

PGP™ Universal Server

Administrator's Guide

3.2



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Symantec Corporation
350 Ellis Street
Mountain View, CA 94043

Symantec Home Page (<http://www.symantec.com>)

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1

Introduction

This Administrator's Guide describes both the PGP™ Universal Server and Client software. It tells you how to get them up and running on your network, how to configure them, and how to maintain them. This section provides a high-level overview of PGP Universal Server.

What is PGP Universal Server?

PGP Universal Server is a console that manages the applications that provide email, disk, and network file encryption. PGP Universal Server with PGP Universal Gateway Email provides secure messaging by transparently protecting your enterprise messages with little or no user interaction. The PGP Universal Server replaces PGP Keyserver with a built-in keyserver, and PGP Admin with PGP Desktop configuration and deployment capabilities.

PGP Universal Server also does the following:

- Automatically creates and maintains a Self-Managing Security Architecture (SMSA) by monitoring authenticated users and their email traffic.
- Allows you to send protected messages to addresses that are not part of the SMSA.
- Automatically encrypts, decrypts, signs, and verifies messages.
- Provides strong security through policies you control.

PGP Universal Satellite, a client-side feature of PGP Universal Server, does the following:

- Extends security for email messages to the computer of the email user.
- Allows external users to become part of the SMSA.
- If allowed by an administrator, gives end users the option to create and manage their keys on their computers.

PGP Desktop, a client product, is created and managed through PGP Universal Server policy and does the following:

- Creates PGP keypairs.
- Manages user keypairs.
- Stores the public keys of others.
- Encrypts user email and instant messaging (IM).
- Encrypts entire, or partial, hard drives.
- Enables secure file sharing with others over a network.

PGP Universal Server Product Family

PGP Universal Server functions as a management console for a variety of encryption solutions. You can purchase any of the PGP Desktop applications or bundles and use PGP Universal Server to create and manage client installations. You can also purchase a license that enables PGP Universal Gateway Email to encrypt email in the mailstream.

The PGP Universal Server can manage any combination of the following PGP encryption applications:

- **PGP Universal Gateway Email** provides automatic email encryption in the gateway, based on centralized mail policy.
This product requires administration by the PGP Universal Server.
- **PGP Desktop Email** provides encryption at the desktop for mail, files, and AOL Instant Messenger traffic.
This product can be managed by the PGP Universal Server.
- **PGP Whole Disk Encryption** provides encryption at the desktop for an entire disk.
This product can be managed by the PGP Universal Server.
- **PGP NetShare** provides transparent file encryption and sharing among desktops.
This product can be managed by the PGP Universal Server.

Who Should Read This Guide

This Administrator's Guide is for the person or persons who implement and maintain your organization's PGP Universal Server environment. These are the PGP Universal Server administrators.

This guide is also intended for anyone else who wants to learn about how PGP Universal Server works.

Common Criteria Environments

To be Common Criteria compliant, see the best practices in *PGP Universal Server 2.9 Common Criteria Supplemental*. These best practices supersede recommendations made elsewhere in this and other documentation.

Improvements in this Version of PGP Universal Server

PGP Universal Server 3.2.1 introduces the following new and improved features:

- This release provides support for VMware VMotion HA Configurations. PGP Universal Server with VMware VMotion allows virtual machines on failed ESX server hosts to restart on surviving ESX hosts.
- This release contains improvements in the backup process which provides a faster way to take and restore backups. Users also now have the capability of specifying encryption and compression with each backup.
- Improvements made to streamline the migration process.
- PGP Universal Web Messenger users are now notified when their accounts are about to expire.
- PGP Universal Web Messenger has added functionality to prevent a Cross Sites Request Forge attacks. PGP Universal Server already provides functionality to prevent CSRF attacks.
- The default mail policy includes the following changes:
 - New default mail policy no longer uses opportunistic encryption. Email is secured only if the sender specifies (such as by selecting the **Encrypt** button in the email client or by marking the email as "Sensitive").
 - New default mail policy attempts to encrypt the mail if the subject line contains "PDF", and should be delivered as a secure PDF message if the key is not found and PGP Universal Web Messenger/PDF options are enabled.
 - "Excluded Signed", and "Excluded Unsigned" rules are removed as they are now part of opportunistic encryption.
 - Secure Reply option for PDF Messenger is enabled by default.
- PGP NetShare can be integrated with Symantec Data Loss Prevention to provide automatic encryption of files without end-user intervention. A Data Loss Prevention administrator defines policies and rules that define the parameters for identifying sensitive files and provide credentials for the encryption. The integration is accomplished using an endpoint client-side plug-in. Files under consideration for sensitive content can be data in motion (DIM) or data at rest (DAR). For more information, see the *PGP NetShare Flex Response Plug-In for Data Loss Prevention Implementation Guide*.

PGP Universal Server 3.2.0 introduces the following new and improved features:

- X.509 certificates are available to your external users through the PGP Universal Web Messenger interface. External users download the certificates, add them to their mail clients, and use them to communicate securely with users in your managed domain.
- The PGP Universal Server user interface and all end user documentation have been rebranded to include the Symantec logo and colors. The product name remains the same.
- We improved performance and page load times for many parts of the interface.
- You can now allow your external users to securely reply to PDF Messenger messages.
- You can now monitor the how well data is being replicated throughout your cluster members.
- After you migrate to PGP Universal Server 3.2.1, you can verify whether your backup/restore or PUP update was successful.
- You can now require users to authenticate at the PGP BootGuard screen with their user name, domain, and passphrase.

- Symantec Patch Distribution Center now provides all software updates, which replaces PGP update servers. Automatic updates through the PGP update servers are no longer available.
- PGP Universal Server is now integrated with Symantec Protection Center, which offers a single point of administration and helps you manage PGP Universal Server and other security products.
- PGP Universal Server now supports group keys, which allows you to protect shared files and folders in PGP NetShare. Group keys allow you to easily add or remove group members without affecting the PGP NetShare metadata associated with the protected files and folders.
- You can now allow users, who use certificates or smart cards to log in to Microsoft Windows, to enroll in PGP Desktop using those certificates.

Using the PGP Universal Server with the Command Line

You can use the PGP Universal Server command line for read-only access to, for example, view settings, services, logs, processes, disk space, query the database, and so on.

Note: If you modify your configuration using the command line, and you do not follow these procedures, your PGP Support agreement is void.

Changes to the PGP Universal Server using command line must be:

- Authorized in writing by PGP Support.
- Implemented by PGP's partner, reseller, or internal employee who is certified in the PGP Advanced Administration and Deployment Training.
- Summarized and documented in a text file in `/var/lib/ovid/customization` on the PGP Universal Server.

Changes made through the command line may not persist through reboots and may become incompatible in a future release. When troubleshooting new issues, PGP Support can require you to revert custom configurations on the PGP Universal Server to a default state.

Symbols

Notes, Cautions, and Warnings are used in the following ways.

Note: Notes are extra, but important, information. A Note calls your attention to important aspects of the product. You can use the product better if you read the Notes.

Caution: Cautions indicate the possibility of loss of data or a minor security breach. A Caution tells you about a situation where problems can occur unless precautions are taken. Pay attention to Cautions.

Warning: Warnings indicate the possibility of significant data loss or a major security breach. A Warning means serious problems will occur unless you take the appropriate action. Please take Warnings very seriously.

Getting Assistance

For additional resources, see these sections.

Getting product information

The following documents and online help are companions to the *PGP Universal Server Administrator's Guide*. This guide occasionally refers to information that can be found in one or more of these sources:

- **Online help** is installed and is available in the PGP Universal Server product.
- **PGP Universal Server Installation Guide**—Describes how to install the PGP Universal Server.
- **PGP Universal Server Upgrade Guide**—Describes the process of upgrading your PGP Universal Server.
- **PGP Universal Mail Policy Diagram**—Provides a graphical representation of how email is processed through mail policy. You can access this document via the PGP Universal Server online help.

You can also access all the documentation by clicking the online help icon in the upper-right corner of the PGP Universal Server screen.

- PGP Universal Satellite for Windows and Mac OS X includes online help.

PGP Universal Server and PGP Satellite release notes are also provided, which may have last-minute information not found in the product documentation.

Technical Support

Symantec Technical Support maintains support centers globally. Technical Support's primary role is to respond to specific queries about product features and functionality. The Technical Support group also creates content for our online Knowledge Base. The Technical Support group works collaboratively with the other functional areas within Symantec to answer your questions in a timely fashion. For example, the Technical Support group works with Product Engineering and Symantec Security Response to provide alerting services and virus definition updates.

Symantec's support offerings include the following:

- A range of support options that give you the flexibility to select the right amount of service for any size organization
- Telephone and/or Web-based support that provides rapid response and up-to-the-minute information
- Upgrade assurance that delivers software upgrades

- Global support purchased on a regional business hours or 24 hours a day, 7 days a week basis
- Premium service offerings that include Account Management Services

For information about Symantec's support offerings, you can visit our Web site at the following URL:

www.symantec.com/business/support/

All support services will be delivered in accordance with your support agreement and the then-current enterprise technical support policy.

Contacting Technical Support

Customers with a current support agreement may access Technical Support information at the following URL:

www.symantec.com/business/support/

Before contacting Technical Support, make sure you have satisfied the system requirements that are listed in your product documentation. Also, you should be at the computer on which the problem occurred, in case it is necessary to replicate the problem.

When you contact Technical Support, please have the following information available:

- Product release level
- Hardware information
- Available memory, disk space, and NIC information
- Operating system
- Version and patch level
- Network topology
- Router, gateway, and IP address information
- Problem description:
 - Error messages and log files
 - Troubleshooting that was performed before contacting Symantec
 - Recent software configuration changes and network changes

Licensing and registration

If your Symantec product requires registration or a license key, access our technical support Web page at the following URL:

www.symantec.com/business/support/

Customer service

Customer service information is available at the following URL:

www.symantec.com/business/support/

Customer Service is available to assist with non-technical questions, such as the following types of issues:

- Questions regarding product licensing or serialization
- Product registration updates, such as address or name changes
- General product information (features, language availability, local dealers)
- Latest information about product updates and upgrades
- Information about upgrade assurance and support contracts
- Information about the Symantec Buying Programs
- Advice about Symantec's technical support options
- Nontechnical presales questions
- Issues that are related to CD-ROMs or manuals

Support agreement resources

If you want to contact Symantec regarding an existing support agreement, please contact the support agreement administration team for your region as follows:

Asia-Pacific and Japan	customercare_apac@symantec.com
Europe, Middle-East, Africa	semea@symantec.com
North America, Latin America	supportsolutions@symantec.com

2

The Big Picture

This chapter describes some important terms and concepts and gives you a high-level overview of the things you need to do to set up and maintain your PGP Universal Server environment.

Important Terms

The following sections define important terms you will encounter throughout the PGP Universal Server and this documentation.

PGP Products

- **PGP Universal Server:** A device you add to your network that provides secure messaging with little or no user interaction. The PGP Universal Server automatically creates and maintains a security architecture by monitoring authenticated users and their email traffic. You can also send protected messages to addresses that are *not* part of the security architecture.
 - **PGP Global Directory:** A free, public keyserver hosted by Symantec Corporation. The PGP Global Directory provides quick and easy access to the universe of PGP keys. It uses next-generation keyserver technology that queries the email address on a key (to verify that the owner of the email address wants their key posted) and lets users manage their own keys. Using the PGP Global Directory significantly enhances your chances of finding a valid public key of someone to whom you want to send secured messages.

For external users without encryption keys, PGP Universal Server offers multiple secure delivery options, leveraging third-party software that is already installed on typical computer systems, such as a web browser or Adobe Acrobat Reader. For email recipients who do not have an encryption solution, you can use one of the following secure delivery options from PGP Universal Server:

- **PGP Universal Satellite:** The PGP Universal Satellite software resides on the computer of the email user. It allows email to be encrypted end to end, all the way to and from the desktop (for both internal and external users). Using PGP Universal Satellite is one of the ways for external users to participate in the SMSA. It also allows users the option of controlling their keys on their local computers (if allowed by the administrator).
- **PGP Universal Web Messenger:** The PGP Universal Web Messenger service allows an external user to securely read a message from an internal user *before* the external user has a relationship with the SMSA. If PGP Universal Web Messenger is available via mail policy for a user and the recipient's key cannot be found, the message is stored on the PGP Universal Server and an unprotected message is sent to the recipient. The unprotected message includes a link to the original message, held on the PGP Universal Server. The recipient must create a passphrase, and then can access his encrypted messages stored on PGP Universal Server.

- **PDF Messenger:** PDF Messenger enables sending encrypted PDF messages to external users who do not have a relationship with the SMSA. In the normal mode, as with PGP Universal Web Messenger, the user receives a message with a link to the encrypted message location and uses a PGP Universal Web Messenger passphrase to access the message. PDF Messenger also provides Certified Delivery, which encrypts the message to a one-time passphrase, and creates and logs a delivery receipt when the user retrieves the passphrase.
- **PGP Desktop:** A client software tool that uses cryptography to protect your data against unauthorized access. PGP Desktop is available for Mac OS X and Windows.
 - **PGP Whole Disk Encryption:** Whole Disk Encryption is a feature of PGP Desktop that encrypts your entire hard drive or partition (on Windows systems), including your boot record, thus protecting all your files when you are not using them.
 - **PGP NetShare:** A feature of PGP Desktop for Windows with which you can securely and transparently share files and folders among selected individuals. PGP NetShare users can protect their files and folders simply by placing them within a folder that is designated as protected.
 - **PGP Virtual Disk:** PGP Virtual Disk volumes are a feature of PGP Desktop that let you use part of your hard drive space as an encrypted virtual disk. You can protect a PGP Virtual Disk volume with a key or a passphrase. You can also create additional users for a volume, so that people you authorize can also access the volume.
 - **PGP Zip:** A feature of PGP Desktop that lets you put any combination of files and folders into a single encrypted, compressed package for convenient transport or backup. You can encrypt a PGP Zip archive to a PGP key or to a passphrase.
- **PGP Portable:** A separately-licensed feature that enables you to send encrypted files to users who do not have PGP Desktop software, and to transport files securely to systems that do not or cannot have PGP software installed.

PGP Universal Server Concepts

- **keys.<domain> convention:** PGP Universal Server automatically looks for valid public keys for email recipients at a special hostname, if no valid public key is found locally to secure a message. This hostname is keys.<domain> (where <domain> is the email domain of the recipient). For example, Example Corporation's externally visible PGP Universal Server is named **keys.example.com**.

Symantec Corporation strongly recommends you name your externally visible PGP Universal Server according to this convention because it allows other PGP Universal Servers to easily find valid public keys for email recipients in your domain.

For more information, see *Naming your PGP Universal Server* (see "About Naming your PGP Universal Server" on page 23).
- **Security Architecture:** Behind the scenes, the PGP Universal Server creates and manages its own security architecture for the users whose email domain it is securing. Because the security architecture is created and managed automatically, we call this a *self-managing* security architecture (SMSA).

PGP Universal Server Features

- **Administrative Interface:** Each PGP Universal Server is controlled via a Web-based administrative interface. The administrative interface gives you control over PGP Universal Server. While many settings are initially established using the web-based Setup Assistant, all settings of a PGP Universal Server can be controlled via the administrative interface.
- **Backup and Restore:** Because full backups of the data stored on your PGP Universal Server are critical in a natural disaster or other unanticipated loss of data or hardware, you can schedule automatic backups of your PGP Universal Server data or manually perform a backup.

You can fully restore a PGP Universal Server from a backup. In the event of a minor problem, you can restore the PGP Universal Server to any saved backup. In the event that a PGP Universal Server is no longer usable, you can restore its data from a backup onto a new PGP Universal Server during initial setup of the new PGP Universal Server using the Setup Assistant. All backups are encrypted to the Organization Key and can be stored securely off the PGP Universal Server.

- **Cluster:** When you have two or more PGP Universal Servers in your network, you configure them to synchronize with each other; this is called a “cluster.”
- **Dictionary:** Dictionaries are lists of terms to be matched. The dictionaries work with mail policy to allow you to define content lists that can trigger rules.
- **Directory Synchronization:** If you have LDAP directories in your organization, your PGP Universal Server can be synchronized with the directories. The PGP Universal Server automatically imports user information from the directories when users send and receive email; it also creates internal user accounts for them, including adding and using X.509 certificates if they are contained in the LDAP directories.
- **Ignition Keys:** You can protect the contents of a PGP Universal Server, even if the hardware is stolen, by requiring the use of a hardware token or a software passphrase, or both, on start.
- **Keyserver:** Each PGP Universal Server includes an integrated keyserver populated with the public keys of your internal users. When an external user sends a message to an internal user, the external PGP Universal Server goes to the keyserver to find the public key of the recipient to use to secure the message. The PGP Universal Server administrator can enable or disable the service, and control access to it via the administrative interface.
- **Learn Mode:** When you finish configuring a PGP Universal Server using the Setup Assistant, it begins in Learn Mode, where the PGP Universal Server sends messages through mail policy without taking any action on the messages, and does not encrypt or sign any messages.

Learn Mode gives the PGP Universal Server a chance to build its SMSA (creating keys for authenticated users, for example) so that when Learn Mode is turned off, the PGP Universal Server can immediately begin securing messages. It is also an excellent way for administrators to learn about the product.

You should check the logs of the PGP Universal Server while it is in Learn Mode to see what it would be doing to email traffic if it were live on your network. You can make changes to the PGP Universal Server’s policies while it is in Learn Mode until things are working as expected.

- **Mail Policy:** The PGP Universal Server processes email messages based on the policies you establish. Mail policy applies to inbound and outbound email processed by both PGP Universal Server and client software. Mail policy consists of multiple policy chains, comprised of sequential mail processing rules.
- **Organization Certificate:** You must create or obtain an Organization Certificate to enable S/MIME support by PGP Universal Server. The Organization Certificate signs all X.509 certificates the server creates.
- **Organization Key:** The Setup Assistant automatically creates an Organization Key (actually a keypair) when it configures a PGP Universal Server. The Organization Key is used to sign all PGP keys the PGP Universal Server creates and to encrypt PGP Universal Server backups.

Caution: It is extremely important to back up your Organization Key: all keys the PGP Universal Server creates are signed by the Organization Key, and all backups are encrypted to the Organization Key. If you lose your Organization Key and have not backed it up, the signatures on those keys are meaningless and you cannot restore from backups encrypted to the Organization Key.

- **PGP Verified Directory:** The PGP Verified Directory supplements the internal keyserver by letting internal and external users manage the publishing of their own public keys. The PGP Verified Directory also serves as a replacement for the PGP Keyserver product. The PGP Verified Directory uses next-generation keyserver technology to ensure that the keys in the directory can be trusted.
- **Server Placement:** A PGP Universal Server can be placed in one of two locations in your network to process email.

With an internal placement, the PGP Universal Server logically sits between your email users and your mail server. It encrypts and signs outgoing SMTP email and decrypts and verifies incoming mail being picked up by email clients using POP or IMAP. Email stored on your mail server is stored secured (encrypted).

With a gateway placement, the PGP Universal Server logically sits between your mail server and the Internet. It encrypts and signs outgoing SMTP email and decrypts and verifies incoming SMTP email. Email stored on your mail server is stored unsecured.

For more information, see *Configuring Mail Proxies* (on page 147) and the *PGP Universal Server Installation Guide*.

- **Setup Assistant:** When you attempt to log in for the first time to the administrative interface of a PGP Universal Server, the Setup Assistant takes you through the configuration of that PGP Universal Server.
- **Group Key:** A server-managed keypair shared by a group of users. A Group Key is assigned to a group based on membership in an Active Directory security group. This allows membership in the Active Directory security group to be modified without affecting the metadata associated with the protected data. To create a Group Key, the Directory Synchronization feature must be enabled and synchronized with an Active Directory database.

PGP Universal Server User Types

- **Administrators:** Any user who manages the PGP Universal Server and its security configuration from inside the internal network.

Only administrators are allowed to access the administrative interface that controls PGP Universal Server. A PGP Universal Server supports multiple administrators, each of which can be assigned a different authority: from read-only access to full control over every feature and function.

- **Consumers:** Internal, external, and Verified Directory users, and devices.
 - **External Users:** External users are email users from other domains (domains *not* being managed by your PGP Universal Server) who have been added to the SMSA.
 - **Internal Users:** Internal users are email users from the domains being managed by your PGP Universal Server.

PGP Universal Server allows you to manage PGP Desktop deployments to your internal users. The administrator can control which PGP Desktop features are automatically implemented at install, and establish and update security policy for PGP Desktop users that those users cannot override (except on the side of being more secure).

- **PGP Verified Directory Users:** Internal and external users who have submitted their public keys to the PGP Verified Directory, a Web-accessible keyserver.
- **Devices:** Managed devices, WDE computers, and WDE disks. Managed devices are arbitrary objects whose keys are managed by PGP Universal Server. WDE computers, and WDE disks are devices that are detected when users enroll.
- **Other Email Users:** Users within your organization can securely send email to recipients outside the SMSA.

First, the PGP Universal Server attempts to find a key for the recipient. If that fails, there are four fallback options, all controlled by mail policy: bounce the message back to the sender (so it is not sent unencrypted), send unencrypted, Smart Trailer, and PGP Universal Web Messenger mail.

Smart Trailer sends the message unencrypted and adds text giving the recipient the option of joining the SMSA by installing PGP Universal Satellite, using an existing key or certificate, or using PGP Universal Web Messenger. PGP Universal Web Messenger lets the recipient securely read the message on a secure website; it also gives the recipient options for handling subsequent messages from the same domain: read the messages on a secure website using a passphrase they establish, install PGP Universal Satellite, or add an existing key or certificate to the SMSA.

Installation Overview

The following steps are a broad overview of what it takes to plan, set up, and maintain your PGP Universal Server environment.

Most of the steps described here are described in detail in later chapters. Steps 1 and 4 are described in the *PGP Universal Server Installation Guide*. Note that these steps apply to the installation of a new, stand-alone PGP Universal Server.

If you plan to install a cluster, you must install and configure one PGP Universal Server following the steps outlined here. Subsequent cluster members will get most of their configuration settings from the initial server by replication.

The steps to install and configure a PGP Universal Server are as follows:

1 Plan where in your network you want to locate your PGP Universal Server(s).

Where you put PGP Universal Servers in your network, how many PGP Universal Servers you have in your network, and other factors all have a major impact on how you add them to your existing network.

Create a diagram of your network that includes all network components and shows how email flows; this diagram details how adding a PGP Universal Server impacts your network.

For more information on planning how to add PGP Universal Servers to your existing network, see *Adding the PGP Universal Server to Your Network in the PGP Universal Server Installation Guide*.

2 Perform necessary DNS changes.

Add IP addresses for your PGP Universal Servers, an alias to your keyserver, update the MX record if necessary, add keys.<domain>, hostnames of potential Secondary servers for a cluster, and so on.

Properly configured DNS settings (including root servers and appropriate reverse lookup records) are required to support PGP Universal Server. Make sure both host and pointer records are correct. IP addresses must be resolvable to hostnames, as well as hostnames resolvable to IP addresses.

3 Prepare a hardware token Ignition Key.

If you want to add a hardware token Ignition Key during setup, install the drivers and configure the token before you begin the PGP Universal Server setup process. See *Protecting PGP Universal Server with Ignition Keys* (on page 25) for information on how to prepare a hardware token Ignition Key.

Note: In a cluster, the Ignition Key configured on the first PGP Universal Server in the cluster will also apply to the subsequent members of the cluster.

4 Install and configure this PGP Universal Server.

The Setup Assistant runs automatically when you first access the administrative interface for the PGP Universal Server. The Setup Assistant is where you can set or confirm a number of basic settings such as your network settings, administrator password, server placement option, mail server address and so on. The details of this process are described in *Setting Up the PGP Universal Server in the PGP Universal Server Installation Guide*.

Note: If you plan to configure multiple servers as a cluster, you must configure one server first in the normal manner, then add the additional servers as cluster members. You can do this through the Setup Assistant when you install a server that will join an existing cluster, or you can do this through the PGP Universal Server administrative interface. For more information see *Cluster Member Configuration in the PGP Universal Server Installation Guide*.

5 License your server.

You cannot take a PGP Universal Server out of Learn Mode or install updates until the product is licensed. Once it is licensed, you should check for product updates and install them if found. For more information, see *Licensing Your Software* (on page 35).

If you want the PGP Universal Server to provide mail proxy services, you must have a PGP Universal Server license with the mailstream feature enabled, and you must check the **Enable Mail Proxies** check box on the **System Settings** page in the PGP Universal Server administrative interface. For more information, see *Licensing Your Software* (on page 35).

6 If you have a PGP key you want to use as your Organization Key with PGP Universal Server, import it, then back it up.

Your Organization Key does two important things: it is used to sign all user keys the PGP Universal Server creates and it is used to encrypt PGP Universal Server backups. This key represents the identity of your organization, and is the root of the Web-of-Trust for your users.

If your organization uses PGP Desktop and already has an Corporate Key or Organization Key, and you want to use that key with PGP Universal Server, you should import it as soon as you have configured your server, then create a backup of the key.

If your organization does not have an existing key that you want to use as your Organization Key, use the Organization Key the Setup Assistant automatically creates with default values. For more information, see *Managing Organization Keys* (on page 47).

No matter which key you use as your Organization Key, it is very important to make a backup of the key. Since PGP Universal Server's built-in back-up feature always encrypts backups to this key, you need to provide a copy of your Organization Key to restore your data.

For more information, see *Organization Certificate* (on page 50).

7 If you have a PGP Additional Decryption Key (ADK) that you want to use with PGP Universal Server, add it.

An ADK is a way to recover an email message if the recipient is unable or unwilling to do so; every message that is also encrypted to the ADK can be opened by the holder(s) of the ADK. You cannot create an ADK with the PGP Universal Server, but if you have an existing PGP ADK (generated by PGP Desktop, an ideal scenario for a split key; refer to the *PGP Desktop User's Guide* for more information), you can add it to your PGP Universal Server and use it. For more information, see *Additional Decryption Key (ADK)* (on page 53).

8 Create a SSL/TLS certificate or obtain a valid SSL/TLS certificate.

You can create a self-signed certificate for use with SSL/TLS traffic. Because this certificate is self-signed, however, it might not be trusted by email or Web browser clients. Symantec Corporation recommends that you obtain a valid SSL/TLS certificate for each of your PGP Universal Servers from a reputable Certificate Authority.

This is especially important for PGP Universal Servers that are accessed publicly. Older Web browsers might reject self-signed certificates or not know how to handle them correctly when they encounter them via PGP Universal Web Messenger or Smart Trailer.

For more information, see *Working with Certificates* (on page 41).

9 Configure the Directory Synchronization feature if you want to synchronize an LDAP directory with your PGP Universal Server.

If you have an existing LDAP server, using the Directory Synchronization feature gives you more control over which users, keys, and certificates are added to the PGP Universal Server.

By default, user enrollment is set to Email enrollment. If you elect to use certificate enrollment or LDAP directory enrollment, you must have an LDAP directory configured and Directory Synchronization enabled. You can change the client enrollment setting from the Directory Synchronization Settings page in the PGP Universal Server administrative interface.

For more information, see *Using Directory Synchronization to Manage Consumers* (on page 225).

10 Configure PGP Desktop client features.

The PGP Desktop client basic (default) license is installed along with the PGP Universal Server, so adding the client license as a separate step is not necessary. However, the optional features (messaging, PGP Whole Disk Encryption, and PGP NetShare) are disabled by default. If you have purchased a license for those features, you must edit your client policy settings to enable them. For more information about consumer policy settings, see "*Establishing PGP Desktop Settings for Your PGP Desktop Clients* (on page 217)".

11 Add trusted keys, configure consumer policy, and establish mail policy.

All these settings are important for secure operation of PGP Universal Server. For more information on adding trusted keys from outside the SMSA, see *Managing Trusted Keys and Certificates* (on page 77). For more information about consumer policy settings, see *Administering Consumer Policy* (on page 197). For information on setting up mail policy, see *Setting Mail Policy* (on page 85).

Note: When setting policy for Consumers, PGP Universal Server provides an option called Out of Mail Stream (OOMS) support. OOMS specifies how the email gets transmitted from the client to the server when PGP Desktop cannot find a key for the recipient and therefore cannot encrypt the message.

OOMS is disabled by default. With OOMS disabled, sensitive messages that can't be encrypted locally are sent to PGP Universal Server "in the mail stream" like normal email. Importantly, this email is sent in the clear (unencrypted). Mail or Network administrators could read these messages by accessing the mail server's storage or monitoring network traffic. However, archiving solutions, outbound anti-virus filters, or other systems which monitor or proxy mail traffic will process these messages normally.

You can elect to enable OOMS, which means that sensitive messages that can't be encrypted locally are sent to PGP Universal Server "out of the mail stream." PGP Desktop creates a separate, encrypted network connection to the PGP Universal Server to transmit the message. However, archiving solutions, outbound anti-virus filters, or other systems which monitor or proxy mail traffic will not see these messages.

During your configuration of your PGP Universal Server you should determine the appropriate settings for your requirements. This option can be set separately for each policy group, and is set through the Consumer Policy settings. For more details on the effects of enabling or disabling OOMS, see Out of Mail Stream Support.

12 Install and configure additional cluster server members.

You can do this through the Setup Assistant when you install a server that will join an existing cluster, or you can do this through the PGP Universal Server administrative interface. Remember that you must configure one server in the normal manner before you can add and configure additional servers as cluster members. For more information, see *Clustering your PGP Universal Servers* (on page 45).

13 Reconfigure the settings of your email clients and servers, if necessary.

Depending on how you are adding the PGP Universal Server to your network, some setting changes might be necessary. For example, if you are using a PGP Universal Server placed internally, the email clients **must** have SMTP authentication turned on. For PGP Universal Servers placed externally, you must configure your mail server to relay SMTP traffic to the PGP Universal Server.

14 Enable SNMP Polling and Traps.

You can configure PGP Universal Server to allow network management applications to monitor system information for the device on which PGP Universal Server is installed and to send system and application information to an external destination. See *Configuring SNMP Monitoring* (on page 9) for more information.

15 Distribute PGP Universal Satellite and/or PGP Desktop to your internal users, if appropriate.

If you want to provide seamless, end-to-end PGP message security without the need for any user training, have them use PGP Universal Satellite. Exchange/MAPI and Lotus Notes environments also require the use of PGP Universal Satellite. PGP Desktop provides more features and user control than PGP Universal Satellite. For more information, see *PGP Universal Satellite and Configuring PGP Desktop Installations*.

16 Analyze the data from Learn Mode.

In Learn Mode, your PGP Universal Server sends messages through mail policy without actually taking action on the messages, decrypts and verifies incoming messages when possible, and dynamically creates a SMSA. You can see what the PGP Universal Server would have done without Learn Mode by monitoring the system logs.

Learn Mode lets you become familiar with how the PGP Universal Server operates and it lets you see the effects of the policy settings you have established before the PGP Universal Server actually goes live on your network. Naturally, you can fine tune settings while in Learn Mode, so that the PGP Universal Server is operating just how you want before you go live.

For more information, see *Operating in Learn Mode* (on page 37).

17 Adjust policies as necessary.

It might take a few tries to get everything working just the way you want. For example, you might need to revise your mail policy.

18 Perform backups of all PGP Universal Servers before you take them out of Learn Mode.

This gives you a baseline backup in case you need to return to a clean installation. For more information, see *Backing Up and Restoring System and User Data* (on page 31).

19 Take your PGP Universal Servers out of Learn Mode.

Once this is done, email messages are encrypted, signed, and decrypted/verified, according to the relevant policy rules. Make sure you have licensed each of your PGP Universal Servers; you cannot take a PGP Universal Server out of Learn Mode until it has been licensed.

- 20 **Monitor the system logs to make sure your PGP Universal Server environment is operating as expected.**

About Integration with Symantec Protection Center

Protection Center helps strengthen the security of your organization by providing easy access to security metrics and simplified security management. You can log in to PGP Universal Server and other security products from within Protection Center. This feature allows for a single point of administration. The tasks you perform within each product's separate console can now be performed through Protection Center.

Protection Center also aggregates security data from PGP Universal Server and other Symantec Corporation products and combines that data into cross-product reports, providing you with a more complete, all-in-one view of the security of your enterprise. PGP Universal Server sends the following data to be included in aggregated reports:

- Internal users
- Client computers
- Client computer status
- Encryption status per client device
- PGP Whole Disk Encryption login failure alerts, which Protection Center calls incident events
- Protection Center install agents, which in this case refers only to PGP Universal Server itself

Before You Integrate with Protection Center

Both Protection Center and PGP Universal Server must be installed and set up before integration and registration.

For detailed information about how to set up your Protection Center and register PGP Universal Server, see the Protection Center documentation.

Complete the following tasks to prepare PGP Universal Server for registration with and discovery by Protection Center.

- To register PGP Universal Server on Protection Center, you need the PGP Universal Server's IP address, as well as the username and passphrase of a superuser administrator. All other registration information appears automatically in the Advanced Options section of the registration interface and do not need to be entered manually.

Best Practice: Create a superuser account to be used only for registration. This provides stability even when other administrators leave the company.

You cannot register with Protection Center using an administrator account that authenticates using SecurID. You must use an account with a passphrase. The account used for registration is not related to which administrators can log in to Protection Center. Any PGP Universal Server administrator, including SecurID and passphrase administrators, can log in to Protection Center, if you map a new Protection Center user account to that administrator. For more information, see the Protection Center documentation.

- Make sure that the time settings for PGP Universal Server and Protection Center match, with less than a minute's difference. The hour and time zone settings do not have to match, but the minute setting must be the same. If the minute settings do not match, registration fails and an error message appears.
- Register only one PGP Universal Server in a cluster. Because data is replicated among cluster members, registering more than one cluster member results in duplicate data sent to Protection Center. For example, if you manage 10 encrypted devices, it will appear in Protection Center reports as if there are 20. If you have cluster members located in the DMZ as well as inside your network, register a cluster member within your network, not one in the DMZ, because cluster members in the DMZ do not usually store private keys.

3

About Open Ports

This chapter provides information on the ports a PGP Universal Server has open and on which ports it listens.

TCP Ports

Port	Protocol/Service	Comment
21	File Transfer Protocol (FTP)	Used to transmit encrypted backup archives to other servers. Data is sent via passive FTP, so port 20 (FTP Data) is not used.
22	Open Secure Shell (SSH)	Used for remote shell access to the server for low-level system administration.
25	Simple Mail Transfer Protocol (SMTP)	Used to send mail. In a gateway placement, the PGP Universal Server listens on port 25 for incoming and outgoing SMTP traffic.
80	HyperText Transfer Protocol (HTTP)	Used to allow user access to the PGP Verified Directory. If the PGP Verified Directory is disabled, access on this port is automatically redirected to port 443 over HTTPS. Also used for Universal Services Protocol (USP) keyserver connection.
110	Post Office Protocol (POP)	Used to retrieve mail by users with POP accounts in an internal placement. Closed to gateway placements.
143	Internet Message Access Protocol (IMAP)	Used to retrieve mail by users with IMAP accounts in an internal placement. Closed to gateway placements.
389	Lightweight Directory Access Protocol (LDAP)	Used to allow remote hosts to look up local users' public keys.
443	HyperText Transfer Protocol, Secure (HTTPS)	Used for PGP Desktop and PGP Universal Satellite policy distribution and PGP Universal Web Messenger access. If the Verified Directory is disabled, used for HTTPS access. Also used for Universal Services Protocol (USP) over SSL for keyserver connection.
444	Simple Object Access Protocol, Secure (SOAPS)	Used to cluster replication messages.

Port	Protocol/Service	Comment
21	File Transfer Protocol (FTP)	Used to transmit encrypted backup archives to other servers. Data is sent via passive FTP, so port 20 (FTP Data) is not used.
465	Simple Mail Transfer Protocol, Secure (SMTPS)	Used to send mail securely in internal placements. Closed to gateway placements. This is a non-standard port used only by legacy mail servers. We recommend, rather than using this port, you use STARTTLS on port 25.
636	Lightweight Directory Access Protocol, Secure (LDAPS)	Used to securely allow remote hosts to look up public keys of local users.
993	Internet Message Access Protocol, Secure (IMAPS)	Used to retrieve mail securely by users with IMAP accounts in internal placements. Closed to gateway placements.
995	Post Office Protocol, Secure (POPS)	Used to retrieve mail securely by users with POP accounts in internal placements. Closed to gateway placements.
9000	HyperText Transfer Protocol, Secure (HTTPS)	Allows access to the PGP Universal Server administrative interface.

UDP Ports

Port	Protocol/Service	Comment
53	Domain Name System (DNS)	Used to look up a Fully Qualified Domain Name (FQDN) on the DNS server and translate to an IP address.
123	Network Time Protocol (NTP)	Used to synchronize the system's clock with a reference time source on a different server.
161	Simple Network Management Protocol (SNMP)	Used by network management applications to query the health and activities of PGP Universal Server and the computer on which it is installed.

4

About Naming your PGP Universal Server

This chapter describes how and why to name your PGP Universal Server using the **keys.<domain>** convention.

How to Name Your PGP Universal Server

Unless a valid public key is found locally, PGP Universal Servers automatically look for valid public keys for email recipients by attempting to contact a keyserver at a special hostname, **keys.<domain>**, where <domain> is the recipient's email domain.

For example, an internal user at example.com sends an email to susanjones@widgetcorp.com. If no valid public key for Susan is found on the Example PGP Universal Server, it automatically looks for a valid public key for Susan at keys.widgetcorp.com, even if there is no domain policy for widgetcorp.com on Example's PGP Universal Server. Keys are found locally if they are cached, or if Susan was an external user who explicitly supplied her key through PGP Universal Web Messenger. If the Widgetcorp PGP Universal Server is named using the **keys.<domain>** convention, the Example Corp. PGP Universal Server can find a valid public key for susan@widgetcorp.com at keys.widgetcorp.com.

Caution: Symantec Corporation strongly recommends you name your PGP Universal Server according to this convention, because it allows other PGP Universal Servers to easily find valid public keys for email recipients in your domain. You must also use this convention to name your externally visible PGP Universal Server.

If your organization uses email addresses, such as mingp@example.com and mingp@corp.example.com, your PGP Universal Server must be reachable at **keys.example.com** and **keys.corp.example.com**. If you have multiple PGP Universal Servers in a cluster that are managing an email domain, only one of those PGP Universal Servers needs to use the **keys.<domain>** convention.

Note: Keys that are found using the **keys.<domain>** convention are treated as valid and trusted.

keys.<domain> should be the address of a load-balancing device, which distributes connections to your PGP Universal Server's keyserver service. The ports that need to be load balanced are the ports on which you are running your keyserver service, port 389 for LDAP and 636 for LDAPS. You can also name your PGP Universal Server according to your company's required naming convention and ensure that the server has a DNS alias of **keys.<domain>.com**.

If you are administering multiple email domains, you should establish the **keys.<domain>** convention for each email domain. If your PGP Universal Server is behind your corporate firewall, you must ensure that ports 389 (LDAP) and 636 (LDAPS) are open to support the **keys.<domain>** convention.

Naming Methods

To support the `keys.<domain>` convention, you can name your PGP Universal Server in one of the following ways:

- In the Setup Assistant, name your PGP Universal Server with the `keys.<domain>` convention in the **Host Name** field on the **Network Setup** page.
- On the **Network Settings** page, change the host name of your PGP Universal Server to `keys.<domain>` .
- Create a DNS alias to your PGP Universal Server that uses the `keys.<domain>` convention that is appropriate for your DNS server configuration.

5

Understanding the Administrative Interface

This section describes the PGP Universal Server's Web-based administrative interface.

System Requirements

The PGP Universal Server administrative interface has been fully tested with the following Web browsers:

Windows	Internet Explorer 6 and greater Firefox 3.6 and greater
Mac OS X	Safari 5.0 and greater Firefox 3.6 and greater

Although the administrative interface works with other Web browsers, we recommend these browsers for maximum compatibility.

Logging In

A login name and passphrase for the administrative interface were originally established when you configured the server using the Setup Assistant. In addition, the original administrator may have created additional administrators, and may have configured your PGP Universal Server to accept RSA SecurID authentication.

To log in to your server's administrative interface

- 1 In a Web browser, type **https://<domain name of server>:9000/** and press **Enter**.

Note: If you see a Security Alert dialog box relating to the security certificate, it means you need to replace the self-signed certificate created automatically with a certificate from a public Certificate Authority.

The **Login** page appears.

- 2 Type the current login name in the **Username** field.
- 3 Type the current passphrase or SecurID passcode in the **Passphrase** field.
(If SecurID authentication is enabled, a message below the Passphrase field will indicate that a SecurID passcode can be entered. A given administrator is configured to use either passphrase or SecurID authentication, not both.)
- 4 Click the **Login** button or press **Enter**.
- 5 If the login credentials are accepted, the System Overview page appears.
- 6 If the login credentials do not match, an error is displayed. For passphrase authentication that fails, an "Invalid Login" error appears. For SecurID authentication, different events may occur. See the following procedure for more information.

To log in using RSA SecurID authentication

- 1 Follow steps 1-4 in the procedure above. If your SecurID passcode is accepted, and no PIN reset is required, the System Overview page appears.

Note: If PGP Universal Server fails to connect with any RSA Manager server, you will be presented with the standard "Invalid Login" message. The connection failure will be logged in the PGP Universal Server Administration log, enabling you to determine whether this was the cause of the login failure.

- 2 If the RSA server policy determines that a PIN reset is required, upon successful login the PIN Reset dialog appears. Depending on the RSA server policy, you may be able to have the RSA server generate a new PIN for you, or enter a new PIN manually. When this is done, the System Overview page appears. For more details see *Resetting SecurID PINs* (on page 23).
- 3 If the RSA server detects a problem with the token code portion of your passcode, you are asked to re-enter your PIN plus the next code shown on your SecurID token. Type your PIN and the next token code that appears, then click **Login** or press **Enter**.
- 4 Based on your RSA server policy, you may be given several chances to authenticate successfully using the next token code. However, eventually continued failures will result in a failed login.

Note: Log in events are logged in the PGP Universal Server Administration log. Successful and failed attempts, and next tokencode requests are logged, as are problems connecting to the RSA Manager servers.

The System Overview Page

The **System Overview** page is the first page you see when you log in to PGP Universal Server. You can also view it from **Reporting > Overview**.

The page provides a general report of system information and statistics. The information displayed includes:

- System alerts, including licensing issues and PGP Whole Disk Encryption login failures. System alerts appear at the top of the page.
- **System Graphs** for CPU usage, message activity, and Whole Disk Encryption. Click the buttons to switch the graphs. Click the **System Graphs** heading to go to the **Reporting > Graphs** page. See *System Graphs* (on page 3) for more information about system graphs.
- Services information, including which services are running or stopped.
 - Depending on the service, the entry may also include the number of users or keys handled by the service.
 - Click the service name link to go to the administrative page for that service.
 - For a running Web Messenger service, click the URL to go to the Web Messenger interface.

- For a running Verified Directory service, click the URL to go to the Verified Directory interface to search for a key, upload your own public key, or remove your key from the searchable directory.
- **System Statistics**, including software version number, system uptime, total messages processed, and number of PGP Portable Disks created. Click the **Statistics** link to go to the **System > General Settings** page.
- **Mail Queue** statistics show the number of email messages in the queue waiting to be processed, if applicable, and the size of the mail queue. Click the **Mail Queue** link to go to the **Mail > Mail Queue status** page for detailed information about the contents of the mail queue. Estimated Policy Group Membership shows the number of members in each consumer policy group. Click a policy group name to go to the page for configuring that policy group.
- **Clustering** provides status information about the cluster configuration, if this PGP Universal Server is a member of a cluster. This display shows, for each cluster member, its hostname or IP address, its status, its location (Internal or DMZ) and a login icon (except for the member on which you are currently logged in). Click the **Clustering** heading to go to the **System > Clustering** page. This display does not appear if your PGP Universal Server is not a member of a cluster.

Click **Refresh** (at the top of the **System Overview** page) to refresh the information shown on this page.

The **Manage Alerts** button takes you to the Alerts page where you can configure how you want to be notified about WDE login failures. For more details, see *Managing Alerts* (on page 27).

The **Export Data** button lets you export statistics for WDE Activity, WDE Login Failures, PDF Messenger Certified Delivery Receipts, and the Mail Policy Print View (which provides in a printable format all your mail policy chains and rules). Because the report can take a long time to generate, you can begin running the report and have an email notification sent to you when the report is ready to be downloaded.

Managing Alerts

The PGP Universal Server groups failed login attempts into reported login failures. This feature is intended to make reporting about failed login attempts more useful, because one or several failed login attempts by a PGP Whole Disk Encryption user does not necessarily mean an attempted break-in. Use the **Alerts** dialog box to choose how many failed login attempts constitutes a login failure. For example, you can specify that an alert should be triggered after 3 failed login attempts. If 6 failed attempts occur, 2 login failure alerts appear.

Alerts about PGP Whole Disk Encryption login failures appear on the **System Overview** page and in the Daily Status Email. Alerts for devices belonging to specific users appear on the user's **Internal Users** dialog box.

Alerts are also sent when a user is locked out of a system because he or she exceeded the number of allowable login failures set on the **Disk Encryption** tab of Consumer Policy.

To specify how you want to be notified of PGP Whole Disk Encryption login failures

- 1 From the **System Overview** page, click **Manage Alerts**.

The Alerts dialog box appears.

- 2 Specify how many consecutive failed login attempts a single device must report before the administrator is notified.
- 3 Choose how long you want login failure alerts to be displayed on the **System Overview** page, the Daily Status Email, and the **Internal Users** page, in hours or days.
- 4 Specify how long you want to keep login failure records in the database, in days.

Logging In For the First Time

The first time you log in to the PGP Universal Server, a welcome dialog box appears. The welcome dialog box provides access to documentation. You can choose to have the welcome dialog box appear every time you log in.

- **What's New**—Lists the new features in PGP Universal Server 3.2.
- **Mail Policy Diagram**—Provides a graphical representation of how email is processed through mail policy.
- **PGP Universal Upgrade Guide**—Provides instructions on how to migrate PGP Keyserver data, how to upgrade your PGP Universal Server, and how version 2.0.6 settings migrate into the mail policy environment.

You can also access all the documentation by clicking the online help icon in the upper right corner of the PGP Universal Server page.

Administrative Interface Map



The administrative interface is organized as follows:




















Sections	Pages
Reporting	Overview
	Graphs
	Logs
Consumers	Groups
	Users
	Devices
	Consumer Policy
	Managed Domains
Keys	Directory Synchronization
	Managed Keys
	Trusted Keys




















	Organization Keys
	Ignition Keys
	Keyservers
	Key Cache
Mail	Mail Policy
	Dictionaries
	Archive Servers
	Proxies
	Mail Queue
	Mail Routes
	Message Templates
Services	Web Messenger
	Keyserver
	SNMP
	Verified Directory
	Certificate Revocation
	USP
	PGP RDD
System	General Settings
	Administrators
	Backups
	Updates
	Network
	Clustering



















Icons




















The administrative interface uses the following icons.






Type	Icon	Description
Actions		Add
		Remove

Type	Icon	Description
		Connect
		Delete
		Clear Search
		Install/Export
		Reinstall/Regenerate
		Restore
		Revoke
		Forward
		Back
		First
		Last
		Move priority up
		Move priority down
		Closed Action
		Opened Action
		Help
		Print
Users		Internal user
		Administrative user
		Excluded user
		Internal user, revoked
		Expired internal user
		External user, revoked

Type	Icon	Description
		External user
		External user, pending
		Expired external user
		Directory user
		Expired directory user
		Directory user, pending
Keys and Certificates		Key
		Key, expired
		Key, revoked
		Key reconstruction
		Whole Disk Recovery Token
		Keypair
		Keypair, expired
		Keypair, revoked
		Group key
		Group key, expired
		Group key, revoked
		Certificate
		Expired certificate

Type	Icon	Description
		Revoked certificate
		Expired certificate pair
		Certificate pair
		Revoked certificate pair
		ADK (Additional Decryption Key)
		Organization Key
		Verified Directory Key
Mail Policy		Default policy chain
		Policy chain
		Policy rule
		Dictionary term
		Excluded address
		Pending excluded address
		Keyserver
		Default keyserver
User Policy		Default policy
		Excluded policy
Web Messenger		Default template

Type	Icon	Description
		Customized template
		Broken template
Backup		Backup successful
		Backup pending
		Backup failed
Update		Successful install
		Update ready to be installed
		Failed install
Clustering		Cluster
		Active cluster
		Inactive cluster
Logs		Info
		Notice
		Warning
		Error
Miscellaneous		Domain
		Mail proxy (SMTP, POP, IMAP)
		Inbound mailserver
		Outbound mailserver

Type	Icon	Description
		SMTP server
		Mail route
		Network interface
		Learn mode
		Access control enabled

6

Licensing Your Software

This section describes how to license your PGP Universal Server.

Overview

Your PGP Universal Server must have a valid license to be taken out of Learn Mode. In other words, without a valid license, your PGP Universal Server will never encrypt or sign any email messages.

If you licensed your PGP Universal Server using the Setup Assistant, you do not have to license it again. If you did not, then you can license it at any time afterwards using the administrative interface.

The PGP Universal Server can provide security for email messaging by inserting itself into the flow of email traffic in your network, intercepting, or proxying, that traffic, and processing it (encrypt, sign, decrypt, verify) based on the applicable policies.

The email proxying feature available on the PGP Universal Server can only be used if you have the PGP Universal Gateway Email license.

Licensing a PGP Universal Server

If you did not install your license when you set up your PGP Universal Server during the Setup Assistant, you can add a license from the **System > General Settings** page.

For instructions, see *Licensing a PGP Universal Server* (on page 14).

License Authorization

When you enter your license information, whether in the Setup Assistant or from the System > General Settings page, the PGP Universal Server automatically authorizes the license number. You do not need an internet connection.

Licensing the Mail Proxy Feature

You must have a PGP Universal Gateway Email license or you cannot use the Mail Proxies feature on the administrative interface. In addition, the **Enable Mail Proxies** check box on the **System Settings** page must be checked. If you installed your license during system setup (through the Setup Assistant) and checked the **Enable Mail Proxies** check box at that time, the check box on the System Settings page will be checked.

You can verify that your license includes the Mail Proxies feature on the **System Settings** page

For information about the Mail Proxies feature, see *Configuring Mail Proxies* (on page 147).(from the **System > General Settings** tab).

Licensing PGP Desktop

In PGP Universal Server version 3.2.1 and later, managed PGP Desktop client licenses are built in to the server; you no longer need to add the desktop license as a separate step.

However, you must still purchase a license to use the PGP Desktop features such as PGP Whole Disk Encryption, messaging, and PGP NetShare. These separately-licensed features are disabled by default. Based on your license, you must configure each consumer policy to enable the PGP Desktop features for which you have a license.

For more information, see *Establishing PGP Desktop Settings for Your PGP Desktop Clients* (on page 217).

7

Operating in Learn Mode

When you finish configuring a PGP Universal Server using the Setup Assistant, it begins running in Learn Mode.

In Learn Mode, messages are processed through mail policy, but none of the actions from the policy are performed. Messages are neither encrypted nor signed. This functions as a rehearsal, so that you can learn how policies would affect email traffic if implemented. While running in Learn Mode, the PGP Universal Server also creates keys for authenticated users so that when Learn Mode is turned off, the server can secure messages immediately.

After messages go through mail policy, PGP Universal Server decrypts and verifies incoming messages for which there are local internal or external user keys. Outgoing messages are sent unencrypted. In Learn Mode, non-RFC compliant email is sent unprocessed and in the clear. Turn Learn Mode off to process messages through the mail policy exception chain.

In Learn Mode, the PGP Universal Server:

- Creates user accounts with user keys, in accordance with Consumer Policy.
- Decrypts messages using internal and external keys stored on the server, but does not search for keys externally.
- Does not encrypt or sign messages.
- Will not apply mail policy to messages, and will not take any Key Not Found action on messages.

Note: Your PGP Universal Server must be licensed before you can take it out of Learn Mode.

Purpose of Learn Mode

Learn Mode allows you to:

- View (by examining the logs) how policies would affect email traffic if implemented.
- Build the SMSA (creating keys for authenticated users, for example) so that when the server goes live—when Learn Mode is turned off—the server can secure messages immediately.
- Identify mailing lists your users send messages to and add their addresses to the dictionaries of Excluded Email Addresses. Most likely, users won't send encrypted messages to a mailing list.

PGP Universal Server decrypts and verifies incoming email while operating in Learn Mode.

PGP Universal Server still automatically detects mailing lists when Learn Mode is off, but unless the addresses were retrieved via the Directory Synchronization feature, they require approval from the PGP Universal Server administrator to be added to the list of excluded email addresses. For more information, see *Using Dictionaries with Policy* (on page 129).

Mailing lists are identified per RFC 2919, List-Id: A Structured Field and Namespace for the Identification of Mailing Lists, as well as by using default exclusion rules.

Checking the Logs

The effects of your policies can be checked while Learn Mode is on, even though the server is not actually encrypting or signing messages.

To check the server's logs

- 1 Access the administrative interface for the server.
The administrative interface appears.
- 2 Click **Reporting**, then **Logs**.
The System Logs page appears.
- 3 Check the logs to see what effect your policies are having on email traffic.

Managing Learn Mode

The PGP Universal Server is put into Learn Mode by the Setup Assistant. If your server is in Learn Mode, you see a yellow icon, the **Change Mode** button, in the upper-right corner of your browser page.

To turn off Learn Mode

- 1 Click the **Change Mode** button in the upper-right corner of the page.
The Mail Processing Settings dialog box appears.
- 2 Deselect **Operate in Learn Mode**.
- 3 Click **Save**.
Learn Mode is turned off.

To turn on Learn Mode

- 1 Click the **Change Mode** button in the upper-right corner of the page.
The Mail Processing Settings dialog box appears.
- 2 Select **Operate in Learn Mode**.
- 3 Click **Save**.
Learn Mode is turned on.

8

Managed Domains

This section describes how to create and manage the internal domains for which your PGP Universal Server protects email messages.

About Managed Domains

The Managed Domains page gives you control over the domains for which the PGP Universal Server is handling email.

Email users from domains being managed by your server are called “internal users.” Conversely, email users from domains not being managed by your server but who are part of the SMSA are called “external users.”

For example, if your company is “Example Corporation,” you can have the domain “example.com” and your employees would have email addresses such as “jsmith@example.com.”

If this were the case, you would want to establish “example.com” as a domain to be managed by your server. When you install your PGP Universal Server you have the opportunity to add a managed domain in the Setup Assistant. If you do not set it up at that time, you can use the Managed Domains page to add it. You can also add additional managed domains from the Managed Domains page, if you have users with addresses in multiple domains that you want to be considered internal users.

Managed domains automatically include sub-domains, so in the example above, users such as “mingp@corp.example.com” would also be considered internal users. Multi-level domain structures as used by some countries are also acceptable: for example, the domain “example.co.uk.”

The Managed Domains page accepts Internet DNS domain names and Domino domains. You must have an Internet DNS domain name, and if you have Notes users, you must also include the Domino domain name. WINS names (for example, [\\EXAMPLE](#)) do not belong here.

Usually, you specify your Internet domain during installation through the Setup Assistant. If your PGP Universal Server is also managing a Domino server, you must add your Domino domain name manually through the Managed Domains page.

For example, if you have an Internet domain “example.com” and a Domino domain “ExDomino,” you would add example.com as the managed domain during setup, for SMTP addressing. You would then add ExDomino as an additional managed domain, for Domino addressing.

Mail to and from your managed domains is processed according to your mail policy. You can also create mail policy rules specifically for your managed domains. See the chapter *Setting Mail Policy* (on page 85) for more information on creating mail policies.

Managed domains entered on the Managed Domains page populate the Managed Domains dictionary. The dynamic Managed Domains dictionary automatically includes subdomains. See *Using Dictionaries with Policy* (on page 129) for more information on dictionaries.

Adding Managed Domains

To add a domain to the list of managed domains

- 1 Click **Add Managed Domain**.

The **Add Managed Domain** dialog box appears.

- 2 Type a domain name in the **Domain** field.

Do not type WINS names (for example, [\\EXAMPLE](#)) here. Type only Internet DNS domain names or Domino domain names.

- 3 Click **Save**.

Deleting Managed Domains

If you delete a managed domain, all the user IDs within that domain remain in the system. Users can still encrypt and sign messages with their keys.

To remove a domain name already on the list of managed domains

- 1 Click the icon in the **Delete** column of the domain you want to remove from the list.

A confirmation dialog box appears.

- 2 Click **OK**.

The confirmation dialog box disappears and the selected domain name is removed from the list of managed domains.

9

Understanding Keys

This chapter introduces some of the concepts related to how Consumer keys are managed. It introduces the concept of key modes, which are used to control whether internal and external users can manage their own keys or whether keys should be managed by PGP Universal Server. It also discusses the use of Certificate Revocation Lists and key reconstruction blocks.

Choosing a Key Mode For Key Management

When you create PGP Universal Satellite and PGP Desktop installers, you can choose whether you want internal and external users to be able to manage their own keys, or whether keys should be managed by the PGP Universal Server. End-to-end email processing functions refer to encryption, decryption, and signing performed at the client, rather than on the PGP Universal Server.

	PGP NetShare Support	PGP Universal Gateway Email Functions			End-to-end Email Processing Functions			Keys Managed By Server
		Encrypt	Decrypt	Sign	Encrypt	Decrypt	Sign	
Client Key Mode (CKM)	Yes	No	No	No	Yes	Yes	Yes	No
Guarded Key Mode (GKM)	Yes	No	No	No	Yes	Yes	Yes	Private keys stored passphrase-protected
Server Key Mode (SKM)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Server Client Key Mode (SCKM)	Yes	Yes	Yes	No	Yes	Yes	Yes	Public and private encryption subkeys stored on client and PGP Universal Server, private signing subkeys stored only on client

- **Server Key Mode (SKM)**—The PGP Universal Server generates and manages user keys.

- Users cannot manage their own keys.
- PGP Universal Server administrators have access to private keys.
- If a user has a client installation, the user's keys are downloaded to the client at each use.
- SKM can also be used without client installations; if there is no client installation, you must use SKM.
- The client stores the private key encrypted to a random passphrase, so users can read email offline.
- In PGP Universal Gateway Email environments, existing users with SKM key mode keys who install PGP Desktop for the first time will be prompted automatically to re-enroll and create a CKM, GKM, or SCKM key.
- **Client Key Mode (CKM)**—Users use client software to generate and manage their own keys.
 - PGP Universal Server administrators do not have access to private keys.
 - CKM user email is secure on the mail server.
 - CKM users are responsible for backing up their keys; if they lose their private keys, there is no way to retrieve them.
 - Users who want to be able to read their email offline and unconnected to PGP Universal Server must use CKM.
 - PGP NetShare supports CKM; it requires that users control their own keys.
 - PGP Universal Gateway Email does not support CKM.
- **Guarded Key Mode (GKM)**—Users generate and manage their own keys, and store their passphrase-protected private keys on the server.
 - GKM is similar to CKM, except that PGP Universal Server stores protected copies of private keys.
 - PGP NetShare supports GKM; it requires that users control their own keys.
 - PGP Universal Gateway Email does not support GKM.
- **Server Client Key Mode (SCKM)**—Keys are generated on the client. Private encryption subkeys are stored on both the client and PGP Universal Server, and private signing subkeys are stored only on the client.
 - SCKM allows for separate signing and encryption subkeys, comparable to X.509 signing and encryption keys.
 - The public and private encryption subkey is on the server, but by default encryption is not performed on the server.
 - The public-only signing subkey is on the server. PGP Universal Server cannot sign email for the user.
 - Mail processing must take place on the client side to use the SCKM signing subkey. If you want to use PGP Universal Gateway Email with SCKM keys, you must be using PGP Universal Server 2.5 or later. PGP Universal Gateway Email allows email encryption and decryption with SCKM keys, but email will not be signed.
 - SCKM is compatible with smart cards, but encryption keys are not generated on the token. Copy the keys onto the token after generation.

- If an SCKM user resets their key, the entire SCKM key is revoked, including all subkeys, and remains on the PGP Universal Server as a non-primary key for the user. This non-primary key can still be used for decryption, and remain on the PGP Universal Server until manually removed by the administrator.
- SCKM is not supported by legacy PGP Desktop installations before version 9.0.
- PGP NetShare supports SCKM; it requires that users control their own keys.

Which key management option you choose depends on what your users need and which client application they use. Server Key Mode is generally appropriate for PGP Universal Satellite users. Client Key Mode is more appropriate for PGP Desktop users. If your security policy requires that a user's signing key is only in the possession of the user, but the user's encryption key must be archived, SCKM is the correct choice.

Changing Key Modes

If you allow PGP Desktop users to change their options and allow user-initiated key generation, users can switch key modes.

If the user's policy has changed to permit user-managed keys, then the user is automatically prompted to create a new key, and no further action is necessary. However, if the user's policy has always permitted user key management, and the user wants to switch key modes, the user should follow this procedure.

To change key mode

- 1 Open PGP Desktop and select the PGP Messaging service whose key mode you want to determine.

The account properties and security policies for the selected service appear.

- 2 Click **Key Mode**.

The PGP Universal Key Mode page appears, describing your current key management mode.

- 3 Click **Reset Key**.

The PGP Key Setup Assistant appears.

- 4 Read the text, then click **Next**.

The Key Management Selection page appears.

- 5 Select the desired key mode.

Depending on how your PGP Universal Server administrator configured your copy of PGP Desktop, some key modes might not be available.

- 6 Click **Next**.

The Key Source Selection screen appears.

- 7 Choose one of the following:

- **New Key**. You are prompted to create a new PGP key, which is used to protect your messaging.
- **PGP Desktop Key**. You are prompted to specify an existing PGP key to use to protect your messaging.

- **Import Key.** You are prompted to import a PGP key, which is used to protect your messaging.
- 8 Make the desired selection, then click **Next**.
 - 9 If you selected **New Key**:
 - a Type a passphrase for the key, then click **Next**.
 - b When the key is generated, click **Next**.
 - c Click **Finish**.
 - 10 If you selected **PGP Desktop Key**:
 - a Select the key from the local keyring that you want to use, then click **Next**.
 - b Click **Finish**.
 - 11 If you selected **Import Key**:
 - a Locate the file that holds the PGP key you want to import (it must contain a private key), then click **Next**.
 - b Click **Finish**.

How PGP Universal Server Uses Certificate Revocation Lists

A certificate revocation list (CRL) is a list of certificates that have been revoked before their scheduled expiration date. The PGP Universal Server retrieves CRLs for certificates from CRL Distribution Points (DP).

The PGP Universal Server checks the CRL DPs automatically before encrypting a message to a certificate, including certificates for internal and external users, as well as certificates in the cache. The server also checks the CRL DPs before importing any internal or external user certificate. It does not check before importing Trusted Certificates, or before connecting to servers with SSL certificates.

The PGP Universal Server checks the revocation status of just the recipient's certificate. It does not check the revocation status of the other certificates in the signing chain.

Once retrieved, certificate revocation status is stored on the parent certificate, so the Trusted Certificate for each user certificate stores the list of all the associated revoked certificates. Once the CRL is stored on the Trusted Certificate, the PGP Universal Server runs future CRL checks based on the "next update" date for that list.

Key Reconstruction Blocks

Key reconstruction blocks allow users to retrieve their private keys if they forget their passphrases.

Key reconstruction blocks contain several user-defined questions and the user's private key, which is encrypted with the answers to those questions.

PGP Universal Server stores these questions and answers so that users can get back their private keys in case they lose their passphrases. For example, if a user writes five questions and answers, they can be asked three (or more) of the questions to reconstruct their private key.

If an internal PGP Desktop user has uploaded a key reconstruction block to the PGP Universal Server, you can delete it. You might want to delete a key reconstruction block if you have already deleted or revoked the associated key and you do not want the key to be recoverable. If you delete the key reconstruction block, it is no longer stored on the PGP Universal Server, although it is possible that the user also has a copy.

Note: Keys created on smart cards and tokens are not compatible with PGP Desktop's key reconstruction feature.

See *Recovering Encrypted Data in an Enterprise Environment* (on page 259) for information on other methods of data recovery.

Managed Key Permissions

Key permissions determine what actions consumers (users or managed devices) can perform upon managed keys. Key permissions are set in three ways:

- At the group level: permissions can be set that determine how group members can interact with managed keys. Permissions set for a group are inherited by all members of the group.
- At the consumer level: individual consumers may be granted permissions. These permissions will exist in addition to the permissions the consumer inherits from the groups of which it is a member.
- At the managed key level: a managed key can have permissions that specify what actions consumers or groups can take upon it. These are set individually for a managed key.

Permissions are positive (they allow actions) and are additive: the actions enabled for a consumer relative to a managed key are combination of the permissions allowed by the consumer's group membership, plus permissions allowed for the consumer, plus permissions allowed by the key.

There are no deny permissions.

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Managing Organization Keys

This section describes the various keys and certificates you can configure and use with your PGP Universal Server.

About Organization Keys

There are multiple keys and certificates you can use with your PGP Universal Server:

- **Organization Key.** Used to sign all user keys the PGP Universal Server creates and to encrypt server backups.
- **Organization Certificate.** Used to generate user S/MIME certificates in an S/MIME environment.
- **External User Root Key.** Provides the key material used to generate the External User Root Certificate.
- **External User Root Certificate.** Used to generate X. 509 S/MIME certificates for download by external users.
- **Additional Decryption Key (ADK).** Used to reconstruct messages if the recipient is unable or unwilling to do so. Every message encrypted to an external recipient by an internal user is also encrypted to the ADK, allowing the PGP Universal Server administrator to decrypt any message sent by internal users, if required to do so by regulations or security policy.
- **Verified Directory Key.** Used to sign keys submitted to the PGP Verified Directory by external users.

The Organization Keys page provides access to all of these.

All of these keys should be created on an internal cluster member only, not on a member located in the DMZ.

Organization Key

Your Organization Key is used to sign all user keys the PGP Universal Server creates and to encrypt server backups. The Organization Key is what was referred to as the Corporate Key in the old PGP Keyserver environment.

Warning: You **must** make a backup of your Organization Key, in case of a problem with the server. That way, you can restore your server from a backup using the backup Organization Key.

Each PGP Universal Server is pre-configured with a unique Organization Key generated by the Setup Assistant. If you would like to use different settings for this key, you can regenerate the key with the settings you prefer. This should only be done prior to live deployment of the server or creation of user keys by the server.

The Organization Key automatically renews itself one day before its expiration date. It renews with all the same settings.

If you have multiple PGP Universal Servers in a cluster, the Organization Key is synchronized.

An Organization Key's identification is based on the name of the managed domain for which the key was created. Organization Keys by convention have one ID per managed domain so that they can be easily found via a directory lookup.

The Organization Key information includes the Public Keyserver URL, as specified on the **Services > Keyserver** page. Anytime the Public Keyserver URL changes, that information on the Organization Key changes immediately.

Inspecting the Organization Key

To inspect the properties of an Organization Key

- 1 Click the name of the Organization Key.
The Organization Key Info dialog box appears.
- 2 Inspect the properties of the Organization Key.
- 3 To export either just the public key portion of the Organization Key or the entire keypair, click the **Export** button and save the file to the desired location. Optional: You can protect your Organization Key with a passphrase when you export it.
When you export the Organization Key you also get the Organization Certificate. You can use PGP Desktop to extract the Organization Certificate from the Organization Key.
- 4 Click **OK**.

If you are going to regenerate your Organization Key, you should use a fairly high bit size, such as 2048. However, if you are going to be using X.509 certificates and S/MIME, be aware that many clients only support up to 1024 bits; thus you may want to use 1024 bits for maximum compatibility with S/MIME. All clients can be expected to support at least 4096 bits.

Regenerating the Organization Key

Warning: Changing the Organization Key makes all previous backups undecryptable and all validity signatures on the keys of internal users are unverifiable until they are automatically renewed. *Only change the Organization Key if you fully understand the consequences of this action.*

Caution: Changing the Organization Key deletes Ignition Keys. If you have hard or soft token Ignition Keys configured, regenerating the Organization Key deletes them. Without an Ignition Key, PGP Universal Web Messenger messages are not stored encrypted.

Note: The Organization Key signs all Trusted Keys and Certificates. If you regenerate the Organization Key, the signature on the Trusted Keys and Certificates becomes invalid. You must re-import all Trusted Keys and Certificates to have them signed by the new Organization Certificate. For more information, see *Managing Trusted Keys and Certificates* (on page 77).

To regenerate an Organization Key

- 1 Click **Regenerate** in the **Action** column of the Organization Key whose properties you want to change.
- 2 The following warning dialog box appears:
Regenerating the Organization Key will cause problems with existing key signatures and backups. Any existing Ignition Keys and Organization Certificate will also be removed. Are you sure you want to proceed?
- 3 Click **OK**.
The Organization Key Generation dialog box appears.
- 4 Make the desired changes to the properties of the Organization Key.
- 5 Click **Generate**.

Importing an Organization Key

You also have the option of importing an existing PKCS #12 key and using that as your Organization Key.

Caution: Importing an Organization Key deletes Ignition Keys. If you have hard or soft token Ignition Keys configured, importing an Organization Key deletes them. Deleting the Ignition Key stops PGP Universal Web Messenger from being stored encrypted

To import an Organization Key

- 1 Click the icon in the Import column of the Organization Key row.
- 2 The following warning dialog box appears:
Importing a new Organization Key will cause the current key (and Organization Certificate, if any) to be deleted, and will cause problems with existing key signatures and backups. Any existing Ignition Keys will also be removed. Are you sure you want to proceed?
- 3 Click **OK**.
The Import Organization Key dialog box appears.
- 4 Do one of the following:
 - If you want to import a key that has been saved as a file, click **Browse** to locate the file of the key you want to import.
 - If you want to import a key by cutting and pasting, copy the key you want to be your Organization Key to the Clipboard and paste it into the **Key Block** box.
- 5 Type the passphrase for the key, if required.
- 6 Click **Import**.
The Organization Key you imported appears in the Organization Key row.

Organization Certificate

An Organization Certificate is required for S/MIME support. You can only have one Organization Certificate attached to your Organization Key. You cannot restore from a backup with more than one Organization Certificate associated with your Organization Key.

The PGP Universal Server will automatically generate certificates as well as keys for new internal consumers created after you import or generate an Organization Certificate. All internal consumers receive a certificate added to their keys within a certain amount of time, between 24 hours to two weeks. However, certificates issued by the old Organization Certificate remains on users' keys until the certificate expires. PGP Universal Server also creates separate signing and encryption certificates for imported SKM and SCKM internal keys, based on the appropriate subkey. PGP Universal Server creates single signing and encryption certificates for imported CKM and GKM keys, based on the user's topkey.

