

SonicWall®
Secure Mobile Access 12.2
Central Management Server
with Global High Availability

Administration Guide

SONICWALL®

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About this Guide

This guide contains installation procedures and configuration guidelines for deploying the SonicWall® Central Management Server (CMS) with Global High Availability (Global HA) for Secure Mobile Access (SMA).

This guide provides the following information:

CMS Configuration

- [Introduction to CMS](#) describes the Central Management Server with Global High Availability and its features.
- [Installing and Configuring the Central Management Server](#) includes procedures for setting up and installing the CMS, setting up VPN appliances to be managed, defining the collection of managed appliances, and monitoring appliances from the CMS Dashboard.
- [Configuring Appliances for Central Management](#) includes information about configuring appliances for central management.
- [Using the Management Console Menus](#) explains the choices available with the CMS menus for operating and controlling the CMS and Managed Appliances. This includes information about Alerts, Configuration, Monitoring, and Maintenance.
- [Central User Licensing](#) includes information about the Central User Licensing (Pooled Licensing).
- [Global High Availability](#) describes the Always Online VPN service that is enabled for users when GTO is enabled.
- [Alerts and SNMP](#) contains information about how the CMS provides a new SNMP MIB that queries the CMS and managed appliances to get health and metrics data associated with the CMS as well as generating SNMP traps for critical alerts.
- [Capture Advanced Threat Protection](#) includes information about using the Capture ATP service to analyze various types of content for malicious behavior.

GTO Configuration

- [Introduction to Global HA and GTO](#) provides overview information about CMS with GTO.
- [Planning GTO Deployment](#) describes how to configure the GTO service with CMS and ensure a highly available and optimized VPN infrastructure.
- [Setting up GTO](#) describes how to make deploying GTO easier by planning and adhering to a few guidelines.
- [Extending GTO Deployment](#) describes how to deploy and configure additional SMA appliances.

SonicWall Support

- [SonicWall Support](#) includes Information about contacting technical support.

Guide Conventions

The following conventions are used in this guide.

Guide Conventions

Convention	Use
Bold Text	Highlights field, button, and tab names. Also highlights window, dialog box, and screen names. Also used for file names and text or values you are being instructed to type into the interface.
<i>Italic Text</i>	Indicates the name of a technical manual, emphasis on certain words in a sentence, or the first instance of a significant term or concept. Italics text also represents a variable in an expression. It should be replaced with the real item, for example, a file name.
Menu Item > Menu Item	Indicates a multiple step Management Interface menu choice. For example, System > Status means select the Status page under the System menu.

CMS Configuration

- Introduction to CMS
- Installing and Configuring the Central Management Server
- Configuring Appliances for Central Management
- Using the Management Console Menus
- Central User Licensing
- Global High Availability
- Capture Advanced Threat Protection
- Alerts and SNMP

Introduction to CMS

Topics

- [Overview](#)
- [CMS Deployment Options](#)
- [What's New in This Release](#)
- [What's Deprecated in This Release](#)
- [Central Management Server](#)
- [Central Management Console](#)
- [Managed Appliances](#)
- [Licensing CMS](#)
- [Central User Licenses](#)
- [Global Traffic Optimizer](#)
- [FIPS and CMS](#)
- [Getting Started in Five Steps](#)

Overview

This section is an introduction to the SonicWall™ Central Management Server (CMS) with Global High Availability (Global HA) and provides important concepts associated with it. CMS is an add-on product for managing multiple Secure Mobile Access (SMA) VPN appliances. It gives customers with multiple appliances a single administrative user interface from where they can manage all their VPN appliances. CMS is a virtual machine that interacts with the managed SMA appliances. CMS reduces the total cost of operation and simplifies the management of multiple VPN appliances for organizations.

Global HA enables SMA appliances to scale performance by deploying multiple appliances under the same service name (e.g. access.example.com). Global HA eliminates a single point of failure and provides resilience whether customers deploy 2 SMA appliances in the same data center or clusters of up to 100 physical and virtual appliances across multiple data centers around the globe. A distributed data store shares user session state and licensing information across the mesh network of SMA appliances in an active-active cluster. This allows for session persistence across data centers. In the event of a fail-over, users get connected to another appliance in the service. Their experience is frictionless and productivity is not impacted. The distributed data store also allows for central user licenses to be shared across appliances and data centers.

NOTE: SMA appliances in the Global HA mesh must be able to communicate with each other via their external interface IP addresses or internet-routable IP addresses to facilitate sharing of information in the distributed data store.

The VPN administrator uses the Central Management Console (CMC) of the CMS to manage all the VPN appliances regardless of location. CMS and managed appliances are closely integrated through native communications secured with TLS.

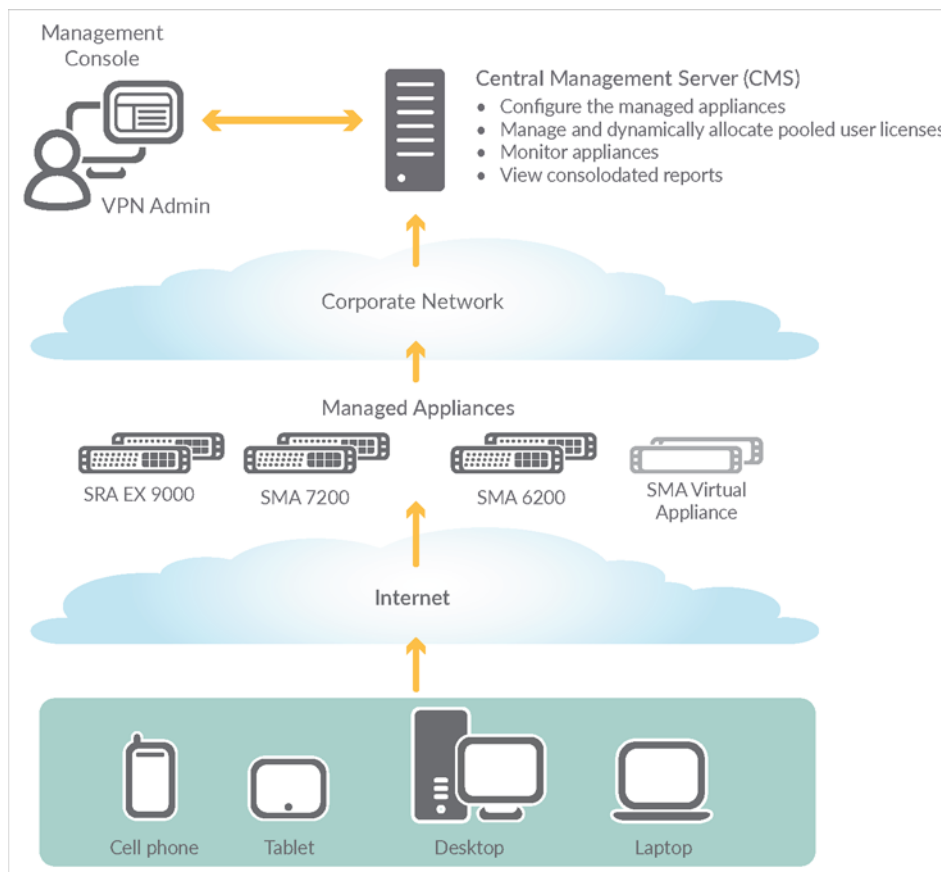
The CMS is a virtual machine, requiring no dedicated appliance or hardware, and provides the following features:

- A single dashboard for managing a distributed VPN infrastructure.
- Simplified license management with a centralized license that eliminates the need for separate appliance licenses. Licenses are shared by appliances
- Central Management Console (CMC) to configure, maintain, and monitor appliances.
- Reduced Total Cost of Operation (TCO) of the VPN infrastructure..
- Reduced operator errors associated with managing multiple appliances that may be in different data centers
- Centralized alerts via the console dashboard and SNMP traps.
- Global High Availability that is enabled with the Global Traffic Optimizer (GTO) service

This dashboard view in the CMC gives the administrator a summarized view of all managed appliances.

Administrators can apply a common configuration to managed appliances from the CMC. Consolidated monitoring and reporting gives the administrator an overview of all the appliances that are being managed.

An administrator can click on a single appliance in the CMC to launch the Appliance Management Console (AMC) for that appliance because of a single-sign on system.



CMS Deployment Options

Depending on your operational needs, CMS can be deployed in four phases:

- **Phase 1: Deploy CMS to only monitor and maintain standalone SMA appliances**

This gives you a dashboard view and a single console from which to monitor and maintain all your SMA appliances.

- **Phase 2: Enable Central User Licenses on CMS**

Central user licenses allows you to optimize user licenses across all your SMA appliances.

- **Phase 3: Use CMS to manage configurations**

A centralized policy on the CMS, that is normalized across all your SMA appliances, simplifies configuration management, and gives users a consistent experience when they get connected to any appliance in your VPN infrastructure.

- **Phase 4: Enable Global High Availability using the Global Traffic Optimization Service**

GTO provides a highly available VPN infrastructure where users connect to a single domain name (such as access.example.com) and get redirected to an available and proximate appliance.

 **NOTE:** Central User Licensing and centralized policies are required for enabling GTO.

What's New in This Release

Version 12.2 of the Secure Mobile Access (SMA) Central Management Server (CMS) with Global High Availability (Global HA) includes these new features and changes:

- [Central Management Over the Internet](#)
- [Cloud CMS](#)
- [CMS Management Using a Single Port](#)
- [Global High Availability Enhancements](#)
- [Capture Advanced Threat Protection Enhancements](#)

Central Management Over the Internet

With Central Management Over the Internet, you can manage SMA appliances hosted in a data center using a CMS that is hosted outside the data center. You can also manage SMA appliances located in a different data center (without a dedicated link between the data centers) over the Internet.

Cloud CMS

This feature allows customers to run CMS on an AWS cloud to manage appliances in their datacenter. This also allows Federal customers to run CMS on a FEDRAMP cloud.

CMS Management Using a Single Port

CMS now manages SMA appliances using only port 443. Using port 8444 is no longer required to centrally manage your SMA appliances.

Global High Availability Enhancements

Global High Availability (Global HA) facilitates global high availability with load distribution and disaster recovery capabilities across the SMA appliances in the GTO service. The high availability can be deployed in a single data center or across dispersed data centers. Global HA takes into account the “busyness” of an appliance and its geographic distance from a user to select the preferred appliance for that user’s connections.

New Global HA features in SMA 12.2 include:

- **Central FIPS Licensing**
- **Central Certificate Management**
- **Standby SMA Appliances**
- **Appliance Load Score**

Central FIPS Licensing

FIPS can be enabled on centrally-managed appliances.

- A central FIPS license allows all appliances managed by the CMS to be FIPS-enabled.
- A CMS can obtain a central license (that includes FIPS) from:
 - The MySonicWall License Manager service
 - A central license file (for closed networks)
- To be managed by the CMS, FIPS-enabled appliances are not required to be part of a GTO service.
- A CMS license that includes FIPS must also include central user licenses. An appliance that is not centrally licensed cannot be FIPS-enabled from a CMS-based license.

When the CMS central user license has FIPS, the administrator can enable FIPS individually for any managed appliance from its AMC.

Central Certificate Management

From the CMS, administrators can also manage certificates for all of the appliances managed by the CMS by:

- Creating Certificate Signing Requests, facilitating the process of obtaining certificates from a Certificate Authority
- Importing certificates issued by a Certificate Authority to a centralized store on the CMS
- Deploying selected certificates to specific appliances and then configuring those appliances to use the selected certificates, either immediately or at a scheduled time.
- Reviewing the list of certificates that have been imported to the CMS.
- Being alerted when certificates are due to expire.

Standby SMA Appliances

You can configure one or more appliances in your CMS to function as a standby appliance.

Global HA will monitor the health of your SMA appliances to determine whether a disaster is happening and automatically activate the standby appliance. To further improve your disaster recovery capabilities with your Global HA environment, the standby appliance(s) can be located in a different data center than your other SMA appliances.

A standby appliance has access to all of the central user licenses. However, the standby appliance counts toward the maximum number of licensed appliances that can be managed by the CMS license.

Appliance Load Score

The appliance load score is determined by:

- The load score is a combined metric computed from several usage and performance factors (such as CPU, network, and memory) that might affect the performance of an appliance, weighted based on their known impact on the remote access experience of connecting users. For example, high CPU usage does not have a major impact on the Load Score for an appliance, but high network bandwidth usage is more highly weighted when the load score for an appliance is calculated.
- When calculating the load score, the differences in the capabilities of the different SMA appliance models in your CMS cluster are taken into account. For example, an SMA 6200 (rated at 2,000 users) with 200 users is expected will show a higher load score than an SMA 7200 (rated at 10,000 users) with 2000 users.
- The impact of different resources is normalized when calculating the load score. For example, users using a significant amount of CPU resources on one appliance will have less impact on the load score than users using excessive bandwidth on another appliance.
- The load score is used by Global HA to determine the preferred appliance toward which user connections and traffic should be routed. For example, if two appliances are located in the same data center or geographic area, Global HA will prioritize the appliance that has the lower load score.

Capture Advanced Threat Protection Enhancements

Capture Advanced Threat Protection (Capture ATP) is a cloud-based service that analyzes various types of content for malicious behavior. This function is integrated with the WorkPlace File Explorer feature. When files are uploaded, the file can be sent to the Capture ATP service for analysis.

Enhancements to Capture ATP support in SMA 12.2 include:

- Increased file size limit to 50MB
- MySonicWall Capture reports are now integrated into the CMS panel
- Capture ATP analysis now also applies to file uploads through a SharePoint site
- Alerts are now provided for disk capacity issues

New User Licensing Options

SMA 12.2 provides new user licensing options:

- **Central FIPS Licensing**

What's Deprecated in This Release

These features are no longer supported in SMA 12.2:

- [Fallback Servers](#)
- [RSA ClearTrust](#)

Fallback Servers

Support for Fallback Servers for Network Tunnel clients is hidden by default in SMA 12.2. It can, if necessary, be enabled by setting `CEM MGMT_FALLBACK_SERVERS=true`.

RSA ClearTrust

Support for RSA ClearTrust authentication servers is hidden by default in SMA 12.2. It can, if necessary, be enabled by setting `CEM MGMT_ALLOW_CLEARTRUST=true`.

Central Management Server

CMS is only available as a virtual machine. Details about the supported platforms is listed in [Supported Platforms for CMS with Global HA](#).

CMS can manage up to 100 appliances (physical and virtual appliances), but before an appliance can be managed it must be registered with CMS. CMS registration is secured with encryption using a one time password. Its purpose is to bootstrap TLS communication by exchanging public keys. Following registration all CMS/appliance communication is secured with TLS.

The CMS communicates with each managed appliance to receive:

- Data on the Control channel for configuring, licensing, maintaining appliances.
- Periodic health and status information from managed appliances.

CMS periodically communicates with MySonicWall for license validation. This ensures correct system wide timing and use of licenses.

CMS also requires access to the following two online services:

	SonicWall Licensing Server	SonicWall Geo Server
FQDN	software.sonicwall.com	geows.global.sonicwall.com
IP addresses	204.212.170.115 217.149.45.76	208.17.117.116
Ports	80 443	80 443

NOTE: CMS must be able to communicate with each appliance on port 443 of one of the following IP addresses: the internal IP address, external IP address, or internet routeable IP address.

NOTE: Do not use more than one CMS for a single managed appliance.

Central Management Console

The Central Management Console (CMC) provides the user with a single screen (called the Dashboard) to show Active alerts, Appliance status, License status, and Geographic View of all appliances on a map of the world. The Dashboard also allows you, from a single point to:

- Configure appliances (using push configuration settings).
- Maintain appliances: upgrade/hotfix, EPC update, add SSL certificates, and Restart.
- Use a one-click (single sign-on) to the AMC of managed appliance.
- View health history and reports for all appliances.
- Configure alerts, manage alert notifications for appliances or CMS.
- Install a central user license. Central licenses are available to all appliances as user demand changes between appliances.

Managed Appliances

Managed appliances are SMA 1000 series appliances that are registered with the CMS so that they can be centrally managed.

Each managed appliance must be an SMA Version 12.2 (or later) SMA appliance. A group of managed appliances may consist of physical and/or virtual appliances.

In this document, the term SMA 1000 series appliance refers to these appliances:

- EX9000
- SMA 6200
- SMA 7200
- SMA 8200v

 **NOTE:** The Virtual Appliance name has been changed to the SMA 8200v virtual appliance.

Managed appliances send health and status information to the CMS. They accept policy configuration, user licenses, and maintenance commands from the CMS. Managed appliance communication with a CMS is secured with TLS.

 **NOTE:** CMS must be able to communicate with appliances on port 443.

Licensing CMS

CMS has the ability to manage appliances licensed with different feature sets. Unlike SMA appliances, the CMS contacts the online SonicWall License Manager service to obtain its license.

 **NOTE:** SMA appliances download and import a license file from the MySonicWall portal.

To license the CMS initially, you enter the serial number and authentication code into the CMS console. The CMS then contacts the License Manager service and obtains its license. After that, the CMS periodically contacts the License Manager service to refresh its license.

A CMS Base License is available at no cost from MySonicWall. You enable a CMS Base License by entering the serial number and the authentication code. A CMS Base License allows you to manage three appliances. A CMS Base license comes with a trial for pooled licenses for a limited period of time. A CMS Base License enables you to use the CMS without pooled licensing. A CMS Base License enables you to manage and monitor licensed SMA appliances. You can upgrade from a Trial License to a Base License.

Central User Licenses (Pooled Licenses) are shared licenses that are available to CMS-managed appliances. To use pooled licensing, you must add Central User Licenses to the CMS Base License. Central User Licenses can be subscription licenses (valid for specific periods of time, such as 1 year or 3 years), or perpetual licenses (without an expiration date).

NOTE: CMS subscription licenses do not have SUPPORT SKUs. CMS subscription user licenses include support costs. CMS perpetual licenses require SUPPORT SKUs.

Central User Licenses

CMS supports an optional pooled licensing model that allows user licenses to be centralized on the CMS and available to the managed appliances. Individual VPN appliances no longer need their own license. Customers with appliances that are globally distributed can benefit from the fluctuating demands for user licenses due to time differences. Central user licenses are available to managed appliances where user demands have peaked when license demand has fallen in other regions due to off-work/night hours. For more information, refer to [Central User Licensing](#).

Global Traffic Optimizer

GTO allows customers to deploy a VPN infrastructure without the need for load balancers or global traffic management using a CMS and SMA 1000 series appliances. The SMA appliances may be located in a datacenter or globally distributed.

GTO allows customers to deploy the SonicWall GTO service. A GTO service is an online VPN service that is enabled by a cluster of SMA appliances working in concert to provide users with a highly available and optimized VPN infrastructure.