You have several options for dealing with Organization Certificates. You can:

- Create a self-signed Organization Certificate. Unfortunately, a self-signed Organization Certificate will not be universally recognized, so Symantec Corporation recommends using a certificate from a reputable Certificate Authority (CA). Self-signed X.509 Organization Certificates are version 3.
- Create a Certificate Signing Request for a certificate authorized by an existing CA. When you receive the certificate back from the CA as a file, you will need to import that file.
- Import an existing certificate to use as your Organization Certificate. Imported X.509 certificates must be version 3.

To enable S/MIME support, the certificate of the issuing Root CA, and all other certificates in the chain between the Root CA and the Organization Certificate, are on the list of trusted keys and certificates on the Trusted Keys and Certificates page.

A self-signed Organization Certificate has the same expiration date as the Organization Key, unless the Organization Key is set never to expire. If the Organization Key never expires, the Organization Certificate expires 10 years from the date you generate it. You must regenerate the Organization Certificate before it expires and distribute the new Certificate to anyone who uses your old Organization Certificate as a trusted root CA.

This certificate is also required if you want PGP Universal Server to generate X.509 certificates for external users. External users can download and use X.509 certificates from the PGP Universal Web Messenger interface to communicate securely with users inside your managed domain. For more information, see *Offering X.509 Certificates to External Users* (on page 255).

Inspecting the Organization Certificate

To inspect the settings of an Organization Certificate

- 1 Click the name of the Organization Certificate.
The Organization Certificate Info dialog box appears.
- 2 Inspect the settings of the Organization Certificate.

- 3 Click **OK**.

Exporting the Organization Certificate

To export an Organization Certificate to a file

- 1 Click on the Organization Certificate.
The Organization Certificate Info dialog box appears.
- 2 Click **Export**.
The Export Certificate dialog box appears.
- 3 Do one of the following:
 - To export just the public key portion of the certificate, select **Export Public Key**.
 - To export the public and private key portions of the certificate, select **Export Keypair** and type a passphrase to protect the private key once it is exported. The resulting file is in PKCS #12 format.
- 4 Click **Export**.
- 5 At the prompt that appears, click **Save**.
- 6 Specify a name and location to save the file, then click **Save**.
The Organization Certificate Info dialog box appears.
- 7 Click **OK**.

Deleting the Organization Certificate

To delete an Organization Certificate

- 1 Click the Delete icon in the Action column of the Organization Certificate.
A confirmation dialog box appears.
- 2 Click **OK**.
The Organization Certificate is deleted.

Generating the Organization Certificate

To create a Certificate Signing Request (CSR)

- 1 Click the icon in the Action column of the Organization Certificate row.
The Generate Organization Certificate dialog box appears.
- 2 Type a name for the certificate in the **Common Name** field.

- 3 Type an email address in the **Contact Email** field.
- 4 Type your organization's name in the **Organization Name** field.
- 5 Type your organization's unit designation in the **Organization Unit** field.
- 6 Type a city or locality, as appropriate, in the **City/Locality** field.
- 7 Type a state or province, as appropriate, in the **Province/State** field.
- 8 Type a country in the **Country** field.
- 9 If you want to generate a self-signed certificate, click **Generate Self-signed**. PGP Universal Server generates a certificate. To generate a Certificate Signing Request (CSR) instead, proceed to the next step.
- 10 Click the **Generate CSR** button.
The CSR dialog box appears, showing the certificate signing request (CSR).
- 11 Copy the entire contents of the CSR dialog box to a file, then click **OK**.
- 12 Paste the CSR into the appropriate field on your third-party CA interface.
The CA sends the certificate back to you when it has approved it.
- 13 When you receive the certificate from the CA, use the **Import** feature to import it as your Organization Certificate.

Importing the Organization Certificate

To import a certificate to be your Organization Certificate

- 1 Click the icon in the Import column of the Organization Certificate row.
The Import Organization Certificate dialog box appears.
- 2 Copy the certificate you want to be your Organization Certificate.
- 3 Paste the text into the Certificate Block box.
- 4 Click **Save**.
The Organization Certificate you imported appears in the Organization Certificate row.

Renewing the Organization Certificate

Start the renewal process for an Organization Certificate issued by a certificate authority before it expires by generating a new Certificate Signing Request. This is not necessary for self-signed certificates.

To renew an Organization Certificate

- 1 Click the Add icon in the Action column of the Organization Certificate row.
The Generate Organization Certificate dialog box appears.
- 2 Type a name for the certificate in the **Common Name** field.
- 3 Type an email address in the **Contact Email** field.

- 4 Type your organization's name in the **Organization Name** field.
- 5 Type your organization's unit designation in the **Organization Unit** field.
- 6 Type a city or locality, as appropriate, in the **City/Locality** field.
- 7 Type a state or province, as appropriate, in the **Province/State** field.
- 8 Type a country in the **Country** field.
- 9 Click the **Generate CSR** button.
The CSR dialog box appears, showing the certificate signing request (CSR).
- 10 Copy the entire contents of the CSR dialog box to a file, then click **OK**.
- 11 Paste the CSR into the appropriate field on your third-party CA interface.
The CA sends the certificate back to you when it has approved it.
- 12 When you receive the certificate from the CA, delete the existing Organization Certificate and import the new one.

Additional Decryption Key (ADK)

An Additional Decryption Key (ADK) is a way to retrieve an email message or other encrypted data if the recipient is unable or unwilling to do so and if required by regulation or security policy. Every message sent by an internal user is also encrypted to the ADK. Messages encrypted to the ADK can be opened by the recipient and/or by the holder(s) of the ADK. The ADK is also added to disks encrypted with PGP Whole Disk Encryption.

If you have an Additional Decryption Key uploaded, all outbound email is encrypted to it when mail policy is applied. This setting appears in the *Send (encrypted/signed)* action and the setting cannot be disabled. For more information, see the chapter "Setting Mail Policy."

You can create an ADK with PGP Desktop, then add it to your PGP Universal Server and use it.

You can also add an ADK to a consumer policy. Clients with a policy with an ADK have all messages and other data encrypted to the policy-specific ADK as well as to the Organization ADK.

Note: S/MIME messages are not encrypted to the ADK.

If you use an ADK, PGP Universal Server adds the ADK to all new keys that it generates and all outbound email messages are automatically encrypted to it.

If you are going to use an ADK on your PGP Universal Server, you should import it prior to generating any user keys. You should also try to avoid changing to a different ADK later on, because doing so results in some keys being associated with the old ADK and some with the new ADK. If you add or change an ADK, it is only associated with the keys of new users. Existing users do not get that ADK added to their key.

Only PGP keys can be used as ADKs, and a key with a certificate cannot be used as an ADK.

For information on using an ADK in a split key scenario, see the *PGP Desktop User's Guide*.

Importing the ADK

To import an ADK to your PGP Universal Server

- 1 Copy the key of the ADK you are adding to the Clipboard using PGP Desktop.
- 2 Click the **Add** icon in the Action column of the Additional Decryption Key row.
The Add Additional Decryption Key dialog box appears.
- 3 Paste the key of the ADK into the **Import Key Block** box, or browse to find and import a key.
- 4 Click **Import**.
The ADK you added appears in the Additional Decryption Key row.

Inspecting the ADK

To inspect the properties of an ADK

- 1 Click the name of the ADK.
The Additional Decryption Key Info dialog box appears.
- 2 Inspect the properties of the ADK.
- 3 To export the ADK, click **Export** and save the file to the desired location.
- 4 Click **OK**.

Deleting the ADK

To delete an ADK

Note: All keys generated while the ADK was present continue to reference the ADK even after you delete the ADK. The change applies only to keys that are generated after the ADK is deleted.

- 1 Click the delete icon in the Action column of the ADK.
A confirmation dialog box appears.
- 2 Click **OK**.
The ADK is deleted.

External User Root Key

The External User Root Key provides the key material used to generate the External User Root Certificate. The External User Root Key and Certificate allow external users to generate and download X.509 certificates through the PGP Universal Web Messenger interface to use to securely communicate with users inside your managed domain. For more information, see *Offering X.509 Certificates to External Users* (on page 255).

Create this key on an internal cluster member only, not on a member located in the DMZ.

Generating the External User Root Key

To generate an External User Root Key

- 1 Click the **Generate** icon in the **Action** column of the External User Root Key. The **External User Root Key Generation** dialog box appears.
- 2 Select the size, allowed ciphers, and key expiration period for the key.
- 3 Click **Generate**.

Importing the External User Root Key

To import an External User Root Key

- 1 Click the icon in the Import column of the External User Root Key row. The Import Organization Key dialog box appears.
- 2 Do one of the following:
 - If you want to import a key that has been saved as a file, click **Browse** to locate the file of the key you want to import.
 - If you want to import a key by cutting and pasting, copy the key you want to be your Organization Key to the Clipboard and paste it into the **Key Block** box.
- 3 Type the passphrase for the key, if required.
- 4 Click **Import**.

The External User Root Key you imported appears in the External User Root Key row.

Deleting the External User Root Key

If you delete the External User Root Key, external users with X.509 certificates generated by PGP Universal Server will no longer be able to communicate securely with internal users.

To delete an External User Root Key

- 1 Click the Delete icon in the Action column of the External User Root Key.
A confirmation dialog box appears.
- 2 Click **OK**.
The key is deleted.

External User Root Certificate

The External User Root Certificate generates and signs external user X.509 certificates. External users can generate and download X.509 certificates through the PGP Universal Web Messenger interface to use to securely communicate with users inside your managed domain.

To deliver X.509 certificates to external users, you must have an Organization Certificate, an External User Root Key, and an External User Root Certificate.

The Organization Certificate and the External User Root Certificate must not expire before the external user certificates expire. If either expires before the user certificate does, external users will no longer be able to communicate securely with internal users.

The External User Root Certificate inherits trust from the Organization Certificate. This means most internal users automatically trust external user certificates because they are signed by the External User Root Certificate. Only internal users with standalone policies do not trust external user certificates, because those PGP Desktop installations cannot access the External User Root Certificate.

For more information on delivering certificates to external users, see *Offering X.509 Certificates to External Users* (on page 255).

Create this certificate on an internal cluster member only, not on a member located in the DMZ.

Generating the External User Root Certificate

To create a Self-Signed Certificate or a Certificate Signing Request (CSR)

- 1 Click the icon in the Action column of the External User Root Certificate row.
The **Generate X509 Certificate** dialog box appears.
- 2 Type a name for the certificate in the **Common Name** field.
- 3 Type an email address in the **Contact Email** field.
- 4 Type your organization's name in the **Organization Name** field.

- 5 Type your organization's unit designation in the **Organization Unit** field.
- 6 Type a city or locality, as appropriate, in the **City/Locality** field.
- 7 Type a state or province, as appropriate, in the **Province/State** field.
- 8 Type a country in the **Country** field.
- 9 If you want to generate a self-signed certificate, click **Generate Self-signed**. PGP Universal Server generates a certificate. To generate a Certificate Signing Request (CSR) instead, proceed to the next step.
- 10 Click the **Generate CSR** button.
The CSR dialog box appears, showing the certificate signing request (CSR).
- 11 Copy the entire contents of the CSR dialog box to a file, then click **OK**.
- 12 Paste the CSR into the appropriate field on your third-party CA interface.
The CA sends the certificate back to you when it has approved it.
- 13 When you receive the certificate from the CA, use the **Import** feature to import it as your External User Root Certificate.

Importing the External User Root Certificate

To import a certificate to be your External User Root Certificate

- 1 Click the icon in the Import column of the External User Root Certificate row.
The **Add Certificate to Key** dialog box appears.
- 2 Copy the certificate you want to be your External User Root Certificate.
- 3 Paste the text into the Certificate Block box.
- 4 Click **Save**.
The External User Root Certificate you imported appears in the External User Root Certificate row.

Deleting the External User Root Certificate

If you delete the External User Root Certificate, external users with X.509 certificates generated by PGP Universal Server will no longer be able to communicate securely with internal users.

To delete an External User Root Certificate

- 1 Click the Delete icon in the Action column of the External User Root Certificate.
A confirmation dialog box appears.
- 2 Click **OK**.
The certificate is deleted.

Verified Directory Key

The Verified Directory Key is the signing key for PGP Verified Directory users outside your managed domain. It must consist of both private and public keys. Once you choose the setting to allow internal and external users to submit their keys through the PGP Verified Directory, you must upload a Verified Directory Key. Users cannot submit their keys to PGP Verified Directory until you have added the Verified Directory Key. For more information, see *Configuring the PGP Verified Directory* (on page 302).

If you have multiple PGP Universal Servers in a cluster, the Verified Directory Keys are synchronized.

Importing the Verified Directory Key

To import a Verified Directory Key to your PGP Universal Server

- 1 Copy the key of the **Verified Directory Key** you are adding to the Clipboard using PGP Desktop.
- 2 Click the **Add** icon in the Action column of the Verified Directory Key row.
The Add Verified Directory Key dialog box appears.
- 3 Paste the key of the Verified Directory Key into the **Import Key Block** box, or browse to find and import a key.
- 4 Type the private key **Passphrase**.
- 5 Click **Import**.

The Verified Directory Key you added appears in the Verified Directory Key row.

Inspecting the Verified Directory Key

To inspect the properties of the Verified Directory Key

- 1 Click the name of the **Verified Directory Key**.
The Verified Directory Key Info dialog box appears.
- 2 Inspect the properties of the Verified Directory Key.
- 3 To export the Verified Directory Key, click **Export**.
 - To export just the public key portion of the Verified Directory Key, select **Export Public Key**.
 - To export the public and private key portions of the key, select **Export Keypair** and type a passphrase to protect the private key once it is exported.
- 4 Click **OK**.

Deleting the Verified Directory Key

To delete the Verified Directory Key

- 1 Click the delete icon in the Action column of the Verified Directory Key.
A confirmation dialog box appears.
- 2 Click **OK**.

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Administering Managed Keys

PGP Key Management Server (KMS) is new technology that centralizes the management of multiple kinds of encryption keys for your organization onto a single server, thus allowing multiple applications in your enterprise to operate against the same set of keys.

To accommodate this new PGP KMS technology, new terms and concepts are being used to describe how PGP applications understand keys, users, and servers, and the relationships between them.

With PGP KMS, a **Consumer** is an identity associated with a person or a device. A consumer can be a **User**, generally identified with a person. A user has a key, can encrypt things, send and receive email, and so on. One person can have more than one user identity (for example, they could be the holder of a corporate ADK as one identity and a PGP Desktop user as a second identity, each identity having a different PGP keypair). A consumer can also be a **Managed Device**, such as a web server that handles credit cards or a bank's automated teller machine. Each consumer has a **Managed Key**, which is a keypair managed by PGP KMS for the consumer.

A **Managed Key** is a PGP keypair with some additional information. A managed key can be used to encrypt, decrypt, sign, and verify. It is also known as a **Managed Asymmetric Key**, or **MAK**, in the USP API and in PGP Command Line. A managed key may or may not have associated symmetric keys, symmetric key series, or custom data objects.

Symmetric Keys (also known as **Managed Encryption Keys**, or **MEKs**) are always associated with a managed key. A symmetric key can be used to encrypt and decrypt; it cannot sign or verify. Any number of symmetric keys can be associated with a managed key. Symmetric keys can have a **Validity Period**, allowing them to be valid for a specified period. At the end of the specified period, the symmetric key expires and a new symmetric key can be automatically created. The old symmetric key is retained in an expired state and kept, to decrypt older data if necessary.

A **Symmetric Key Series** (or **MEK series**) is series of symmetric keys, each one of which is automatically created, is valid for the duration of its **Validity Period**, and then expires and is replaced by a new symmetric key. Consumers using a symmetric key series can be automatically notified of a new symmetric key so that they can synchronize to the series and thus use the correct symmetric key at the correct time. In other cases, no notification is needed; when you encrypt against the symmetric key series, the active symmetric key is used automatically.

Custom Data Objects are encrypted data objects stored on a PGP KMS and associated with a managed key. It is just like a regular encrypted file except it is stored on a PGP KMS. Custom data objects are also known as **Managed Secure Data**, or **MSDs**.

Symmetric Keys and Custom Data Objects can be created, edited, searched for and deleted by external applications using the USP APIs, or through PGP Command Line commands. They can be viewed through the PGP Universal Server administrative interface, but cannot be created or modified by a PGP Universal Server administrator.

Viewing Managed Keys

Managed keys can be associated with several types of consumers: internal, external, and verified directory users, and managed devices for which keys have been imported.

There are a number of paths available to view managed keys.

- For a User, you can access the Managed Key Information page by clicking the Key ID from the Managed Key section of the user's User Information page.
- For a Managed Device, you can access the Managed Key Information page by clicking the Key ID from the Managed Key section of the Managed Device Information page.

The organization key and Verified Directory signing keys are also managed keys, but are discussed in *Managing Organization Keys* (on page 47).

To view all managed keys

- 1 Go to the **Keys > Managed Keys** page.

This displays the list of all managed keys in the PGP Universal Server database.

The Managed Keys Display shows the following information about the keys:

- **Key ID:** click this to view Managed Key Information for this managed key.
- **Name:** the display name and email address of the user, or the display name of the managed device.
- **Key Mode:** the key mode type (SKM, CKM, GKM, SCKM)
- **Key Size and type:** key size in bits and the key type (RSA or DH/DSS)
- **Created:** date the key was created.
- **Expires:** date the key will expire (or never if it does not expire)
- **Status:** the status of the key (valid, revoked, expired).
- **Recovery:** whether a key reconstruction block has been uploaded
- **Owner:** the owner of the key. For Users, the user is the owner of his/her keys.

Using the icons under the Actions area you can:

- Revoke the key
- Export the key
- Delete the key.

Managed Key Information

The Managed Key Information page shows detailed information about a managed key.

To view detailed information about a specific managed key

- 1 Click the Key ID of the managed key from any of the following pages:
 - From the Managed Keys page
 - From the Managed Key section of a User Information page

From the Managed Key section of a Device Information page The **Managed Key Information** page appears for the key you selected.

From this page you can view detailed information about the key. You can also add or change information about the device.

To changed the display name of the key

- 1 Click **Edit Names...** and type a new display name for the key.
- 2 Click **Save** to save the change or **Cancel** to close the dialog without making the change.

To change the owner of the key

- 1 Click **Edit Owner...**

This takes you to the **Edit Owner** page where you can change the owner of this managed key.

Note: Keys associated with email addresses cannot have their owner modified. The **Edit Owner...** key will be disabled in this case.

- 2 Click **Save** to save the change or **Cancel** to close the dialog without making the change.

To revoke the managed key of an SKM key

- 1 Click **Revoke**.
A confirmation dialog box appears.
- 2 Click **OK**.
The key is revoked.

To Export the managed key

- 1 Click **Export**.
If only the public key is available, the text of the key downloads to your system.
If both the public and the private key are available, the Export Key dialog box appears.
- 2 Select **Export Public Key** to export just the public key portion of the keypair.
- 3 Select **Export Keypair** to export the entire keypair, the public key and the private key portions.
- 4 If you want to protect the exported key file with a passphrase, type it in the **Passphrase** field.
If a private key already has an attached passphrase, it is already protected and there is no need to type another passphrase. When you export the keypair, you receive a file containing an unencrypted public key and an encrypted private key.
- 5 Click **Export**.
The key is exported.

To delete the managed key

- 1 Click **Delete**.
A confirmation dialog box appears.
- 2 Click **OK**.
The key of is deleted.

Note: When you delete an internal user's key, the private key material is deleted, which means messages are no longer decryptable. If you want to retain the private key material, you can revoke the key instead of deleting it.

To view Symmetric Key Series and the symmetric keys associated with this managed key

- Click **Symmetric Key Series...** to display the Symmetric Key Series associated with this managed key.

This button is only enabled for managed keys that have associated Symmetric keys.

Symmetric keys, also known as Managed Encryption Keys, or MEKs, can be used to encrypt or decrypt; it cannot sign or verify.

These keys can only be created by external applications using the USP API or PGP Command Line. For more information about Symmetric Key Series and Symmetric Keys, see *Symmetric Key Series* (on page 66).

To view Custom Data Objects associated with this managed key

- Click **Custom Data Objects...** to display the list of custom data objects associated with this managed key.

This button is only enabled for managed keys that have associated data objects. These objects can only be created by external applications using the USP API. For more information about Custom Data Objects, see *Custom Data Objects* (on page 69).

Email Addresses

To view the Email Addresses associated with this key

- Expand the Email Addresses section of the **Managed Key Information** page. This displays the list of email addresses associated with this managed key.
If this is the managed key of a managed device, no email address will be present.

Subkeys

To view the subkeys associated with this managed key

- Expand the Subkeys section of the **Managed Key Information** page.
This displays any subkeys associated with this managed key.

For each subkey, this section shows the Key ID, the usage flags that are set for the key, the key size (in bits) and key type (RSA or DH/DSS), the date the key was create, the date it expires (or Never if it does not expire) and the key status (Valid or Expired).

Certificates

To view the certificates associated with this managed key

- Expand the Certificates section of the **Managed Key Information** page.

This displays any certificates that are associated with this managed key.

For each certificate, this section shows Common Name to which the certificate was issued, the date the certificate was created (meaning when it was imported into PGP Universal Server), the date on which it expires, and the usage flags that are set for the certificate.

The Actions section at the end of the row provides icons for revoking, exporting, and deleting the certificate. You can revoke a certificate attached to any key type if the certificate was generated by PGP Universal Server. Revoked certificates are added to the CRL.

Permissions

Managed Key permissions are similar to the permissions that can be granted to a Consumer or Group, with an important exception: while group and consumer permissions define the actions a consumer or group member can perform, a Managed Key permission defines what actions others (Groups or Consumers) can perform upon the Managed Key.

For example, a Consumer may be given a permission such as:

```
Can read public key of Managed Key Joe Smith <jsmith@example.com>
```

while a Managed Key may have a permission such as:

```
Group Marketing can delete
```

meaning that any Consumer that is a member of the group Marketing can delete this key.

To view, set, or delete Permissions for this key

- 1 Expand the Permissions section of the **Managed Key Information** page.

If permissions have been added specifically for this device, the permission settings are listed in this area.

If a listed permission involves a named consumer or a group, you can click the name to see details about the consumer or group.

- 2 To add, edit, or delete permissions, click **View and Edit Permissions....**

The Permissions page for this key appears.

- To remove a permission, click the Delete icon.

- To remove multiple permissions, check the boxes next to the permissions you want to delete and select **Delete Selected** from the **Options** menu. To remove all permissions, select **Delete All** from the **Options** menu.
- 3 To search for a specific permission, type the relevant string into the Search field at the top right of the dialog box, and click the search icon.

The permissions list will be filtered to display only permissions that match the search criterion.
 - 4 To add, remove or modify permissions, click **Add Permissions...**
 - 5 Use the drop-down menus to create a new permission.
 - 6 Click the **Add** icon to create as many permissions as necessary. Use the **Remove** icon to remove individual permission.

Attributes

To view, add, or delete Attributes for this key

- 1 Expand the Attributes section of the Key Information page.

If attributes have been added, the attribute/value pairs are listed in this area.

Attributes are arbitrary name/value pairs. Outside applications can make requests related to attributes through the USP API or using PGP Command Line commands.
- 2 To add, delete, or modify attributes for this device, click **Edit Attributes....**
- 3 To add attributes, type the attribute name and its value in the fields provided.
 - To add additional attributes, click the Add icon.
- 4 To change an attribute name or its value, just retype the information in the field.
- 5 To remove an attribute, click the Remove icon.

Symmetric Key Series

A KMS license is required to access Symmetric Key Series and Symmetric Keys.

Symmetric keys (also known as Managed Encryption Keys, or MEKs) can be used, through the USP API or the PGP Command Line commands, to encrypt and decrypt data. A symmetric key typically has a limited life span, with a specific validity period that determines how long the key remains valid. At the end of the validity period, the current key expires and is replaced by a new symmetric key.

The **Symmetric Key Series** is the set of the current plus expired keys, maintained by PGP Universal Server. The currently valid key is used to encrypt content during its validity period, and to decrypt content encrypted during this validity period. The expired keys are maintained in order to decrypt content that was encrypted in the past; PGP Universal Server determines which key to use for decryption based on the date the content was encrypted.

To view the symmetric key series associated with this managed key

- 1 Go to the **Keys > Managed Keys** page.

This displays the list of all managed keys in the PGP Universal Server database.

- 2 Click the Key ID of the managed key.
The **Managed Key Information** page appears for the key you selected.
- 3 Click the **Symmetric Key Series...** button to display a list of Symmetric Key Series owned by this managed key.
The information shown in this list includes the key series display name, the validity period, the date at which the key will expire (or never); the date when it will next be renewed (or never); and the number of symmetric keys in this series.
- 4 To delete one or more key series, click the delete icon in the key series row, or check one or more rows and select **Delete Selected** from the **Options** menu, or select the **Delete All** option.
- 5 To export one or more keys, check one or more rows and select **Export Selected** from the **Options** menu, or select the **Delete All** option.
- 6 Click the key series name to view the list of symmetric keys that are included in the series.

To view an individual symmetric key series

- 1 From the **Managed Key Information** page, click the **Symmetric Key Series...** button to display the list of Symmetric Key Series owned by this managed key.
- 2 Click a key series name to view the list of symmetric keys that are included in that series.

The Symmetric Key Series Information page appears.

On this page you can see the same basic information about the key series as was shown in the Symmetric Key Series list. You can also view and set attributes and permissions for the key, and force a rekey of the series.

- 3 To view or set attributes for this key series, expand the Attributes section of the Symmetric Key Series Information page. This shows any attribute/value pairs defined for this key series.
 - To add an attribute or to modify existing ones, click **Edit Attributes...**
- 4 To view the permissions for this key series, expand the Permissions section of the Symmetric Key Series Information page. This shows any permissions allowed for this key.
 - To add or delete permissions, click **View and Edit Permissions...**
The Permissions page for this key appears. You can delete permissions by clicking the delete icon next to a permission.
You can add a new permission by clicking **Add Permissions...**, which takes you to a page where you can add permissions.
- 5 To view the individual Symmetric Keys within this series, click **Symmetric Keys...** For details of the pages that show the Symmetric Keys, see *Symmetric Keys* (on page 68).

To force replacement of the current valid key

- 1 Click **Force Rekey**.

This lets you replace the current valid symmetric key, regardless of its validity period or when it is due to expire. The current valid symmetric key is marked expired, and a new symmetric key is created as the valid key.

Symmetric Keys

Individual Symmetric Keys are contained within a Symmetric Key Series, which is itself associated with a specific managed key. To view the set of individual Symmetric Keys, you must navigate through the Symmetric Key Series display.

To view the set of Symmetric Keys in a series

- 1 From the **Managed Key Information** page, click the **Symmetric Key Series...** button to display the list of Symmetric Key Series owned by this managed key.
- 2 Click a key series name to view the list of symmetric keys that are included in that series.

The Symmetric Key Series Information page appears.

- 3 Click the **Symmetric Keys...** button to display the list of Symmetric Keys in the selected key series.

From this list, you can see each Key ID, along with the Validity dates (start and end dates) for each key.

The key icon at the left of each Key ID indicates whether the key is expired or valid - normally only the last key in the list will be valid, the others will be expired.

- 4 To delete an individual Symmetric Key, click the Delete icon. You can also delete multiple keys by clicking check boxes and selecting **Delete Selected** from the **Options** menu, or by selecting the **Delete All** option.
- 5 To export one or more individual Symmetric Keys, click their check boxes and select **Export Selected** from the **Options** menu. You can export all the keys by selecting the **Export All** option.

To view the details of an individual Symmetric Key

- 1 From the list of symmetric keys, click the individual key ID to display the Symmetric Key Information page.

This shows the key UUID, the date it was created, and its validity start and end dates.

- 2 To view or set attributes for this key, expand the Attributes section of the Symmetric Key Information page. This shows any attribute/value pairs defined for this key series.

Note: Attributes of symmetric keys cannot be added or modified through the PGP Universal Server administrative interface. They can only be manipulated using PGP Command Line commands or through the USP API.

- 3 To view the data in this key, click **Show Data**. This displays the data in a text field. The administrator can copy the contents for use elsewhere.

Click **Hide Data** to hide the data display.

Custom Data Objects

A KMS license is required to access Custom Data Objects (also known as Managed Secure Data, or MSDs).

Custom Data Objects are always associated with (owned by) a Managed Key. They can be used to store arbitrary data objects securely in the PGP Universal Server database. They are created and manipulated using the USP API or PGP Command Line commands.

Custom Data Objects can be viewed through the PGP Universal Server administrative interface. The administrator can also add and edit attributes and permissions for a Custom Data Object.

To view a list of the Custom Data Objects associated with a managed key

- 1 From the **Managed Key Information** page, click the **Custom Data Objects...** button to display the list of Custom Data Objects owned by this managed key.

For each object in the list, this page shows its name, its size (in kbytes), and its MIME type.

PGP Universal Server supports the MIME types for image files, plain text, rich text, and PDF.

- 2 To delete an individual Custom Data Object, click the Delete icon next to the object. You can also delete multiple objects by clicking the appropriate check boxes and selecting **Delete Selected** from the **Options** menu, or by selecting the **Delete All** option.
- 3 To view an individual Custom Data Object, click the object ID.

To view the details of an individual Symmetric Key

- 1 From the list of symmetric keys, click the individual key ID to display the Symmetric Key Information page.

This shows the key UUID, the date it was created, and its validity start and end dates.

- 2 To view or set attributes for this Custom Data Object, expand the Attributes section of the Custom Data Object Information page. This shows any attribute/value pairs defined for this key series.
 - To add an attribute or to modify existing ones, click **Edit Attributes...** For details on adding or editing attributes, see *Attributes (Managed Keys)* (see "Attributes" on page 66).
- 3 To view the permissions for this key series, expand the Permissions section of the Custom Data Object Information page. This shows any permissions allowed for this object.
 - To add or delete permissions, click **View and Edit Permissions...**

The Permissions page for this object appears. You can delete permissions by clicking the Delete icon next to a permission.

- 4 You can add a new permission by clicking **Add Permissions...**, which takes you to a page where you can add permissions. For details on adding or editing permissions, see *Permissions (Managed Keys)* (see "Permissions" on page 65).
- 5 To view the data in this Custom Data Object as plain text, click **Show Data**.

If the MIME type of the object is one that PGP Universal Server recognizes, it attempts to display the data using the appropriate application in a separate browser window or tab. If it does not recognize the MIME type, it displays the data in a text field.

Click **Hide Data** to hide the data display.

Exporting Consumer Keys

The following sections describe how to export keys for users and managed devices.

Exporting the Managed Key of an Internal User

If the user's key data is stored in Server Key Mode, you can export both public and private key information. If the private key is stored protected by the user's passphrase, you cannot export it unencrypted. If the key data is in Client Key Mode, the private key is not stored on the server and cannot be exported.

To export the managed key of an internal user

- 1 From the **Consumers > Users** page, click the check box for the internal user whose key you want to export.
- 2 From the **Options** menu, select **Export Keys for Selected**.

If only the public key is available, the text of the key downloads to your local system.

If both the public and the private key are available, the Export Key dialog box appears, allowing you to choose to export only the public key, or both public and private portions of the key.

- 3 Select **Export Public Key** to export just the public key portion of the keypair.
- 4 Select **Export Keypair** to export the entire keypair, the public key and the private key portions.
- 5 If you want to protect the exported key file with a passphrase, type it in the Passphrase field.

If a private key already has an attached passphrase, it is already protected and there is no need to type another passphrase at this time. When you export the keypair, you receive a file containing an unencrypted public key and an encrypted private key.

- 6 Click **Export**.

The key is exported to your local system.

Exporting the Managed Key of an External User

To export the managed key of an external user

- 1 From the **Consumers > Users** page, click the check box for the external user whose key you want to export.
- 2 From the **Options** menu, select **Export Keys for Selected**.
If only the public key is available, the text of the key downloads to your system.
If both the public and the private key are available, the Export Key dialog box appears.
- 3 Select **Export Public Key** to export just the public key portion of the keypair.
- 4 Select **Export Keypair** to export the entire keypair, the public key and the private key portions.
- 5 If you want to protect the exported key file with a passphrase, type it in the **Passphrase** field.
If a private key already has an attached passphrase, it is already protected and there is no need to type another passphrase. When you export the keypair, you receive a file containing an unencrypted public key and an encrypted private key.
- 6 Click **Export**.
The key is exported.

Exporting PGP Verified Directory User Keys

To export the key of directory users

- 1 From the **Consumers > Users** page, select the check box for the users whose key you want to export.
- 2 From the **Options** menu, select **Export Keys for Selected**.
The text of the keys downloads to your local system.

Exporting the Managed Key of a Managed Device

To export the managed key of an external user

- 1 From the **Consumers > Devices** page, select the check box for the managed device whose key you want to export.
The Managed Device Information page for the device appears.
- 2 From the Managed Keys tab, click the Export icon in the Actions column of the managed key you want to delete.
If only the public key is available, the text of the key downloads to your system.

If both the public and the private key are available, the Export Key dialog box appears.

- 3 Select **Export Public Key** to export just the public key portion of the keypair.
- 4 Select **Export Keypair** to export the entire keypair, the public key and the private key portions.
- 5 If you want to protect the exported key file with a passphrase, type it in the **Passphrase** field.

If a private key already has an attached passphrase, it is already protected and there is no need to type another passphrase. When you export the keypair, you receive a file containing an unencrypted public key and an encrypted private key.

- 6 Click **Export**.
The key is exported.

Deleting Consumer Keys

The following sections describe how to delete keys for users and managed devices.

Deleting the Managed Key of an Internal User

If you delete a user's key, the private key material is gone, which means messages are no longer decryptable. If you want to retain the private key material, you can revoke the key instead of deleting it. For more information see *Revoking Managed Keys* (on page 74).

To delete the managed key of an internal user

- 1 Select the user you want from the Internal Users page.
The Internal User Information dialog box appears.
- 2 From the Managed Keys tab, click the Delete icon in the Actions column of the managed key you want to delete.
A confirmation dialog box appears.
- 3 Click **OK**.
The key of the internal user is deleted.

Deleting the Managed Key of an External User

To delete the managed key of an external user

- 1 Select the user you want from the External Users page.
The External User Information dialog box appears.

- 2 From the Managed Keys tab, click the Delete icon for the managed key you want to delete.
A confirmation dialog box appears.
- 3 Click **OK**.
The key of the external user is deleted.

Deleting the Key of a PGP Verified Directory User

To delete the key of a PGP Verified Directory user

- 1 Select the user you want from the Verified Directory Users page.
The Directory User Information dialog box appears.
- 2 From the Managed Keys tab, click the Delete icon for the managed key you want to delete.
A confirmation dialog box appears.
- 3 Click **OK**.
The key of the PGP Verified Directory user is deleted.

Deleting the Managed Key of a Managed Device

To delete the key of a managed device

- 1 Select the managed device you want from the All Devices or Managed Devices page.
The Managed Device Information dialog box appears.
- 2 From the Managed Keys tab, click the Delete icon for the managed key you want to delete.
A confirmation dialog box appears.
- 3 Click **OK**.
The key of the managed device is deleted.

Approving Pending Keys

Internal Users

In addition to automatically creating a key for your email users or manually adding internal users, you can allow internal users to submit their own keys through the PGP Verified Directory. Allowing user key submission is useful for internal users who already have keys, such as existing PGP Desktop users who of course would have their own PGP key. If the user already has a PGP key, and the new key is approved, the new key replaces the old key.

PGP Desktop users upload their public keys through the PGP Verified Directory interface at the interface and port you configure on the Verified Directory page. They can also upload keys through the PGP Desktop "Send To" function.

On the Verified Directory page, you can specify how you want these user-submitted keys approved. If you have set the PGP Verified Directory to require either a confirmation email from the user or to require you, the administrator, to manually approve the key, the user's PGP key status is marked pending. See *Configuring the PGP Verified Directory* (on page 302) for information on the PGP Verified Directory.

To manually approve the key submission

- 1 From the Internal Users page, click the plus sign icon to approve the key.
- 2 Click the minus sign icon to deny the submitted key.
- 3 Click the delete icon to delete the user.

Directory users

If you have set the PGP Verified Directory to require either a confirmation email from the user or to require you, the administrator, to manually approve the key, the user's PGP key status are pending.

To manually approve the key submission, choose one of the following

- 1 To approve a single user key, click the plus sign icon in the Options column to approve the key.
- 2 Click the minus sign icon to deny the submitted key.
- 3 Click the delete icon to delete the user.

Or

- 1 To approve multiple user keys, click the check box at the far right end of the row of each of the directory user key you want to approve.
- 2 Select **Approve Selected** or **Approve All** from the Options menu.

Revoking Managed Keys

Revoking a key removes the Organization Key signature from the key. Only keys for which the PGP Universal Server has the private key can be revoked; that is, only the keys of SKM users can be revoked. The **Revoke** button is disabled for all other keys.

If you revoke an internal user's managed key, it continues being published via the LDAP server, but appears marked as a revoked key, and it appears on the Certificate Revocation Lists.

Once you revoke a key, you cannot un-revoke it.

Note: Revoking a key is safer than deleting a user because the private key material is preserved, which means that decryption continues to work.

To revoke the managed key of an internal user

- 1 Select the user you want from the Internal Users page.
The Internal User Information dialog box appears.
- 2 From the Managed Keys tab, click the Revoke icon next to the key you want to Revoke.

Note: If the key is not an SKM key, the Revoke icon is disabled.

A confirmation dialog box appears.

- 3 Click **OK**.
The internal user's key is revoked.

To revoke the managed key of a managed device

- 1 Select the managed device you want from the All Devices or Managed Devices page.
The Managed Device Information dialog box appears.
- 2 From the Managed Keys tab, click the Revoke icon next to the key you want to revoke.

A confirmation dialog box appears.

- 3 Click **OK**.
The internal user's key is revoked.

12

Managing Trusted Keys and Certificates

This section describes how trusted keys and certificates are used with your PGP Universal Server. You can find the list of trusted keys at **Organization > Trusted Keys**.

Overview

The Trusted Keys and Certificates page lists keys and certificates that are not part of the SMSA created by PGP Universal Server but which nevertheless you do trust.

Trusted Keys

In those cases where your PGP Universal Server cannot find a public key for a particular user on any of the key servers you have defined as trusted, it also searches the default directories. If it finds a key in one of the default directories, it trusts (and therefore can use) that key only if it has been signed by one of the keys in the trusted keys list.

For example, if your company's law firm uses a PGP Corporate Signing Key (CSK), you can add this key as a trusted key. Then, if someone in your firm wants to send a message to someone at the law firm and the PGP Universal Server finds that person's key, signed by the law firm's CSK, in a default directory, then that key can be used by the server to securely send the message to the recipient at the law firm.

Trusted Certificates

PGP Universal Server can use S/MIME only if it has the root certificates from the CAs available to verify the client certificates. These CAs can be in your company or they can be an outside-managed CA, such as VeriSign.

To enable S/MIME support, the certificate of the issuing Root CA, and all other certificates in the chain between the Root CA and the Organization Certificate, are on the list of trusted keys and certificates on the Trusted Keys and Certificates page.

PGP Universal Server comes with information on many public CAs already installed on the Trusted Keys and Certificates page. Only in-house CAs or new public CAs that issue user certificates need to be manually imported. You can inspect, export (save on your computer), or delete the root certificates at any time.

Trusted Certificates can be in any of the following formats: .cer, .crt, .pem and .p7b.

Adding a Trusted Key or Certificate

To add a trusted key or certificate

- 1 On the **Trusted Keys and Certificates** page, click **Add Trusted Key**.
The Add Trusted Key dialog box appears.
- 2 Do one of the following:
 - To import a trusted key saved in a file, click **Browse** and choose the file on your system that contains the trusted key or certificate you want to add.
 - To import a key in key block format, paste the key block of the trusted key or certificate into the **Import Key Block** box (you need to copy the text of the trusted key or certificate first to paste it).
- 3 If desired, select any of the following:
 - **Trust key for verifying mail encryption keys.** Enable this option to trust the key or certificate added to verify signatures on keys from default key servers.
 - **Trust key for verifying SSL/TLS certificates (only valid if importing X.509 certificate).** Enable this option to trust the X.509 certificate added to verify SSL/TLS certificates presented from remote SMTP/POP/IMAP mail servers.
 - **Trust key for verifying keyserver client certificates (only valid if importing X.509 certificate).** Enable this option to trust the X.509 certificate added to verify keyserver client authentication certificates.
- 4 Click **Save**.

Note: SSL v1.0 certificates are not supported.

Inspecting and Changing Trusted Key Properties

To inspect or change the properties of a trusted key or certificate

- 1 Click on the User ID (the name) of the trusted key or certificate whose properties you want to inspect in the list of trusted keys and certificates.
The Trusted Key Info dialog box appears.
- 2 Inspect the properties of the trusted key or certificate you selected. You can click **more** to see all the certificate data, which appears in a pop-up dialog box.
- 3 To export the trusted key, click **Export** and save the file to the desired location.
- 4 To change the properties of the trusted key or certificate, select any of the following:
 - **Trust key for verifying mail encryption keys.** Enable this option to trust the key or certificate added to verify signatures on keys from default key servers.

- **Trust key for verifying SSL/TLS certificates.** Enable this option to trust the X.509 certificate added to verify SSL/TLS certificates presented from remote SMTP/POP/IMAP mail servers.
 - **Trust key for verifying keyserver client certificates.** Enable this option to trust the X.509 certificate added to verify keyserver client authentication certificates.
- 5 Click **Save**.

Deleting Trusted Keys and Certificates

To delete a trusted key or certificate

- 1 Click the delete icon in the row of the trusted key or certificate you want to delete.
A confirmation dialog box appears.
- 2 Click **OK**.
The trusted key or certificate you specified is removed from the list.

Searching for Trusted Keys and Certificates

To find keys and certificates using search, enter the criteria for which you want to search, and click **Search**. A list of keys and certificates that fit the criteria you specified appears.

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Managing Group Keys

This section describes how group keys are used with PGP Universal Server. You can find the list of group keys at **Keys > Managed Keys**. Group keys have "(Group)" appended to their name.

Overview

A group key is a PGP Universal Server-managed keypair shared by a group of users. A group key is assigned to a PGP Universal Server group. A group key can be assigned to one group only; a group can have only one *active* group key assigned to it (a group can have multiple *revoked* group keys).

Note: In version 3.2 of PGP Universal Server, group keys can only be used with PGP NetShare.

Group keys can be assigned to any PGP Universal Server group. To use the **Generate AD Group Keys** wizard to create a group, however, requires the Directory Synchronization feature to be enabled and synchronized with an Active Directory database.

Membership in a group can be modified without affecting the metadata associated with the data protected by the group key. For groups that are based on membership in an Active Directory security group, membership in the AD security group can also be modified without affecting the metadata.

The users of a group key must be in a PGP Universal Server-managed environment; group keys are not supported in standalone environments.

Once created, normal key lifecycle events (creating, editing, revoking, deleting, logging, and so on) for group keys are managed by the PGP Universal Server.

Group keys are fully compatible with additional decryption keys (ADKs).

Caution: The Distinguished Name (DN) of an Active Directory security group associated with a group key should *not* be changed after creation. This could lead to loss of access to the private portion of the group key. Additionally, the "memberOf" attribute for members of a group with an associated group key should be set to the same value as the Distinguished Name (DN) of the group.

Establishing Default Group Key Settings

To establish default settings for your group keys

- 1 Navigate to the **Consumers > Groups** screen, then click the **Group Key Settings** button.
- 2 Select the appropriate **Key Generation** settings.

- 3 Click **Save**.

Note: If you change the default group key settings, the new settings apply only to group keys created *after* you make the changes; the settings of existing group keys are not affected.

Adding a Group Key to an Existing Group

To add a group key to an existing group

- 1 Go to the **Consumers > Groups** page. The Keys column shows a group key icon for those groups that already have a group key assigned.
- 2 Click on the name of the group to which you want to add a group key.
- 3 In the **Keys** row, click **View**.
- 4 Click **Add Group Keys** to add a group key to this group.
- 5 Click **Generate** to create a new group key or **Import** to import an existing keypair as the group key.

When you click **Generate**, a new group key will be created using the current default settings for a group key.

When you click **Import**, the Import Key page appears. Select a key file or paste a key block, enter the passphrase of the private key, then click **Import**.

- 6 Click **Save** to add the key to the group.

Caution: A group can only have one active group key. If you add a group key to a group that already has a group key assigned, the existing group key will be overwritten by the group key you are adding.

Creating a New Group with a Group Key

To create a new group with a group key

- 1 On the Groups page, click **Add Group**. The Groups Settings: Add Group page appears.
- 2 On the **General** subtab, type in a **Group Name** and **Description**.
- 3 To apply a consumer policy to members of this group, select **Apply Consumer Policy to members of this group**, and choose a consumer policy from the drop-down menu.
- 4 To add a group key to this group, click **Generate** to create a new group key or **Import** to import an existing keypair as the group key.

When you click **Generate**, a new group key will be created using the current default settings for a group key.

When you click **Import**, the Import Key page appears. Select a key file or paste a key block, enter the passphrase of the private key, then click **Import**.

- 5 On the **Membership** subtab, enable **Match Consumers Via Directory Synchronization**.
- 6 For LDAP Directory, select the appropriate LDAP directory from the drop-down menu.
- 7 Select **If all of the following apply**, then enter "memberOf" without the quotes in the **Attribute** field. In the **Value** field, check **Regular Expression**, then enter the Distinguished Name (DN) of the appropriate Active Directory security group.
- 8 Click **Save** to create the group.

Note: To quickly create a new group from an Active Directory security group with an automatically generated group key, go to **Keys > Managed Keys**, click on the **Generate AD Group Keys** button, and follow the on-screen instructions.

Removing a Group Key from a Group

To remove a group key from a group

- 1 Go to the **Consumers > Groups** page. The Keys column shows a keypair icon for those groups that already have a group key assigned.
- 2 Click on the name of the group from which you want to delete the group key.
- 3 In the **Keys** row, click **View**.
- 4 In the **Key ID** column, click on the key ID of the group key you want to delete.
- 5 Click **Delete**.
- 6 When the confirmation dialog appears, click **OK**.
- 7 To confirm that the group key was deleted from the group, go to the **Consumers > Groups** page. The **Keys** column will no longer show a keypair icon for the group from which you deleted the group key.

Deleting a Group Key

To delete a group key

- 1 Go to **Keys > Managed Keys**. In the listing of managed keys, group keys have their own icon and their names have "(Group)" without the quotes appended to the end of their name.
- 2 Click on the key ID of the group key you wish to delete.
- 3 On the information screen for the group key, click **Delete**.
- 4 When the confirmation dialog appears, click **OK**.

Caution: Do not delete a group key that is currently assigned to a group unless you are adding a new group key to the group.

Revoking a Group Key

To revoke a group key

- 1 Go to **Keys > Managed Keys**. In the listing of managed keys, group keys have their own icon and their names have "(Group)" without the quotes appended to the end of their name.
- 2 In the Actions column of the group key you wish to revoke, click the **Revoke** icon.
- 3 When the confirmation dialog appears, click **OK**.

Caution: Do not revoke a group key that is currently assigned to a group unless you are adding a new group key to the group.

Exporting a Group Key

To export a group key

- 1 Go to **Keys > Managed Keys**. In the listing of managed keys, group keys have their own icon and their names have "(Group)" without the quotes appended to the end of their name.
- 2 In the **Actions** column of the group key you wish to export, click the **Export** icon.
- 3 On the **Export Key** dialog, choose to export just the public key or the entire keypair. Enter a passphrase and confirm it if you wish to protect the keypair file. Click **Export**.
- 4 Save the file to your local system.

14

Setting Mail Policy

This section describes mail policy, which determines how a PGP Universal Server handles email messages.

Policies are enforced on the PGP Universal Server with PGP Gateway Email, and at the desktop with PGP Desktop Email. Even if your PGP Universal Server is not proxying and encrypting email in the mailstream, it is important to create secure mail policy, because PGP Desktop Email receives and enforces policy information from PGP Universal Server.

PGP Whole Disk Encryption and PGP NetShare are not affected by mail policy settings. If your PGP Universal Server is only managing these features, mail policy is not required.

PGP Universal Web Messenger functionality is not available for use with a non-mailstream license.

Overview

The PGP Universal Server processes email messages based on the policies you establish. Mail policy applies to inbound and outbound email for both PGP Universal Server traffic and email processed by client software. Mail policy consists of multiple policy chains, comprised of sequential mail processing rules, which appear on the Mail Policy page.

The Mail Policy page lets you change the settings of the default mail policy chains, and add and edit policy chains and rules. It allows you detailed granular control of all aspects of mail processing.

If your PGP Universal Server is in gateway placement and your users do not have client software installed, then mail policy is applied only to messages sent to recipients outside the managed domain. Messages sent from internal users to internal users do not pass through the PGP Universal Server, so the policy is not applied.

If your mail policy requires Smart Trailer and/or PGP Universal Web Messenger service, you must enable the PGP Universal Web Messenger service. For more information, see *Configuring PGP Universal Web Messenger* (on page 281).

For information on how mail policy settings appear to external users, and how external users interact with Smart Trailer and PGP Universal Web Messenger, see *Applying Key Not Found Settings to External Users* (on page 121).

If you upgrade from PGP Universal Server 2.0.x, your policy settings are automatically replicated in the new mail policy. For more information, see *Migrating Settings from Version 2.0.x*.

How Policy Chains Work

Mail policy refers to the entire set of chains and rules as a whole. Individual policy chains process different kinds of email; for example, inbound or outbound mail. Each rule in a policy chain is one step in processing a message.

- **Policy chains** determine how messages are processed. Chains are made up of sequences of rules. A message can pass through more than one policy chain during processing.
- **Rule Applicability** specifies where the policy chain's rules are applied to a message. Rules can be evaluated and enforced on the PGP Universal Server, on the client, or on both client and server. Policy chains can also be created that will run on a PGP Mobile client or standalone on a PGP Desktop client, without requiring server interaction. A Policy chain's rule applicability determines what conditions and actions can be used to create the policy rules.
- **Rules** consist of sets of conditions and actions. Messages pass through the rules in a chain in order until the message comes to a rule that applies. If the conditions for the rule are met by a message, the rule takes effect. If the conditions of a rule are not met by a message, the message is passed to the next rule in the chain.
- **Conditions** are the set of requirements a message must meet to trigger a rule. If a message meets the conditions, the associated actions are performed on the message. For a list of possible conditions, see *Conditions* (on page 102).
- **Groups** are sets of one or more conditions, linked together by statements about the Conditions. For example, a rule can have a group of conditions that are all required to be true for the rule to be triggered. For a list of possible condition statements, see *Condition Statements* (on page 101).
- **Condition statements** link together conditions into groups, and specify how conditions should be matched. For example, if you have more than one condition in a rule, you can specify that the rule is triggered if all conditions are matched, or you can specify that the rule is triggered if only one of the conditions is matched.
- **Actions** are performed on messages when rule conditions apply. Actions applied to a message can include encryption or simply passing the message along to another policy chain. For a list of possible actions, see *Actions* (on page 106).

Mail Policy and Dictionaries

Dictionaries are lists of terms to be matched. Dictionaries work with mail policy to allow you to define content lists that can trigger rules or fulfill the conditions of a rule to trigger actions. For example, dictionaries can contain addresses you want excluded from processing, key words such as “confidential,” or user names for internal users whose messages need special handling.

A policy rule can have a dictionary associated with it as part of a condition. If a message meets the condition, PGP Universal Server processes the message according the rule's actions. For example, one of the default Outbound rules is called Excluded Signed. The condition for that rule is “If any of the following are true: Recipient address is in dictionary *Excluded Addresses: Sign*.” This means the rule applies to any message in which the recipient address matches a term in the dictionary. If that condition is met, the action for the rule is triggered. The action is to sign and send the message with no further processing.

For information on using conditions with dictionaries, see *Choosing Condition Statements, Conditions, and Actions* (on page 101).

Consider whether the use of a dictionary in your rule is appropriate. There are several different ways to create a rule condition that contains terms to be matched. Sometimes you want to add a single term or pattern directly in the condition itself. Sometimes you need to use a dictionary instead. If you want your condition to look for matches to multiple terms, it is more appropriate to create a dictionary.

For example, if you want to create a rule that applies only to email going to specific recipient domains, you can create a rule that will match to an individual domain: select the condition "Recipient Domain," the modifier "is" and provide the domain as the value to be matched.

However, if you want the rule to apply to email going to many different recipient domains, use a dictionary. From the **Mail > Dictionaries** page, create a dictionary listing all domain names as matchable literal terms. When you create the rule on the policy chain, you would select the condition "Recipient Domain," and the modifier "is in dictionary." You can then select that dictionary from a drop-down menu.

For instructions on creating dictionaries, see *Using Dictionaries with Policy* (on page 129).

Mail Policy and Key Searches

External domains sometimes have publicly accessible key servers containing users' public keys (in a PGP key server or an X.509 directory).

Mail policy contains rules that require a message be signed or encrypted to a recipient's key. The PGP Universal Server always looks in its own databases for keys in the Internal Users, External Users, and Key Cache lists. If the PGP Universal Server does not have a copy of a particular key, the policy can specify searching external sources for the key.

For more information, see *Key servers, SMTP Servers, and Mail Policy* (see "Key servers, SMTP Archive Servers, and Mail Policy" on page 137). For instructions, see *Adding Key Searches* (on page 100).

Mail Policy and Cached Keys

Public keys for remote users are automatically cached on the PGP Universal Server on the **Keys > Key Cache** page. Whenever the PGP Universal Server can harvest a key from the mailflow, the key is stored in the key cache. As long as the key is in the key cache, it can be used to encrypt future email, without requiring a key search.

Whenever email processing requires a remote user key, the PGP Universal Server can automatically search for remote user keys in the cache for any key server that you have added to the rule. If you add a key server to a rule's Key Search tab, all cached keys from that server are available. If you delete a key server from a rule, the rule can no longer use the cached keys from that key server to encrypt mail.

For more information on cached keys, see *Managing Keys in the Key Cache* (on page 143). For more information, see *Key servers, SMTP Servers, and Mail Policy* (see "Key servers, SMTP Archive Servers, and Mail Policy" on page 137).

Understanding the Pre-Installed Policy Chains

This section describes the pre-installed policy chains for a new, non-migrated, PGP Universal Server installation. The pre-installed policy chains provide the PGP Universal Server and PGP Desktop with rules for processing email. You can edit any of these policy chains, but you should make sure that you understand each of the processing functions the chains provide before you change them. This section provides an overview of each pre-installed chain, but you should examine the chains as installed on the PGP Universal Server for more details.

- **Default:** This is the starting point for the mail policy. This chain specifies how to evaluate all messages and route them to the next appropriate policy chain for processing. All messages start processing here, and are routed to the *Inbound* or *Outbound* chains. Because this is the root policy chain for the entire mail policy, it cannot be deleted. The rules in this chain apply to messages processed by both PGP Universal Server and PGP Desktop.
- **Default: Legacy Client:** This policy chain provides mail policy support for 9.0.x legacy client software. This policy chain cannot be deleted. For more information, see the *PGP Universal Server Upgrade Guide*.
- **Default: Standalone:** This is the default mail policy chain that is downloaded to PGP Desktop clients that are members of a policy group with a Mail Policy setting of *Standalone* or *Offline: Standalone*. Once downloaded, Standalone mail policy is enforced on the client without reference to PGP Universal Server. For more information, see *Offline Policy* (on page 205). This policy chain cannot be deleted. The default behavior is to block messages when a key is not found.
- **Default: Mobile:** This is the default mail policy chain for PGP Mobile clients. It is enforced on the PGP Mobile client. This policy chain cannot be deleted. The default behavior is to block messages when a key is not found.
- **Exception:** When the PGP Universal Server receives a badly formed message, mail policy evaluation fails. This chain specifies how to handle messages that cannot be processed. This chain cannot be deleted.

Messages reach the exception chain in two ways:

- An error occurs during message processing, and processing cannot continue. The message is sent to the *Exception Chain*.
- The message is so badly malformed that normal message processing cannot begin. Message processing begins on the *Exception Chain*.

If the message cannot be processed normally, the PGP Universal Server has limited data about the message to use to determine how to handle the message. The only conditions supported on the *Exception Chain* are: Application, Service type, Connected user has authenticated, IP Address of local connector (server only), Port of local connector (server only). The default condition is to handle the message based on service type. Possible actions are: bounce, pass through without processing, or drop the message. The default is to pass the message through.

- **Inbound:** This policy chain describes how to process inbound messages to users inside the managed domains. It decrypts and delivers messages to the user. This is the final chain in processing inbound email. Messages are routed to this chain by the *Default* chain. The rules in this chain apply to messages processed by the PGP Universal Server.

- **Outbound:** This policy chain contains processing rules for email to external users. It expands mailing lists and signs messages. Email flagged as sensitive or marked with "PDF," or flagged with the encrypt button is passed along to the *Outbound: Secure Message* chain for further processing. All other messages pass through unencrypted. The rules in this chain apply to messages processed by both PGP Universal Server and PGP Desktop.
-
-
- **Outbound: Secure Message:** This policy chain contains the processing rules for emails that originate from internal users to external users. It delivers messages to external users who choose PGP Universal Web Messenger and PDF Messenger. Emails that are not processed according to these rules are passed to the *Outbound: Secure With Key Only* policy chain. The rules in this chain apply to messages processed by both PGP Universal Server and PGP Desktop.
- **Outbound: Secure With Key Only:** This policy chain contains the processing rules for emails that originated from internal users and must be secured using only the key. The rules in this chain apply to messages processed by both PGP Universal Server and PGP Desktop. If the key is not found, the message bounces.

How Upgrading and Updating Affect Mail Policy Settings

When you upgrade to the latest version of PGP Universal Server, different things happen to mail policy depends on the upgrade method you choose.

- **Update:** If you update using a .pup update package, your current mail policy chains do not change. Any new chains or rules are not applied. If you later use the mail policy **Restore To Factory Defaults** feature, the newer version of the mail policy chains is installed.
- **Fresh Installation:** If you upgrade to the latest version by backing up your existing data, doing a fresh installation on a new computer, and then restoring the backed up data to the new installation, the old mail policy overwrites the new version. If you want to use the new mail policy rules, you must recreate them manually. See the Mail Policy Diagram to understand what the default rules are and which conditions and actions to use to recreate them.

For more information on upgrading and migration, as well as how to recreate some mail policy rules after restoring data, see the *PGP Universal Server Upgrade Guide*.

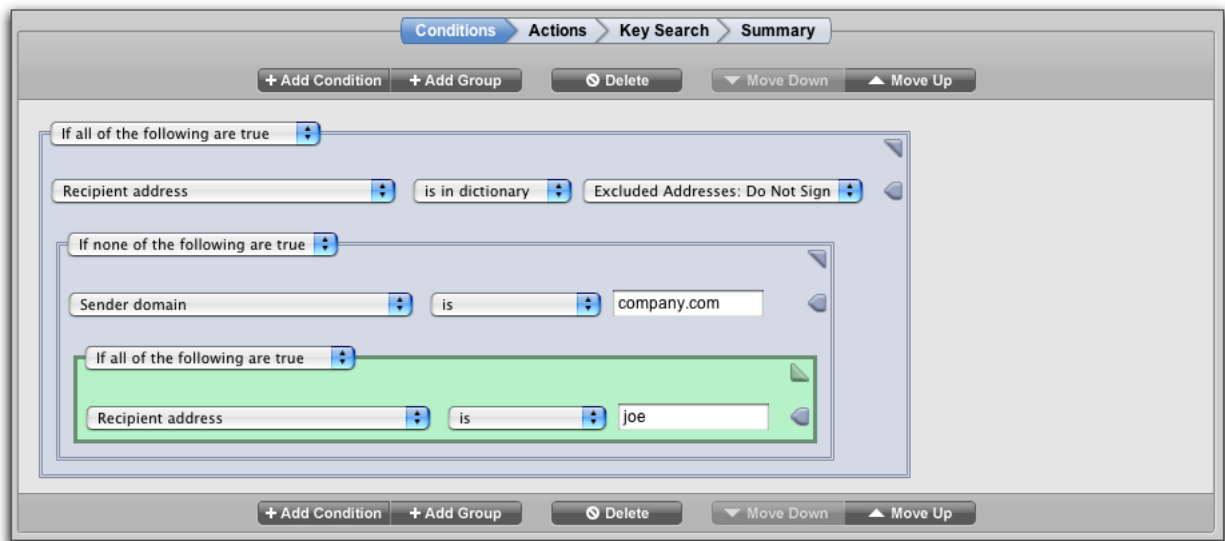
Mail Policy Outside the Mailflow

If your PGP Universal Server is outside the mailflow on your network, mail policy cannot be enforced at the network level. However, you can enforce mail policy through client software. PGP Desktop installations bound to your PGP Universal Server receive client policy information from that PGP Universal Server. Any policy chain marked as applicable to PGP Desktop client software is enforced by the installed client application.

For more information on creating PGP Desktop installations bound to your PGP Universal Server, see *Creating PGP Desktop Installers* (on page 179).

Using the Rule Interface

The rule interface has a set of arrows and buttons to help you arrange conditions and actions. When you add a rule, the rule interface displays the **Conditions** page first.



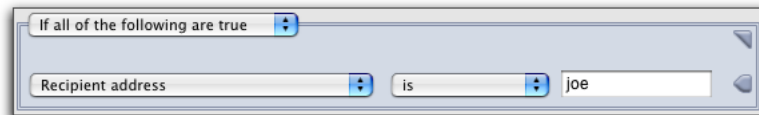
- 1 Once you have finished creating conditions, click the **Actions** arrow button to open the **Actions** card and add actions to the rule. See *The Actions Card* (on page 92).
- 2 Next, click the **Key Search** arrow button to add searchable key servers to the rule, if necessary. See *Adding Key Searches* (on page 100) for more information on key searches.
- 3 To see a summary of the entire rule, click the **Summary** arrow button.

The Conditions Card

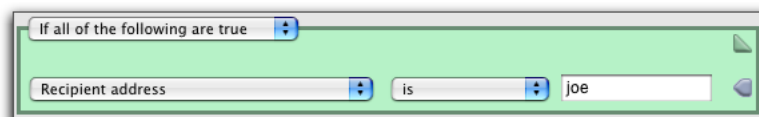
This section describes how to use the interface to create, add, or delete rule groups and conditions for your rules. For more information, see *Building Valid Chains and Rules* (on page 92).

Selecting Groups

In an unselected group, the rule group box is blue-gray, and the triangle in the upper right corner points away from the condition.



You cannot add conditions to a rule group until you select the group. To select the group, click the triangle in the upper right corner. The selected group turns green and the triangle points toward the condition. You can now delete the group or add more conditions or groups.

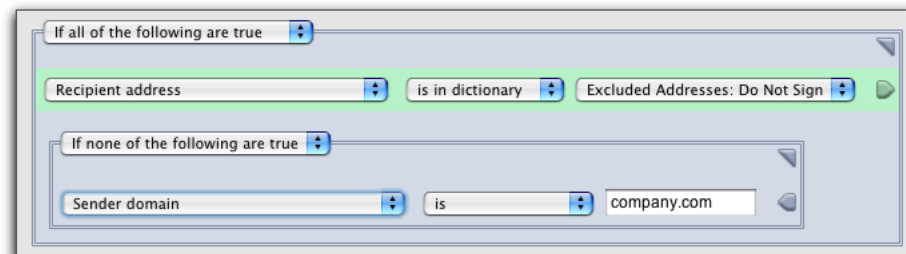


Adding Groups or Conditions

To add a condition or rule group to the selected group, click the **Add Condition** or **Add Group** button.

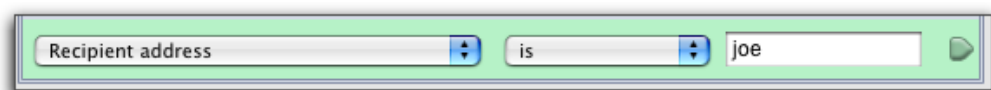
If you click the **Add Group** button, another group appears nested inside the group you originally selected. In the example below, for the condition to be matched and the rule triggered, the recipient address must be in the *Excluded Addresses: Do Not Sign* dictionary, and the *Sender Domain* must not be company.com.

You can nest up to 10 levels of groups or conditions.



Selecting Conditions

To select a condition, click the arrow at the end of the condition. When the condition is selected, the arrow points away from the condition and the condition background is green. You cannot delete a condition until you select it.



Deleting Groups or Conditions

To delete a group or condition, select that group or condition and click **Delete**.

There must be at least one condition in a rule. If there is only one condition in a rule, you cannot delete it.

Reordering Groups or Conditions

You can change the order of conditions and groups. To change order, select the condition or group and click the **Move Up** or **Move Down** button.

The Actions Card

This section describes how to use the interface to add, delete, and reorder rule actions.

Adding or Deleting Actions

To add or delete an action in a rule, click the **Add** or **Delete** icons to the right of the action.

Reordering Actions

The order in which actions appear in the rule is important. Actions that finish processing must come at the end of a list of actions in a rule. For example, in a list of actions, the *Send copy to alternate archive server* action must come before the *Deliver message* action in a list.

To change the order of actions in a rule, renumber the action you want to move. All actions automatically reorder.

Building Valid Chains and Rules

Carefully plan and diagram the entire set of chains and rules before you begin creating mail policy on the PGP Universal Server. Once you have created your mail policy, test it before you implement it in your network. The PGP Universal Server does not prevent you from creating chains that contradict each other or invalid rules. There are many things to think about when creating policy chains and rules.

- When you create a policy chain, organize the policy chains and rules in the correct order.
- Make sure you understand how to use condition settings, conditions, and actions to create valid rules.
- Ensure every email type that needs special processing is covered by a rule that applies; for example, confidential email or email to specific recipients. For a list of possible rule conditions, see *Conditions* (on page 102).

- Do not allow email to drop through the end of your policy chains. Make sure that for every message that passes through mail policy, there is a rule with an action that finishes processing by sending, delivering, bouncing, or dropping the email. For a list of actions that finish processing, see *Actions* (on page 106).

Using Valid Processing Order

Within a chain, some rules process email, then pass the email along to other actions or rules for further processing; for example, *Decrypt Message*. Other rules end email processing; for example, *Deliver Message*. When constructing a rule or chain of rules, make sure that actions that finish email processing come after the actions that allow continued processing.

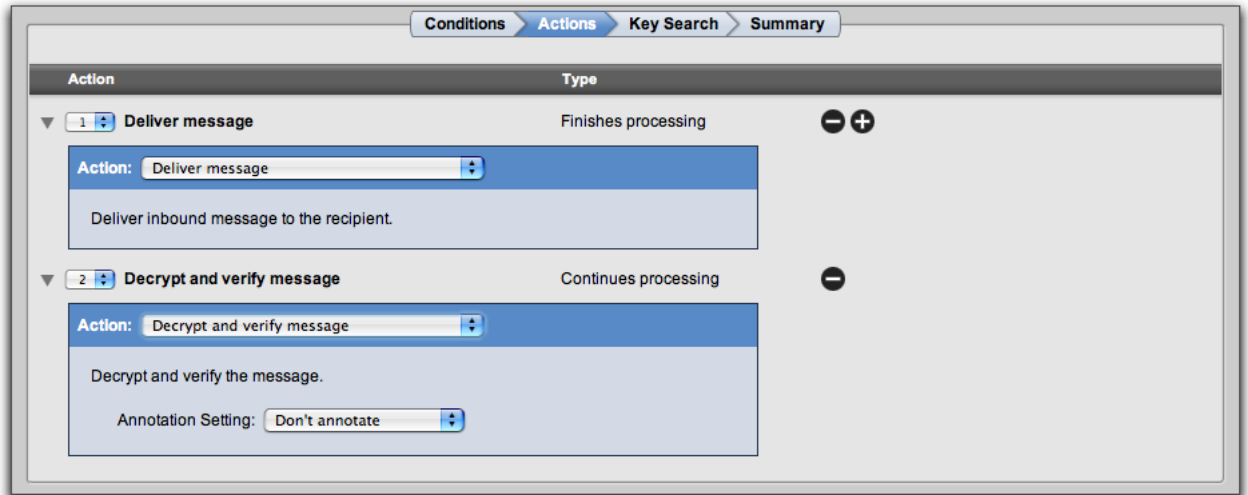
The sample policy chain below is an example of invalid processing order. The *Deliver Message* rule is before the *Decrypt Message* rules, so that the mail is delivered before the message is decrypted. This means that PGP Universal Server cannot decrypt the messages before delivering them to the recipient.



Policy Chain: Inbound					
This Policy Chain is applicable to Server					
Rule	Description	Status	Delete		
1	 Deliver Message Deliver the message.	Enabled		<input type="checkbox"/>	
2	 Decrypt Message (SMTP) Decrypt inbound encrypted messages on SMTP connections.	Enabled		<input type="checkbox"/>	
3	 Decrypt Message (non-SMTP) Decrypt messages for authenticated connections on other non-gateway proxies such as POP or IMAP.	Enabled		<input type="checkbox"/>	
4	 Find Mailing List Addresses If this message is sent to a mailing list, add its address to the Pending Exclusions dictionary.	Enabled		<input type="checkbox"/>	

Within a rule, processing order is important to actions as well. Make sure that actions that finish processing come after actions that continue processing.

In the example below, *Deliver message* is processed before *Decrypt and verify message*, so messages would be sent out without being decrypted.



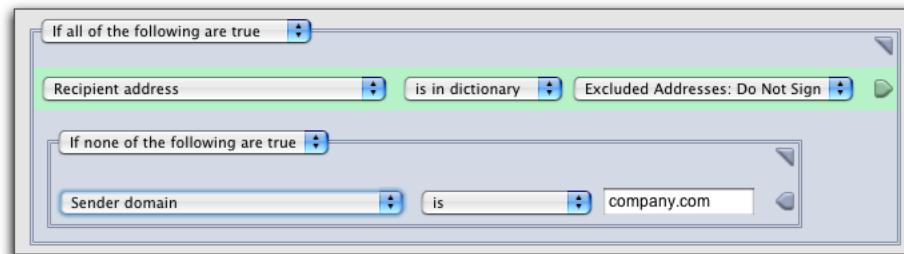
Creating Valid Groups

It is important to pay attention to how your condition settings work, especially if you have nested groups.

In the example below, the first condition setting states everything it applies to must be true. For the condition to be matched and the rule triggered, the first condition statement must be true, and the nested conditional group must also be true.

The first condition setting applies to the condition statement about the recipient address, and to the nested group, both of which must be true. The second condition setting applies to the condition statement within the nested group about the sender domain, which must not be true.