The GTO service distributes VPN connection requests from users to the appropriate SMA appliances. Load distribution is done using heuristics based on system parameters that are known and monitored by the GTO service. These parameters include appliance availability, appliance proximity to the user, user load, and appliance capacity.

NOTE: To use GTO with Connect Tunnel, Connect Tunnel must be upgraded to 11.4.0 or above.

FIPS and CMS

FIPS can be enabled on centrally managed appliances.

- A central FIPS license allows all appliances managed by the CMS to be FIPS-enabled.
- A CMS can obtain a central license (that includes FIPS) from:
 - The MySonicWall License Manager service
 - A central license file (for closed networks)
- To be managed by the CMS, FIPS-enabled appliances are not required to be part of a GTO service.

- A CMS license that includes FIPS must also include central user licenses. An appliance that is not centrally licensed cannot be FIPS-enabled from a CMS-based license.

When the CMS central user license has FIPS, the administrator can enable FIPS individually for any managed appliance from its AMC. (See “Enabling FIPS” in the *SMA 12.2 Administration Guide* for more information.)

Getting Started in Five Steps

- 1 Install and configure the CMS and apply the CMS license.
Refer to [Installing and Configuring the Central Management Server](#).
- 2 Configure GTO.
Refer to [Setting up GTO](#)
- 3 Setup the VPN appliances to be managed.
Refer to [Configuring Appliances for Central Management](#).
- 4 Define the collection of managed appliances.
Refer to [Add/Remove](#).
- 5 Monitor and manage appliances from the CMS Dashboard.
Refer to [Dashboard](#).

i | **NOTE:** When updating an SMA infrastructure that is already in place with upgrades and hotfixes, the managed SMA appliances are updated first, and then CMS is updated last.

Installing and Configuring the Central Management Server

Topics

- [Overview](#)
- [Supported Platforms for CMS with Global HA](#)
- [Hardware Resource Requirements](#)
- [Installation Files](#)
- [Setting Up a CMS](#)

Overview

The Central Management Server with Global High Availability (CMS with GTO) is located inside a corporation's intranet. CMS requires a new type of license called a CMS License that is issued by SonicWall.

The CMS runs as a virtual machine that can be hosted on VMware ESX/ESXi or Microsoft Hyper-V. CMS is not designed to run on custom hardware such as VPN appliances.

CMS with GTO provides the following features:

- Central Management Console (CMC) to monitor, maintain, and configure SMA appliances
- Simplified license management with a centralized license that eliminates the need for individual appliance licenses
- Centralized alerts via the console dashboard and SNMP traps
- Global Traffic Optimizer (GTO)

Supported Platforms for CMS with Global HA

CMS with GTO runs as a virtual machine on the following hypervisor platforms:

Supported Platforms

VMWare	Microsoft
ESXi 5.5 or higher	Windows Hyper-V Server 2012 R2
	Windows Server 2016

CMS with GTO is supported on the following SMA 1000 series appliances:

- EX9000
- SMA 6200
- SMA 7200
- SMA 8200v (ESX/Hyper-V)

Hardware Resource Requirements

The virtual instance of CMS requires the following hardware resources:

- 8 GB RAM
- 4 CPU

Installation Files

The Central Management Server should run the same firmware version as the appliances it manages.

- To install on VMware hypervisors, the Open Virtualization Archive (.OVA) file with the following file name format is available for import and deployment to your ESX/ESXi server: `ex_sra_vm_12.x.x-xxx.ova`
- To install in a Microsoft Hyper-V environment, use an International Organization for Standardization (.ISO) file such as: `12.x.x-xxx.iso`.

The 12.x.x indicates the SMA release version and xxx represent a build number.

i | **NOTE:** The same firmware is used for both the CMS and the SMA 8200v. The Central Management feature is enabled during the setup process.

For information on installing the SMA 8200v, refer to the *SMA 8200v Getting Started Guide*.

Setting Up a CMS

To setup a Centrally Managed VPN infrastructure:

- 1 Setup a virtual instance (ESX or Hyper-V) of the release firmware.
- 2 Start the virtual machine and wait for a login prompt to appear.
- 3 Login as **root** (no password is required).
- 4 Press any key to continue.
- 5 Enter the network settings for the internal interface (labeled **2** on the appliance).
 - IP Address
 - Subnet mask
 - Gateway

i | **NOTE:** If you are on the same network as the appliance, press **Enter** when prompted for the gateway.

6 Continue until instructed to access the console from a browser at <https://<Internal-IP-Address>:8443>.

This Setup Wizard guides you through a series of required and optional settings for getting the appliance up and running quickly:

Basic Settings: Set the password you'll use to administer the appliance, and the date and time.

Network Settings: Set the name of the appliance, which is used in log files, and the IP address and subnet mask for the internal and external network interfaces.

Routing: Configure the gateways for internal and external network traffic.

Name Resolution: Configure the domain name of the network to which the appliance will be connected and the internal DNS.

User Access: Create a basic security policy. You can change it later in the Appliance Management Console (AMC).

After you complete the Setup Wizard:

- You will be redirected to AMC. To log in, type "admin" in the Username box, and then enter the administrator password that you set on the Basic Settings page.
- Register your appliance on MySonicWALL (www.mysonicwall.com). Registration gives you access to essential resources, such as your license file and updates. In order to register, you need both the serial number for your appliance, and its authentication code, which is visible on the General Settings page in AMC.

7 Click **Next** to view the License Agreement.

Welcome

License Agreement

Basic Settings

Network Settings

Routing

Name Resolution

User Access

Completion

License Agreement

To continue with setup, you must accept the terms of the End User License Agreement. Please read the agreement carefully.

SonicWall End User Product Agreement

PLEASE READ THIS AGREEMENT CAREFULLY BEFORE USING THIS PRODUCT. BY DOWNLOADING, INSTALLING OR USING THIS PRODUCT, YOU ACCEPT AND AGREE TO THE TERMS AND CONDITIONS OF THIS AGREEMENT. FOR DELIVERIES OUTSIDE THE UNITED STATES OF AMERICA, PLEASE GO TO [HTTPS://WWW.SONICWALL.COM/LEGAL/EUPA.ASPX](https://www.sonicwall.com/legal/eupa.aspx) TO VIEW THE APPLICABLE VERSION OF THIS AGREEMENT FOR YOUR REGION. IF YOU DO NOT AGREE TO THE TERMS AND CONDITIONS OF THIS AGREEMENT OR THE APPLICABLE VERSION OF THIS AGREEMENT FOR YOUR REGION, DO NOT DOWNLOAD, INSTALL OR USE THIS PRODUCT.

This SonicWall End User Product Agreement (the "Agreement") is made between you, the Customer ("Customer" or "You") and the Provider, as defined below.

1. Definitions. Capitalized terms not defined in context shall have the meanings assigned to them below:

I accept the terms of the license agreement

I do not accept the terms of the license agreement

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Secure Mobile Access

8 Read the agreement and if you agree, select **I accept the terms of the license agreement**.

- 9 Click **Next** to select Basic Settings.

Basic Settings

Central Management

This appliance can manage the licensing and configuration of up to 100 appliances.

Install this appliance as the central management server for a pool of appliances

Administrator password

Specify the password you will use to access the Appliance Management Console (AMC). Your password must be at least eight characters long.

Enter password: *

Confirm password: *

Date and time

Please select a time zone below. To set the current time, click **Change**. If you wish to synchronize the time with an NTP server, it can be configured later in AMC.

Time zone:

Current time: Mon Sep 14 2015 13:30:11 GMT [Change](#)

- 10 Select **Install this appliance as the central management server for a pool of appliances**.

- 11 Under **Administrator password**, enter the password you want for the administrator and confirm it.

i | **IMPORTANT:** Be sure to save or write this password down in a secure location. It is encrypted and is difficult to recover if you forget it.

- 12 Under **Date and time**, select the time zone from the **Time Zone** menu.

- 13 Click **Next**.

Network Settings

Enter a name to identify your appliance as well as the IP address and subnet mask for the internal and external network interfaces. If you are using a single gateway in your DMZ, you should select "Single Interface".

Appliance name: *

Dual interfaces Single interface

Internal Interface

IP address: *

Subnet mask: *

This is the interface connected to your private internal network.

External Interface

IP address: *

Subnet mask: *

This is the interface connected to the Internet.

- 14 Enter a descriptive name in the **Appliance name** field.

15 Select the **Single interface** option.

i | **IMPORTANT:** CMS is restricted to a single interface; it cannot be set up with dual interfaces.

16 Enter the **Internal Interface IP address** and **Subnet mask**.

17 Click **Next**.

Routing

To leverage an existing router, select the dual gateway option to reach your resources. To restrict incoming appliance traffic to only a few routes or subnets, select a single gateway option and enter the routes or subnets as static routes later in AMC.

If you plan to access AMC from a computer on a different subnet than the appliance (172.31.4.222/255.255.0.0), you must configure an internal gateway that will pass traffic to that subnet. Alternatively, you can define a static route later in AMC to the subnet from which the appliance is to be accessed.

Routing mode:

Internal gateway IP address: *

External gateway IP address: *

This gateway is used for internal network traffic. It must be on the same subnet as the internal interface (172.31.4.222/255.255.0.0).

This gateway is used for external network traffic. It must be on the same subnet as the external interface (10.4.124.222/255.255.248.0).

< Back Next > Cancel

18 From the **Routing mode** menu, select **Default gateway**.

19 In the **Default gateway IP address** field, enter the gateway IP address.

20 Click **Next**.

Name Resolution

Specify the domain in which the appliance is located and the primary DNS server used for name resolution. This allows the appliance to reach resources on your internal network by name.

Default domain: *

DNS Server:

The domain in which the appliance is located (such as example.com).

Enter the IP address for your primary DNS server. More DNS servers can be added later in AMC.

< Back Next > Cancel

21 Enter your domain in the **Default domain** field.

- 22 Enter the IP address of the primary DNS server into the **DNS Server** field.
- 23 Click **Next**.

Central Management

This server manages the licensing and configuration for a collection of appliances.

Locale

Country:

Location:

Example: Seattle, WA

Policy Synchronization

Enable pushing policy configuration from this server to managed appliances.

- 24 Under **Locale**, enter the **Country** and the **Location**.
- 25 Select **Enable pushing policy configuration from this server to managed appliances**.
- 26 Click **Next**.

Completion

You have successfully completed the Setup Wizard.

To apply your settings, click **Finish**. After your settings have been applied, you will be directed to AMC where you can login using the password you supplied earlier.

Appliance Settings

Date and time:	Mon Sep 14 2015 13:32:48 GMT
Central management server:	Yes
Clustered:	No
Appliance name:	CMS-90
Internal interface:	172.24.0.1
External interface:	Disabled
Routing:	Default gateway (172.24.0.1)
Default domain:	win2012.com
DNS server:	8.8.8.8
Full network access:	OnDemand Tunnel disabled
Access policy:	Unknown

- 27 Click **Finish**. The configuration changes are applied and a **Logon** screen appears.

Secure Mobile Access
Central Management Console

Please log in

Username:

Password:

Log in using: Management Console ▼

28 Login with username **admin** and the password that you just configured. The **Central Management Console (CMC) Dashboard** Page appears.

Management Server

- Dashboard
- Alerts
- Configure
- Monitor
- Maintain

Managed Appliances

- Add/Remove
- Configure
- Monitor
- Maintain

Alerts

✓ None

Appliances Appliance table ▼

Name	Status	Users	CPU	Mem	Mbps	Uptime
No data available in table						

Showing 0 to 0 of 0 entries

Appliance load

No appliances

Central license usage Daily ▼

Click [here](#) to enable central user licensing. The current license will support 15 concurrent user sessions across all appliances.

About

Model: SonicWall Secure Mobile Access CMS
Hypervisor platform: Microsoft HyperV
Version: 12.2.0-03999
Hotfixes: None
System times: Wed Sep 26 23:39:23 GMT 2018
Uptime: 4 days 21 hours 37 mins
License: 3 appliances, 10 Full users , 0 Email users
Spike: 0 Spike users, 0 days left

You can now download and install a CMS license from MySonicWall.com. Refer to [Licensing Pages](#).

SMA 12.2 Central Management Server with Global High Availability Administration Guide | Installing and Configuring the Central Management Server

24

Configuring Appliances for Central Management

Topics

- [Overview](#)
- [Firmware Compatibility with the CMS](#)
- [Enabling Central Management and Registering an SMA Appliance with the CMS](#)
- [Previously Configured Appliances](#)

Overview


This section describes how to configure SMA appliances for CMS with GTO, so that they become Managed Appliances.

A CMS can manage up to 100 appliances. Managed Appliances can be any combination of physical and virtual appliances (for example: EX9000, SMA 6200, SMA 7200, and SMA 8200v).

Firmware Compatibility with the CMS

CMS can only manage appliances running firmware that is the same version (or higher) than the CMS. The CMS and all appliances must be running 12.2 firmware (or later) to activate the CMS and GHA feature improvements contained in the 12.2 firmware.

CMS can be used to manage appliance that have been upgraded to a new release that is one version above the CMS version. However, newer features on the managed appliances may not work until the CMS is upgraded to the same version as all the managed appliances.

 **NOTE:** CMS cannot manage an appliance that exceeds one major version ahead of the CMS.

For more information about upgrading CMS and its managed appliances, refer to the *SMA 12.2 Upgrade Guide*.

Enabling Central Management and Registering an SMA Appliance with the CMS

Before an appliance can be registered with the CMS, it must first be enabled for Central Management. In addition, the CMS must have an unused appliance license (obtained from the CMS license) before an SMA Appliance can be registered. The administrator must enable Central Management and type the One-Time Password into the console of the SMA appliance. In addition the administrator must register the appliance with the CMS.

The One-Time Password is used to establish a secure channel, and all subsequent communications go through the secure channel. The appliance uploads its information (model, version, serial#) to the CMS. The CMS pushes a Leased License to the appliance, and then (if configured), pushes the configuration settings to the appliance.

The managed appliance is now online and ready to accept VPN connections.

To enable central management:

- 1 On the AMC for the appliance, navigate to the **System Configuration > Maintenance** page.

Maintenance Maintenance Tasks

Product: SonicWall Secure Mobile Access 8200v
Version: 12.2.0-03999
Time since last reboot: 19 Days 12 Hours 49 Minutes 27 Seconds
Number of current users: 0
Last replication: N/A

Restart... Restart the appliance. **Shutdown...** Turn off the appliance. **Reset...** Reset the system software.

System configuration

Import or export
Import configuration data from another system or from backup, or export the current configuration for replication or backup.
[Import/Export...](#)

Central Management
Include this appliance in a pool of appliances that is licensed and managed by a central management server.
[Configure...](#)

System software updates

Update
Install a system upgrade or hotfix on the appliance.
[Update...](#)

Rollback
Restore a previous version of the system software or remove a hotfix.
[Rollback...](#)

- 2 In the **System Configuration** section, under **Central Management**, click **Configure...**

Maintenance > Configure Central Management

Include this appliance in a pool of appliances that is managed by a central management server.

Enable central management
 Allow central management over the external interface

i An authorized central management server is permitted to manage the appliance over the external interface.

i This appliance is managed by a [central management server](#).

[Save](#) [Cancel](#)

- 3 Verify that **Enable central management** is selected.
- 4 Choose **Save**.
- 5 Click on the link to **Apply Pending Changes**.

Apply Pending Changes

Apply or discard pending configuration changes. Depending on your configuration, applying changes may take a few minutes to restart services.

CAUTION

- A realm with no authentication server is configured, but there is no deny rule for it in access control. This may be a security risk. [Click here](#) to configure access control.

▼ Advanced

- 6 Click **Apply Changes**. The one time password is now active and the appliance is ready to be registered by the CMS.

Maintenance > Configure Central Management

⚠ The one time password is active. Please register with a central management server as soon as is convenient, or disable central management.

Include this appliance in a pool of appliances that is managed by a central management server.

Enable central management

i Use this password to register with a central management server. After registration is complete you can refresh this page to see the registration status.

One Time Password: **5d4f4d58-b15f-4d33-b2ba-a9e4214bc833**

Previously Configured Appliances

Standalone appliances that were originally configured from their AMC can be registered with a CMS without affecting the appliance's policy settings.

For information on how to synchronize (or not) policy on an appliance from the CMS, refer to [Configure](#).

Configuring Your SMA Appliance to be a SAML IdP

For your SMA appliance to operate as a Identity Provider, trust needs to be established between the application and your SMA appliance.

For more information, see “Using Your SMA Appliance as a SAML Identity Provider” in the *SMA 12.2 Administration Guide*.

To configure your SMA appliance to be SAML IdP:

- 1 In the CMS, navigate to the **Managed Appliances | Configure > Define Policy** page.
- 2 In the **User Access** section, click **SAML Identity Provider**.

The appliance can be configured as a SAML 2.0 Identity Provider (IdP) offering authentication as a service. Third-party applications (SAML Service Providers) can send authentication requests to the appliance (IdP) to provide single sign-on.

Enable SAML 2.0 Identity Provider service

Entity ID:*

Assertion validity: * seconds

Endpoint FQDN:*

Signing certificate:

The Endpoint FQDN does not match the FQDN or a SAN

Export SAML metadata:


The Entity ID is a URL that uniquely identifies your SAML Identity Provider. Example:
<https://idp.company.com/idp>

Time allowance that Service Provider should accept for assertions from this IdP

Specify an FQDN to which the Service Provider will send SAML requests. Configure a [WorkPlace site](#) to customize the FQDN.

The certificate used by the IdP to sign the SAML messages. The certificate is automatically selected based on the selected Endpoint FQDN. Certificates can be configured [here](#).

To ease configuration, the Identity Provider's metadata XML file can be exported.

- 3 Select **Enable SAML 2.0 Identity Provider service** to enable the SMA appliance as an Identity Provider.
- 4 In the **Entity ID** field, enter the URL that uniquely identifies your SAML Identity Provider. For example, <https://idp.company.com/idp>.
- 5 Set the value in the **Assertion validity** field for the time allowance (in seconds) that the application should accept for assertions from your SMA appliance.
- 6 In the **Endpoint FQDN** field, specify an FQDN to which the application will send SAML requests.
 **NOTE:** You will need to configure a WorkPlace site in order to customize the FQDN.
- 7 The **Signing certificate** field displays the location of the certificate used by the IdP to sign its SAML messages. The certificate is automatically selected based on the **Endpoint FQDN**. (You can configure certificates in the **SSL Settings > SSL Certificates** page. For more information, see “Certificates” in the *SMA 12.2 Administration Guide*.)
- 8 Click the **Export** button to export the SAML metadata to an XML file that can be imported when configuring applications to accept your SMA appliance as an Identity Provider.
- 9 Click **Save**.

Using the Management Console Menus

- [Overview](#)
- [Management Server](#)
 - [Dashboard](#)
 - [Alerts](#)
 - [Configure](#)
 - [Monitor](#)
 - [Maintain](#)
- [Managed Appliances](#)
 - [Add/Remove](#)
 - [Configure](#)
 - [Monitor Managed Appliances](#)
 - [Maintain Managed Appliances](#)

Overview

The Central Management Console is the interface you use to manage all the registered VPN appliances. The menu is listed on the left and the content of the window varies depending on the option selected. When you first login to the console, the Dashboard page is the default screen that appears.

The menu has two sections: Management Server and Managed Appliance. Management Server has the commands for central management, licensing and so forth. Managed Appliances have the commands for managing the registered VPN appliances in your infrastructure.

Management Server

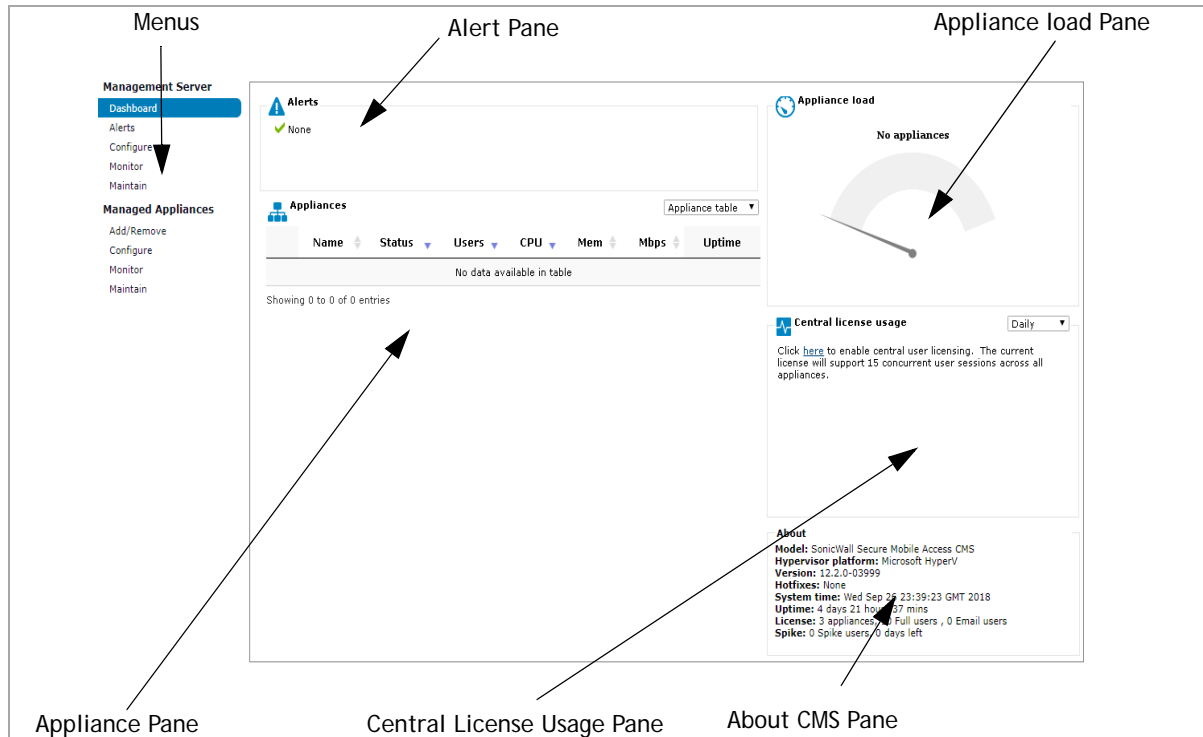
This section provides information about the Management Server commands:

- [Dashboard](#)
- [Alerts](#)
- [Configure](#)
- [Monitor](#)
- [Maintain](#)

Dashboard

The **Dashboard** page is the first screen that appears after you log in. You can also access it anytime by clicking **Management Server > Dashboard** from the menus.

The Dashboard is divided into the sections illustrated and explained below.



- **Menu** - Contains the commands for central management of your devices.
- **Alerts** - Contains a list of currently active alerts. Select an Alert to view more information.
- **Appliance load** - an estimate of the current load on an appliance based on metrics such as CPU and memory usage.
- **Appliances** - Shows all online appliances. Select a managed appliance to view information about it. Appliances are sorted starting with the appliance with the most users.
- **Central License Usage** - Displays information about license usage.
- **About** - Displays CMS Information consisting of Model, Hypervisor platform, Version, Hotfixes, System Time, Uptime, License.

Each pane is independently refreshed with updated information/status.

The Dashboard panes use the following color codes:

- Green (OKAY)
- Yellow (WARNING)
- Red (ERROR)

Alerts Pane

The **Alerts** pane on the Dashboard shows a consolidated view of all currently active alerts that have not been acknowledged by the administrator. These alerts appear when specific thresholds are met. Warnings and Errors are shown on the CMC Dashboard.



Red icons represent critical alerts and yellow icons represent warnings. Errors are listed first, followed by warnings with the most recent being listed at the top of each category.

Alerts can be acknowledged by the administrator by clicking on the X to the right of the it. An acknowledged alert no longer appear in the dashboard, but it re-appears if the state changes. Alerts are automatically removed if the cause of the alert ceases. Click on an individual alert to see the details.

All alerts can be seen when you chose the **Alert** command. Refer to [Alerts](#) for more details.

Appliances Pane

The **Appliances** pane displays a quick overview of the appliances being managed. It provide real-time data for online, managed appliances and includes:

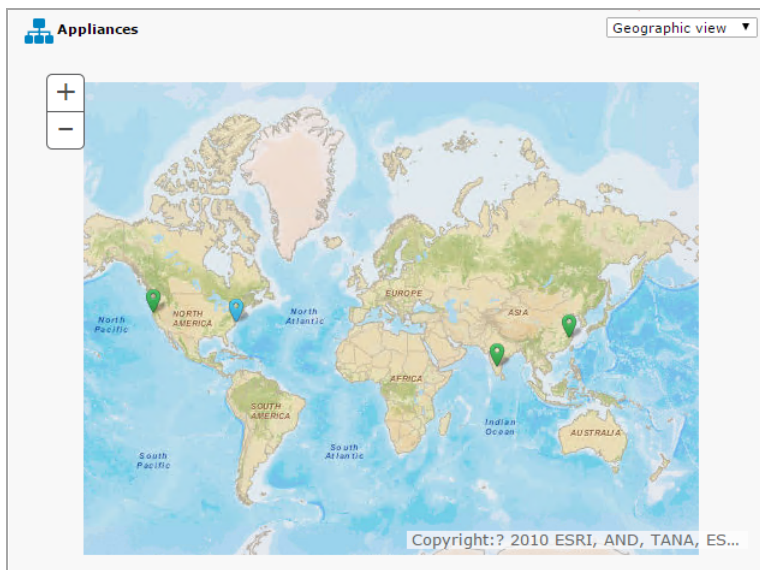
- Name
- Status
- Users
- CPU usage
- Memory usage
- Mbps, Uptime.

The drop down menu on the top, right side provides toggling views of the appliances

- The Appliance Table is the default view.

Appliances							Appliance table ▾
Name	Status	Users	CPU	Mem	Mbps	Uptime	
⊕ Seattle-111	● Managed	4900	0%	38%	0	12 days	
⊕ Bangalore-112	● Managed	4000	0%	32%	0.01	12 days	
⊕ Shanghai-113	● Managed	220	1%	35%	0.01	12 days	

- The Geographic View shows the geographic location of each appliance on a world map.



The Geographic View shows a visual location of the appliance based on its city and country obtained during configuration. You can reposition the icon for an appliance by dragging and dropping the icon to another location. You may need to do this if the icon for an appliance is not correctly positioned on the map, or if multiple appliance icons are positioned too closely to each other.

By moving your cursor across the colored icons on the map, details about that appliance appears. In addition, the color of the icon has meaning:

- A blue icon represent the CMS Server and displays Host name and address.
- A green icon represents a selected managed appliance that is online. The interface displays Host, Status, Users, CPU, Memory, Bandwidth information.
- A red icon represents an appliance that is offline.

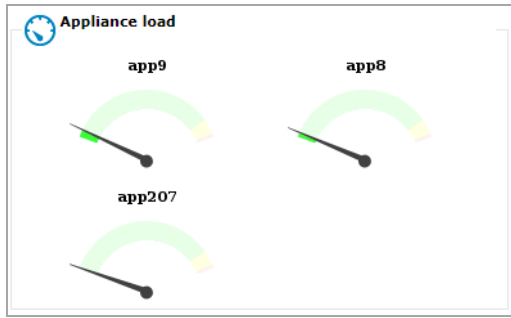
Zoom (+) and UnZoom (-) buttons allow the map view to be changed. The last map viewed is saved.

Appliance Load Pane

The **Appliance load** pane displays an estimate of the load level of the appliance based on metrics such as CPU, memory usage, and the number of users logged into the appliance. For more information, see the [Appliances Pane](#).

The dial for each appliance displays an estimate of how busy the appliance is:

- Green indicates that the appliance is not very busy.
- Yellow is a warning that the appliance is starting to get busy.
- Red indicates that the appliance is busy or has a 100% load; the user experience may degrade.

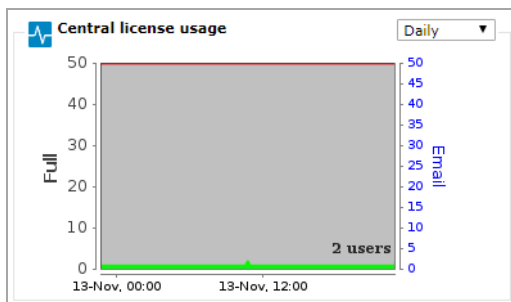


The Appliance load for an appliance is determined by its “load score”.

- The load score is a combined metric computed from several usage and performance factors (such as CPU, network, and memory) that might affect the performance of an appliance, weighted based on their known impact on the remote access experience of connecting users. For example, high CPU usage does not have a major impact on the Load Score for an appliance, but high network bandwidth usage is more highly weighted when the load score for an appliance is calculated.
- When calculating the load score, the differences in the capabilities of the different SMA appliance models in your CMS cluster are taken into account. For example, an SMA 6200 (rated at 2,000 users) with 200 users is expected will show a higher load score than an SMA 7200 (rated at 10,000 users) with 2000 users.
- The impact of different resources is normalized when calculating the load score. For example, users using a significant amount of CPU resources on one appliance will have less impact on the load score than users using excessive bandwidth on another appliance.
- The load score is used by Global HA to determine the preferred appliance toward which user connections and traffic should be routed. For example, if two appliances are located in the same data center or geographic area, Global HA will prioritize the appliance that has the lower load score.

Central License Usage Pane

This **Central License Usage** pane displays the history of CMS user license consumption relative to the maximum license capacity. The drop-down menu allows you to change the display to different time periods, such as Now, Hourly, Daily, Weekly, Monthly, and Quarterly.



The graph displays the number of users as a function of time and colors are used to indicate the status of the licensing:

- Green indicates that the CMS license usage is running within the Central User Licensed capacity.
- Yellow indicates that the license capacity has reached 75%, the default threshold for a CMS license usage warning.
- Red indicates that the license capacity has reached 90% threshold, default threshold for the a CMS license usage alert.

About Pane

About
Model: SonicWall Secure Mobile Access CMS
Hypervisor platform: Microsoft HyperV
Version: 12.2.0-03999
Hotfixes: None
System time: Wed Sep 26 23:39:23 GMT 2018
Uptime: 4 days 21 hours 37 mins
License: 3 appliances, 10 Full users , 0 Email users
Spike: 0 Spike users, 0 days left

The **About** pane displays the information about the Central Management Server:

- Model name
- Hypervisor platform and version number
- Installed hotfixes
- current system time
- current uptime statistics
- licensing summary

Alerts

CMS generates alerts that are either Warnings or Errors. Alerts are displayed prominently on the CMS dashboard and can also be accessed by selecting the **Alerts** menu option. Alerts typically originate from a condition that occurs on the CMS or on a managed appliance.

For detailed information about alerts and using alerts with SNMP, refer to [Alerts and SNMP](#).

To view and configure alerts:

- 1 Select **Management Server > Alerts**. This page has two tabs: **View Alerts** and **Configure Alerts**.

The **View Alerts** tab is the default view and shows all the alerts in table form. You can sort the table by clicking on the table headings to sort the data.

The screenshot shows the 'View Alerts' tab in the management console. At the top, there are tabs for 'View Alerts' and 'Configure Alerts'. Below the tabs, there is a text area: 'View system alerts. You can also access the [Alerts](#) using the Management API to download a list of alerts in CSV format. [Click here](#) for more information on using the Management API.' Below this, there are filter controls: 'Filters (active: reset)', 'Description: All', 'Priority: All', 'Appliance: All', and checkboxes for 'Acknowledged' and 'Cleared', along with a 'Refresh' button. There is also an 'Acknowledge' link. The main part of the screenshot is a table with the following columns: Priority, State, Appliance, Description, and Time. The table contains 147 rows of alerts, with the first few rows showing 'License has expired' and 'Unreachable for 1 day' alerts. At the bottom, there is a footer: '147 of 147 alerts shown (Filtered) [show all](#). [Modify alert notification settings.](#)

- At the bottom of the page, click **alert notification**.

[Configure Alerts](#) > Configuration Alert Notification

Configure settings for alert notification

Notify recipients of:

- Critical alerts
- Warning alerts
- Acknowledged alerts
- Cleared alerts

Email settings

Email messages will be sent for the above events.

! Email alerts will not be sent because SMTP is not enabled. Go to the [SMTP settings](#) page to configure SMTP.

From address:

Alert notifications use the [SMTP settings](#) to send email messages.

Send email to the following recipients:

[+ New](#) [X Delete](#)

<input type="checkbox"/>	Name	Address	Enabled
<input type="checkbox"/>			<input type="checkbox"/>
<input type="checkbox"/>			<input type="checkbox"/>
<input type="checkbox"/>			<input type="checkbox"/>

[Save](#) [Cancel](#)

- Select the alerts for which you want to be notified:
 - Critical alerts
 - Warning alerts
 - Acknowledged alerts
 - Cleared alerts
- Under **Email Settings**, enter the Email address from which alert notifications is sent.
- To add an Email address to send alert notifications to, click the **New** button.
- Enter the **Name** and Email **Address** of the recipient to be notified and click **OK**. Repeat to add more recipients.

i **NOTE:** The **OK** option is located next to the email address field. You may need to expand the window to see it.
- Click **Save**.

Adding an Alert Trigger

To add an alert trigger:

- 1 Select to the **Configure Alerts** option.

The screenshot shows the 'Configure Alerts' interface. At the top, there are two tabs: 'View Alerts' and 'Configure Alerts'. Below the tabs, the text 'Configure system alerts' is displayed. There is a 'Filters (reset)' section with dropdown menus for 'Name:', 'Measurement:', 'Priority:', and 'Enabled:', along with a 'Refresh' button. Below the filters are buttons for '+ New', 'Delete', 'Disable', and 'Enable'. The main area contains a table of alert triggers with columns for 'Pri', 'Name', 'Measurement', and 'Condition'. The table lists 18 alerts, including 'Unable to communicate with License Ma...', 'Temporary communication loss', 'Permanent communication loss', 'License has expired', 'License expires soon', 'High user license usage', 'High swap usage', 'High memory usage', 'High disk usage', 'High CPU usage', 'High appliance license usage', 'Critically high memory usage', 'Critically high CPU usage', 'Critically high appliance license usage', 'Certificate expired', and 'Certificate about to expire'. At the bottom, it says '18 of 18 alerts shown' and 'Modify alert notification settings.'

- 2 Click **New**.

The screenshot shows the 'Alerts > Add Alert Trigger' form. It has a 'Name:' field. Below it is a checked checkbox 'Alert trigger is enabled'. The 'Priority:' section has radio buttons for 'Critical' (selected) and 'Warning'. The 'When this measurement:' dropdown is set to 'CMS license usage'. The 'Meets this condition:' dropdown is set to 'Value is over the threshold'. Below that is a 'Threshold: 0 percent' field. The 'Activate alert:' section has radio buttons for 'As soon as condition is met' (selected) and 'If condition is met for 0 minutes'. At the bottom are 'Save' and 'Cancel' buttons.

- 3 In the **Name** field, enter a name for the alert.
- 4 Select **Add trigger is enabled**.
- 5 Select the **Priority**.
- 6 Select the other conditions and options that you want.
- 7 Click **Save**.

Configure

The **Configure** option allows you to set various options for the Central Management Console. Select **Management Server > Configure** to see the options.

Central Management Settings

Configure CMS location, central user licensing, global traffic optimizer, and policy synchronization.

Licensing

License holder:	"SonicWall"
Maximum users:	15
Maximum appliances:	3
Appliance serial number:	004010277D29
Authentication code:	7P7MWAT2

General options

Client security:	720 minutes credential lifetime
Date and time	
Current time:	Wed Apr 26 2017 04:49:46 IST
Time zone:	GMT+05:30 India Standard Time (Asia/Kolkata)

Administration

Define administrators and authentication servers for managing the central management server.

Network Settings

Modify server IP address, routing, and name resolution.

Network Services

Modify settings for server services NTP, SSH, SNMP, and SMTP.

SSL Settings

Modify the management console certificate and SSL settings.

Topics:

- [Central Management Settings](#)
- [Licensing Pages](#)
- [General Options](#)
- [Administration](#)
- [Network Settings](#)
- [Network Services](#)
- [SSL Settings](#)

Central Management Settings

Use the **Central Management Settings** option to configure CMS location, central user licensing, Global Traffic Optimizer, and policy synchronization.

To configure the Central Management Settings:

- 1 Select **Management Server > Configure > Central Management Settings**.

Configure Server > CMS Settings

This central management server manages the licensing and configuration for a collection of appliances.

Locale

Country: Geographic server can't be accessed now. You can only change central management server's location by dragging it on [dashboard](#).

Location:
Example: Seattle, WA

Central User Licensing

Enable managing appliance user licensing with one central license. The current license will support 15 concurrent user sessions across all appliances.

Global Traffic Optimizer Service

i Central User Licensing must be enabled to activate the Global Traffic Optimizer Service

Users connect to this global high availability service from anywhere in the world and are routed to a nearby appliance.

Policy Synchronization

Enable pushing policy configuration from this server to managed appliances.

By default, configuration data on the destination nodes will be overwritten. To preserve certain settings on the destination, specify exclusions here.

Authentication servers

Nodes in the collection share centralized authentication servers
Overwrites the authentication server settings on the destination nodes.

Each node has its own authentication server
Retains authentication settings on the destination nodes, except in the case of a PKI server: trusted CA certificates cannot be retained.