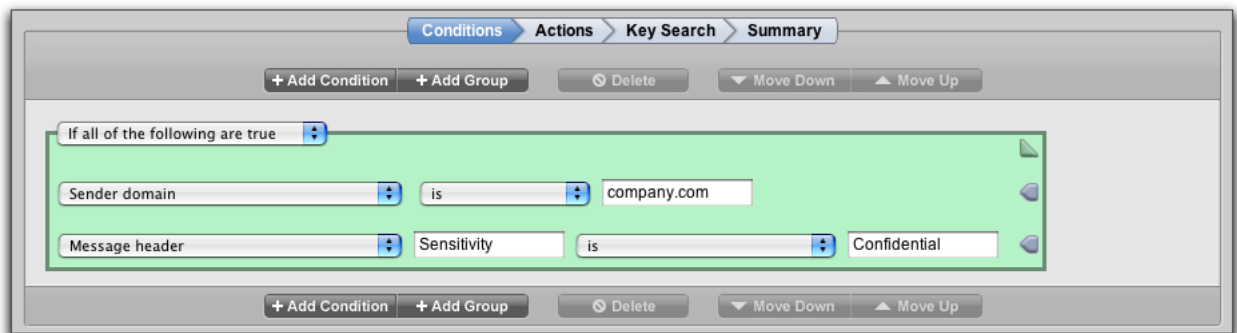
In other words, for the condition to be matched it must be true that the recipient address is in the *Excluded Addresses: Do Not Sign* dictionary, and it must be true that the *Sender Domain* is not company.com.



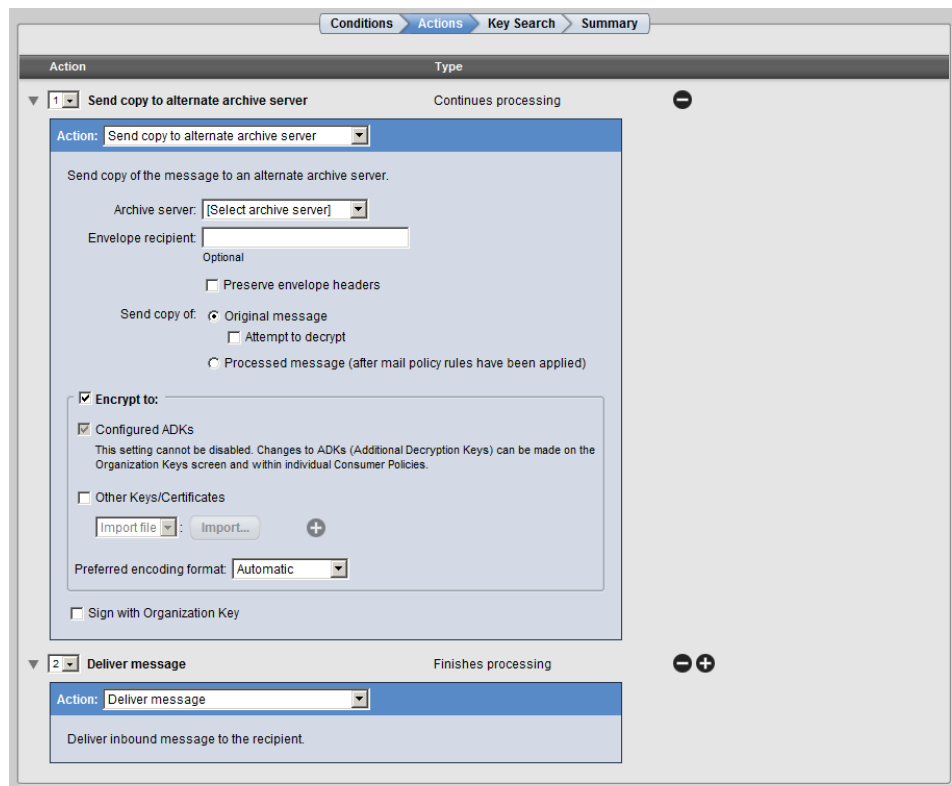
Creating a Valid Rule

The following example shows how to create a valid rule. This sample rule applies to any email with a Sensitivity header sent to anyone in a specific domain.

The condition setting requires that all conditions be true to trigger the action. The first condition that must be true is that the email must be from senders in the company.com domain. The second condition that must be true is that the message header called *Sensitivity* must be the key word *Confidential*.



The rule action first sends a copy of the message to an archive server. The second action delivers the message. Notice that the action that finishes processing is last. If the action *Deliver message* comes first, the rule *Send copy to alternate archive server* cannot be performed.



Managing Policy Chains

Use these procedures to edit policy chain settings, add, delete, export, import, and print policy chains.

Mail Policy Best Practices

Managing mail policy through the web interface is the recommended method.

It is possible to export mail policy as an XML file, edit chains and rules directly in XML, then import the edited file back into the PGP Universal Server. However, there is a higher risk of error using this method. You can edit mail policy directly in XML if you have a large number of changes to make at once, for example if you are migrating PGP Universal Server 2.0.6 proxy settings from multiple upgraded clustered Secondaries. Contact PGP Support for help if you intend to edit mail policy in XML.

Restoring Mail Policy to Default Settings

You can reset the entire Mail Policy page. This deletes all the changes you have made to the mail policy and restores all the mail policy settings that were originally installed on the server.

To reset the mail policy, click **Restore the Factory Defaults**.

Editing Policy Chain Settings

To edit the name of a policy chain

- 1 Click the name of the chain you want to edit.
The Policy Chain page appears.
- 2 Click **Edit Policy Chain Settings**.
The Edit Policy Chain dialog box appears.
- 3 Type a new name for the policy chain, if necessary.
- 4 Click **Save**.

Note: Once you have created a policy chain, you cannot change its Rule Applicability, because the rule conditions in the policy chain may not be valid under a different applicability setting. To change the rule applicability, you must delete the policy chain and recreate it.

Adding Policy Chains

To create a new policy chain

- 1 Do one of the following:
 - Click the **Add Policy Chain** button.
 - From the **Options** list, select **Import Policy Chains**.
The Add Policy Chain dialog box appears.
- 1 To create a new chain, select **Create New Policy Chain**.
- 2 Type in the name for the new chain.
- 3 Choose the application where the rules for the policy chain will apply. This setting specifies where the policy will be enforced, and determines what conditions and actions are available when creating rules for the policy chain. For example, the *Standalone* setting allows a limited set of conditions to be used in creating rules, as the resulting policy chain must be able to be evaluated on a PGP Desktop client that does not have PGP Universal Server connectivity. The *Server and Client* setting provides a larger set of conditions.
 - A policy chain can have rules that can be interpreted and enforced on both a PGP Desktop client and the PGP Universal Server.
 - A policy chain can contain only rules that can be interpreted and enforced on the PGP Universal Server.
 - A policy chain can contain only rules that can be interpreted and enforced on the PGP Desktop client.
 - A policy chain with *Standalone* rule applicability can contain only rules that can be interpreted and enforced on a PGP Desktop client independently of the PGP Universal Server, without PGP Universal Server connectivity.
 - A policy chain with *Mobile* rule applicability can contain only rules that can be enforced on a PGP Mobile client.
- 4 Click **Save**.

You can also import a new policy chain from a file. Import policy chain files in XML format, or in a ZIP file containing multiple XML files.

To import a policy chain

- 1 Click the **Add Policy Chain** button, or select **Import Policy Chains** from the **Options** list.
The Add Policy Chain dialog box appears.
- 2 Select **Import Policy Chain File**, and click **Choose File**.
- 3 Browse to select the file you want to import.
- 4 Click **Import**.
If the policy you want to import has the same name as a policy already in your chain, the Import Policy Chain Conflict dialog box appears.
- 5 Choose whether to Ignore or Replace:

- Choose **Ignore** to skip importing policies with duplicate names.
- Choose **Replace** to overwrite the existing policies with names the same as the chains you are importing.

Deleting Policy Chains

Caution: The Default, Default: Legacy Clients, Default: Standalone, Default: Mobile, and Exception policy chains cannot be deleted, but you can delete or edit the rules within. The Default chains provide a necessary starting point in the mail policy for all message processing. If you delete or change the rules in the Default chains, it can make your mail policy invalid and prevent your messages from being processed.

To delete policy chains

Do one of the following:

- To delete one policy chain:
 - a** Click the Delete icon of the policy chain you want to delete.A confirmation dialog box appears.
 - b** Click **OK**.The policy chain is removed from the mail policy list.
- To delete multiple policy chains:
 - a** Click the check box at the far right end of the row of each of the policy chain you want to delete.
 - b** Select **Delete Selected** from the Options menu at the bottom right corner, or **Delete All** to remove all policy chains.A confirmation dialog box appears.
 - c** Click **OK**.The policy chains are removed from the mail policy list.

Exporting Policy Chains

To export a policy chain

- 1 Select the check box at the far end of the row for each chain you want to export.
 - 2 From the **Options** list, select **Export Selected**.
 - 3 To export all dictionaries associated with the rules in the chain, click the **Include all associated dictionaries** check box.
- Click **Export**.

The policy chain you chose is exported to your desktop as an XML file. If you exported more than one policy chain, the XML files are inside a ZIP file.

Printing Policy Chains

To create a printable version of your policy chain, including all rules

- 1 Select the check box at the far end of the row for each chain you want to print.
- 2 From the **Options** list, select **Print View for Selected**. To print the entire mail policy, select **Print View for All**.
A printable version of the mail policy appears.
- 3 Click the **Print** link at the top of the page.

Managing Rules

Use these procedures to add, delete, enable, and disable rules within policy chains.

Adding Rules to Policy Chains

To add a rule

- 1 Select the Policy Chain to which you want to add a rule.
The **Policy Chain** page appears.
- 2 Click **Add Rule**.
The **Add Rule** page appears.
- 3 Type in a name and description for the rule. The description should provide an explanation for what the rule does.
- 4 Add conditions, actions, and keyserver locations, as needed.
For information on using the rule interface, see *Using the Rule Interface* (on page 90). For information on designing a valid rule, see *How Policy Chains Work* (on page 85).

Deleting Rules from Policy Chains

To delete a rule

Do one of the following.

- To delete a specified rule:
 - a** Select the policy chain from which you want to delete a rule.
The **Policy Chain** page appears.
 - b** Click the **Delete** icon of the rule you want to delete.

A confirmation dialog box appears.

c Click **OK**.

The rule is removed from the policy chain.

- To delete multiple rules:
 - a** Select the check box at the far right end of the row of each of the rule you want to delete.
 - b** From the **Options** list, select **Delete Selected**, or **Delete All** to remove all rules.

A confirmation dialog box appears.

c Click **OK**.

The rules are removed from the policy chain.

Enabling and Disabling Rules

An enabled rule is a rule that is turned on and being used to process email on the policy chain. A disabled rule is not deleted, but is not currently in use to process email through the policy chain.

Caution: If you disable a rule in the policy chain, email might be processed incorrectly. Depending on how you have designed your policy chain, disabling rules can cause email to be sent unintentionally unencrypted, or to fall through the policy chain and not be sent at all.

To enable or disable rules

- 1 Select the check box at the far right end of the row of each of the rule you want to enable or disable.
- 2 Select **Toggle Status for Selected** from the **Options** menu at the bottom right corner, or **Toggle Status for All** to enable or disable all rules.

A confirmation dialog box appears.

- 3 Click **OK**.

The rules enabled or disabled.

Changing the Processing Order of the Rules

To change the order in which rules are processed, renumber the rule you want to move. All the rules reorder automatically.

Adding Key Searches

The PGP Universal Server always looks in its own databases for keys. If the PGP Universal Server does not have a copy of a particular key, a rule can require searching external sources for the key.

To enable external key searches for a rule

- 1 Click the **Key Search** arrow button.
- 2 Select **Search for keys in additional locations**.
- 3 Select a keyserver from the drop-down menu.
- 4 To add more keysevers to the rule, click the **Add** icon next to the server name.
- 5 If you have added more than one specified directory in the policy, you can choose the order in which the added directories are searched for keys. Renumber a directory to give it a higher search priority.

You can also add searchable keysevers to the PGP Universal Server list from this page.

To add a new searchable keyserver to the rule:

- 1 Select **Add new keyserver...** from the drop-down menu.
The Add Keyserver dialog box appears.
- 2 Type the information for the keyserver you want to add. See *Adding or Editing a Keyserver* (on page 138) for more information on this dialog box.
The keyserver information you add also appears on the **Keys > Keysevers** page.

Choosing Condition Statements, Conditions, and Actions

Policies are based on condition statements, conditions, and actions.

Condition Statements

Condition statements link conditions together into groups, and specify how conditions should be matched. For example, if you have more than one condition in a rule, you can specify that the rule is triggered if all the conditions are matched, or you can specify that the rule is triggered if just one of the conditions is matched.

Statement	Description
If all of the following are true	Every condition and group nested under this statement must be true.
If any of the following are true	Any of the conditions and groups nested under this statement can be true for the statement to be true, but at least one must be true.
If none of the following are true	None of the conditions and groups nested under this statement can be true. Use this statement to exclude certain email from being processed by the rule.
The condition is always true	There are no conditions allowed under this statement. This statement ensures that this rule action is performed on every email processed by the rule.

Conditions

Conditions are the set of requirements a message must meet to trigger a rule.

Some conditions require matches to terms found in the email headers or body. Terms can be numbers, words, regular expressions, or in dictionaries or user policies. The condition modifier indicates how the term should be matched.

Modifier	Description
Is	The term can only match against the exact characters specified in the condition. There is one and only one possible match. Not case-sensitive.
Matches pattern	The term in the email must match against a regular expression. See the online help for more information on using regular expressions. Not case-sensitive.
Contains	The term must match against the exact characters specified in the condition, but the characters specified can occur anywhere within the term. Not case-sensitive.
Begins with	The term must match against the exact characters specified in the condition, and the characters specified must occur at the beginning of the term. Not case-sensitive.
Ends with	The term must match against the exact characters specified in the condition, and the characters specified must occur at the end of the term. Not case-sensitive.
Is in dictionary	The term must match against the content of a specified dictionary. Not case-sensitive.
Is a subdomain of	The email domain matches if it is a subdomain of the specified domain. Not case-sensitive.
Is greater than	The term matches if it is greater than the value specified.
Is less than	The term matches if it is less than the value specified.
Is greater than or equal to	The term matches if it is greater than or equal to the value specified.
Is less than or equal to	The term matches if it is less than or equal to the value specified.
Fewer than	The term matches if it is fewer than the number specified.
Greater than	The term matches if it is greater than the number specified.

Not all conditions are available for all rules. The policy chain's rule applicability setting determines whether a condition can be used in a rule. For example, policy chains whose rule applicability is Standalone or Mobile have restricted choices for rule conditions. In the following table, the column labeled Applicable indicates the rule applicability settings under which a condition can be used. For more information on Rule Applicability see *How Policy Chains Work* (on page 85) and *Adding Policy Chains* (on page 97).

Condition	Applicability	Modifiers	Matches	Details
Recipient address	All	is, contains, begins with, ends with, matches pattern, is in dictionary	email address, partial email address, regular expression, dictionary name	—
Recipient domain	All	is, contains, begins with, ends with, matches pattern, is in dictionary, is a subdomain of	domain name, partial domain name, regular expression, dictionary name	—
Recipient consumer policy	Client and Server, Client Only, Server Only	is	user policies, dictionary names	When you choose to apply this condition to a specific consumer policy, select the policy you want from the drop-down menu. If there is more than one policy with the same name, it only lists the policy name once. For example, you have two Default user policies. You might need to create another condition specifying whether you want to apply the rule to internal or external users. If you have multiple consumer policies with similar names, be sure you are selecting the correct policy.
Recipient address is mailing list	Client and Server, Client Only, Server Only	—	user policies	Used with the <i>Expand mailing list and restart processing</i> Action (<i>Details on Actions</i> (on page 110)).
Recipient key mode	Client and Server, Client Only, Server Only	—	SKM, CKM, GKM, SCKM	—
External user recipient delivery preference	Client and Server, Client Only, Server Only	—	PGP Universal Web Messenger, Smart Trailer, PGP Desktop/PGP Universal Satellite, PDF Messenger	For external recipients only.
Sender address	All	is, contains, begins with, ends with, matches pattern, is in dictionary	exact or partial email address, regular expression, dictionary name	—
Sender domain	All	is, contains, begins with, ends with, matches pattern, is in dictionary, is a subdomain of	exact or partial domain, regular expression, dictionary name	—

Condition	Applicability	Modifiers	Matches	Details
Message encoding format	Server Only	is not encoded, is OpenPGP, is S/MIME, is partitioned	message encryption format	This condition is available only for server-applicable rules.
Sender consumer policy	Client and Server, Client Only, Server Only	is, is in dictionary	user policies, dictionary name	When you choose to apply this condition to a specific consumer policy, select the policy you want from the drop-down menu. If there is more than one policy with the same name, it only lists the policy name once. For example, you have two Default user policies. You might need to create another condition specifying whether you want to apply the rule to internal or external users. If you have multiple consumer policies with similar names, be sure you are selecting the correct policy.
Sender key mode	Client and Server, Client Only, Server Only	–	SKM, CKM, GKM, SCKM	–
Message header	All	is, contains, begins with, ends with, matches pattern	message header type (e.g., To, From); exact or partial content of message header, or regular expression	Matches on the content of a message header. You can use regular expressions with the <i>matches pattern</i> modifier to express the content of the message header.
Message subject	All	is, contains, begins with, ends with, matches pattern	exact or partial content of message subject, or regular expression	Matches on the content of the message subject. For example, [Important] , [AAA] , or [Confidential] . You can use regular expressions with the <i>matches pattern</i> modifier.
Message body	All	is, contains, begins with, ends with, matches pattern	exact or partial content of message body, or regular expression	Matches on the content of the message body. You can use regular expressions with the <i>matches pattern</i> modifier.
Message size	All	is, is greater than, is less than	size in KB	–

Condition	Applicability	Modifiers	Matches	Details
Any part of the message is encrypted	Server Only	–	to any key, to key ID, to ADK, to key in dictionary	<p>This condition is available only for server-applicable rules.</p> <p>The key typed in the condition must match the key or subkey used for message encryption. This is either the encryption key (for v4 keys) or the topkey (for v3 keys). If you type a v4 topkey into the condition, it does not match the encryption subkey found in the message.</p>
All of the message is encrypted	Client and Server, Server Only	–	to any key, to key ID, to ADK, to key in dictionary	<p>This condition is available for server-applicable rules. It is also applicable to client-applicable rules for SMTP, POP, and IMAP only. It is not applicable to Lotus Notes and MAPI.</p> <p>The key typed in the condition must match the key or subkey used for message encryption. This is either the encryption key (for v4 keys) or the topkey (for v3 keys). If you type a v4 topkey into the condition, it does not match the encryption subkey found in the message.</p>
Any part of the message is signed	Server Only	–	–	This condition is available only for server-applicable rules.
Message has an attachment whose name	All	is, contains, begins with, ends with, matches pattern	exact or partial content of message attachment name, or regular expression	You can block messages with this condition by matching it with an action to bounce or drop matching messages.
Message has an attachment whose type	All	is, contains, begins with, ends with, matches pattern	exact or partial content of message type name, or regular expression	You can block messages with this condition by matching it with an action to bounce or drop matching messages.
Message is from mailing list	Server Only	–	–	This condition is available only for server-applicable rules.
Mailing list user count is	Client and Server, Client Only, Server Only	fewer than, greater than	number of members in list	Default value is 30 users. <i>Expand mailing list and restart processing</i> Action (<i>Details on Actions</i> (on page 110)).
Application	All	–	is internal PGP Desktop/PGP Universal Satellite, is external PGP Desktop/PGP Universal Satellite, is PGP Universal Server	Matches on where the message is being processed. Mobile and standalone clients match Internal PGP Desktop/PGP Universal Satellite
Service type	All	–	is SMTP Inbound, is SMTP Outbound, is POP, is IMAP,	–

Condition	Applicability	Modifiers	Matches	Details
			is Microsoft Outlook (MAPI), is Lotus Notes, is PGP Universal Web Messenger, is RIM Blackberry	
Client version	Client Only, Standalone, Mobile	is, is greater than, is less than, is greater than or equal to, is less than or equal to	2.7/9.7	–
Connected user has authenticated	Client and Server, Client Only, Server Only	–	–	If the PGP Universal Server is in gateway placement, authentication from internal users is not possible because the user is authenticating to the mail server, not directly to the PGP Universal Server.
IP address of local connector	Client and Server, Client Only, Server Only	is, contains, begins with, ends with, matches pattern, is in dictionary	exact or partial IP address, regular expression, dictionary name	–
Port of local connector	Client and Server, Client Only, Server Only	is, is greater than, is less than	port number	–

Actions

Actions are performed on messages when rule conditions apply. Some actions process email, then pass the email along to other actions or rules for further processing; for example, *Add log entry*. Other actions end email processing; for example, *Drop message*. When constructing a rule or chain of rules, make sure that actions that finish email processing come after the actions that allow continued processing.

Not all actions are available for all rules. Which actions are available depends on the rule applicability setting of the rule's policy chain. The Rule Applicability column in the table below indicates the types of policy chains where a given action can be used. For more information, see *Adding Policy Chains* (on page 97).

Action	Applicability	Type	Options	Result
Send (encrypted/signed)	All	Finishes processing	See <i>Send (encrypted/signed) Action</i> (on page 110) for information on how to configure this action.	Sends the email encrypted to specified key(s).

Action	Applicability	Type	Options	Result
Send via Web Messenger	Server and Client, Server Only, Client Only	Finishes processing	–	<p>Recipients receive a message (not the original email message) that directs them to a website where they have options for accessing the original message securely.</p> <p>This option is not available when message processing is on the client unless Out Of Mail Stream support (OOMS) is enabled on the Messaging & Keys tab of Consumer Policy.</p>
Send clear (unencrypted and unsigned)	All	Finishes processing	–	Sends the email unencrypted and unsigned.

Action	Applicability	Type	Options	Result
Send via PDF Messenger	Server and Client, Server Only, Client Only	Finishes processing	<p>Encrypt body text and all attachments checkbox. The email is sent to the recipient as a PDF file, secured to the recipient's Web Messenger passphrase. The body text of the original email is used as the body text of the secured PDF file. All attachments to the original email are attached to the secured PDF.</p> <p>Require Certified Delivery checkbox. Creates and logs a delivery receipt when the recipient obtains the password to obtain the message.</p> <p>We recommend that you select the Require user authentication for Certified Delivery checkbox in the PDF Messenger Options panel on the General tab before you allow senders to use certified delivery. If you allow certified delivery before you select the checkbox, external recipients will have a passphrase that can be used only for Secure Reply and not for the other PDF Messenger options.</p> <p>Add Secure Reply link checkbox. The message and PDF attachment contain a link the recipient can use to reply to all members of the email thread. The reply is delivered through PGP Universal Web Messenger.</p>	<p>Sends the email as a secured PDF.</p> <p>Converts the text of the email to PDF and secures it using the recipient's PGP Universal Web Messenger passphrase. Message attachments can also be secured.</p> <p>See <i>Send via PDF Messenger Action</i> (see "Encrypt Body Text and all Attachments" on page 114) for details on how the types of attachments interact with this checkbox.</p> <p>This option is not available when message processing is on the client unless Out Of Mail Stream support (OOMS) is enabled on the Messaging & Keys tab of Consumer Policy.</p>
Send copy to alternate archive server	Server Only	Continues processing	Select or add an archive server. Choose to send original or mail policy-processed message. Choose whether to encrypt.	Sends a copy of the email content (encrypted or unencrypted) to an archive server for archiving. For more information, see <i>Send copy to alternate archive server Action</i> (on page 117).

Action	Applicability	Type	Options	Result
Deliver message	Server and Client, Server Only, Client Only	Finishes processing	–	Delivers inbound email to recipient.
Decrypt and verify message	Server and Client, Server Only, Client Only	Finishes processing	See <i>Decrypt and verify message Action</i> (on page 116) for information on how to configure this action.	Decrypts and verifies email and annotates email with information about verification results.
Bounce message	All	Finishes processing	–	Returns email to the sender.
Drop message	Server Only	Finishes processing	–	Drops email. Inbound IMAP and POP mail cannot be dropped. Instead, users receive the email with the message text replaced by the information in the Blocked Message Content template. For more information, see <i>Customizing System Message Templates</i> (on page 165).
Add to dictionary	Server Only	Continues processing	Add sender, recipient, or mailing list address to chosen dictionary.	Adds data found in email to a selected dictionary. For more information, see <i>Add to dictionary Action</i> (on page 119).
Expand mailing list and restart processing	Server and Client, Server Only, Client Only	Continues processing	–	See <i>Expand mailing list and restart processing Action</i> (on page 116) for information on this action.
Add log entry	Server and Client, Server Only, Client Only	Continues processing	Type in the log entry you want to appear.	The specified entry appears in the Mail log when this rule is applied to a message. Client rules create log entries on the client, server rules create log entries on the server.
Add message header	Server and Client, Server Only, Client Only	Continues processing	Type in a name and a value for your custom message header. Choose if you want your message header to replace existing message headers with the same name.	Flags messages for further processing in the mail policy chain or elsewhere in the mail stream. This action applies to server and SMTP client rules. Not supported for MAPI and Lotus Notes clients.
Go to chain	Server and Client, Server Only, Client Only	Continues processing	Select a policy chain to which to pass the email.	Sends message on to any other chain in the mail policy for further processing.

Details on Actions

The following sections provide additional detail on selected Actions.

- *Send (encrypted/signed) Action* (on page 110)
- *Send via PDF Messenger Action* (see "*Encrypt Body Text and all Attachments*" on page 114)
- *Decrypt and verify message Action* (on page 116)
- *Expand mailing list and restart processing Action* (on page 116)
- *Send copy to alternate archive server Action* (on page 117)
- *Add to dictionary Action* (on page 119)

Send (encrypted/signed) Action

This action attempts to encrypt, sign the message, and send it. You can specify which key(s) to use to encrypt the email and what happens if a suitable key is not found.

Note: Not all Key Not Found options are possible for all rules. In client-based rules, select the PGP Universal Web Messenger or Smart Trailer actions in response to a Key Not Found condition only if you enable Out Of Mail Stream (OOMS) support in Consumer Policy. If you select one of these options, and OOMS support is disabled, email is sent in unencrypted and unsigned.

If the sender or recipient uses signing and encryption subkeys, the encryption behavior for this action can be affected. If your policy requires messages to be encrypted and signed, the necessary keys must be available.

The message is not sent if one of the following occurs:

- The recipient's encryption subkey is not available.
- The policy requires that the email be encrypted and signed to the sender's key, and the sender's encryption key is unavailable.

However, if the policy requires that the email be encrypted and signed to the sender's key, but the sender's signing key is unavailable, the message is sent encrypted and unsigned.

For more information about how external users receive email when no suitable key is found, and how those users interact with Smart Trailer and PGP Universal Web Messenger, see *Applying Key Not Found Settings to External Users* (on page 121).

To create the Send (encrypted/signed) action

- 1 In the Action section of a rule, select **Send (encrypted/signed)** from the drop-down menu.
- 2 Select the **Recipient's Key** checkbox to encrypt the email to the recipient's key.
- 3 Determine whether you want to require a verified key.
If you select this checkbox, and the root certificate is not in the Trusted Key list, the certificates of external users is not trusted.
- 4 Choose whether to require an end-to-end key.

An end-to-end key is owned by the individual recipient. For example, a CKM or GKM key is an end-to-end key, but an SKM key is not. An SCKM key is end-to-end for signing but not for encryption.

5 Select one of the following options when a suitable key or certificate cannot be found:

- **Bounce:** The email message is returned to the sender if a key for the recipient cannot be found.
- **Send clear (signed):** The email is sent to the recipient unencrypted but signed if a suitable encryption key cannot be found.
- **Send clear (unsigned):** The email is sent to the recipient unencrypted and unsigned if a suitable encryption key cannot be found.

PDF Messenger: If the original email did not have unencrypted PDF attachments, a PDF file is created and secured to the recipient's Web Messenger passphrase. The body text of the original email is the body text of the secured PDF file, and attachments from the original email are attached to the secured PDF and are accessible after the PDF has been successfully opened. The secured PDF is added as the attachment to the template-based PDF Messenger message.

If the original email contains at least one attached unencrypted PDF file, all unencrypted PDF attachments are encrypted to the recipient's Web Messenger passphrase, but the other attachments are sent unencrypted. The original email is sent (unencrypted), with the previously unencrypted PDF attachments now encrypted. Existing PGP Universal Web Messenger users receive the email as a PDF Messenger message. New users receive a message (but not the original email) that directs them to a website where they create a passphrase to access their email in PDF Messenger format.

PDF Messenger Secure Reply: This feature is identical to PDF Messenger, except for the Secure Reply link. This link appears in the encrypted email and the PDF attachment, unless the encrypted PDF attachment was created from an unencrypted PDF attachment in the original email.

Best Practice: If you want to offer **Secure Reply**, you should also choose **Encrypt All**.

- **PDF Messenger Encrypt All:** The email is sent to the recipient as an encrypted PDF file, secured to the recipient's Web Messenger passphrase. The body text of the original email is used as the body text of the secured PDF file. All attachments to the original email are attached to the secured PDF. The secured PDF is then added as the sole attachment to the PDF Messenger message, which is based on a template.

Existing PGP Universal Web Messenger users receive the email as a PDF Messenger message. New users receive a message (but not the original message) that directs them to a website where they create a passphrase to access their message in PDF Messenger format.

- **PDF Messenger Encrypt All, Secure Reply:** There is one encrypted PDF attachment in the final email. The contents of the encrypted PDF file include all the contents of the original unencrypted email. Because this option includes **Secure Reply**, there are two secure reply links; one in the PDF file as a button, and the other as a link in the email received by the external user.

- **PDF Messenger Certified Delivery:** An email is sent to the recipient with a Read Me First.html file and a secured PDF file of the email message. Users must open the .html file to retrieve the one-time random passphrase to which the PDF file is encrypted. The body text of the original email is the body text of the secured PDF file, and attachments from the original email are attached to the secured PDF. This secured PDF is the only attachment to the template-based PDF Messenger message.

The original email is sent (unencrypted), with the previously unencrypted PDF attachments are now encrypted. Existing PGP Universal Web Messenger users receive the email as a PDF Messenger message. If the **Require user authentication for Certified Delivery** checkbox is selected, new users must create a passphrase to access their message in PDF Messenger format.

Note: Whether the user is required to authenticate to access the passcode for the PDF is set in the **Web Messenger** section of Consumer Policy.

- **PDF Messenger Certified Delivery, Secure Reply:** An email is sent to the recipient with a Read Me First.html file and a PDF file of the email message. Users must open the .html file to retrieve the one-time random passphrase to which the PDF file is encrypted. In your consumer policy, you must select the **Require User authentication for Certified Delivery** checkbox. If you leave this checkbox deselected, users with a passphrase cannot log in. Certified Delivery messages are always encrypted to a one-time random passphrase, so that you know when recipients read their message.

Note: If users do not set up a passphrase, they cannot reply securely.

- **PDF Messenger Certified Delivery, Encrypt All:** The email is sent to the recipient as a PDF file and is secured to the recipient's Web Messenger passphrase. The content of the original email is used as the body text of the secured PDF file, and the attachments from the original email are attached to the secured PDF. The secured PDF is added as an attachment to the PDF Messenger message, which is based on a template.
When mail policy requires that a PDF Messenger message, existing PGP Universal Web Messenger users receive the email as a PDF Messenger message. New users receive a message (not the original message) that directs them to a website where they must create a passphrase to access the message in PDF Messenger format.
When the recipient opens the Read Me First.html file to retrieve the passphrase, the PGP Universal Server creates and logs a delivery receipt.
- **PDF Messenger Certified Delivery, Encrypt All, Secure Reply:** Identical to **PDF Messenger Certified Delivery, Encrypt All** but with a Secure Reply link.
- **Smart Trailer:** The email is sent to the recipient unencrypted with a trailer that explains how to get mail from the sender in a secure manner. Not available for client policy or non-mailstream installations.
- **Web Messenger:** The recipient is sent a message (but not the original email message) that directs them to a website where they have options for accessing the original message securely. Not available for client policy or non-mailstream installations.

- 6 Select the **Sender's Key** check box to encrypt the email to the sender's key. This can help in retrieving the email message.

- 7 If you have uploaded Additional Decryption Keys (ADKs), all applicable outbound email is encrypted to these keys. All outbound mail is encrypted to the Organization ADK, and Consumer Policy ADKs are used to encrypt the outbound mail of a consumer to whom the policy applies. This setting cannot be disabled.
- 8 Select the **Other Keys/Certificates** checkbox to encrypt the message to another key or certificate.

You can click **Add** or **Delete** to add or remove additional keys, but you should add keys and certificates that can be used for encryption.

- Select **Key ID** and type in the key ID of the key to which you want to encrypt. Only internal user keys can be found using the key ID. To encrypt to any other key, select **Import file** and import the key.
 - Select **Import file** and click the **Import** button to import a key to which you want to encrypt.
- 9 Select the **Sign** check box if you want the email to be signed.
 - 10 In the **Preferred encoding format** menu, select your preferred format for signed messages.

The preferred encoding format was called preferred signing format in PGP Universal Server 2.0.x. This format is important when email is sent signed but not encrypted. Because the email format cannot be set automatically based on the type of key to which the email is encrypted, when the recipient's key is not available, it is up to the PGP Universal Server administrator to decide which format the users at each domain can handle.

Select the **Preferred encoding format** based on the following:

- **Automatic** enables PGP Universal Server to choose the most appropriate encoding format by considering the original format of the message and the preferred-encoding packet of the keys or certificates to which the email is being encrypted.
- **PGP Partitioned** is a mail encoding format that works with non-MIME mail clients, such as Microsoft® Outlook.
- The sender has only a PGP key.

Senders must use **PGP/MIME** as the signing format. If you select **S/MIME**, the selection reverts to **PGP/MIME**. Keys generated by PGP Universal Server have preferred encoding set to **PGP/MIME**.

- The sender has only an X.509 certificate.

Senders must use **S/MIME** as the signing format. If you select **PGP/MIME**, the selection reverts to **S/MIME**.

- The sender has a PGP key and an X.509 certificate.

In this case, you need to select between **PGP/MIME** and **S/MIME**, based on the recipients' ability to decrypt messages. If they can read PGP key signatures, choose **PGP/MIME**, but if they can read X.509 certificate signatures, choose **S/MIME**. You might need to make this choice based on your best guess of what type of encryption system used by recipients.

Send via PDF Messenger Action

When you select to send a message using the Send via PDF Messenger action, select one (or all) of these options:

- **Encrypt body text and all attachments**, which encrypts the email body and the attachments as a secure PDF file. For more information, see *Encrypt Body Text and all Attachments* (on page 114).
- **Require Certified Delivery**, which creates a delivery receipt that is logged when the recipient opens the message.
- **Add Secure Reply link**, which adds a link to the delivered email and PDF attachment and allows the recipient to reply to the email using Web Messenger.

PDF Messenger is not available when message processing is on the client unless Out Of Mail Stream support (OOMS) is enabled on the **Messaging & Keys** tab of Consumer Policy.

Encrypt Body Text and all Attachments

Recipients receive PDF Messenger messages delivered to their mail servers. How such messages and their attachments are secured depend on whether the "Encrypt body text and all attachments" check box is selected and whether the original message has any unencrypted PDFs attached to it.

The following table describes the effects of the check box depending on the type of attachments included in the message:

This table provides detailed information on this option.

Attachment Type	With Checkbox Selected	With Checkbox Deselected
No attachments	<p>Converts plain text email to PDF and encrypts it to the PGP Universal Web Messenger passphrase.</p> <p>Attaches the secured PDF to a template-based message which is sent to the intended recipient.</p>	<p>Converts plain text email to PDF and encrypts it to the PGP Universal Web Messenger passphrase.</p> <p>Attaches the secured PDF to a template-based message which is sent to the intended recipient.</p>
Only non-PDF attachments	<p>Converts plain text email to PDF and encrypts it to the PGP Universal Web Messenger passphrase.</p> <p>Attaches the attachments of the original email to the secured PDF. (These attachments are secured and available after the PDF is decrypted.)</p> <p>Attaches the secured PDF to a template-based message which is sent to the intended recipient.</p>	<p>Converts plain text email to PDF and encrypts it to the PGP Universal Web Messenger passphrase.</p> <p>Attaches non-PDF attachments of the original email to the secured PDF. (These can only be read by first opening the new secured PDF.)</p> <p>Attaches the secured PDF to a template-based message which is sent to the intended recipient.</p>
Only unencrypted PDF attachments	<p>Converts plain text email to PDF format and encrypts to the PGP Universal Web Messenger passphrase.</p> <p>Attaches all attachments of the original email to the secured PDF. (These attachments are secured and available after the PDF is decrypted.)</p> <p>Attaches the secured PDF to</p>	<p>Encrypts these PDF attachments to the recipient's Web Messenger passphrase and replaces the original attachments with the encrypted versions.</p> <p>Does not convert the message body to a PDF or secure it in any way.</p> <p>Sends the original message with the encrypted versions of the PDF attachments to the intended</p>

Attachment Type	With Checkbox Selected	With Checkbox Deselected
	a template-based message which is sent to the intended recipient.	recipient.
Only already encrypted PDF attachments	<p>Converts plain text email to PDF format and encrypts to the PGP Universal Web Messenger passphrase.</p> <p>Attaches all attachments of the original email to the secured PDF. (These attachments are secured and available after the PDF is decrypted.)</p> <p>Attaches the secured PDF to a template-based message which is sent to the intended recipient.</p>	<p>Converts plain text email to PDF format and encrypts to the PGP Universal Web Messenger passphrase.</p> <p>Attaches the already-encrypted PDF attachments of the original email to the new secured PDF. (The attachments can only be read by first opening the new secured PDF.)</p> <p>Attaches the secured PDF to a template-based message which is sent to the intended recipient.</p>
Some encrypted PDF attachments, some non-encrypted PDF attachments	<p>Converts plain text email to PDF and encrypts it to the PGP Universal Web Messenger passphrase.</p> <p>Attaches the attachments of the original email to the secured PDF. (These attachments are secured and available after the PDF is decrypted.)</p> <p>Attaches the secured PDF to a template-based message which is sent to the intended recipient.</p>	<p>Leaves encrypted PDF attachments alone.</p> <p>Encrypts the unencrypted PDF attachments to the recipient's Web Messenger passphrase and replaces the original attachments with the encrypted versions.</p> <p>Does not convert the message body to a PDF or secure it in any way.</p> <p>Sends the original message with encrypted versions of all unencrypted PDF attachments to the intended recipient.</p>
Some unencrypted PDF attachments, some non-PDF attachments	<p>Converts plain text email to PDF and encrypts it to the PGP Universal Web Messenger passphrase.</p> <p>Attaches the attachments from the original email to the secured PDF. (These attachments are secured and available after the PDF is decrypted.)</p> <p>Attaches the secured PDF to a template-based message which is sent to the intended recipient.</p>	<p>PGP Universal Server:</p> <p>Leaves non-PDF attachments alone.</p> <p>Encrypts the unencrypted PDF attachments to the recipient's Web Messenger passphrase and replaces the original attachments with the encrypted versions.</p> <p>Does not convert the message body to a PDF or secure it in any way.</p> <p>Sends the original message with encrypted versions of all unencrypted PDF attachments and original versions of the non-PDF attachments to the intended recipient.</p>

Attachment Type	With Checkbox Selected	With Checkbox Deselected
Some unencrypted PDF attachments, some encrypted PDF attachments, and some non-PDF attachments	<p>Converts plain text email to PDF and encrypts it to the PGP Universal Web Messenger passphrase.</p> <p>Attaches the attachments from the original email to the secured PDF. (These attachments are secured and available after the PDF is decrypted.)</p> <p>Attaches the secured PDF to a template-based message, which is sent to the intended recipient.</p>	<p>Leaves encrypted PDF attachments alone.</p> <p>Leaves non-PDF attachments alone.</p> <p>Encrypts the unencrypted PDF attachments to the recipient's Web Messenger passphrase and replaces the original attachments with the encrypted versions.</p> <p>Does not convert the message body to a PDF or secure it.</p> <p>Sends the original message with encrypted versions of unencrypted PDF attachments, original versions of the non-PDF attachments, and encrypted PDF attachments to the intended recipient.</p>

Decrypt and verify message Action

This action decrypts and verifies email and annotates email with information about verification results.

To create the Decrypt and verify message action

- 1 In the **Action** section of a rule, select **Decrypt and verify message** from the drop-down menu.
- 2 From the **Annotation Setting** drop-down menu, select how you want the email to be annotated.
 - **Don't annotate:** Leaves the email as it was sent and does not include information on verification.
 - **Annotate failures only:** Annotates the email only if verification failed.
 - **Annotate detailed info:** Provides full annotation for all email and all attachments.
 - **Smart annotation:** If everything in a message is signed by the same individual, the message has a single annotation. If the message has multiple signatures, then the email receives detailed annotation information.

Expand mailing list and restart processing Action

This action takes any Active Directory-based mailing list in the recipient message header and expands it, replacing the mailing list address in the header with all the mailing list member email addresses. The action then returns the email to the Default policy chain and reruns mail policy on the message, processing it with the expanded addresses.

In the factory-set mail policy, the rule containing this action is on the Outbound chain and is called *Expand mailing lists*.

This functionality is important if not all members of a mailing list should have email processed in the same way. For example, you have an Active Directory mailing list called execs@example.com. The mailing list has 3 members, two of whom are executives and one of whom is an administration assistant. Your mail policy specifies that all email received by executives must be encrypted, but email received by the administration assistant should not be encrypted.

If the mailing list is not expanded, the executives receive mailing-list email unencrypted. The *Expand mailing lists* rule means that mail policy is applied to the individual members of a list, not to the list as a whole.

The action is triggered by matching the condition *Recipient address is mailing list*. It is important to limit the size of the mailing list to which you apply the action by also using the condition *Mailing list user count is fewer than <n>*. The default limit for the condition is 30 users, although you can edit the value. Limiting the rule to smaller lists is important because the more recipients addressed in the email, the longer it takes to process and send the message.

If it is necessary to encrypt email to a very large mailing list, use this procedure:

- 1 Create a new key and distribute it to all the members of the specific mailing list to which you want to send encrypted email.
- 2 Create a rule on the Outbound policy chain, and place it before the *Expand Mailing Lists* rule.
- 3 In the new rule, create the condition
If all of the following are true:
Recipient address is mailing list
so that it is matched by email addressed to the mailing list.
- 4 In the rule, create a *Send (encrypted/signed)* action.

Select **Other Keys/Certificates**, and import the mailing list key for encryption.

Send copy to alternate archive server Action

This action sends a copy of the email, either encrypted or unencrypted, to an archive server. The message can be archived in its original form (optionally after decryption) or it can be archived after mail policy rules have been applied. However, for PDF Messenger or PGP Universal Web Messenger messages, only the actual message is archived -- the message invitation is not archived.

The message copy can be encrypted to one or more keys or certificates, and also can be signed with the organization key.

This action is available only for policy chains with Server Only applicability.

To create the Send copy to alternate archive server action

- 1 In the Action section of a server rule, select **Send copy to alternate archive server** from the drop-down menu.
- 2 Select the alternate SMTP archive server from the **Archive server** drop-down menu.

You can configure an archive server (without leaving the Rule configuration process) by selecting **Add new archive server...** from the drop-down menu. This displays the Add Archive Server dialog. When you have configured the new archive server, you are returned to the Rule Action configuration process, and the new server is available in the drop-down menu.

- 3 You have the option of specifying an envelope recipient on the archive server. If you do not specify an envelope recipient, it is the same as the envelope recipient of the original message.
- 4 Check the **Preserve envelope headers** option to include all the original SMTP envelope recipients (all addresses specified with "RCPT TO") in an "X-PGP-Envelope-Recipients" header, included with the archived message.
- 5 For the **Send copy of** option, specify whether to send the message as it was originally received, or after processing by other policy actions.

Further, if the message is encrypted, you can check the **Attempt to decrypt before sending** check box. The PGP Universal Server will attempt to decrypt the message using the ADK (if it exists) and internal user keys. If the message cannot be decrypted, the encrypted message is archived, and a warning level log message is placed in the proxy log. This option is only applicable when archiving the original message.

- 6 Check **Encrypt to:** to encrypt the message before sending to the archive server. If an ADK is configured, archival messages are encrypted to the ADK (this cannot be disabled). If no ADK is configured, you must specify at least one key or certificate to be used for the encryption.
- 7 Check **Other Keys/Certificates** to encrypt the message to any other key or certificate. You can add or remove more keys by clicking the Add or Delete icons. Only add keys and certificates that can be used for encryption.
 - Select **Key ID** and type in the key ID of the key you want to encrypt to. Only internal user keys can be found through the key ID. To encrypt to any other key, select **Import file** and import the key.
 - Select **Import file** and click the **Import** button to import a key to encrypt to.
- 8 From the **Preferred encoding format** menu, choose your preferred format for encrypted messages:
 - **Automatic** enables PGP Universal Server to choose the most appropriate encoding format, taking into account the original format of the message, as well as the preferred-encoding packet of the keys or certificates to which the email is being encrypted.
 - **PGP Partitioned** is the standard PGP format.
 - **PGP/MIME** can be used as a signing format when the sender has only a PGP key.
 - **S/MIME** can be used as a signing format when the sender has only an X.509 certificate.

These options are the same as the equivalent options in the **Send (encrypted/signed)** action. For additional information see the discussion of that action earlier in this section.

- 9 Click **Sign with Organization Key** to sign archival messages with the Organization key.

Add to dictionary Action

This action adds an email address found in the message to one of the dictionaries available for use with mail policy. The address can be the email sender address, the recipient address, or the address of a mailing list. You can select the dictionary from the existing set of dictionaries available for use with mail policy (any of the predefined Excluded Addresses dictionaries or user-defined dictionaries).

In order to add multiple addresses to a dictionary, you can use multiple Add to dictionary actions.

To create the Add to dictionary action

- 1 In the Action section of a server rule, select **Add to dictionary** from the drop-down menu.
- 2 Select the type of address to add from the drop-down menu.
- 3 Select the dictionary to which the address is to be added from the drop-down menu of dictionaries.

Working with Common Access Cards

Common Access Cards (CAC) are a type of smart card used by the Department of Defense and compatible with PGP Desktop. CACs contain multiple X.509 certificates; one is used to encrypt messages and another is used for signing.

Because PGP Universal Server normally works with only one primary key per user, you must take extra steps to make it possible for your internal PGP Desktop users to use CACs.

To ensure that CACs work with the PGP Universal Server, make sure that the server can access the directory containing the CAC user certificates. You must add the CAC Directory to the **Key Search** page of every rule in mail policy that specifies a key search.

To access the CAC user certificates

- 1 For every rule in mail policy that requires a key search, click **Key Search** to add the user certificate directory to the rule. See *Adding Key Searches* (on page 100) for information on adding a keyserver search to a rule.
- 2 Since the directory contains X.509 certificates, choose directory type X.509 Directory LDAP or LDAPS.
- 3 All the certificates on the CACs have been signed by some root Certificate Authority. Add the root signing certificate to the Trusted Keys list. See *Managing Trusted Keys and Certificates* (on page 77) for more information.

15

Applying Key Not Found Settings to External Users

This section describes your options for dealing with users who are outside of the Self-Managing Security Architecture (SMSA) each PGP Universal Server creates and maintains. This chapter explains how Key Not Found mail policy settings appear to external users, and how external users interact with Smart Trailer and PGP Universal Web Messenger. See the chapter "Setting Mail Policy" for more information about working with these settings in mail policy.

This feature is an important part of creating mail policy, and is used by server and desktop email processes.

Overview

Your PGP Universal Server automatically creates and maintains an SMSA by monitoring authenticated users and their email traffic.

However, there are always email users who are outside the SMSA but to whom you still want to send protected email: for example, the law firm your company uses; email to and from the attorneys includes sensitive information and should probably be encrypted.

Policy options for users outside the SMSA are established on the Mail Policy page of the administrative interface. These options are controlled through the Key Not Found settings of the *Send (encrypted/signed)* action. See *Details on Actions* (on page 110) for more information.

You have a number of policy options you can establish for mail sent to recipients currently outside the SMSA (that is, users for whom the PGP Universal Server cannot find a trusted key). You can:

- bounce the message back to the sender.
- send the message unencrypted and signed, or unencrypted and unsigned.
- send the message through PDF Messenger, with or without Secure Reply.
- require a delivery receipt when recipients open a PDF Messenger message, through Certified Delivery.
- add a Smart Trailer.
- offer PGP Universal Web Messenger through Smart Trailer text.

All options are described in subsequent sections.

Bounce the Message

The message is returned to the sender, undelivered, because it could not be sent encrypted. This is the high-security approach; it *requires* encryption to a trusted key or the message is not sent.

If there was more than one recipient, and some messages could be sent encrypted but some could not, only the messages that could *not* be sent encrypted are bounced.

The bounced message appear to be from an account called “pgpuniversal-admin@manageddomain” (pgpuniversal-admin@example.com, for example). Unless you create it, this account does not actually exist on the mail server. If you think your users might respond to the bounce message (to ask *why* the message bounced, for example), you can create this account on the mail server.

PDF Messenger

If a PDF Messenger recipient does not have an existing PGP Universal Web Messenger account, the recipient receives a message generated by PGP Universal Server requesting that the recipient create a passphrase. After the recipient creates the passphrase, the PDF Messenger message is delivered.

When the recipient opens the PDF Messenger message, a password dialog box appears in Adobe Acrobat. The recipient types his Web Messenger passphrase, and the PDF opens.

Existing PGP Universal Web Messenger users who receive a PDF Messenger message for the first time receive a notification email requiring confirmation of the passphrase. PGP Universal Web Messenger user passphrases created before 2.7 are stored hashed, rather than encrypted to the Ignition Key. Confirming the passphrase allows it to be encrypted to the Ignition Key.

You can store copies of messages sent through PDF Messenger on the PGP Universal Server, and allow recipients to access them through PGP Universal Web Messenger. Messages read through PGP Universal Web Messenger are displayed in their original format, not converted to secured PDF format. From Consumer Policy, select the policy you want to change, choose PGP Universal Web Messenger and enable **Retain sent PDF Messenger messages on the PGP Universal Server and make them available to recipients through Web Messenger**.

Encrypted PDF files work best in Adobe Acrobat 7.0 or later. Attachments that do not have an extension on Adobe's list cannot be opened using Adobe Acrobat 8.0. Mac Preview does not support the secured PDF format.

This option is not available when message processing is on the client unless Out Of Mail Stream support (OOMS) is enabled on the **Messaging & Keys** tab of Consumer Policy.

PDF Messenger Secure Reply

PDF Messenger Secure Reply allows your external users to securely receive, reply, and forward encrypted emails. To use PDF Messenger Secure Reply, you must select the **Add Secure Reply** link in the **Send via PDF Messenger** action. For more information on actions, see *Details on Actions* (on page 110). On the **General** tab of the Web Messenger page, if you select **Retain sent PDF Messenger messages on the PGP Universal Server and make them available to recipients through Web Messenger**, you can set that the number of days after which the metadata for the Secure Reply link is deleted. The default is 90 days. For more information on additional Web Messenger settings, see PGP Universal Web Messenger Settings.

If the checkbox is selected, the Secure Reply action includes the original email text as any other email program does when you click **Reply**. Emails are forwarded and stored on the recipient's system, and there is no key management or public key infrastructure for external users. If external recipients are offline, they can still access and print the messages.

This option is not available when message processing is on the client unless Out Of Mail Stream support (OOMS) is enabled on the **Messaging & Keys** tab of Consumer Policy.

If you forward a certified delivery messages, unless you require a login, these messages can be read by new recipients. For more information on certified delivery, see *Certified Delivery with PDF Messenger* (on page 123).

You cannot add attachments with these file extensions:

- ZIP
- EXE
- BAT
- VBS
- DLL
- JS

Working with Passphrases

External recipients must remember their passphrases to read their encrypted PDF messages. If they change their passphrase, older PDF messages are encrypted to the previous passphrase. Messages received after the passphrase was changed are encrypted to the new passphrase. You can have one passphrase to access encrypted PDF messages and a different passphrase to use the Secure Reply link.

Note: If the external recipients forget their passphrase, they cannot open their encrypted PDF messages.

You cannot enforce the use of the Secure Reply link by a policy, only by the action of the external recipient.

They can do one of the following:

- Click on the link
- Click **Reply** in their email client
- Log in to Web Messenger to compose a new message

Certified Delivery with PDF Messenger

PDF Messenger with Certified Delivery creates and logs a delivery receipt when the recipient obtains the passphrase, or opens the message initially in Web Messenger.

Certified Delivery messages are converted to secured PDF format, and must be opened with a passphrase. The original message is converted to PDF in the same way as the regular PDF Messenger feature.

The recipient email contains two attachments: the message PDF and an HTML link called Read Me First.html. The recipient retrieves the PDF Messenger passphrase by clicking the readmefirst.html link.

The PGP Universal Server creates and logs the delivery receipt when the recipient obtains the passphrase (or accesses the message via Web Messenger). You can download all delivery receipt logs from the External Users page. To specify how long the PGP Universal Server stores delivery receipts, see *Configuring the PGP Universal Web Messenger Service* (on page 292).

There are two ways to generate a passphrase:

- **User authentication not required:** When the recipient clicks the `readmefirst.html` link, a web page appears with a randomly generated single-use passphrase. The user copies and pastes that passphrase into the PDF Messenger passphrase field to open the PDF. Each passphrase is used only once, and all previously used passphrases are stored. This secure method does not require the user to create a login credential.
- **User authentication required:** If you require login authentication, the recipient must create a PGP Universal Web Messenger passphrase and log in using it to obtain the single-use passphrase that opens the PDF Messenger message. When the recipient clicks the `readmefirst.html` link, a PGP Universal Web Messenger passphrase creation page appears. When the user creates a passphrase, a web page appears with a randomly generated single-use passphrase. The user copies and pastes that passphrase into the PDF Messenger passphrase field to open the PDF.

To require that certain external user groups use login authentication to open a Certified Delivery message, from Consumer Policy, select the policy you want to change, choose PGP Universal Web Messenger and enable **Require user authentication for Certified Delivery**.

This option is not available when message processing is on the client unless Out Of Mail Stream support (OOMS) is enabled on the **Messaging & Keys** tab of Consumer Policy.

Send Unencrypted

The message is sent to the recipient unencrypted. This is a low-security option. You can specify that the email be unsigned, or signed by the sender's key.

Smart Trailer

The message is sent *unencrypted* with a Smart Trailer added. The Smart Trailer is text that explains that the message would be encrypted if the recipient were a member of the SMSA.

This option is not available when message processing is on the client unless Out Of Mail Stream support (OOMS) is enabled on the **Messaging & Keys** tab of Consumer Policy.

The Smart Trailer also includes a link to a location on the PGP Universal Server where recipients can set a passphrase and choose how they would like to receive future messages from senders in the same domain. In other words, it gives them ways to become part of the SMSA.

When the recipient follows the link, a Security Confirmation page appears.

The user then receive another email with a new link. When the user follows the link, the Passphrase page appears.

The user types a passphrase that allow them to securely retrieve all future messages. Then the user clicks **Continue**.

The Future Message Delivery Options page appears.

The options on the Future Message Delivery Options page depend on the applicable mail policy. Possible choices are:

- **PGP Universal Web Messenger:** The recipient gets access to a Web browser-based email reader called PGP Universal Web Messenger mail. This is available only if PGP Universal Server is in the mailstream.

If the recipient chooses this option, they can also choose to have all outgoing messages they compose in PGP Universal Web Messenger saved to a “Sent Mail” folder.

- **PGP Universal Satellite:** The recipient downloads PGP Universal Satellite, becoming a part of the SMSA. If the recipient selects this option, they are prompted to download PGP Universal Satellite. For more information, see *PGP Universal Satellite* (on page 263).

If downloading PGP Universal Satellite is prohibited by policy, this option does not appear.

- **PGP Desktop or S/MIME:** If recipients are already PGP Desktop users or have X.509 certificates for S/MIME environments, they can provide their keys or certificates; future email messages to them are encrypted with the key or certificate they provide, making them part of the SMSA.

If they select this option, they are prompted to provide the public portion of their key or certificate in a file (.asc format for PGP keys, .pem or .crt formats for X.509 certificates, p7b or .p7c formats for PKCS #7, or .p12 or .pfx formats for PKCS #12 certificates) or they can copy and paste their PGP key.

Users providing a PKCS#12 certificate that has a passphrase need to type that passphrase in the **Passphrase** field.

Future email messages from the same domain are encrypted using their key or certificate.

External users who choose this option and provide their key can opt later to switch to receiving mail through PGP Universal Web Messenger. For more information, see *Changing User Delivery Method Preference* (on page 127).

After providing their PGP Desktop public key or S/MIME certificate, a page appears describing additional steps needed to use the PGP Desktop key or certificate to decrypt, verify, and encrypt messages:

If a PGP Desktop public key was provided, then they need to add this PGP Universal Server as a keyserver in PGP Desktop and download and import to their PGP Desktop keyring the Organization Key of the domain they are sending messages to and receiving messages from.

If an S/MIME certificate was provided, then they need to download the Organization Certificate and install it into their email client (Outlook or Outlook Express, for example) as a trusted root certificate.

- **PDF Messenger:** The recipient can choose to have all future email delivered as PDF Messenger messages. Plain text email is converted to PDF format and encrypted to the passphrase. The PDF is attached to a message generated by the PGP Universal Server. If the email already has a PDF attachment, the PDF is encrypted to the recipient's passphrase, and the message body is not converted. Recipients can use the PGP Universal Web Messenger interface to change their passphrase and view archived statements.
- **Regular Email:** The recipient can choose to receive all future email messages unencrypted from senders in the same domain.

If a user selects Regular Mail, it does not necessarily mean that the user receives unencrypted email. This option only allows users to express their preference to receive regular mail when possible. Mail policy can override this choice. For example, if the Key Not Found setting for a *Send (encrypted/signed)* action is PGP Universal Web Messenger, email to a recipient without suitable keys is delivered through PGP Universal Web Messenger, despite the user's delivery preference.

PGP Universal Web Messenger

PGP Universal Web Messenger mail gives recipients a way to securely read messages sent to them.

Note: For PGP Universal Web Messenger mail to work, the PGP Universal Server must be accessible from outside the network. One way to do this is to put the server in a DMZ. The PGP Universal Web Messenger port must be accessible from outside the network for external users to access the PGP Universal Web Messenger interface and the synchronization port for PGP Universal Satellite.

Instead of sending the original message to the recipient, PGP Universal Web Messenger leaves the message on the PGP Universal Server and sends the recipient a different message.

Note: Email messages sent to PGP Universal Web Messenger users must be smaller than 50MB. Attachments to email replies created in PGP Universal Web Messenger are limited to approximately 15MB per attachment. Also, users cannot send or receive any message that would put them over their message storage Quota.

The PGP Universal Server stores both mail received and mail sent by PGP Universal Web Messenger users. The user's Quota is the memory allotted for PGP Universal Web Messenger mail storage. You can specify how big the Quota is for each external user. For more information, see *External User Settings* (on page 254).

If you customized the PGP Universal Web Messenger user interface, the images of the interface shown might not match what your users see.

Subsequent email messages from the same domain contain a link to that message in PGP Universal Web Messenger mail. Following the link brings up the message. The Inbox button to the left of the message page provides access to their secure inbox. Buttons to the left of the messages let users access their inbox, compose new messages, and view sent messages (if policy allows sent messages to be saved). Icons across the top of the user interface enable users to access their settings (they can change their delivery options or their passphrase), view help, and log out.

The Inbox can be accessed at any time; the PGP Universal Web Messenger mail user simply points their Web browser to the URL provided in the first PGP Universal Web Messenger email, then types their passphrase when prompted.

PGP Universal Web Messenger allows its users to send reply email to any user in your managed domains, as well as to anyone outside the managed domains but originally carbon-copied in the message, but users cannot add new external recipients to the reply.

This option is not available when message processing is on the client unless Out Of Mail Stream support (OOMS) is enabled on the **Messaging & Keys** tab of Consumer Policy.

Changing Policy Settings

Changing your mail policy can change how current PGP Universal Web Messenger users receive future messages. See the chapter "Setting Mail Policy" for more information.

If your mail policy is currently set to allow PGP Universal Web Messenger accounts, changing that setting affects PGP Universal Web Messenger users differently depending on how you change the setting.

- **Change your policy to Smart Trailer without PGP Universal Web Messenger.** Current PGP Universal Web Messenger users can remain so. They can still read all their old messages in PGP Universal Web Messenger and all their new messages are also presented through PGP Universal Web Messenger, in spite of the policy change. As long as the user has even one PGP Universal Web Messenger message, the user still sees the PGP Universal Web Messenger option the first time they log in, even if they do not log in for the first time until after the policy changes. Users who do not already have any PGP Universal Web Messenger messages are treated according to policy, and are not be offered PGP Universal Web Messenger as an option.
- **Change your policy from PGP Universal Web Messenger to Bounce/Send clear/PDF Messenger.** Treatment of all new messages follow that policy. Current PGP Universal Web Messenger users can still view their old messages, but no new ones are added to any user's account.

Changing User Delivery Method Preference

External PGP Desktop users who choose to provide their key can opt later to switch to receiving mail through PGP Universal Web Messenger.

- 1 The user must log in to PGP Universal Web Messenger using their email address and passphrase.
- 2 On the Secure Messaging Settings page, the user should change how to receive future email by selecting **Regular Mail**.
- 3 The user should log out.
The next time an internal user sends email to this external user, the external user receives another PGP Universal Web Messenger invitation.
- 4 The user should click the link in the email and log in to PGP Universal Web Messenger using their email and passphrase.
- 5 On the Secure Messaging Settings page, the user should select PGP Universal Web Messenger.

All future email from internal users are delivered to this external user through PGP Universal Web Messenger.

16

Using Dictionaries with Policy

This section describes dictionaries, which are lists of matchable terms that allow the PGP Universal Server to process messages according to mail policy rules. The Dictionaries page is under the Mail tab.

This feature is available with PGP Universal Gateway Email and PGP Desktop Email.

Overview

Dictionaries are lists of terms to be matched. Dictionaries work with mail policy to allow you to define content lists that can trigger rules or fulfill the conditions of a rule to trigger actions. For example, Dictionaries can contain addresses you want excluded from processing, key words such as “confidential,” or user names for internal users whose messages need special handling.

A policy rule can have a dictionary associated with it as a condition. If a message meets the condition, the PGP Universal Server processes the message according to the rule’s action. For example, one of the default Outbound rules is called Excluded Signed. The condition for that rule is “If any of the following are true: Recipient address is in dictionary *Excluded Addresses: Sign*.” This means the rule applies to any message in which the recipient address matches a term in the dictionary. If that condition is met, the action for the rule is triggered. The action is to sign and send the message with no further processing.

For more information on mail policy conditions and actions, see the chapter “Setting Mail Policy”.

Dictionaries are also used to match consumers to the correct group. Create a dictionary containing a terms to match; for example, a list of user names, then create a group with a membership made up of consumers with names in that dictionary. For more information, see *Sorting Consumers into Groups* (on page 169).

The Dictionaries page lets you add and edit Dictionaries. There are 4 default dictionaries, and you can also create your own.

There are two types of dictionaries:

- **Static** dictionaries are editable lists of literal or pattern strings. All except one of the dictionaries are static.
- **Dynamic** dictionaries are not editable but are maintained by the PGP Universal Server. Information in the dictionary comes from data elsewhere on the PGP Universal Server rather than added directly to the dictionary by hand. There is one dynamic dictionary, the Managed Domains dictionary.

There are two types of entries in a dictionary:

- **Literals** are dictionary entries that can only match against the exact characters in the entry. There is one and only one possible match. For example, if the dictionary entry is “[jsmith@example.com](#)”, then a message matches the entry only if it contains “[jsmith@example.com](#)”. Similar strings, for example, “[smith@example.com](#)”, do not match.

- **Patterns** are dictionary entries that match against characters in messages that satisfy the pattern. For example, the pattern "[j.*@example.com](#)" requires a match for the letter "j", then any number of other characters, then the sequence "@example.com", it matches "[jsmith@example.com](#)" and "[jgreen@example.com](#)". Use regular expression syntax to create patterns. For more information on using regular expressions in building mail policy, see the PGP Universal Server online help.

Default Dictionaries

There are four default dictionaries that exist on the server as installed. You cannot delete these dictionaries.

- **Excluded Addresses: Sign:** The addresses in this dictionary do not receive normally encrypted messages; messages to these addresses are signed. These addresses are generally mailing lists. For more information, see *Editing Default Dictionaries* (on page 131).

The list of "sign" default excluded addresses includes:

- [.*-announce@.*](#)
- [.*-bugs@.*](#)
- [.*-devel@.*](#)
- [.*-digest@.*](#)
- [.*-docs@.*](#)
- [.*-help@.*](#)
- [.*-list@.*](#)
- [.*-news@.*](#)
- [.*-users@.*](#)

This dictionary corresponds to the default Outbound rule *Excluded Signed* in versions of PGP Universal Server before 3.2.1. The rule applies to any message in which the recipient address matches a term in this dictionary. If that condition is met, the action for the rule is triggered. The action is send the message signed but not encrypted. In PGP Universal Server 3.2.1 and newer, this rule is no longer required because the default mail policy behavior is to send non-sensitive messages unencrypted.

- **Excluded Addresses: Do Not Sign:** The addresses in this dictionary receive unsigned and unencrypted email. These addresses are generally mailing lists. For more information, see *Editing Default Dictionaries* (on page 131).

PGP Universal Server includes default exclusion rules that handle email addresses common to mailing lists. You do not need to add these to the Excluded Email Addresses list.

The list of "do not sign" default excluded addresses includes:

- [.*-bounces@.*](#)
- [.*-report@.*](#)
- [.*-request@.*](#)
- [.*-subscribe@.*](#)

- [*-unsubscribe@*](#)

This dictionary corresponds to the default Outbound rule *Excluded Unsigned* in versions of PGP Universal Server before 3.2.1. The rule applies to any message in which the recipient address matches a term in this dictionary. If that condition is met, the action for the rule is triggered. The action is to send the message unsigned and not encrypted. In PGP Universal Server 3.2.1 and newer, this rule is no longer required because the default mail policy behavior is to send non-sensitive messages unencrypted.

- **Excluded Addresses: Pending:** If your PGP Universal Server proxies email, possible excluded addresses are detected and added to this dictionary automatically. You can approve addresses on this list to add them to either Excluded Addresses: Sign or Excluded Addresses: Do Not Sign. For more information, see *Approving Pending Excluded Addresses* (on page 132).

While in Learn Mode, the PGP Universal Server will automatically detect and add to the Excluded Email Addresses dictionary those mailing lists that use standards-based header identification.

When Learn Mode is turned off, the PGP Universal Server still automatically detects mailing lists, but it adds them to the **Excluded Addresses: Pending** dictionary. The PGP Universal Server administrator must approve the mailing lists before messages to it are excluded.

The PGP Universal Server detects mailing lists per RFC 2919, "List-Id: A Structured Field and Namespace for the Identification of Mailing Lists," as well as by using default exclusion rules.

If you are using the Directory Synchronization feature, mailing lists found in the directory are automatically added without requiring approval when using directories that support proper identification of mailing lists, such as Active Directory with Exchange Server.

If a mailing list is not in the **Excluded Addresses: Pending** dictionary, it possibly was not detected or did not use standards-based header identification.

If a mailing list is not automatically detected and added to the **Excluded Addresses: Pending** dictionary, you can easily add it directly to either of the Excluded Addresses dictionaries manually. For more information, see *Editing Default Dictionaries* (on page 131).

- **Managed Domains:** You cannot edit this dictionary from the Dictionaries page. If you want to add or delete a managed domain, use the **Consumers > Managed Domains** tab. For more information on adding Managed Domains, see *Managed Domains* (on page 39).

The dynamic managed domains dictionary automatically includes subdomains. To exclude or include specific subdomains in a rule, create a dictionary listing those domains and reference it in the rule's conditions.

Editing Default Dictionaries

You can edit, but not delete, a default dictionary.

Editing Excluded Addresses Dictionaries

- 1 From the **Mail > Dictionaries** tab, click **Excluded Addresses: Sign** or **Excluded Addresses: Do Not Sign**.

The View Dictionary page appears.

- 2 To delete terms from the dictionary, click the icon in the Delete column of the term you want to delete, or select check boxes for multiple exclusions, and choose **Delete Selected** from the **Options** list.

A confirmation dialog box appears.

- 3 Click **OK**.
- 4 To add to the contents of the dictionary, click **Add Exclusions**.

The Edit Dictionary dialog box appears.

- 5 Select from the menu whether you are adding plain text terms, an XML file, or a ZIP file.
- 6 Type in or paste a list of terms, each separated on its own line, or choose **Import File** and select a file to import.
- 7 Specify whether the terms are **Patterns** or **Literals**.
- 8 Choose whether to append the new terms to the current contents of the dictionary or to replace the existing terms with the new terms.
- 9 Click **Import**.

Approving Pending Excluded Addresses

When you approve a pending excluded address, it moves to the Excluded Addresses: Sign dictionary.

- 1 From the **Mail > Dictionaries** tab, click the **Excluded Addresses: Pending** dictionary.

The View Dictionary page appears.

- 2 To approve excluded addresses, select the check boxes of the addresses you want to approve, and choose **Approve Selected** from the **Options** menu.

A confirmation dialog box appears.

- 3 Click **OK**.

User-Defined Dictionaries

You can add dictionaries to use with specific policy rules.

Adding a User-Defined Dictionary

To add a user-defined dictionary

- 1 At the bottom of the Dictionaries page, click **Add Dictionary**.

The Add Dictionary dialog box appears.

- 2 Select from the list whether you are adding plain text terms, an XML file, or a ZIP file.
- 3 Add a Dictionary Name and Description. For example, you can add a dictionary named Managers and the description might be “Messages from these users must always be encrypted and signed.”
- 4 Type in or paste a list of terms, each separated on its own line, or choose **Import Text File** and select a file to import.
- 5 Specify whether the terms are Patterns or Literals.
- 6 Click **Import**.