- 2 Under **Locale**, enter your **Country** and **Location**.
- 3 Under **Central User Licensing**, select **Enable managing appliance user licensing with one central license**.
- 4 Under **Global Traffic Optimizer Service**, select **Users connect to this global high availability service from anywhere in the world and are routed to a nearby appliance**.

i **NOTE:** Central User Licensing must be enabled to activate the Global Traffic Optimizer service.

- 5 Under **Policy Synchronization**, select **Enable pushing policy configuration from this server to managed appliances**.
- 6 Under **Authentication servers**, select one of the following:
 - **Nodes in the collection share centralized authentication servers**
 - **Each node has its own authentication server**
- 7 Click **Save**.

Licensing Pages

Use the Licensing option to review and manage the software licenses for CMS.

To manage the licenses:

- 1 Go to the **Management Server > Configure > Licensing** page. The default view is the Manage Licenses view.

[Configure Server](#) > Manage Licenses

Review and manage the software licenses for the CMS.

Product: SonicWall Secure Mobile Access CMS (Unlocked)
License holder: SonicWall Engineering
Maximum concurrent users: Full: 500 Email: 50
Maximum appliances: 500
Appliance serial number: 004010277D29
Authentication code: 7P7MWAT2
Licensing mode: Online, synchronized 7 hours, 25 minutes, 43 seconds ago

Component	License Type
Managed appliances: 500	Evaluation - Expires Wed Nov 22 2017
Central email licenses: 50	Evaluation - Expires Wed Nov 22 2017
Central user licenses: 500	Evaluation - Expires Wed Nov 22 2017

Online licensing

This appliance is registered with MySonicWall. Choose **Manage** to activate, upgrade or renew services. Choose **Synchronize** to synchronize this appliance with the licensed services on MySonicWall.

▼ Advanced

- 2 Review your license information.
- 3 Under **Online licensing**:
 - Choose **Manage** to activate, upgrade or renew services.
 - Expand the **Advanced** section to manage spike licensing.

[Configure Server](#) > [Manage Licenses](#)

Review and manage the software licenses for the CMS.

MySonicWall License Manager

mySonicWall.com Login

mySonicWall.com is a one-stop resource for registering all your SonicWall Internet Security Appliances and managing all your SonicWall security service upgrades and changes. mySonicWall provides you with an easy to use interface to manage services and upgrades for multiple SonicWall appliances. For more information on mySonicWall, please visit the [FAQ](#). If you do not have a mySonicWall account, please click [here](#) to create one.

Please enter your existing mySonicWall.com username (or email address) and password below:

MySonicWall username/email:

Password:

[Forgot your Username or Password?](#)

i **NOTE:** If you choose **Synchronize**, this appliance synchronizes with the licensed services on MySonicWall.

- 4 Login to MySonicWall with your MySonicWall credentials.
- 5 Follow the prompts to manage or create a license.

General Options

Use the **General Options** to control security settings for users and set the date and time.

To configure the General Options:

- 1 Select **Management Server > Configure > General Options**.

Client security settings

Control security settings for users. You can also enhance security using [End Point Control \(EPC\)](#).

Credential lifetime: * minutes

If the length of a session exceeds the time specified, the user is prompted to reauthenticate.

Date/time

To set the management server time click **Change** next to the current time, or [click here](#) to configure the management server to synchronize with one or more NTP servers. To set the time zone referenced on the management server and in the system logs, click **Change** next to the time zone.

⚠ Apply or discard pending changes before modifying the date, time, or time zone.

Current system time: Wed Apr 26 2017 05:49:32 IST

Time zone: GMT+05:30 India Standard Time (Asia/Kolkata)

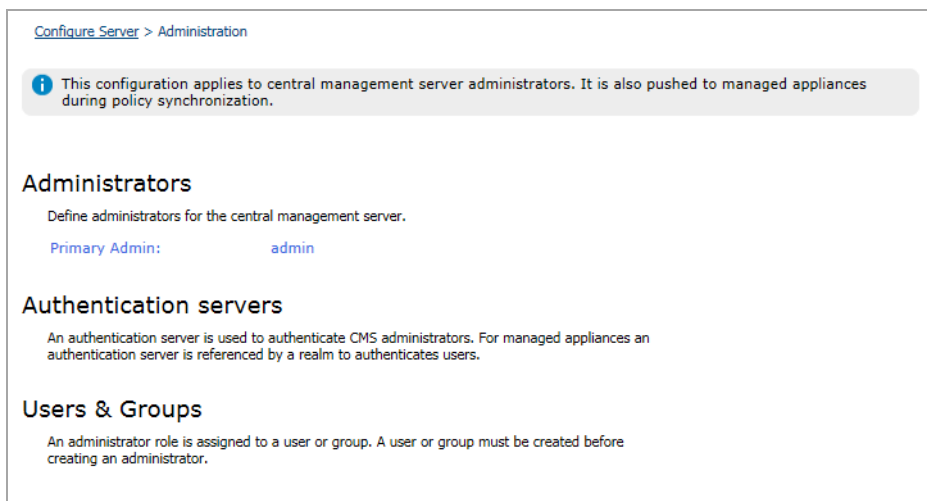
- 2 Set the credential lifetime in minutes. This refers to the length of a user session. If it exceeds the time specified the user is asked to re-authenticate.
- 3 Set the date and time, if needed.
- 4 Click **Save**.

Administration

Use the **Administration** option to define who the administrators are and what authentication server are used for managing the Central Management Server.

To configure the Administration settings:

- 1 Select **Management Server > Configure > Administration**.



The screenshot shows the 'Administration' configuration page. At the top, there is a breadcrumb trail 'Configure Server > Administration'. Below it is a grey information box with a blue 'i' icon and the text: 'This configuration applies to central management server administrators. It is also pushed to managed appliances during policy synchronization.' The page is divided into three main sections: 'Administrators', 'Authentication servers', and 'Users & Groups'. Under 'Administrators', there is a sub-section 'Primary Admin:' with the value 'admin'. Under 'Authentication servers', there is a descriptive paragraph. Under 'Users & Groups', there is another descriptive paragraph.

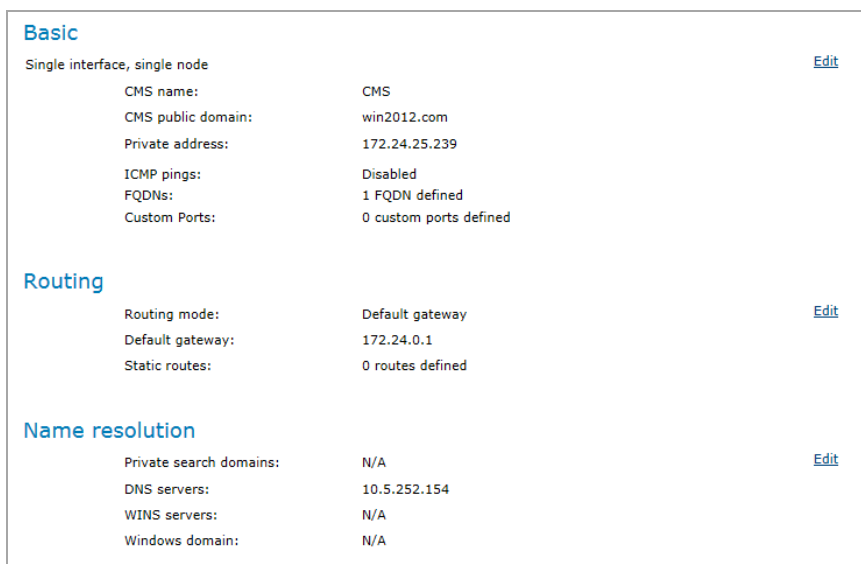
- 2 Select any of the three items: **Administrators**, **Authentication servers**, and **Users & Groups**.
- 3 Make the changes you want.
- 4 When finished, click **Save**.

Network Settings

Use Network Settings to modify server IP address, routing and name resolution.

To configure the network settings:

- 1 Select **Management Server > Configure > Network Settings**.



The screenshot shows the 'Network Settings' configuration page. It is divided into three sections: 'Basic', 'Routing', and 'Name resolution'. Each section has a list of configuration items and an 'Edit' link. The 'Basic' section includes: CMS name (CMS), CMS public domain (win2012.com), Private address (172.24.25.239), ICMP pings (Disabled), FQDNs (1 FQDN defined), and Custom Ports (0 custom ports defined). The 'Routing' section includes: Routing mode (Default gateway), Default gateway (172.24.0.1), and Static routes (0 routes defined). The 'Name resolution' section includes: Private search domains (N/A), DNS servers (10.5.252.154), WINS servers (N/A), and Windows domain (N/A).

- 2 Click **Edit** to configure any of the **Basic**, **Routing**, or **Name resolution** settings.
- 3 When finished, click **Save**.

Network Services

Use the **Network Services** option to modify the settings for server services like NTP, SSH, SNMP and SMTP.

To configure Network Services:

- 1 Select **Management Server > Configure > Network Services**.
The **Network Services** page appears.

<p>NTP Synchronize the system clock with an external Network Time Protocol (NTP) server.</p> <p>Configure</p>	Status: Disabled
<p>SSH Use Secure Shell (SSH) to safely access the CMS command line from another host.</p> <p>Configure</p>	Status: Disabled
<p>SNMP Monitor the CMS from a Simple Network Management Protocol (SNMP) management tool.</p> <p>Configure</p>	Status: Disabled
<p>SMTP Allow the CMS to send email using a Simple Mail Transfer Protocol (SMTP) mail server.</p> <p>Configure</p>	Status: Disabled

- 2 Click **Configure** for the item you want to configure: **NTP**, **SSH**, **SNMP**, or **SMTP**.
- 3 Make the desired changes.
- 4 When finished, click **Save**.

SSL Settings

Use the **SSL Settings** option to modify the management console certificate and SSL settings.

To configure SSL settings:

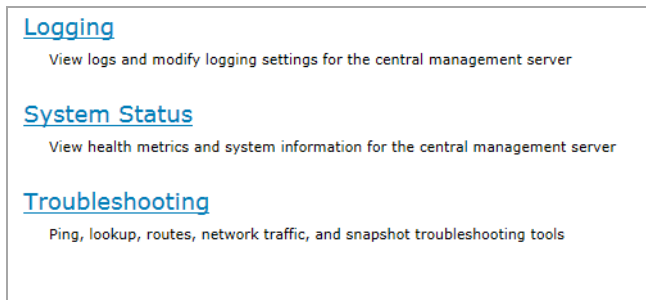
- 1 Select **Management Server > Configure > SSL Settings**.

SSL certificates		
Management console certificate (CMC)		Edit
192.168.0.10 (self-signed)		
Valid through: 10 Apr 2022		
Virtual hosting certificates for WorkPlace sites and URL resources		
172.24.25.239, 192.168.0.10		
SSL encryption		Edit
Protocols:	TLS v1.2 or v1.1	
Ciphers:	ECDHE/ECDSA AES: 128 bit GCM with SHA-256 , 256 bit GCM with SHA-384 RSA AES CBC: 256 or 128 bit with SHA-256 , 256 or 128 bit with SHA-1 RSA DES: none RSA RC4: none Compression: disabled	

- 2 Click **Edit** for the item you want to edit: **SSL certificates** or **SSL encryption**.
- 3 Make the desired changes.
- 4 When finished, click **Save** and **Apply Pending Changes**.

Monitor

The Monitor option allows you to set various options for monitoring. Select **Managed Server > Monitor** to see the options.



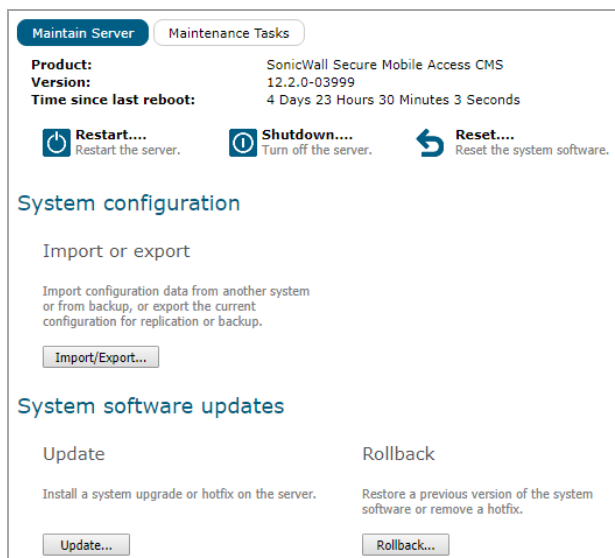
- To view or edit logging settings for the CMS, click **Logging**. Make the changes and click **Save**.
- To view health metrics and system information for the CMS, click **System Status**. Make the changes and click **Save**.
- To ping, lookup, view network traffic or use snapshot troubleshooting tools, click **Troubleshooting**. Make the changes and click **Save**.

Maintain

The Maintain option allows you to set various options for monitoring. Select **Managed Server > Maintain** to see the options. The default view is Maintain Server.

To maintain the CMS:

- 1 Select **Management Server > Maintain**.



- 2 Do any of the following:
 - To restart the CMS, click **Restart**.
 - To shutdown the CMS, click **Shutdown**.
 - To reset the CMS, click **Reset**.
- 3 To import or export a system configuration file, click **Import/Export**. Provide additional information on the next window.
- 4 To update the system software to a newer version, click the **Update** button.
- 5 To rollback the system software to a previous version, click the **Rollback** button.
- 6 Click the **Maintenance Tasks** button. In the **Task log** panel, you can view the tasks that are scheduled.

Maintain Server **Maintenance Tasks**

View, reschedule or delete maintenance tasks. All times are in the [server time zone GMT](#).

Task log

Filters (reset)

Start Date: 11/13/2017 End Date: 11/14/2017 Refresh

Time	Task	Run at	Status	Message
11/14/2017 07:27:41	Synchronize policy with app8, app9, app207	11/14/2017 07:21 GMT	✓ Succeeded	
11/14/2017 07:16:18	Synchronize policy with app8, app9, app207	11/14/2017 07:07 GMT	✓ Succeeded	
11/14/2017 07:15:09	Restart app207	11/14/2017 07:10 GMT	✓ Succeeded	
11/14/2017 05:40:36	Synchronize policy with app8, app9, app207	11/14/2017 05:33 GMT	✓ Succeeded	

Scheduled Tasks

Run at	Scheduled by	Task

*This task will restart the server after running.

Delete Run now Reschedule

- 7 Filter the **Task log** table by setting a **Start Date** and **End Date** and clicking **Refresh**.

NOTE: If the **Start Date** and **End Date** fields aren't visible, click on the plus sign (+) by **Filters**.
- 8 In the **Scheduled Tasks** panel, you can select a task and **Delete**, **Run now**, or **Reschedule**.

Managed Appliances

This section provides information about the Managed Appliances commands:

- [Add/Remove](#)
- [Configure](#)
- [Monitor Managed Appliances](#)
- [Maintain Managed Appliances](#)

- 5 Click **OK**. This registers the appliance with the CMS and adds it to the CMS list. The dialog changes with more options.

i **NOTE:** The client certificate warning, **DNS name** field, and **Public IP** field are only visible when CMS is enabled for GTO.

Finalize Appliance Settings

i TP Test has been registered for central management. Please complete the following settings

Display Name*	<input type="text" value="TP Test"/>	The display name for this appliance
Host Name*	<input type="text" value="tptest"/>	The host name for this appliance
Management address*	<input type="text" value="172.24.24.105"/>	An appliance IP address or host name that is reachable from the CMS
Public IP*	<input type="text"/>	The appliance IP address that is routable from the Internet, typically this is the appliance external IP address
Public IPv6	<input type="text"/>	The appliance IPv6 address that is routable from the Internet, typically this is the appliance external IPv6 address
Pool IP	<input type="text"/>	The appliance IP address that is reachable by other managed appliances. This is only required if the appliance Public IP is not reachable by other managed appliances.
Country or region	<input type="text" value="N/A"/>	The country or region where this appliance is located
Location	<input type="text"/>	The city, state or province where this appliance is located

- 6 In the **Display Name** field, enter the name you want displayed for this appliance.
- 7 In the **Host name** field, enter a unique DNS-legal name for this appliance, for example **seattle01**.
- 8 In the **Management address** field, enter the IP address for the appliance.
- 9 In the **Public IP** field, enter the internet-visible, public IP address for this appliance.
i **NOTE:** The **Public IP** should be the address by which remote users will access this appliance. The default IP address is the external IP address of the appliance. The public IP address may be different from its external IP address if the public WAN addresses are using NAT at the DMZ.
- 10 If the appliance has an IPv6 address, enter that IP address in the **Public IPv6** field.
- 11 In the **Pool IP**, field, enter the IP address that is reachable by other appliances by the same CMS. This IP address is only required if the **Public IP** of this appliance cannot be reached by the other managed appliances.
- 12 From the **Country** menu, select the country where the appliance is located.
- 13 In the **Location** field, enter the city, state, or province where the appliance is located.
- 14 Click **Save**.

To stop managing an appliance:

- 1 Select the appliance you want to delete.
- 2 Click the **Delete** button.
- 3 Click **OK**.
- 4 Apply pending changes on the CMS.
- 5 Log into AMC on the appliance you wish to stop managing.
- 6 Navigate to **Maintenance > Central Management**.
- 7 Unselect **Enable Central Management**.
- 8 Click **Save**.
- 9 Apply pending changes on the appliance.

Configure

Topics:

- [Overview](#)
- [Configuring the Managed Appliances](#)

Overview

An administrator can import policies from an existing appliance and define configurations. Policies can be applied to all appliances or just a subset. An existing managed appliance configuration may be partially imported into the CMS to startup the CMS global configuration.

Services do not need to be restarted after this configuration.

The first time the CMS synchronizes a policy with an appliance, it overwrites the policy on the appliance. This is equivalent to the appliance partially importing the CMS configuration. After the initial policy synchronization, further policy synchronizations replicate the CMS configuration onto the appliance.

Also, after the initial policy synchronization, the administrator can manually modify the address pools of the appliance and the authentication servers. The administrator changes are not overwritten during subsequent CMS policy synchronizations.

The policy settings that are replicated during synchronization are:

- Security policy, including access control rules and EPC configuration
- Network resources
- Users and groups
- Realms
- Authentication servers (the authentication server names should match those on the sending node, even if the IP addresses do not).

i **NOTE:** When you define a collection of appliances, you have the option of either overwriting authentication server settings (which would be typical in a deployment where there is a shared, central server), or excluding server settings from being overwritten during replication.

- WorkPlace shortcuts
- CA certificates
- Certificate revocation lists downloaded from a remote CDP (CRL distribution point)
- Agent configuration, including graphical terminal agents (Citrix and Windows Terminal Server) and Web browser profiles
- Local user accounts
- Single sign-on profiles

The policy settings that are not replicated during synchronization are:

- Network settings, including IP addresses, routing information, name resolution settings (DNS and WINS), and the settings for the network services (NTP, SSH and SNMP)
- License files
- SSL certificates
- WorkPlace configuration data (customized templates)

- Administrator user accounts and role definitions

NOTE: You can optionally exclude authentication server settings from being overwritten during replication, which is typical for a deployment where each appliance has its own authentication server.

Configuring the Managed Appliances

Select **Managed Appliances > Configure** to see the configuration options.

Management Server

- Dashboard
- Alerts
- Configure
- Monitor
- Maintain

Managed Appliances

- Add/Remove
- Configure**
- Monitor
- Maintain

[Define Policy](#)
Define the central policy for managed appliances.

[Synchronize Policy](#)
Synchronize appliance policies with the central policy.

- The **Define Policy** option provides access to the **Security Administration**, **User Access**, and **System Configuration** policy pages.
- The **Synchronize Policy** option allows you to view and schedule policy synchronization events.

Define Policies

To define policies:

- 1 Go to **Managed Appliances > Configure > Define Policy**.

Security Administration

Access Control
Review and manage your access control rules.

Resources
Manage web, network, and file system resources. Manage resource groups and variables.

Users & Groups
Manage users and groups

User Access

Realms
A realm references an authentication server and determines which access agents are provisioned to your users and what end point control restrictions are imposed.

Network Tunnel Service
Manages TCP/IP connections from the network tunnel clients (Connect Tunnel and OnDemand Tunnel).

Web Proxy Service
Manages HTTP and TCP/IP connections from web browsers, OnDemand, and Connect Tunnel.

WorkPlace
Manage workplace shortcuts, shortcut groups, sites, appearance, and settings.

Agent Configuration
Manage access agents and other agents.

End Point Control
Manage end point control settings.

- 2 Under **Security Administration**, define:
 - **Access Control**
 - **Resources** (web, file, group and variables)
 - **Users & Groups**
- 3 Under **User Access**, define:
 - Realms
 - Network Tunnel Service
 - Web Proxy Service
 - WorkPlace
 - SAML Identity Provider
 - Agent Configuration
 - End Point Control
 - Capture Advanced Threat Protection
- 4 Under **System Configuration**, define:
 - Administrators
 - Authentication Servers
 - CA certificates
 - OSCP (Online Certificate Status Protocol)
- 5 When you are finished defining a policy, click **Save** or **OK**.

Synchronize Policy

To synchronize a policy:

- 1 Go to **Managed Appliances > Configure > Synchronize Policy**.

Configure Appliances > Synchronize policy

Push policy data to the selected appliance(s).

<input type="checkbox"/>	Name	Status
<input checked="" type="checkbox"/>	app8	Last synchronization: ✔ Tue Nov 14 2017 07:10:36 GMT
<input checked="" type="checkbox"/>	app9	Last synchronization: ✔ Tue Nov 14 2017 07:12:47 GMT
<input checked="" type="checkbox"/>	app207	Last synchronization: ✔ Tue Nov 14 2017 07:16:01 GMT
<input type="checkbox"/>		
<input type="checkbox"/>		
<input type="checkbox"/>		
<input type="checkbox"/>		
<input type="checkbox"/>		
<input type="checkbox"/>		
<input type="checkbox"/>		

Advanced

Force selected appliances to import the CMS policy

Synchronize configuration:

Now

At : GMT on

- 2 Click **Advanced** to open the **Advanced** panel.
- 3 Select **Force selected appliance to import the CMS policy** if you want to reset the appliance policy to the baseline CMS policy. This triggers the next synchronization (or scheduled synchronization) to overwrite the policies of the selected appliances with the CMS policy, including all custom-defined address pools and authentication servers.
- 4 Select **Now** if you want to synchronize immediately, or select **At** and choose the time and date from the drop-down menus to schedule the synchronization.
- 5 Click **Synchronize**.

Synchronizing a policy does not usually terminate existing user sessions. If a synchronization does terminate any user sessions, a warning message is displayed for that appliance on the **Sync Policy** page.

Monitor Managed Appliances

The Monitor option for Managed appliances provides detailed information on **User Sessions**, **Reports** and **Health**. Select **Managed Appliances > Monitor** to see the options.

[User Sessions](#)
View current and past user sessions and terminate current sessions.

[Reports](#)
View reports on appliance user activity.

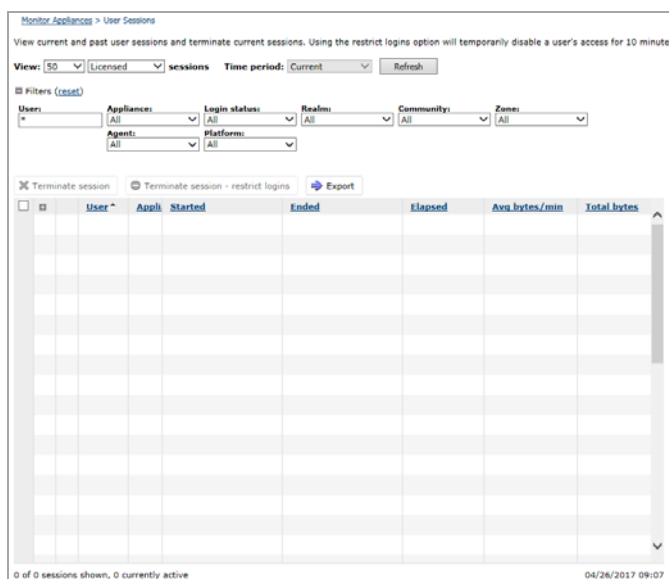
[Health](#)
Monitor appliances CPU, memory and disk usage.

User Sessions

On the **User Sessions** page, you can view current and past user sessions and terminate current sessions. If you select a session and then select the **Terminate session-restrict logins** option, it temporarily disables the user's access for up to 10 minutes.

To monitor user sessions:

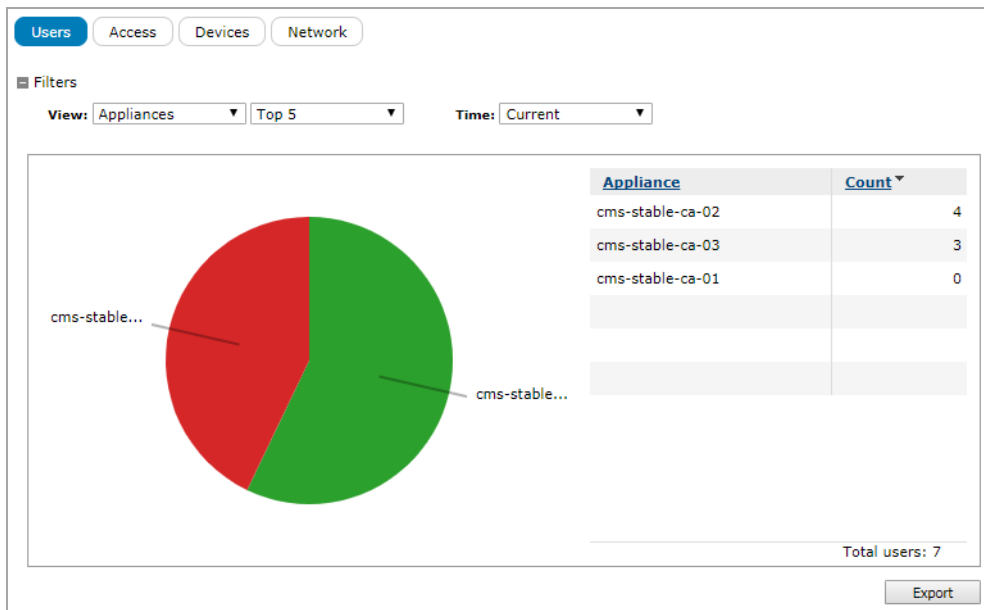
- 1 Navigate to the **Managed Appliances > Monitor > User Sessions** page.



- 2 Define the how the data appears in the table:
 - a In the **View** field, select the number of users to show per page.
 - b In the **sessions** field select the type of session to view: **Licensed**, **All open**, or **All**.
 - c From the drop-down menus under **Filters**, select the items you want to view or manage.
- 3 If you want to filter the data further, select options from the drop down lists under **Appliance**, **Login status**, **Realm**, **Community**, **Zone**, **Agent**, and **Platform**.

Reports

On the **Reports** page, you can view reports about Users, Access, Devices, and the Network.



- **User** — View reports that show the number of user sessions on appliances or realms, for example, the number of user sessions currently on selected appliances, or the count for each of the top five realms of licensed users for the last day.
- **Access** — View reports that show the policy rules matched and destinations accessed by users on managed appliances, for example, the top five permit rules and how many times they have been enforced over the last hour, or the count for each of the top five most accessed destinations over the last day.
- **Devices** — View reports that show the platforms and zones in use by users, for example, a user's platform distribution for the last week, or a user's zone placement count for the last month.
- **Network** — View reports on the bandwidth consumption of appliances and the data transferred to users. For example, the top five users who transferred the most data and how much they transferred over the last hour or over the last three months, or view the top five appliances that consume the most bandwidth and how much they are currently consuming.

To view the reports:

- 1 Select the category: **Users**, **Access**, **Devices**, or the **Network**.
 - 2 From the drop down lists, select the options for **View**.
- NOTE:** The option for the View fields vary according to the type of report selected.

- 3 Select an option from the **Time** drop down list.

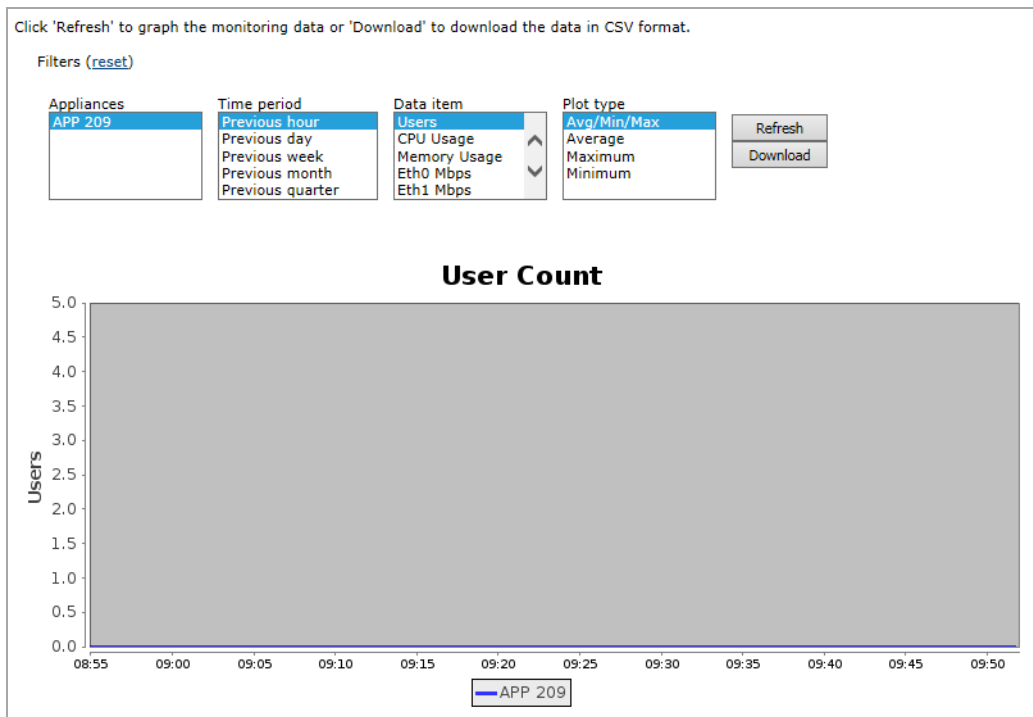
The display adjusts according to the selections made. Select **Refresh** to refresh the data in the report. Select **Export** to export the data to a CSV file.

Health

On the **Health** page, you can set up and monitor various health metrics on a graph that charts users against time. The data is downloadable to a CSV file.

To monitor health metrics:

- 1 Go to the **Managed Appliances > Monitor > Health**.



- 2 From the **Appliances** menu, select the appliance you want to graph.
- 3 From the **Time period** menu, select the time period you want the graph to display.
- 4 From the **Data item** menu, select the data you want the graph to display.
- 5 From the **Plot type** menu, select the type of graph you want to plot.
- 6 Select **Refresh** to refresh the data or select **Download** to download the data to a CSV file.

Maintain Managed Appliances

To maintain a managed appliance:

- 1 Go to the **Managed Appliances > Maintain** page. This page has two options: **Maintain Appliances** and **Maintenance Tasks**.

<input type="checkbox"/>	Name ^	Host	Platform	Version	Hotfixes	EPC version	Pending Changes
<input type="checkbox"/>	sma86	172.24.27.86	SonicWall Secure Mobile Access 8200v	12.2.0-03999	None	18.05.31.06	No
<input type="checkbox"/>	sma87	172.24.27.87	SonicWall Secure Mobile Access 8200v	12.2.0-03999	None	18.05.31.06	No

- 2 Under the **Maintain Appliances** tab, check the box for an appliance and use the buttons across the top to perform any of the following tasks: **Restart**, **EPC Update**, **Add SSL Certificate**, **Upgrade/Hotfix**.
- 3 Select the **Maintenance Tasks** tab.

View, reschedule or delete maintenance tasks. All times are in the [server time zone IDT](#).

Task log

Filters (reset)

Start Date: 04/25/2017 End Date: 04/26/2017 Refresh

Time	Task	Run at	Status	Message
------	------	--------	--------	---------

Scheduled Tasks

<input type="checkbox"/>	Run at	Scheduled by	Task
--------------------------	--------	--------------	------

*This task will restart the server after running.

Delete Run now Reschedule

- 4 In the **Task log** panel, you can view the tasks that are scheduled.
- 5 In the **Scheduled Tasks** panel, you can select a task and **Delete**, **Run now**, or **Reschedule** that task.

Central User Licensing

Topics

- [Overview](#)
- [How Central User Licenses Work](#)
- [Enabling Central User Licensing](#)
- [Getting Started with Central User Licensing](#)

Overview

Central User Licensing is an optional feature that allows a CMS to share a pool of user licenses among managed appliances. Customers with appliances that are globally distributed can use their licenses more efficiently with central user licenses where user demands peak in one geographic area while it falls in a different geographic area due to off-work/night hours. Appliances that are in a datacenter can share licenses instead of having individual licenses for each appliance. When new or replacement appliances (physical or virtual) are added under CMS management, they get to share the pool of central user licenses.

Central user licensing must be enabled to use Global High Availability.

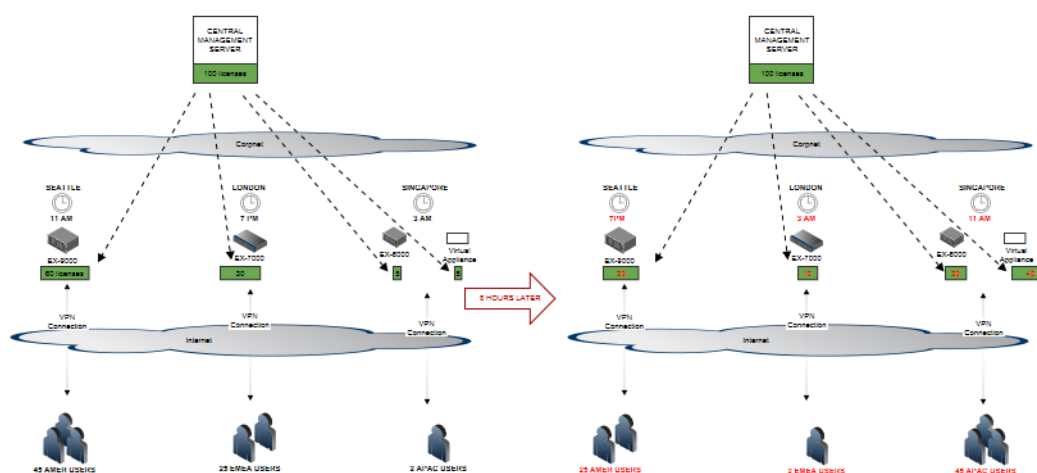
- i** **NOTE:** If CMS is used to manage appliances that have their own license, the administrator is responsible for ensuring that licenses across all managed appliances have the same features. CMS cannot manage configurations on appliances with a heterogeneous set of licensed features.

How Central User Licenses Work

User licenses do not have to be applied to individual VPN appliances. The pooled licensing model allows central user licenses to be shared among the managed appliances. Central user licensing makes use of a distributed data store to keep track of license usage. The distributed data store has storage nodes on multiple appliances so that central user licensing is resilient to the failure of (or communication loss with) the CMS or any one appliance.

- i** **NOTE:** Managed appliances must be able to communicate with each other via their external interface IP addresses or internet-routable IP addresses in order for them to be able to share information in the distributed data store.

The following drawing illustrates centrally managed licenses for globally located VPN appliances.



NOTE: Beginning with the SMA 12.2 release, CMS uses a distributed data store is used to track user license consumption for each appliance and to regulate the total number of pooled user licenses being used.

In the event of a **CMS failure (or loss of communication)**:

- Managed appliances will continue to access the distributed data store and share central user licenses.

In the event **an appliance is orphaned (unable to communicate with the CMS or other appliances)**:

- An orphaned appliance will have access to the all the central user licenses (and spike licenses) for 7 days or until communications are re-established.

In the event of a **communications loss between the CMS and MySonicWall**:

- The central user licenses continue to be valid for 30 days.

Topics:

- [Central Spike User Licenses](#)
- [Central Email Licenses](#)
- [Perpetual Pooled Licenses](#)

Central Spike User Licenses

Spike licensing allows temporary increases in the number of available licenses to meet sudden increases in demand for licenses due to inclement weather or disaster. Spike licenses can be applied to a CMS using either a subscription user license or perpetual user license. Spike user licenses are “full” user licenses and allow any type of connection (e.g., tunnel, web, ActiveSync). A spike license is automatically activated for a day if the user session count exceeds the CMS user license count.

When a spike is active, it allows the appliances to service up to sum of:

- the CMS base license max user count
- the spike license max user count

The CMS Dashboard and Licensing page will indicate that a spike is in effect, along with its Start and Stop times.

A central spike license allows any of these user licenses to spike:

- Subscription full-user license
- Subscription tiered-user license
- Perpetual full-user license

i **NOTE:** When a spike license is installed on a CMS with a subscription user license, and the subscription license expires, the spike will remain enabled.
When SMA is licensed with a standalone license, and that license is expires, the spike license also expires.

The CMS administrator can control whether or not to use automatic spike licensing.