Editing a User-Defined Dictionary

To edit a user-defined dictionary

- 1 Click the name of the domain in the Name column.
The View Dictionary page appears.
- 2 To remove terms from the dictionary, click the icon in the Delete column of the term you want to delete.
A confirmation dialog box appears.
- 3 Click **OK**.
- 4 Click **Add Terms** to add to the contents of the dictionary.
The Edit Dictionary dialog box appears.
- 5 Select from the drop-down menu whether you are adding plain text terms, and XML file, or a ZIP file.
- 6 Type in or paste a list of terms, each separated on its own line, or choose **Import Text File** and select a file to import.
- 7 Specify whether the terms are **Patterns** or **Literals**.
- 8 Choose whether to append the new terms to the current contents of the dictionary or to replace the existing terms with the new terms.
- 9 Click **Import**.
- 10 Click the **Dictionary Settings** button to change the name or description of the dictionary.

Caution: If you change the name of a dictionary, any rule that refers to the original dictionary name become invalid.

The Dictionary Settings dialog box appears.

- 11 Choose the appropriate setting, then click **Save**.

Deleting a Dictionary

Use this procedure to delete dictionaries. You cannot delete the default dictionaries.

Caution: If you do not want a rule to use a particular dictionary, you can simply remove it from that rule's conditions. If you delete a dictionary from the Dictionaries page, it is no longer available for any rule in your mail policy and can make your rules invalid. Any consumer group using the deleted dictionary to match consumers to the group will no longer be able to use the dictionary to determine group membership.

To delete a dictionary

- 1 Click the icon in the Delete column of the dictionary you want to delete.
A confirmation dialog box appears.
- 2 Click **OK**.
The dictionary you specified is deleted.

Exporting a Dictionary

To export a dictionary

- 1 Select the check box at the far end of the row for each dictionary you want to export.
- 2 From the **Options** menu, select **Export Selected**.
The dictionary you chose is exported to your desktop as an XML file. If you exported more than one dictionary, the XML files are inside a ZIP file called dictionaries.zip.

Searching the Dictionaries

You can search dictionaries in 2 different ways.

- **Search for exclusion/term** allows you to find a term in the dictionary. This substring search returns entries that exactly match the characters you type into the search box. For example, if you have dictionary entries "[jsmith@example.com](#)" (literal) and "[j.*@example.com](#)" (pattern), and you search for "@example", both entries would be returned.

- **Evaluate expression** allows you to determine whether any term in the dictionary matches a certain string. You can use this as a trial of the dictionary as it would act in a rule condition. Type a test string that you know should match a dictionary entry to see if the string would trigger the action in the rule. The results of the evaluation are the matches for the test string. For example, if you have dictionary entries "[jsmith@example.com](#)" (literal) and "[j.*@example.com](#)" (pattern), and you evaluate the expression "jsmith", neither entry is returned. If you evaluate "[jsmith@example.com](#)", both entries are returned. If you evaluate the expression "[jgreen@example.com](#)", only the pattern "[j.*@example.com](#)" is returned.

To search dictionaries

- 1 From the **Mail > Dictionaries** page, click the name of the dictionary you want to search.
- 2 Select **Search for exclusion/Search for term** or **Evaluate expression** from the drop-down menu.
- 3 Type the term you want to find or evaluate.
- 4 Click **Go**.

A list of terms that fit the criteria you specified appears.

To clear the search, click the cancel button to the right of the search field.

17

Keyservers, SMTP Archive Servers, and Mail Policy

This section describes how to add keyserver and SMTP archive server information to the PGP Universal Server. Policy rules can then refer to those servers to enforce your mail policy.

These features are available with PGP Universal Gateway Email and PGP Desktop Email.

Overview

PGP Universal Server allows you to add and manage information about servers outside your network. There are two types of external servers you can manage in this way; Keyservers and SMTP servers used for archiving email. Policy rules can specify the keyservers listed on this tab for recipient key searches, as required by mail policy. The Archive servers you add are used by policy rules to archive messages, as required by mail policy.

Keyservers can be added from the **Keys > Keyservers** tab.

SMTP archive servers can be added from the **Mail > Archive Servers** tab.

Keyservers

Mail policy contains rules that require a message be signed or encrypted to a recipient's key. The PGP Universal Server always looks in its own databases for keys in the Internal Users, External Users, and Key Cache lists. If the PGP Universal Server does not have a copy of a particular key, the policy can specify searching external sources for the key. The Keyservers page (accessed from the **Keys > Keyservers** tab) allows you to add and edit information for those external keyservers.

For information on using keyservers with policy rules, see the chapter "Setting Mail Policy."

The keyservers on the Keyservers page are divided into two groups:

- All keyservers available to be searched for recipient keys are listed under All Keyservers. You can use the Key Search tab of the Add Rule or Edit Rule page to select which keyservers a mail policy rule searches.
- Keyservers in the default set are referred to when legacy client software verifies signatures. If PGP Desktop or PGP Universal Satellite requests a key, the PGP Universal Server searches the default keyservers for the correct key, based on the key ID in the email. Legacy client software includes PGP Desktop 9.0.x and PGP Universal Satellite 2.0.x.

You can specify the order in which default keyservers are searched by numbering the keyservers in the order you want them searched.

The PGP Universal Server has one pre-selected Default Keyserver, the PGP Global Directory at `ldap://keyserver.pgp.com:389`. The PGP Global Directory is a free, publicly available keyserver hosted by PGP Corporation that lets PGP users find the public keys of other PGP users with whom they want to exchange secure messages. It provides quick and easy access to the universe of PGP keys. If your policy requires it, you can keep the PGP Global Directory from being searched for keys by removing it from the policy rules' Key Lookup lists. For more information on Key Lookup, see the chapter "Setting Mail Policy."

The PGP Universal Server has one other preinstalled keyserver. This keyserver's hostname appears on the Keyservers page as `keys.$ADDRESS_DOMAIN`. If you add this keyserver to the Key Search tab for a rule, PGP Universal Server searches for a keyserver at the domain in the recipient's email. For example, if the rule states that a message sent to jsmith@company.com must be encrypted, and the recipient's key is not already stored on the PGP Universal Server, the PGP Universal Server can search for the key in a keyserver called `keys.company.com`. Keys found in this type of keyserver are used for encrypting messages.

You can add more searchable keysevers to the Keyservers page. Keysevers can be PGP keysevers or X.509 directories.

You can also add new locations to search for keys directly from a mail policy rule's Key Search tab. Servers entered this way automatically appear on the **Keys > Keysevers** page.

Note: PGP Universal Server does not support HTTP keysevers. Key queries to HTTP keysevers are unsuccessful.

Adding or Editing a Keyserver

If you know of a keyserver or directory outside your own network that can contain keys belonging to people receiving mail from inside your network, you can add that keyserver to the list of searchable keysevers. The PGP Universal Server searches the specified keyserver for recipient keys or certificates, if mail policy rules containing that keyserver apply to the message being sent.

This procedure covers adding and editing keysevers.

To add or edit a keyserver

- 1 Click **Add Keyserver** on the Keyservers page or click the name of the keyserver you want to edit.
The Add (or Edit) Keyserver dialog box appears.
- 2 If you choose, type a description of the keyserver into the Description field. The description appears in the Key Search area of rules in your mail policy, to help you choose keysevers for each mail policy rule.

Note: External applications that call into the PGP Universal Server use the keyserver description (as defined in the Description field) to identify the keysevers to use for external key searches. As a result, changing the description of an existing keyserver may prevent those applications from finding keys. Applications that call into the PGP Universal Server may include PGP Command Line and custom applications that use the PGP Universal Services Protocol API.

- 3 Select the keyserver type and method of access from the Type drop-down menu:

- **PGP Keyserver LDAP:** Select this option to connect to a PGP Keyserver via LDAP. The default port is 389.
 - **PGP Keyserver LDAPS:** Select this option to connect to a PGP Keyserver via LDAPS (LDAP over SSL). The default port is 636.
 - **PGP Universal Services Protocol:** Select this to connect to a keyserver using the USP protocol. The default port is 80.
 - **PGP Universal Services Protocol (SSL):** Select this to connect to a keyserver using the USP protocol via SSL. The default port is 443.
 - **X.509 Directory LDAP:** Select this option to connect to an LDAP directory to search for X.509 certificates. The default port is 389.
 - **X.509 Directory LDAPS:** Select this option to connect to an LDAPS directory to search for X.509 certificates. The default port is 636.
 - **PGP Global Directory LDAP:** Select this option to connect to the PGP Global Directory via LDAP. The default port is 389. The host is ldap://keyserver.pgp.com.
 - **PGP Global Directory LDAPS:** Select this option to connect to the PGP Global Directory via LDAPS. The default port is 636. The host is ldaps://keyserver.pgp.com.
- 4 Type a hostname or IP address in the **Hostname** field.
 - 5 If you want to change the default port, type the desired port number in the **Port** field.
 - 6 Type a base distinguished name (base DN) in the **Base DN** field, if appropriate.
 - 7 If you selected a keyserver that uses the LDAPS protocol, you can specify a client certificate to be used to authenticate when the PGP Universal Server queries the directory. Click the **Add** icon next to **Client Certificate** to import a certificate or generate a CSR or self-signed certificate using the New Keyserver Client Certificate dialog box.
 - a** To add an existing certificate, click **Import**, select the certificate file or paste in the certificate block, and type an optional passphrase.
 - b** To generate a self-signed certificate or CSR, type the appropriate information into the New Keyserver Client Certificate dialog box and click either **Generate Self-signed** or **Generate CSR**.
 - 8 Select **Trust keys from this keyserver implicitly** to automatically trust all keys from this keyserver.
 - 9 Select **Include this keyserver in the default set** to add the keyserver to the default set for client software signature verification requests.
 - 10 On the Add Keyserver dialog box, click **Save**.

The new keyserver is added to the searchable keyserver list on the Keyserver page.

Deleting a Keyserver

Caution: If you do not want a rule to search a particular keyserver, you can simply remove it from that rule's Key Lookup. If you delete a keyserver from the Servers page, it is no longer available for any rule in your mail policy and can make your rules invalid.

To delete a keyserver

- 1 Click the **Delete** icon to the right of the name of the keyserver you want to delete.
A confirmation dialog box appears.
- 2 Click **OK**.
The keyserver you specified is deleted.

SMTP Servers

Archive Servers are used by policy rules to archive messages, as required by mail policy. When you create a rule with the action *Send copy to alternate archive server*, the PGP Universal Server sends a copy of the message to the archive server specified in the rule. See the chapter *Setting Mail Policy* (on page 85) for more information on how archive servers work with policy rules.

Adding or Editing an Archive Server

To add or edit an archive server

- 1 Go to the **Mail > Archive Servers** tab.
- 2 Click **Add Archive Server...** on the Archive Servers page or click the hostname of the archive server you want to edit. The Add Archive Server dialog box appears.
- 3 Type a hostname or IP address in the **Hostname** field.
- 4 If you want to change the default port, type the desired port number in the **Port** field.
- 5 Select the security type from the **Security** menu:
 - **STARTTLS Attempt:** Allows the security of the connection to be upgraded to TLS via negotiation when communications begin. The SMTP server must support STARTTLS for the upgrade to occur.
 - **STARTTLS Disable:** STARTTLS is not allowed for this connection.
 - **STARTTLS Require:** Requires that the connection be secured by TLS. Only select this option if you are confident that the SMTP server supports upgrading the security to STARTTLS.
 - **SSL:** Uses SSL to protect the connection between the archive server and the PGP Universal Server.

- 6 Type a username into the **Username** field if you chose a secure SMTP connection.
- 7 Type a passphrase into the **Passphrase** field for the secure SMTP connection.
- 8 On the Add Archive Server dialog box, click **Save**.
The Archive Server page reappears with the new server entry added.

Deleting an Archive Server

Caution: If you do not want a rule to archive messages to an archive server, you can simply remove the server from the rule. If you delete a server from the Archive Servers page, it is no longer available for any rule in your mail policy and can make your rules invalid.

To delete an archive server

- 1 Click the **Delete** icon to the right of the name of the archive server you want to delete.
A confirmation dialog box appears.
- 2 Click **OK**.
The archive server you specified is deleted.

18

Managing Keys in the Key Cache

This section describes the key cache, which stores public keys on the PGP Universal Server.

This feature is available with PGP Universal Gateway Email and PGP Desktop Email.

Overview

Public keys for remote users are automatically cached on the PGP Universal Server, and can be viewed on the **Keys > Key Cache** page. Whenever the PGP Universal Server can harvest a key from the mailflow or finds a recipient key on an external keyserver, the key is stored in the key cache. As long as the key is in the key cache, it can be used to encrypt future email, without requiring a key search.

Keys found on external keyservers stay in the cache for a time period you specify. After the specified time period, the keys are purged. Keys found in the mailflow automatically time out after 6 months.

If you have clustered PGP Universal Servers, there are duplicate keys in the cache, because keys cached from the mailflow are replicated across the cluster and the same key might already be cached on more than one cluster member. PGP Universal Server does not share keys found on external keyservers between cluster members.

Bound PGP Desktop installations harvest S/MIME certificates from messages and send those certificates, and all certificates in the chain, to the PGP Universal Server key cache.

Changing Cached Key Timeout

To change the cache settings

- 1 On the **Keys > Key Cache** page, click the **Cache Settings** button.
The Cache Settings dialog box appears.
- 2 Type the desired number in the **Public key cache timeout** field, then select **Hours** or **Days**, as appropriate.
- 3 Click **Save** to save changes to the scheduled cache timeout period.
The Key Cache page reappears.

Purging Keys from the Cache

Purging the cache is useful, for instance, if you are aware that a key has been updated and you want to force the PGP Universal Server to retrieve the latest copy before the cache expires.

To purge keys from the cache

- 1 Do one of the following:
 - To purge a single key manually, click the purge icon next to the key you want removed.
 - To purge multiple public keys and certificates currently in the cache, select the check box at the far right end of the row of each of the keys you want to purge.
- 2 Select **Purge Selected** from the **Options** menu or select **Purge All** to purge all the keys in the cache.

A confirmation dialog box appears.
- 3 Click **OK**.

Trusting Cached Keys

To mark as trusted the public keys and certificates currently in the cache

- 1 Select the check box at the far right end of the row of each of the keys you trust.
- 2 Select **Trust Selected** from the **Options** menu.
- 3 The newly trusted key is added to the list of external users on the **Users > External Users** page.

Viewing Cached Keys

To view information about each key in the cache, and either purge the key or mark it trusted

- 1 From the **Keys > Key Cache** page, click the ID of the key you want.

The Key Information dialog box appears. The dialog box shows the Key ID, the User ID, when the key was created, when the key expires, when the key was cached, where the key was found (on a keyserver or in the mailflow), and when the key will be purged, as well as a list of email addresses associated with that key.
- 2 Click the **Trust Key** button to trust this key. The key is added to the list of external users.
- 3 Click the **Purge Key Now** button to purge this key from the cache.
- 4 Click **OK** to save changes and close the dialog box.

Searching the Key Cache

To find a cached key using a simple search, enter the criteria for which you want to search, and click the **Search** button. A list of users that fit the criteria you specified appears.

To search using advanced criteria

- 1 On the Key Cache page, click the **Advanced** icon.

The User Search dialog box appears.

- 2 Specify your criteria:

- In the drop-down menu on the left, select search criteria from: **Key ID**, **Primary Email**, **Key Cached**, or **Source**.
- In the middle drop-down menu, select how to limit the search, for example: **contains**, **does not contain**, **is on**, **is before**.
- In the text box on the right, enter or select the criteria you want to search for.
- If you want to use more search criteria, click the plus sign icon and enter the appropriate criteria. Returned results match all the search criteria you enter.

- 3 Click **Search**.

A list of keys that fit the criteria you specified appears.

To clear the search, click the cancel button to the left of the search field.

19

Configuring Mail Proxies

This section describes the mail proxies that a PGP Universal Server uses to determine how to handle incoming and outgoing mail traffic.

This feature is available with PGP Universal Gateway Email.

Note: You must be using a PGP Universal Gateway Email license, and the **Enable Mail Proxies** check box on the System > General Settings page must be checked, or you cannot use the Mail Proxies feature on the administrative interface. If your license has not been typed, server-side mail proxy functionality is disabled. You cannot add or edit proxies. If you upgraded from a previous version of PGP Universal Server and your new license does not include PGP Universal Gateway Email, your mail is no longer being proxied.

Overview

Mail proxies control how your PGP Universal Server handles the email traffic in your environment: where it comes into the PGP Universal Server, how the server knows where the traffic came from, and where it is going, so that it can be processed correctly.

PGP Universal Server accepts up to 30 proxy connections per second.

The Mail Proxies page lets you create new POP, IMAP, and SMTP proxies, and edit existing proxies to match your security requirements. You also have control over Learn Mode.

PGP Universal Server and Mail Proxies

A PGP Universal Server provides security for email messaging by inserting itself into the flow of email traffic in your network, intercepting, or proxying, that traffic, and processing it (encrypt, sign, decrypt, verify) based on the applicable policies.

The chapter "Setting Mail Policy" discussed how email is processed and protected by PGP Universal Server. This chapter focuses on correctly setting up how your PGP Universal Server proxies email traffic in your network. A PGP Universal Server cannot protect your email messages unless proxying is set up correctly.

Proxying means "to act on behalf of." The PGP Universal Server intercepts email traffic before it gets to the intended destination, accepting the traffic on behalf of the intended destination for a brief period while it processes it (based on applicable mail policy), then forwarding it onto the intended destination when it is done. Connections are proxied in real time, meaning PGP Universal Server does not typically take possession of messages for any longer than necessary to apply policies.

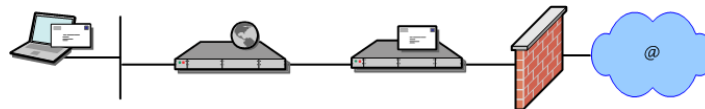
An example of how this works in a real network would be using PGP Universal Server in an *internal placement*. The mail server supports the POP protocol, which email users use to retrieve their email messages from the mail server. Before the PGP Universal Server was installed in an internal placement, email users retrieved their email, using POP, by connecting directly from their email client to the mail server. Now that there is a PGP Universal Server in an internal placement, when email users want to retrieve their email using POP, they should connect from their mail client directly to the PGP Universal Server. The PGP Universal Server then creates its own connection directly to the mail server, and proxies the POP request between the two connections. While doing this, the PGP Universal Server processes the mail according to policy.

At PGP Universal Server installation, the Setup Assistant requires you to specify whether you want an *internal placement* or a *gateway placement*. The Setup Assistant combines this information with the information you provide about your network and your mail server, and the Setup Assistant configures your mail proxies for you.

Mail Proxies in an Internal Placement

For an *internal placement*, the Setup Assistant creates three mail proxies: one POP and one IMAP (the protocols used to retrieve messages from a mail server) and one SMTP (a protocol for sending mail messages). Because the POP and IMAP proxies are both used for retrieving mail, they are referred to together as POP/IMAP throughout the documentation.

For example, a simplified look at the configuration:



- | | |
|---|----------------------|
| 1 | Email users |
| 2 | PGP Universal Server |
| 3 | Mail server |

The POP/IMAP proxy listens for incoming mail traffic on ports 110 and 143, respectively, on a virtual interface configured on the PGP Universal Server; this interface/port combination is called the *local connector*. The connection between the user trying to retrieve their email and the local connector can optionally be secured and/or restricted by the connecting IP address, if desired. At least one local connector is required for a mail proxy; however, you can have as many as you want, as long as they use different interface/port combinations.

The POP/IMAP proxy also has a *proxy peer*—the device to which the PGP Universal Server sends the email traffic after it has processed it. The proxy peer for the POP/IMAP proxy is the mail server from which the email users are retrieving their email messages.

The initial SMTP proxy created by the Setup Assistant is an *Outbound* type (SMTP proxies can be *Outbound* only, *Inbound* only, or *Unified*, which combines the settings for Inbound and Outbound into a single proxy); Outbound means the email traffic originates from the local network (and often heads out to the Internet).

The Outbound SMTP proxy also has one or more local connectors, the interface/port combination on which the PGP Universal Server listens for and accepts email traffic. As with the POP/IMAP proxy, the local connectors can optionally use secured connections and/or restrict access by IP address.

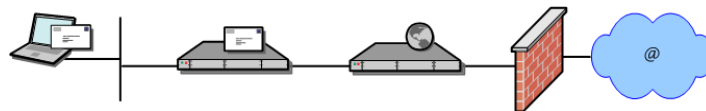
The Outbound SMTP proxy also has a proxy peer, the device to which outbound email traffic is sent after processing by the PGP Universal Server. By default, this is the mail server that outgoing mail messages would have been sent to if the PGP Universal Server had not been inserted into the flow of email traffic; it is called the *recipient mail server*.

To summarize, when you use the Setup Assistant to configure a PGP Universal Server in an *internal placement* (between your email users and their local mail server), the Setup Assistant configures the PGP Universal Server with a POP proxy and an IMAP proxy to process email messages the local email users are retrieving and an Outbound SMTP proxy for messages the local email users are sending.

Mail Proxies in a Gateway Placement

When you use the Setup Assistant to configure a PGP Universal Server in a *gateway placement* (the PGP Universal Server is between your network's outward-facing mail server and the Internet), the Setup Assistant creates the proxies differently. In a gateway placement, the Setup Assistant creates a single, *Unified SMTP proxy*.

For example, a simplified look at the configuration:



- 1 Email users

- 2 Mail server

- 3 PGP Universal Server

The default *local connector*, the interface/port combination on which PGP Universal Server listens for email traffic, is interface 1 and port 25. To enhance security, add a second local connector that uses port 465 (SMTPS) with SSL security, for example. And you can also restrict access by IP address, as is possible for any local connector. Whichever combinations of local connectors you use, these local connectors are where email traffic is coming in, whether inbound from the Internet or outbound from your network's outward-facing mail server.

Because this is the *Unified SMTP proxy*, and thus handles both incoming mail traffic from the Internet and outgoing mail traffic from your network's outward-facing mail server, the Unified SMTP proxy has **two proxy peers**, two destinations to which email traffic is sent. Which one is used depends on where each connection is coming from.

To deal with two destinations, the proxy peer for the Unified SMTP proxy has two sections: *Outbound Mail* and *Inbound Mail*. The Outbound Mail section handles mail traffic coming from your outward-facing mail server on its way to the Internet then to its destination. The Inbound Mail section handles mail traffic coming in from the Internet on its way to your outward-facing mail server.

The *Outbound Mail* section lists *Designated Source IPs*. If the PGP Universal Server receives a connection from an IP address on this Designated Source IPs list, it knows that the email traffic is from your outward-facing mail server(s) on its way to the Internet and processes it accordingly.

The *Outbound* Mail section of the Unified SMTP proxy also lets you choose between sending outgoing email traffic that has been processed by the PGP Universal Server directly to the recipient mail server (the default) or to a different device (a SMTP relay) that you specify by hostname and port. You can also specify security settings for the connection to this device.

The *Inbound* Mail section of the Unified SMTP proxy handles email traffic coming in from the Internet. Because it is listening on the same local connector as the Outbound Mail section, how does the Inbound Mail section know what is inbound mail traffic and what is not? The **opposite** way the Outbound section does: any connection from an IP address that *does not* appear in the *Designated Source IPs* list is considered Inbound mail from the Internet and is processed accordingly.

The *Inbound* Mail section of the Unified SMTP proxy includes one mailserver field; this is where you specify the connection details for your outward-facing mail server. The PGP Universal Server then sends inbound mail traffic there as it proxies it. You specify the host, port, and type of security for the connection.

Warning: In almost all cases, one of the IP addresses in the *Designated Source IPs* listed in the *Outbound* Mail section should be the IP address of the mailserver host configured in the *Inbound* Mail section. In both cases, this is your network's outward-facing mail server. Typical organizations that have only one mail server only have one entry on the *Designated Source IPs* list, and this entry is also the same mail server the *Inbound* mail traffic is going to. This is how the Setup Assistant initially configures the Unified SMTP proxy (note these both refer to the same mail server; one referenced by IP address, the other by hostname).

To summarize, when you use the Setup Assistant to configure a PGP Universal Server in *gateway placement* (between the outward-facing mail server and the Internet), the Setup Assistant creates and configures one *Unified* SMTP proxy that proxies both inbound and outbound mail traffic between your mail server and the Internet.

Changes in Proxy Settings from PGP Universal Server 2.0 to 2.5 and later

Some of the settings that in previous versions of PGP Universal Server were controlled through the Mail Proxies page are now managed on the Mail Policy page. You can now manage the following settings through mail policy rules:

- Decrypt Upon Receipt
- Apply Mail Policy for Authenticated Connections
- Always Encrypt Internal Mail

When you migrate from PGP Universal Server 2.0 to version 2.5 and later, your previous settings are also automatically migrated. Policy rules reflect your previous choices. However, if you had multiple SMTP proxies, or if you have clustered PGP Universal Servers, you need to recreate some of your settings manually.

To learn more about how your previous settings are now reflected in mail policy, or to learn how to recreate your settings if necessary, see the *PGP Universal Server Upgrade Guide*. For more information, see the chapter "Setting Mail Policy."

Mail Proxies Page

The Mail Proxies page:

- Displays the proxies that are configured on this PGP Universal Server, lets you manage existing proxies, and lets you create new ones.
- Lets you control the mail processing settings.

The Mail Proxies page lists the proxies currently configured on a PGP Universal Server. It shows the protocol of the proxy, the assigned interface, the local port, and the remote host and port; it also lets you delete proxies.

Depending on your environment, the proxies created for a PGP Universal Server using the Setup Assistant might be adequate. On the other hand, you might need to add or edit a proxy on the Mail Proxies page.

Creating New or Editing Existing Proxies

You can add or edit three types of proxies:

- **POP.** The POP protocol is available only for internal placements. The POP protocol is used by email clients to retrieve email messages from a mail server.
- **IMAP.** The IMAP protocol is also available only for internal placements. The IMAP protocol is also used by email clients to retrieve email messages from a mail server.
- **SMTP.** The SMTP protocol is available for internal or gateway placements. With an internal placement, you can only create or edit an Outbound SMTP proxy. With an gateway placement, you can create or edit an Outbound, Inbound, or Unified SMTP Proxy.

Creating or Editing a POP/IMAP Proxy

The POP and IMAP proxies support email traffic where your internal email users are retrieving their messages from their local mail server. Because the PGP Universal Server is sitting between the email users and their mail servers, a POP and/or IMAP proxy must exist to proxy that traffic.

Note: POP and IMAP proxies are only needed if your PGP Universal Server is placed internally, between your email users and their local mail server. They are not needed if your PGP Universal Server is in a gateway placement.

This procedure applies to both POP and IMAP proxies. Differences are noted in the text.

To create or edit a POP/IMAP proxy

- 1 If you are editing an existing POP or IMAP proxy, click on the name of the proxy you want to edit in the Proxy column on the Mail Proxies page.

The Edit Mail Proxy page appears.

- 2 Or, if you are creating a new POP or IMAP proxy, click **Add Proxy** on the Mail Proxies page and select POP or IMAP, as appropriate, from the **Protocol** menu.

The Add Mail Proxy: POP or IMAP page appears.

- 3 In the **Connector 1** field, in the Local Connector section, select the interface for the local connector for this proxy from the drop-down menu.

The interfaces available are those configured on the Network Settings page (**System > Network**). If you want more interfaces to be available for your proxies, you need to configure them on the Network Settings page. See *Setting Network Interfaces* (on page 39) for more information.

- 4 In the **Port** field, select the appropriate port.

The default for POP is 110; the default for IMAP is 143. The default for POPs (secure POP) is 995; the default for IMAPS (secure IMAP) is 993.

The port number automatically changes based on your selection from the **Security** menu.

- 5 In the **Security** menu, select from:

- **STARTTLS Allow.** Allows the security of the connection to be upgraded to TLS via negotiation when communications begin. The email client must support STARTTLS for the upgrade to occur.
- **STARTTLS Disable.** STARTTLS is not allowed for this connection.
- **STARTTLS Require.** Requires that the connection is secured by TLS. Only select this option if you are confident that all email clients connecting to this local connector support upgrading the security to STARTTLS.
- **SSL.** Uses SSL to protect the connection between the email client and the PGP Universal Server.

- 6 Click the **Restrict Access** button to enhance the security of this local connector by restricting access by IP address.

- 7 On the Access Control for Connector dialog box, put a check in the **Enable Access Control for Connector** check box.

- 8 Select **Hostname/IP** or **IP Range**.

- In the **Hostname/IP** field, type a hostname or IP address, then click **Add**. What you type here appears in the **Block or Allow** field below. If you type a hostname such as **example.com**, the name resolves to an IP address.
- In the **IP Range** fields, type starting and ending IP addresses for an IP address range, then click **Add**. What you type here appears in the **Block or Allow** field below.
- In the **Block or Allow** field, select **Block these addresses** or **Allow only these addresses**, as appropriate, for the IP addresses or ranges in the box below.

To remove an IP address or range from the box, select it then click **Remove**.

Click **Save** when you have configured the appropriate access control restrictions.

The Access Control for Connector dialog box disappears.

- 9 In the **Mailserver** field, in the Proxy Peer section, type the mail server from which the email clients are attempting to retrieve their messages.

This is the mail server from which the email clients would be retrieving their messages directly if the PGP Universal Server were not between them in the flow of email traffic.

- 10 In the **Port** field, select the appropriate port.

The default for POP is 110; the default for IMAP is 143. The default for POPs (secure POP) is 995; the default for IMAPS (secure IMAP) is 993.

The port number automatically changes based on your selection from the **Security** menu.

- 11 In the **Security** menu, select between:

- **STARTTLS Attempt.** Allows the security of the connection to be upgraded to TLS via negotiation when communications begin. The mail server must support STARTTLS for the upgrade to occur.
- **STARTTLS Disable.** STARTTLS is not allowed for this connection.
- **STARTTLS Require.** Requires that the connection be secured by TLS. Only select this option if you are confident that the mail server connecting to this local connector supports upgrading the security to STARTTLS.
- **SSL.** Uses SSL to protect the connection between the PGP Universal Server and the mail server.

- 12 Click **Save**.

Creating or Editing an Outbound SMTP Proxy

An Outbound SMTP proxy can be configured for either an internal placement of your PGP Universal Server or a gateway placement.

In an internal placement, the Outbound SMTP proxy proxies messages being sent by your internal email users to the local mail server for delivery to the intended recipient.

In an gateway placement, the Outbound SMTP proxy proxies messages being sent by your outward-facing mail server to the Internet on the way to the intended recipient.

To create or edit an Outbound SMTP proxy

- 1 If you are editing an existing Outbound SMTP proxy, click on the name of the proxy you want to edit in the Proxy column on the Mail Proxies page.
The Edit Mail Proxy page appears.
- 2 If you are creating a new Outbound SMTP proxy, click **Add Proxy** on the Mail Proxies page, select **SMTP** from the **Protocol** menu, then select **Outbound** from the SMTP Proxy Type in the Proxy Peer section.
The Add Mail Proxy: SMTP page appears.
- 3 In the **Connector 1** field, in the Local Connector section, select the interface for the local connector for this proxy from the drop-down menu.
The interfaces available are those configured on the Network Settings page (**System > Network**). If you want more interfaces to be available for your proxies, you need to configure them on the Network Settings page.
- 4 In the **Port** field, select the appropriate port.

The default port for SMTP is 25. The default for SMTPS (secure SMTP) is 465.

The port number automatically changes based on your selection from the **Security** menu.

- 5 In the **Security** menu, select between:
 - **SSL**. Uses SSL to protect the connection between the email client and the PGP Universal Server.
 - **STARTTLS Allow**. Allows the security of the connection to be upgraded to TLS via negotiation when communications begin. The email client must support STARTTLS for the upgrade to occur.
 - **STARTTLS Disable**. STARTTLS is not allowed for this connection.
 - **STARTTLS Require**. Requires that the connection be secured by TLS. Only select this option if you are confident that all email clients connecting to this local connector support upgrading the security to STARTTLS.
- 6 Click the **Restrict Access** button to enhance the security of this local connector by restricting access by IP address.
- 7 On the Access Control for Connector dialog box, put a check in the **Enable Access Control for Connector** check box.
- 8 Select **Hostname/IP** or **IP Range**.

- In the **Hostname/IP** field, type a hostname or IP address, then click **Add**. What you type here appears in the **Block or Allow** field below. If you type a hostname such as **example.com**, the name resolves to an IP address.
- In the **IP Range** fields, type starting and ending IP addresses for an IP address range, then click **Add**. What you type here appears in the **Block or Allow** field below.
- In the **Block or Allow** field, select **Block these addresses** or **Allow only these addresses**, as appropriate, for the IP addresses or ranges in the box below.

To remove an IP address or range from the box, select it then click **Remove**.

Click **Save** when you have configured the appropriate access control restrictions.

The Access Control for Connector dialog box disappears.

- 9 In the Proxy Peer section, choose between:
 - **Send mail directly to recipient mailserver**. When selected, the outgoing email messages coming from your internal email users are sent to the recipient mail server after processing by the PGP Universal Server per the appropriate policies.
 - **Proxy mail to SMTP server**. When selected, the outgoing email messages from your internal email users are sent to the device you specify after processing by the PGP Universal Server per the appropriate policies.
- 10 If you selected **Proxy mail to SMTP server**, in the **Hostname** field, type the hostname or IP address of the device you want outgoing email messages to be sent to after processing by the PGP Universal Server.

In the **Port** field, select the appropriate port. The default port for SMTP is 25. The default for SMTPS (secure SMTP) is 465. The port number automatically changes based on your selection from the **Security** menu.

In the **Security** menu, select between **SSL**, **STARTTLS Attempt**, **STARTTLS Disable**, and **STARTTLS Require**. These are the same options available for the Security menu in the Local Connector section.

- 11 Click **Save**.

Creating or Editing an Inbound SMTP Proxy

The Inbound SMTP proxy processes mail traffic coming into your network from the Internet. An Inbound SMTP proxy can be configured only for a PGP Universal Server in a gateway placement.

To create or edit an Inbound SMTP proxy

- 1 If you are editing an existing Inbound SMTP proxy, click on the name of the proxy you want to edit in the Proxy column on the Mail Proxies page.

The Edit Mail Proxy page appears.

- 2 If you are creating a new Inbound SMTP proxy, click **Add Proxy** on the Mail Proxies page, select **SMTP** from the **Protocol** menu, then select **Inbound** from the SMTP Proxy Type in the Proxy Peer section.

The Add Mail Proxy: SMTP page appears.

- 3 In the **Connector 1** field, in the Local Connector section, select the interface for the local connector for this proxy from the drop-down menu.

The interfaces available are those configured on the Network Settings page (**System > Network**). If you want more interfaces to be available for your proxies, you need to configure them on the Network Settings page.

- 4 In the **Port** field, select the appropriate port.

The default port for SMTP is 25; the default for SMTPS (secure SMTP) is 465.

The port number automatically changes based on your selection from the **Security** menu.

- 5 In the **Security** menu, select between:

- **STARTTLS Allow**. Allows the security of the connection to be upgraded to TLS via negotiation when communications begin. The external MTA must support STARTTLS for the upgrade to occur.
- **STARTTLS Disable**. STARTTLS is not allowed for this connection.
- **STARTTLS Require**. Requires that the connection be secured by TLS. Only select this option if you are confident that all the devices connecting to this local connector support upgrading the security to STARTTLS.
- **SSL**. Uses SSL to protect the connection between the external MTA sending and the PGP Universal Server.

- 6 Click the **Restrict Access** button to enhance the security of this local connector by restricting access by IP address.

- 7 On the Access Control for Connector dialog box, put a check in the **Enable Access Control for Connector** check box.

- 8 Select **Hostname/IP** or **IP Range**.

- In the **Hostname/IP** field, type a hostname or IP address, then click **Add**. What you type here appears in the **Block or Allow** field below. If you type a hostname such as **example.com**, the name resolves to an IP address.

- In the **IP Range** fields, type starting and ending IP addresses for an IP address range, then click **Add**. What you type here appears in the **Block or Allow** field below.
- In the **Block or Allow** field, select **Block these addresses** or **Allow only these addresses**, as appropriate, for the IP addresses or ranges in the box below.

To remove an IP address or range from the box, select it then click **Remove**.

Click **Save** when you have configured the appropriate access control restrictions.

The Access Control for Connector dialog box disappears.

- 9 In the **Mailserver** field, in the Proxy Peer section, in the **Hostname** field, type the hostname or IP address of the device you want incoming email messages to be sent to after processing by the PGP Universal Server.

Under most circumstances, this should be your outward-facing mail server.

In the **Port** field, select the appropriate port. The default port for SMTP is 25; the default for SMTPS (secure SMTP) is 465. The port number automatically changes based on your selection from the **Security** menu.

In the **Security** menu, select between **SSL**, **STARTTLS Attempt**, **STARTTLS Disable**, and **STARTTLS Require**. These are the same options available for the Security menu in the Local Connector section.

- 10 Click **Save**.

Creating or Editing a Unified SMTP Proxy

The Unified SMTP proxy is a single proxy that includes the properties of both the Inbound SMTP proxy and the Outbound SMTP proxy. In fact, you can individually configure one Inbound and one Outbound SMTP proxy and achieve the same result as with the Unified SMTP proxy.

The Unified SMTP proxy can only be configured for a PGP Universal Server in gateway placement.

With the Unified SMTP proxy, all mail traffic arrives on the same local connectors. This means that you do not need a second IP address for your PGP Universal Server, which you would need if you created separate Inbound and Outbound SMTP proxies.

It also means you need to configure the Unified SMTP proxy so that it can distinguish between inbound and outbound mail traffic, because all mail traffic is arriving on the same local connectors.

You do this by creating a Designated Source IPs list, a list of IP addresses which by definition are sending outbound mail traffic to the PGP Universal Server. Traffic from all other IP addresses are, by definition, inbound from the Internet.

Put a different way, on the Unified SMTP proxy you put the IP addresses of your trusted internal mail servers on the Designated Source IPs list, because these are the only devices that should be sending outbound email traffic to the PGP Universal Server in gateway placement.

The PGP Universal Server checks the source IP addresses of all incoming mail traffic on its local connectors and decides the traffic fits one of these two categories:

- The mail traffic is coming from an IP address *on* the Designated Source IPs list. This traffic is thus outbound traffic coming from an internal mail server, and is processed as such. Messages are encrypted and/or signed, per the applicable policy, but not decrypted or verified.
- The mail traffic is coming from an IP address *not* on the Designated Source IPs list. This traffic is thus inbound traffic coming from the Internet, and is processed as such. Messages are decrypted and verified, but not encrypted or signed.

To create or edit a Unified SMTP proxy

- 1 If you are editing an existing Unified SMTP proxy, click on the name of the proxy you want to edit in the Proxy column on the Mail Proxies page.
The Edit Mail Proxy page appears.
- 2 If you are creating a new Unified SMTP proxy, click **Add Proxy** on the Mail Proxies page, select **SMTP** from the **Protocol** menu, then select **Unified** from the SMTP Proxy Type in the Proxy Peer section.
The Add Mail Proxy: SMTP page appears.
- 3 In the **Connector 1** field, in the Local Connector section, select the interface for the local connector for this proxy from the drop-down menu.
The interfaces available are those configured on the Network Settings page (**System > Network**). If you want more interfaces to be available for your proxies, you need to configure them on the Network Settings page.
- 4 In the **Port** field, select the appropriate port.
The default port for SMTP is 25; the default for SMTPS (secure SMTP) is 465.
The port number automatically changes based on your selection from the **Security** menu.
- 5 In the **Security** menu, select between:
 - **STARTTLS Allow**. Allows the security of the connection to be upgraded to TLS via negotiation when communications begin. The external MTA must support STARTTLS for the upgrade to occur. The default port is 25.
 - **STARTTLS Disable**. STARTTLS is not allowed for this connection. The default port is 25.
 - **STARTTLS Require**. Requires that the connection be secured by TLS. Only select this option if you are confident that all devices connecting to this local connector support upgrading the security to STARTTLS. The default port is 25.
 - **SSL**. Uses SSL to protect the connection between the external MTA and the PGP Universal Server. The default port is 465.
- 6 Click the **Restrict Access** button to enhance the security of this local connector by restricting access by IP address.
- 7 On the Access Control for Connector dialog box, put a check in the **Enable Access Control for Connector** check box.
- 8 Select **Hostname/IP** or **IP Range**.
 - In the **Hostname/IP** field, type a hostname or IP address, then click **Add**. What you type here appears in the **Block or Allow** field below. If you type a hostname such as **example.com**, the name will be resolved to an IP address.

- In the **IP Range** fields, type starting and ending IP addresses for an IP address range, then click **Add**. What you type appears in the **Block or Allow** field below.
- In the **Block or Allow** field, select **Block these addresses** or **Allow only these addresses**, as appropriate, for the IP addresses or ranges in the box below.

To remove an IP address or range from the box, select it then click **Remove**.

Click **Save** when you have configured the appropriate access control restrictions.

The Access Control for Connector dialog box disappears.

- 9 In the **Designated Source IPs** list, add the internal mail server(s) that sends mail traffic to the PGP Universal Server that is outbound for the Internet.

To add the IP address of a mail server, click the plus sign icon, type the IP address, then click **Save**.

The Unified SMTP proxy considers all mail traffic coming from IP addresses on this list to be outbound for the Internet, and processes it accordingly.

- 10 Choose between:

- **Send mail directly to recipient mailserver.** When selected, the outgoing email messages coming from your internal email users will be sent to the recipient mail server after processing by the PGP Universal Server per the appropriate policies.
- **Send all outbound mail to relay.** When selected, the outgoing email messages from your internal email users will be sent to the device you specify after processing by the PGP Universal Server per the appropriate policies.

- 11 If you selected **Send all outbound mail to relay**, in the **Hostname** field, type the hostname or IP address of the device you want outgoing email messages to be sent to after processing by the PGP Universal Server.

In the **Port** field, select the appropriate port. The default port for SMTP is 25. The default for secure SMTP is 465. The port number automatically changes based on your selection from the **Security** menu.

In the **Security** menu, select between **SSL**, **STARTTLS Attempt**, **STARTTLS Disable**, and **STARTTLS Require**. These are the same options available for the Security menu in the Local Connector section.

- 12 In the **Mailserver** field, for **Hostname**, type the hostname or IP address of the device you want incoming email messages to be sent to after processing by the PGP Universal Server.

Under most circumstances, this should be your outward-facing mail server.

In the **Port** field, select the appropriate port. The default port for SMTP is 25; the default for SMTPS (secure SMTP) is 465. The port number automatically changes based on your selection from the **Security** menu.

In the **Security** menu, select between **SSL**, **STARTTLS Attempt**, **STARTTLS Disable**, and **STARTTLS Require**. These are the same options available for the Security menu in the Local Connector section.

- 13 Click **Save**.

20

Email in the Mail Queue

This section describes the Mail Queue feature.

You can configure Mail Queues from the **Mail > Mail Queue** page.

This feature is available with PGP Universal Gateway Email.

Overview

The Mail Queue page lists email messages that are waiting to be sent by the PGP Universal Server. The list is often empty, even on medium-load servers.

When there are messages in the list, the following information is shown about each queued message: the email address of the sender, the email address of the recipient, the reason the message is in the queue, when the server received the message, and its size.

If the reason is too long to display in full, it is truncated. Click on or roll your cursor over the shortened reason to see the complete text.

There are several reasons why an email message would appear on the list:

- While looking for a key for the recipient of a message, a keyserver did not respond. Only keyserver failures for \$ADDRESS_DOMAIN keyserver do not cause a message to be queued.
- A problem with the network or the recipient mail server is preventing the PGP Universal Server from sending messages (a network outage might be the issue). While the PGP Universal Server waits for the mail server to respond, it queues up outgoing messages.
- The message recipient's email address does not exist. If the message is not immediately deliverable, the PGP Universal Server places it in the Mail Queue and continues trying to send it. The message times out and disappears from the queue after 4 days (96 hours).

You can wait for the messages to be sent or you can delete them from the queue.

Note: If a message is addressed to multiple recipients, and the keys for some of the recipients cannot be found immediately, PGP Universal Server breaks the message into multiple messages and only queues the messages for those recipients whose key(s) were not found.

Deleting Messages from the Mail Queue

When there are messages in the list, the Mail Queue page lists each one on its own row. You can delete one, some, or all messages from the list:

- To delete individual email messages from the queue, click on the icon in the Delete column of the message you want to delete. The message is deleted.

- To delete some of the email messages from the queue, click the check boxes for the messages you want to delete, then select **Delete Selected** from the **Options** menu.
- To delete all email messages in the queue at one time, select **Delete All** from the **Options** menu. The messages are deleted.

Note: PGP Universal Server does not notify the sender of a deleted message of the deletion.

For information about what messages have been handled by the PGP Universal Server, see *System Logs* (on page 5).

21

Specifying Mail Routes

This section describes how to use mail routes with your PGP Universal Server.

Mail routes apply to all email processed by PGP Universal Gateway Email. For PGP Desktop Email, mail routes apply only to messages generated by PGP Universal Server and sent to internal users.

Warning: Creating static Mail Routes is an advanced feature that should only be used if you have a specific reason to override the default mail routing behavior of a PGP Universal Server. Incorrect configuration can cause mail loops or other delivery problems.

Overview

Mail routing is used to establish static mail routes that override the DNS MX-record lookup normally used when determining where to route mail. In certain instances, this can provide a more efficient route, bypassing the “loop” through DMZ and the firewall.

For example, if you set static routes, email for internal users can be forwarded from the PGP Universal Server directly to the internal mail server. Mail traffic for certain destinations can also be routed over leased lines instead of the Internet.

Typically, PGP Universal Server proxies SMTP connections to specific hosts defined by the administrator. These proxied connections do not involve mail routing, and thus are not affected by any configured static mail routes. However, in certain instances, PGP Universal Server transmits messages directly – in these instances, any configured static mail routes applies.

Examples of such instances are:

- When messages are being retransmitted from the mail queue.
- For PGP Universal Server-generated messages: Daily Status Email, PGP Universal Web Messenger notifications, bounce notifications, and so on.
- When the outbound SMTP proxy is configured to “Send mail directly to recipient mailservr.”

When no static mail routes are configured, the Mail Routes page displays the text “Your mail is being routed normally.”

The PGP Universal Server can automatically create or adjust static mail routes when you add or remove managed domains or when you change the server’s placement within your network. For example, if the PGP Universal Server is externally placed, the Setup Assistant automatically adds a mail route based on the managed domain and mail server information you enter. You should make sure that the mail route is correct, because it is not always possible for the PGP Universal Server to determine the correct rules for your network.

Use a wildcard static mail route when using PGP Universal Web Messenger and an external relay. Your network firewall can block outgoing PGP Universal Web Messenger messages when the messages are sent directly to the recipient domain. The wildcard forces all outbound email to be routed to the next hop or specified MTA, which has permission from the firewall to send email through. To create a wildcard mail route, use the character * instead of specifying a route with a domain and hostname/IP.

Managing Mail Routes

You can add a new mail route, change route priority, edit an existing mail route, or delete a mail route. You can only create one mail route per domain.

Adding a Mail Route

To add a static mail route

- 1 Click **Add Mail Route**.

The Add New Mail Route dialog box appears.

- 2 In the **Domain Name** field, type the domain name of the email that is to be statically routed.

For example, if you want all email bound for example.com to be routed to a device other than the MX-listed mailservers for example.com, you would type "example.com." You can also use the wildcard character "*".

- 3 In the **Hostname/IP** field, type the hostname or IP address of the device to which mail should be routed.

For example, "mail.example.com" or "10.1.1.30."

There is no requirement that the device you specify in the Hostname/IP field be a device in the domain you specified in the **Domain Name** field.

- 4 Click **Save**.

The new static mail route is added.

Editing a Mail Route

To edit a static mail route

- 1 Click on the static route you want to edit.

The Edit Mail Route dialog box appears.

- 2 Type the desired changes for the domain name and the IP address of the host.

- 3 Click **OK**.

The information about the host is changed.

Deleting a Mail Route

To delete a static mail route

- 1 Click the icon in the Delete column of the static route you want to delete.

A confirmation dialog box appears.

- 2 Click **OK**.

The static route you specified is removed from the list.

22

Customizing System Message Templates

This section describes message templates, which allow you to modify the content of predefined messages sent out by your PGP Universal Server in various circumstances. For example, you can edit the content of messages sent out when email bounces, or when notifying PGP Universal Web Messenger users of new email.

These messages are available for PGP Universal Gateway Email and PGP Desktop Email.

Overview

Message templates let you modify the contents of the predefined messages sent out by the PGP Universal Server in various circumstances; for example, you can edit the wording of the Smart Trailer.

You can customize each message template to add any content that is important for your specific situation.

Most message templates include one or more template variables. These variables always begin with a \$, such as \$URL. These variables convert directly into RFC 822 headers with appropriate text when the message is sent. Some variables are optional, others are required. Be very careful when editing templates; the PGP Universal Server does not send messages based on a template with incorrect or 822-unsupported variables.

Changing the format of the template can also cause it to fail. If you change or remove the blank line between the email headers and the message body, a template is no longer considered by the system to be well-formed, and the template fails.

The list of permitted variables for each template along with a description of each is provided on the dialog box itself. You can also restore a message to the factory default setting, if necessary.

You should always test template changes to confirm that the template is still correctly formatted. You should make sure, for example, that the mail built from the template was successfully received by the proper recipients and that it contained the proper information and/or links. Test the template by forcing the circumstance that causes the edited template to be used. The test message should be sent to an external account that you can access immediately so you can quickly validate the results.

The Message Templates page shows the list of message templates, and which PGP Universal Server function each template supports.

Caution: The messages template character set is UTF-8. Do not change the character set, or messages based on the templates are unreadable.

Templates and Message Size

There are two ways email senders are notified if they send messages too large to be received by PGP Universal Web Messenger users.

If the email is smaller than the recipient's quota but would exceed the quota when added to the rest of the email stored for that user, the sender receives a message based on the template **Quota Exceeded for Web Messenger Recipient (Delivered to Sender)**. The original email is not delivered to the PGP Universal Web Messenger user.

If the email is larger than the recipient's quota, or if the message is larger than 50MB total, the sender receives a message based on the template **Message Bounced - Message Too Large**. The original email is not delivered to the PGP Universal Web Messenger user.

PDF Messenger Templates

New PDF Messenger recipients can receive one of several message notifications, depending on the type of user they are. For more information, see *PDF Messenger* (on page 122).

- **New PDF Messenger Message Notification.** Messages based on this template are sent to recipients who are PGP Universal Web Messenger users with passphrases. This is the standard message recipients see when the entire original message is converted to a secure PDF message.
- **Establish PDF Messenger Passphrase.** Messages based on this template are sent to recipients who are existing PGP Universal Web Messenger users but do not have an un-hashed passphrase on record. This could be because they only received statements with PDF Messenger Certified Delivery and were never previously asked to create a passphrase.
- **New User Email - Establish PDF Messenger Passphrase.** Messages based on this template are sent to new recipients who have never received a PDF Messenger statement and have never established a PGP Universal Web Messenger account.
- **New PDF Messenger Message Notification + Secure Reply.** A message based on this template is sent to existing PGP Universal Web Messenger users with instructions on how to open the email. They must click the Secure Reply link to send a secure reply. In addition to opening and replying to emails, users can also change their passphrase or delivery options.
- **New Certified Delivery Message Notification + Secure Reply.** A message based on this template is sent to the recipient instructing them to read the attached Read Me First.html file. They can then open the email using a PDF reader, send a secure reply with or without acknowledging receipt of the message, or access their PGP Universal Web Messenger Inbox.
- **New Certified Delivery Message Notification.** A message based on this template is sent to the recipient instructing them to read the attached Read Me First.html file. They can then open the email using a PDF reader.
- **Secure Reply Trailer.** A message based on this template is sent to the recipient instructing them to click the Secure Reply link to reply to the email. Recipients can also change their PGP Universal Web Messenger passphrase or delivery options.

PGP Universal Web Messenger Templates

New and existing PGP Universal Web Messenger recipients receive one of several message notifications, depending on what type of user they are.

- **New Message Notification.** Messages based on this template notify recipients that they have received a new PGP Universal Web Messenger message.
- **New User Email - Establish Passphrase.** This template creates a message used when sending a PGP Universal Web Messenger invitation to an external user imported into the External Users page on the PGP Universal Server. Recipients must create a passphrase to retrieve future PGP Universal Web Messenger messages.
- **New User Email - Out-of-band Passphrase.** A message based on this template states that the recipient has a waiting PGP Universal Server Secured Message. The recipient must contact the sender for the passphrase used to log in to PGP Universal Web Messenger. The sender is prompted to create a passphrase by a message based on the Out-of-band Passphrase (Delivered to sender) template.
- **Expiration Warning Message.** This template creates a message that is sent by the PGP Universal Server server to external users as a reminder that their PGP Universal Web Messenger accounts are about to expire.

The expiration message is sent is seven days before the account expires, and the maximum number of reminders that can be sent out each day is 10,000. Only one account expiration reminder is sent for each user per expiration. When users receive the expiration messages, users must click on the link in the email message to log in to their PGP Universal Web Messenger accounts.

The following daily events are logged:

- The number of expiration reminders to be processed.
- The number of successful or failed expiration reminders.

Editing a Message Template

To edit a message template

- 1 Click on the description of the template you want to edit.
The appropriate Edit Message Template dialog box appears.
- 2 Make the desired changes to the template.

Caution: The messages template character set is UTF-8. Do not change the character set, or messages based on the templates are unreadable.

- 3 To revert to the default content (both text and variables) of a message template, click **Revert to Default Message**.
- 4 Click **Save**.

23

Managing Groups

This chapter describes how consumers are sorted into groups.

Understanding Groups

A group is a set of users and managed devices that match specified criteria. You can sort consumers into groups manually, by user type, or by matching consumer attributes to domains, dictionary entries or through LDAP values.

There are two groups installed on the PGP Universal Server: Everyone and Excluded. You can also create custom groups.

Consumer policy and permissions are applied to consumers depending on to which groups they belong. You can assign a consumer policy to a group, but it is not required.

Consumers can belong to multiple groups.

Because consumers can belong to more than one group, you can set the priority order of the list of groups that reference consumer policy. Consumers receive policy based on the highest ranking group to which the consumer belongs. The Everyone group is always last in priority and the Excluded group is always first.

Sorting Consumers into Groups

Consumers can be sorted by the following methods:

- **LDAP rules.** Specify sets of attributes and values that the consumer must match to be a member of the group.
- **Dictionary matching.** You can require that consumers match criteria specified in a dictionary to be a member of the group. For example, you can create a dictionary of usernames or email addresses, and any consumer with a matching username or email address is a member of the group. For more information on using dictionaries, see *Using Dictionaries with Policy* (on page 129).
- **Domain matching.** You can require that users must have email addresses from a specified domain.
- **Consumer type.** Specify that members of the group must be internal users, external users, Verified Directory users, and/or managed devices.
- **Assigned manually.** You can add users and devices to the group manually. Devices can only be sorted into groups manually, not through matching.

You can sort by any or all of these methods. You can specify multiple required matches.

For more information on how to sort consumers into groups, see *Setting Group Membership* (on page 175).

Everyone Group

The Everyone group is the default group. All non-excluded consumers are members of the Everyone group. If consumers belong to no other group, then the consumer policy assigned to the Everyone group applies. If a consumer belongs to any other group, the other group's consumer policy applies. By default, the Everyone group receives the Default consumer policy, but you can specify a different policy. For more information on consumer policy, see *Understanding Consumer Policy* (on page 197).

You cannot delete this group, but you can change settings at any time.

Excluded Group

Excluded consumers are consumers you do not want to include as part of any group. They do not have keys managed by the PGP Universal Server. They do not receive client installations. The Excluded consumer policy applies. For more information on consumer policy, see *Understanding Consumer Policy* (on page 197).

You can edit the settings of the Excluded group, but you cannot delete the group.

You can exclude consumers through Directory Synchronization, or through matching to domain, dictionary, or type. You cannot manually add consumers to the Excluded group.

If some of your consumers are sorted into the Excluded group using Directory Synchronization, and you later disable Directory Synchronization, those consumers become members of the Everyone group.

You can also exclude users by adding their email addresses to either of the default exclusions dictionaries. If a user's email address appears on the Excluded Addresses: Sign or the Excluded Addresses: Do Not Sign dictionaries, that user is a member of the Excluded group. This is true even if none of the mail policy rules use the default exclusions dictionaries. Excluding users this way does not require Directory Synchronization. For more information, see *Using Dictionaries with Policy* (on page 129).

Excluding Users by Default

In previous versions of PGP Universal Server, you could use the **Exclude non-matching users by default** feature to specify that all users who do not match the criteria for any other policy are treated as excluded users, instead of assigning those users to the default policy. You can replicate this function by opening the Group Settings page for the Everyone group and applying the consumer policy Excluded.

Policy Group Order

Because consumers can belong to more than one group, you can set the priority order of the list of groups that reference consumer policy. Consumers receive policy based on the highest ranking group to which the consumer belongs. The Everyone group is always last in priority and the Excluded group is always first.

Group permissions are also enforced using this setting.

Migrate Groups from PGP Universal Server 2.12 SP4

Caution: After migrating from a previous version of PGP Universal Server, you must ensure that the groups are in the correct priority order. If groups are incorrectly prioritized, users will not receive the correct policy settings.

In PGP Universal Server versions 2.12 SP4, if a user can be matched to more than one user policy, the user received the policy with the name that was first in alphabetical order. Administrators could not change this ordering. In PGP Universal Server 3.2.1, because users can belong to more than one group, you must make sure that the policies are ranked correctly.

Setting Policy Group Order

Use the numbers in the order drop-down menus to reorder the groups. This function is only available if you have at least one custom group.

To set the policy group order

- 1 Select a number from the drop-down menu for each group. The number indicates the order in which you want group policies applied.
Groups reorder based on your number selections.
- 2 Continue selecting numbers until the groups are in the correct policy priority order.

Creating a New Group

- 1 On the Groups page, click **Add Group**.
The Groups Settings: Add Group page appears.
- 2 On the General subtab, type in a **Group Name** and **Description**.
- 3 To apply a consumer policy to members of this group, select **Apply Consumer Policy to members of this group**, and choose a consumer policy from the drop-down menu.
- 4 On the Membership subtab, specify how you want to sort users into this group and what criteria you want users to match. For more information, see *Setting Group Membership* (on page 175).
- 5 Click **Save**.

Deleting a Group

You can only delete groups created by an administrator. The Excluded and Everyone groups cannot be deleted. Because consumers receive policy based on the highest ranking group to which the consumer belongs, members of a deleted group receive policy based on the next highest ranking group to which they belong. If they are not members of any other ranked group, they receive policy settings of the Everyone group.

To delete a group

- 1 Click the **Delete** icon of the group you want to remove.
A confirmation dialog box appears.
- 2 Click **OK**.
The group is deleted.

Viewing Group Members

You cannot view lists of members for the pre-installed groups Everyone and Excluded, but you can see lists of users for groups you create.

To view a list of group members

- 1 Select the group whose members you want to see.
The Group Details page appears.
- 2 Click **View** to select which type of group member you want to see. You can choose:
 - **Users.** Users added to the group by the administrator.
 - **Managed Devices.** Devices added to the group by the administrator.
 - **Matched Consumers.** Users and devices added to the group because of matched domain, dictionary, consumer type, or directory criteria.

Manually Adding Group Members

Consumers are often sorted into groups based on matched criteria, but you can also manually add users or devices to the group.

For more information on using matching to sort consumers into groups, see *Setting Group Membership* (on page 175).

To add consumers to a group

- 1 Select the group to which you want to add members.

- The Group Details page appears.
- 2 Click the **View** button for the Users or Managed Devices member type.
The group member page appears.
 - 3 Click **Add Users** or **Add Managed Devices**.
 - 4 The Add to Group dialog appears.
 - 5 Type the name of the user or device you want to add.
 - 6 Click **Save**.
 - 7 The consumer is added to the group.

You can also add individual consumers to the group from that consumer's User Information or Managed Device Information page. For more information, see *Adding Users to Groups* (on page 242) or *Adding Managed Devices to Groups* (on page 184).

Manually Removing Members from a Group

You can manually remove members from any custom group, but you cannot remove members from the Excluded or Everyone groups. You also cannot remove group members if they are in the group because they matched a domain, dictionary, or directory.

To remove one consumer from a group

- 1 Select the group from which you want to remove members.
The Group Details page appears.
- 2 Click the **View** button for the Users or Managed Devices member type.
The group member page appears.
- 3 Click the **Remove** icon of the consumer you want to remove.
A confirmation dialog box appears.
- 4 Click **OK**.
The consumer is removed from the group.

To remove multiple consumers from the group

- 1 Select the group from which you want to remove members.
The Group Details page appears.
- 2 Click the **View** button for the Users or Managed Devices member type.
- 3 The group member page appears.
- 4 Select the check box at the far right end of the row of each of the consumers you want to remove.
- 5 Select **Remove Selected From Group** or **Remove All From Group** from the Options menu at the bottom right corner.
A confirmation dialog box appears.

6 Click **OK**.

The consumers are removed from the group.

Group Permissions

Permissions allow members of a group to perform actions on objects. In other words, you can give all members of a group permission to delete managed keys, or create custom data objects, or many other actions. You can give permission to group members to act on a single object, or every object of a certain type; for example, to create all symmetric key series or one particular symmetric key series.

Managed keys, symmetric key series, and custom data objects have owners, and object owners have complete permission to act on what they own. There is one exception: SKM key owners cannot delete or modify their OpenPGP keys, because they do not have access to their private keys. Also, owners cannot move ownership of objects they own to any other consumer.

Excluded consumers have read-only permissions for things they own but cannot change anything. They also have any read-only permissions granted to Everyone group members. Read-only permissions include the ability to read a public key, read a key pair, decrypt with a key, and verify with a key.

All non-excluded consumers are members of the Everyone group, and can also be members of more than one group. Group members have the permissions of all groups of which they are members.

Adding Group Permissions

To add group permissions

- 1 Select the group to which you want to add permissions.
The Group Details page appears.
- 2 Click **View** for permissions.
The group permissions page appears.
- 3 Click **Add Permissions**.
The Add Permissions dialog appears.
- 4 Use the drop-down menus to create a new permission.
- 5 Click the **Add** icon to create as many permissions as necessary.
- 6 Click **Save**.

Deleting Group Permissions

To delete a single group permission

- 1 Select the group from which you want to delete permissions.

The Group Details page appears.

- 2 Click **View** for permissions.

The Permissions page appears.

- 3 Click the **Delete** icon of the permission you want to remove.

A confirmation dialog box appears.

- 4 Click **OK**.

The permission is removed from the group.

To delete multiple group permissions

- 1 Select the group from which you want to delete permissions.

The Group Details page appears.

- 2 Click **View** for permissions.

- 3 The Permissions page appears.

- 4 Select the check box at the far right end of the row of each of the permissions you want to remove.

- 5 Select **Delete Selected** or **Delete All** from the Options menu at the bottom right corner.

A confirmation dialog box appears.

- 6 Click **OK**.

- 7 The permissions are removed from the group.

Setting Group Membership

You can control how users and devices are sorted into groups. You can sort consumers into groups by user type, or by matching consumer attributes to domains, dictionary entries or through LDAP values. Consumers must match your requirements to become members of the group.

To set group membership requirements

- 1 From the Groups page, select the group you want to edit.

The Group Details page appears.

- 2 Click Group Settings.

The Group Settings page appears.

- 3 If necessary, click the Membership subtab.

- 4 Enable Match Consumers by Domain, Dictionary, or Type to sort consumers into the group by matching the specified criteria. You can use this in conjunction with LDAP directory matching.

- 5 From the drop-down menu, select the criteria you want to match. Add as many criteria as necessary.

- 6 Enable Match Consumers Via Directory Synchronization to sort consumers into the group by matching LDAP directory values. Directory Synchronization must be enabled. You can use this in conjunction domain, dictionary, and type matching.
- 7 For All LDAP Directories, use attribute and value pairs that are common to all the LDAP directories to which the PGP Universal Server refers. Leave this empty if you do not want to use attributes associated with global LDAP directories. Choose whether you want all or any of the attribute and value pairs to be true and apply to the consumer to make the consumer a member of the group.

When you set a group to match disabled users in Active Directory and specify matching any of the following, PGP Universal Server matches all disabled users in the directory and ignores specified LDAP attribute/value pairs for that group. If you want to match disabled users and also attribute/value pairs, specify matching all of the following.

- 8 For any LDAP Directory, use attribute and value pairs that are specific to the LDAP directory you choose. Add as many directories as needed. Choose whether you want all or any of the attribute and value pairs to be true and apply to the consumer to make the consumer a member of the group.
- 9 Enable Match disabled Active Directory users to add users disabled in Active Directory to the group. Matching Active Directory-disabled users receive the same policy and permissions as all other group members.

You can also add consumers to a group manually. For more information, see *Manually Adding Group Members* (on page 172).

Searching Groups

To do a simple search

- 1 On the **Consumers > Groups** page, select the group you want to search.
The **Group Details** page appears.
- 2 Click **View** to open the list of consumers or permissions you want to search.
- 3 Type the criteria for which you want to search, and click the Search icon. A list of consumers or permissions that fit the criteria you specified appears.

To search using advanced criteria

- 1 On the **Consumers > Groups** page, select the group you want to search.
The **Group Details** page appears.
- 2 Click **View** to open the list of consumers you want to search. You cannot perform an advanced search for permissions.
- 3 Click the advanced icon.
The Search dialog box appears.
- 4 Specify your criteria. Available search criteria depends on which users are listed.
- 5 If you want to use more search criteria, click the plus sign icon and enter the appropriate criteria. Returned results match all the search criteria you enter.

6 Click **Search**.

A list of consumers that fit the criteria you specified appears.

To clear the search, click the cancel button to the left of the search field.

Creating Group Client Installations

You can create and download a customized client installation for distribution to a group.

Consumer policy controls the client software configuration. For more information on setting consumer policy for a group, see *Administering Consumer Policy* (on page 197).

Before you create a client installer, you must understand how consumers enroll. Enrollment is the binding of a computer with client software installed to a PGP Universal Server. After a client is bound it receives feature policy information from the PGP Universal Server; for example, encryption keys, email policy, PGP NetShare, or PGP Whole Disk Encryption administration. For more information on how to plan for consumer enrollment, see *Understanding User Enrollment Methods* (on page 227).

How Group Policy is Assigned to PGP Desktop Installers

Create PGP Desktop deployments from the **Consumers > Groups** section of the PGP Universal Server administrative interface.

Create PGP Desktop installers for consumers with one of three available policy settings:

- **No policy settings.** Create a PGP Desktop installer with no policy settings, which means that the PGP Universal Server administrator has no way to control how users use PGP Desktop on their systems.
- **Auto-detect Policy Group.** PGP Desktop coordinates with the PGP Universal Server to identify the correct policy group for the consumer. Sort consumers into groups by user type, or by matching consumer attributes to domains, dictionary entries or through LDAP values. Based on these attributes, the appropriate policy is applied. If you later create a new group and the user's attributes match that group, the policy for the consumer switches to the policy for that new group. If you have not created any custom groups, the consumer policy for the default Everyone group applies.
- **Preset policy.** Select a consumer policy to apply to the installer you are creating. All users who get this installer are bound to the selected policy. If you change the settings of the policy later, those settings that are not implemented at installation (such as creating a PGP Virtual Disk volume) are modified for the PGP Desktop users who are bound to this policy. If you have not created any custom consumer policies, the default policy is the only user policy you can apply to the installer.

Note: If you are using Directory Sync to apply policy, do not use Preset Group Policy. Directory Sync will always override the Preset Group Policy.

Note: You must have a PGP Desktop license to create customized PGP Desktop installers. You can use the same license for all your policies, but unless you clone your user settings from a policy that already has license information entered, you need to type the license information into each policy individually.

Note: Changes you make to download policies automatically update. If you make changes to the Key Setup section of a policy, those changes only affect new users. Existing user keys do not change.

Note: PGP Corporation supports backward compatibility for clients only. For example, you cannot upgrade or install a PGP Desktop 9.9 client bound to PGP Universal Server 2.0.x. You must upgrade your PGP Universal Server to support PGP Desktop 9.9 bound clients. PGP Universal Server 2.5 and later does offer limited support to 9.0.x clients.

When to Bind a Client Installation

To send and receive protected email, PGP Desktop must be able to access a mail server to send and receive mail and a PGP Universal Server to get keys and policies.

In many cases, PGP Desktop determines how to communicate with the appropriate mail server and PGP Universal Server automatically. There are two scenarios where it cannot do this automatically, however. In these cases, this information must be provided to it.

Note: Do not to bind a mail server to a PGP Universal Server except for the two cases described below. If you do, the PGP Desktop user cannot send or receive email. Because the mail server binding setting default is a wildcard *, which binds to any mail server, you might need to remove the default to ensure that there is no bound mail server.

The two cases are:

- **Internal MAPI or Lotus Notes client running PGP Desktop:** In a Microsoft Exchange or Domino Server environment, the PGP Universal Server is prohibited from being between the internal email client and the Exchange or Domino Server in the logical flow of data. In this situation, the PGP Desktop can automatically determine its mail server (the Exchange or Domino Server), but it *cannot* automatically determine its PGP Universal Server; that information must be provided to it.

MAPI and Lotus Notes email clients are only supported in the Windows version of PGP Desktop.
- **Internal PGP Desktop user accessing a PGP Universal Server externally:** Same problem with this configuration. By definition, the PGP Universal Server is between the mail server and the Internet, thus making it impossible for the PGP Desktop to automatically determine its PGP Universal Server. It must be told which PGP Universal Server to use.

Caution: If PGP Desktop is installed in either of the two cases described above and the mail server is **not** bound to a PGP Universal Server, and the end user then sends an email message outside of their email domain, the PGP Universal Server creates Server Key Mode keys for that user. The user does not have the option of other key modes (if allowed by policy). The user also cannot retrieve keys or policies until the mail server is bound to a PGP Universal Server in a PGP Desktop policy.

There are two ways of “binding” a mail server and a PGP Universal Server in a PGP Desktop policy: pre-binding and manual binding.

- **Manual binding:** PGP Desktop is first installed on the system of the end user, then create a policy on the client that includes the appropriate mail server and PGP Universal Server.

- **Pre-binding:** Configure the PGP Desktop installer with the information needed to create the binding; the client is already bound to the mail server and PGP Universal Server when it is installed. To pre-bind a client, follow the instructions on creating client installers.

Creating PGP Desktop Installers

The procedure for creating PGP Desktop installers for your consumers is different depending on how you want group policy applied to client installation.

Creating an Installer with No Policy Settings

To create a PGP Desktop installer with no associated consumer policy

- 1 On the Groups page, click **Download Client**.
The Download PGP Clients page appears.
- 2 In the **Client** field, select PGP Desktop.
- 3 In the **Platform** field, select **Mac OS X, Linux 32-bit or Linux 64-bit (RHEL 6.2, 6.1, 5.3, 5.2; Ubuntu 11.04, 11.10, 9.04, 8.04), Windows 32-bit, or Windows 64-bit** as appropriate.
- 4 From the **Language** drop-down menu, select the language you want the client installation to use.
- 5 Make sure the **Customize** check box is deselected.
- 6 Click **Download**.
The PGP Desktop installer is created and downloaded to your system.
- 7 Distribute the PGP Desktop installer to your users and have them install it on their systems.

Creating an Installer with Auto-Detect Policy Group

Before you begin, create the custom consumer policies you want to be linked to your PGP Desktop users. If you do not create any custom consumer policies, then your PGP Desktop users automatically receive whatever policy is associated with the Everyone group, most likely the Default consumer policy. Configure the settings on the PGP Desktop page appropriately for these custom consumer policies. For more information, see *Administering Consumer Policy* (on page 197).

To create a PGP Desktop installer with auto-detect policy

- 1 On the Groups page, click **Download Client**.
The Download PGP Clients page appears.
- 2 In the **Client** field, select PGP Desktop.
- 3 In the **Platform** field, select **Mac OS X, Linux 32-bit or Linux 64-bit (RHEL 5.3, RHEL 5.2, Ubuntu 8.04, Ubuntu 9.04), Windows 32-bit, or Windows 64-bit** as appropriate.

- 4 From the **Language** drop-down menu, select the language you want the client installation to use.
- 5 Make sure the **Customize** check box is selected.
- 6 Select **Auto-detect Policy**.
- 7 In the **PGP Universal Server** field, type the PGP Universal Server you want the application to interact with.

The PGP Universal Server you are using to create the installer is listed by default.

- 8 In the **Mail Server Binding** field, type the name of the mail server you want bound to that PGP Universal Server. You must type this information unless your users read mail directly from this PGP Universal Server via POP or IMAP. Customized client installations will not work without mail server binding.

The * wildcard character is the default setting; the client will bind automatically to any mail server. Mail policy will be enforced for any mail server to which the client connects. You can also use the wildcard as follows: *, *.example.com, and example.*.com.

For more information about what mail configurations require you to change the binding to other than the default settings, see *Binding* (see "*When to Bind a Client Installation*" on page 178).

If you are creating a binding for an internal MAPI email client, you *must* use the WINS name of the Exchange Server.

If you are creating a binding for an internal Lotus Notes email client, you *must* use the fully qualified domain name of the Domino server.

- 9 Click **Download**.

The PGP Desktop installer is created and downloaded to your system.

- 10 Distribute the PGP Desktop installer to your users and have them install it on their systems.

Once installed, PGP Desktop coordinates with the PGP Universal Server and links to the most appropriate user policy. This linkage is based on how closely the settings for the particular user in the LDAP directory match the settings of the available user policies.

If an administrator later adds a more appropriate policy, the affected PGP Desktop users automatically become linked to the new, more appropriate policy.

Creating an Installer with Preset Policy

Before you begin, create the custom consumer policies you want to be linked to your PGP Desktop users. If you do not create any custom consumer policies, then your PGP Desktop users automatically receive whatever policy is associated with the Everyone group, most likely the Default consumer policy. Configure the settings on the PGP Desktop page appropriately for these custom consumer policies. For more information, see *Administering Consumer Policy* (on page 197).

To create a PGP Desktop installer with preset policy

- 1 On the Groups page, click **Download Client**.
The Download PGP Clients page appears.
- 2 In the **Client** field, select PGP Desktop.

- 3 In the **Platform** field, select **Mac OS X, Linux 32-bit or Linux 64-bit (RHEL 5.3, RHEL 5.2, Ubuntu 8.04, Ubuntu 9.04), Windows 32-bit, or Windows 64-bit** as appropriate.
- 4 From the **Language** drop-down menu, select the language you want the client installation to use.
- 5 Make sure the **Customize** check box is *selected*.
- 6 Select **Preset Policy**, then select the policy you want your PGP Desktop users to be linked to from the drop-down menu.

If you have not created any custom user policies, then the only entry in the drop-down menu is **Default**.

- 7 You can also select to embed policy and license information into the installer to force the clients to be disconnected from the PGP Universal Server. Choose **Embed policy and license information to force disconnected clients**. In this case, there is no connection between the client and the PGP Universal Server. The client **never** receives any updated policy information from the PGP Universal Server, even if the policy is updated on the server side. Policy information normally downloaded during installation is instead embedded in the installer itself. The Organization Key and ADK are not included in embedded policies. This option is useful for PGP Whole Disk Encryption-only deployments, which cannot connect again to the PGP Universal Server. Remember that if a PGP Whole Disk Encryption deployment never connects to the PGP Universal Server, you cannot use Whole Disk Recovery Tokens. The option is not recommended for other PGP Desktop deployments.

Caution: Use this option carefully; most product features do *not* work in this mode.

- 8 In the **PGP Universal Server** field, type the PGP Universal Server you want the application to interact with.
The PGP Universal Server you are using to create the installer is listed by default.
- 9 In the **Mail Server Binding** field, type the name of the mail server you want bound to that PGP Universal Server. You must type this information unless your users read mail directly from this PGP Universal Server via POP or IMAP. Customized client installations do not work without mail server binding.

The * wildcard character is the default setting; the client will bind automatically to any mail server. Mail policy is enforced for any mail server to which the client connects. You can also use the wildcard as follows: *, *.example.com, and example.*.com.

For more information about what mail configurations require you to change the binding to other than the default settings, see *Binding* (see "When to Bind a Client Installation" on page 178).

If you are creating a binding for an internal MAPI email client, you *must* use the WINS name of the Exchange Server.

If you are creating a binding for an internal Lotus Notes email client, you *must* use the fully qualified domain name of the Domino server.

- 10 Click **Download**.
The PGP Desktop installer is created and downloaded to your system.
- 11 Distribute the PGP Desktop installer to your users and have them install it on their systems.

Once installed, PGP Desktop coordinates with the PGP Universal Server to retrieve the settings from the linked consumer policy. This link cannot be changed once PGP Desktop is installed.

If the linked policy is deleted, the link reverts to the Default policy.

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Managing Devices

In the PGP Universal Server, Consumers can include not only Users (the owners of email addresses) but also devices such as the computers and disks that are running under PGP Whole Disk Encryption through the PGP Desktop client, if those features have been purchased and licensed for use with PGP Universal Server. In addition, you can add arbitrary devices as Managed Devices to the PGP Universal Server database.

If you have PGP Desktop clients with WDE, whenever a user enrolls, PGP Universal Server also obtains information about the computer and disks associated with the user. As an administrator you can then view information about disk encryption status, login failures, and authorized users. If the device has a key reconstruction block associated with it, you can also view that from the device information display.

- You can add managed devices manually through the administrative interface, or through the USP API or PGP Command Line commands.
- WDE Disks and WDE Computers cannot be added manually. They are discovered when a user enrolls.

For a managed device that you have added manually, you can add an authentication key (public key) or password, assign it to be a member of a group, set arbitrary attributes, and set permissions for the device.

External applications can make requests of PGP Universal Server concerning these managed devices using the USP API or PGP Command Line commands.

To view the devices being managed by PGP Universal Server

- 1 Go to **Consumers > Devices**. The **All Devices** page appears.

This shows all the devices (managed devices, WDE Disks, WDE Computers) in the PGP Universal Server database.

For each device, the shows the name of the device, its type, whether authentication is configured for the device, and the date and time of the last interaction the PGP Universal Server had with the device.

- 2 To view only devices of a specific type, click the appropriate tab (Managed Devices, WDE Computers, WDE Disks). The list is filtered to show only devices of the selected type. Depending on the type of device, different information is displayed.
- 3 To view detailed information about a device, click the device name. This displays the **Device Information** page for the device.

Managed Devices

Managed Devices are arbitrary "devices" added manually to the PGP Universal Server database so the the PGP Universal Server can manage them and their related components, such as keys, attributes, and permissions. A Managed Device can be a device such as a web server that handles credit cards or a bank's automated teller machine.

For a managed device, you can add an authentication key (public key) or password, assign the device to be a member of a group, set arbitrary attributes, and set permissions for the device.

External applications can make requests of PGP Universal Server concerning these managed devices using the USP API or PGP Command Line commands.

To view the Managed Devices in the PGP Universal Server database

- 1 Go to **Consumers > Devices**. The **All Devices** page appears.
- 2 Click the **Managed Devices** tab. This filters the list so that only Managed Devices (not WDE Disks or WDE Computers) are listed.

For each managed device, the list shows the name of the device, whether authentication is configured for the device, its effective policy group (Everyone by default), and the date and time of the last interaction the PGP Universal Server had with the device.

Adding and Deleting Managed Devices

To manually add a Managed Device to the PGP Universal Server database:

- 1 From the **Consumers > Devices** page, under either the **All Devices** list or the **Managed Devices** list, click **Add Managed Device...**
- 2 Type a name for the device in the **Display Name** field.
- 3 Optionally, type a passphrase in the **Passphrase** field, and type it again to confirm it in the **Confirm** field.
- 4 Click **Add** to add the device to the database.

The **Add Managed Device** dialog stays open so you can add another managed device.

To delete Managed Device

- 1 From the **Consumers > Devices** page, find the device on either the **All Devices** list or the **Managed Devices** list
- 2 Click the Delete icon in the row for the device you want to delete.
- 3 To delete multiple devices, click the check boxes for the rows you want to delete and select **Delete Selected** from the **Options** menu. Use the **Delete All** option from the **Options** menu to delete all managed devices.

Adding Managed Devices to Groups

Sorting devices into groups enables you to use policy to manage the certificates on the devices.

Managed Devices can be sorted into groups manually or by matching to the consumer type. You cannot use directory, domain, or dictionary matching to sort devices into groups.

Note: Only managed devices can be added as members of a group. WDE Computers and WDE Disks cannot be members of a group.

You can manually assign a managed device to a group in one of two ways:

- From the **Managed Device Information** page for a specific device, you can add the device to one or more groups (in addition to the Everyone group).
- From a group information page, you can add managed devices to the group.

Managed Device added manually appear under the **Managed Devices** section on the group information page.

Devices added automatically through matching to a consumer type appear under the **Matched Consumers** section on the group information page.

Note: A managed device can be a member of multiple groups, but an individual managed device can appear only once in a specific group. In other words, if a managed device is added to a group through consumer type matching, you cannot add it manually. If a managed device has been added manually, and you subsequently turn on consumer matching, only managed devices that are not already group members will be added as matched consumers.

To manually add a Device to a group from the Managed Device Information page

- 1 From the **Consumers > Devices** page, under either the **All Devices** list or the **Managed Devices** list, click the name of the Managed Device you want to add to a group. The **Managed Device Information** page for the device appears.
- 2 Display the **Groups** list to see the current group memberships for this device. Managed devices are always members of the Everyone group.
- 3 To add the device to an individual group, click **Add to Group...** to display the **Add Devices to Group** dialog.
- 4 In the **Name** field, type the name of the group to which the device should be added, and click **Save**. The group appears in the Groups list for the device.

To manually add a device to a group from the Group Information page:

- 1 From the **Groups** page, click the name of the group to which you want to add a device. The group information page for the selected group appears.
- 2 Click **View...** under the Managed Devices section to display the managed devices added to the group by an administrator.

Note: Managed Devices that are added automatically through Consumer Matching appear in the Matched Consumers section, and do not appear in the Managed Devices section.

- 3 Click **Add Managed Devices...** to display the Add Devices to Group dialog.
- 4 In the **Name** field, type the name of the device you want to add. The device must already exist in the database (and appear in the Managed Devices list under **Consumers > Devices**).
- 5 Click **Save**. The device appears in the Managed Devices list for the group.

Adding Managed Devices automatically through Consumer Matching

- 1 From the **Groups** page, click the name of the group to which you want to add a device. The group information page for the selected group appears.
- 2 Click **Group Settings...** to display the **Group Settings** page for the group.
- 3 Go to the Membership tab, and check **Match Consumers by Domain, Dictionary, or Type**.
- 4 From the drop-down menu for **Consumer is**, select Managed Device, then **Save**.
Managed Devices that are already in the PGP Universal Server database are added to this group. As new managed devices are added to PGP Universal Server they are automatically also added to the group.

Managed Device Information

To view detailed information about a specific managed device

- 1 From the **Consumers > Devices** page, under either the **All Devices** list or the **Managed Devices** list, click the name of the managed device you want to see.
- 2 The **Managed Device Information** page appears for the device you selected.

From this page you can view some basic information about the device. You can also add or change information about the device.

To view logs for this device

- Click **View Log Entries**. This displays the Administration log entries for this device.

To changed the device display name

- 1 Click **Edit Names...** and type a new display name for the device.
- 2 Click **Save** to save the change or **Cancel** to close the dialog without making the change.

Authentication Information

To view or add authentication credentials for the device

- 1 Expand the Authentication section of the **Managed Device Information** page.
If a public key has been imported for the device, the key ID is displayed.
 - To view the public key information, click the key ID link.
 - To delete the key, click the delete icon.If a passphrase has been added, the status Assigned appears.

- To change the passphrase click **Change...**
 - To delete the passphrase, click the delete icon.
- 2 To add a Public Key, click **Import...** to display the **Update Public Key** page.
 - Provide the name of a file where the key has been saved, or copy and paste the key block.
 - Click **Import** to import the key.
 - 3 To add a passphrase:
 - Click **Create...** and type (and confirm) the passphrase in the fields provided.

Attributes

To view, add, or delete Attributes

- 1 Expand the Attributes section of the **Managed Device Information** page.
If attributes have been added, the attribute/value pairs are listed in this area.
Attributes are arbitrary name/value pairs. Outside applications can make requests related to attributes through the USP API or through PGP Command Line.
- 2 To add, delete, or modify attributes for this device, click **Edit Attributes....**
- 3 To add attributes, type the attribute name and its value in the fields provided.
 - To add additional attributes, click the Add icon.
- 4 To change an attribute name or its value, just retype the information in the field.
- 5 To remove an attribute, click the Remove icon.

Groups

To add or view Group membership for this device

- 1 Expand the Groups section of the **Managed Device Information** page.
This shows all the groups to which the managed device has been added. The group at the top of the list is the Effective Group -- the group whose policies apply to this managed device. The effective group is always the most recent group to which the device was added
Managed Devices are always members of the Everyone group by default.
- 2 To view a group of which the device is a member, click the group name.
- 3 To go to the **Consumers > Groups** page to view all groups, click **All Groups....**
- 4 To add the managed device to a group, click **Add to Group...**
The **Add Device to Group** dialog appears.

- 5 Type the name of the group to which the device should be added, and click **Save**. See *Adding Managed Devices to Groups* (on page 184) for more information.
- 6 To remove a device from a group, you must go to the Group information page and do it from there. For instructions see *Deleting Managed Devices from Groups* (on page 190).

Permissions

To view, set, or delete Permissions for this device

- 1 Expand the Permissions section of the **Managed Device Information** page.
If permissions have been added specifically for this device, the permission settings are listed in this area. The device also inherits permissions based on its group membership.
If a listed permission involves a managed key, you can click the key ID to see details about the managed key.
- 2 To add, edit, or delete permissions, click **View and Edit Permissions...**
The Permissions page for this device appears.
 - To remove a permission, click the Delete icon.
 - To remove multiple permissions, check the boxes next to the permissions you want to delete and select **Delete Selected** from the **Options** menu. To remove all permissions, select **Delete All** from the **Options** menu.
- 3 To search for a specific permission, type the relevant string into the Search field at the top right of the dialog box, and click the search icon.
The permissions list will be filtered to display only permissions that match the search criterion.
- 4 To add, remove or modify permissions, click **Add Permissions...**
- 5 Use the drop-down menus to create a new permission.
- 6 Click the **Add** icon to create as many permissions as necessary. Use the **Remove** icon to remove individual permission. You can also modify existing permissions.

Managed Keys

To view the Managed Keys for this device

- 1 Expand the Managed Keys section of the **Managed Device Information** page.
If there are managed keys for this device, they are listed in this area.

Information provided about the keys includes the key mode (SKM, CKM etc.), what key usage flags are set on the key, the key size and encryption type, the date it was created and when it will expire, its status (Valid, Revoked, Expired), and whether key reconstruction is enabled. (If a key reconstruction block has been uploaded, a delete icon is also provided to enable deleting the key reconstruction block to prevent a user from recreating the key.)

Subkeys are also displayed.

- 2 You can revoke, export, or delete the managed key using the icons at the end of the row.
- 3 To view key details, click the Key ID to display the Managed Key Information page for this key.

Deleting Devices from PGP Universal Server

Warning: You cannot delete Intel Anti-Theft-activated computers from the Devices list. Before you delete an AT Activated device, you must deactivate and decrypt the computer.

You can delete any of the three types of devices -- managed devices, WDE Disks and WDE computers. Deleting a managed device removes it from any groups to which it has been assigned, as well as deleting it from the PGP Universal Server database. Any configuration information (authentication, attributes, permissions) is also deleted. To delete a device from a group without removing it from the database, see *Deleting Managed Devices from Groups* (on page 190).

To delete a single device from PGP Universal Server

- 1 From the **Consumers > Devices** page, find the device on either the **All Devices** list or the list based on the type of device.
- 2 Click the Delete icon in the row for the device you want to delete.

To delete multiple devices from the PGP Universal Server

- 1 From the **Consumers > Devices** page, display either the **All Devices** list or the list based on the type of device.
- 2 Click the check boxes for the rows you want to delete and select **Delete Selected** from the Options menu.
- 3 To delete all devices in the list, use the **Delete All** option from the **Options** menu to delete all managed devices.

Deleting Managed Devices from Groups

You can manually remove Managed Devices from any custom group, but you cannot remove them from the Everyone group. You also cannot manually remove Managed Devices if they are in the group due to matching the consumer type.

To remove one Managed Device from a group

- 1 Select the group from which you want to remove the device.
The Group Details page appears.
- 2 Click the **View** button for the Managed Devices member type.
The group member page appears.
- 3 Click the **Remove** icon of the device you want to remove.
A confirmation dialog box appears.
- 4 Click **OK**.
The Managed Device is removed from the group.

To remove multiple Managed Devices from the group

- 1 Select the group from which you want to remove managed devices.
The Group Details page appears.
- 2 Click the **View** button for the Managed Devices member type.
- 3 The group member page appears.
- 4 Select the check box at the far right end of the row of each of the managed devices you want to remove.
- 5 Select **Remove Selected From Group** or **Remove All From Group** from the Options menu at the bottom right corner.
A confirmation dialog box appears.
- 6 Click **OK**.
The managed devices are removed from the group.

If managed devices were added to a group based on matching the consumer type, you cannot remove them individually. However, if you remove the consumer matching setting in the Group Settings dialog, all matched managed devices are automatically removed from the group.

To remove all Managed Devices from the matched consumers list for a group

- 1 Select the group from which you want to remove the device.
The Group Details page appears.
- 2 Click **Group Settings...** to display the **Group Settings** page for the group.
- 3 Go to the Membership tab, and under the **Match Consumers by Domain, Dictionary, or Type**, remove the row that specifies **Consumer is Managed Device**.

- 4 Click **Save**.

All managed devices in the **Matched Consumers** list are removed.

WDE Devices (Computers and Disks)

If you have PGP Desktop clients with WDE, whenever a user enrolls, PGP Universal Server also obtains information about the computer and disks associated with the user. As an administrator you can then view information about disk encryption status, login failures, and authorized users for these devices.

External applications can make requests of PGP Universal Server concerning these managed devices using the USP API or PGP Command Line.

WDE Computers

To view the WDE Computers in the PGP Universal Server database

- 1 Go to **Consumers > Devices**. The **All Devices** page appears.
- 2 Click the **WDE Computers** tab. This filters the list so that only WDE Computers are listed.

For each WDE computer, the list shows: the name of the device, the number of partitions on its disks, the operating system, the version of the PGP Desktop client, the encryption status of the partitions, the number of Login Failures seen, whether the boot drive has a Whole Disk Recovery Token associated with it, the number of authorized users associated with this computer, and the date of the last interaction PGP Universal Server had with this device.

Note: Some information, for example the device name and MAC address, appears only after PGP Desktop sends log information to PGP Universal Server for the first time. Thus, depending on the logging interval, there may be a delay before all the information is available.

- 3 To view the details for this computer, click the device name.
- 4 To delete multiple computers, check the boxes for the computers you want to delete and select **Delete Selected** from the **Options** menu. To delete all computers, select **Delete All** from the **Options** menu.
- 5 To export WDE Login Failure information, either check selected computers and select **Export WDE Login Failures for Selected** from the **Options** menu, or select **Export WDE Login Failures for All**.
- 6 To export all WDE Activity for the listed computers, select **Export All WDE Activity** from the **Options** menu.

WDE Computer Information

The WDE Computer Information page shows details about the selected computer.

To view logs for this device

- Click **View Log Entries**. This displays the Administration log entries for this device.

To view the Whole Disk Recovery Token (WDRT) for this device

- Click **View WDRT...** This displays information about the WDRT for this device. For more information about the WDRT, see *Using Whole Disk Recovery Tokens* (on page 250).

This button is not available if the disk is not a boot disk, or if it does not have a WDRT.

To view the Disk Encryption status for this device

- 1 Expand the Disk Encryption section of the **WDE Computer Information** page. This shows the disks associated with this device, and their encryption status.
- 2 To view detailed information about the disk, click the Disk ID. This takes you to the appropriate **WDE Disk Information** dialog.

To view the Disk Login Failures detected for this device

- 1 Expand the Disk Login Failures section of the **WDE Computer Information** page. This section lists login failures alerts for encrypted devices, and allows you to clear them.

Login failure alerts also appear on the System Overview page. You can configure the System Overview failure alerts display using the *Managing Alerts* (on page 27) dialog box from the System Overview page.
- 2 To clear the login failures alerts list, click **Clear Login Failure Alerts**.

To view the Authorized Users associated with this device

- 1 Expand the Authorized Users section of the **WDE Computer Information** page. This section lists the authorized users associated with this computer.
- 2 To view detailed information about a user, click the user name. This takes you to the appropriate Internal User Information page.

WDE Disks

To view the WDE Disks in the PGP Universal Server database

- 1 Go to **Consumers > Devices**. The **All Devices** page appears.
- 2 Click the **WDE Disks** tab. This filters the list so that only WDE Disks are listed.

For each WDE disk, the list shows: the name of the device, the type of disk, the number of the partition, the operating system, the version of the PGP Desktop client, the encryption status of the partition, the number of Login Failures seen, whether the boot drive has a Whole Disk Recovery Token associated with it, the number of authorized users associated with this disk, and the date of the last interaction PGP Universal Server had with this device.

- 3 To view the details for this computer, click the device name.
- 4 To delete a disk from the database, click the Delete icon.
- 5 To delete multiple disks, check the boxes for the disks you want to delete and select **Delete Selected** from the **Options** menu. To delete all disks, select **Delete All** from the **Options** menu.
- 6 To export WDE Login Failure information, either check selected disks and select **Export WDE Login Failures for Selected** from the **Options** menu, or select **Export WDE Login Failures for All**.
- 7 To export all WDE Activity for the listed devices, select **Export All WDE Activity** from the **Options** menu.

WDE Disk Information

The WDE Computer Information page shows details about the selected computer.

To view logs for this device

- Click **View Log Entries**. This displays the Administration log entries for this device.

To view the Whole Disk Recovery Token (WDRT) for this device

- Click **View WDRT...** This displays information about the WDRT for this device. For more information about the WDRT, see *Using Whole Disk Recovery Tokens* (on page 250).

This button is not available if the disk is not a boot disk, or if it does not have a WDRT.

To view the Disk Login Failures detected for this device

- 1 Expand the Disk Login Failures section of the **WDE Disk Information** page.
This section lists login failures alerts for encrypted devices, and allows you to clear them.

Login failure alerts also appear on the System Overview page. You can configure the System Overview failure alerts display using the *Managing Alerts* (on page 27) dialog box from the System Overview page.
- 2 To clear the login failures alerts list, click **Clear Login Failure Alerts**.

To view the Authorized Users associated with this device

- 1 Expand the Authorized Users section of the **WDE Disk Information** page.

This section lists the authorized users associated with this disk.

- 2 To view detailed information about a user, click the user name. This takes you to the appropriate Internal User Information page.

Searching for Devices

You can search for devices using a plain string match or through an **Advanced Search** dialog box.

To perform a simple string match search

- 1 In **Search computers**, type a search string.
- 2 Click **Search**.

The devices that match your search criteria are displayed.

To perform an advanced search

- 1 Click **Advanced search**.
The relevant search dialog box appears.
- 2 Select a search type from the drop-down menu and type or select your search criteria.
- 3 To search using multiple criteria, click + and type the appropriate criteria.
- 4 Click **Search**.

The devices that match your search criteria are displayed.

The following table lists the search criteria for the device.

Note: Not all criteria are available for all types of devices.

Search Criteria	Search Limiters
Name	All or part of a device's name.
Type	The type of device (selected from a drop-down menu): Managed Device, WDE Disk, WDE Computer, or Unknown.
Last Seen	Date or time of the last device activity.
WDE Status	The encryption status of the target disks: Unencrypted, Decryption Paused, Decryption Started, Encryption Completed, Encryption Paused, Encryption Started.
Client OS	The operating system managing the disk.
Client	The version and build of the PGP Desktop client managing the disk.
Partition ID	The ID of the partition.

Search Criteria	Search Limiters
Recovery	Whether Recovery is enabled (True) or not (False).

25

Administering Consumer Policy

This chapter describes how to create consumer policy, including key generation and management, client updates, and PGP Universal Web Messenger.

The chapter also explains how certain consumer policy settings change the behavior of client installations, and when and how those settings should be used.

For information on how to set consumer policy specifically for client software features, see *Setting Policy for Clients* (on page 215).

Understanding Consumer Policy

Use consumer policies to create client installations and control how they behave. For more information on specific consumer policy settings, see the online help and *Managing Consumer Policies* (on page 197).

Consumer policy is applied to consumers depending on group membership and policy group order. For more information on groups and consumer policy, see *Managing Groups* (on page 169).

There are two consumer policies installed on the PGP Universal Server: Default and Excluded.

- **Default policy.** All non-excluded consumers are members of the Everyone group. By default, the Everyone group receives the Default policy, but you can assign any other custom consumer policy to the group. You can also assign the Default policy to any custom group. You can edit Default policy settings.
- **Excluded policy.** All Excluded consumers receive the Excluded policy, but you can also assign the Excluded policy to any custom group. You cannot edit Excluded policy settings.

You can also create custom consumer policies.

Managing Consumer Policies

You can add, edit or delete consumer policies.

Adding a Consumer Policy

To create a new consumer policy

- 1 On the Consumer Policy page, click **Add Policy**.
The Add Consumer Policy dialog box appears.
- 2 In the **Clone From** menu, select the existing policy with the settings you would like to use as a starting point for a new policy.

If this is the first new consumer policy to be created, the menu has only one entry, Default, the external users default policy.

- 3 In the **Policy Name** field, type a name for the policy you are creating.
- 4 Click **Save**.
- 5 Edit the new policy settings as appropriate.

Editing a Consumer Policy

You cannot edit the Excluded consumer policy.

Note: The settings you establish for PGP Desktop can be affected by the licenses used, features you enable or disable, or by changes made to the client installer after it is created.

To edit a consumer policy

- 1 On the Consumer Policy page, select the policy you want to change.
The Consumer Policy Options page appears.
- 2 For each of the following policy sections, make the necessary changes. For details on the feature settings for each section, see the online help.
 - **General.** Click **Edit...** to make changes related to client software updates, to configure a proxy server, import an ADK for this policy, or edit XML preferences.
 - **Keys.** Click **Edit...** to select key types and sizes, key modes, certificate generation settings, and passphrase specifications. These settings apply to keys and certificates generated for use with any of the PGP encryption products, including PGP Universal Satellite. See *Choosing a Key Mode For Key Management* (on page 41) for more information on selecting key modes.
 - **PGP Desktop.** The section provides the following configuration settings:
 - **Desktop....** Configuration settings for PGP Desktop as well as PGP NetShare, PGP Virtual Disk, PGP Whole Disk Encryption, and other options.
 - **Mobile....** Configuration options for PGP Mobile users.
 - **Client Licensing....** This shows the information about your client license for both version 9.0 and 9.5+ PGP Desktop clients. PGP Desktop client licenses are included by default in PGP Universal Server version 3.1 and later. If you upgraded from a previous PGP Universal Server release, your existing PGP Desktop license is shown; you have the option to use the default license instead.

The license information is integrated in the PGP Desktop client installers.

Note that in a new PGP Universal Server installation with the default client license, all licensable features are disabled; you must explicitly configure your consumer policy to enable the features for which you have purchased a license.

- **PGP Universal Web Messenger.** Click **Edit...** to configure options for enabling external users to join the SMSA. Based on consumer policy settings, recipients are offered different ways to join the SMSA; for example, PGP Universal Satellite or PGP Universal Web Messenger. See *Applying Key Not Found Settings to External Users* (on page 121) for information on how external users interact with Smart Trailer and PGP Universal Web Messenger.
- 3 To change the name or description of the policy, click **Edit Policy Name...**
 - 4 To delete all changes you have made to this policy (in any of the policy sections) and restore it to the default settings, click **Restore to Factory Defaults**.

Deleting a Consumer Policy

You cannot delete the Default and Excluded consumer policies.

To delete a consumer policy

- 1 To delete a consumer policy, click the **Delete** icon for the policy you want to remove.
A confirmation dialog box appears.
- 2 Click **OK** to continue.

Making Sure Users Create Strong Passphrases

When you create internal and external user policies, you can make sure users create strong passphrases by setting the **Enforce minimum passphrase quality** feature. The feature allows you to choose a passphrase quality of 25%, 50%, 65%, 75%, 80%, 85%, 90%, or 100%.

When an internal or external user creates a passphrase, the Passphrase Quality bar appears. The length of the bar indicates the strength of the user's passphrase. The passphrase quality percentage you choose determines the minimum length of the user's Passphrase Quality bar. If you choose a 50% passphrase quality, the Passphrase Quality bar must be at least 50% of its full length.

The Passphrase Quality bar compares the amount of entropy, or randomness, in the passphrase the user enters against a true 128-bit random string (the same amount of entropy in an AES128 key). This is called 128 bits of entropy. Entropy is a measure of the difficulty in determining a password or key.

If the passphrase the user creates fills up approximately half the Passphrase Quality bar, then that passphrase has approximately 64 bits of entropy. If the passphrase fills the Passphrase Quality bar, then that passphrase has approximately 128 bits of entropy.

To make sure user passphrases have approximately 64 bits of entropy, select a minimum passphrase quality of 50%, which is half the total length of the Passphrase Quality bar.

For information on how to set the **Enforce minimum passphrase quality** feature, see *Editing a Consumer Policy* (on page 198).

Understanding Entropy

How strong is 128 bits of entropy? In the late 1990s, specialized "DES cracker" computers were built that could recover a DES key in a few hours by trying all possible key values.

If you could build a computer that could recover a DES key in one second (the computer would have to be able to try 255 keys per second), it would take that computer approximately 149 trillion (thousand billion) years to crack one 128-bit AES key.

The entropy of a particular character measured by the number of possible choices. The more characters there are to choose from when picking a particular character, the more entropy is assigned to the chosen character. For example, if you must create a numeric PIN, you can only choose from the numbers zero through nine; a total of 10 characters. This is a small pool, so the entropy for a chosen character is low.

When an internal or external user chooses a passphrase, there are many more choices. The user has three pools of characters to choose from: uppercase and lowercase letters (52 characters), numbers zero through nine (10 characters), and the punctuation characters on a standard keyboard (32 characters). When the user enters a character, the software determines the entropy value for that character based on the set of characters it comes from, and applies that value to the Passphrase Quality bar.

Enabling or Disabling Encrypted Email

On the Options page in your consumer policy, the Allow users to receive encrypted mail checkbox determines whether any PGP email messaging software can encrypt email to the primary keys that belong to users who follow the consumer policy.

If the checkbox is selected, any PGP email messaging software can encrypt mail to that user.

If it is deselected, and PGP software tries to encrypt mail to the user's key, the key not found (KNF) action in your mail granular policy is triggered, as if the email recipient had never had a key. The key can be found and only used for other purposes, for example by PGP NetShare, but not email encryption.

Note: When you migrate to PGP Universal Server 3.2, the default setting is the same as the one for PGP Desktop Email Messaging. Users who upgrade to PGP Universal Server 3.2 need to verify that the setting is appropriate for them. For a new installation of PGP Universal Server 3.2, you must verify that the Allow users to receive encrypted mail checkbox is selected to reflect the encryption needs of the affected policy group.

To enable or disable encrypted emails:

- 1 Select **Consumer > Consumer Policy**.
- 2 Click **Default**.
- 3 In the Keys panel, click **Edit**.
- 4 Click the **Options** tab.

- 5 Do one of the following:
 - To allow encrypted email, select the **Allow users to receive encrypted mail** checkbox.
 - To prevent encrypted email, deselect the **Allow users to receive encrypted mail** checkbox.
- 6 Click **Save**.

Using the Windows Preinstallation Environment

Creating a customized Windows Preinstallation (PE) CD/UFD (USB Flash Drive) provides a bootable recovery tool that can be used for rescue purposes. For example, you can use the DOS commands to copy, edit, backup and delete files.

Also use Windows PE to upgrade a PGP WDE-encrypted computer to Windows Vista.

To obtain the PGP WDE drivers and tools, go to the *Symantec Knowledgebase* (<http://www.symantec.com/business/support/index?page=home>) and search for TECH149060, "Windows Preinstallation Environment & BartPE Tools." Also included in this knowledgebase article is a technical note you can download that contains all of the instructions in this section.

X.509 Certificate Management in Lotus Notes Environments

Note: This section applies only if you have *both* a PGP Universal Server enterprise encryption platform managing PGP Desktop clients and a Lotus Notes/Domino environment.

You can populate your Lotus Notes Domino X.509 certificate store with X.509 certificates created by and managed by your PGP Universal Server through the PGP Universal Server Encryption Platform. This includes deploying the private portion of the certificate into the user's Lotus Notes ID file and the public portion into the organization's Domino Directory.

This feature is disabled by default.

This feature allows you to take advantage of the management capabilities of your PGP Universal Server and to maintain cryptographic compatibility in places where PGP Universal Server cannot otherwise play a role.

For example:

- If a user or administrator selects "encrypt incoming mail" on the user's Domino person document, any mail encrypted by the server can be decrypted by PGP Desktop when the user opens the message. All secure-messaging features provided by PGP Desktop can be used, including notifications and logging.
- The Lotus Notes full-text indexer can index PGP-encrypted content; MIME-formatted mail becomes searchable, but Lotus Notes Rich Text mail does not.

- External or internal users who are not using client software can still find the X.509 certificates deployed by Lotus Notes-based PGP Desktop users and send S/MIME-encrypted mail to those users. The PGP Universal Server-managed X.509 certificates proliferate into the Notes/Domino X.509 certificate stores so that all Notes/Domino services can make native use of them.

Note: Further integration with the Lotus Domino X.509 environment, including participation in the Domino Certificate Authority (CA) server process, is not included in this feature. Certificates deployed by PGP Desktop are not included in the Domino Issued Certificate List (ICL) or its internal Certificate Revocation List (CRL).

Trusting Certificates Created by PGP Universal Server

To populate your Domino Directory with X.509 certificates created by PGP Universal Server, you must configure the Domino Directory to trust the X.509 certificates, then establish how the X.509 certificates are pushed to the Lotus Notes/Domino environment.

Note: By taking the following steps, you are extending explicit trust of X.509 certificates that are created and managed by PGP Universal Server into your Lotus Notes/Domino environment.

To configure the Domino Directory to trust the X.509 certificates

- Export the root public and passphrase-protected private X.509 Organization Certificate from the PGP Universal Server to a PKCS12 file.
- Import the PKCS12 file into the Domino Directory.
- Configure the Domino Directory to trust the X.509 certificates.
- Establish how X.509 certificates are pushed to the Lotus Notes/Domino environment.

To export the root X.509 Organization Certificate from the PGP Universal Server to a PKCS12 file

- 1 On the PGP Universal Server, from **Keys >Organization Keys**, open the Organization Certificate.
- 2 Click **Export**.
- 3 From the Export Certificate dialog box, select **Export Keypair**.
- 4 Type a passphrase.
- 5 Click **Export** to export the root public and passphrase-protected private X.509 certificate from the PGP Universal Server to a PKCS12 file.

To import the PKCS12 file into your Domino Directory:

- 1 On the Domino Directory **Administration Client**, select **Configuration**.
- 2 Open the **Certificates** part of the directory tree.
- 3 From the **Certificates** part of the directory tree, select **Certificates**.
- 4 From the **Action** menu, select **Import Internet Certificates**.

The Specify File dialog box appears.

- 5 Browse to select the PKCS12 certificate, then click **Open**.
- 6 Type the certificate passphrase in the Enter Password dialog box.
The Import Internet Certificate dialog box appears.
- 7 Click **Accept All**. The certificate is imported.

To configure the Domino Directory to cross-certify (trust) the X.509 certificates:

- 1 On the Domino Directory **Administration Client**, select **Configuration**.
- 2 Open the **Certificates** part of the directory tree.
- 3 From the Certificates part of the directory tree, select **Certificates**.
- 4 From **Internet Certificates**, find and double-click the imported certificate.
The certificate opens.
- 5 From the **Actions** menu, select **Create Cross Certificate**.
The Create Cross Certificate dialog box appears.
- 6 Select the certificate and click **OK**.
- 7 From the Issue Cross Certificate dialog box, click **Server** and select the server where the certificate should be stored, then click **OK**.
- 8 Click **Certifier**, choose the appropriate Notes/Domino certifying ID file (or use the Domino CA Process if it is in use), and click **OK**.
- 9 Choose the subject name and expiration date for the certificate.
- 10 Click **Cross Certify**. The imported root certificate is cross-certified (trusted).

To establish how X.509 certificates should be pushed to the Lotus Notes/Domino environment:

- 1 On the PGP Universal Server, from **Consumers > Consumer Policy**, select the consumer policy you want to modify.
- 2 Click **Desktop....**
- 3 Click **Messaging & Keys** and choose the correct Lotus Notes settings. For information on how to select the appropriate settings, see *Setting the Lotus Notes Key Settings in PGP Universal Server* (on page 203).

Setting the Lotus Notes Key Settings in PGP Universal Server

There are two options in PGP Universal Server that control how PGP Universal Server X.509 certificates are used in the Lotus Notes/Domino environment.

These options are:

- **Use PGP certificates instead of Lotus Notes certificates.** This option adds the users' PGP X.509 certificate into the Lotus Notes/Domino credential store if and only if the user has an active X.509 certificate not generated by PGP Universal Server. Lotus Notes users do not receive an X.509 certificate by default; instead, the user or administrator must provide one.

Once enabled, the PGP X.509 certificate becomes the users' active certificate in Lotus Notes; the Lotus Notes certificate is suppressed. Lotus Notes users without client software can find PGP Universal Server-generated X.509 certificates in the Domino Directory and use them to encrypt mail.

This setting allows the organization to eliminate certificate confusion by making the PGP-generated certificate primary and any other certificates secondary. The setting prevents message verification failure, which occurs when a recipient without PGP Desktop client software opens an S/MIME message signed by a sender who does use PGP Desktop. The sender's signing certificate is generated by PGP Desktop, but the recipient directory lookup in the Domino Directory fails to find a match.

- **Add PGP certificates to Lotus Notes if no certificate exists.** If you enable this setting in addition to the **Use PGP certificates instead of Lotus Notes certificates** setting, this setting inserts the PGP X.509 certificates into the Lotus Notes certificate directory, overlaying and overriding any X.509 certificates already there. Every Lotus Notes-based PGP Desktop client automatically inserts its PGP X.509 certificate into the Lotus Notes/Domino environment.

- **Prefer Notes native encoding over PGP encoding - Sign and Encrypt or Encrypt only**

If the recipient is an internal Notes user, this setting allows PGP Desktop to encrypt mail messages using Notes native encryption as the primary encryption method. Regardless of whether keys are found, if the Notes native encryption option is selected, this setting enables Notes native encryption to attempt encrypting messages first. If the recipient is not a Notes user, PGP Desktop uses PGP encoding.

- **Prefer Notes native encoding over PGP encoding - Sign Only**

If the Notes native encryption option is selected, and the PGP result is **Sign Only**, this setting passes the Signature action to Notes. Notes will attempt to sign the message using Notes native signing. When this option is selected, PGP Desktop does not sign the mail message at all.

Technical Deployment Information

Before you use PGP-generated certificates with your Domino server, you must prepare your email environment. To prevent an inconsistent state, there are steps you must take before any change to the Lotus Notes/Domino certificate store is committed.

The steps are:

- 1 Make sure the user has Author or Editor access to her "person document" in the Domino Directory on her home server. This enables PGP Desktop and certificate settings to be shared.
 - If the Domino directory template has been installed unmodified, give users Author access.
 - If the Domino directory template has been installed with modifications, Author access might not be sufficient. If Author access does not allow PGP Desktop and certificates settings to be shared, give users Editor access.

- 2 If the public certificate to be deployed is not found in the person document, add the certificate and mark it as the default encryption certificate.
- 3 If the public certificate is not found in the user's Notes ID file (keyring), add the associated private key and the certificate to the ID file, marking it as the default signing certificate for Internet mail.

Furthermore, PGP Desktop maintains any certificates deployed, updating them when they expire, for instance, and PGP Universal Server issues replacements. No certificates are ever deleted from the Lotus Notes/Domino certificate store by PGP Desktop, as legacy certificates must be preserved to decrypt or verify content previously encrypted to or signed by those certificates.

Offline Policy

Offline policy allows administrators to control how PGP Desktop processes messages when it can access the mail server but not PGP Universal Server. Each consumer policy can specify different offline policy behavior. PGP Desktop uses offline policy instead of local policy to process messages.

In Mail Policy (**Mail > Mail Policy**), the default offline policy messaging rules are laid out in the **Default: Standalone** policy chain. You can also create customized standalone rule chains. Standalone chains can only contain conditions and actions PGP Desktop can perform without PGP Universal Server. For example, you cannot have dictionary searches in a standalone chain.

You can also specify that PGP Desktop should always use the standalone mail policy whether PGP Universal Server is available or not.

These settings control offline policy behavior:

From **Consumer Policy > Policy Options > PGP Desktop > Messaging and Keys:**

- **Mail Policy.** Specifies how PGP Desktop processes messages when it can access the mail server but not PGP Universal Server. Select one of the following options.
 - **Standalone:** PGP Desktop always enforces the selected Standalone mail policy locally, regardless of whether PGP Universal Server is reachable. The client only contacts PGP Universal Server for policy updates and to upload logs. If you also disable policy updates and uploading logs, the client will never contact PGP Universal Server again after enrollment.
 - **Offline: Standalone:** PGP Desktop enforces the selected Standalone mail policy locally whenever PGP Universal Server is unreachable. PGP Desktop follows normal mail policy when it can reach PGP Universal Server.
 - **Offline: Block:** If PGP Universal Server is unreachable, PGP Desktop queues or blocks outgoing messages. PGP Desktop follows normal mail policy when it can reach PGP Universal Server.
 - **Offline: Send Clear:** If PGP Universal Server is unreachable, PGP Desktop sends outgoing messages in the clear, with user confirmation. PGP Desktop follows normal mail policy when it can reach PGP Universal Server.
- **If client fails to download policy for X days/hours/minutes.** Specifies how PGP Desktop processes messages when it has not been able to download policy for the specified period of time.
 - **Block outbound message.** Blocks outgoing messages after the specified period of time.

- **Apply last downloaded policy.** PGP Desktop continues to use the last policy settings downloaded. Choose this option if you turn off the setting **Download policy updates from PGP Universal Server**, because otherwise PGP Desktop will permanently block all outgoing messages after the specified time period.

From **Consumer Policy > Policy Options > PGP Desktop > General**:

- **Send client logs to PGP Universal Server every X days/hours/minutes.** Specifies how often PGP Desktop contacts PGP Universal Server to send client logs. If you turn off this setting, PGP Desktop will never upload client logs.
- **Download policy updates from PGP Universal Server every X days/hours/minutes.** Specifies how often PGP Desktop should attempt to download policy. If you deselect this, PGP Desktop will never contact PGP Universal Server to get new policy. If you turn off this setting, select **Apply last downloaded policy** from the setting **If client fails to download policy**, or PGP Desktop will permanently block all outgoing messages after the specified time period.

Using a Policy ADK

You can import an Additional Decryption Key for a Consumer Policy from the **Consumers > Consumer Policy > Consumer Policy Options > General** page. The consumer policy ADK is a public key used to encrypt resources owned by any consumer in a group that uses the policy.

For more information on ADKs, see *Additional Decryption Key (ADK)* (on page 53) and *Using an Additional Decryption Key for Data Recovery* (on page 262).

Out of Mail Stream Support

PGP Desktop encrypts email locally when it can find a key for the recipient. If it cannot find a key, it sends the message to the PGP Universal Server for further processing. Out Of Mail Stream support (OOMS) specifies how the email gets transmitted from the client to the server.

Out Of Mail Stream support is disabled by default.

During installation, you should consider the following information to determine the appropriate setting for your requirements.

OOMS Disabled

With OOMS disabled, sensitive messages that can't be encrypted locally are sent to PGP Universal Server "in the mail stream." In other words, these messages are sent from the mail client, through the mail server, and then to the PGP Universal Server just like normal email.

Importantly, *this email is sent in the clear (unencrypted)*. Mail or Network administrators could read these messages by accessing the mail server's storage or monitoring network traffic. These messages in the sender's Sent folder may also remain unencrypted.

However, archiving solutions, outbound anti-virus filters, or other systems which monitor or proxy mail traffic will process these messages normally.

OOMS Enabled

With OOMS enabled, sensitive messages that can't be encrypted locally are sent to PGP Universal Server "out of the mail stream." PGP Desktop creates a separate, encrypted network connection to the PGP Universal Server to transmit the message.

Technically, this email is sent via an SSL connection over port 443 (similar to accessing secure web sites on the Internet). Messages will not be delivered if SSL traffic between the client and the server over port 443 is not available.

Because OOMS sends sensitive messages over an encrypted connection, they are protected from interception or monitoring by mail or network administrators. Additionally, outbound messages in the sender's Sent folder will be encrypted to the sender's key.

However, archiving solutions, outbound anti-virus filters, or other systems which monitor or proxy mail traffic will not see these messages. For example, email archive systems may not capture these messages unless they also archive the contents of senders' Sent folders.

	Notes/Domino		Outlook/Exchange	
	OOMS Enabled	OOMS Disabled	OOMS Enabled	OOMS Disabled
Sensitive External Email sent via	SSL/port 443	Mail stream	SSL/port 443	Mail stream
Encrypted in transit from PGP Desktop to PGP Universal Server	Encrypted	Clear	Encrypted	Clear
Sent items folder	Encrypted	Encrypted	Encrypted	Clear
Archiving system impact	Invisible	None (archived email will be unencrypted)	Invisible	None (archived email will be unencrypted)

To enable or disable OOMS

- 1 From the **Consumers > Consumer Policy** page, select the policy you want to modify.
- 2 Click **Edit...** in the PGP Desktop section.
- 3 Select the **Messaging & Keys** tab.
- 4 Check or uncheck the **Enable Out of Mail Stream support (OOMS)** option
- 5 **Save** the policy.

This setting will now take effect for Users who are members of Groups that use this policy.

Enrolling Users through Silent Enrollment

PGP Desktop silent enrollment reduces the number of screens your users must navigate during enrollment. Only essential Setup Assistant screens appear during enrollment. Silent enrollment suppresses non-essential screens and uses default settings. Enrollment with SKM is completely silent.

Using smart cards means that enrollment is not completely silent. Users are prompted to enter their smart card PINs during enrollment.

Set silent enrollment for a PGP Desktop installer by selecting the **Enable Silent Enrollment** option on the General subtab of the PGP Desktop section.

Silent enrollment requires the use of the LDAP Directory Synchronization feature.

For information on configuring silent enrollment, go to the *Symantec Knowledgebase* (<http://www.symantec.com/business/support/index?page=home>) and search for: HOWTO59479 "HOW TO: Enable Invisible Silent Enrollment for PGP Desktop Clients".

Silent Enrollment with Windows

When you create a PGP Desktop installer for Windows with silent enrollment enabled, the **Allow/Deny/Require encryption of disks to existing Windows Single Sign-On password** option (on the Disk Encryption subtab of the PGP Desktop section) is ignored if set to **Deny**. Windows users log in to Windows and PGP Whole Disk Encryption using a single sign-on password.

Silent Enrollment with Mac OS X

When you create a PGP Desktop installer for Mac OS X with silent enrollment enabled, and you require that the boot disk automatically be encrypted at enrollment, enrollment is no longer completely silent. Users must provide credentials before disk encryption begins.

To require that the boot disk automatically be encrypted at enrollment, set **Automatically encrypt boot disk upon installation** on the Disk Encryption subtab of the PGP Desktop section.

PGP Whole Disk Encryption Administration

PGP Whole Disk Encryption includes the Single Sign-On (SSO) feature. It synchronizes the PGP Whole Disk Encryption authentication with the one required by Microsoft Windows when a user boots a computer. Once a disk or boot partition is encrypted, the next time the user starts the system, the PGP WDE BootGuard screen appears immediately upon startup. Logging in at this point also logs the user into the Windows session. The users does not have to log in twice.

The SSO feature is enabled through the **Allow/Force/Deny encryption of disks to existing Windows Single Sign-On password** option on the Disk Encryption subtab of the PGP Desktop Settings for any consumer policy.

If you select **Force**, users with this policy are forced to choose the SSO feature when they initially protect a boot partition or an entire disk using PGP Whole Disk Encryption. If you select **Allow**, users can choose to use the SSO feature.

PGP Whole Disk Encryption on Mac OS X with FileVault

There are no conflicts with FileVault on Mac OS X systems. If a system has only a single user, using FileVault would be redundant by double-encrypting the user's Home folder. However, if a system has multiple users, you can use FileVault also to ensure privacy of data for each user's Home folder from the other users of the system.

How Does Single Sign-On Work?

Microsoft Windows has a few methods available by which other companies can customize the Windows login experience. One method is the Graphical Identification and Authentication (GINA) dynamic-link library (DLL), the pluggable part of WinLogon, which third parties can replace to customize login functionality or the login user interface. GINA can be used to create, for example, biometric login methods, or smart card logins.

The PGP Whole Disk Encryption Single Sign-On (SSO) feature does not use GINA, as there are certain compatibility issues with GINA. For example, it is possible to have multiple, conflicting GINAs on the same system. Instead, SSO uses another method, the Windows Automatic Login feature. PGP Desktop uses your configured authentication information to create, dynamically, specific registry entries when you attempt to log in. Your Windows password is never stored in the registry, nor in any form on the disk—neither encrypted, nor as cleartext.

Implementation details differ between the various versions of Microsoft Windows, but user interaction with the feature is the same, regardless of Windows platform.

The SSO feature is not compatible with other GINAs. You might encounter some issues if you attempt to use SSO in conjunction with another GINA.

Multiple Users and Single Sign-On

You can configure up to 120 multiple users on one system for Single Sign-On. Symantec Corporation, however, recommends limiting the number of Single Sign-On users to the fewest possible persons who must share the system. While technically feasible to do so, a large number of users sharing a single, encrypted computer is not a secure solution, and Symantec Corporation discourages this practice.

Note that the Single Sign-On feature is passphrase-only; you cannot utilize Single Sign-On with users' keys, nor is the feature compatible with smart cards or tokens.

Local Users

If a computer is not a part of a domain, PGP Whole Disk Encryption automatically disables certain User Access features, including "Use Welcome Screen" and "Fast User Switching" (which relies on the welcome screen), such that it then makes the CTRL+ALT+DEL available.

These features are automatically disabled when computers are part of a domain.

Enabling Single Sign-On

- Your license must include PGP Whole Disk Encryption.
- The user must have PGP Whole Disk Encryption installed.
- Select **Force** or **Allow** for the consumer policy setting **Allow/Force/Deny encryption of disks to existing Windows Single Sign-On password**.

Note: If you change the Single Sign-On setting on a group policy or re-assign a user to a new policy with a different setting, the change is not reflected on the user's end. Users continue to sign in once or more than once, based on the original Single Sign-On setting for their group.

To set up the Single Sign-On feature through the user's PGP Whole Disk Encryption installation

- 1 Click the PGP Disk control box, then select **Encrypt Whole Disk**.
- 2 Select the disk or partition that you would like to encrypt, and choose the PGP Whole Disk Encryption options that you would like, if any.
- 3 In the User Access section, select **New Passphrase User**.
- 4 Select **Use Windows Password**, then click **Next**.
- 5 Type your Windows login password, then click **Finish**.

PGP Whole Disk Encryption verifies that your name is correct across the domain, and that the Windows password is correct. PGP Whole Disk Encryption also checks your password to make sure that it contains only allowable characters. If your password does contain any such characters, you are not allowed to continue.

- 6 Click **Encrypt**, then click **OK**.

Changing the User's Passphrase

For PGP Whole Disk Encryption Single Sign-On to work properly, the user must change the password for Single-Sign On using the **Change Password...** feature in the Windows Security dialog box, which you access by pressing CTRL+ALT+DEL.

To change the user passphrase

- 1 Press CTRL+ALT+DEL.
- 2 Type the old password.
- 3 Type and confirm the new password.
- 4 Click OK.

Single Sign-On automatically and transparently synchronizes with this new password. The user can use the new password immediately, in the next login attempt.

If you change the password in any other manner—via Domain Controller, the Windows Control Panel, via the system administrator, or from another system, the next login attempt on the PGP BootGuard screen fails. The user must then supply the old Windows password. Successful login on the PGP BootGuard screen using the old Windows password then brings up the Windows Login username/password screen. The user must then log in successfully using the new Windows password, at which time PGP WDE synchronizes with the new password.

Supported Characters and Keysets

PGP WDE Single Sign-On supports alphanumeric, punctuation characters, spaces, and standard meta-characters. TABs and control characters are not supported.

The following characters are supported:

abcdefghijklmnopqrstuvwxyz

ABCDEFGHIJKLMNOPQRSTUVWXYZ

0123456789

`!@#\$%>&*()_+={}:;[]'"<>.,?/-

Managing Clients Remotely Using a PGP WDE Administrator Active Directory Group

To access users' systems remotely to perform system changes to the PGP Whole Disk Encryption configuration, create an Active Directory group. Members of this group can access PGP Whole Disk Encryption installations through the `-admin-authorization` command line option, using their current remote login capability.

Any member of the WDE-ADMIN Active Directory group can remotely access a system to add or remove users from PGP WDE, encrypt or decrypt a drive, and so on, using the PGP Whole Disk Encryption command-line tool. These administrative functions can be performed without having to request the user's passphrase.

Using Active Directory, create a new Administrator Group called `WDE-ADMIN`. Add members to this group who are authorized to remotely access users' systems to perform PGP WDE maintenance tasks. WDE-ADMIN is a security group, not a distribution group.

The encrypted drive and Active Directory must both be running for you to use this function.

Creating an Active Directory group for WDE-ADMIN allows you to:

- Log in remotely to perform PGP WDE maintenance tasks (using the `pgpwde` command line).
- Use SMS or other tools to perform PGP WDE maintenance.
- Use `pgpwde` to perform Active Directory authentication to ensure only authorized administrators can access users' systems. (Note that the system must be connected to the network and Active Directory must be running.)

For more information on using a WDE-ADMIN administrator group, see the *PGP Whole Disk Encryption Command Line for Windows User's Guide*.

Managing Clients Locally Using the PGP WDE Administrator Key

If you need to perform maintenance or other tasks on a user's system, use the PGP Whole Disk Encryption administrator key without having to request the user's passphrase. Use the PGP Whole Disk Encryption administrator key to log in to a user's system at the PGP WDE BootGuard screen using two-factor authentication (with a smart card or token). Once you have logged in at the Bootguard, you can then log in to the user's system using your domain administrator user name and password.

The benefits of using two-factor authentication to access a user's system are:

- Each administrator has a unique token that allows access to systems encrypted with PGP Whole Disk Encryption.
- Because both the smart card or token *and* a PIN are required to access the system, security is maintained if the smart card or token is lost or stolen.
- If an administrator leaves the company, the PGP Universal Server administrator can change the key in PGP Universal Server for that group, and all clients are updated automatically. Clients are updated at PGP Desktop tray startup and every 24 hours.

Note: If you have systems that have been encrypted with PGP WDE, you do not need to re-encrypt those disks to add the PGP WDE administrator key. The key is pushed down to the clients during the next policy update.

Supported Smart Cards and Tokens

The following smart cards and tokens can be used for the PGP WDE administrator key:

- Aladdin eToken 64K, 2048 bit RSA-capable
- Aladdin eToken PRO USB Key 32K, 2048 bit RSA capable
- Aladdin eToken PRO without 2048 bit capability (older smart cards)
- Athena ASEKey Crypto USB Token

Athena ASECard Crypto Smart Card No other tokens are supported. To create a PGP WDE administrator Key

- 1 Create a key (for example, AdminSales) using PGP Desktop. For more information on creating a key, see *PGP Desktop User's Guide* .

Do not specify a preferred keyserver for this key. If you do specify a keyserver on the key, you need to upload and publish the key to the specified keyserver.

- 2 Configure the key in a PGP Universal Server internal user group policy, if necessary, so that only systems in that group can be accessed using the PGP WDE administrator key. If you want all PGP Whole Disk Encryption installations to be accessible through the same key, upload the same key to all internal user groups. For information on adding the key to a consumer policy, see the online help for the Disk Encryption subtab of the PGP Desktop section of consumer policy.

- 3 Copy the key to a smart card or token using PGP Desktop.

The same key can be copied to multiple tokens. Each token should have its own unique PIN.

To use a PGP WDE administrator Key

- 1 Insert the smart card into one of the USB ports.
- 2 Start the system to be accessed.
- 3 At the PGP BootGuard screen, type the PIN, and then press CTRL + ENTER.
- 4 At the Windows login dialog box, after the system has booted, type your administrator user name and password to access the system.
- 5 Perform the tasks needed on the system, and shut down the system.

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Setting Policy for Clients

This chapter describes how to use policy settings to build client installations for consumers. Client installations are PGP client applications such as PGP NetShare, PGP Portable, PGP Mobile, and PGP Desktop.

For more general information on setting consumer policy, see *Administering Consumer Policy* (on page 197).

Client and PGP Universal Server Version Compatibility

Symantec Corporation supports backward compatibility for clients only. PGP Universal Server 3.2.1 supports managing policy of these versions (and subsequent maintenance releases of each) of PGP Desktop:

- 9.5.3
- 9.6.1
- 9.6.2
- 9.6.3
- 9.7.1
- 9.8.2
- 9.9.0
- 9.9.1
- 9.10.0
- 9.10.1
- 9.12.0
- 10.0.0
- 10.0.1
- 10.0.2
- 10.1.0
- 10.2.0
- 10.2.1

Note: Limited backward compatibility support means that legacy features, such as enrollment, policy download, logging and reporting are supported, but legacy clients cannot access the latest client features in Consumer Policy.

We recommend that you upgrade your PGP Universal Server and your clients, so that they are eventually on the same release. For the most current information on which client versions are supported, see the Knowledge Base.

PGP Universal Server 3.2.1 supports managing policy of these versions (and subsequent maintenance releases of each) of PGP Universal Satellite:

- 2.5.3
- 2.6.3
- 2.7.1
- 2.8.2
- 2.9.0
- 2.10
- 2.12
- 3.0
- 3.0.1
- 3.1.0
- 3.2.0
- 3.2.1

Note: Policy options for features that do not exist in supported legacy versions are ignored by those installations.

PGP Universal Server 3.2.1 provides limited management support (without policy) back to PGP Desktop version 9.0 and PGP Universal Satellite version 2.0.

Serving PGP Admin 8 Preferences

You can import and store Administrative Preferences from PGP Admin 8.x clients in an LDAP directory associated with your new PGP Universal Server. This allows you to retain preferences for PGP Desktop 8.x users, and still replace the old PGP Keyserver.

PGP Admin preferences do not affect PGP Desktop 9.x clients. The preferences are only stored for the benefit of users running previous versions of PGP Desktop.

You can use LDAP or LDAPS. If you choose LDAPS, make sure you have enabled LDAPS keyserver service on the new PGP Universal Server.

Read-only and Service Control Only PGP Universal Server administrators do not have write access to the LDAP servers, so they cannot import PGP Admin preferences.

- 1 Install and set up your new PGP Universal Server.
- 2 Open PGP Admin on your PGP administrative computer.
- 3 From **Administrative Options > Updates**, change the previous LDAP Server URL (for example, `ldap://<oldkeyservername>`) to the LDAP server URL you are using with your PGP Universal Server.

The LDAP server URL format must be `ldap://<newservername>/o=Prefs` or `ldaps://<newservername>/o=Prefs`.

The bind DN must be `cn=<username>,o=Prefs`.

The username is the username of the PGP Universal Server administrator, and the passphrase is that user's PGP Universal Server passphrase. An example of the new LDAP server URL format would be `ldap://keys.example.com,o=Prefs`, which replaces `ldap://oldkeyserver.example.com`.

- 4 Click **OK**. The PGP Admin screen appears.
- 5 Click **Update Server Configuration**. The login screen for your new LDAP server appears. Log in with the username and passphrase specified in step 3.

The current PGP Admin settings file is uploaded to the new LDAP server.

PGP Desktop 8 clients download the preferences from the old server at `ldap://<oldkeyserver>`. Those preferences contain the new LDAP URL.

When your PGP Desktop 8 clients next poll for preference updates, they download them from the new LDAP URL at `ldap://<newservername>/o=Prefs`.

Once your users have all started receiving preferences from the new PGP Universal Server, you can remove your old PGP Keyserver from service.

Establishing PGP Desktop Settings for Your PGP Desktop Clients

There are multiple ways for you to control what your users can do with PGP Desktop when it is installed on their systems:

- **License settings:** The traditional method of controlling what your users can do with PGP Desktop is for your organization to purchase licenses that support the features you want. So if you want your users to whole disk encrypt their drives, you purchase licenses that include support for PGP Whole Disk Encryption. You must then enable the PGP Whole Disk Encryption feature within your consumer policies.

For more information about feature licenses, see *PGP Desktop Feature License Settings* (on page 218).
- **Feature settings:** Once your organization purchases the appropriate licenses, establish settings for each feature that support your organization's security policies. The default license is installed by default along with the PGP Universal Server. If you have purchased a license that includes PGP Whole Disk Encryption, for example, you must enable the PGP Whole Disk Encryption feature. When Whole Disk Encryption is enabled within a consumer policy, you can control other aspects of the feature, such as whether or not removable USB disks inserted on your users' systems must be encrypted. For more information, see *Enabling PGP Desktop Client Features in Consumer Policies* (on page 218).
- **Feature control:** Another way to control what your users can do with PGP Desktop is by controlling not just the settings for a feature but the feature itself. So if your organization has licenses for all employees that support PGP Shredder, for example, but you have a subset of employees that do not need this feature, you can create a client installer just for this subset of users that does *not* contain the PGP Shredder feature. Feature control is available for all major features of PGP Desktop. Features that are disabled do not appear in the PGP Desktop user interface. For more information, see *Editing a Consumer Policy* (on page 198).

- Component control:** You can also control what your users can do with PGP Desktop by editing the MSI client installer file to disable PGP Desktop components. If your organization does not use Lotus Notes or Groupwise for messaging, for example, disable these components to limit any potential compatibility issues. This is accomplished by using Microsoft's msixec application to disable components after the client installer file is created. To enable a component that has been disabled requires a reinstallation of PGP Desktop with the component enabled. Components that are disabled do not appear in the PGP Desktop user interface. For more information, see *Controlling PGP Desktop Components* (on page 219).

PGP Desktop Feature License Settings

The following features are available depending on what PGP Desktop license you purchased:

The column headings indicate the name of the PGP Desktop products you can purchase. The row labels indicate the product features that are licensed for each product.

	PGP Desktop Email	PGP Whole Disk Encryption	PGP NetShare	PGP Desktop Professional	PGP Desktop Storage	PGP Desktop Corporate
PGP Desktop Email	Yes	No	No	Yes	No	Yes
PGP Whole Disk Encryption	No	Yes	No	Yes	Yes	Yes
PGP NetShare	No	No	Yes	No	Yes	Yes
PGP Virtual Disk	Yes	Yes	Yes	Yes	Yes	Yes
PGP Keys	Yes	Yes	Yes	Yes	Yes	Yes
PGP Shredder	Yes	Yes	Yes	Yes	Yes	Yes
PGP Zip	Yes	Yes	Yes	Yes	Yes	Yes

PGP Portable is licensed through PGP Universal Server, not PGP Desktop.

PGP Mobile clients are licensed separately.

Enabling PGP Desktop Client Features in Consumer Policies

The basic license for PGP Desktop is installed along with the PGP Universal Server, but the optional features (email messaging, PGP Whole Disk Encryption, PGP NetShare) are disabled. If you have purchased a license for one or more of these features, you must enable those features in your consumer policies.

To enable PGP Desktop client features in a consumer policy

- 1 On the Consumer Policy page, select the policy you want to change.

Note: If you plan to use multiple consumer policies, but want to enable the same PGP Desktop features for all of them, edit the policy you will use as the basis for cloning the additional policies.

The Consumer Policy Options page appears.

- 2 Click **Desktop...** in the PGP Desktop area.
- 3 Select and enable options based on the features in the PGP Desktop license you have purchased:
 - If your license includes Email Messaging, select the **Messaging & Keys** tab, and check the **Email Messaging** check box. You can then set specific policy settings for how clients handle email.
 - If your license includes PGP Whole Disk Encryption, select the **Disk Encryption** tab, and check the **PGP Whole Disk Encryption** check box. Once selected, the default settings are enabled. You can then select and modify the relevant settings.
 - If your license includes PGP NetShare, select the **Netshare** tab, and check the **PGP Netshare for Windows** check box. Once selected, the default settings are enabled. You can then select and modify the relevant settings.

For details of the features included with the various client licenses, refer to the table in *PGP Desktop Feature License Settings* (on page 218).

- 4 Save these policy changes to enable the selected features.

Controlling PGP Desktop Components

One of the ways you can control what your users can do with PGP Desktop is by disabling specific PGP Desktop components. This is accomplished by using software to distribute your client installers that has the ability to specify switches to the `msiexec.exe` command line utility.

Disabling a PGP Desktop component means it does not appear in the PGP Desktop user interface, and it ensures that there are no compatibility issues with the operating system or third-party products.

Upgrades, including automatic upgrades, honor the disabling of PGP Desktop components and do not reenabling disabled components unless the MSI file has been specifically edited to reenabling the disabled component.

The following PGP Desktop components can be disabled:

- **MAPI:** Means MAPI messaging is disabled.
- **Notes:** Means Notes messaging is disabled.
- **LSP:** Means the IM encryption feature and POP, SMTP, and IMAP messaging is disabled.
- **SSO:** Means the PGP WDE Single Sign-On feature is disabled.
- **WDE:** Means the PGP Whole Disk Encryption feature is disabled.
- **NetShare:** Means the PGP NetShare feature is disabled.
- **Groupwise:** Means Groupwise messaging is disabled.

- **Memory lock:** Means the memory locking feature (which keeps sensitive data from leaving volatile memory) is disabled. Disabling the memory lock means you can disable all kernel-level items, if desired. It should generally *not* be disabled unless you have a specific reason to do so.
- **Virtual Disk:** Means the PGP Virtual Disk feature is disabled.

The syntax to disable PGP Desktop components is:

```
> msisexec /I pgpdesktop.msi PGP_INSTALL_[component]=0 Where [component] is the PGP Desktop component you want to disable:
```

- MAPI
- NOTES
- LSP
- SSO
- WDE
- NETSHARE
- GROUPWISE
- MEMLCK
- VDISK

You can disable multiple PGP Desktop components using a single command. For example:

```
> msisexec /I pgpdesktop.msi PGP_INSTALL_MAPI=0  
PGP_INSTALL_NOTES=0 PGP_INSTALL_LSP=0
```

To reenable a PGP Desktop component that was disabled requires a reinstallation with the disabled component specifically reenabled. For example:

```
> msisexec /I pgpdesktop.msi PGP_INSTALL_MAPI=1
```

Note: If you disable the MAPI, Notes, and LSP components, clients cannot enroll through email. Email enrollment does not work with the email proxies disabled.

PGP Portable

PGP Desktop users use PGP Portable to distribute encrypted files to users who do not have PGP Desktop software, and to transport files securely to other systems that do not or cannot have PGP Desktop installed, for example through a USB device. A device containing PGP Portable-encrypted files also provides encryption and decryption functionality, and does not require any other encryption software.

PGP Portable provides:

- Portability of secured documents
- Ease of distribution of secured documents

PGP Portable is licensed through the PGP Universal Server. PGP Portable is available to PGP Desktop users if your PGP Universal Server license includes PGP Portable.

You can see how many PGP Portable disks have been created on the System Settings, Reporting Overview, Consumer Policy Options, and Daily Status Email

For information on enabling or disabling PGP Portable through the PGP Desktop settings, see *Editing a Consumer Policy* (on page 198) or the online help.

For information on how to create and use PGP Portable disks, see *PGP Portable Quick Start Guide*.

PGP Mobile

PGP Mobile enables enterprises to extend market-leading PGP® encryption security solutions for laptops and desktops to Windows Mobile devices, allowing users to encrypt emails, files, and entire storage volumes.

You can use PGP Universal Server to manage mail and consumer policy for PGP Mobile. You can edit the Default: Mobile mail policy chain from **Mail > Mail Policy**, and update the PGP Mobile consumer policies from **Consumers > Consumer Policy**. However, you cannot create the initial PGP Mobile installer from PGP Universal Server. For information on creating and configuring a PGP Mobile installation, see the *PGP Mobile Administrator's Guide*.

PGP NetShare

How the PGP NetShare Policy Settings Work Together

To understand how the PGP NetShare policy settings work together, this example demonstrates how these settings work together.

Assuming that:

- The folder whitelist contains %USERHOME%\Audit.
- The application-based encryption list contains excel.exe.
- The decryption bypass list contains FTP.
- The network share (H:\Finance_Q4 folder) is encrypted to UserA, UserB, and UserC.

Then, when UserA:

- Saves a standalone Excel file, the file is encrypted to UserA only.
- Saves an Excel file to the Audit folder, the file is encrypted to UserA only.
- Saves an Excel file to the H:\Finance_Q4 network share, the file is encrypted to UserA, UserB, and UserC.
- Transfers the standalone file (from the first bullet) via FTP to the a corporate server, the file retains the encryption to UserA only.
- Emails the file from within Excel, the file is not encrypted as a result of any PGP NetShare policy settings. The file is encrypted to according to mail policy settings.