Central Email Licenses

Different terms for central email licensing are available:

Full license	permits a connection of any of these connection types: - VPN tunnel, web, ActiveSync, or Outlook Anywhere
Tiered license	permits a connection of a specific connection type: VPN tunnel, web, ActiveSync, or Outlook Anywhere
Email license	a tiered license that permits an ActiveSync or Outlook Anywhere connection

Depending on which licensing terms are available for the appliance, licensing for email connections will be applied in this way:

- During operation, if an ActiveSync connection request is made and Email licenses are available, then an Email license will be used.
- If all Email licenses are consumed and an ActiveSync connection request is made (and full licenses are available), then a full license will be used.
- The license that is issued when a connection begins will remain with the connection until it ends.

Perpetual Pooled Licenses

Perpetual pooled licenses are CMS-based user licenses that do not expire in the way that subscription-based licenses do:

- Perpetual licenses are full user licenses and allow any type of connection (e.g., tunnel, web, ActiveSync).
- Perpetual CMS licenses are stackable. Licenses remains perpetual after being stacked.

i **NOTE:** Perpetual CMS user licenses cannot be stacked with a subscription CMS user license.

These licenses and components can be used with a perpetual pooled license:

- subscription email license
- subscription Capture CMS license
- time-limited subscription components

Enabling Central User Licensing

To enable Central User Licensing on the CMS:

- 1 Go to the **Management Server > Configure > Central Management Settings** page.

The screenshot shows the 'Configure Server > CMS Settings' page. It includes a header with the breadcrumb 'Configure Server > CMS Settings' and a sub-header 'This central management server manages the licensing and configuration for a collection of appliances.' The page is divided into several sections: 'Locale' with a 'Country' dropdown set to 'India' and a 'Location' text box containing 'Bangalore' (with an example 'Seattle, WA' below it); 'Central User Licensing' with an unchecked checkbox 'Enable managing appliance user licensing with one central license. The current license will support 15 concurrent user sessions across all appliances.'; 'Global Traffic Optimizer Service' with an information message 'Central User Licensing must be enabled to activate the Global Traffic Optimizer Service' and an unchecked checkbox 'Users connect to this global high availability service from anywhere in the world and are routed to a nearby appliance.'; 'Policy Synchronization' with a checked checkbox 'Enable pushing policy configuration from this server to managed appliances.' and a note 'By default, configuration data on the destination nodes will be overwritten. To preserve certain settings on the destination, specify exclusions here.'; and 'Authentication servers' with two radio button options: 'Nodes in the collection share centralized authentication servers' (selected) and 'Each node has its own authentication server'. At the bottom are 'Save' and 'Cancel' buttons.

- 2 Under **Central User Licensing**, select **Enable managing appliance user licensing with one central license**.
- 3 Click **Save**.

Getting Started with Central User Licensing

This section describes how to migrate from a standalone appliance to CMS with Global HA and Central User Licenses.

Topics

- [Setting Up CMS to Use Central User Licenses](#)
- [Setting up CMS for Centralized Appliance Configuration and Management](#)

Setting Up CMS to Use Central User Licenses

Once you have SMA appliances registered with CMS, you can transition to Central User Licensing.

NOTE: If you have an HA Pair, you need to engage with SonicWall Sales to exchange your HA pair licenses for CMS-based Central User Licenses.

To transition standalone SMA appliances to use the Central User License model:

- 1 Log into the Central Management Console.
- 2 Navigate to **Management Server > Configure > Licensing**.

[Configure Server](#) > Manage Licenses

Manage Licenses License Distribution

Review and manage the software licenses for the CMS.

Product: SonicWall Secure Mobile Access CMS
License holder: Default license
Maximum concurrent users: 15
Maximum appliances: 3
Appliance serial number: N/A
Authentication code: N/A
Licensing mode: Default

Component	License Type
Central user licenses: 15	Default - Expires Sat Apr 29 2017
Managed appliances: 3	Default - Expires Sat Apr 29 2017

Online licensing

This appliance is not registered with MySonicWall. Choose **Register** to register this appliance with your MySonicWall account.

3 Select **Register**.

The screenshot shows the 'Manage Licenses' section of the configuration interface. It features a breadcrumb trail 'Configure Server > Manage Licenses' and two tabs: 'Manage Licenses' (active) and 'License Distribution'. Below the tabs, a heading reads 'MySonicWall License Manager'. The main content area is titled 'mySonicWall.com Login' and contains the following text: 'mySonicWall.com is a one-stop resource for registering all your SonicWall Internet Security Appliances and managing all your SonicWall security service upgrades and changes. mySonicWall provides you with an easy to use interface to manage services and upgrades for multiple SonicWall appliances. For more information on mySonicWall, please visit the [FAQ](#). If you do not have a mySonicWall account, please click [here](#) to create one.' Below this text, a prompt asks the user to 'Please enter your existing mySonicWall.com username (or email address) and password below:'. There are two input fields: 'MySonicWall username/email:' and 'Password:'. A 'Submit' button is positioned to the right of the password field. A link 'Forgot your Username or Password?' is located below the input fields. At the bottom left of the main content area, there is a 'Return' button.

4 Enter the MySonicWall credentials of the MySonicWall account who owns the licenses for the Central Management Server.

The screenshot shows the 'MySonicWall License Manager' registration page. It has the same breadcrumb trail and tabs as the previous screenshot. The heading is 'MySonicWall License Manager'. The main content area is titled 'Enter your 12 character Software Serial Number and Authentication Code'. It contains three input fields: 'Serial Number:', 'Authentication Code:', and 'Friendly Name:'. The 'Authentication Code:' field has a sub-field and a link 'What is this?'. A 'Submit' button is located below the input fields. At the bottom left, there is a 'Return' button.

5 Enter the serial number and authentication code that match the license in MySonicWall.

6 Enter a friendly name to identify this CMS in your MySonicWall account.

- 7 Select **Submit**. You see the MySonicWall view of your license. You can get back to this at any time after are registered by choosing **Manage Licenses > Manage** and re-entering your MySonicWall credentials.

[Configure Server](#) > Manage Licenses

Manage Licenses License Distribution

Review and manage the software licenses for the CMS.

MySonicWall License Manager

Security Service	Status	Free Trial	Manage Service	Count	Expiration
Analyzer	Not Licensed	Try	Activate		
Central User Licenses	Licensed		Upgrade Renew	15	26 May 2017
Managed Appliances	Licensed		Upgrade	3 Max: 100	

Support Service	Status	Manage Service	Expiration
Dynamic Support 24x7	Licensed		26 May 2017

[Return](#)

- 8 Select **Return**. This is the normal view of a registered CMS license. It shows the licensing mode as online and how long since it was last synchronized. It should never be more than 24 hours since was last synchronized.

[Configure Server](#) > Manage Licenses

Manage Licenses License Distribution

Review and manage the software licenses for the CMS.

Product: SonicWall Secure Mobile Access CMS

License holder: "SonicWALL"

Maximum concurrent users: 15

Maximum appliances: 3

Appliance serial number: [REDACTED]

Authentication code: [REDACTED]

Licensing mode: Online, synchronized 24 seconds ago

Component	License Type
Central user licenses: 15	Online - Expires Fri May 26 2017
Managed appliances: 3	Online
Dynamic Support 24x7	Online - Expires Fri May 26 2017

Online licensing

This appliance is registered with MySonicWall. Choose **Manage** to activate, upgrade or renew services. Choose **Synchronize** to synchronize this appliance with the licensed services on MySonicWall.

[Manage](#) [Synchronize](#)

[Cancel](#)

NOTE: You can also select Synchronize to force an immediate synchronization with the backend.

Setting up CMS for Centralized Appliance Configuration and Management

Once you have a cluster of SMA appliances that share a central license pool and you can monitor and maintain them from a single console.

If your appliances have very different configurations, you should normalize the differences so that you can take full advantage of CMS, GTO, and Global HA.

To use CMS to centralize appliance configuration management:

- 1 Normalize the appliance configurations.
- 2 Export the configuration from your SMA appliance.
- 3 Import the configuration to CMS.
- 4 Synchronize the CMS policy with the managed appliances.
- 5 Configure the CMS as described in [Configure](#).

Resetting a CMS License

The license state on a Central Management Server can be reset or undone.

- 1 Navigate to the **Licensing** page.
- 2 Add `?troubleshoot=1`.
- 3 Select **Reset**.

This reboots the CMS with no license and it can be registered again with MySonicWall.

Global High Availability

Global High Availability (Global HA) facilitates global high availability with load distribution and disaster recovery capabilities across the SMA appliances in the GTO service. The high availability can be deployed in a single datacenter or across dispersed data centers.

Topics:

- [High Availability of the VPN Service](#)
- [High Availability of the CMS](#)
- [Disaster Recovery for the VPN Service](#)
- [Global High Availability Versus HA Pair](#)

NOTE: Global High Availability replaces the HA Pair model. Secure Mobile Access version 11.4 is the last version of SMA that supports HA Pairs. See the [Comparison of HA Pair and GTO with Global HA](#) table for a comparison of the two models.

High Availability of the VPN Service

Global High Availability (Global HA) is configured from the CMS console by first enabling the Global Traffic Optimizer (GTO) service. Users access the VPN using the service name (e.g. access.example.com) in the VPN tunnel clients (Connect Tunnel or Mobile Connect) or the web client. The GTO service directs user connections to an appliance that is available.

Global HA enables SMA appliances to scale performance by deploying multiple appliances under a service name. Global HA eliminates a single point of failure and provides a highly available global VPN service. Customers can deploy 2 SMA appliances in the same data center or deploy clusters of up to 100 physical and virtual appliances across multiple data centers around the globe.

A distributed data store shares user session state as well as licensing information across the mesh network of SMA appliances. This allows for session persistence across appliances. In the event of a failover, users are connected to another appliance in the service. The distributed data store also allows for central user licenses to be shared across appliances and data centers.

All of the SMA appliances that are configured for the GTO service participate in the highly available VPN service. If an appliance that is part of the service fails due to hardware, power, or network issues:

- New connection requests (by tunnel or web clients) will get directed to other available appliances.
- Existing connections (that were connected to the appliance that failed) are automatically reconnected to another available appliance. Users typically do not need to re-enter their credentials.

High Availability of the CMS

Customers can setup their CMS in a virtual infrastructure (ESXi or Hyper-V) that supports high availability. The following HA models can be used to enable a fault tolerant CMS.

CMS High Availability and Disaster Recovery Features

CMS Global HA and Disaster Recovery Scenarios	VMware ESXi	Microsoft Hyper-V	Comments
HA Clustering	Yes	Yes	Seamless transition of CMS in a HA cluster from host 1 to host 2, when host 1 is rebooted or shutdown
Cloning of CMS	Yes	Yes	CMS can be successfully cloned followed by resumption of communication with managed appliances and the License Manager service.
Export/Import	Yes	Yes	CMS could be successfully exported from host 1 and imported to host 2 followed by resumption of communication with managed appliances and the License Manager service.
Snapshot/Checkpoint	Yes	Yes	Successful preservation and transition

Disaster Recovery for the VPN Service

Customers can setup Disaster Recovery (DR) for their VPN by locating appliances that are in a Global Traffic Optimizer (GTO) service at different data centers. Configuring a standby appliance is another good way to ensure connectivity during a service outage.

Disaster recovery of the VPN service enables the continuation of remote access capabilities when a disaster or failure occurs to a major location. Users use the same GTO service name (such as access.example.com) and SMA appliances that are located at other locations that are part of the global VPN service accepts the connection requests.

Planning the Disaster Recovery for the VPN service is done in conjunction with disaster recovery planning of other essential IT services. SMA appliances (that are part of the GTO service) must be located at alternate data centers along with other key infrastructure components.

If a disaster destroys a data center that has SMA appliances, the remaining appliances continue to provide service.

Global High Availability Versus HA Pair

Global Traffic Optimizer (GTO) with Global High Availability (Global HA) is a new solution for SMA 12.2 and later that facilitates high availability and disaster recovery for SMA products.

The High Availability (HA) Pair product is not supported after SMA version 11.4.

The [Comparison of HA Pair and GTO with Global HA](#) table compares the features of an HA Pair with the features of GTO with Global HA.

Comparison of HA Pair and GTO with Global HA

	HA Pair	GTO with Global HA
High availability model	Active-Standby	All appliances in the cluster are active.
Number of appliances in HA cluster	Always 2	2 to 100
Licensing model	Two separate appliance-based license files	CMS-based pooled user license obtained from the License Manager Service
Location of appliances	Appliances must be in a single data center less than 3 feet apart.	Globally distributed locations
SMA appliances supported	All physical appliances. Virtual appliances are not supported.	All SMA physical and virtual appliances are supported.
Virtual infrastructure	Not needed	Required. CMS is a virtual machine and must be hosted on virtual infrastructure (VMWare ESX/i or Microsoft Hyper-V)
Mix of appliances	Both appliances in the HA Pair must be identical (for example two SMA EX-7200s)	The cluster can have any combination of physical and virtual SMA appliances.
Release versions supported	SMA 10.7.2 and 11.4.0 Not supported after 11.4.0 support expires	SMA 12.2 and higher No plans to back port to 11.4
End of Life	April 2019 (3 years after release of 11.4)	This is the next generation of SMA HA
Disaster Recovery	Not Supported. Appliances in an HA Pair must be in the same data center.	Supported. Appliances in the cluster can be globally distributed.
Redirection model	Uses a VIP	DNS-based redirection Requires customers to configure DNS for Global Traffic Optimizer.
Session restoration	Session is automatically restored on the paired appliance.	VPN reconnection and session restoration is supported with Global HA in SMA 12.2.

Comparison of HA Pair and GTO with Global HA

Data persistence	Personal Bookmarks, Local User accounts, Device Registration. Per-app VPN data persists across a failover. User lock out persists across a failover.	Personal bookmarks, Local User accounts, Device Registration, per-application VPN data, and user lockouts are supported with Global HA in SMA 12.2.
Single Points of Failure	HA Pair is installed in one datacenter which is susceptible to power, network or other disasters	CMS server failure. A CMS outage for a few minutes has little or no adverse affect on HA. CMS is a virtual appliance and relies on the HA model of the IT department for it virtual infrastructure. CMS has a relatively low MTTR if a full clone is instantiated or the HA Cluster model is used. License Manager Service. CMS queries the License Manager every 24 hours and continues to operate for 30 days without access to the License Manager.

Alerts and SNMP

It consists of the following topics:

- [Overview](#)
- [Pre-Configured Alerts](#)
- [Configuring SNMP](#)

Overview

This section contains detailed information about alerts and the use of SNMP in the CMS.

The CMS generates alerts that are either Warnings or Errors. Alerts are displayed prominently on the CMS dashboard. Alerts can originate from a condition that occurs on the CMS, or from a managed appliance.

Alerts can be configured to generate SNMP traps that are monitored by any IT infrastructure Network Management System (NMS).

Pre-Configured Alerts

The Table of Pre-Configured Alerts below has a fixed set of conditions that can trigger alerts.

NOTE: The Priority symbols represent a Warning  or an Error .

Table of Pre-Configured Alerts











Priority	Name	Measurement	Condition
	Unable to communicate with License Manager	CMS connection to MySonicWall	Connection is lost for 10080 minutes
	Unable to communicate with License Manager	CMS connection to MySonicWall	Connection is lost for 10080 minutes
	Temporary communication loss	Managed appliance connection to CMS	Connection is temporarily lost
	Permanent communication loss	Managed appliance connection to CMS	Connection is permanently lost
	Managed appliances intercommunication failure	Managed appliances intercommunication	Connection is lost
	License has expired	CMS license expiration date	Expiration date is past
	License expires soon	CMS license expiration date	Expiration date is a certain number of days away
	High user license usage	CMS license usage	Value is over 95 percent
	High user license usage	CMS license usage	Value is over 75 percent

Table of Pre-Configured Alerts

Priority	Name	Measurement	Condition
	High swap usage	Swap usage	Value is over 5 percent
	High memory usage	Memory usage	Value is over 85 percent for 5 minutes
	High email user license usage	CMS Email license usage	Value is over 95 percent
	High email user license usage	CMS Email license usage	Value is over 75 percent
	High disk usage	Disk usage	Value is over 95 percent
	High CPU usage	CPU usage	Value is over 85 percent for 5 minutes
	High appliance license usage	Appliance license usage	Value is over 89 percent
	Critically high memory usage	Memory usage	Value is over 95 percent for 5 minutes
	Critically high CPU usage	CPU usage	Value is over 95 percent for 5 minutes
	Critically high appliance license usage	Appliance license usage	Value is over 98 percent
	CMS Spike license is active	CMS Spike license usage	Spike license is active
	CMS Spike license days left is low	CMS Spike license days left	Value is under 5 days
	CMS Spike license days left is critically low	CMS Spike license days left	Value is under 2days
	Certificate expired	Time until certificate expires	Value is under 0 days
	Certificate about to expire	Time until certificate expires	Value is under 30 days
	Standby appliance is active	The standby appliance is active	The standby appliance becomes active
	Public DNS settings do not match GTO settings	The Public DNS settings and GTO settings do not match	The Public DNS settings do not match the GTO settings

The administrator can edit the pre-configured alerts as follows:

- Modify or customize these pre-configured default alerts.
- Disable them
- Make changes to the threshold, duration and message.
- Configure additional alerts. The Table of Alerts lists all the conditions that can be used to configure Alerts.
- Configure the priority of an alert to either Critical or Warning. SNMP traps are generated for all Critical alerts.

For these activities, use the following guidelines:

- When an appliance-related alert is configured, it applies to all the managed appliance, that is, alerts cannot be individually configured/tailored for a specific appliance.
- The maximum number of alerts that can be configured by the administrator on a CMS is 100.

Alerts shown on the dashboard can be dismissed by the administrator. Dismissed alerts will no longer be displayed in the dashboard view, but can be seen in the Alerts page. If the alert condition toggles (ON->OFF->ON), a new alert for the same condition will be raised in the dashboard.

All alerts are stored in the Alerts Database. A rolling history of 90 days worth of alerts are retained in the Alerts Database. An Alerts View allows the administrator to see all Alerts in the past Day, Week, Month or Quarter.

Configuring SNMP

To enable SNMP:

- 1 Click **Management Server > Configure > Network Services**.
- 2 Under SNMP, click **Configure**.

Management Server

Dashboard
Alerts
Configure
Monitor
Maintain

Managed Appliances

Add/Remove
Configure
Monitor
Maintain

Services > Configure SNMP Download MIB

Configure Simple Network Management Protocol (SNMP).
SNMP can be used to manage the CMS and managed appliances.

Disable SNMP
 Enable SNMPv2
 Enable SNMPv3

Interface selection:

Agent properties

System location:
System contact:

SNMPv2 Agent properties

System name: CMS-10
Community string:

SNMPv3 Agent properties

Engine ID: 0x80001f8801ac181b0a
Username:

Enable authentication (SHA-1) Enable privacy (AES)

Password: Password:
Confirm password: Confirm password:
Password cannot exceed 255 characters.

SNMP hosts

Define one or more management systems from which the CMS will allow SNMP requests.

IP address	Netmask
<input type="text"/>	<input type="text"/>

Trap receivers

Define one or more management systems to which the CMS will send traps. Traps will be sent for all critical alerts that are generated on the CMS.

Enable support for SNMP traps

IP address
<input type="text"/>

- 3 Enter the information you want in the appropriate fields.
- 4 Click **Save and Apply Pending Changes**.

Capture Advanced Threat Protection

Capture Advanced Threat Protection (Capture ATP) is a cloud-based service that analyzes various types of content for malicious behavior. This function is integrated with the WorkPlace File Explorer feature. When files are uploaded, the file can be sent to the Capture ATP service for analysis.

IMPORTANT: Capture Advanced Threat Protection (Capture ATP) is an add-on security service to the firewall that helps a firewall identify whether a file is malicious.

Before you can enable Capture ATP you must first get a license. If the Capture ATP license has not been activated, an error message displays:

Capture Advanced Threat Protection

Capture Advanced Threat Protection (Capture ATP) is a cloud-based service that analyzes various types of content for malicious behavior. This function is integrated with the WorkPlace File Explorer feature. When files are uploaded, the file can be sent to the Capture ATP service for analysis.

* This CMS is not licensed for Capture Advanced Threat Protection.

Enable Capture Advanced Threat Protection

After Capture ATP is licensed, you can view Capture ATP status in your MySonicWall account as well as configure and receive alerts and notifications.

For further information about Capture ATP, licensing it, and using your MySonicWall account to configure and receive alerts and notifications, see the [Capture Advanced Threat Protection Feature Guide](#).

Enabling Capture ATP

After being successfully licensed, Capture ATP must be enabled before it will begin analyzing files for malicious behavior.

To enable Capture ATP:

- 1 From the CMS, navigate to **Managed Appliances > Configure > Define Policy**.

Management Server	
Dashboard	Global Traffic Optimizer
Alerts	Manage the Global Traffic Optimizer configuration for appliances.
Configure	Define Policy
Monitor	Define the central policy for managed appliances.
Maintain	
Managed Appliances	
Add/Remove	Synchronize Policy
Configure	Synchronize appliance policies with the central policy.
Monitor	
Maintain	

- 2 In the **User Access** section, select **Capture Advanced Threat Protection**.

User Access

Realms
A realm references an authentication server and determines which access agents are provisioned to your users and what end point control restrictions are imposed.

Network Tunnel Service
Manages TCP/IP connections from the network tunnel clients (Connect Tunnel and OnDemand Tunnel).

Web Proxy Service
Manages HTTP and TCP/IP connections from web browsers, OnDemand, and Connect Tunnel.

WorkPlace
Manage workplace shortcuts, shortcut groups, sites, appearance, and settings.

Agent Configuration
Manage access agents and other agents.

End Point Control
Manage end point control settings.

Capture Advanced Threat Protection
Manage Capture Advanced Threat Protection settings.

- Under **Capture Advanced Threat Protection**, select **Enable Capture Advanced Threat Protection**.

Capture ATP | Capture ATP Reports

Capture Advanced Threat Protection (Capture ATP) is a cloud-based service that analyzes various types of content for malicious behavior. This function is integrated with the WorkPlace File Explorer feature and SharePoint file uploads. When files are uploaded, the file can be sent to the Capture ATP service for analysis.

Enable Capture Advanced Threat Protection

- To verify the connection to the Capture ATP service, click the **Test connection** button.

File Options

The **File Options** settings allow you to specify which file types will be sent to the Capture ATP service for analysis and the maximum size of those files.

File Options

Specify the file types that will be sent to the Capture ATP service for analysis.

Executables (PE, Mach-O, and DMG)
 PDF
 Office 97-2003 (.doc, .xls, ...)
 Office (.docx, .xlsx, ...)
 Archives (.jar, .apk, .rar, .gz, and .zip)

Specify the maximum file size that will be sent to the Capture ATP service.

Use the default value (10MB)
 Restrict to MB

Topics:

- [Setting the File Types](#)
- [Setting the Maximum File Size](#)

Setting the File Types

You can select the types of files to be submitted to Capture ATP for inspection.

Specify the file types that will be sent to the Capture ATP service for analysis.

- Executables (PE, Mach-O, and DMG)
- PDF
- Office 97-2003 (.doc, .xls, ...)
- Office (.docx, .xlsx, ...)
- Archives (.jar, .apk, .rar, .gz, and .zip)

To set which file types are analyzed:

- 1 Navigate to **Managed Appliances > Configure > Define Policy**.
- 2 Under **User Access**, select **Capture Advanced Threat Protection**.
- 3 Select the file types you want analyzed by the Capture ATP service. By default, only the **Executables (PE, Mach-O, and DMG)** file type is enabled.
- 4 Click the **Save** button.


Setting the Maximum File Size

You can select the maximum size of files to be submitted to Capture ATP for inspection.

Specify the maximum file size that will be sent to the Capture ATP service.

- Use the default value (10MB)
- Restrict to MB

To set the maximum file size:

- 1 Navigate to **Managed Appliances > Configure > Define Policy**.
- 2 Under **User Access**, select **Capture Advanced Threat Protection**.
- 3 Choose one of the options.
 - Select **Use the default value (10MB)** to use the default file size of 10MB.
 - **Restrict to __ MB** to specify your own maximum file size.
 -  **NOTE:** The maximum file size supported by SMA 12.2 is 50MB.
- 4 Click the **Save** button.

Web Services

 **NOTE:** The resource must be classified as a SharePoint web service for this feature to function. See “Configuring a Resource as a SharePoint Web Service” in the *SMA 12.2 Administration Guide*.

Files uploaded to your SharePoint sites can be sent to Capture ATP for inspection.

Web Services

File uploads that occur from resources that are configured as Microsoft SharePoint can be sent to the Capture ATP service for analysis. The file size and type restrictions defined above will apply.

- Send SharePoint file uploads to Capture ATP service

To configure Capture ATP to analyze files uploaded to SharePoint sites:

- 1 Navigate to **Managed Appliances > Configure > Define Policy**.
- 2 In the **Web Services** section, select **Send SharePoint file uploads to Capture ATP service**.
- 3 Click the **Save** button.

i **NOTE:** The restrictions set for Capture ATP for file types and maximum sizes will apply to files uploaded to SharePoint site. See [Setting the File Types](#) and [Setting the Maximum File Size](#) for more information on configuring these options.

Advanced Settings

The **Advanced** settings allows you to choose to block or allow uploaded files that are not evaluated by Capture ATP.

Advanced

Choose to block or allow uploaded files that are not evaluated by Capture ATP

- Block uploads when the file size exceeds the above limit
- Block uploads when there is a failure communicating with the Capture ATP service or issues in file processing due to system disk capacity

- Select **Block uploads when the file size exceeds the above limit** to stop files from being uploaded that exceed the maximum file size specified in the **File Options** section. (This is selected by default.)
- Select **Block uploads when there is a failure communicating with the Capture ATP service or issues in file processing due to system disk capacity** to stop files from being uploaded when the appliance cannot communicate with the Capture ATP service or when the performance of the appliance is impacted by high disk usage. (This is selected by default.)

Central FIPS Licensing

FIPS (Federal Information Processing Standard) 140-2 Level 2 is a validation standard for evaluating cryptographic modules, and includes stringent reviews of source code, algorithms, physical security, and operational testing on cryptographic security products. The United States Federal Government is required to purchase cryptographic products validated to the FIPS 140-2 standard. In the international marketplace, ISO19790 is being adopted as a standard and is a direct adaptation of FIPS 140-2.

The SonicWall E-Class SMA EX9000, SMA 7200, and SMA 6200 appliances have FIPS 140-2 Level 2 certification from NIST (the National Institute of Standards and Technology, the United States FIPS 140-2 Cryptographic Module Validation Authority) and CSE (the Communications Security Establishment, the Canadian FIPS 140-2 Cryptographic Module Authority).

FIPS mode is transparent to end users. Internally, FIPS mode enforces secure communication and system integrity.

FIPS can be enabled on centrally managed appliances.

- A central FIPS license allows all appliances managed by the CMS to be FIPS-enabled.
- To be managed by the CMS, FIPS-enabled appliances are not required to be part of a GTO service.
- A CMS license that includes FIPS must also include central user licenses. An appliance that is not centrally licensed, but has its own user license file, cannot be FIPS-enabled from a CMS-based license.

When the CMS central user license has FIPS, the administrator can enable FIPS individually for any managed appliance from its AMC. (See “Enabling FIPS” in the *SMA 12.2 Administration Guide* for more information.)

For more information about FIPS, see “FIPS Certification” in *SMA 12.2 Administration Guide*.

To enable Central FIPS Licensing:

- 1 From the Central Management Console, navigate to **Management Server > Configure > Licensing**.
- 2 In the **Online Licensing** section, click **Manage**.
- 3 Log into your MySonicWall account with your username and password.
- 4 Navigate to **Product Management | My Products**.
- 5 Expand the line that contains your CMS license.
- 6 On the **Licenses** page, in the **Gateway Services** section, verify that **FIPS Support** has an active license.

Global High Availability

- Introduction to Global HA and GTO
- Planning GTO Deployment
- Setting up GTO
- Extending GTO Deployment

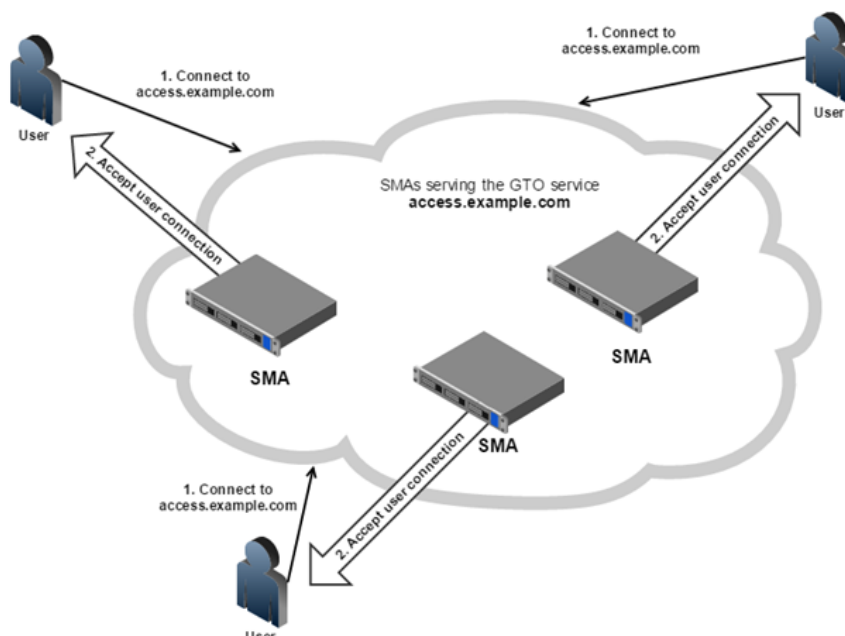
Introduction to Global HA and GTO

Topics

- [Overview](#)
- [CMS with GTO](#)
- [Exchange ActiveSync and Outlook Anywhere](#)
- [Custom FQDN for Mapped Resources](#)
- [Viewing GTO Status from the CMS Console](#)
- [GTO and IPv6](#)
- [Deployment Notes](#)

Overview

Global High Availability (Global HA) is a set of SMA features that come together to deliver a highly available VPN service. Global HA presents a collection of SMA appliances to end users through a single service name (for example access.example.com). Global Traffic Optimizer (GTO) is the underlying service that is enabled from the CMS console.



Previously, the benefits provided by GTO could only be achieved by deploying and coordinating an array of separate third-party appliances and services, such as content-distribution-network DNS redirectors, local traffic managers, and load balancers often under separate administrative control. GTO replaces this scenario with a single external DNS delegation, which manages all aspects of user traffic distribution automatically, including license provisioning and leveling.

NOTE: Remember to keep the DNS port open on the firewall. Refer to [Additional Deployment Notes](#) for more details.

Users have one consistent sign-on procedure with one GTO service name that connects them with the appropriate SMA appliance for their current location and circumstances, and gives them a similar experience every time they use the system anywhere in the world.

GTO makes intelligent routing decisions based on real-time data such as appliance availability, health, load, and geographic location. For example, it will limit the availability of appliances with heavy utilization in order to optimize the performance of your entire GTO environment. GTO redirects user connection requests to an available appliance.

This guide provides instructions on how to deploy CMS with GTO, including DNS configuration and certificate requirements.

CMS with GTO

CMS with GTO supports the following services and features:

- Exchange ActiveSync and Outlook Anywhere
- Custom FQDN for access to resources and Workplace sites
- Administration visibility into GTO status from the CMS console
- IPv6

NOTE: An SMA appliance must be dual-homed to participate in GTO.

Exchange ActiveSync and Outlook Anywhere

From the CMS console, you can configure Exchange ActiveSync and Outlook Anywhere across all appliances in the GTO service. For example, if the GTO service name is **access.example.com** the custom FQDN could be **mail.example.com**.

Mail clients using Exchange ActiveSync or Outlook Anywhere protocol can connect to the GTO service, using a custom FQDN, and experience global traffic Optimizer, such connection to a proximate appliance, improved availability, and load distribution.

NOTE: Public DNS must be configured for the ActiveSync and Outlook Anywhere FQDN, and the names must similar to the GTO service names.

CMS with GTO supports roaming as follows:

- When an Exchange ActiveSync client connects to a GTO service it may get directed to a different appliance from the last time it connected.
- Exchange ActiveSync clients send credentials with each request and after they get authenticated, they can access the ActiveSync server.
- A new pooled license is issued for each connection.
- The license is released after the ActiveSync connection is terminated.

Custom FQDN for Mapped Resources

You can configure custom FQDNs to backend resources across all appliances in a GTO service, and you can access those resources through the appliances that are part of the GTO service.

Users connecting to custom FQDNs can experience the benefits of GTO:

- GTO connection to a proximate appliance
- Improved availability
- Load distribution

Resources should be accessed with the FQDN name rather than with the IP address.

The public DNS must be configured appropriately for each custom FQDN, in that each custom FQDN name must be similar to the GTO service name. For example, if the GTO service name is **access.example.com**, the custom FQDN name for Email should be **mail.example.com**.

In Workplace, all links must point to the same appliance.

The maximum number of custom FQDNs that can be configured for all appliances is the same as that of a standalone SMA appliance. If you are already authenticated to a GTO service, you will need to re-authenticate if you enter a Vanity FQDN into a Web browser.

You can deploy configurations with the following types custom FQDNs to appliances that are configured for GTO:

- Vanity FQDNs that are currently supported on a single appliance.
- Custom FQDN Mapped Resource Access where the backend resource or server is mapped to an external fully qualified domain name (host and domain).
- Workplace site with a domain name that is different from the GTO service domain name.

Viewing GTO Status from the CMS Console

You can view and monitor the following capabilities on the CMC dashboard:

- Appliances successfully enabled for GTO
- Appliances not functioning correctly with GTO
- Appliances that have the recommended certificate SANs for the primary GTO service
- Appliances that do not have the recommended certificate SANs for the primary GTO service
- DNS status of appliances delegated as authoritative servers

GTO and IPv6

- End users on IPv6-only networks can reach SMA appliances with IPv6 addresses through GTO.
- SMA appliances serving as authoritative DNS servers include IPv6 AAAA records in their responses where appropriate.
- IPv6 is not supported on the internal interfaces of SMA appliances.

Deployment Notes

- You should configure a minimum of two SMA appliances and delegate them in DNS as authoritative servers. This minimizes the likelihood that your users ever lose DNS resolution of the GTO service.
- You must enable UDP 53 on your firewall for all traffic that is sent to CMS-managed appliances that are configured as authoritative servers.

Planning GTO Deployment

This section describes how to make deploying GTO easier by planning and adhering to a few guidelines as described below:

Topics

- [Choosing a Deployment Model](#)
- [Minimizing Configuration Differences](#)
- [GTO Service Names and DNS Delegations](#)
- [Provisioning Certificates](#)

Choosing a Deployment Model

Before you set up your equipment, you need to choose a deployment model that meets your organization's needs. There are several ways you can set up the network hierarchy of your GTO deployment:

- [SMA Appliances Located in One Data Center](#)
- [SMA Appliances Geo-Distributed across Multiple Data Centers](#)
- [Mixed Mode](#)

SMA Appliances Located in One Data Center

This model is typically employed by mid-sized organizations with major operations in a single location. All their SMA appliances are located in the organization's primary data center. Users have a single GTO service name (such as `access.example.com`) to access the network.

GTO eliminates the need for a load balancer in the data center for VPN traffic. User connections are automatically directed to an available appliance in the data center. The CMS and SMA appliances are all located in the data center. If any one of the appliances fails, the CMS detects the failure, and GTO automatically redirects the VPN connections to another appliance.

SMA Appliances Geo-Distributed across Multiple Data Centers

This model is typically employed by mid-sized organizations with operations in more than one geographic location, and their SMA appliances are located in different geographic locations. For example, an organization deploys two SMA appliances, one located in their New York City data center and the second appliance located in their London branch office. The employees in the Americas connect to the appliance in New York City, while the employees in Europe connect to the appliance in London.

The CMS and one of their SMA appliances is located in New York City. The other SMA appliance is located in London and is also managed by the CMS. All the employees in the Americas and in Europe use a single service name: `access.example.com`, which directs all connections to an available and proximate appliance.

Mixed Mode

This model is typically employed by larger sized organizations with a global workforce. Their SMA appliances are located in multiple geographic locations, and they may have more than one SMA appliance in the data center. For example, an organization has six SMA appliances: three in New York City, two in London, and one in Tokyo. Employees globally use the same service name: `access.example.com`.

GTO automatically directs connections from employees in the Americas to the SMA appliances in New York City, connections from employees in Europe to the SMA appliances in London, and connections from employees in Asia to the SMA appliance in Tokyo. GTO eliminates the need for a global traffic manager or load balancer in the data center.

Minimizing Configuration Differences

In a GTO service, users can get directed to different SMA appliances frequently, and users expect the same experience, regardless. You can minimize configuration differences between SMA appliances in a GTO service by observing the following guidelines:

- Maintain the same resource set and access rules on each SMA appliance in the GTO service. The best way to do this is to define one central policy on the CMS and synchronize it with all the managed SMA appliances.
- Use only DHCP tunnel address pools at each SMA deployment site. Other types of address pools can be used, but managing SMA appliances with different configurations is difficult. However, this can be done and is described in [Varying Tunnel Address Pools](#).
- Use a single authentication server configuration for all SMA appliances. If necessary, use transparently-distributed authentication services. CMS policy replication does include support for varying the authentication server configurations at each SMA appliance. You can do this by configuring locally-replicated authentication servers at the SMA appliance console. See [Using Distributed Authentication Servers](#).
- Use wildcard certificates for user access. GTO makes all of its SMA appliances available under a variety of names, each of which must match the certificate. It is possible to identify all such names each time the configuration changes and generate certificates without wildcards. It is recommended that you use wildcard certificates instead.