Multi-user environments and managing PGP NetShare

PGP NetShare, and management of it, is now supported in multi-user environments. These environments were not supported in past releases because they only isolate sessions at the user level, resulting in undesired behavior when taking some typical actions. For example, disabling PGP NetShare affected all users, and more importantly, decrypted data would be available to all users. Now, user sessions are isolated at the driver-level on the client systems, ensuring the desired behavior of all PGP NetShare functionality.

Multi-user environment requirements

Not all multi-user environments are supported. PGP NetShare support is limited to several environments and server operating systems.

Supported multi-user environments:

- Microsoft Terminal Services
- Fast User Switching (this is a subset of Terminal Services)

Citrix Presentation Server 4.x Server operating systems supported for multi-user environments:

- Windows Server 2003, all editions
- Windows Server 2003 R2, all editions

Windows Server 2008, all editions **Note:** Both 32-bit and 64-bit versions of platforms are supported.

Backing Up PGP NetShare-Protected Files

You can back up files and folders that have been protected by PGP NetShare. Whether you are using PGP NetShare in a PGP Universal Server managed environment or not determines how the files are handled during the backup process.

Backing up files with an unmanaged client

When an unmanaged (standalone) client backs up protected files and folders, the protected files are decrypted transparently during backup and are stored in the clear on the backup media. Restoring them to their original encryption will encrypt them again transparently.

Backing up files with a PGP Universal Server-managed client

When a managed client is used to back up of protected files and folders, how the encryption is handled depends on if the backup application is set as an application bypass by the PGP Universal Server administrator.

- If the backup application is part of the decryption bypass list, the protected files stay encrypted on the backup media after backup. Restoring them to their original location keeps them encrypted.

- If the backup application is not part of the decryption bypass list, then it is similar to backing up files with an unmanaged client. In this case, the protected files are decrypted transparently during backup and are stored in the clear on the backup media. Restoring them to their original encryption will encrypt them again transparently.

Note: Symantec Corporation recommends that you do not mix the different scenarios between backing up data and restoring data. For example, if you are using an unmanaged client to back up the files, an unmanaged client should restore the files.

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Using Directory Synchronization to Manage Consumers

This section describes the Directory Synchronization feature, which lets you synchronize LDAP directories with your PGP Universal Server. Directory Synchronization allows you use LDAP directories to enroll clients as internal user consumers, and to assign a consumer to a specific consumer group based on the consumer's presence in a specified LDAP directory, or based on matching directory attributes you specify.

You can configure PGP Universal Server to search multiple LDAP directories, specify which directories should be searched based on matching the consumer's email address to predefined patterns, and specify how to handle a consumer that cannot be found in a directory.

For more information on using LDAP directories to sort consumers into groups, see *Managing Groups* (on page 169).

PGP Universal Server supports LDAPv2, LDAPv3, and LDAPS. You can use any of a number of directories with PGP Universal Server, although directories that more closely conform to the OpenLDAP or X.500 standards work best.

How PGP Universal Server Uses Directory Synchronization

Enabling Directory Synchronization lets you do multiple things:

- Use the LDAP directory to help create and enroll internal users.
- Include only specified consumers from the directories, allowing them to be added to the PGP Universal Server as internal users or as managed devices, and excluding consumers that do not match the criteria.
- Prevent specified consumers found in the directories from becoming members of any group except the Excluded group.
- Match certain consumers, based on their attributes in the specified directories, with a consumer policy group you create.

Directory Synchronization occurs when the local user (a user in a managed domain) sends or receives an email message. When a local user sends or receives a message, the PGP Universal Server checks to see if the sender is known to it. If not, it checks one or more LDAP directories (assuming Directory Synchronization is enabled) to see if an entry for the sender is present.

Note: Changes made to an LDAP directory can take up to 10 minutes to take effect in PGP Universal Server.

If the user is found in an LDAP directory (or the portion of it you specify), the PGP Universal Server adds that person to a group. You also have options to narrow the scope of the searching to certain parts of the directory (see *Adding or Editing an LDAP Directory* (on page 234) and *The Base Distinguished Name Tab* (on page 236)) or to consumers with certain attributes (see *Setting Group Membership* (on page 175)).

When users are added to PGP Universal Server from a directory via Directory Synchronization, their names, email addresses, and existing X.509 certificates (used to secure S/MIME email messages) are imported. If certificates are not found, PGP Universal Server generates PGP keys (and certificates, if configured for certificates) for these users.

Note: To import an X.509 certificate (RSA only) found on an LDAP directory, that certificate must have been issued by a trusted certificate. To ensure this happens, be sure the certificate of the issuing Root CA, and all other certificates in the chain between the Root CA and the X.509 certificate, are on the list of trusted keys and certificates on the Trusted Keys and Certificates page (**Keys > Trusted Keys**) and is trusted for verifying mail encryption keys. If it is not, import the certificate of the issuing Root CA that issued the user certificate to the list as soon as you enable Directory Synchronization. For instructions, see *Managing Trusted Keys and Certificates* (on page 77).

Certificates that include an email address that is *not* in a domain being managed by the PGP Universal Server are *not* added to the internal user account created. Expired, revoked, weak certificates (less than 1024-bit encryption), and certificates with greater than 4096-bit encryption are also not imported via Directory Synchronization.

When Directory Synchronization is enabled, for a user to be correctly added to PGP Universal Server, the “mail” attribute must be present in the directory and they must match the information PGP Universal Server has about them. The “uid” attribute must also be present, unless the directory is a Microsoft Active Directory, which requires the “sAMAccountName” attribute. For example, if PGP Universal Server discovers a user with a login name of “ming” and an email address of “mingp@example.com,” that user must have attributes “uid=ming” and “mail=mingp@example.com” in the directory. If these attributes do not match or are empty, the user is not added correctly. For a list of attributes, see *Directory Attributes* (on page 232).

The X.509 certificates stored in LDAP directories contain only public keys, so these users are imported into PGP Universal Server as Client Key Mode (CKM) users, which means that the PGP Universal Server does *not* have the private key for these users.

Base DN and Bind DN

The Directory Synchronization feature makes use of two types of Distinguished Names when communicating with an LDAP directory.

Bind DN

The Bind Distinguished Name (DN) is used to initially bind (or log in) to the directory server.

The Bind DN entry, if included, must match a user entry in the directory. This user represents the PGP Universal Server to the LDAP directory, allowing PGP Universal Server to log in to the directory and retrieve information. Supply the passphrase for this user, if appropriate.

Note: A bind DN is optional. If no Bind DN is provided, anonymous binding will be used, if the directory allows it.

Bind DN entries usually look as follows in an Active Directory environment:

```
CN=LDAP user,CN=users,DC=<yourcompany_name>,  
DC=<yourcompany_domain>
```

(CN=LDAP user,CN=users,DC=acmecorp, DC=net, for example)

Following is a sample Directory Synchronization configuration for an Exchange Server for a fictitious company called Acme Corporation:

Host: mail.acmecorp.net

Bind DN: CN=LDAP Search, CN=Users, DC=acmecorp, DC=net

Base DN: Leave blank

Here the “LDAP Search” user is a username created explicitly to allow the PGP Universal Server access to the directory. Its passphrase would be typed in the next field.

Base DN

A Base Distinguished Name (DN) specifies the location in the directory tree where directory lookups will start. You can have multiple Base DN's on one server. When you enter a Base DN value, you narrow the search for users and certificates to that specific portion of the directory.

Base DN entries usually look as follows in an Active Directory environment:

CN=users,DC=<yourcompany_name>,DC=<yourcompany_domain>

(CN=users, DC=acmecorp, DC=net, for example)

PGP Universal Server can automatically determine the Base DN to use if your LDAP directory supports the RFC 2252 namingContexts attribute. If it does not support this attribute, manually type the Base DN's to search. You can also specify the order in which Base DN's are searched.

Consumer Matching Rules

Consumer matching rules let you specify the set of consumers that are expected to be found in a given LDAP directory. For example, if you have several managed domains, or a managed domain with subdomains that each have their own LDAP directories, you can use the matching rules to specify which LDAP directory to search for a given email address.

For details about how consumer matching rules are used, see *Adding or Editing an LDAP Directory* (on page 234), and specifically *The Consumer Matching Rules Tab* (on page 236).

Understanding User Enrollment Methods

Enrollment is the binding of a computer with client software installed to a PGP Universal Server. After a client is bound it receives feature policy information from the PGP Universal Server; for example, encryption keys, email policy, PGP NetShare, or PGP Whole Disk Encryption administration.

There are two ways to enroll client software:

- **Email enrollment.** This is the default method; if you do not select **Enroll clients using directory authentication** for Directory Synchronization, users enroll through email.

This method is available to all client installations, including PGP Whole Disk Encryption-only installations, as long as there is an email account on the installed computer. Email enrollment is possible even if the PGP Universal Server does not perform email encryption or is out of the mailflow. Email enrollment only requires that the PGP Universal Server be able to send an SMTP message to the client's mail server.

For more information, see *Email Enrollment* (on page 229).

- **LDAP directory enrollment.** If you select **Enroll clients using directory authentication** for Directory Synchronization, you allow clients to enroll with LDAP.

LDAP enrollment requires certain attributes in the directory to bind the client to the PGP Universal Server. For more information on necessary attributes, see *Directory Attributes* (on page 232).

When you allow clients to enroll with LDAP, you can specify whether the users can enroll using a certificate. Use **Certificate Enrollment** to enroll users who already log on to Windows with existing smart cards/certificates. These users do not know their Windows passwords, so they cannot use LDAP enrollment alone to enroll. If you select this option, enrollment defaults to LDAP enrollment for any user without a certificate or smart card.

Certificate enrollment requires that the LDAP server must already be set up to work with PGP Universal Server. Users are found using the sAMAccountName attribute.

Add the certificate's issuing root CA to the PGP Universal Server Trusted Key list.

If client computers are also encrypted, smart cards must be compatible with PGP WDE.

You can change the client enrollment setting for Directory Synchronization from the Directory Synchronization Settings page, accessed by clicking the **Settings...** button at the bottom of the **Consumers > Directory Synchronization** page. For more details about global Directory Synchronization settings, see *Directory Synchronization Settings* (on page 238).

For more information on enrolling clients using directory synchronization, see *Directory Enrollment* (on page 231).

Before Creating a Client Installer

Perform the following tasks before you create a PGP Desktop installer. These tasks apply to both email and LDAP enrollment.

- 1 Make sure that port 443 is open between the client computer and the PGP Universal Server. Clients use this port to retrieve policy information and encryption keys from the PGP Universal Server. Enrollment fails if port 443 is unavailable.
- 2 If the client must connect through a proxy server, from the applicable consumer policy, click **General**, select **Use an HTTPS Proxy Server for client communications**, and type in the hostname and port for the HTTPS proxy server.
- 3 Type a valid PGP Desktop license. From **Consumers > Consumer Policy**, choose the policy for which you want to add a license. For more information on licensing your software, see *Administering Consumer Policy* (on page 197).

- 4 Ensure that the domain you use for email appears as a managed domain on the **Consumers > Managed Domains** page. This is necessary even if you are not using PGP Universal Server or PGP Desktop Email to process email. If your email domain does not appear on the Managed Domains page, add the domain. For more information, see *Managed Domains* (on page 39).
- 5 Make sure you have DNS properly configured. Properly configured DNS settings (including root servers and appropriate reverse lookup records) are required to support PGP Universal Server. Make sure both host and pointer records are correct. IP addresses must be resolvable to hostnames, as well as hostnames resolvable to IP addresses.
- 6 If you use the **Override default keyring locations** option, PGP Desktop still requires temporary access to the My Documents folder on the user's system. If your IT policy restricts access to users' My Documents folder, please be sure to temporarily enable access when users are installing PGP Desktop.
- 7 If you are reinstalling PGP Desktop from a previous failed attempt, delete the folder under `C:\Documents and Settings\\Application Data\PGP Corporation`. This deletes the preferences file and allows you to start with new settings.

Email Enrollment

This method is available to all client installations, including PGP NetShare-only and PGP Whole Disk Encryption-only installations, as long as there is an email account on the installed computer. Email enrollment is possible even if the PGP Universal Server does not perform email encryption or is out of the mailflow. Email enrollment only requires that the PGP Universal Server be able to send an SMTP message to the mail server.

If your email protocol cannot be proxied, then you cannot use email enrollment, but must choose LDAP enrollment instead. POP, IMAP, Lotus Notes, and MAPI protocols can all be proxied. Novell GroupWise cannot be proxied and does not allow email enrollment.

If you do not select **Enroll clients using directory authentication** on the Directory Synchronization Settings dialog box when you enable Directory Synchronization, clients enroll through email.

There are two parts to client installation and enrollment:

- On the PGP Universal Server, you create a client installer. Tasks include: adding mail routes, checking port and SMTP settings, enabling Directory Synchronization, creating consumer groups and policies, and customizing and downloading the client installer.
- On the client computer, you install the client software. Tasks include: uploading the installer file, installing the client software, and following the enrollment wizard.

To create a client installer for email enrollment

- 1 From **Mail > Mail Routes** on your PGP Universal Server, create a mail route that sends mail for your domain to the hostname of your mailserver. For more information on adding mail routes, see *Specifying Mail Routes* (on page 161).

- 2 Make sure port 25 is open between your PGP Universal Server and your mail server.
- 3 Make sure your mail server accepts SMTP. Some mail servers, for example Domino servers, are not set to accept SMTP by default.
- 4 If you want to use directory synchronization to assign consumers to user policies, enable Directory Synchronization. From **Consumers > Directory Synchronization**, select **Settings**. Do not select **Enroll clients using directory authentication**. For more information, see *Enabling Directory Synchronization* (on page 234).
- 5 From **Consumers > Consumer Policy**, create consumer policies. For more information, see *Administering Consumer Policy* (on page 197).
- 6 From **Consumers > Groups**, create consumer groups and assign consumer policies. For more information, see *Managing Groups* (on page 169).
- 7 Create a client installer. From **Consumers > Groups**, select **Download Client**.
- 8 Click **Customize**, and add the settings you want for the installer.

Make sure to add your mail server name to the **Mail Server Binding** field. You can use wildcards. Mail Server Binding is necessary for email enrollment because it tells the client where to send enrollment email. This setting is also particularly important when PGP Universal Server is proxying email, because it specifies the mail server for which policies are being locally enforced. When the client computer sends email using the specified mail server, policy from the PGP Universal Server is enforced.

For more information on creating a client installer, *Creating Group Client Installations* (on page 177).

- 9 Click **Download** to download the installer.

If your Microsoft Internet Explorer security settings do not allow downloads, to override the security setting, click **Download** while you press and hold the CTRL button on your keyboard.

To install and enroll a client through email enrollment

- 1 Upload the installer file to the client computer.
- 2 Install PGP Desktop by double-clicking the installer file.
- 3 Follow the on-screen instructions to install.
- 4 Restart the client computer when instructed.
The PGP Desktop Setup Assistant appears. Follow the instructions to enroll.
- 5 Type the user's email address.
- 6 Run the email client and check for new email.
- 7 The user should receive an enrollment email from the PGP Universal Server. Open the email to use the enrollment cookie embedded in the email.

Note: If the user does not receive an enrollment email, make sure the email domain matches a managed domain, and make sure the correct ports are open.

- 8 From the Enrollment Assistant, continue with enrollment by following the instructions.

Directory Enrollment

If you select **Enroll clients using directory authentication** when you enable Directory Synchronization, you allow clients to enroll with LDAP. If you do not select this setting, clients enroll through email.

To use LDAP enrollment your directory schema must contain certain attributes. For more information, see *Directory Attributes* (on page 232).

There are two parts to client installation and enrollment:

- On the PGP Universal Server, you create a client installer. Tasks include: enabling Directory Synchronization, creating user policies, and customizing and downloading the client installer.
- On the client computer, you install the client software. Tasks include: uploading the installer file, installing the client software, and following the enrollment wizard.

To create a client installer for directory enrollment

- 1 Enable Directory Synchronization on the PGP Universal Server. From **Consumers > Directory Synchronization**, click **Enable**.
- 2 Add LDAP directories. For more information, see *Enabling Directory Synchronization* (on page 234).
- 3 From **Consumers > Directory Synchronization**, click **Settings**. Select **Enroll clients using directory authentication**.
- 4 Click **Save**.
- 5 From **Consumers > Consumer Policy**, create consumer policies. For more information, see *Administering Consumer Policy* (on page 197).
- 6 From **Consumers > Groups**, create consumer groups and assign consumer policies. For more information, see *Managing Groups* (on page 169).
- 7 Create a client installer. From **Consumers > Groups**, select **Download Client**.
- 8 Click **Customize**, and add the settings you want for the installer.

Make sure to add your mail server name to the **Mail Server Binding** field. You can use wildcards. This setting is particularly important when PGP Universal Server is proxying email, because it specifies the mail server for which policies are being locally enforced. When the client computer sends email using the specified mail server, policy from the PGP Universal Server is enforced.

For more information on creating a client installer, see *Creating Group Client Installations* (on page 177).

- 9 Click **Download** to download the installer.

If your Microsoft Internet Explorer security settings do not allow downloads, to override the security setting, click **Download** while you press and hold the CTRL button on your keyboard.

To install and enroll a client through directory enrollment

- 1 Upload the installer file to the client computer.
- 2 Install PGP Desktop by double-clicking the installer file.

- 3 Follow the on-screen instructions to install.
- 4 Restart the client computer when instructed.
The PGP Desktop Setup Assistant appears. Follow the instructions to enroll.
- 5 Type your network login username and password when prompted.
- 6 Click **Next**, and continue with enrollment.

Note: If enrollment fails, make sure that the attributes, especially the email address, are present in the directory and are populated with data.

Directory Attributes

Below is a list of required and optional attributes your LDAP directory must have for LDAP enrollment.

Because you specify what type of LDAP directory you use, PGP Universal Server queries user information using only the necessary attributes, providing faster results when querying user information.

Note: Microsoft Windows 2000, 2003, 2008 Active Directory with Exchange Server have all required attributes. Other Directory Server and Email Server combinations might not have the necessary attributes.

Required attributes:

- **uid** or **sAMAccountName**. These attributes are interchangeable. Microsoft Active Directory uses sAMAccountName. All other LDAP directories use uid.
- **DN**. This attribute exists if the user exists in the directory.
- **mail** or **proxyAddresses**. These attributes are interchangeable. Every user must have an email address for the attribute **mail**.
- **cn**. This attribute matches what PGP Universal Server refers to as Display Name.

Each user must have a password defined in the directory. This security feature prevents enrollment unless the user can authenticate with a username and password.

Optional attributes:

- **userCertificate**. This attribute allows PGP Universal Server to find user X.509 S/MIME public certificates.
- Attributes used to assign users to Internal User Policies.

Certificate Enrollment

If you select **Enroll clients using directory authentication**, you can also choose whether users can enroll using smart cards or certificates. Use certificate enrollment to enroll users who already log on to Windows with existing smart cards/certificates. For more information on how to use your LDAP server for client enrollment, see *Directory Enrollment* (on page 231).

There are two parts to client installation and enrollment:

- On the PGP Universal Server, you create a client installer. Tasks include: enabling Directory Synchronization, specifying whether users enroll using certificates, creating user policies, and customizing and downloading the client installer.

- On the client computer, you install the client software. Tasks include: uploading the installer file, installing the client software, and following the enrollment wizard.

To create a client installer for certificate enrollment

- 1 Enable Directory Synchronization on the PGP Universal Server. From **Consumers > Directory Synchronization**, click **Enable**.
- 2 Add LDAP directories. For more information, see *Enabling Directory Synchronization* (on page 234).
- 3 From **Consumers > Directory Synchronization**, click **Settings**. Select **Enroll clients using directory authentication**.
- 4 From the drop-down menu, select **Allow**, **Deny**, or **Force certificate enrollment**.
- 5 Click **Save**.
- 6 From **Consumers > Consumer Policy**, create consumer policies. For more information, see *Administering Consumer Policy* (on page 197).
- 7 From **Consumers > Groups**, create consumer groups and assign consumer policies. For more information, see *Managing Groups* (on page 169).
- 8 Create a client installer. From **Consumers > Groups**, select **Download Client**.
- 9 Click **Customize**, and add the settings you want for the installer.

Make sure to add your mail server name to the **Mail Server Binding** field. You can use wildcards. This setting is particularly important when PGP Universal Server is proxying email, because it specifies the mail server for which policies are being locally enforced. When the client computer sends email using the specified mail server, policy from the PGP Universal Server is enforced.

For more information on creating a client installer, see *Creating Group Client Installations* (on page 177).

- 10 Click **Download** to download the installer.

If your Microsoft Internet Explorer security settings do not allow downloads, to override the security setting, click **Download** while you press and hold the CTRL button on your keyboard.

To install and enroll a client through certificate enrollment

- 1 Upload the installer file to the client computer.
- 2 Install PGP Desktop by double-clicking the installer file.
- 3 Follow the on-screen instructions to install.
- 4 Restart the client computer when instructed.

The PGP Desktop Setup Assistant appears. Follow the instructions to enroll. You will not be prompted to enter a username and password, but you may be required to enter information about your certificate or smart card.

Note: If enrollment fails, make sure that the attributes, especially the email address, are present in the directory and are populated with data.

Enabling Directory Synchronization

The Directory Synchronization page enables you to add and configure LDAP directories, and to enable and disable the Directory Synchronization function. Enabling Directory Synchronization is necessary to allow PGP Desktop LDAP enrollment. Disabling Directory Synchronization deactivates LDAP enrollment.

To enable Directory Synchronization

- 1 Go to **Consumers > Directory Synchronization** in the administrative interface.

The Directory Synchronization page appears.

- 2 Click **Enable**.

You can enable Directory Synchronization before you add and configure your LDAP directories, or you can leave the feature disabled until you have completed and tested your LDAP directory configurations.

Once the Directory Synchronization is enabled, the enable button changes to **Disable**.

The LDAP Directories section

If you have added LDAP directories, they appear listed in the LDAP Directories list at the lower part of the page.

For each directory, this display shows the directory name, and the number of servers that are part of the directory.

Click on a directory name to edit the directory.

Adding or Editing an LDAP Directory

A single LDAP Directory can have multiple servers associated with it. PGP Universal Server treats all the associated servers as a single directory.

You can specify multiple Base DN's to be used as the basis for directory searches.

To Add an LDAP directory

- 1 Go to **Consumers > Directory Synchronization** in the administrative interface.

- 2 Click **Add LDAP Directory...**

The Add LDAP Directory page appears.

- 3 Type a name for the directory in the **Name** field.

- 4 From the **Type** drop-down menu, select the type of directory: choose **Active Directory**, **OpenLDAP (RFC 1274)**, **Lotus Domino**, or **SunOne**. Active Directory is the default setting.

Microsoft Active Directory uses the sAMAccountName attribute for user information. OpenLDAP-based directories use the attribute uid for user information. PGP Universal Server queries user information using only the necessary attributes, providing faster results when querying user information.

- 5 In the **Bind DN** field, type the Distinguished Name of a valid user that exists in the LDAP directory. PGP Universal Server will use this as the user name to bind (log in) to the LDAP directory. This DN must match the name of an existing user in the directory. Binding determines the permission granted for the duration of a connection.

- 6 In the **Passphrase** field, type the passphrase to use for authentication to the DN.

Note: If you want to bind to the LDAP directory anonymously, leave these fields blank. If no DN is provided, PGP Universal Server will attempt to bind anonymously.

- 7 Go to the **LDAP Servers** tab and add at least one LDAP server. See *The LDAP Servers Tab* (on page 235) for further details.
- 8 Go to the **Base Distinguished Names** tab to specify any Base DN's you want to use as the basis for searches within this directory. See *The Base Distinguished Name Tab* (on page 236) for further details.
- 9 Go to the **Consumer Matching Rules** tab if you want to set rules for which email addresses should be searched for in this LDAP directory. For further details see *The Consumer Matching Rules Tab* (on page 236).

To Edit an LDAP Directory

- 1 Click the directory name in the LDAP Directories list under **Consumers > Directory** Synchronization.

The **Edit LDAP Directory** page appears.

From this page you can change the directory name, its type, add or remove servers, change the Base DN settings and the consumer matching rules.

The LDAP Servers Tab

Under the **LDAP Servers** tab, you can add one or more LDAP servers to be associated with this LDAP directory.

- 1 Type the fully qualified domain name or IP address of the LDAP directory server in the **Hostname** field.
- 2 Type the port number in the **Port** field. Typically, port 389 is used for LDAP or and 636 for LDAPS.
- 3 From the **Protocol** menu, select **LDAP** or **LDAPS**.
- 4 Specify the search priority for each server. If you have more than one LDAP server, assign the priority with which you want the servers searched. More than one server can have the same priority number; PGP Universal Server load balances between servers with the same priority. You can use the priority setting to make sure PGP Universal Server always searches the local LDAP server first.

There are two ways to assign priority. You can number each server in the order you want them searched, simply using 1,2,3, etc., or you can assign priority as a reflection of the cost of connecting the PGP Universal Server to the LDAP server. The connection cost can be ping time or any other measure you want, and you can use any number you want to reflect cost. PGP Universal Server always contacts the LDAP server with the lowest cost first.

Note: Priority settings are not replicated across a cluster. However, if you change any setting on this page other than the priority setting, the other cluster members lose their priority settings. You must reset the priority for all LDAP servers on the other cluster members.

- 5 To test whether PGP Universal Server can successfully connect to the server using the credentials you have provided (hostname, port, Bind DN and passphrase) click the **Test Connection** button associated with this server. For additional information, see *Testing the LDAP Connection* (on page 237).
- 6 To add another server to this LDAP directory, click the Add icon at the end of the row.

The order of servers is not significant.

To remove a server, click the associated Remove icon.

The Base Distinguished Name Tab

Select this tab to specify one or more base DN's to use with searches of this directory.

- 1 If desired, type a value in the **Base DN** field; this narrows the search for users and certificates to that portion of the directory. This is an optional field. For more information about the Base DN and Bind DN fields, see *Base DN and Bind DN* (on page 226).
- 2 To add another Base DN, click the Add icon at the end of the row.
- 3 To remove a Base DN, click the Remove icon.
- 4 The order in which the Base DN's are used for5 lookup is indicated by the number in the drop-down menu at the left of the row. To reorder the Base DN's, select a different number from the drop-down menu. The rules renumber immediately.
- 5 Click the **Browse Base DN's...** button to display a list of the DN's configured on this LDAP directory. You can use this list to determine the valid DN's you can use for your searches on this LDAP Directlry.

The Consumer Matching Rules Tab

Use the Consumer Matching Rules tab to specify patterns to match again the enrollment user name. If an enrollment username matches this pattern, PGP Universal Server will query this LDAP directory. If the username does not match the pattern, this directory will not be searched.

- 1 Type the string to be used as a match in the **Pattern:** field.
- 2 To add another string, click the Add icon.
- 3 To remove a string, click the Remove icon.

Pattern strings can take the form of a regular expression. For example, you might use `.*example.com` to search the LDAP directory only for users in the example.com domain.

Testing the LDAP Connection

You can test the connection to the LDAP server from the Directory Synchronization page without having to log out of PGP Universal Server. The PGP Universal Server validates the information you typed into the fields, then uses that information to connect to the LDAP server. The host, port, Bind DN, and passphrase are required for this test.

To test the LDAP server connection

- 1 Go to **Consumers > Directory Synchronization** in the administrative interface.
- 2 Click **Add LDAP Directory...**, then go to the **LDAP Servers** tab.
- 3 Click **Test Connection** for the server you want to test.

A box appears with a pass or failure message.

Using Sample Records to Configure LDAP Settings

PGP Universal Server provides a way to test your LDAP configuration and lookup settings.

The **View Sample Records...** button attempts to perform a lookup using the credentials and search settings you have provided (Bind DN, configured servers, base DN and consumer matching rules) and returns the first five results it finds. You can use these to determine if your search will return the results you expect based on your search criteria.

For example, the five returned results should all be relative to your specified base DN or set of base DN's, and should be appropriate matches for your consumer matching rules. If no results are returned it may mean you are not searching the correct directory, or that your base DN or matching rules are incorrect.

Deleting an LDAP Directory

To Delete an LDAP Directory

- 1 Go to **Consumers > Directory Synchronization** in the administrative interface.
- 2 Click the Delete icon next to the directory you want to delete.

You can remove a server from the directory without deleting the directory through the Edit LDAP Directory page. Click the directory name to open the Edit LDAP Directory page.

Setting LDAP Directory Order

The order that LDAP directories appear in the directory list determines the order in which they are searched. You can configure PGP Universal Server to search for users in multiple LDAP directories and specify which directory to search first. If the first directory is unavailable, PGP Universal Server does not automatically search the next directory in your list. PGP Universal Server only searches the next LDAP directory if the user was not found in the first LDAP directory.

To change the order of LDAP directories

- 1 In the administrative interface, select **Consumers > Directory Synchronization**.
- 2 From the drop-down menu that is next to the directory whose position you want to change, select the number that represents the directory's new position in the list.

The directory list is reordered immediately based on your change.

Note: You can choose whether you want the directory search order to be replicated across your cluster. For more information, see *Directory Synchronization Settings* (on page 238).

Directory Synchronization Settings

You can configure several aspects of how Directory Synchronization behaves. These are global settings.

To configure Directory Synchronization Settings

- 1 Go to **Consumers > Directory Synchronization** in the administrative interface.
- 2 Select **Settings...**

The Directory Synchronization Settings dialog appears.

- 3 To change the **Mailing List Cache Timeout** value, type the number of minutes entries should remain in the cache. The mailing list cache stores information about the users in a mailing list, captured when mail policy expands a mailing list and sends the processed message to the users on the list. The default is 30 minutes.
- 4 To enable PGP Desktop user enrollment authentication through Directory Synchronization instead of through email, check the **Enroll clients using directory authentication** option. This is unchecked by default, so that email enrollment is the default behavior.

User enrollment through LDAP allows you to deploy standalone PGP Whole Disk Encryption to users without requiring email processing.

For more information, see *Understanding User Enrollment Methods* (on page 227).

- 5 Check the **Enable LDAP Referrals** option to allow PGP Universal Server to query referred LDAP directories when searching for user information. If this option is not selected, users who cannot be found in the named directory will be disabled, even if the LDAP directory has responded with a referral to user information that exists in another directory.

Allowing PGP Universal Server to search referred directories can result in lengthy search times. This is unchecked by default.

- 6 Select **Replicate LDAP Directory search order across all cluster members** to have all cluster members search LDAP directories in the same order. This is enabled by default. If you deselect this option, LDAP directories are still replicated across the cluster, but each cluster member can search them in a different order. For example, you can specify that each cluster member first search a local LDAP directory.

- 7 To change the behavior of Directory Synchronization when a user cannot be matched to a specific LDAP directory based on any consumer matching rules, select an option from the drop-down menu of choices. Your choices are:

- **Look for the consumer in all ordered LDAP Directories:** If the consumer cannot be matched to a specific directory, then search all LDAP Directories specified for this PGP Universal Server, in priority order. (You can define the order that directories are searched on the Directory Synchronization page.)
- **Only look for the consumer in the first ordered LDAP Directory:** If the consumer cannot be matched to a specific directory, then search only the first (highest priority) LDAP Directory specified for this PGP Universal Server. If not found in the first ordered directory, the consumer is rejected.
- **Reject the consumer:** If the consumer cannot be matched to a specific directory based on the consumer matching rules, reject the consumer.

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Managing User Accounts

This section describes how to manage the user accounts on your PGP Universal Server.

Understanding User Account Types

Three types of users can have accounts on PGP Universal Server. All users share some common features, and their accounts require some of the same management tasks. Each user type also has unique features and management functions.

- **Internal users.** Email users from managed domains. Internal users are created automatically by your PGP Universal Server when those internal users interact with the mail server, for example, when PGP Desktop users enroll with this PGP Universal Server. You can also add internal users manually.
- **External users.** Email users outside of managed domains but who are part of the SMSA. External users can run PGP Universal Satellite or PGP Desktop, or they can interact with the PGP Universal Server through PGP Universal Web Messenger.
- **Verified Directory users.** Users outside of your domain who submit and manage their keys stored on PGP Universal Server through the PGP Verified Directory.

Viewing User Accounts

You can look at user accounts on the **Consumers > Users** page. Buttons at the top of the page allow you to view all users, or only internal, external, or Verified Directory users.

User Management Tasks

You can manage user accounts from the **Consumers > All Users** page, or from each individual user information page. All users share some common features, and their accounts require some of the same management tasks.

Setting User Authentication

You can add additional keys and passphrase information for internal and external users.

Authentication for internal users:

- **Passphrase:** This passphrase functions as an alternate means of authentication for internal users. PGP Universal Server only stores this passphrase. PGP Desktop users cannot use this passphrase to enroll. However, the passphrase can be used with PGP Command Line and through external products that use the PGP USP API.

- **Public Key:** This key functions as an alternate means of authenticate for users. PGP Universal Server only stores this key; it does not replace the signing and encryption key and is not used for those functions. However, the key can be used as an authentication credential with PGP Command Line and through external products that use the PGP USP API.

Authentication for external users:

- **Passphrase:** You can add or edit the PGP Universal Web Messenger passphrase for external user accounts. This option is not available if the user authenticates to an external authentication server.
- **Public Key:** This key functions as an alternate means of authenticate for users. PGP Universal Server only stores this key; it does not replace the signing and encryption key and is not used for those functions. However, the key can be used as an authentication credential with PGP Command Line and through external products that use the PGP USP API. This option is not available if the user authenticates to an external authentication server.

Editing User Attributes

Store important non-key data about users by adding user attributes. Attributes are attribute/value pairs that provide metadata about a user, device, or key. The attribute value can be a text string or numeric.

For example, add information about how the user fits into the organization by creating the attribute "department," and then adding a text string value with the name of the user's department. An attribute identifying make and model can be added to a managed device.

Adding Users to Groups

You can add users to groups from the User Information page.

To add a user to a group

- 1 From **Consumers > Users**, click the user who you want to manage.

The User Information page appears.

- 2 From the Groups section, click **Add to Group**.

You can also add users to a group from the **Consumers > Groups** page. For information on users and groups, see *Managing Groups* (on page 169).

Editing User Permissions

Permissions are actions that a group or consumer is allowed to perform on keys, consumers, or data objects. These are permissions specific to the user, not permissions inherited from a group. To edit this user's permissions, click **View and Edit Permissions**.

For more information on permissions and how users inherit permissions through group membership, see *Group Permissions* (on page 174).

Deleting Users

Caution: Deleting a user is permanent. If you delete a user, all private key material is lost with no way to get it back. Anything encrypted only to those keys is not recoverable. If you store private key material and there is any chance that user's private key might be needed again, revoke the user's key instead of deleting the user. See *Revoking PGP Keys* (see "Revoking Managed Keys" on page 74).

Warning: You cannot delete users with Intel Anti-Theft-activated computers from the Users list. When you delete users, all user records are lost. The next time the computer tries to rendezvous with PGP Universal Server, authentication fails and the computer locks. You will not be able to recover the laptop without the PGP RDD recovery passphrase, which is also deleted with the user records, unless you previously exported it. Before you delete an AT Activated user or device, you must deactivate and decrypt the computer.

To delete one user

- 1 Click the **Delete** icon of the user you want to delete.
A confirmation dialog box appears.
- 2 Click **OK**.
The user is deleted.

To delete multiple users

- 1 Select the check box at the far right end of the row of each of the users you want to delete.
- 2 Select **Delete Selected** or **Delete All** from the Options menu at the bottom right corner.
A confirmation dialog box appears.
- 3 Click **OK**.
The users are deleted.

Searching for Users

To find an user using a simple search, type the criteria for which you want to search, and click the Search icon. A list of users that fit the criteria you specified appears. You can also search using more specific criteria.

To search using advanced criteria

- 1 On the **Consumers > Users** page, click the advanced icon.
The User Search dialog box appears.
- 2 Specify your criteria. Available search criteria depends on which users are listed.
- 3 If you want to use more search criteria, click the plus sign icon and enter the appropriate criteria. Returned results match all the search criteria you enter.
- 4 Click **Search**.

A list of users that fit the criteria you specified appears. Search results only contain users with Published or Pending Delete keys. Searches do not return information for users with keys waiting for confirmation.

To clear the search, click the cancel button to the left of the search field.

Viewing User Log Entries

You can search for system logs for any user directly from that user's User Information page.

To view user logs

- 1 Select the user you want from the All Users, Internal Users, External Users, or Verified Directory Users page.

The User Information page appears.

- 2 Click **View Log Entries**.

The System Logs page appears with search results for the user you chose. Results are from the Mail logs only.

For more information, see *System Logs* (on page 5).

Changing Display Names and Usernames

You can change or add usernames or display names associated with a user's account.

To edit usernames and display names

- 1 Click on the name of the user whose information you want to edit.

The User Information page appears.

- 2 To change the user name displayed in the Users list, click **Edit Names**.

The Edit Names dialog box appears.

- 3 Type the display name you want to use. Display names containing the symbol @ are not valid unless the display name is typed within quotation marks; for example, "joe@example.com" is valid.

- 4 If this is an internal user, you can also type in one or more usernames. Click the Add icon to add more usernames. Usernames must be unique and not shared with any other user.

- 5 Click **Save**.

Exporting a User's X.509 Certificate

To export the X.509 certificate of a user

- 1 Select the user you want from the All Users page.

The User Information page appears.

- 2 From the Email Addresses section, click the Export icon to export the certificate associated with that email address.

If only the public key is attached to the certificate, the text of the certificate downloads to your system.

If both the public and the private key are attached to the certificate, the Export Certificate dialog box appears, allowing you to choose to export only the public key, or both public and private portions of the key.

- 3 Select **Export Public Key** to export just the public key portion of the certificate.

- 4 Select **Export Keypair** to export the entire certificate.

- 5 If you want to protect the exported certificate file with a passphrase, type it in the **Passphrase** field.

If the X.509 certificate is already protected by a passphrase, you cannot export the private portion. You export only a PEM file containing the public certificate.

- 6 Click **Export**.

The X.509 certificate is exported.

Revoking a User's X.509 Certificate

If you revoke a user's certificate, it is removed from the user's key, and it appears on the Certificate Revocation Lists.

The certificate can be used to decrypt messages, but cannot be used to encrypt or sign.

Once you revoke a certificate, you cannot un-revoke it.

To revoke the certificate of a user

- 1 Select the user you want from the All Users page.

The User Information page appears.

- 2 From the Email Addresses section, click the Revoke icon next to the certificate you want to revoke.

A confirmation dialog box appears.

- 3 Click **OK**.

The user's certificate is revoked.

Managing User Keys

You can manage an individual user's keys directly from the User Information page. The Managed Keys section of the page lists the key ID, what key usage flags are set on the key, key size, creation date, expiration date, reconstruction block status, key status, and actions you can take for PGP keys associated with the selected user. You can delete internal users' key reconstruction blocks uploaded to the PGP Universal Server. For more information, see *Deleting a PGP Desktop Key Reconstruction Block* (on page 249). If the internal user has an associated PGP key, you can export or delete the key. If the user's key is in SKM, you can also revoke it. Pending keys can be exported, but you cannot revoke or delete them.

If you delete a user's key, the private key material is gone, which means messages are no longer decryptable.

To manage user keys

- 1 From **Consumers > Users**, click the user who you want to manage.

The User Information page appears.

- 2 From the Managed Keys section, click the icon for the action you want to take.

You can also manage user keys from the **Keys > Managed Keys** page. For information on managed keys, see *Administering Managed Keys* (on page 61).

Managing Internal User Accounts

The list on the Internal Users page (**Consumers > All Users > Internal Users**) shows all internal users that are part of the SMSA created by the PGP Universal Server. It lists their Name, Primary Email Address, the policy group to which the user belongs, how many keys the user has, the last time they sent or received a message, device encryption information, whole disk recovery tokens, and it lets you delete a user.

Sometimes a user is listed on the Internal Users page with no email address shown. This happens when the user account was created automatically by the PGP Universal Server when the user accessed email over a POP or IMAP connection, but the PGP Universal Server does not know what email address is associated with that user. As soon as that user sends email over SMTP, the PGP Universal Server adds the rest of the user information to the record.

You can also manually add the keys of PGP Desktop users to the list, search for an internal user, and approve keys submitted by internal users.

When user keys are created, they automatically contain information on the preferred keyserver URL, as specified on the **Services > Keyserver** page. If the Public URL for the preferred keyserver changes, the information updates on the key the next time the Organization Key signature on the user key renews.

Importing Internal User Keys Manually

In addition to automatically creating a key for your email users, the PGP Universal Server also lets you manually add internal users. This option is useful for internal users who already have keys, such as existing PGP Desktop users who of course would have their own PGP key, or existing S/MIME users from a previous PKI in your organization.

The PGP Universal Server checks the Certificate Revocation List Distribution Points automatically before importing any internal user certificate. See *Certificate Revocation Lists* (see "How PGP Universal Server Uses Certificate Revocation Lists" on page 44) for more information.

There are some important things to know before you import the key of an internal user:

- You can only import users with email addresses in a domain being managed by the PGP Universal Server.
- You can import more than one key at a time (if appropriate, of course). Paste the keys into the Key Block box one after the other or put them together in one file.
- If users manage their private keys on their own computers, called Client Key Mode (CKM), then paste in only their public keys.
- To have the PGP Universal Server manage both the private key and the public key for the user, called Server Key Mode (SKM), paste in a keypair that was created with no passphrase.
- If the user wants to manage their private key on their own computer, but wants to keep a copy of their private key on the server in encrypted format, called Guarded Key Mode (GKM), paste in a keypair that was created with a passphrase.
- If the user wants to store their private encryption key on both their own computer and on the PGP Universal Server, but wants to store their private signing key only on their own computer, called Server Client Key Mode (SCKM), paste in the SCKM keypair.

To manually import internal user keys

- 1 From **Consumers > Users > Internal Users**, click **Add Internal Users**.

The Import Internal Users dialog box appears.

- 2 Enter key material.
- 3 If you importing a private key, type in the passphrase.
- 4 Click **Import**.

The key data is imported.

If you are importing a PGP Keyserver file, all keys belonging to internal users are imported, and all other key information is discarded.

Creating New Internal User Accounts

You can create internal users without keys.

To manually create internal users without keys

- 1 Click **Add Internal Users**.
The Import Internal Users dialog box appears.
- 2 Click **Manual Creation**.
The Create Internal Users dialog box appears.
- 3 Enter user information.
- 4 Click **Add**.

Exporting PGP Whole Disk Encryption Login Failure Data

You can download just PGP Whole Disk Encryption login failure data to view offline. The data covers login failures for all internal users. For more information on login failures, see *Managing Alerts* (on page 27).

To export login failure data

- 1 From the Internal Users page, from the **Options** menu, select **Export WDE Login Failures For All**.
- 2 If you want to export the data for only some users, select the users you want and select **Export WDE Login Failures For Selected**.
The file WDE_Failures.CSV is exported.
- 3 To view login failure data for a single user, click the user you want to view.

Internal User Settings

To inspect the settings of an internal user, click on the name of the user whose information you want to inspect. The Internal User Information page appears.

The top section of this dialog box displays the Username, Display Name, when the user account was created, status, last use, WDE status, UUID, and what policy group applies for the selected internal user.

Status reflects a user's key status. Key status for CKM and SKM users is always Published because those keys are published to your LDAP directory. If a user submits their keys using the PGP Verified Directory interface, the key status indicates where the key is in the PGP Verified Directory process. For more information, see *Configuring the PGP Verified Directory* (on page 302).

The UUID is the unique identifier assigned to this user within the PGP Universal Server database. The username and all other user information is associated with this UUID.

- The Attributes section lists the attributes that apply to the user. To add or change attributes, click **Edit Attributes**.
- The Groups section lists to which group the user belongs. To add the user to a different group, click **Add to Group**. To see a list of groups, click **All Groups**.
- The Permissions section lists permissions for this user. To edit this user's permissions, click **View and Edit Permissions**.

- The Managed Keys section lists the key ID and mode, what key usage flags are set on the key, key size, creation date, expiration time, status, reconstruction block status, pending keys, and actions you can take for PGP keys associated with the selected internal user. For example, you can delete internal users' key reconstruction blocks uploaded to the PGP Universal Server. For more information, see *Deleting a PGP Desktop Key Reconstruction Block* (on page 249). If the internal user has an associated PGP key, you can export or delete the key. If the user's key is in SKM, you can also revoke it. Pending keys can be exported, but you cannot revoke or delete them.
- The Email Addresses section lists the email addresses associated with the selected internal user, any certificates attached to their email addresses, and anything you can do in regards to their certificates. The tab also shows any included X.509 certificate. For more information, see *Exporting a User's X.509 Certificate* (on page 245).
- The Whole Disk Encryption section lists encrypted device data. Information is grouped by computer, then by disk ID, common device name, then by partition. You can also see any whole disk recovery tokens associated with encrypted devices, their status, and actions you can take. For more information, see *Viewing PGP Whole Disk Encryption Status* (on page 251). For more information about whole disk recovery tokens, see *Using Whole Disk Recovery Tokens* (on page 250).
- The WDE Login Failures section lists login failures alerts for encrypted devices, and allows you to clear them. Specify how long you want login failure alerts to be listed using the *Managing Alerts* (on page 27) dialog box on the System Overview page.

Deleting a PGP Desktop Key Reconstruction Block

If an internal PGP Desktop user has uploaded a key reconstruction block to the PGP Universal Server, you can delete it. You can delete a key reconstruction block if you have already deleted or revoked the associated key and you do not want the key to be recoverable. If you delete the key reconstruction block, the PGP Universal Server no longer stores it, although the user may also have a copy. See *Key Reconstruction Blocks* (on page 44) for more information.

To delete a key reconstruction block

- 1 Select the user you want from the Internal Users page.
The Internal User Information page appears.
- 2 From the Managed Keys tab, click the Delete icon in the **Reconstruction** column.
A confirmation dialog box appears.
- 3 Click **OK**.
The key reconstruction block is deleted.

Using Whole Disk Recovery Tokens

Whole disk recovery tokens are associated with encrypted devices, not single computers or single users. A single computer can be associated with multiple encrypted devices. If multiple users have accounts on the same device, they share the same whole disk recovery token. Whatever you do with the token affects all users sharing that device. Each encrypted device has only one whole disk recovery token, which unlocks all the encrypted disks on that device.

The WDRT column of the Whole Disk Encryption section of the Internal User Information dialog box lists any whole disk recovery tokens the internal user has.

Whole disk recovery token strings are case-sensitive and contain both letters and numerals. Because it can be difficult to tell the difference between certain letters and numerals, whole disk recovery tokens use letter and numeral equivalencies. You can type either letter or numeral when you use a whole disk recovery token, and the token string are still accepted. The following are interchangeable:

- Capital letter B and numeral eight (8)
- Capital letter O and numeral zero (0)
- Capital letter I and numeral one (1)
- Capital letter S and numeral five (5)

To recover a whole disk

- 1 Select the user you want from the Internal Users page.
The Internal User Information page appears.
- 2 From the Whole Disk Encryption tab, click the View icon in the WDRT column.
The recovery token string appears.
- 3 Provide this information to the user, who uses it to recover the disk.
Once the token is used, it is presented as a “broken” or opened token, and a new token is automatically generated by PGP Desktop and synchronized with the PGP Universal Server as soon as the user logs in and the PGP Universal Server is contacted. The new token then re-appears as unviewed or valid.

Deleting Whole Disk Recovery Tokens

Caution: You can delete any whole disk recovery token. If you delete a WDRT that has not been used to recover a disk, the PGP Whole Disk Encryption client is not prompted to create and send another token. The disk cannot be recovered. Search the log files to make sure the token you want to delete has been used.

To delete a whole disk recovery token

- 1 Select the user you want from the Internal Users page.
The Internal User Information page appears.
- 2 From the Whole Disk Encryption tab, click the View icon in the WDRT column.
The recovery token string appears.

- 3 Click **Delete WDRT**.
A confirmation dialog box appears.
- 4 Click **OK** to continue and delete the WDRT.

Viewing PGP Whole Disk Encryption Status

The Whole Disk Encryption section of the Internal User Information page lists encrypted disk data. Information is grouped by computer, then by disk, then by partition. You can also see any whole disk recovery tokens associated with encrypted disk, their status, and actions you can take. For more information, see *Using Whole Disk Recovery Tokens* (on page 250).

The Whole Disk Encryption tab displays the following information:

- **Computer:** The name of the computer associated with the encrypted disk. A single computer can have multiple associated encrypted disk.
- **Disk ID:** The ID for the encrypted disk. A single encrypted disk can have multiple encrypted partitions.
- **Common Name:** The type of disk encrypted; for example, the brand and model.
- **Partition:** The encrypted disk partition.
- **Size:** The size of the encrypted disk.
- **Type:** Whether the disk is fixed or removable.
- **Last Seen:** Date of the most recent event occurring on the disk.
- **Status:** Encryption status of the internal user's entire system (not just an encryptable drive on the system), including encrypting and decrypting, as well as login failures.

Note: The PGP Universal Server does not display encrypted disk status on the Internal User Information page for PGP Desktop prior to 9.7, and instead displays the "Unknown" status for all such devices. To see encrypted device status, you must upgrade the client to 9.7 or later.

The status can be:

- No encrypted disks
- Unencrypted
- Encrypting
- Partially encrypted (one drive is encrypted, one or more other drives on the system are not encrypted)
- Fixed encrypted
- Encrypted
- Decrypting
- Error
- **Client:** The version number of the PGP Whole Disk Encryption client software used to encrypt the all devices associated with a computer.

- **WDRT:** Whole disk recovery tokens. Click the whole disk recovery token icon to see details.
- 1 For details on all the encrypted devices associated with a computer, click the name of the computer.

The WDE Computer Information dialog box appears. The dialog box shows all encrypted devices, as well as login failures for each encrypted partition.
- 2 Click **OK** to close the dialog box.
- 3 To clear the list of login failures, click **Clear Login Failure Alerts**. For more information on login failures, see *Managing Alerts* (on page 27).

Managing External User Accounts

The External Users page (**Consumers > All Users > External Users**) shows accounts for users outside your domain. Importing external users allows your internal users to easily send encrypted messages to them, because external users' public keys are stored locally. This is similar to adding external domains and directories to the PGP Universal Server, except that you are adding information about specific individuals rather than domains. PGP Universal Server stores the key material for external users, rather than having to look for it on an external keyserver directory.

The PGP Universal Server checks the Certificate Revocation List Distribution Points automatically before importing any external user certificate. For more information, see *Certificate Revocation Lists* (see "How PGP Universal Server Uses Certificate Revocation Lists" on page 44).

The External Users page lists all external users your PGP Universal Server knows. It lists their Email Address, Name, User Type, what policy group the user belongs to, number of keys associated with the user, how much of the Web Messenger quota is in use, date and time stamp of the last use, and lets you delete the user or export their keys.

You can also change the default account settings your server uses when it creates a new external user or search for an external user.

If you would prefer your external users to manage their own keys stored on the PGP Universal Server, rather than you importing and managing their keys yourself, you can allow them to submit keys to the PGP Verified Directory. For more information, see *Managing PGP Verified Directory User Accounts*.

You can also specify whether PGP Universal Web Messenger user passwords authenticate locally or to an external authentication server.

Importing External Users

If PGP Universal Web Messenger is enabled, you can add external users by sending them email invitations to establish a passphrase, and to choose a method to receive secure email, including the option to submit their public keys.

To manually import one or more external users using their email addresses

- 1 On the External Users page, click **Add External Users**.
The Add External Users dialog box appears.
- 2 In the **Email addresses** field, type the email addresses of the external users you are adding. Separate email addresses with commas, semi-colons, or on new lines.
- 3 Click **Save**. The added users then receive an invitation email.

If you have an external user's public key, you can import it directly into the PGP Universal Server, so that your internal users can immediately begin sending encrypted email to that user. If PGP Universal Web Messenger is not enabled, you can add external users by manually importing user keys.

To manually import one or more external users by importing their keys

- 1 On the External Users page, click **Add External Users**.
The Add External Users dialog box appears.
- 2 Click **Import keys**.
On the Import External Users dialog box, import your external users by choosing their key file or pasting their key block. Type a passphrase if necessary.
- 3 Click **Import**.
The key data is imported.
If you are importing a PGP Keyserver file, all keys belonging to external users are imported, and all other key information is discarded.

Exporting Delivery Receipts

External users can receive messages through PDF Messenger with Certified Delivery. For more information, see *Certified Delivery with PDF Messenger* (on page 123).

The PGP Universal Server creates and logs the delivery receipt when the recipient obtains the passphrase required to open the PDF. A delivery receipt is also created and logged if the user initially opens a PDF Messenger message through Web Messenger (depends on Consumer Policy settings). To specify how long the PGP Universal Server stores delivery receipts, see *Configuring the PGP Universal Web Messenger Service* (on page 292).

To download delivery receipts

- 1 To export receipts for all users, from the **Options** menu, select **Export Delivery Receipts For All**.
OR
- 2 Select the check boxes for the users whose delivery receipts you want to export.
- 3 From the **Options** menu, select **Export Delivery Receipts For Selected**.
DeliveryReceipts.csv is exported. The delivery receipt file contains the following information:
 - Delivery status of the message

- Message subject
- Sender and recipient
- Sent and receipt dates

External User Settings

From the **Users > External Users** page, click on the name of the user whose information you want to inspect. The External User Information page appears.

The top section of this dialog box shows the Display Name, when the user account was created, the policy group the user belongs to, where the user's Web Messenger data is stored, last use, user type, Web Messenger quota, the user's UUID, and quota usage for the selected external user.

The user's Quota is the storage space allotted for PGP Universal Web Messenger mail storage. All mail messages received, sent, and saved are counted.

The Web Messenger Server is where the user's PGP Universal Web Messenger data is stored. In a cluster, Web Messenger data can be stored on more than one cluster member.

The User Type describes the external user's encryption method, for example, Web Messenger, PDF, or S/MIME.

The UUID is the unique identifier assigned to this user within the PGP Universal Server database. The username and all other user information is associated with this UUID.

Usage refers to how much of the user's Quota has already been used.

- The Authentication section allows you to upload an authentication key and to add or change the user's PGP Universal Web Messenger passphrase. You can also control whether a PGP Universal Web Messenger user's password is authenticated to the PGP Universal Server or to an external directory, if there is an external directory configured.
- The Attributes section lists the attributes that apply to the user. To add or change attributes, click **Edit Attributes**.
- The Groups section lists to which group the user belongs. To add the user to a different group, click **Add to Group**. To see a list of groups, click **All Groups**.
- The Permissions section lists permissions for this user. To edit this user's permissions, click **View and Edit Permissions**.
- The Managed Keys section lists the key ID, key usage, key size, creation date, expiration time, status, reconstruction block status, and actions you can take for PGP keys associated with the selected directory user. You can revoke, export or delete the key.
- The Email Addresses section lists the email address associated with the selected external user.

Changing the Passphrase of an External User

To change the passphrase of an external user

- 1 On the External User Information page, from the Authentication section, click **Change Passphrase**. This option is not available if the user authenticates to an external authentication server.
The Change Passphrase dialog box appears.
- 2 In the **New Passphrase** field, type the new passphrase. The passphrase must be at least 6 characters long.
- 3 In the **Confirm New Passphrase** field, type the new passphrase again, exactly as you typed it in the New Passphrase field.
- 4 Click **Save**.
The passphrase is changed.

Unlocking PGP Universal Web Messenger Accounts

After a specified number of failed login attempts to PGP Universal Web Messenger, the user account locks and the user is shut out of the system. When users are shut out, they receive an email message notifying them that they have been locked out. The email message provides a URL to allow the user to log back in again. This ensures that only the correct recipient of a message can log back in after multiple failed login attempts. If a user is locked out and fails to respond to the email, the administrator can unlock the account manually.

For more information on specifying the number of times a user can attempt to log in before the account is locked, see *Configuring the PGP Universal Web Messenger Service* (on page 292).

To unlock a PGP Universal Web Messenger account

On the External User Information page, click **Unlock Account**.

Offering X.509 Certificates to External Users

You can offer X.509 certificates to your external users through the PGP Universal Web Messenger interface. External users who choose this option download the certificates, add them to their mail clients, and use them to communicate securely with users inside your managed domain. PGP Universal Server stores the certificates and uses them to encrypt messages from internal to external users. The messages are forwarded to the recipient mail clients; they are not stored in PGP Universal Web Messenger. External users' mail clients decrypt the messages. External users must choose to encrypt and sign replies to internal users; there is no way to enforce secure replies.

Before external users can generate and download X.509 certificates, the following requirements must be met.

- PGP Universal Server must have an Organization Certificate, External User Root Certificate, and External User Root Key. For more information, see *Managing Organization Keys* (on page 47).
- External users must have access to internal user X.509 certificates. Without certificate access, external users cannot securely reply to messages from internal users. External users can access certificates via LDAP if their mail clients are LDAP-enabled. PGP Universal Server can function as a keyserver to provide internal user certificates to external users whose mail clients are not LDAP-enabled. If an external user's mail client cannot connect to an LDAP keyserver, the internal user can send their public key directly to the external user.
- The PGP Universal Server license must include gateway email.
- PGP Universal Web Messenger must be enabled. For more information, see *Configuring PGP Universal Web Messenger* (on page 281).
- You must set up a consumer policy for PGP Universal Web Messenger that offers certificates to external users. Enable the **Generate and download digital ID/ X.509 Certificate for S/MIME** option and select certificate generation settings in the PGP Universal Web Messenger section of consumer policy. For more information on creating consumer policies, see *Administering Consumer Policy* (on page 197). For information on PGP Universal Web Messenger policy settings, see the online help.

External user certificates are not offered as a Key Not Found option. If PGP Universal Web Messenger is available as a Key Not Found setting, you can add the option to make certificates available to users as a message delivery choice through PGP Universal Web Messenger consumer policy. Only the external user can choose to download and use a certificate; you cannot manually assign that delivery type to a user.

When a user selects this delivery type, they are prompted to download the certificate, install it on the mail client, send a test message through PGP Universal Web Messenger, and confirm success. PGP Universal Server does not verify that the user successfully set up certificate delivery. If any part of the process fails, the external user continues to receive messages through PGP Universal Web Messenger. Every time the user receives another message, they are prompted to either try again to download the certificate or choose a different delivery type.

If the user changes delivery types, the user's certificate remains stored on PGP Universal Server. However, to renew or re-download the certificate, the user must temporarily switch back to the X.509 download delivery type. If the user uploads a different certificate to PGP Universal Server, the first certificate is not deleted.

Managing Verified Directory User Accounts

Internal and external users can submit their keys to the PGP Verified Directory. The PGP Verified Directory gives you the option of hosting a Web-accessible keyserver for the public keys of your internal or external users. Storing external user keys through the PGP Verified Directory allows directory users to manage their keys themselves through the PGP Verified Directory interface, without requiring them to establish PGP Universal Web Messenger accounts.

You must add a Verified Directory Key to the PGP Universal Server before you import keys or allow users outside your managed domain to submit keys. The Verified Directory Key is the signing key for PGP Verified Directory users outside your managed domain. (Internal PGP Verified Directory user keys are signed by your Organization Key.)

For more information on the Verified Directory Key, see *Managing Organization Keys* (on page 47).

For information on enabling users outside your managed domain to use the PGP Verified Directory, see *Configuring the PGP Verified Directory* (on page 301).

If you would prefer to manage external user keys, or you would like external users to use PGP Universal Web Messenger, see *Managing External User Accounts* (on page 252).

You can manage Verified Directory users through **Consumers > Users > Verified Directory Users**.

Importing Verified Directory Users

While you can allow directory users to submit their own keys through the PGP Verified Directory interface, you can also import their keys manually, and still allow the users to manage their own keys.

- 1 On the Verified Directory Users page, click **Add Verified Directory Users**.
The Import Verified Directory Users dialog box appears.
- 2 On the Import Verified Directory Users dialog box, import directory users by choosing their key file or pasting their key block.
- 3 Choose how the user keys should be verified:
 - **Default.** Applies the vetting method you selected on the Verified Directory service page.
 - **Implicitly.** The keys are by default trusted.
 - **Via Email.** The directory user receives an email message and must respond.
 - **Manually.** The PGP Universal Server administrator manually approves or disapproves the directory user keys.
- 4 Click **Import**.
The key data is imported.

PGP Verified Directory User Settings

From the **Consumers > Users > Verified Directory Users** page, click on the name of the user whose information you want to inspect. The Verified Directory User Information page appears.

The top section of this page shows the Display Name, when the user account was created, last use, the policy group the user belongs to, the user's UUID, and status of the user's key. The key status indicates where the key is in the PGP Verified Directory process: Pending Confirmation, Published, or Delete Pending.

The UUID is the unique identifier assigned to this user within the PGP Universal Server database. The username and all other user information is associated with this UUID.

- The Attributes section lists the attributes that apply to the directory user. To add or change attributes, click **Edit Attributes**.
- The Groups section lists to which group the user belongs. To add the user to a different group, click **Add to Group**. To see a list of groups, click **All Groups**.

- The Permissions section lists permissions for this user. To edit this user's permissions, click **View and Edit Permissions**.
- The Managed Keys section lists the key ID, key usage, key size, creation date, expiration time, status, reconstruction block status, and actions you can take for PGP keys associated with the selected directory user. You can approve, deny, revoke, export or delete the key. Pending keys can be exported, but you cannot delete them.
- The Email Addresses section lists the email address associated with the selected directory user.

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Recovering Encrypted Data in an Enterprise Environment

PGP Desktop together with PGP Universal Server securely encrypts data and email.

When enterprise-critical data is encrypted, the ability to recover data is necessary.

- How can data be recovered if an employee loses an encryption key, or forgets the key passphrase?
- How can data be recovered if it was encrypted for an employee, and the employee is unable or unwilling to perform the decryption?

When the original encryption key is not available, there are four methods to ensure the enterprise can still access protected data:

- Key reconstruction.
- Recovery of the encryption key material.
- Decryption of the encrypted data using a special data recovery key, known as an Additional Decryption Key (ADK).
- Using administrator keys and groups to recover encrypted data. For more information, see *Managing Clients Remotely Using a PGP WDE Administrator Active Directory Group* (on page 211) and *Managing Clients Locally Using the PGP WDE Administrator Key* (on page 212).

PGP Desktop, in conjunction with PGP Universal Server, supports four different key modes. Key modes affect which solutions are available for key reconstruction or recovery. The ADK is suitable for use with all key modes.

Choose the most appropriate solution for your enterprise data security needs.

Using Key Reconstruction

Enabling key reconstruction ensures that users can reconstruct their PGP keys. For more information on enabling key reconstruction, see *Configuring PGP Desktop Installations*.

If you enable this option, when the user generates their key, a window appears requiring the user to enter five questions and five corresponding answers. Answers must contain at least six characters, which helps prevent attacks against the key reconstruction material.

Key reconstruction is useful if the user loses their key material, or forgets their key passphrase. To use key reconstruction, the user selects “Reconstruct Key” from the PGP Desktop Keys menu. The user is then prompted to answer the key reconstruction questions; if they answer three of the five questions correctly, their key is reconstructed and they can type a new passphrase for the key.

Key reconstruction is not suitable for enterprise data recovery, since only the user knows the answers to the reconstruction questions.

Key reconstruction is only applicable for CKM, GKM, and SCKM keys. For more information on key modes, see *Understanding Keys* (on page 41).

Recovering Encryption Key Material without Key Reconstruction

In some circumstances, key material can be recovered from PGP Universal Server without utilizing key reconstruction. It is sometimes possible to continue to use the key normally, but it may be necessary to generate a new key to be used going forward.

PGP Desktop, in conjunction with PGP Universal Server, supports four different key modes. The key mode affects how key recovery is performed.

For more information on key modes, see [Setting Internal User Policy](#).

Encryption Key Recovery of CKM Keys

CKM keys are created and managed by users. CKM keys are fully compatible with key reconstruction, but the encryption key material cannot be recovered in any other way. If reconstruction is not available, and the key material is lost or the passphrase is forgotten, the user needs to generate a new CKM key, and begin using that key. Any data recovery must then be accomplished with a data recovery key. For more information, see [Recovering Encryption Key Material without Key Reconstruction](#) (on page 260).

Encryption Key Recovery of GKM Keys

Because the PGP Universal Server stores a copy of a GKM key, a user can download a new copy whenever needed. If the user loses their key (due, for example, to a hard disk failure or theft of the computer), they can download the backed-up copy of their key from PGP Universal Server, and continue to use it as before.

The GKM key stored by PGP Universal Server is encrypted using the user's passphrase. If the user has forgotten the passphrase, or is not available to provide the passphrase, it is not possible to recover the encryption key. Any data recovery must be accomplished with a data recovery key. For more information, see [Using an Additional Decryption Key for Data Recovery](#) (on page 262).

Encryption Key Recovery of SCKM Keys

SCKM keys are generated and managed by users. However, the PGP Universal Server stores a passphraseless, unencrypted copy of the encryption key.

If a user has forgotten their passphrase or has lost their SCKM key material, the user needs to generate and use a new SCKM key.

Because PGP Universal Server keeps a copy of the old SCKM encryption key, you can use this key to decrypt data and email.

User Recovery of the Encryption Key for Email Decryption

When a user attempts to decrypt an email message encrypted to an old SCKM key, PGP Desktop automatically downloads a copy of this key and stores it locally. This is transparent to the user, but does require that the user have connectivity to PGP Universal Server; the key is not stored permanently by the client.

This method of key recovery is only suitable for decrypting old email. Data cannot be decrypted with the key downloaded from PGP Universal Server.

User Recovery of the Encryption Key for Data Decryption

If a PGP Desktop user needs to recover data encrypted to their old SCKM key, or needs to decrypt email while disconnected from the PGP Universal Server, they must have a local copy of the old SCKM key in their keyring.

The encryption key can be recovered by the PGP Universal Server administrator, by following the following steps:

- 1 Export the old SCKM key from PGP Universal Server. Since the user has generated a new SCKM key, the old key should be considered revoked.
- 2 Import the old key into PGP Desktop.
- 3 Remove the signing subkey.
- 4 Change the key passphrase, and provide a strong passphrase.
- 5 Send to the user an email message containing the key.
- 6 Send the passphrase to the user. You can send the passphrase in an email message, because the email should be encrypted to the user's new SCKM key.
- 7 The user imports the key into their keyring, and changes the passphrase.

At this point the user has a copy of the encryption key locally, and can use it off-line to decrypt both email and data.

Enterprise Recovery of the Encryption Key for Email or Data Decryption

If an enterprise needs to decrypt email or data encrypted for a user, they can recover the encryption key using the *User Recovery of the Encryption Key for Data Decryption* (on page 261) procedure. However, instead of sending the key to the user, the administrator uses the key with the administrator's own installation of PGP Desktop.

Encryption Key Recovery of SKM Keys

SKM keys are always stored on PGP Universal Server, and have no passphrase.

The PGP Universal Server administrator can export any user's SKM key and use it to decrypt messages encrypted for that user. SKM users do not need a key recovery process, because their keys are provided automatically by PGP Universal Server as needed for decrypting email.

SKM keys cannot be used for data encryption. Encryption key recovery of SKM keys is only required when email must be decrypted.

Using an Additional Decryption Key for Data Recovery

The ADK (Additional Decryption Key) is only available in PGP Universal Server managed environments. The ADK provides a solution for enterprise data recovery that works with any user key mode. An ADK can be used to decrypt encrypted data and messages if an end user is unable or unwilling to do so.

An ADK is a normal PGP key created in PGP Desktop and uploaded to the PGP Universal Server. The ADK can be a split key, which requires multiple administrators to come together to reconstitute the key and use it for decryption. For more information on creating keys, see the *PGP Desktop User's Guide*.

When configured for use in a PGP Universal Server managed environment, all email is encrypted to the ADK as well as the email recipient's keys. The ADK is added as an authorized recipient when a PGP Zip file is created. When a PGP NetShare folder is created, the ADK is added as an authorized user key. In this manner, encrypted email messages and data encrypted by a user can be decrypted by an administrator in possession of the ADK. The ADK can be used to recover data from encrypted disks, because it is also added to disks encrypted with PGP Whole Disk Encryption.

Because the ADK is created the same way as any other key, the holder of the ADK can use it for email and data decryption, using the same method as for any other key in their possession. The holder of the ADK can decrypt any encrypted message, decrypt PGP Zip files, recover data from encrypted disks, and access PGP NetShare protected files.

For more information on adding an ADK to the PGP Universal Server, see *Managing Organization Keys* (on page 47). You can also add an ADK to a specific consumer policy; for more information, see *Using a Policy ADK* (on page 206)

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PGP Universal Satellite

This section describes PGP Universal Satellite.

PGP Universal Satellite is available for both Windows and Mac OS X systems. This chapter describes those aspects of PGP Universal Satellite that are common to both.

For information about the Windows version, see *PGP Universal Satellite for Windows* (on page 275). For information specific to the Mac OS X version, see *PGP Universal Satellite for Mac OS X* (on page 271).

Overview

PGP Universal Satellite:

- Provides security for messages all the way to the computers of external users (email users external to an organization's PGP Universal Server).
- Allows external users to become part of the Self-Managing Security Architecture (SMSA) and to use their favorite email client for sending and receiving PGP Universal Server messages.
- Gives external users the option to create and manage their keys on their own computer, if allowed by the PGP Universal Server administrator.

Caution: PGP Universal Satellite cannot be installed on a system with PGP Desktop 9.0 or later. Beginning with PGP Desktop 9.0, PGP Universal Satellite functionality is built into PGP Desktop.

PGP Universal Satellite installation requires no input from the person installing it. Once installed, PGP Universal Satellite gets its policy settings from a PGP Universal Server. **PGP Universal Satellite does not do anything to outbound email without a policy from a PGP Universal Server.**

PGP Universal Satellite proxies SMTP traffic when the user sends email messages and POP and IMAP traffic when they retrieve email messages from their mail server.

PGP Universal Satellite also manages all sending and receiving of email via the MAPI protocol in an Exchange Server environment and via the Lotus Notes email client in a Domino Server environment.

Note: Connectivity to the PGP Universal Server on port 443 (HTTPS) is required.

Technical Information

Before the PGP Universal Satellite software is installed on the email user's computer, their email client communicates with its associated mail server using SMTP to send email and POP or IMAP to retrieve email.

When installed, PGP Universal Satellite inserts itself into this process. It monitors the email traffic of the user and proxies their SMTP and POP or IMAP traffic, adding security (encrypting, decrypting, verifying, and signing) according to the policies it receives from its associated PGP Universal Server. It also gets policies and exchanges keys with the server over a link secured via SOAP/TLS.

Distributing the PGP Universal Satellite Software

PGP Universal Server provides an executable for deploying and upgrading PGP Universal Satellite to your external users.

Configuration

PGP Universal Satellite is installed on the computer of an external user, someone who is outside of the email domain being managed by a PGP Universal Server. PGP Universal Satellite obtains its policies from a PGP Universal Server in the managed domain. This is the same PGP Universal Server that sent the Smart Trailer or PGP Universal Web Messenger message.

It does not matter if the PGP Universal Server in the managed domain is placed internally or externally, as long as it is accessible to the external PGP Universal Satellite via HTTPS on port 443.

To configure PGP Universal Satellite to add security to email traffic, you must decide which key modes the user can choose.

Key Mode

PGP Universal Satellite also works differently depending on the key mode associated with an applicable policy (one installation of PGP Universal Satellite can potentially have multiple key modes, one for each policy):

- In **Client Key Mode (CKM)**, all cryptography is performed by the computer on which PGP Universal Satellite is installed. The private key stays on the computer; the computer also handles all private key management.
- In **Guarded Key Mode (GKM)**, is the same as CKM, with one difference: an encrypted copy of the private key is stored on the PGP Universal Server (encrypted to the user's passphrase). The PGP Universal Server administrator cannot use the stored private key in GKM. GKM is useful if a key is accidentally deleted or if the user needs to access the key and policy from a different computer: the PGP Universal Server provides the private key when needed. The user must use the same passphrase for the key from any system where this mobile key is used.

- In **Server Key Mode (SKM)**, all cryptography is performed by the computer on which PGP Universal Satellite is installed (with the exception of key generation); the PGP Universal Server temporarily sends the private key to PGP Universal Satellite via SOAP/TLS. The private key is stored only on the PGP Universal Server, and the PGP Universal Server handles all private key management. With SKM, the PGP Universal Server administrator has complete access to the private key material and can thus access all messages encrypted by the PGP Universal Satellite user.

Caution: If you are in an S/MIME environment and require ADK-like key recovery capabilities, you must operate S/MIME in SKM.

- In **Server Client Key Mode (SCKM)**, all cryptography is performed by the computer on which PGP Universal Satellite is installed. Additionally, an unencrypted copy of the encryption subkey is stored on the PGP Universal Server, while the signing subkey is held only on the computer on which PGP Universal Satellite is installed. All other key management is also handled by the user's computer. This mode ensures compliance with laws and corporate policies that require that signing keys not leave the control of the user while making sure that encryption keys are stored in case of emergency. SCKM requires a key with a separate signing subkey, which can be created for a new key with PGP Desktop or PGP Universal Satellite 9.5 or later or added to an older PGP key using PGP Desktop 9.5 or later.

PGP Universal Satellite users can select from any allowed mode.

PGP Universal Satellite Configurations

These two concepts together – the deployment mode and the key mode – gives us three possible configurations for PGP Universal Satellite:

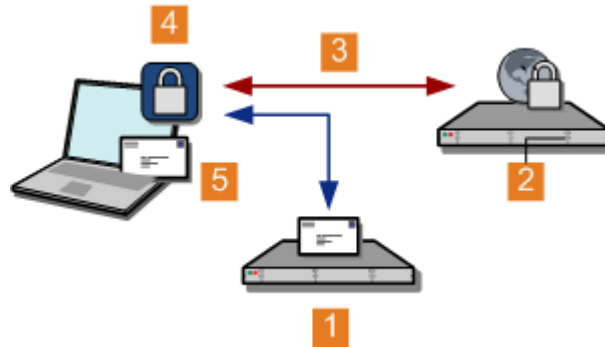
- External user, Server Key Mode (called External SKM)
- External user, Client Key Mode (called External CKM)
- External user, Server-Client Key Mode (called External SCKM)

For the purposes of understanding PGP Universal Satellite configurations, CKM and GKM work the same way.

All PGP Universal Satellite configurations are described below.

External SKM

In External SKM, the email user joins the SMSA via a Smart Trailer or PGP Universal Web Messenger message. When they respond to the message, they must establish a passphrase to secure future messages. Next, they choose a method of delivery for future messages from the managed email domain: PGP Universal Web Messenger, PGP Universal Satellite, or using an existing PGP Desktop key. For an external user:

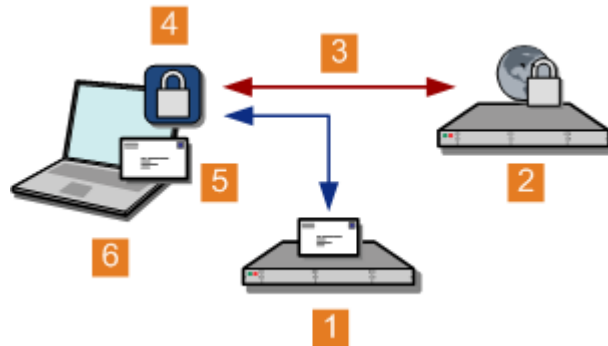


- | | |
|----------|--|
| 1 | Email server of external user |
| 2 | PGP Universal Server (public and private keys) |
| 3 | Keys and policies |
| 4 | PGP Universal Satellite |
| 5 | Email client |

When they select the PGP Universal Satellite option, the PGP Universal Satellite installer downloads to their computer. After installation, PGP Universal Satellite automatically contacts the PGP Universal Server that sent the Smart Trailer or PGP Universal Web Messenger message and downloads its policies. The PGP Universal Server creates and manages the key for this user.

External CKM

External CKM users go through the same process as External SKM users except that instead of the PGP Universal Server automatically creating and managing a key for them, the PGP Universal Satellite Key Setup Assistant gives the users options: first to choose an allowed key mode, then to specify the key to use.



1	Email server of external user
2	PGP Universal Server (public key)
3	Public key and policies
4	PGP Universal Satellite
5	Email client
6	Private key

The private key stays on the email user's computer and is *not* sent to the PGP Universal Server. A technical exception to this rule is the ability to synchronize the key with the PGP Universal Server (Guarded Key Mode), which stores an encrypted, passphrase-protected version of the private key on the PGP Universal Server; the key is sent to the PGP Universal Server, but it is encrypted and passphrase-protected, so the PGP Universal Server cannot do anything with it. The advantage to Guarded Key Mode is that the encrypted private key remains available to the user as they move between computers or between home and work, for example.

External SCKM

External SCKM users also joins the SMSA via a Smart Trailer or PGP Universal Web Messenger message. Once PGP Universal Satellite is installed and the user selects the SCKM option, their encryption subkey is copied to their PGP Universal Server, allowing encrypted messages to be decrypted if the user is unwilling or unable to decrypt them.

SCKM requires a key with a separate signing subkey, which can be created for a new key with PGP Desktop 9.5 or later or added to an older key using PGP Desktop 9.5 or later.

Switching Key Modes

To switch key modes

- 1 In PGP Universal Satellite, click **Clear**.
The next time PGP Universal Satellite needs the key of the user, the Key Setup Assistant appears.
- 2 The PGP Universal Satellite user chooses an allowed key mode, then selects a key source, if applicable.
When the Key Setup Assistant is complete, the key mode has been switched.

Policy and Key or Certificate Retrieval

PGP Universal Server includes built-in support to help PGP Universal Satellite users retrieve lost policies and keys or certificates.

A policy might be lost if it is accidentally removed or if the computer hosting the policy stops working. A key or certificate might be lost because it has been cleared from a policy or the computer hosting the key or certificate stops working. A “lost” policy or key/certificate is one that once existed but that is no longer available.

If both a policy and a key/certificate are no longer available (if the computer hosting them stops working, for example), then the policy should be retrieved first, followed by the key/certificate.

Retrieving Lost Policies

This section explains how to retrieve a lost policy in External Deployment Mode as well as how to retrieve the PGP Universal Satellite software and the policy.

The PGP Universal Satellite software is installed on the computer of an external user, a user who is not in an email domain being managed by a PGP Universal Server. PGP Universal Satellite gets its policies from the PGP Universal Server from which it received the PGP Universal Satellite software via a Smart Trailer or PGP Universal Web Messenger message.

Need Policy Only

An external PGP Universal Satellite user who has lost their policy but still has the PGP Universal Satellite software installed needs to retrieve the lost policy from the PGP Universal Server.

To retrieve a lost policy

- Log in to the PGP Universal Server that you originally got PGP Universal Satellite from by pointing your Web browser at <https://keys.domain.com> (where **domain.com** is the domain you originally got PGP Universal Satellite from), type your passphrase, re-select PGP Universal Satellite as your delivery option, and click **Choose Option**. The ActiveX control determines that you already have PGP Universal Satellite installed but do not have a policy, so it downloads your policy for you.
- Access the PGP Universal Satellite user interface, create a new external policy (use the URL and email address that were part of the lost policy), then click **Retrieve Policy**. The lost policy is retrieved from the server.

Need PGP Universal Satellite Software and Policy

A, external PGP Universal Satellite user who has lost both their PGP Universal Satellite software and their policy needs to both reinstall the PGP Universal Satellite software and retrieve the lost policy.

To reinstall PGP Universal Satellite software and retrieve a lost policy without the original PGP Universal Satellite installer

- 1 Open a Web browser and access the Web interface of the PGP Universal Server from which you received the original PGP Universal Satellite installer.

Use the URL <https://keys.<domain>>.

- 2 Log in to the PGP Universal Server using the passphrase that was established when you first downloaded the PGP Universal Satellite software.
- 3 Re-select **PGP Universal Satellite** as your delivery option and click **Choose Option**.

The ActiveX control determines that you do not have PGP Universal Satellite installed nor do you have a policy, so it downloads and installs both PGP Universal Satellite and your policy for you.

Retrieving Lost Keys or Certificates

The method of retrieving a lost key or certificate depends on the key mode of the user.

Note: This section covers only retrieving lost keys/certificates. If you also need to retrieve the PGP Universal Satellite software and/or a policy, see *Retrieving Lost Policies* (on page 268). When the PGP Universal Satellite software and policy are in place, return to this section for key/certificate retrieval instructions.

SKM

In SKM, the private key/certificate is stored only on the server, and the server handles all private key management.

If a key/certificate is lost from a policy in SKM, because it resides on the server and not on the computer hosting the PGP Universal Satellite software, it is automatically retrieved the next time an email message is sent or received. No action is required by the user to retrieve the key/certificate.

CKM and GKM

In CKM, the private key/certificate stays on the user's computer; it is only transmitted to the PGP Universal Server if the user chooses to store it there encrypted, which is GKM.

If a key or certificate is lost from a policy in CKM, PGP Universal Satellite attempts to locate the key/certificate the next time it is needed. If the user synchronizes their key/certificate with the server (GKM), the key/certificate is retrieved.

If PGP Universal Satellite cannot locate the key/certificate, or if the key/certificate has been manually cleared from the policy, PGP Universal Satellite displays the Key Wizard, which gives the user the option of importing the key/certificate from an exported file or reinitializing the account.

To import a private key/certificate from an exported file

- 1 On the Key Source Selection page, select **Import Key** and click **Next**.
- 2 Locate and select the ASC file that includes the appropriate key or certificate, then click **Import**.

The key is retrieved.

If a private key/certificate is permanently unretrievable, you should reinitialize the account so that the user does not continue to receive messages they cannot decrypt. Another reason you might want to reinitialize an account is if the private key/certificate has been compromised.

To reinitialize an account where the key has been lost

- 1 On the Key Source Selection page, select **Reinitialize Account** and click **Next**.
You are prompted for a key or certificate for the new account.
- 2 Select from create a new key/certificate, create a managed key/certificate (that is, Server Key Mode), or import a different, previously exported key or certificate. Make your selection and click **Next**.

The account is reinitialized.

To reinitialize an account where the key has been compromised, have the user click the **Clear** button. This clears the compromised key from the account. When PGP Universal Satellite next needs the key, the Key Setup Assistant appears and asks the PGP Universal Satellite user to set up a new key.

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PGP Universal Satellite for Mac OS X

This section describes those aspects of the PGP Universal Satellite software that are specific to the Mac OS X version.

For information about PGP Universal Satellite, see *PGP Universal Satellite* (on page 263). For information specific to the Windows version, see *PGP Universal Satellite for Windows* (on page 275).

Overview

PGP Universal Satellite for Mac OS X proxies SMTP traffic when the user is sending email messages and POP and IMAP traffic when the user is retrieving email messages from their mail server.

It should work without problems with any Internet-standards-based email client that runs on Mac OS X 10.4 or later.

For the most current system requirements, see the *PGP Universal Satellite for Mac OS X Release Notes*.

Note: PGP Universal Satellite requires a PGP Universal Server; it provides no functionality at all without a policy from an associated PGP Universal Server.

System Requirements

Please see the most current *PGP Universal Satellite for Mac OS X Release Notes* for minimum system requirements for PGP Universal Satellite for Mac OS X.

Obtaining the Installer

External users (email users external to an organization's PGP Universal Server) get access to the PGP Universal Satellite installer via a link in an email message from an internal user that includes a Smart Trailer or when they retrieve a message sent using PGP Universal Web Messenger mail. For more information, see *Applying Key Not Found Settings to External Users* (on page 121). After installation, PGP Universal Satellite automatically downloads its policies from the appropriate PGP Universal Server.

Installation

Caution: PGP Universal Satellite for Mac OS X *cannot* be installed on a system with PGP Desktop. If you currently have PGP Desktop on your system, do not install PGP Universal Satellite for Mac OS X. If you are using a version of PGP Desktop prior to 9.0, you should upgrade. If you are using 9.0 or later of PGP Desktop, you can configure PGP Desktop to do everything PGP Universal Satellite for Mac OS X does for you. See your administrator for more information.

To install PGP Universal Satellite for Mac OS X

- 1 Download the PGP Universal Satellite for Mac OS X installation file to the computer.

The file that is downloaded is `pgpuniversal.tar.gz`. Most Mac OS X systems should automatically extract the actual installer, `PGP Universal Server.pkg`.

If this does not happen automatically, you can extract the installer using Stuffit Expander or with Terminal using the command:

```
tar -xzf pgpuniversal.tar.gz.
```

- 2 Quit any open programs.
- 3 Double-click the installer (`PGP Universal Server.pkg`).
- 4 Follow the on-screen instructions.

Updates

When the PGP Universal Server with which PGP Universal Satellite communicates receives an updated version of the PGP Universal Satellite software, it notifies PGP Universal Satellite of this the next time they communicate.

The PGP Universal Server **Automatic Update** screen displays automatically on the computer on which PGP Universal Satellite is installed.

Once the installer is downloaded, it can be installed in the same manner as described in *Installation* (on page 272).

Files

PGP Universal Satellite both installs files onto the user's system and creates files when it is used.

The following files are installed onto the user's system during installation:

- `/Library/Application Support/PGP/pgpdivert`
- `/Library/Application Support/PGP/pgpipfwtol.pl`

- /Applications/PGP Universal Server.app

The following files are created when the user runs PGP Universal Satellite for Mac OS X:

- ~/Library/Preferences/com.pgp.universal.plist
- ~/Documents/PGP Universal Server/PGP Public Keyring.pkr
- ~/Documents/PGP Universal Server/PGP Private Keyring.skr
- ~/Library/Logs/PGP/PGPEngine*.log

Note: If your users are managing their own keys, it is recommended that they back up their keyring files (PGP Public Keyring.pkr and PGP Private Keyring.skr).

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PGP Universal Satellite for Windows

This section describes those aspects of the PGP Universal Satellite software that are specific to the Windows version.

For information about PGP Universal Satellite, see *PGP Universal Satellite* (on page 263). For information specific to the Mac OS X version, see *PGP Universal Satellite for Mac OS X* (on page 271).

Overview

PGP Universal Satellite for Windows proxies SMTP traffic when the user is sending email messages and POP and IMAP traffic when the user is retrieving email messages from their mail server. It also supports MAPI traffic in an Exchange Server environment and Lotus Notes email client (versions 5.x and above) traffic in a Domino Server environment.

It should work without problems with any Internet-standards-based email client that runs on Windows, with email clients that support MAPI, and with Lotus Notes email clients.

Versions of Novell GroupWise earlier than 6.5 might not work properly due to a lack of support for standard mail protocols.

For the most current system requirements, see the *PGP Universal Satellite for Windows Release Notes*.

Note: PGP Universal Satellite requires a PGP Universal Server; it provides no functionality at all without a policy from an associated PGP Universal Server.

System Requirements

Please see the most current *PGP Universal Satellite for Windows Release Notes* for minimum system requirements for PGP Universal Satellite for Windows.

Obtaining the Installer

Email users who are already part of the Self-Managing Security Architecture (SMSA) should get the PGP Universal Satellite installer from their PGP Universal Server administrator (the PGP Universal Satellite installer is included on the PGP Universal Server CD and can be downloaded from the PGP Universal Server administrative interface). After installation, PGP Universal Satellite communicates with the local PGP Universal Server to get its policies.

Email users outside the SMSA get access to the PGP Universal Satellite installer via a link in an email message from an internal user that includes a Smart Trailer or when they retrieve a message sent using PGP Universal Web Messenger mail. For more information, see *Applying Key Not Found Settings to External Users* (on page 121).

External PGP Universal Satellite for Windows users also are sent an ActiveX® control that assists them with both installing and updating their PGP Universal Satellite software. The ActiveX control is clearly labeled as being from PGP Corporation.

In these cases, PGP Universal Satellite downloads its policies from the appropriate PGP Universal Server.

Installation

Caution: PGP Universal Satellite for Windows *cannot* be installed on a system with PGP Desktop. If you currently have PGP Desktop on your system, do not install PGP Universal Satellite for Windows. If you are using a version of PGP Desktop prior to 9.0, you should upgrade. If you are using 9.0 or later of PGP Desktop, you can configure PGP Desktop to do everything PGP Universal Satellite for Windows does for you. See your administrator for more information.

External users need to download an ActiveX component and approve it to be installed and allowed to run.

To install PGP Universal Satellite for Windows for external users

- 1 As part of interacting with a PGP Universal Server via a Smart Trailer or PGP Universal Web Messenger message, the Future Message Delivery Options screen appears.
- 2 Select PGP Universal Satellite and click **Choose Option**.
The PGP Universal Satellite ActiveX control asks for permission to install and run.
- 3 Click **Yes**.
- 4 Agree to the End User License Agreement.
You are prompted for permission to download the installer.
- 5 Click **Yes**.
PGP Universal Satellite begins installing.
- 6 When the install is complete, click **Continue**.
The system prompts you to restart your computer.
- 7 Follow the instructions to create your key.
Once a key is generated, the policy is downloaded from PGP Universal Server.

Updates

When PGP Universal Satellite communicates with a PGP Universal Server that is running a newer version, PGP Universal Satellite can update its software.

The PGP Universal Server **Automatic Update** screen displays automatically on the computer on which PGP Universal Satellite is installed.

Click **Install** to begin the installation.

Click **Remind Me Later** to be reminded in 18 hours.

Files

The files that are created and/or used by PGP Universal Satellite are stored on the user's computer at:

```
C:\Documents and Settings\\Application Data\PGP Corporation\PGP Universal
```

If your users are managing their own keys, it is recommended that they back up their keyring files (`secring.skr` and `pubring.pkr`).

MAPI Support

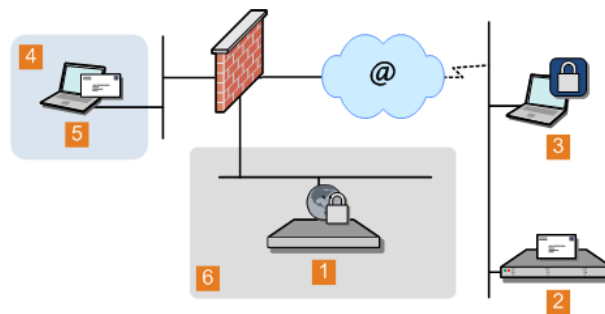
MAPI (Messaging Application Programming Interface), a messaging architecture and a client interface used in Microsoft Exchange Server environments, is supported in PGP Universal Satellite for Windows.

MAPI support in PGP Universal Satellite for Windows means you get both PGP message security all the way to your users' computers and the other features that MAPI makes available.

External MAPI Configuration

For external email users using PGP Universal Satellite, MAPI is no different than using POP or IMAP.

The external PGP Universal Satellite gets its policies from a PGP Universal Server in the managed domain. This is the same PGP Universal Server that sent the Smart Trailer or PGP Universal Web Messenger message.



2	Exchange Server
3	External MAPI user (with PGP Universal Satellite)
4	Example Corp. internal network
5	Example Corp. email user
6	Example Corp. DMZ

It does not matter if the PGP Universal Server in the managed domain is in Internal or Gateway Mode as long as it is accessible to the external PGP Universal Satellite via HTTPS on the well-known port 443.

Lotus Notes Support

Lotus Notes is a groupware application that supports messaging, calendaring, and scheduling capabilities. The Lotus Notes email client is supported in PGP Universal Satellite for Windows.

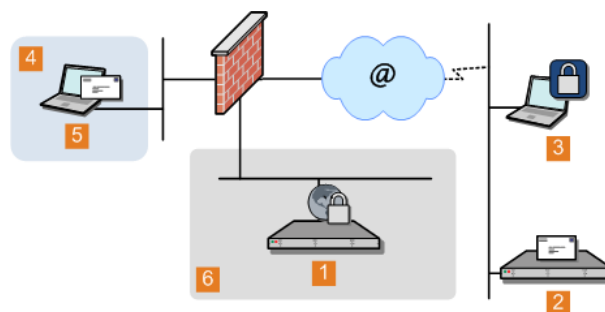
(Support for Lotus Notes email clients is not included in PGP Universal Satellite for Mac OS X.)

Support for Lotus Notes email clients in PGP Universal Satellite for Windows means you get both PGP message security all the way to your users' computers and the other features that Lotus Notes makes available.

External Lotus Notes Configuration

For external email users, using a Lotus Notes email client is no different than using a POP or IMAP email client.

The external PGP Universal Satellite gets its policies from a PGP Universal Server in the managed domain. This is the same PGP Universal Server that sent the Smart Trailer or PGP Universal Web Messenger message.



1	PGP Universal Server
2	Domino server
3	External Lotus Notes user (with PGP Universal Satellite)

-
- 4** Example Corp. internal network

 - 5** Example Corp. email user

 - 6** Example Corp. DMZ

It does not matter if the PGP Universal Server in the managed domain is in Internal or Gateway Mode, as long as it is accessible to the external PGP Universal Satellite via HTTPS on the well-known port 443.

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Configuring PGP Universal Web Messenger

This section describes how to configure the PGP Universal Web Messenger service.

PGP Universal Web Messenger functionality is available for use with PGP Universal Gateway Email and PGP Desktop Email, if PGP Universal Server is in the mailstream.

For information about using PGP Universal Web Messenger, see *Applying Key Not Found Settings to External Users* (on page 121).

Overview

The Web Messenger Configuration page lets you enable, configure, and customize the PGP Universal Web Messenger service.

The PGP Universal Web Messenger service allows an external user to securely read a message from an internal user *before* the external user has a relationship with the SMSA.

If PGP Universal Web Messenger is available via mail policy for a user and the recipient's key cannot be found, the message is stored on the PGP Universal Server and an unprotected message is sent to the recipient. The unprotected message includes a link that sets up an SSL-protected connection to the original message, waiting on the PGP Universal Server.

When they go to read their messages, recipients are given several options for how future messages from the same PGP Universal Server are handled:

- Continue to use PGP Universal Web Messenger.
- Receive messages as PDF Messenger messages.
- Install PGP Universal Satellite, if the policy permits.
- Encrypt messages using an existing PGP Desktop key or an S/MIME certificate that the external user provides.

If the PGP Universal Web Messenger service is not enabled, messages bounce when processed by policy rules that use PGP Universal Web Messenger as the key not found setting. You must also enable the PGP Universal Web Messenger service if your policy rules use Smart Trailer, even if you are not also using the PGP Universal Web Messenger service for external users.

If users continue to use PGP Universal Web Messenger to read and send messages, the PGP Universal Server stores both mail received and, if the user chooses, mail sent by the users. The user's Quota is the disk space allotted for PGP Universal Web Messenger mail storage. You can set the size of the Quota. There is also a 20MB limit to the total encoded message size of email sent to PGP Universal Web Messenger users, and a limit of approximately 15MB per uploaded attachment (after encoding) in email replies created in PGP Universal Web Messenger. Users cannot send or receive any message that would put them over their message storage Quota or exceed 50MB.

PGP Universal Web Messenger sessions time out after 15 minutes of user inactivity. After the session times out, the user is required to log in again.

If you protect your PGP Universal Server with an ignition key, PGP Universal Web Messenger passphrases and messages are stored encrypted. When existing PGP Universal Web Messenger users log in for the first time after installation of PGP Universal 2.7 or later, they receive a notification email requiring confirmation of the passphrase. PGP Universal Web Messenger user passphrases created before 2.7 are stored hashed, rather than encrypted to the Ignition Key. Confirming the passphrase allows it to be encrypted to the Ignition Key. For more information, see *Protecting PGP Universal Server with Ignition Keys* (on page 25).

PGP Universal Web Messenger supports browser languages English, German, Japanese, French, and Spanish. You can use customization to add any other language.

PGP Universal Web Messenger and Clustering

If the PGP Universal Web Messenger service is running on a PGP Universal Server that is a member of a cluster, you can choose whether PGP Universal Web Messenger data is replicated to other cluster members that are running the Web Messenger service. There are three options for replication of Web Messenger data:

- You can have Web Messenger data replicated to all PGP Universal Servers in the cluster that are running the Web Messenger service.
- You can have Web Messenger data replicated to a subset of the eligible servers in a cluster. (Only servers running Web Messenger are eligible to host Web Messenger data).

For example, if you have four servers in a cluster running the Web Messenger service, you can elect to have Web Messenger data replicated only to two of the four servers, to reduce the amount of resources required for storage of Web Messenger data.

- You can elect not to replicate Web Messenger data at all.

For more information on clustering, see *Clustering your PGP Universal Servers* (on page 45).

External Authentication

External users can enroll and log in using passwords stored on an existing authentication server, or using passphrases stored on the PGP Universal Server. External authentication enables compliance for PGP Universal Web Messenger passwords with corporate password policies.

Administrators can specify an external authentication server.

Supported standard authorization types:

- LDAP
- RADIUS

If you use RADIUS, the username must be the user's email address. If the username is not the user's email address, contact PGP Support. Contact PGP Support to use anything other than RADIUS or LDAP.

PGP Universal Server stores PGP Universal Web Messenger passphrases locally and in cleartext. At enrollment, users who authenticate locally create a passphrase, and that passphrase is stored locally.

Users who authenticate externally have their passwords authenticated against the externally configured server. At enrollment, external authentication users do not create a passphrase. Users log in using existing passwords, and the external authentication server verifies the passwords. PGP Universal Server stores the passwords locally and in cleartext. Storing cleartext passwords is necessary because PDF Messenger requires access to cleartext to encrypt messages. Although passwords are stored locally, user passwords continue to authenticate externally.

Note: Use an Ignition Key with the PGP Universal Server to store PGP Universal Web Messenger passphrases encrypted instead of in cleartext.

Users added after you enable external authentication have passwords authenticated externally. Existing users continue to authenticate locally. You can convert all existing users to external authentication. You can also convert an individual existing user to external authentication through the user's External User account. If you convert a user from local to external authentication, the locally stored passphrase is overwritten with the external password on PGP Universal Server

If PGP Universal Server loses the connection to the authentication server while authenticating a user password, the PGP Universal Web Messenger user will not be able to log in.

If you turn off external authentication, all users are authenticated to the locally stored passwords, even if individual user accounts are set to external authentication.

Smart Trailer cannot be used with external authentication enabled.

For more information on how to set up external authentication, see *Setting Up External Authentication* (on page 295).

Options for External Authentication for User Accounts

Options for which external users authenticate to an external server:

- **New users only.** Enable external authentication. All users added after enabling this option authenticate to an external server.
- **All new and existing users.** Enable external authentication and select **Convert all existing External Users with local authentication to external authentication**. All existing users and all users added after enabling this option authenticate to an external server.
- **Most but not all users.** Enable external authentication. Select **Convert all existing External Users with local authentication to external authentication** and then open individual external user accounts and reset them to authenticate locally.
- **Few users.** Enable external authentication. Open individual external user accounts and set them to authenticate externally. New users are all set to authenticate externally. You can change this for any individual account.

Note: If PGP Universal Server Web Messenger is selected as the only delivery method, external users can create a passphrase and log into their Web Messenger Inbox without first having to select Web Messenger as the delivery option.

Customizing PGP Universal Web Messenger

You can customize the appearance of PGP Universal Web Messenger to match your corporate style by creating customized templates to control look and feel. Choose from among the templates you create which one you want to be the active template. Some customization options require knowledge of HTML. You can either edit the HTML yourself, or have a designer provide you with what you need. The default template is the standard, and cannot be edited or deleted.

There are three levels of customization:

- **Simple Customization:** Your company's name and customized introductory text appear on the login page. Change the color theme. Upload and display your company's logo. You do not need to know how to edit HTML to use this option.
- **Advanced Customization:** Your company's name and customized introductory text appear on the login page. Change the appearance of the header, footer, and left side of the PGP Universal Web Messenger interface using HTML and CSS. Upload new images and edit existing ones. You can cut and paste HTML created for you, or modify the HTML directly.
- **Complete Customization:** Your company's name and customized introductory text appear on the login page. Download the HTML, CSS, JavaScript, and Image files, edit them offline, then upload them. This option gives you the most control over the appearance of the interface, including adding more supported languages. Complete customization requires expertise in using HTML.

Templates are synchronized across the cluster, but can only be edited on the Primary.

Note: Make sure you finish customizing PGP Universal Web Messenger before performing tasks such as updating the system time.

Note: If PGP Universal Web Messenger is selected as the only delivery method, external users can create a passphrase and log into their PGP Universal Web Messenger Inbox without first having to select PGP Universal Web Messenger as the delivery option.

Adding a New Template

- 1 Click **Add Template**.
The Web Messenger Customization dialog box appears.
- 2 Read the Customization Agreement and click **I Agree**.
The Customization Option page appears.
- 3 Choose one of the three customization options, and click **Next**.

Using Simple Customization

To create a simple template

- 1 Select **Simple Customization** from the Customization Option page, and click **Next**.
- 2 Type in a name for the template.
- 3 Type in your company name, if you want it to appear on the Secure Messaging Settings page.
- 4 Type in a login title. This appears at the top of the login page.
- 5 Type in a login message, if you have information you want users to read on the login page.
- 6 Click **Next**.
- 7 Select a theme color: blue, green, red, or yellow, for the PGP Universal Web Messenger display.
- 8 Click **Next**.
- 9 If you want to display a custom logo, for example your company logo, click **Choose File** and browse to find an image file to use as a logo. You can use a .gif, .jpg, or .png file. If you do not choose a graphic, the default PGP Universal Web Messenger logo appears.
- 10 Click **Next**.
- 11 Your template is complete. Click **Close Window**.

Note: Make sure you finish customizing PGP Universal Web Messenger before performing tasks such as updating the system time.

Customizing the Logo

Customizing the logo is part of the simple customization process. To perform simple customization, such as changing the color theme or adding a custom logo, you do not need to know how to edit the HTM file.

To select a custom logo, browse to and select the image file to use as the logo displayed to users on the PGP Universal Web Messenger pages. You can use a .gif, .jpg, or .png file. If you do not choose a graphic, the most recently uploaded custom logo displays. If no custom logo has been uploaded, the default Web Messenger logo is used.

To create a simple template to customize the logo

- 1 Select **Simple Customization** from the Customization Option page, and click **Next**.
- 2 Type in a name for the template.
- 3 Type in your company name, if you want it to appear on the Secure Messaging Settings page.
- 4 Type in a login title. This appears at the top of the login page.
- 5 Type in a login message, if you have information you want users to read on the login page.

- 6 Click **Next**.
- 7 Select a theme color: blue, green, red, or yellow, for the PGP Universal Web Messenger display.
- 8 Click **Next**.
- 9 If you want to display a custom logo, for example your company logo, click **Choose File** and browse to find an image file to use as a logo. You can use a .gif, .jpg., or .png file. If you do not choose a graphic, the default PGP Universal Web Messenger logo displays.
- 10 Click **Next**.
- 11 Your template is complete. Click **Close Window**.

Using Advanced Customization

To create an advanced template

- 1 Select **Advanced Customization** from the Customization Option page, and click **Next**.
- 2 Download both the default image template files and the image source file. While it is not required that you edit using the .psd file, it is much faster and easier.
 - Default Web Messenger Template Images: Contains the complete set of images used by the PGP Universal Web Messenger interface. The downloaded file is called WebMessengerImages.zip.
 - Adobe Photoshop/ImageReady Image Source File: Contains Adobe Photoshop-editable versions of all the files in the WebMessengerImages.zip file. The .psd format file allows you to edit the default images, export them to .gif format, then upload them back to the Web Messenger Customization page. The downloaded file is called PGP-Universal-Web-Messenger-Image-Source.zip. Use this file to edit the images, then save your edits as .gif files.
 - a Download both the PGP Universal Web Messenger and Adobe Photoshop/ImageReady .zip files.
 - b Extract the contents of the .zip files and save them to your desktop.
 - c Edit the images in the image source .psd file. If you edit the images through the .psd file, the final graphics quality is better, you can control transparency and anti-aliasing, and the final images are correctly named and sized. For more information, see the Adobe Photoshop/ImageReady documentation.
 - d Save each edited image as a .gif file, using "Save as optimized" in Adobe ImageReady.
 - e Copy the .gif files into the WebMessengerImages/images directory on your desktop.
 - f Compress the WebMessengerImagesdirectory into a .zip file. You can rename the .zip file, but the directory structure must not change.

- g** When you are finished, upload the .zip file containing the edited images. You can upload new files, but all files from the original .zip must be uploaded, even if you did not edit them.

- 3 Click **Next**.
- 4 Type in a name for the template.
- 5 Type in your company name, if you want it to appear on the Secure Messaging Settings page.
- 6 Type in a login title. This appears at the top of the login page.
- 7 Type in a login message, if you have information you want users to read on the login page.
- 8 Click **Next**.

The Custom Content page appears. If you have HTML ready, paste it into the appropriate content box. Otherwise, edit the CSS and HTML for the Header, Left Side, and Footer.

Header	Edit the HTML here to change the appearance of the top part of the interface. If you plan to upload new image files to replace the default .gif files, make sure to change the .gif file names to match the new file names.
Left Side	Edit the HTML here to change the appearance of the interface to the left of the page, underneath the Compose, Inbox, and Sent buttons. You can edit this section to display images you upload or reference CSS you add to the CSS file. For example, you can add links to a Privacy Policy or Terms of Service.
Footer	Edit the HTML here to change the appearance of the bottom part of the interface. For example, you can add text in addition to the copyright information already present.
CSS	Edit the CSS to change the overall appearance of the interface, including font usage, spacing, error display, and button appearance and behavior. If you plan to upload new image files to replace the default .gif files, make sure to change the .gif file names to match the new file names.

Click **Next**. The Upload New Files page appears.

- 9 Use this page to upload edited files.
 - a** If you want to edit image files offline, and upload them to this template at a later time, you can upload the default WebMessengerImages.zip file without making any changes, and click **Next**. The template is saved. After you have edited your image files, re-open the template and upload them.
 - b** Or, if you are ready to upload edited image files, click **Choose File** and browse to select the .zip file and click **Next**. PGP Universal Server validates the file you uploaded. This can take a few minutes.

Uploaded files with the same names as existing image files overwrite the existing files. If you added other new images, files with new names are added. You can only upload a .zip file, and the .zip file must contain all images in the set, not just the images you edited.

If the uploaded files contain errors, a File Validation Error page appears. For more information, see *Troubleshooting Customization* (on page 289).

If the uploaded files contain no errors, a page appears notifying you that the customization files have been successfully uploaded and validated.

10 Your template is complete. Click **Close Window**.

Note: Make sure you finish customizing PGP Universal Web Messenger before performing tasks such as updating the system time.

Using Complete Customization

To create a complete template

- 1 Select **Complete Customization** from the Customization Option screen, and click **Next**.
- 2 Download both the image file and the template files for offline editing. You need both files for offline editing of graphics and HTML.
 - All Default Web Messenger Template Files: This is all default PGP Universal Web Messenger HTML, CSS, JavaScript, localization, and image files. You can edit each individual file that makes up the PGP Universal Web Messenger interface, then upload them again. Editing these files requires knowledge of HTML. Comments describing the HTML have been added to the files to make editing easier. The downloaded file is called WebMessengerWeb.zip.
 - Adobe Photoshop/ImageReady Image Source File: The .psd format file allows you to edit the default images, export them to .gif format, then upload them back to the Web Messenger Customization screen. You cannot upload the source file itself. The downloaded file is called PGP-Universal-Web-Messenger-Image-Source.zip.

For more information on editing the image files, see *Using Advanced Customization* (on page 286).

- 3 Click **Next**.
- 4 Type in a name for the template.
- 5 Type in your company name, if you want it to appear on the Secure Messaging Settings screen.
- 6 Type in a login title to appear at the top of the login screen.
- 7 Type in a login message, if you have information you want users to read on the login screen.
- 8 Click **Next**.
- 9 The Upload New Files page appears.
- 10 Use this screen to upload edited files.
 - a If you want to edit image and HTML files offline, and upload them to this template at a later time, you can upload the default .zip file without making any changes, and click **Next**. The template is saved. After you have edited your files, re-open the template and upload them.
 - b Or, if you are ready to upload edited files, click **Choose File** and browse to select the .zip file and click **Next**. PGP Universal Server validates the file you uploaded. The Validating Files page appears. Validation can take a few minutes.

Uploaded files with the same names as existing files overwrite the existing files. Files with new names are added. You can only upload a .zip file, and the .zip file must contain all files in the set, not just the ones you edited.

If the uploaded files contain errors, a File Validation Error screen appears. For more information, see *Troubleshooting Customization* (on page 289).

If the uploaded files contain no errors, a screen appears notifying you that the customization files have been successfully uploaded and validated.

11 Your template is complete. Click **Close Window**.

Note: Make sure you finish customizing PGP Universal Web Messenger before performing tasks such as updating the system time.

Troubleshooting Customization

You cannot make active a broken template.

Best Practices

Before you upload HTML and images for a customized template:

- **Test the appearance of your files:** You can test the appearance of your edited files and graphics by opening them within your web browser. You cannot test the functionality of the new template within the PGP Universal Server.
- **Use the correct version of HTML:** Use HTML 4.01 Transitional or earlier. Newer versions of HTML are not compatible.

Upgrades and Templates

PGP Universal Server upgrades can cause templates to break. After upgrade, the Overview page that appears at login displays a warning if the active template is broken. The Daily Status Email also provides a warning if the active template is broken. If the active template is broken, the default template becomes active. The **Services > Web Messenger** page displays information about all broken templates.

Fixing Templates in Error States

Templates in error states appear in red on the Web Messenger page. Error states can be caused by malformed or missing files discovered during the upload validation phase, or because an upgrade to PGP Universal Server caused a template to break. Click to open the broken template. The validation page appears. You can view the validation errors, export the validation error logs, and upload new files from this page.

Template Validation Errors

Advanced and complete custom templates allow you to edit the images and/or HTML files used by PGP Universal Web Messenger. After you upload your files, there are two levels of validation: file validation and tag validation.

File Validation

During advanced customization file upload, the zipped image file is validated to make sure all required files are present. During complete customization, the zipped file is validated to make sure all required image, HTML, and other files are present and located in the correct directory. When you download the default file set, all necessary files are present. The same files must be present, although edited, during upload. You can add more files, but you cannot remove any.

File validation runs before tag validation. If the template fails file validation and you make corrections, the template can still fail validation at the tag validation stage.

To correct invalid files

If validation fails, the File Validation Error page appears. The File Validation Error page shows a list of missing or misplaced files.

- 1 Click **Export Validation Error Log** to export and view the error log offline. The error log is exported as a text file.
- 2 Click **Cancel** to save the template in the error state.
- 3 Repair the invalid files on your own computer desktop, using the exported error log as a reference.

You can download the default set of files and use them as a reference when replacing and re-organizing missing and incorrectly located customized files.

- 4 When you are ready to upload the corrected files, click the template.

The template opens to the validation page.

- 5 Click **Upload New File** to upload the .zip files.

The files are validated.

Tag Validation

During complete customization file upload, the zipped file is validated to make sure all required files are present. A compiler converts the HTML pages to an internal format, then validation makes sure that all required HTML tags and tag attributes are present in the HTML and are correctly positioned in relation to each other.

Validation checks that specific code necessary to PGP Universal Web Messenger functionality has not been modified, moved, or deleted. Tag attributes that mark specific locations on each page, such as ID attributes, are particularly important.

If your files failed validation compare the default set of files with your edited versions to find the errors listed in the validation error log.

- Make sure that you have not deleted any HTML tags, IDs, and other elements that use the "Required" attribute. HTML tags necessary to PGP Universal Web Messenger functionality are marked with the Required attribute, so if you delete a tag that was marked as Required, validation fails and an error message appears. If the Required attribute is "true," the tag is required.

Example:

```
<h2 id="loginWelcome" required="true">
```

- Look for incorrectly nested HTML tags, attributes, and other elements. Make sure you have not moved or deleted elements containing the "Within" attribute. The content of the attribute is the element in which it should be nested.

Example:

```
<tr id="trTemplateRow" required="true" within="taInbox">  
  <td class="first" width="20"><input id="deletecheckbox" type="checkbox"  
    required="true" within="trTemplateRow" name="deletedMessages" value="runtime_replace"  
    onclick="highlightRow(this);"></td>
```

To correct invalid files

If validation fails, the **Tag Validation Error** page appears. The **Tag Validation Error** page shows a list of missing or misplaced files.

- 1 Click **Export Validation Error Log** to export and view the error log offline. The error log is exported as a text file.
- 2 Click **Cancel** to save the template in the error state.
- 3 Repair the invalid files on your own computer desktop, use the exported error log as a reference.

You can download the default set of files and use them as a reference when replacing and re-organizing missing and incorrectly located customized files and repairing the HTML.

- 4 When you are ready to upload the corrected files, click the template.

The template opens to the validation page.

- 5 Click **Upload New File** to upload the .zip files.

The files are validated.

Changing the Active Template

To change the active template displayed to users

- 1 From the Active column, select the template you want to make active.

A confirmation dialog box appears.

- 2 Click **OK**.

Users see the template you choose when they log in to PGP Universal Web Messenger.

Deleting a Template

To delete a template

- 1 Click the delete icon in the Actions column of the template you want to delete. You cannot delete the default template or the active template. Make a different template active before deletion.

A confirmation dialog box appears.

- 2 Click **OK**.

The template you specified is deleted.

Editing a Template

You can edit the settings for any non-active template, change the HTML, and upload new files. You cannot edit the active template or the default template. For more information on how to change template settings, see *Adding a New Template* (on page 284).

If you want to change the customized image or template files for a template, click the download icon in the Actions column.

To edit a template

To edit a template, click the name of the template. The Web Messenger Customization dialog box for that template appears.

You cannot edit a template while it is active. If you want to edit the current active template, you must first make another template active.

Downloading Template Files

To download all files

- To download the files for a specific advanced or complete customized template, click the download icon in the Actions column of the template. You receive all the current files belonging to the template, including any customized files.
You can edit the files after download, then upload them for use with the template.
- To download the default set of files, begin creating a new advanced or complete customized template, download the default files, then click **Cancel** to stop template creation.

Restoring to Factory Defaults

Restoring to factory defaults deletes all custom templates and activates the Default template.

To restore factory defaults

- 1 Click **Restore To Factory Defaults**.
A confirmation dialog box appears.
- 2 Click **OK** to continue.

Configuring the PGP Universal Web Messenger Service

The following sections provide details on configuring the PGP Universal Web Messenger service for this PGP Universal Server.

- You can enable or disable the service; you can also pause the service temporarily. For details see *Starting and Stopping PGP Universal Web Messenger* (on page 293).
- You can configure the URL used by external users to log into the PGP Universal Web Messenger service. You can also configure one or more interfaces that PGP Universal Server will use to listen for Web Messenger traffic. Further, you can restrict access to those interfaces, if necessary. For details, see *Selecting the PGP Universal Web Messenger Network Interface* (on page 293)
- You can configure how external users are authenticated for PGP Universal Web Messenger access: either using a passphrase stored locally (on the PGP Universal Server or through an external authentication service. See *Setting Up External Authentication* (on page 295) for details.
- You can configure options for external users, such as whether messages should be encrypted to the Ignition Key, how much storage is available per user, how long an account can be inactive before it expires, how long messages are retained, and a number of other settings. For details, see *Creating Settings for PGP Universal Web Messenger User Accounts* (on page 296).
- If your PGP Universal Server is a member of a cluster, you can configured how replication of Web Messenger data is replicated. See *Setting Message Replication in a Cluster* (on page 297) for further details.

Note: If PGP Universal Server Web Messenger is selected as the only delivery method, external users can create a passphrase and log into their Web Messenger Inbox without first having to select Web Messenger as the delivery option.

Starting and Stopping PGP Universal Web Messenger

To enable the PGP Universal Web Messenger service

- 1 On the **Services > Web Messenger** page, click the **Enable** button to enable the service.
- 2 To disable the PGP Universal Web Messenger service, click the **Disable** button on the Web Messenger page.
- 3 To suspend the PGP Universal Web Messenger service, click the **Pause** button. Users see a message that the service is unavailable. Click **Resume** to continue the service.

Selecting the PGP Universal Web Messenger Network Interface

To select network interfaces

- 1 On the **Services > Web Messenger** page, click **Edit**.
The **Edit Web Messenger** page appears.
- 2 Select the **Interface** tab to specify where external users log in to the PGP Universal Web Messenger service.
- 3 In the **Public URL** field, type a PGP Universal Web Messenger hostname. This is the hostname used in Smart Trailer and PGP Universal Web Messenger links.

If the keyserver is behind a load balancer, this name can be different from the PGP Universal Server's network name. Once you specify a custom value for the PGP Universal Web Messenger's hostname here, it remains there permanently even if the actual hostname changes later.

- 4 In the **Interface** field, select the network interface on which the PGP Universal Server should listen for PGP Universal Web Messenger traffic. Restrict access to all interfaces by following the procedure described in *Restricting Access to the Connectors* (on page 294).
- 5 In the **Port** field, keep the default or type an appropriate port number.
 - If you change the port (from the default 443 to any other value), then be sure to change the public URL to include that port (for example, <https://keys.example.com:500>).
- 6 To remove the requirement that connections to PGP Universal Web Messenger be over SSL, remove the check in the **SSL** check box. SSL should be enabled for at least one connector.
- 7 Click the plus sign icon to add another interface, and select the appropriate interface, port, and SSL information.
- 8 Click **Save**.
- 9 The PGP Universal Server restarts, which takes a few seconds.

Restricting Access to the Connectors

To restrict access to connectors

For all interfaces, you have the option of restricting the source of incoming PGP Universal Web Messenger HTTP or HTTPS requests to one or more specific IP addresses. Access restriction applies to all PGP Universal Web Messenger connectors.

- 1 Click **Restrict Access** to establish access control for the connections on the Access Control for Connector dialog box:
- 2 Select **Enable Access Control for Connector** to enable access control.
- 3 Select **Hostname/IP** or **IP Range** from the menu.
 - If you selected **Hostname/IP**, type a hostname or IP address, then click **Add**. What you type here appears in the **Block or Allow** field below. If you type a hostname such as `example.com`, the name resolves to an IP address.
 - If you selected **IP Range**, type starting and ending IP addresses for an IP address range, then click **Add**. What you type here appears in the **Block or Allow** field below.
- 4 In the **Block or Allow** field, select **Block these addresses** or **Allow only these addresses**, as appropriate, for the IP addresses or ranges in the box below.

To remove an IP address or range from the box, select it, and then click **Remove**.
- 5 Click **Save** to close the Access Control for Connector dialog box. The changes you made apply to all PGP Universal Web Messenger interfaces.

The PGP Universal Server restarts, which takes a few seconds.

Setting Up External Authentication

To set up external authentication

- 1 On the **Services > Web Messenger** page, click **Edit**.
The **Edit Web Messenger** page appears.
- 2 Select the **External Authentication** tab.
- 3 Select **Enable External Authentication**.
- 4 From the **Protocol** menu, select **LDAP** or **Radius**.
- 5 Provide the required information to connect to your external authentication server.
 - **LDAP**. Specify Hostname, Port, SSL, Base DN, Bind DN, Bind DN Passphrase, Username Attribute, and Mail Attribute.
 - **RADIUS**. Specify Hostname, Account Port, Authentication Port, and Secret.
- 6 Click **Convert all existing External Users with local authentication to external authentication** to authenticate all existing users externally. For more information on converting users, see *Options for External Authentication for User Accounts* (on page 283).

Note: If Protector for Mail Encryption Web Messenger is selected as the only delivery method, external users can create a passphrase and log into their Web Messenger Inbox without first having to select Web Messenger as the delivery option.

- 7 Click **Save**.
The PGP Universal Server restarts, which takes a few seconds.

Testing the External Authentication Configuration

To test the external authentication configuration

- 1 Type in the email address and passphrase of a user in the external authentication server.
- 2 Click **Test Connection**.
PGP Universal Server attempts to contact and authenticate to the external authentication server using the configuration.
A message appears at the top of the page, indicating whether the test succeeded or failed. If the test succeeded, the configuration is valid. If the test failed, there are errors in the configuration.

Creating Settings for PGP Universal Web Messenger User Accounts

To set up PGP Universal Web Messenger user accounts

- 1 On the **Services > Web Messenger** page, click the **Edit** button.
The Edit Web Messenger page appears.
- 2 Select the **Options** tab to create settings for PGP Universal Web Messenger external user accounts.
- 3 Select **Encrypt stored messages to Ignition Keys** to encrypt all stored PGP Universal Web Messenger messages to your Ignition Key(s). This option is not available if you have not created any Ignition Keys. See *Protecting PGP Universal Server with Ignition Keys* (on page 25) for more information.

If this option is currently enabled and you disable it by deselecting the check box, all encrypted stored messages are decrypted.
- 4 Select **Allow users to reset their passphrase by email** if you want external users to be able to reset their PGP Universal Web Messenger passphrases by email.
- 5 In the **Inactivity Expiration** field, specify how long a PGP Universal Web Messenger account can be inactive before it expires.

Before the account expires, PGP Universal Server sends a message to the user requesting that the user log in to keep the account active. When the account inactivity time-out is reached, the account is deleted—including any keys, email, or settings associated with the account.
- 6 In the **Storage Quota** field, type the desired per-user storage quota for PGP Universal Web Messenger user accounts in megabytes (MB) or gigabytes (GB).
- 7 From the **Maximum Login Attempts** menu, select how many times the user can attempt to log in before being shut out of the system. The default is to allow unlimited login attempts. When users are shut out, they see an error message in the PGP Universal Web Messenger interface, then receive an email message notifying them that they have been locked out. The email message provides a URL to allow the user to log back in again. This ensures that only the correct recipient of a message can log back in after multiple failed login attempts. If a user is locked out and fails to respond to the email, the administrator can unlock the account manually from the External User account page. For more information, see *Unlocking PGP Universal Web Messenger Accounts* (on page 255).
- 8 If this PGP Universal Server is a member of a cluster, the **Message Replication** settings let you configure whether and how Web Messenger data (user account information and message) are replicated to other cluster members. For details on these settings, see *Setting Message Replication in a Cluster* (on page 297). These settings are not available if this PGP Universal Server is not a member of a cluster.
- 9 From the **Message Expiration** menu, select when you want user messages to expire, from 1 day to 5 years, or never. When a message expires, it is deleted from the user's account.
- 10 From the **Delivery Receipt Expiration** menu, select when you want Certified Delivery receipts to expire and be deleted, from 1 day to 5 years, or never. For more information on Certified Delivery, see *Certified Delivery with PDF Messenger* (on page 123).
- 11 Click **Save**.

The PGP Universal Server restarts, which takes a few seconds.

Setting Message Replication in a Cluster

To configure Web Messenger data replication in a cluster

- 1 On the Services>Web Messenger page, click the **Edit** button.

The Edit Web Messenger page appears.

- 2 Select the **Options** tab to configure PGP Universal Web Messenger data replication for this cluster member.
- 3 Under the **Message Replication** section, select the replication option you want for this PGP Universal Server:

- Select **All** to have Web Messenger data replicated from this PGP Universal Server to all eligible cluster members. Cluster members that are not running the PGP Universal Web Messenger service cannot host Web Messenger data.
- To replicate Web Messenger data to a subset of eligible cluster members, select **Replicate messages on X servers in the cluster**, and select the number of servers from the drop-down menu. This will cause data to be replicated only the the number of servers you indicate. For example, if there are four servers in a cluster that are running the Web Messenger service, you could elect to have each PGP Universal Servers Web Messenger data replicated to only two of the other four eligible servers. This can reduce the amount of resources and overhead needed for replicating Web Messenger data.

If there are only two members in a cluster, then this selection is not available.

- Select **Off** to indicate that Web Messenger data should not be replicated. If you select this option, you will need to confirm this choice.

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Configuring the Integrated Keyserver

This section describes the Keyserver service, which is integrated into every PGP Universal Server and holds the public keys of internal users.

You can configure Keyserver options from the **Services > Keyserver** page.

Overview

Every PGP Universal Server includes an integrated keyserver that is populated with the public keys of your internal users. When an internal user sends a message to another internal user, the PGP Universal Server goes to the keyserver to find the public key of the recipient to secure the message.

Depending on how your network is configured, the PGP Universal Servers of other organizations can also contact your keyserver to look for public keys. External users' PGP Desktop applications can do the same.

The keyserver is always on if the service is enabled, but PGP Universal Server administrators can control access to it via the Keyserver page. You can block or allow access to the keyserver by specified IPs and hostnames.

If you have the PGP Verified Directory activated, the keyserver receives vetted user-submitted keys from the PGP Verified Directory. See *Configuring the PGP Verified Directory* (on page 302).

Starting and Stopping the Keyserver Service

To enable the Keyserver service

- 1 Go to **Services > Keyserver**. On the Keyserver page, click **Enable** to enable the service.
- 2 To disable the Keyserver service, click **Disable** on the Keyserver page.

Configuring the Keyserver Service

You can allow access to the keyserver through non-SSL/TLS service, SSL/TLS service, or both.

To configure the Keyserver service:

- 1 From the **Services > Keyserver** page, click **Edit**.
The Edit Keyserver page appears.

- 2 In the **Public URL** field, type the keyserver's network name. If the keyserver is behind a load balancer, this name can be different from the PGP Universal Server's network name.

Anytime the Public Keyserver URL changes, that information on the Organization Key changes immediately. On user keys, the URL information updates the next time the Organization Key signature is renewed.
- 3 In the **Interface** field, select the appropriate interface for the Keyserver from the drop-down menu.
- 4 In the **Port** field, type a port number for the Keyserver to listen on or keep the default setting. The default port for the first interface connector is port 389. The SSL default is port 636.
- 5 Put a check in the **SSL** check box to require that connections to the Keyserver be over SSL.
- 6 Put a check in the **Require SSL Client Authentication** check box to require that client connections be SSL-authenticated.
- 7 Click the plus sign icon to add another network interface, and select the appropriate interface, port, and SSL information.
- 8 Click **Save** to save changes and return to the Keyserver page.
- 9 For each interface you enabled, you have the option of clicking **Restrict Access** and establishing access control for the connection on the Access Control for Connector dialog box:
- 10 Put a checkmark next to **Enable Access Control for Connector** to enable access control, and select **Hostname/IP** or **IP Range**:
 - In the **Hostname/IP** field, type a hostname or IP address, then click **Add**. What you type here appears in the **Block or Allow** field below. If you type a hostname such as **example.com**, the name resolves to an IP address.
 - In the **IP Range** fields, type starting and ending IP addresses for an IP address range, then click **Add**. What you type here appears in the **Block or Allow** field below.
 - In the **Block or Allow** field, select **Block these addresses** or **Allow only these addresses**, as appropriate, for the IP addresses or ranges in the box below.To remove an IP address or range from the box, select it then click **Remove**.
- 11 Click **Save** to close the Access Control for Connector dialog box.

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Configuring the PGP Verified Directory

This section describes how to configure the PGP Verified Directory feature to enable users to submit their keys.

You can configure PGP Verified Directory options from the **Services > Verified Directory** page.

Overview

The PGP Verified Directory gives you the option of hosting a Web-accessible keyserver for the public keys of your internal or external users. This feature is optional; you do not have to enable it. You can choose whether to allow your internal users or external users, or both, to submit their keys.

The PGP Verified Directory feature allows users running older client software not directly supported by PGP Universal Server to submit their keys.

The PGP Verified Directory uses next-generation keyserver technology that lets users manage their own keys, including submitting and removing them. These features are not available on keyservers with older keyserver technology.

These advanced features simplify managing user keys and ensure that the keys in the directory can be trusted.

Specifically, the PGP Verified Directory sends verification messages to the email addresses on keys submitted to it. If the key owner responds to the verification message with permission to add the key, then the key is added to the directory. This approach keeps the PGP Verified Directory free of useless keys and protects users' privacy by foiling the upload of bogus keys that use their email addresses.

Published user keys are signed by another key. Keys submitted by internal users are signed by the Organization Key attached to the PGP Universal Server; keys submitted by external users (also called directory users) are signed by the Verified Directory Key.

You must add a Verified Directory Key to the PGP Universal Server before you allow users outside your managed domain to submit keys. See *Managing Organization Keys* (on page 47) for more information on the Verified Directory Key.

The signature on the submitted key expires on a timetable you set. Every time the key signature expires, the key must be renewed based on the selected vetting method. For example, using the email vetting method, the user receives an email asking them to re-confirm that the email and key still belong to them. If the user responds to the verification email, the posted key is renewed. If the user does not respond, the key is removed from the PGP Verified Directory.

Additionally, the PGP Verified Directory lets the owner of a key remove it from the directory, even if the passphrase has been lost. This prevents the buildup of unusable keys; with older keyserver technology, once a key was posted, it was there forever unless the keyserver administrator manually removed it. However, removing a user's key removes all key-related material for that user. Whole Disk Recovery Tokens and other important user data are lost.

Finally, the PGP Verified Directory lets users search the directory through a web interface for the public keys of persons to whom they want to send secured messages.

Once the PGP Verified Directory accepts an uploaded key, the verified key material is shared with the keyserver, to be used in encrypting messages.

Starting and Stopping the PGP Verified Directory

To enable the PGP Verified Directory service

- 1 On the **Services > Verified Directory** page, click **Enable** to enable the service.
- 2 To disable the PGP Verified Directory service, click **Disable** on the Verified Directory page.
- 3 To suspend the PGP Verified Directory service, click **Pause**. Users see a message that the service is unavailable. Click **Resume** to continue the service.

Configuring the PGP Verified Directory

To configure the PGP Verified Directory service

- 1 On the **Services > Verified Directory** page, click the **Edit** button.
The Edit Verified Directory page appears.
- 2 Click the **Interface** tab to specify how users access the directory.
- 3 In the **Public URL** field, type the PGP Verified Directory's network name.
Directory users access the PGP Verified Directory using this URL. The default URL is the hostname of the server, and the default port is port 80. You can change the URL, depending on your network configuration. By default, SSL is turned off. If the PGP Verified Directory runs on an interface with SSL, use HTTPS, and not HTTP, for the public URL. If the port you choose is not the default, add the number to the end of the URL; for example, https://<publicURL>:9999.
- 4 In the **Interface** field, select the appropriate interface for the PGP Verified Directory from the drop-down menu.
- 5 In the **Port** field, type a port number for the PGP Verified Directory to listen on or keep the default setting.
The above two fields are the interface and port on which the PGP Verified Directory is established.
- 6 Put a check in the **SSL** check box to require that connections to the PGP Verified Directory be over SSL.
- 7 Click the plus sign icon to the right of the **Edit** field to add another network interface, and select the appropriate interface, port, and SSL information.
- 8 Click the **Options** tab to specify key and user interaction settings.
- 9 Establish user key submission criteria:

- **Allow Submission.** When checked, users can submit their public keys to the PGP Verified Directory. When unchecked, they cannot. You can choose whether internal or directory users can submit their keys. Internal users are inside your managed domain; directory users are users outside your managed domain.
- **Vetting Method.** Choose a method for determining whether or not the owner of a submitted key agrees to it being posted in the PGP Verified Directory.

Implicit means anyone who submits a key is by default trusted. **Manual** means the PGP Universal Server administrator must manually approve or disapprove all submitted keys (the default). **Email** means an email message is sent and must be responded to. See *Approving Pending Keys* (on page 73) in the Internal Users chapter for information about manually approving internal user submitted keys. See Managing PGP Verified Directory User Accounts for information on approving submitted external user keys.

- 10 In the **Re-email Timeout** field, type a timeout value for resending email. The default is 24 hours. If for some reason a user's key is submitted multiple times, the timeout value specifies how often the user receives the vetting email in response. The default of 24 hours means that users only receive the email once every 24 hours.
- 11 In the **Email Token Timeout** field, type the timeout value for the expiration of the email token. The default is 336 hours (14 days).
- 12 In the **Signature Expiration** field, type the expiration time for the Organization Key's signature. The default is 6 months.

When signature expiration time period is reached, the user's key is automatically re-verified using the selected vetting method.
- 13 In the **Max Search Results** field, type the maximum number of results users receive for a web-based search. The default number of results returned for web-based searches is 25.
- 14 In the **Customized Sender Address** field, type the email address you want all PGP Verified Directory-generated email to appear to be from. Every email users receive from the PGP Verified Directory has this address in the email "From" line. The customized sender address prevents your PGP Universal Server's hostname from appearing in the "From" line.

Note: You do not need to create an email account to correspond to the email address you choose, because users should only interact with the PGP Verified Directory through the PGP Verified Directory interface, or through the information you provide in the Administrator Contact Message. However, if you want users to be able to reply to verification email using this address, you can create an email account using this email address. If you do not create an email account, reply email sent to the customized sender address bounces.

- 15 Click **Save**.

The settings you established are saved.

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Managing the Certificate Revocation List Service

This section describes the Certificate Revocation List (CRL) service, which automatically generates and publishes a CRL, adds certificates to the CRL when their key is revoked, and lets you download the CRL via HTTP or LDAP. The PGP Universal Server CRL service is RFC 3280-compliant.

PGP Universal Server also checks the CRLs it gets from other CRL Distribution Points before encrypting a message to a certificate (see *Certificate Revocation Lists* (see "How PGP Universal Server Uses Certificate Revocation Lists" on page 44) for more information).

You configure the CRL service from the **Services > Certificate Revocation** page.

Overview

PGP Universal Server includes a CRL service that, when enabled (the default setting), monitors the status of keys and their associated certificates. When a key is revoked, the corresponding certificate is automatically added to the CRL.

There are two ways for a key to be revoked, causing the certificate to be added to the CRL:

- The key is manually revoked by a PGP Universal Server administrator (see *Revoking the PGP Key of an Internal User* (see "Revoking Managed Keys" on page 74)).
- If a new key is imported for an existing internal user, the old key is automatically revoked.

The only way to revoke a certificate is to revoke the corresponding key.

The CRLs created by PGP Universal Server are valid for a configurable number of days; the default is 7 days.

Starting and Stopping the CRL Service

To enable or disable the CRL service

- 1 On the **Services > Certificate Revocation** page, click **Enable** to enable the service if it is not running.
- 2 To disable the CRL service if it is running, click **Disable** on the **Certificate Revocation** page.

Editing CRL Service Settings

To edit settings for the CRL service

- 1 On the **Services > Certificate Revocation** page, click the **Edit** button.
The Edit Certification Revocation page appears.
- 2 In the **URLs** field, type the URLs you want to be stamped into the CRL DP when the PGP Universal Server creates a certificate for a key.

Type one URL per line.

Note: To use the default CRL DP location, enter only the protocol and hostname of the URL (for example, `https://examplehostname:port`) and the rest of the path is stored correctly in generated certificates (for example, <https://examplehostname:port/crl/RevokedCertificates.crl>).

To use a custom CRL DP location, you must enter the complete URL. Custom CRL DP locations are not modified in anyway.

- 3 In the **Regeneration** field, type the number of days for which a CRL is valid.
The default is 7 days. When the threshold is reached, a new CRL is generated.
- 4 In the **Interfaces** fields, type an interface and port you want stamped into the CRL DP for accessing the CRL via HTTP.
You must configure one interface for each HTTP URL you type in the **URLs** field. You can create additional interface/port combinations by clicking the plus-sign icon and typing the appropriate information.
The interfaces you configure have no effect on accessing the CRL via LDAP.
- 5 Click **Save**.
The settings you established are saved.

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Configuring Universal Services Protocol

The Universal Services Protocol (USP) provides communication between external services and the PGP Key Management Service (KMS). USP enables key management and policy services to clients and other external services.

USP is used for communication between PGP Universal Server and PGP Desktop client and PGP Universal Satellite, and for communication with keyservers for key lookup.

Starting and Stopping USP

The Universal Services Protocol page lets you enable or disable the Universal Services Protocol.

This protocol is enabled by default.

Warning: Disabling USP could cause PGP Desktop communications and key lookups to fail.

To disable the Universal Services Protocol

- 1 Go to **System > USP** in the administrative interface.
The Universal Services Protocol page appears.
- 2 Click **Disable**.

To enable the Universal Services Protocol

- 1 Go to **System > USP** in the administrative interface.
The Universal Services Protocol page appears.
- 2 Click **Enable**.

Adding USP Interfaces

USP is initially configured with a single interface, on port 443 using SSL, for communication with PGP client software. You can add additional interfaces to allow communication over other ports or via HTTP rather than HTTPS (SSL).

To add an interface for USP

- 1 Go to **System > USP** in the administrative interface.
The Universal Services Protocol page appears.
- 2 Click **Edit....**

The Edit Universal Services Protocol page appears.

- 3 Click the Add icon to create a new row.
- 4 Select an interface from the drop-down menu.
- 5 Type the port number you want to use.
- 6 Uncheck the SSL box if you do not want to use SSL.
- 7 Click **Save** to save your changes.
- 8 To remove a row from the table, click the Remove icon.

You cannot remove the interface if it is the only one configured.

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Introducing PGP Remote Disable and Destroy

About PGP Remote Disable and Destroy

PGP Remote Disable and Destroy from Symantec(TM) powered by Intel(R) Anti-Theft Technology (PGP RDD) provides a security solution for lost, stolen, or decommissioned computers.

PGP RDD solves the need to keep data secure in mobile environments and comply with increasingly stringent regulations in data security and privacy using the latest Intel AT technology. PGP RDD offers corporate users the option to activate PGP Universal Server's security service and manage hardware-based, client-side intelligence to secure the notebook and/or data if a notebook is lost or stolen. If the client system is lost or stolen, you can remotely disable client systems or disable access to data and securely decommission client systems.

Components of PGP RDD

The following items are part of the overall PGP RDD installation:

- **PGP Universal Server.** The administrative server used to manage client systems.
- **Intel Content License Server (ICLS).** The ICLS permit licensing server is the activation site at Intel where client installations are tracked.
- **Managed PGP Desktop client system with PGP Whole Disk Encryption installed.** Once PGP RDD policies are applied and the system is encrypted, the client system then becomes PGP RDD-enabled.

How PGP RDD Works

You deploy PGP RDD to clients you have specified in PGP Universal Server as part of a particular consumer group. For that consumer group, you create a policy that enables PGP RDD with Intel Anti-Theft Technology. You then create a PGP Desktop client installer that uses the policy.

A user installs the PGP Desktop client and enrolls with the PGP Universal Server using the method you choose. The client computer is then encrypted with PGP Whole Disk Encryption. During this process, the client receives the policy from PGP Universal Server that enables PGP RDD. PGP RDD in turn activates the Intel Anti-Theft Technology on that client, and the encrypted client moves to a state known as "AT Activated." This is the normal operating state for a PGP RDD-enabled client. This state is transparent to the user. The client system operates normally and is protected.

PGP Universal Server then monitors PGP RDD-enabled clients through regular periodic contact between server and client. This contact refreshes the theft status of the computer and is known as a rendezvous. A successful rendezvous indicates to the server that a client is online and controlled by the authorized user.

After a missed rendezvous, a timer begins counting down to disable the system. If the client fails to rendezvous successfully before the timer expires, the client is automatically flagged on the server as "Stolen." The client is locked down until the user or administrator unlocks the system and returns it to an "AT Activated" state.

Security for the system is local. The computer is disabled when the timers expire. This thwarts a common strategy employed in laptop theft to avoid putting the computer online. Security is also hardware-based, preventing use of the system even if its hard drive is replaced.

For more information on configuring and deploying PGP RDD, go to the *Symantec Knowledgebase* (<http://www.symantec.com/business/support/index?page=home>) and search for DOC4975, "PGP Remote Disable & Destroy Configuration Guide".

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System Graphs

This section describes system graphs, a feature that graphically displays information about your PGP Universal Server.

Overview

Select **Reporting > Graphs** to view the graph page. There are three system graphs:

- CPU usage (Last 24 hours)
- Message activity
- Whole Disk Encryption

Click **Refresh** (at the top of the System Graphs page) to refresh the information in the graphs.

CPU Usage

The CPU Usage graph displays information about the CPU usage of the hardware hosting your PGP Universal Server in the last 24 hours. The following categories are shown:

- **Nice.** Shows CPU usage by processes running at a lower priority than any other processes; it is mostly used for low-importance background tasks and rarely shows much activity on PGP Universal Servers. Nice processes only run when the CPU is not running any other task.
- **System.** Shows CPU usage by the PGP Universal Server software.
- **User.** Shows CPU usage by PGP Universal Server users.

Message Activity

The Message Activity graph shows the number of messages the PGP Universal Server encrypted, decrypted, and processed for the specified time period.

Available time periods are the previous 30 days, previous 6 months, and previous year.

Whole Disk Encryption

The Whole Disk Encryption chart shows the number of fixed devices with PGP Whole Disk Encryption in the following states:

- Encrypted
- Decrypted
- Encrypting
- Decrypting
- Encryption Paused
- Decryption Paused
- Unknown
- In error states

From this page, you can export a CSV report on all PGP Whole Disk Encryption activity data for each encrypted device, on the system; a system with multiple drives that can be encrypted will have multiple rows in the report. The fields on the report are:

- User name
- Primary email address
- Last access by user
- MAC address
- Domain
- IP address
- PGP Desktop version
- Device ID and type
- Partition ID
- Device status

The device status field displays numeric codes for the PGP WDE status of the device. These codes include:

- 0 - Unknown status
- 1 - Encrypting
- 2 - Encryption paused
- 3 - Encrypted
- 4 - Decrypting
- 5 - Decryption paused
- 6 - Not encrypted

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System Logs

This section tells you about the PGP Universal Server system logs.

Overview

The System Logs page lists and time stamps each action a PGP Universal Server takes. Analysis of the logs can help you determine how your configuration of the server and the policies you have established are affecting your email.

The list shows the most recent events at the top.

The list can be filtered by what actions were logged, date the action occurred, time the action occurred, and type of message (Information, Warnings, Notices, and Errors). You can filter on the following types of actions:

- **Administration** logs are audit logs of configuration changes made through the administration console interface.
- **Backup** logs provide information about events such as data and configuration restoration, and automatic and manual backups.
- **Client** logs display messages about connections made from client software. For example, PGP Whole Disk Encryption event notices include device detection, disk encryption or decryption, device status changes, errors during events, and WDRT use or creation.
- **Cluster** logs include messages about cluster join events and data replication notices.
- **Data Layer** logs provide information on the data layer service, which is part of the system that sits between the PGP Universal Server database and the rest of the code.
- **Groups** logs provide information on the group manager service.
- **Ignition Key** logs record events such as adding and removing ignition keys and using ignition keys to unlock the server.
- **Mail** logs record mail proxy activities such as PGP Universal Server finding recipient keys, IMAP connections, and the starting and stopping of mail services.
- **Postfix** logs display events associated with sending mail messages.
- **RDD** logs provide information about events associated with the PGP RDD feature, including viewing the hardware recovery passphrase.
- **Update** logs provide information about software-update specific actions.
- **Verified Directory** logs include information about events such as user submission of keys and key-verification email.
- **Web Messenger** logs display events such as users logging in and out of the service and messages being sent.

You can also search the log and save a copy of the log as a text file at any time.

Filtering the Log View

You can filter the log view based on multiple criteria.

To filter the view of the system log

- 1 Select **Reporting > Logs**.
- 2 Click the current **Log** selection and select the appropriate logged action from the drop-down menu.

The list of log entries re-displays, showing only those entries for the appropriate action for the selected date.

- 3 To change the type of entries shown in the list, select the **Display** type you want to see. The list immediately re-displays to show entries of the display type you have selected, as well as any entries of greater (more severe) types.

You can select from from the following **Display** types:

- **Information** shows informative log entries (events of low importance) as well as error, warning, and notification log entries.
- **Notice** shows notification log entries (important events such as starting and stopping processes) as well as warning and error log entries.
- **Warnings** shows warning log entries, indicating possible problems, in addition to error log entries.
- **Errors** shows error log entries, for example, serious and non-fatal errors.

For example, if you select the **Warnings** display type, the resulting list will also show any error entries that match the current **Log** selection. It will not show **Information** or **Notice** entries.

The list of log entries re-displays each time you choose a **Log** or **Display** filter.

- 4 To change the dates and times displayed, select **1 page**, **1 hour**, **6 hours**, and so on, from the menu on the right. You can move between time periods one at a time by clicking the arrows.

Searching the Log Files

Searches are not case-sensitive.

Note: To use regular expressions to search for log messages, escape the regular expression meta characters (such as parentheses, periods, square brackets, etc.) with a backslash. For example, to use the regular expression `. *ppp . *`, type `\ . \ *ppp \ . \ *` into the **Search** field.

To perform a simple search in the list of log entries for a particular word or phrase

- 1 Type the word or phrase in the **Search** field.

- 2 Check **Regular expressions**, as appropriate.
- 3 Choose any of the Log and Display types.
- 4 Click **Search**.

The list of log entries re-displays to show logs containing the word or phrase for which you searched.

To perform an advanced search based on days of the week, or dates and times

- 1 Click **advanced**.
- 2 Type a word or phrase in the **Search** field, if necessary.
- 3 Check **Regular expressions**, as appropriate.
- 4 Choose any of the Log and Display types.
- 5 Enter the dates and times of the logs you want to view.
- 6 Click **Search**.

The list of log entries shows those entries time stamped at the times you specified for the selected dates.

Exporting a Log File

You can save a log file, or a record of log messages, to examine offline. The log file is a text file, so you can open it with any text editor.

To export log files

Click the **Export Log** button to save a log file for the log you are currently viewing.

You can also download just PGP Whole Disk Encryption login failure data to view offline.

To export login failure data

On the Users/Internal tab, from the **Options** menu, select **Export WDE Login Failures For All**.

The file WDE_Failures.CSV is exported.

Enabling External Logging

Log Settings lets you enable external system logging, which means you can send all log messages to an existing remote syslog server for central log gathering. Keeping logs for all systems in one location can help with log analysis.

When external syslog is enabled, the logs for the following PGP Universal Server services are sent to the syslog server: administration, software updates, clustering, backups, Web Messenger, Verified Directory, Postfix, client logs, and mail. The logs of some generic services, such as cron (the system task scheduler), are sent as well.

To configure the log settings

- 1 Click on the **Settings** button.

The Log Settings dialog box appears.

- 2 Put a checkmark next to **Enable External Syslog**.
- 3 Choose the desired **Protocol** to use to send the logs (UDP or TCP) from the drop-down menu.

The default protocol and port values are the most common values; they should be used unless you are certain you must use different values.

- 4 Specify the **Hostname** to which to send them.
- 5 Type the desired **Port** number or use the default.
- 6 Click **Save**.

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Configuring SNMP Monitoring

This chapter describes how to configure PGP Universal Server to allow network management applications to monitor system information for the device on which PGP Universal Server is installed, and to send system and application information to an external destination.

You can configure SNMP options from the **Services > SNMP** page.

Overview

SNMP enables a network management application to monitor the health and activity of the PGP Universal Server software and the computer on which it is installed. The network management application can poll the PGP Universal Server on a regular basis to extract information. Polling means that the network management application periodically queries the PGP Universal Server to get the desired status information, and SNMP is the protocol it uses.

You can configure all polling settings, including polling cycles, on the network management application. You can poll the following system information, as part of the standard MIB:

- The number of instances of certain running processes
- System memory usage
- Disk usage
- System load information

You can also download custom MIBs that allow you to poll for messaging statistics, including the number of messages:

- Processed that day
- Encrypted and/or signed that day
- Decrypted that day
- Processed total
- Encrypted and/or signed total
- Decrypted total
- Currently in the mail queue

You can also set up the PGP Universal Server to use SNMP to send out trap information to one or more specified hosts or IP addresses. Traps are triggers set off by certain network events. You can configure the SNMP service to send out an alert every time these events occur:

- The number of certain processes drops to zero
- The available swap space drops too low
- A disk has less than 20% free space
- The 1-minute system load average rises above 4.0

- The 5-minute system load average rises above 1.0
- The 15-minute system load average rises above 1.0

Starting and Stopping SNMP Monitoring

To enable the SNMP service

On the **Services > SNMP** page, click the **Enable** button to enable the service.

To disable the SNMP service, click the **Disable** button on the SNMP page.

Configuring the SNMP Service

To configure the SNMP service

- 1 From the SNMP page, click the **Edit** button.
The Edit SNMP page appears.
- 2 In the **Interface** field, select the interface on which you want to allow SNMP polling of the PGP Universal Server.
You cannot specify a port because the standard port for SNMP traffic is always port 161.
- 3 In the **Community** field, type the community name, also called the community string. The community name acts as a password, allowing the network management application to poll the PGP Universal Server. Use the same community name in your SNMP browser.
- 4 In the **SNMP Traps Recipient** field, type the IP or hostname you want to receive SNMP trap data.
- 5 Click the plus sign icon next to the Recipient field to add another recipient. There is no limit to the number of IPs you can add.
- 6 Click **Save** to save changes and return to the SNMP page.
- 7 You have the option of clicking **Restrict Access** and establishing access control for the connection on the Access Control for Connector dialog box:
- 8 Put a checkmark next to **Enable Access Control for Connector** to enable access control and select **Hostname/IP** or **IP Range**:
 - In the **Hostname/IP** field, type a hostname or IP address, then click **Add**. What you type here appears in the **Allow only these addresses** field below. If you type a hostname such as **example.com**, the name resolves to an IP address.
 - In the **IP Range** fields, type starting and ending IP addresses for an IP address range, then click **Add**. What you type here appears in the **Allow only these addresses** field below.

To remove an IP address or range from the box, select it and click **Remove**.

- 9 Click **Save** to close the Access Control for Connector dialog box.

Downloading the Custom MIB File

PGP Corporation provides a custom MIB extension to allow you to poll for PGP Universal Server-specific information. The MIB files are called PGP-UNIVERSAL-MIB.mib and PGP-SMI.mib. The root Object ID (OID) for the PGP Universal Server custom MIB set is .1.3.6.1.4.1.17766.1.1.1, which is .iso(1).org(3).dod(6).internet(1).private(4).enterprises(1).pgp(17766).products(1).pgpuniversal(1).messaging(1).

To download the custom MIB files

- 1 From the **Services > SNMP** page, click **Download PGP Universal ServerMIBs**.
- 2 Save the zipped file mibs.zip to your desktop.
The MIB files download to your desktop.
- 3 Unzip mibs.zip, and extract the files PGP-UNIVERSAL-MIB.mib and PGP-SMI.mib.
- 4 Depending on which SNMP browser you are using, you might need to compile the MIBs before you can add them to the browser. The MIB files are formatted as text and can be converted to a database form before they can be used. Consult the documentation for your SNMP browser.
- 5 Import the MIBs to your SNMP browser.

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Viewing Server and License Settings and Shutting Down Services

This section discusses the tasks you can perform on the System General Settings page.

Overview

From the System Settings page found at **System > General Settings**, you can:

- View Server information such as the server host name, currently installed software version, and information about your PGP Universal Server license
- Install or update your PGP Universal Server license
- Stop and restart system services
- Reboot the PGP Universal Server
- Shut down the PGP Universal Server

Server Information

The Server Information section displays the version of the server currently installed and any important information or cautions that apply (a system update ready to be installed, for example). It also includes links to the release notes for the current release, and to the software update page if you have downloaded an update to your PGP Universal Server but not yet installed it.

If you have a valid PGP Universal Server license installed, this section also shows information about the license: the licensee information, number of licensed users, and the features included with the license, and whether you have mail proxies enabled, if your license includes PGP Universal Gateway Email. If the license includes PGP Portable, it shows the number of PGP Portable disks created.

The **Enable Mail Proxies** check box must be checked in order to configure and use mail proxies.

- If you installed a PGP Universal Server license with the Setup Assistant, and it included PGP Universal Gateway Email, this check box should appear already checked. (You can uncheck it to disable the mail proxying feature.)
- If your license does not include PGP Universal Gateway Email then the check box is disabled.
- If you install a new license that included PGP Universal Gateway Email you must check this box in order to configure and use mail proxying.

Setting the Time

You need to set the time for your PGP Universal Server so that it knows what time it is; this is especially important for time-based operations such as scheduled backups.

To set the time

- 1 Click **Set Time**.
The Set System Time dialog box appears.
- 2 Select the appropriate time zone from the **Time Zone** menu.
- 3 Select your preferred time and date formats.
- 4 Select either **Set Time Manually**, then set the correct time or **Use NTP Server** and use the default NTP server or specify a different one.
- 5 Click **Save**.

Licensing a PGP Universal Server

To enter, change, or view licensing information for this PGP Universal Server

- 1 Click **License...**
The Enter License Information dialog box appears.
- 2 In the **Licensee Name** field, type the name of the person who owns the license.

Note: If you have already used your license number for authorization, you must type your name and organization exactly the way you did the first time. If you are unable to authorize your software successfully and you have ruled out problems with your network connection, please contact PGP Support (www.pgp.com/support/).

- 3 In the **Licensee Organization** field, type the name of the organization that owns the license.
- 4 In the **Licensee Email** field, type the email address of the person who owns the license.
- 5 In the **License Number** field, type the license number for this server.
- 6 Click **Save**.

If the authorization is successful, the System Settings page appears with the license information filled in.

If your license includes PGP Universal Gateway Email, the **Enable Mail Proxies** check box will be shown and enabled. You must check this box in order to configure mail proxies.

If you installed your license with the Setup Assistant, and it includes PGP Universal Gateway Email, the **Enable Mail Proxies** check box should appear already checked.

Downloading the Release Notes

To download the *Release Notes*, click *Release Notes* in the Server Information section. The *Release Notes* for your version of the software appears.

Shutting Down and Restarting the PGP Universal Server Software Services

Services lets you shut down and restart the software services provided by PGP Universal Server; the hardware and the administrative interface are not affected. Restarting restarts any stopped services and reloads any running services; the server does not accept connections until the restart is complete. Stopping services shuts down all services until they are restarted; the server does not accept connections during this time.

Services include:

- PGP Universal Web Messenger
- Keyserver
- PGP Verified Directory
- Mail proxies
- Clustering communication
- Client software communication

To restart services when services are running, click **Restart Services**.

The server software is restarted. A confirmation message appears at the top of the page when the restart is complete.

To stop all services, click **Stop All Services**.

All software services are stopped. A confirmation message appears at the top of the page when the services are stopped.

To start all services when the services are stopped, click **Start All Services**.

All software services start. A confirmation message appears when the services are started.

Shutting Down and Restarting the PGP Universal Server Hardware

Server Power lets you restart or shut down the hardware on which your PGP Universal Server is running. Restarting stops all server functionality until the automatic restart is complete. Shut down stops all server functionality until the server is manually restarted.

To restart the PGP Universal Server, click **Restart**.

The PGP Universal Server restarts.

To shut down the PGP Universal Server, click **Shut Down**.

The PGP Universal Server shuts down.

You must manually restart the server to restore operation.

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Managing Administrator Accounts

This section describes how to create administrators for your PGP Universal Server. You can configure Administrator options from the **System > Administrators** page.

Overview

You can have as many administrators as you want for each PGP Universal Server, and those administrators can be configured in any of six roles, each role having a fixed set of privileges attached to it.

PGP Universal Server supports two types of authentication for administrators; standard passphrase authentication, or RSA SecurID authentication, verifying administrator credentials against RSA Authentication Manager servers.

During the Setup Assistant, one administrator must be created. This administrator is automatically created with the highest privileges, called SuperUser, and uses passphrase authentication. Other administrators, created by the first SuperUser administrator, can also be SuperUser administrators or they can have fewer privileges. If RSA SecurID authentication is enabled, they can be configured to use SecurID Passcode authentication, or standard passphrase authentication.

Once administrators are configured, they can log in and have access to only those functions they are entitled to based on their role. Administrators who do not have all privileges can see everything in the administrative interface, but those functions they cannot affect are disabled.

Any administrator can receive a daily status email sent from the PGP Universal Server. You can also have the PGP Universal Server send a status email at any time.

On the Administrators page, you can create a new administrator, delete one or more administrators, sort the configured administrators listed on the Administrators page, view the settings of configured administrators, change their authentication type (if RSA SecurID authentication is enabled), change their passphrases, and upload or remove the SSH v2 keys of SuperUser administrators.

Administrator Roles

The following preconfigured administrator roles are in PGP Universal Server:

Role	Has Permission To:
Read-only Administrator	View settings and logs
WDRT-only Administrator	View settings and logs Access and read Whole Disk Recovery Tokens
Service Control Only	View settings and logs Start and stop software and hardware services but not configure them

Role	Has Permission To:
Basic Administrator	View settings and logs Control and configure services Access and read Whole Disk Recovery Tokens Configure system settings Install updates Restore backups Manage policies Manage users (excluding adding/deleting users) and their public keys Vet users
Full Administrator	View settings and logs Control and configure services Access and read Whole Disk Recovery Tokens Configure system settings Install updates Restore backups Manage policies Manage users (including adding/deleting users) and their public keys Vet users Configure clustering Export user private keys Manage organization, trusted, ignition, and Additional Decryption Keys (ADKs) Update consumer policies Manage groups and group permissions
SuperUser	View settings and logs Control and configure services Access and read Whole Disk Recovery Tokens Configure system settings Install updates Restore backups Manage messaging policies Manage users and their public keys Vet users Configure clustering Export user private keys Manage organization, trusted, ignition, and ADKs Access the PGP Universal Server via SSH Create and manage other administrators Update consumer policies Manage groups and group permissions

Administrator Authentication

The PGP Universal Server supports two types of authentication for administrators: standard passphrase authentication, and RSA SecurID passcode authentication.

The SecurID authentication feature allows PGP Universal Server to be configured to verify authentication credentials against RSA Authentication Manager servers. Once enabled, SuperUser administrators can individually set themselves and other administrators to login to PGP Universal Server using SecurID Passcode Authentication.

- The SecurID feature must be configured and enabled before administrators can be configured to use SecurID authentication.
- A SecurID passcode consists of a PIN (optional) plus Tokencode. The PIN is optional, and is under the control of the RSA Authentication server, based on the policy in force on that server.
- At least one SuperUser administrator must use standard passphrase authentication, to ensure that the PGP Universal Server Administration interface will never become inaccessible because the RSA Authentication servers cannot be reached.
- Administrators can use either passphrase authentication or SecurID authentication, but not both. An administrator's passphrase is immediately deleted from the PGP Universal Server database when that administrator is set to use SecurID authentication.
- If an Administrator's login method is changed from SecurID to Passphrase, a new passphrase must be entered, and will be enforced and stored in the database.

Creating a New Administrator

To add a new administrator

- 1 From the **System > Administrators** page, click **Add Administrator**.
The Administrator Settings dialog box appears.
- 2 In the **Login Name** field, type a login name for the new administrator. If you are using SecurID authentication, make sure the login name exactly matches this administrator's username in the RSA server, or this user will not be able to authenticate successfully.
- 3 If SecurID authentication is enabled, an **Authentication** field with a drop-down menu is shown.
Select **Passphrase** to use a passphrase for authentication. The fields to enter a passphrase will appear below.
Select **SecurID** to use RSA SecurID authentication.
If RSA SecurID authentication is not enabled, the Authentication field does not appear on this page.

- 4 If you are using Passphrase authentication, fields to enter and confirm the administrator passphrase are shown. These fields are not displayed if this administrator will use SecurID authentication.
 - In the **Passphrase** field, type a passphrase for this administrator.
 - In the **Confirm** field, type the same passphrase again.
- 5 In the **Email** field, type the email address of the new administrator.
- 6 Select **Daily Status Email** if you want the new administrator to receive a daily status email for your system.
- 7 From the **Role** list, select the role for the new administrator.
- 8 The privileges for the selected role appear.
- 9 Click **Save**.

The new administrator is added.

Importing SSH v2 Keys

SuperUser administrators have the option of adding their SSH v2 key to the PGP Universal Server. The SSH v2 key acts as an authentication token and allows SuperUser administrators to access the command line of the PGP Universal Server by logging in with the username root.

Caution: Accessing the PGP Universal Server command line in this way can void portions of your PGP Support agreement. Contact PGP Support for more information.

To import an SSH v2 key

- 1 Click the plus icon at the end of the **SSHv2 Key** field on the Administrator Settings dialog box.

The Update SSH Public Key dialog box appears.
- 2 Import the SSH v2 key file either by selecting a key file via the **Import Key File** field, or by pasting the SSH v2 public key block into the **Import Key Block** box.
- 3 Click **Import**.

The SSH key is imported.

Deleting Administrators

To delete one administrator

- 1 From the **System > Administrators** page, click the icon in the Delete column of the administrator you want to delete. Administrators cannot delete themselves.

A confirmation dialog box appears.
- 2 Click **OK**.

The name of the deleted administrator is removed from the list.

If SecurID authentication is enabled, you cannot delete the administrator who is the single remaining administrator using standard passphrase authentication.

To delete multiple administrators

- 1 Specify the administrators you want to delete by selecting the appropriate check boxes on the far right side of each administrator's name.
- 2 Select **Delete Selected** from the **Options** menu on the bottom right corner of the Administrators page.
- 3 To delete all administrators, select **Delete All** from the **Options** menu.
A confirmation dialog box appears.
- 4 Click **OK**.

The selected administrators are deleted from the list.

If SecurID administration is enabled, PGP Universal Server will not delete the last remaining administrator who is using standard passphrase authentication.

Inspecting and Changing the Settings of an Administrator

To inspect or change the settings of a configured administrator

- 1 On the Administrators page, click the name of the administrator whose settings you want to view.
The Administrator Settings dialog box appears.
- 2 You can type a new email address, activate the daily status email, send an immediate status email, add an SSH v2 key if you have SuperUser status, or change the passphrase. You can also change other administrators' roles, but you cannot change your own role. If SecurID authentication is enabled, you can change the administrator's authentication type.
- 3 To change your own passphrase, click **Change Passphrase**, type the current passphrase, type a new passphrase, confirm the new passphrase, then click **Save**. The **Change Passphrase** button does not appear if you are configured to use SecurID authentication.
- 4 To change another administrator's passphrase, click **Reset Passphrase**, type and confirm the new passphrase, and click **Save**. The **Reset Passphrase** button does not appear if the administrator is configured to use SecurID authentication.
- 5 To change the authentication type (this requires SecurID to be enabled), select either **Passphrase** or **SecurID** from the **Authentication** drop-down menu.
 - If you change from Passphrase to SecurID, the Passphrase fields disappear.
 - If you change from SecurID to Passphrase, the Passphrase fields appear, and you must enter and confirm a new passphrase.

Note: The Authentication menu is not available if this administrator is the only one using passphrase authentication. There must always be at least one administrator who authenticates using a passphrase.

6 Click Save.

The Administrator Settings dialog box disappears.

If you have change the authentication type to SecurID, an alert pops up stating that SecurID credentials must be used at the next login.

Configuring RSA SecurID Authentication

To use RSA SecurID authentication, one or more RSA Authentication Manager servers must be configured prior to configuring SecurID on the PGP Universal Server.

- The PGP Universal Server IP address must be added as an agent to each RSA Authentication server.
- The RSA server configuration file (sdconf.rec) must be exported from the RSA server or cluster, and placed where it can be uploaded to the PGP Universal Server.

To enable SecurID Authentication

- 1 From the Administrators page, click the **SecurID Authentication...** button to display the SecurID Authentication page.
- 2 Click **Upload...** to display the Upload Configuration File dialog, and browse to the location of the sdconf.rec file.
- 3 Click **Upload** to upload the file.

An alert appears indicating that the server is restarting.

- 4 When the server has restarted, log in, and return to the **Systems > Administrators** page.
- 5 Click **SecurID Authentication...** again to return to the SecurID Authentication page.

The SecurID Authentication Enable button is now available. An icon and the file name are displayed, along with a Delete icon, an **Upload...** button, and a **Test Connection** button.

- 6 To enable SecurID Authentication, click **Enable**.

To verify connectivity with the RSA Authentication server

You can test the connection to ensure that the PGP Universal Server can successfully contact the RSA Authentication Manager servers present in the RSA configuration file. SecurID does not need to be enabled on the PGP Universal Server, but you must have successfully uploaded the sdconf.rec file and restarted the server. It is recommended that you test the connection before you enable SecurID authentication.

- 1 From the Administrators page click **SecurID Authentication...**
- 2 Click **Test Connection**. A message appears indicating whether this was successful or it failed. The test will fail only if none of the servers in the configuration file can be reached.

NOTE: The Test Connection function tests to ensure that at least one RSA server is reachable. It cannot be used to test an individual user ID.

To update the SecurID configuration file

You can update the sdconf.rec file at any time without disabling SecurID authentication.

- 1 From the Administrators page click **SecurID Authentication...**
- 2 Click **Upload...**, browse to the location of the sdconf.rec file, and upload it. The server will restart. SecurID authentication is still enabled.

To disable SecurID authentication

- 1 For any administrator that is using SecurID authentication, go to Administrator Settings and set their Authentication type to Passphrase. You cannot disable SecurID authentication if an administrator is using it as their authentication method.
- 2 Go to the SecurID Authentication page and click **Disable** to disable SecurID authentication.
- 3 To delete the sdconf.rec file, click the Delete icon.

Resetting SecurID PINs

If PINs are required as part of the SecurID passcode, the RSA server can flag an account as needing a PIN reset. When this occurs, the affected administrator is able to log in to the PGP Universal Server administrator interface using his current credentials, but is immediately presented with the Reset SecurID PIN dialog.

The RSA server administration policy determines whether and when a PIN must be reset, and also determines the method(s) available to reset the PIN. One method is to request that the RSA server generate the PIN. The other method is to allow the PGP Universal Server administrator to manually enter a new PIN that conforms to the RSA server policy for PINs.

- 1 Select the method for generating the new PIN.
 - Select **Automatically Generate** to have the RSA server generate the PIN. The new PIN is displayed in the confirmation box.
 - Select **Create Manually** and type and confirm the new PIN to generate a PIN Of your choice. A pin can be between 4 and 8 letters and digits.

To create a valid PIN, you must know the policy set in the RSA server for choosing a new PIN (e.g. numeric only, alphanumeric, or no PIN).

Note: If only one method is allowed by your RSA server policy, then only one choice will appear.

- 2 Click **Continue** to generate the PIN. A confirmation dialog is displayed. If you had the PIN generated automatically, it is displayed here. If you entered one manually, it is not shown here.

Note: A PGP Universal Server administrator cannot initiate a PIN reset, or flag an account for reset. The PIN is entirely under the control of the RSA server and its administrators.

Daily Status Email

Any administrator can receive a daily or immediate status email.

To send an administrator the daily status email, from the Administrator Settings dialog box select **Send Daily Status Email**. To send a status report now, **Send Status Now**.

The status email provides information about the following:

- Software version number.
- Length of time the PGP Universal Server has been running.
- Warnings. For example, that there is a software update available.
- Data backup failures.
- Security. For example, failed administration login attempts and excessive PGP Universal Web Messenger login failures.
- Statistics. For example, messages processed, encrypted, decrypted, in queue, and pending email address exclusions.
- License information.
- Organization Certificate status.
- Disk and CPU usage.
- PGP Whole Disk Encryption login failures.

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Protecting PGP Universal Server with Ignition Keys

This section describes the Ignition Key feature, which protects your PGP Universal Server in the event an unauthorized person gains physical control of the hardware.

Overview

Ignition Keys protect the data on your PGP Universal Server (your Organization Key, internal and external user keys in SKM mode, and optionally PGP Universal Web Messenger messages) in case an unauthorized person gains physical control of your PGP Universal Server.

The Ignition Keys page shows the current status of the PGP Universal Server at the top of the page: for example, **Server is unlocked**. It also lists all Ignition Keys currently configured on the PGP Universal Server. If there are no Ignition Keys configured, **There are currently no ignition keys** appears.

There are two types of Ignition Keys:

- **Hardware Token.** When you insert a PKCS#11 token in the PGP Universal Server, the PGP Universal Server detects it and allows you to use it as an Ignition Key. The token must contain a single key, which must be protected by a PIN. You can cache the token's PIN so that you do not need to type the PIN at restart, just have the token present.
- **Soft-Ignition Passphrase.** A passphrase you specify protects the PGP Universal Server.

If the PGP Universal Server is protected by an ignition key, the following information is stored encrypted on the server:

- PGP Universal Web Messenger passphrases. (If you do not have an Ignition Key, PGP Universal Web Messenger passphrases are stored in the clear.)
- PGP Universal Web Messenger messages, if you choose it. Enable this option on the **Services > Web Messenger** page. See *Configuring PGP Universal Web Messenger* (on page 281) for more information.
- Internal and external user private (SKM) keys.
- Whole Disk Recovery Tokens.
- Organization key, public and private.
- Cluster shared secrets.

Using the Ignition Key feature, you can provide several levels of protection for the hardware hosting your PGP Universal Server:

- No ignition key protection.
- Soft-ignition key with passphrase-only protection (no hardware token).
- Hardware ignition key with PIN cached.
- Hardware ignition key with PIN uncached.

You can create as many Ignition Keys as you like; any combination of hardware token keys and soft-ignition passphrase keys. If you have multiple administrators, for example, you might want to create separate Ignition Keys for each administrator.

If you add or remove an Ignition Key, the database begins encrypting or decrypting immediately. Additional Ignition Keys cannot be added or removed while the database is encrypting or decrypting.

If you configure one or more Ignition Keys, but they are not available when the PGP Universal Server is restarted, the Organization Key can be used to unlock the server.

During normal operation, the PGP Universal Server is unlocked; it automatically locks on restart if you have ignition keys enabled. You can manually lock a PGP Universal Server only by rebooting it; you cannot use the administrative interface to lock it.

You can unlock a PGP Universal Server in any of the following ways:

- By inserting a hardware token Ignition Key with a cached PIN. In this case, the PGP Universal Server unlocks automatically.
- By inserting a hardware token Ignition Key with an uncached PIN, then supplying the PIN.
- By supplying a configured soft-ignition passphrase.

Caution: Changing the Organization Key deletes Ignition Keys. If you have hard or soft token Ignition Keys configured, regenerating the Organization Key deletes them.

Ignition Keys and Clustering

Ignition Keys are synchronized throughout the cluster; any Ignition Key can be used to unlock any PGP Universal Server in the cluster. However, each PGP Universal Server in the cluster must be unlocked independently on startup.

The cluster page shows which cluster members are locked.

Preparing Hardware Tokens to be Ignition Keys

Before you can add a hardware token Ignition Key, you must prepare the token. Currently only the Athena ASEKey USB token (both 1024-bit and 2048-bit versions) can be used as a hardware Ignition Key.

To use an Athena token as a hardware Ignition Key token with PGP Universal Server, the Athena token must have a PGP keypair on it. The only way to get a PGP keypair onto an Athena ASEKey token is using PGP Desktop.

The token must have one keypair and a PIN to be an Ignition Key.

To put a PGP keypair onto an Athena ASEKey token

- 1 Obtain an Athena ASEKey USB token that has been set up and properly initialized.

This is the only token that can be used as an Ignition Key with PGP Universal Server 2.9 or later.

Install PGP Desktop 9.9 or later for Windows on a Windows system (if you do not already have a Windows system with PGP Desktop installed).

- 2 Install the Athena driver software 4.17 on the Windows system.
The driver software is available from *Athena Smartcard Solutions* (www.athena-scs.com). The file name is `ASECardCryptoToolkit417.msi` (or `64-bit ASECardCryptoToolkit417x64.msi`); it includes the ASEKey drivers and the PKCS#11 library.
- 3 When PGP Desktop for Windows 9.9 or later and the Athena driver software are installed, open PGP Desktop.
- 4 Insert the Athena ASEKey token in an available USB port on the Windows system. You have two options for getting a PGP keypair onto your Athena ASEKey token:
 - Create a new PGP keypair directly on the token.
 - Use the **Send To** shortcut menu to copy an existing PGP keypair to the token.
- 5 To create a new PGP keypair on your Athena ASEKey token, select **File > New PGP Key**. When the PGP Key Generation Assistant appears, select **Generate Key on Token**, and then click **Next**.
- 6 On the **Name and Email Assignment** page, type a name and an email address (if you plan on using this PGP keypair only as an Ignition Key for PGP Universal Server, you can leave the Primary Email field empty; no email address on a keypair means no messages are encrypted to the key nor can it be uploaded to the PGP Global Directory. You are asked if you want to continue without an email address; click **Yes**.) Click **Next**.
- 7 On the **Passphrase Assignment** page, type the PIN of your Athena ASEKey token (which becomes the passphrase for the keypair); the default for Athena tokens is eight 1s (11111111). Click **Next**.
- 8 PGP Desktop generates the key on the token. When complete, click **Next**.
- 9 On the PGP Global Directory Assistant page, click **Skip** so the public key is not sent to the PGP Global Directory. When PGP Desktop reappears, click the **Smart Card Keys** item in the PGP Keys Control box; the PGP keypair you just created should appear on the right.
- 10 To copy an existing PGP keypair to your Athena ASEKey token, click the **All Keys** item in the PGP Keys Control box. Right-click the keypair you want to send to the token (it must be a 1024-bit or 2048-bit RSA keypair, not just a public key). Make sure there is only one keypair in the token.
- 11 In the shortcut menu, select **Send To > Smart Card** (if **Smart Card** is grayed out, the selected key does not meet the requirements to be on the token).
A warning message explains that the passphrase for the selected keypair is changing to the PIN of the token; click **OK**.
- 12 Type the current passphrase for the selected keypair, then click **OK**.
- 13 Type the PIN of the Athena ASEKey token, then click **OK**.
The keypair is copied to the token.
- 14 As the default PIN for Athena tokens is publicly known, you need to change it immediately.
The Athena ASEKey token now has a PGP keypair on it. It can be used as a hardware Ignition Key with a PGP Universal Server.

Configuring a Hardware Token Ignition Key

To add a hardware token Ignition Key

- 1 On the Ignition Keys page, click **Add Ignition Key**.
The Add Ignition Key dialog box appears.
- 2 Insert the hardware token you want to use. The system reads the token's manufacturer and serial number.
- 3 In the **Ignition Key Name** field, type a name for the Ignition Key you are creating.
- 4 Select **Hardware Token**.
- 5 If you want to store the token's PIN on the PGP Universal Server so that you do not need to type it on restart, enable **Cache PIN** and type the PIN for the token you are using.

Caching the token's PIN can save time when you are restarting the PGP Universal Server, but it also lowers security.

If you leave the token in the server and cache the PIN, the server unlocks automatically at restart, for example in the event of a power failure. This option is useful if the box is installed in a remote location, because you do not have to go there to type the PIN. However, this option compromises the security of using an Ignition Key.

- 6 Click **Save**.
The Ignition Keys page appears; the Ignition Key you just created appears on the list.

Configuring a Soft-Ignition Passphrase Ignition Key

To add a soft-ignition passphrase Ignition Key

- 1 On the Ignition Keys page, click **Add Ignition Key**.
The Add Ignition Key dialog box appears.
- 2 In the **Ignition Key Name** field, type a name for the Ignition Key you are creating.
Soft-Ignition Passphrase is already selected.
- 3 In the **Passphrase** field, type a passphrase for this Ignition Key.
- 4 In the **Confirm** field, type the same passphrase again.
- 5 Click **Save**.

The Add Ignition Key dialog box disappears; the Ignition Key you just created appears on the list.

Deleting Ignition Keys

If you no longer need a specific Ignition Key, you can delete it.

To delete an Ignition Key

- 1 Click the icon in the Delete column of the Ignition Key you want to delete.
A confirmation dialog box appears, asking if you are sure you want to delete this Ignition Key.
- 2 Click **OK**.
The Ignition Key is deleted.

Deleting the Ignition Key means all formerly protected data is no longer protected.

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Backing Up and Restoring System and User Data

This section describes PGP Universal Server's backup and restore capabilities. You can configure Backup options from the **System > Backups** page.

Overview

Your data is important. To help make sure that it does not get lost, PGP Universal Server supports backing up your data in two ways: scheduled backups and on-demand backups.

Backup files can be stored on the PGP Universal Server, or they can be automatically sent via FTP or SCP to a location you specify. If your remote host is temporarily unavailable, the backup file is stored on the PGP Universal Server until the host becomes available. Make sure that you get the backup file from the host in binary format, not ASCII.

Backups include all information necessary to restore the PGP Universal Server to its exact condition when the backup was created, including proxy and policy settings, as well as keys and user information. Symantec Corporation recommends making periodic backups of all PGP Universal Servers. Each backup is a full backup.

The System Backups list shows both pending backups (if scheduled) and existing backups.

PGP Universal Server also supports multiple ways of restoring data from a backup.

Caution: It is not possible to upload backups of 2GB or larger through the PGP Universal Server web interface. Contact PGP Support for help restoring your data.

Caution: You cannot use FTP to back up large amounts of data. The backup will fail. If you have 3 GB or more to back up, do not use FTP.

Creating Backups

PGP Universal Server supports two kinds of backups:

- **Scheduled backups.** You set up a schedule so that backups of your data are made automatically.
- **On-demand backups.** You create a backup immediately.

Note: If a backup attempt fails, hover your mouse over the **View Details** link in the **Status** column of the **Backups** page to see the error message for the failure.

Scheduling Backups

To schedule automatic backups

- 1 On the **System > System Backups** page of the administrative interface, click **Backup Schedule**.
The Backup Schedule dialog box appears.
- 2 Click **Enable Scheduled Backups**.
- 3 Select the boxes under the names of the days of the week you want backups performed.
- 4 Specify a time for the backups to begin in the **Start backups at** field.
- 5 Click **Save**.

Performing On-Demand Backups

To create a backup right now, on the **System > System Backups** page of the administrative interface, click **Backup Now**.

A backup of your data is performed immediately. When the backup is complete, it displays in the Backups list.

Configuring the Backup Location

By default, backups are saved to the local disk on the PGP Universal Server. You can specify another location to save backup files to instead. Backup files are then automatically sent to that location via FTP or SCP.

If you change your backup location, you cannot restore from backups stored on the old location, even though the backup files still appear listed on the System Backups page.

Caution: You cannot use FTP to back up large amounts of data. The backup will fail. If you have 3 GB or more to back up, do not use FTP.

To configure the backup location

- 1 On the **System > System Backups** page of the administrative interface, click **Backup Location**.
The Backup Location dialog box appears.
- 2 Choose **Save backups on this PGP Universal Server**, or to have backups saved to a remote location, select **Save backups to a remote location**.
- 3 Select **FTP**, **SCP Password Authentication**, or **SCP Keypair Authentication**.
- 4 Type the backup location hostname in the **Hostname** field.

- 5 Type the port number in the **Port** field. The default FTP port is 21. The default SCP port is 22.
- 6 Specify a **Directory** to which to save the backup. The default backup directory is the FTP or SCP home directory for the username you choose.
- 7 Type a valid login name for the location you are saving the backup to in the **Username** field.
- 8 Type a valid passphrase for the login name you specified in the **Passphrase** field.
- 9 If you chose **SCP Keypair Authentication**, import an SSHv2 Key by clicking the Add icon. The Update SSH Key dialog box appears.
 - a If you do not have an SSH keypair, choose **Generate and Import New Key**. Select the appropriate key size and type.
 - b If you already have an SSH keypair, choose **Import Key File**, import your keypair, and type a passphrase.
 - c Click **Import**. The Update SSH Key dialog box disappears and the keypair appears in the Backup Location dialog box.
- 10 Type a name for your backup files into the **Backup Name** field.
- 11 Specify if you want to **Encrypt backups to the Organization Key**. Backing up data is much faster if you do not encrypt and compress the backup file, but your backup files will be less secure and require more disk space.
- 12 Specify if you want to **Enable file compression**. Backup files are saved in binary format normally, which is compressed, but you can choose this option to compress the file further.
- 13 Specify how many backups you want to save at a time. Once you have saved that number of backups, the newest backup overwrites the oldest backup file.
- 14 Click **Save**.

The Backup Location dialog box disappears.

You can download your SSH keypair and place the public part of the key onto another server to use to validate logins on that server.

Restoring From a Backup

PGP Universal Server supports three ways of restoring data from an existing backup file:

- **On-demand restore**, where you restore a server that is up and running to the data saved in an existing backup file. This is useful if data has been lost or corrupted but the PGP Universal Server is still up and running.
- **Configuration restore**, where you use the data in an existing backup file to configure a replacement PGP Universal Server. This is useful when you need to replace a PGP Universal Server because it is no longer functional.
- **Specific-version restore**, where you have a backup created by a version of the PGP Universal Server software and you need to restore that backup using a PGP Universal Server running that same version.

Caution: You should not attempt to restore a backup taken on one system to a different system (unless that system is intended as a replacement for the original system). The network parameters from the original (backed-up) system will be restored to the target system, which may cause IP address conflicts or other problems. Contact PGP Support for help if you need to do this.

Restoring On-Demand

There are two ways to restore server data from a backup.

- On the **System Backups** page, click the icon in the **Restore** column of the backup from which you want to restore.
- If you have a backup file on your system that is *not* on the list of backups but from which you would like to restore, click **Upload Backup**, locate the backup file, and then click **Restore**. The PGP Universal Server is restored from the backup file you specified.

Caution: It is not possible to upload backups of 2GB or larger through the PGP Universal Server web interface. Contact PGP Support for help restoring your data.

The PGP Universal Server is restored to the state when the backup was performed.

Restoring Configuration

You can do a configuration restore when you are configuring a new PGP Universal Server or when you are re-installing PGP Universal Server.

Remember that you must have stored the backup in a location other than the PGP Universal Server itself, if you want to restore the data after upgrading.

Begin by connecting to the new PGP Universal Server for the first time, which brings up the Setup Assistant, as described in Setting Up the PGP Universal Server. Restoring from a backup restores everything configured, including proxy and policy settings, as well as keys and user information. If you want to upgrade from a previous version and restore your configuration, see the *PGP Universal Server Upgrade Guide* or the *PGP Universal Server Release Notes* for your product version.

Note: If the PGP Universal Server software you are using for your configuration restore is a different version than was used to make the backup file from which you are restoring, you might have problems performing the restore. If this is the case, see *Restoring from a Different Version* (on page 35). Older versions may not be able to be restored directly on the most recent version of the PGP Universal Server.

To restore backed-up data during the initial configuration of a server

- 1 Access the Setup Assistant for the new server.
- 2 On the **Welcome** page, read the text, then click the **Forward** button.
The End User License Agreement page appears.
- 3 Read the text, click the **I Agree** button at the end, then click the **Forward** button.
The **Setup Type** page appears.
- 4 Select **Restore**, then click the **Forward** button.

The **Import Organization Key** page appears.

- 5 Copy your Organization Key and paste it into the box or import a file containing the key, then click the **Forward** button.

The **Upload Current Backup File** page appears.

- 6 Click **Choose File**, select the backup file from which you want to restore, then click **OK**.

When installation is complete, the Network Configuration Changed page appears and the server restarts automatically.

You are redirected to the PGP Universal Server administrative interface.

The server is configured with the settings from the backup file you selected.

Restoring from a Different Version

Restoring from a backup might not work if the PGP Universal Server software you are using to perform the restore is a different version than was used to make the backup file.

Note: You can only restore backed-up data from version 2.7 or later. For information on upgrading and restoring data, see the *Release Notes* for your product version.

If a version mismatch is preventing you from restoring directly from a backup, a specific-version restore lets you restore from the backup file.

Remember that you must have stored the backup in a location other than the PGP Universal Server itself, if you want to restore the data after reinstalling the software.

To perform a specific-version restore

- 1 Reinstall the PGP Universal Server software using the original CD or download file.
- 2 Use the software update feature to update the PGP Universal Server software to the same version as was used to create the backup file. For more information, see *Updating PGP Universal Server Software* (on page 37).
- 3 On the **System Backups** page, click the icon in the Restore column of the backup from which you want to restore.

If the backup file from which you want to restore is not on the list of backups, click **Upload Backup**, locate the backup file, then click **Restore**. The PGP Universal Server is restored from the backup file.

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Updating PGP Universal Server Software

This section describes how to manage software updates for your PGP Universal Server.

Caution: Test software updates on staging servers before implementing them in large live production environments. This allows you to easily return to a previous version if you run into problems.

Overview

The Software Updates page lets you control how and when updates to PGP Universal Servers and PGP Universal Satellite are handled.

You do not need to backup and restore your data to perform an update. Backing up and restoring your data is only necessary for major software upgrades, which are installed using a DVD instead of the Software Updates page.

Symantec Corporation makes updates available periodically to provide support for new security patches or new software releases by other vendors. Updates for PGP Universal Satellite are also available this way. (New versions of PGP Universal Satellite install over the existing version.)

Note: You cannot update the software of a PGP Universal Server unless it has been licensed.

The file format for PGP Universal Server updates is .pup.

The list on the **Software Updates** page shows all updates available and not yet installed for your PGP Universal Server. Updates have to be installed in the appropriate order, so only the update that should be installed next has its install icon active (all other updates have their install icon disabled).

The list shows the name of the update, the version, the size, the date of the last action for that update, and the Install icon.

After the update installs, all users logged in during the update must log back in to the server. All mail connections shut down during the installation, so any mail sent to the PGP Universal Server during the short update period is rejected, and the mail client or other sender resends the message.

Updates to the PGP Universal Server software are not propagated among cluster members; all PGP Universal Servers in a cluster must update their own software.

Note: All members of a cluster use the same version and build of the PGP Universal Server software. If you update the software of one member of a cluster, you must update the software of all others as well. If you need to update to a new version from a previous version, see the *PGP Universal Server Upgrade Guide*.

Inspecting Update Packages

Click the name of the update you want to inspect. When the Update Information dialog box appears, you can read the information about the update. Click **OK** to close the dialog box.

If an update is available, you can obtain it from the <cn_long> web site and save it on your hard drive.

The **Upload Update Packages** link lets you retrieve update packages saved on your hard drive. You can upload the package, then install it as you would any other update package.

- 1 Click **Upload Update Packages** to upload an update package from your hard drive.

The Upload Update dialog box appears.

- 2 Browse to find the file you want, then click **Upload**.

The update package appears on the list.

The **Install** icon lets you manually install an update. You must install them in the order in which they were received, if you are installing more than one.

- 3 Click the icon in the **Install** column to manually install an update.

The text in the **Date of Last Action** column says “Currently Installing” while the install is in progress.

After the update installs, log back into the server.

For more information on how to verify the success of your update, see the *PGP Universal Server Upgrade Guide*.

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Setting Network Interfaces

This section tells you about network settings and how to modify them. It also describes certificates and tells you how to work with them.

Understanding the Network Settings

The Network Settings page lets you view and change the settings for the interfaces the PGP Universal Server is using to connect to your network.

You can have more than one network interface. Each interface must have its own IP address.

At installation and setup, PGP Universal Server attempts to fill in as much network information as possible, so values for IP address, MAC ID, MTU, subnet mask, and other settings may already appear when you open this page. By default the link speed is determined by auto-negotiation. The default MTU is 1500.

- **Interface number.** Numbered sequentially from the highest existing interface number.
- **Physical adapter.** The physical network cards on your hardware.
- **MAC ID.** Specify the MAC address associated with each network interface. PGP Universal Server prevents you from setting an invalid or broadcast MAC address. You can use the same MAC address for all virtual interfaces associated with a network adapter. You cannot use the same MAC address for different adapters.
- **Link Speed.** Speed and duplex values together make up the link speed. PGP Universal Server determines which combinations of speed and duplex are appropriate for the hardware, and offers only those as options. You can also choose auto-negotiation, where the network interface determines the appropriate speed and duplex setting, but that does not always result in the best link speed.
- **MTU (Maximum Transmission Unit).** Set this value to make the most efficient use of the network. You can specify any valid MTU. Values lower than 500 can cause inefficient network usage. MTU values of 64 or lower make the network adapter unusable.

Interfaces belonging to the same physical adapter share the same link speed and MTU value.

Changing the IP address, MAC ID, or MTU disconnects current network connections. Changing network interface IP addresses and MAC IDs disconnects all current SSH connections.

MAC ID, MTU, and Link Speed are not applicable to PGP Universal Server hosted on VMWare. The ESX server controls the network settings.

You can also use the Network Settings page to manage the certificates your PGP Universal Server uses.

If you want to change the network settings of any Primary or Secondary cluster member, break up the cluster first, change the settings, and reestablish the cluster. See Clustering and PGP Universal Web Messenger for information on clusters and network settings.

Changing Interface Settings

To change the settings of an interface

- 1 Select the interface whose settings you want to change from the **Edit** menu.
- 2 Establish the appropriate settings for the **Physical Adapter** (the physical network cards on your hardware), **MAC ID**, **Link Speed**, **MTU**, **IP Address**, and **Subnet Mask** fields.
- 3 Click **Save**.

Adding Interface Settings

To add an interface

- 1 Click the **Add** icon.
A new interface number appears in the **Edit** field; it is numbered sequentially from the highest existing interface number.
- 2 Establish the appropriate settings for the **Physical Adapter**, **MAC ID**, **Link Speed**, **MTU**, **IP Address**, and **Subnet Mask** fields.
- 3 Click **Save**.
The new interface is added.

Deleting Interface Settings

To delete an interface

- 1 Click the **Delete** icon to the right of the **Edit** field.
A confirmation dialog box appears.

Caution: You might need to reassign services assigned to the interface you are trying to delete **before** you can delete the interface. A message appears, listing which services need to be reassigned.

- 2 Click **OK**.

Editing Global Network Settings

Your PGP Universal Server needs to have a hostname and needs to know about domain name servers (DNS) it can use. These were configured when you first accessed your server using the Setup Assistant; existing settings can be changed here.

To edit the global network settings

- 1 In the **Hostname** field, type a fully qualified domain name for the server (keys.example.com, for example).
- 2 In the **DNS Servers** box, remove the IP address of an existing DNS server or add the IP address of a new DNS server.
- 3 In the **Gateway** box, type the IP for the network gateway.
- 4 Click **Save**.

Assigning a Certificate

When you assign a certificate to an interface, any service bound to that interface automatically uses the certificate for SSL/TLS traffic.

To assign a certificate to an interface

- 1 In the Assigned Certificate section of the Network Settings page, click the drop-down menu.

The SSL/TLS certificates that can be assigned to the interface shown at the top of the Network Settings page appear.

- 2 Select the appropriate certificate, then click **Save**.

The certificate you selected is assigned to the interface.

For information about adding certificates to the list, see *Working with Certificates* (on page 41).

Working with Certificates

To see the Certificates page, navigate to the Network Settings page (**System > Network** in the administrative interface) and click the **Certificates** button in the lower left corner of the page.

The Certificates page lets you view existing certificates, import existing certificates, and generate self-signed certificates and new certificate signing requests.

The Setup Assistant automatically creates a self-signed certificate for use with SSL/TLS traffic. Because this certificate is self-signed, it might not be trusted by email or Web browser clients. Specific behavior in response to this self-signed certificate depends on the specific email or web browser client and its security settings.

Note: Symantec Corporation recommends you obtain a valid SSL/TLS certificate for each of your servers from a reputable Certificate Authority. Not doing so causes incompatibilities with some email clients and Web browsers.

You can also use pre-existing keys and certificates for SSL/TLS traffic (you must import them first so that they appear on the Certificate page, then you can assign them using the Certificate Assignment page).

Most commonly, these keys and certificates are used in conjunction with Apache Web servers to provide secure communications between Web browsers and Web servers.

Importing an Existing Certificate

If you have an existing certificate you would like to assign to an interface, you must import it first.

To import a certificate

- 1 Click **Add Certificate** on the Certificates page.
The New SSL/TLS Certificate dialog box appears.
- 2 Click **Import**.
The Import SSL/TLS Certificate dialog box appears.
- 3 Select **Import Certificate File** and use the **Choose File** button to locate the file of the PKCS #12 certificate.
If you have a native Apache-style SSL/TLS certificate, you can paste both the public and private portions of the certificate into the **Import Certificate Block** box in any order.
- 4 If the certificate you are importing has a passphrase, type it in the **Passphrase** field.
- 5 Click **Import**.
The Import SSL/TLS Certificate dialog box disappears. The certificate you just added appears on the Certificate page. It can now be assigned to an interface.

Generating a Certificate Signing Request (CSR)

Services that the PGP Universal Server runs that use the SSL protocol require a server-side SSL/TLS certificate, which includes the DNS name for the IP address on which the service is running. To issue a certificate, the Certificate Authority needs information found in a certificate signing request (CSR).

To generate a certificate signing request (CSR)

- 1 Click **Add Certificate** on the Certificates page.
The New SSL/TLS Certificate dialog box appears.

- 2 Type the PGP Universal Server domain name in the **Hostname** field.
- 3 In the **Key Type** field, the only supported option is **RSA**.
- 4 In the **Key Size** field, select **1024**, **1536**, or **2048** from the drop-down menu.
- 5 In the **Expiration** field, select **6 months**, **1 year**, **2 years**, **3 years**, or **5 years** from the drop-down menu.
- 6 Type an email address in the **Contact Email** field.
- 7 Type your organization's name in the **Organization Name** field.
- 8 Type your organization's unit designation in the **Organization Unit** field.
- 9 Type a city or locality, as appropriate, in the **City/Locality** field.
- 10 Type a state or province, as appropriate, in the **Province/State** field. Do not abbreviate the state or province name. For example, type "California," not "CA."
- 11 Type a country in the **Country** field.
- 12 To generate a self-signed certificate that you can use right away, click **Generate Self-signed** after you have typed all the values; a new, self-signed certificate is created, which you can then assign to an interface. Skip the rest of this procedure because it does not apply.
- 13 To generate a certificate signing request (CSR), click **Generate CSR**. If you choose this option, the certificate appears on the Certificate page labeled "Pending." When the certificate has been validated and returned by the Certificate Authority (CA), add the certificate.

The New SSL/TLS Certificate dialog box disappears. The certificate signing request (CSR) is created with the settings you specified.

The CSR dialog box appears, showing the certificate signing request (CSR).
- 14 Copy the contents of the CSR dialog box to a file, then click **OK**.
- 15 Submit this file to your CA.

The CA approves and sends the certificate back to you.
- 16 When the certificate signing request (CSR) has been approved, go to the Certificates page, and add the certificate using the Import icon in the row for the pending certificate (for details, see *Adding a Pending Certificate* (on page 43)). Then assign the certificate to an interface using the Certificate Assignment page.

Adding a Pending Certificate

When you send a certificate signing request (CSR), the certificate appears on the Certificate page listed as pending. When the certificate signing request (CSR) is approved, add the pending certificate so that it can be assigned to an interface.

To add a pending certificate

- 1 Click the plus sign icon in the Import column of the pending certificate you are adding.

The Add Certificate to Key dialog box appears.
- 2 Paste the validated certificate file that was sent to you by the CA into the **Certificate Block** box.

- 3 Click **Save**.

The Add Certificate to Key dialog box disappears. The certificate is ready for inspection and can be assigned to an interface.

Inspecting a Certificate

To inspect the settings of a certificate

- 1 Click the name of the certificate whose settings you want to inspect.
The Certificate Info dialog box appears.
- 2 Inspect the information about the certificate you selected. You can click **more** to see all the certificate data, which appears in a pop-up dialog box.
- 3 Click **OK**.
The Certificate Info dialog box disappears.

Exporting a Certificate

To export a certificate to a PKCS #12 file

- 1 Click the name of the certificate you want to export.
The Certificate Info dialog box appears.
- 2 Click **Export**.
The Export Key dialog box appears.
- 3 To export the certificate with just the public key, select **Export**.
- 4 To export the certificate with the private key, select **Export Keypair** and type a passphrase to protect the exported key file, then click **Export**.
- 5 Specify a location you want to save the file to, then click **Save**.
The certificate is saved to a PKCS #12 file.

Deleting a Certificate

To delete a certificate

- 1 Click the Delete icon of the certificate you want to delete.
A confirmation dialog box appears.
- 2 Click **OK**.
The confirmation dialog box disappears. The certificate is deleted.

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Clustering your PGP Universal Servers

Clustering allows multiple PGP Universal Servers in an organization to synchronize with each other.

Overview

When you have two or more PGP Universal Servers operating in your organization, you can configure them to synchronize with each other; this arrangement is called a “cluster.” The benefits of clustering include lower overhead (spreading the system load between the PGP Universal Servers in the cluster means greater throughput) and the ability for email services to continue working even if one of the servers in the cluster goes down.

Servers in a cluster can all keep data replicated from the other servers in the cluster: users, keys, managed domains, and policies. For those servers running PGP Universal Web Messenger they can also replicate Web Messenger data.

Cluster members interact with each other as peers. Every server in a cluster can serve all types of requests, and any server can initiate persistent changes.

For the most part, cluster members all share the same database and configuration information -- changes on one are replicated to all the other cluster members. However, not all configuration settings are global, and it is possible to configure a cluster such that not all servers in the cluster provide all services.

The following settings and data are considered global and are replicated to all servers in the cluster:

- Consumers (internal and external users, devices, and their public keys and properties)
- Group configurations, the group's public key, and consumer policies
- Managed domains and mail settings (policies, dictionaries, archive servers, message templates)
- Directory synchronization settings
- Organization keys and certificates
- Ignition keys
- Trusted keys
- Configured key servers
- Web Messenger data, if replication is enabled and if the target server has a valid license
- Learn Mode
- PGP Verified Directory data (though the service can be enabled or disabled on individual servers).

The following settings are not replicated:

- Server TLS/SSL certs

- Mail routes
- Mail proxies

As the administrator, you have some degree of control over what data is replicated to which cluster members:

- You can allow or prevent the private keys of internal users and groups from being replicated to individual servers.
- You can configure the Web Messenger service to run only on a subset of cluster members, which limits Web Messenger data replication to only those servers running Web Messenger. Further, you can configure Web Messenger data replication so that it is replicated only to a subset of the eligible cluster members. For example, if you have a cluster of four servers, three of which run Web Messenger, you can configure Web Messenger replication so that each user's mailbox is replicated to only one or two of the three eligible servers.
- You can choose to set the order in which each cluster member searches LDAP directories, or specify that all cluster members use the same search order.

Cluster members may reside either inside or outside an organization's inner firewall -- members outside the firewall are considered to reside in the DMZ. Cluster members in the DMZ cannot initiate contact with systems on the internal network; therefore, in order to add a cluster member that resides in the DMZ, a server on the internal network must be configured first, and can then initiate a join, acting as the "sponsoring" server for the server in the DMZ.

Cluster Status

On the **System Overview** page, you can determine the cluster status of a PGP Universal Server, and detailed status is available on the **Clustering** page. For more details on the clustering status available from the System Overview, see *The System Overview Page* (on page 26). The **Clustering** page shows a list of the IP addresses or hostnames and properties of all the servers in the cluster, including the server in which you are logged.

On the **Clustering** page, the following status information is available for each cluster member:

- If the server is not a member of a cluster, no member hostnames or IP addresses appear on the clustering page, and the message *This server is not participating in a cluster.* appears.
- Is a member of a cluster, the cluster members are grouped based on their location:
 - Internal members
 - DMZ members

Internal members are cluster members that are located in the organization's firewall, and DMZ members are located outside the firewall.

- Hostname or IP address, the data replication rate, whether it stores private keys, and which services it provides.
- Logging in to other clusters by clicking **Login** column for the cluster member into which you want to log in.

This opens an additional tab (or browser window) for the other member's administrative interface. If you logged in to PGP Universal Server through Symantec Protection Center, this feature is unavailable.

- **Pending**, which appears on the PGP Universal Server you are trying to add after you issue an **Add Cluster Member** request for another server.

Since your server is the sponsoring PGP Universal Server, you must click **Contact** to initiate the join and replication of cluster data. When the contact has been initiated, the status changes to **Replicating**. When data replication has finished, this status is replaced by the replication rate for that server.

- **Unreachable**, which appears in the **Replication Rate** column, means that the other cluster member could not be reached from this cluster member. Reasons why it could not be reached include a networking issue or that the other server is down temporarily.

Creating a Cluster

You can create a cluster once you have a PGP Universal Server installed and running on your network.

To create and add members to a cluster, you must:

- 1 Perform an **Add Cluster Member** operation from initial PGP Universal Server (the sponsor) administrative interface. This adds the IP address or hostname of the prospective cluster member to the list of pending cluster members.
- 2 Complete a Join request on the PGP Universal Server being added (the joining server), which can be done in one of the following ways:
 - The joining server can be installed as a cluster member through the Setup Assistant and specifying the sponsor server as the cluster it will be joining.
 - If the joining server is already installed, it can send a **Join Cluster** request from its administrative interface.
- 3 From the sponsoring server, initiate contact with the joining server to start the configuration and replication process.

The first time you do an **Add Cluster Member** request, a cluster is created that includes both the sponsor and joining servers. Once the cluster exists, with at least two members, any cluster member can act as a sponsor for a new cluster member.

To create a new cluster or to sponsor a cluster member

- 1 On the sponsoring PGP Universal Server, select **System > Clustering**.
- 2 Click **Add Cluster Member**.
- 3 Specify the hostname or IP address of the PGP Universal Server that is to be added (the joining server).
- 4 If private keys should be replicated to the joining server, leave **Host private keys for Internal Users and Groups** selected. If your private keys should **not** be replicated to this server, you can deselect this checkbox after you select **This server is located in the DMZ**.

If the **Host private keys for Internal Users and Groups** checkbox is selected, keys are replicated as follows:

- External user keys (public and private) generated on this node are replicated to your internal and DMZ nodes.

- Internal user public keys are replicated between internal nodes and between your internal nodes to your DMZ nodes.
- Internal user private keys are only replicated between your internal nodes. DMZ nodes **never** host private keys.
- Internal user keys (public and private) are not replicated from your DMZ nodes to your internal nodes.

As a best practice, you should deselect **Host private keys for Internal Users and Consumer Groups** if the node you are adding is located in the DMZ.

- 5 If the joining server is located in your corporate DMZ, select **This server is located in the DMZ**.
- 6 Click **Save**.
Both your current server (the PGP Universal Server you are logged in to) and the server you are adding appear on the **Clustering** page. A **Contact** button appears in the entry for the joining server, which is designated as **Pending**.
- 7 After the joining server initiates its join request (see the next section) and is waiting for contact, click **Contact** in the row for the joining server. This attempts to contact the joining server and initiate the replication process.

The **Contact** function assumes that the joining server has already requested to join the cluster, specifying the IP address or hostname of the server from which you did the Add Cluster Member request (the sponsoring server).

Note: For the sponsoring server to successfully contact the joining server, the hostname and IP address of the joining server must be resolvable via DNS. If not, the sponsoring server will not be able to contact the joiner, and the join will not succeed. If your cluster members do not have DNS resolvable hostnames, contact Symantec Corporation Technical Support for help.

To join a stand alone PGP Universal Server to a cluster

If the joining server is already configured as a stand-alone PGP Universal Server, you can generate the Join Cluster request from its administrative interface:

- 1 On the joining PGP Universal Server, select **System > Clustering** in the administrative interface.

Note: You can log in to the joining server's administrative interface by clicking **Login** on the **Clustering** page.

- 2 Click **Join Cluster**.
After a warning, the joining server is put into a wait state until contact is initiated from the sponsor server. You can cancel the join process by clicking **Cancel**.
- 3 When the sponsoring host has initiated contact, a replication status notice appears with a progress bar that shows the progress of the data replication process.

Settings from the sponsoring server are replicated to the joining server. If the joining server was configured differently from the sponsoring server, except for network settings, mail routes and proxies, and the server certificate, the configuration is replaced by the sponsoring server's configuration.

Warning: After the join process starts, whether the process fails or succeeds, all data is erased.

To join a server that has not yet been installed or configured

- 1 After installing the software, connect to the administrative interface to initiate the Setup Assistant.
- 2 For the Setup Type, select **Cluster Member**.
- 3 Proceed through the initial Setup Assistant.
- 4 On the **Join Cluster** page, type the hostname or IP address of the sponsoring cluster member.

This is the PGP Universal Server from which the **Add Member** request was performed. After confirmation and a server reboot, the joining server is in a wait state until contact is initiated from the sponsor server. You can cancel the join process by clicking **Cancel**.

Note: You must wait until the **Waiting** dialog box appears before you initiate contact from the sponsoring server.

- 5 After the sponsoring host has initiated contact, monitor the progress bar in the a replication status notice.
- 6 When the replication has completed, log in to the cluster member's administrative interface.
- 7 Configure the appropriate mail routes and mail proxies:
 - For the mail route, select **Mail > Mail Routes** and click **Add Mail Route**.
For detailed instructions, see *Specifying Mail Routes* (on page 161).
 - For the mail proxy, select **Mail > Mail Proxies** and click **Add Proxy**.
For detailed instructions, see *Configuring Mail Proxies* (on page 147).

Deleting Cluster Members

You can remove individual cluster members from a cluster without dismantling the entire cluster (assuming the cluster consists of more than two members).

To delete a cluster member

- 1 Go to **System > Clustering** in the administrative interface of any of the cluster members.
- 2 Click the Delete icon next to the cluster member you want to delete.

The cluster member is removed from the cluster list, and will operate as a single server.

If there are only two nodes in a cluster, deleting either node dismantles the cluster.

Note: If you delete a node from a cluster while another cluster member is not available, the deletion information is not communicated to the cluster member that was unavailable. When the unavailable member comes back up, it will attempt to communicate to the deleted member. To resolve this, log in to the out-of-sync member, go to its **System > Clustering** page, and delete the member that is no longer part of the cluster.

Clustering and PGP Universal Web Messenger

If you have multiple PGP Universal Servers configured as a cluster, you can choose how PGP Universal Web Messenger messages are replicated between cluster members that are running the Web Messenger service. There are three options for replication of Web Messenger data:

- You can have Web Messenger data replicated to all PGP Universal Servers that are running the Web Messenger service.
- You can have Web Messenger data replicated to a subset of the eligible servers in a cluster. (Only servers running Web Messenger are eligible to host Web Messenger data). For example, if you have four servers in a cluster running the Web Messenger service, you can elect to have Web Messenger data replicated only to two of the four servers, to reduce the amount of resources required for storage of Web Messenger data.
- You can elect not to replicate Web Messenger data at all. This is also known as "home" server mode. In this mode each Web Messenger user can access his messages only from the specific PGP Universal Server where his account resides.

You can configure Web Messenger data replication through the **Options** tab on the **Edit Web Messenger** page (accessed from **Services > Web Messenger > Edit...**). The replication settings for Web Messenger are global and affect all PGP Universal Servers in the cluster that run PGP Universal Web Messenger.

PGP Universal Web Messenger data is not replicated to cluster members that are not running the Web Messenger service.

For more information on configuring PGP Universal Web Messenger see *Configuring PGP Universal Web Messenger* (on page 281).

Managing Settings for Cluster Members

Setting up a cluster is intended to spread the system load and provide a certain level of data redundancy. Cluster members interact with each other as peers, and every server in a cluster can serve all types of requests and initiate persistent changes. You configure a cluster so that not all servers in the cluster provide all services. For example, you can configure a cluster so that only selected servers store private keys or store Web Messenger data.

Each server in the cluster can independently control selected functions:

- Services, including enabling or disabling the following on a cluster member:
 - PGP Universal Web Messenger
 - keyserver functionality

- SNMP polling and traps
- PGP Verified Directory

If PGP Universal Web Messenger or the keyserver functions are enabled, these services will participate in the data replication functions of the cluster, as determined by your clustering configuration.

- Licensing
Each server must have a valid license.
- Network settings
- Backup and restore
- Purging the key cache
- PGP Verified Directory User key vetting, which can be enabled or disabled for each cluster member.
The directory is shared and replicated.
- Mail processing
Each cluster member must have its mail routes and proxies configured individually. If the PGP Universal Server has been installed as a cluster member through the Setup Assistant, this configuration must be done after the installation is complete. However, the managed domains are global.

Many other functions are affected by the PGP Universal Server's membership in the cluster. When a PGP Universal Server joins a cluster, data and configuration settings are replicated to the joining server from the sponsoring server, and the changes through the administrative interface on a cluster member affect all cluster members.

Changing Network Settings in Clusters

Changing the network settings of a cluster member prevents the servers from communicating with each other.

To change network settings:

- 1 Remove the server from the cluster.
- 2 Change the network settings.
This causes the server to reboot.
- 3 Re-join the server to the cluster.

For more information on network settings, see *Setting Network Interfaces* (on page 39).

About Clustering Diagnostics

Clustering Diagnostics allows you to monitor data replication on the cluster members in your cluster. For more information on clusters, see *Clustering your PGP Universal Servers* (on page 45).

Regularly monitor the data replication rates in your cluster to ensure that these rates remain in synch between the cluster members. If the difference between the change IDs is minimal, your cluster members are in synch. Symantec recommends that you set a daily schedule to regularly monitor your cluster.

Note: To get your servers back in synch, contact Tech Support.

Data replication rates comprise the following information:

- **Change IDs**

Change IDs represent the rate of replication between servers. When cluster members synchronize their database against each other's data, each cluster member assigns a change ID to a group of new data before replicating them to another cluster member. The difference between the change IDs increase or decrease over time, so regular monitoring is important. Large differences in change IDs means your servers are out of synch. Regular monitoring ensures that you can get servers back in synch quickly.

- **Group IDs**

Group IDs represent different groups of replicated data. Information from the databases is not replicated in one large batch but in chunks. Each type of replicated data is assigned a different group ID.

The group IDs are:

- **Keys**, which are replicated to all servers.

Private keys can only be replicated between internal cluster members. For more information, see step 4 in *Creating a Cluster* (on page 47).

- **Consumer Data**, which are replicated to all servers without restrictions.
- **Web Messenger on <server-name>**, which is data that is accessible through a specific Web Messenger server and is replicated in one of the following ways:
 - **High availability (HA)**, where data is replicated to all cluster members.
 - **Selected replication**, where the server determines to which cluster members data is replicated.
 - **Home server**, where data is replicated only to the current server.

Each cluster member that has Web Messenger enabled appears as a separate row, but Web Messenger may not appear on all cluster members. This is because the server determines on which member Web Messenger is displayed.

Monitoring Data Replication in a Cluster

Before monitoring the replication rates for cluster members you want to compare, you must log into a Universal Servers in a separate Web browser window for each cluster member. For example, if you have three cluster members, but you want to check the replication rates of two cluster members, you must log into two instances of Universal Server.

- 1 In each Web browser window, select **System > Clustering**.
- 2 On the **Clustering** page, in the **Replication Status** column, click the magnifying glass icon for the cluster member from which the data originates.

The **Clustering Replication Status** dialog box appears. The group IDs and change IDs that represent the rate of replication for data to this cluster member are displayed.

- 3 Repeat step 2 for each of the other browser windows.
- 4 In the **Clustering Replication Status** dialog boxes, compare the replication rates from the member where the data originated to each of the other cluster members.

Here is an example that explains how Clustering Diagnostics works:

- You have the following cluster members in a cluster:
 - Cluster member A
 - Cluster member B
 - Cluster member C
- You want to compare the replication rate of data from cluster member A to cluster members B and C.
- To compare replication rates:
 - 1 Open three Web browser windows.
 - 2 Do the following in each browser window:
 - a Log into an instance of Universal Server.
 - b Select **System > Clustering**.
 - c In cluster member A, under the **Replication Status** column, click the magnifying glass icon in member A for member A.
 - d Repeat steps b and c for the other two cluster members.

The **Replication Status** dialog box appears in each browser window.

- e Read the message at the top of the dialog box.
- In the dialog box for cluster member A, it should read:

You are looking at replication data on Cluster member A with data originating from Cluster member A.
- For cluster member B and cluster member C, the message should read:

You are looking at replication data on Cluster member B (or C) with data originating from Cluster member A.

This means that for cluster members B and C, you are looking at the rate that data is being replicated from cluster member A.

If the difference between the change IDs for cluster member A and cluster member B is small, it means that the servers are in synch. However, if the differences between the change IDs for cluster member A and cluster member C are large, it means that your servers are not in synch. If the difference between change IDs does not decrease over time, contact Technical Support.

Note: Symantec recommends that you set a daily schedule to regularly monitor your cluster members.

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