GTO Service Names and DNS Delegations

To establish a GTO service, you must choose a GTO service name and establish DNS delegations.

Topics

- [Choosing a GTO Service Name](#)
- [Establishing the GTO Service Name Delegations in DNS](#)

Choosing a GTO Service Name

The GTO service name is a delegated DNS zone, which means you must control the parent zone and make a delegation from it to one or more SMA appliances under the GTO service.

If your organization controls the example.com DNS zone, the access.example.com or vpn.example.com could be appropriate GTO service names.

Establishing the GTO Service Name Delegations in DNS

A GTO service name delegation is a DNS subzone delegation. It requires NS records that identify the authoritative server names for the subzone, and corresponding glue-A record that provides IP addresses for those authoritative server names.

DNS delegations must be created for the following components on each of the managed appliances:

- Primary GTO service
- Custom FQDN
- Custom Workplace Sites
- Outlook Anywhere
- Active Sync

The authoritative servers themselves are SMA appliances that are part of the GTO service and are identified by their public IP addresses and the NS record names in the following format:

`<DNSname>.ns.<GTOserviceName>`

For example, the following two DNS records in the zone configuration of example.com could establish a delegation for the GTO service and SMA appliance described above:

```
access.example.com. 86400 IN NS node1.ns.access.example.com.
```

```
node1.ns.access.example.com. 86400 IN A 123.231.55.77
```

In a typical GTO deployment with multiple SMA appliances, it is important to establish at least two such delegations. This ensures that the GTO service remains available if any one the SMA appliances is brought down for maintenance (or a network outage).

At least one authoritative server (SMA appliance) must be running at any given moment. Otherwise, users are not be able to connect.

Additional authoritative servers can provide redundancy and improved performance for some users. You should limit GTO service delegations to about three. Ideally, they should be geographically distributed.

Provisioning Certificates

You must provision certificates on the GTO-enabled SMA appliances to facilitate the GTO service. Provisioning certificates must be created for the following components on each of the managed appliances:

- Primary GTO service
- Custom FQDN
- Custom Workplace Sites
- Outlook Anywhere
- Active Sync

Certificates, which give connecting users proof of SMA authenticity before they submit credentials, must be configured on each individual SMA appliance. A single wildcard certificate naming both the GTO service name and all names underneath it (such as access.example.com and *.access.example.com) can be copied onto every SMA appliance.

The CMS console Dashboard provides convenient links to the management consoles of each SMA appliance, where certificates are uploaded under SSL Settings.

Topics:

- [Adding Certificates to SMA Appliances](#)
- [Generating a Certificate Signing Request \(CSR\)](#)
- [Importing SSL Certificates](#)


Adding Certificates to SMA Appliances

To add a certificate to a managed SMA appliance:

- 1 Add an SSL certificate to the CMS by either:
 - [Generating a Certificate Signing Request \(CSR\)](#)
 - [Importing SSL Certificates](#)
- 2 Create a maintenance task to add the certificate to the managed SMA appliances. (See [Maintain Managed Appliances](#) for more information.)

Generating a Certificate Signing Request (CSR)

To generate a certificate signing request:

- 1 If you want to use wildcard names in the certificate, select **Allow wildcard names**.
 -  **NOTE:** Using wildcard names can reduce the number of alternative name entries in the certificate. However, it may cost more to get the certificate signed by a Certificate Authority (CA).
- 2 Select the managed appliances in the table with the missing certificate names.
- 3 Select the GTO Services names to be included in your certificate request.
- 4 Click **Generate Certificate Names**.

- 5 Review the Certificate information to ensure that all expected Subject Alternative Names (SANs) are included in the certificate signing request. Add any missing SANs to the list.
- 6 Click **Save Certificate Signing Request** to save the CSR.
- 7 Submit the CSR to a third-party Certificate Authority.
- 8 When you receive the signed certificate from the Certificate Authority, import the certificate. (See [Importing SSL Certificates](#) for more information.)

Importing SSL Certificates

To import an SSL certificate:

- 1 Navigate to **Management Server > Configure** page.
- 2 Click **SSL Settings**.
- 3 In the **SSL certificate** section, click **Edit**.
- 4 In the **Certificates** section, click **New**.
- 5 From the dropdown menu, select **Import certificate....**
- 6 Click **Choose File** to select the certificate file.
- 7 In the **Password** field, enter the password needed to decrypt the certificate.
- 8 Click **Import**.

Setting up GTO

This section describes how to configure a basic GTO deployment, consisting of a CMS that manages at two or more SMA appliances.

Topics

- [Setting up the CMS and SMA appliances](#)
- [Setting up a Basic GTO Service](#)
- [Registering an SMA Appliance with the CMS](#)
- [Monitoring and Configuring GTO](#)
- [Defining the Central Policy](#)

Setting up the CMS and SMA appliances

Before you can configure the GTO, you must first set up a CMS and at least two SMA appliances. GTO uses a distributed data store to share session state and licensing information across the SMA appliances.

NOTE: Managed appliances must be able to communicate with each other via their external interface IP addresses or internet-routable IP addresses in order for them to be able to share information in the distributed data store.

Set up a CMS by following the instructions in [Installing and Configuring the Central Management Server](#) for establishing a CMS virtual machine to control the GTO service and manage the configuration of its component SMA appliances.

Set up the SMA appliances by following the instructions in [Configuring Appliances for Central Management](#). Follow the initial Setup Wizard configuration steps for cabling, administrator password, internal and external interface addresses, routing mode, and gateways, etc.

NOTE: GTO deployments do not support single-homed appliances.

Setting up a Basic GTO Service

After you set up the Central Management Server (CMS), and at least two SMA appliances, you can set up a basic GTO deployment.

To set up a basic GTO deployment:

- 1 On the CMS, navigate to the **Management Server > Configure**.

Management Server	Central Management Settings
Dashboard	Configure CMS location, central user licensing, global traffic optimizer, and policy synchronization.
Alerts	
Configure	Licensing
Monitor	
Maintain	
Managed Appliances	License holder: "SonicWall"
Add/Remove	Maximum users: 15
Configure	Maximum appliances: 3
	Appliance serial number: 004010277D29
	Authentication code: 7P7MWAT2

- 2 Select the **Central Management Settings** option.
The **Central Management Settings** dialog appears.

This central management server manages the licensing and configuration for a collection of appliances.

Locale

Country:

Location:
Example: Seattle, WA

Central User Licensing

Enable managing appliance user licensing with one central license. The current license will support 5265 concurrent user sessions across all appliances.

Global Traffic Optimizer Service

Users connect to this global high availability service from anywhere in the world and are routed to a nearby appliance.

i Each service name must be [delegated in public DNS](#)

i Custom GTO services can be created [using central policy resources](#)

Service name:
Example: access.example.com

Policy Synchronization

Enable pushing policy configuration from this server to managed appliances.
By default, configuration data on the destination nodes will be overwritten. To preserve certain settings on the destination, specify exclusions here.

Authentication servers

Nodes in the collection share centralized authentication servers
Overwrites the authentication server settings on the destination nodes.

Each node has its own authentication server
Retains authentication settings on the destination nodes, except in the case of a PKI server: trusted CA certificates cannot be retained.

- 3 Under **Central User Licensing**, check box for **Enable managing appliance user licensing with one central license. The current license will support 500 concurrent user sessions across all appliances.**
- 4 Under **Global Traffic Optimizer Service**, check the box for **Users connect to a service from anywhere in the world and are routed to the nearest managed appliance.**

i **NOTE:** The **Global Traffic Optimizer Service** check box is grayed out if **Central User Licensing** is not enabled. You must enable **Central User Licensing** before you can enable the **Global Traffic Optimizer Service**.

After you enable the **Global Traffic Optimizer Service**, the following message is displayed:

The service name must be delegated in public DNS, see the admin guide for details.

- 5 In the **One Time Password** field, enter the one time password obtained from the **Maintenance > Central Management** page of the SMA appliance.
- 6 Click **OK**. This registers the appliance with the CMS and adds it to the CMS list. The dialog changes with more options.

i **NOTE:** The client certificate warning, **DNS name** field, and **Public IP** field are only visible when CMS is enabled for GTO.

Finalize Appliance Settings

i TP Test has been registered for central management. Please complete the following settings

Display Name*	<input type="text" value="TP Test"/>	The display name for this appliance
Host Name*	<input type="text" value="tptest"/>	The host name for this appliance
Management address*	<input type="text" value="172.24.24.105"/>	An appliance IP address or host name that is reachable from the CMS
Public IP*	<input type="text"/>	The appliance IP address that is routable from the Internet, typically this is the appliance external IP address
Public IPv6	<input type="text"/>	The appliance IPv6 address that is routable from the Internet, typically this is the appliance external IPv6 address
Pool IP	<input type="text"/>	The appliance IP address that is reachable by other managed appliances. This is only required if the appliance Public IP is not reachable by other managed appliances.
Country or region	<input type="text" value="N/A"/>	The country or region where this appliance is located
Location	<input type="text"/>	The city, state or province where this appliance is located

- 7 In the **Display Name** field, enter the name you want displayed for this appliance.
- 8 In the **Host name** field, enter a unique DNS-legal name for this appliance, for example **seattle01**.
- 9 In the **Management address** field, enter the IP address for the appliance.
- 10 In the **Public IP** field, enter the internet-visible, public IP address for this appliance.

i **NOTE:** The **Public IP** should be the address by which remote users will access this appliance. The default IP address is the external IP address of the appliance. The public IP address may be different from its external IP address if the public WAN addresses are using NAT at the DMZ.
- 11 If the appliance has an IPv6 address, enter that IP address in the **Public IPv6** field.
- 12 In the **Pool IP**, field, enter the IP address that is reachable by other appliances by the same CMS. This IP address is only required if the **Public IP** of this appliance cannot be reached by the other managed appliances.
- 13 From the **Country** menu, select the country where the appliance is located.
- 14 In the **Location** field, enter the city, state, or province where the appliance is located.
- 15 Check the box for **Standby appliance** to enable users connecting to GTO service to be routed to this appliance when all designated appliances serving GTO users are unavailable. (See [Using Standby Appliances](#) for more information on using and configuring standby appliances.)
- 16 Click **Save**.

Monitoring and Configuring GTO

The CMC dashboard shows which appliances are participating in GTO. A GTO participant appliance's nominal status is **GTO** with a green globe icon. A non-participant appliance's nominal status is **Managed**. The top of the dashboard displays GTO service warnings and errors, if any.

Some appliance certificates are [not configured correctly for GTO](#). Users may see certificate warnings.

Alerts
 None

Appliances

Name	Status	Users	CPU	Mem	Mbps	Uptime
33	GTO	0	6%	14%	0.35	20 days
24	GTO	0	6%	39%	0.31	20 days
55	Managed	0	4%	14%	0.59	18 days
23	GTO	0	3%	37%	0.12	20 days
32	GTO	0	1%	13%	0.12	20 days

Showing 1 to 5 of 5 entries

Appliance load

23, 24, 32, 33

Central license usage

Daily

500, 400, 300, 200, 100, 0

Full

14-Nov, 12:00 15-Nov, 00:00

About

Model: SonicWall Secure Mobile Access CMS
 Hypervisor platform: Microsoft HyperV
 Version: 12.2.0-03999
 Hotfixes: None
 System time: Thu Sep 27 02:08:59 GMT 2018
 Uptime: 5 days 0 hours 6 mins
 License: 3 appliances, 10 Full users, 0 Email users
 Spike: 0 Spike users, 0 days left

GTO services can be managed on the **Managed Appliances > Configure > Global Traffic Optimizer** page.

Management Server

- Dashboard
- Alerts
- Configure
- Monitor
- Maintain

Managed Appliances

- Add/Remove
- Configure
- Monitor
- Maintain

Global Traffic Optimizer
 Manage the Global Traffic Optimizer configuration for appliances.

Define Policy
 Define the central policy for managed appliances.

Synchronize Policy
 Synchronize appliance policies with the central policy.

From this page, you can manage the following items:

- Global Traffic Optimizer (GTO)
- Central policies for managed appliances
- Synchronize appliance policies with the central policy

The **GTO Services** page shows a table of all GTO services and their statuses. GTO services are colored green, yellow, or red to reflect their health status. On the lower part of the page is a guide for creating a GTO service with a Custom FQDN, Exchange, or Workplace Site.

Configure Appliances > GTO Services

GTO Services | Appliance Certificates | DNS Delegations

GTO Services

Some appliance certificates are **not configured correctly for GTO**. Users may see certificate warnings.

Each service name must be **delegated in public DNS**

Service Name	Type	Resource Name
sonicwall.com	Primary Service	
sonicwall.com Appliance certificate warnings	Mapped URL	urlname_01
sonicwall.com	Mapped URL	urlname_01_sonwall0101
sonicwall.com	Mapped URL	urlname_010101
sonicwall.com Appliance certificate warnings	Mapped URL	url_010101
sonicwall.com Appliance certificate warnings	Mapped URL	urlname_0101_01
sonicwall.com	Exchange Server	urlname_01_01010101

Create a Custom GTO Service

- Enable [Policy Synchronization](#)
- Define one of the following items in the central policy:
 - [URL Resource with Custom FQDN](#)
 - [URL Resource with Exchange Server FQDN](#)
 - [Workplace Site](#)
- [Synchronize](#) the central policy with all GTO participant appliances
- Verify that a new GTO service appears in the table above with a **Service Name** equal to the FQDN of the new resource/site
- [Follow this guide](#) to install an supporting certificate on each appliance
- Verify that the new GTO service appears with a icon in the table above
- [Follow this guide](#) to delegate the new GTO service in public DNS

The **Appliance Certificates** page shows which Certificate Subject Alternative Names (SANs) must be included in each appliance certificate, and notifies the administrator which SANs are missing.

Configure Appliances > Appliance Certificates

GTO Services | Appliance Certificates | DNS Delegations

Add an appliance certificate

Add an SSL certificate to the CMS by completing the CSR process below or [importing a certificate file](#), then [create a maintenance task](#) to add the certificate to managed appliances

Generate a certificate signing request

Generate a Certificate Signing Request containing the required certificate names for the selected appliances and GTO services

Step 1: Choose whether to use wild card names in the certificate
 Step 2: Review **Certificate Status** in the table below and select appliances with missing cert names
 Step 3: Select GTO service names to be included in your certificate request
 Step 4: Review the **Certificate information** to ensure that all expected SANs are included in the CSR
 Step 5: Add any missing SANs to the list
 Step 6: Save CSR
 Step 7: Submit CSR to a third party Certificate Authority for certificate generation
 Step 8: On the [Certificate Signing Requests](#) page process CSR response and import the certificate
 Step 9: [Create a maintenance task](#) to add the certificate to managed appliances

Allow wildcard names. This will reduce the number of alternative name entries in the certificate, but may cost more to get signed by a Certificate Authority

Include Subject Alternative Names for these appliances in the Certificate Signing Request

<input type="checkbox"/>	Appliance Name	Certificate Status
<input type="checkbox"/>		
<input type="checkbox"/>		
<input type="checkbox"/>		
<input type="checkbox"/>		
<input type="checkbox"/>		

Include these GTO services in the Certificate Signing Request

<input type="checkbox"/>	GTO Services
<input type="checkbox"/>	
<input type="checkbox"/>	
<input type="checkbox"/>	

The **DNS Delegations** page describes the additional steps an administrator must take to configure the public DNS system for GTO, and provides a helper tool to generate DNS records in BIND format.

[Configure Appliances](#) > DNS Delegations

GTO Services | **Appliance Certificates** | **DNS Delegations**

i Each GTO service name must be delegated in public DNS

This page helps you generate the DNS delegation text that you can use to configure public DNS for the GTO services identified in the table below. Each GTO service name identified in the table must be delegated in public DNS as a subzone delegation.

You must also select SMA appliances that will serve as the DNS authoritative servers for the GTO service names. We recommend that you select at least two SMA appliances from the table below. This ensures that the GTO service remains available if any one of the SMA appliances serving as an authoritative server is brought down for maintenance (or a network outage).

The SMA appliances serving as authoritative servers are identified by their public IP addresses and by NS record names of a specific format:

DNSname.ns.GTOservicename

Each GTO service requires two DNS delegation records for each authoritative server:

- NS record that identifies the authoritative server name for the subzone
- Corresponding "glue-A" record giving the IP address for the authoritative server name

For example, these two DNS records in the zone configuration of **access.example.com** could establish a delegation for GTO service and the SMA appliance **Seattle-01**, which has a DNS Name of **seattle01** and a public IP of **172.16.100.101**:


```
access.example.com. 259200 IN NS seattle01.ns.access.example.com.
seattle01.ns.access.example.com. 259200 IN A 172.16.100.101
```

GTO Services

<input type="checkbox"/>	Service Name	Type
<input checked="" type="checkbox"/>	192.168.1.101.wall.com	Primary Service
<input checked="" type="checkbox"/>	192.168.1.101.sonicwall.com	Mapped URL
<input type="checkbox"/>	192.168.1.101.icwall.com	Mapped URL
<input type="checkbox"/>	192.168.1.101.sonicwall.com	Mapped URL

Appliances

<input type="checkbox"/>	Appliance Name	DNS Name	Public IPv4 Address	Public IPv6 Address
<input checked="" type="checkbox"/>	192.168.1.101	192.168.1.101	172.16.100.101	
<input checked="" type="checkbox"/>	192.168.1.101	192.168.1.101	172.16.100.101	
<input type="checkbox"/>	192.168.1.101	192.168.1.101	172.16.100.101	
<input type="checkbox"/>	192.168.1.101	192.168.1.101	172.16.100.101	

 **Generate Dns Delegation Text**

```
192.168.1.101.wall.com. 259200 IN NS 192.168.1.101.ns.192.168.1.101.wall.com.
192.168.1.101.sonicwall.com. 259200 IN A 172.16.100.101


192.168.1.101.sonicwall.com. 259200 IN NS 192.168.1.101.ns.192.168.1.101.sonicwall.com.
192.168.1.101.icwall.com. 259200 IN A 172.16.100.101

192.168.1.101.icwall.com. 259200 IN NS 192.168.1.101.ns.192.168.1.101.icwall.com.
192.168.1.101.sonicwall.com. 259200 IN A 172.16.100.101

192.168.1.101.sonicwall.com. 259200 IN NS 192.168.1.101.ns.192.168.1.101.sonicwall.com.
```

Defining the Central Policy

From the Central Management Console (CMS), you can define the central policy for a single-appliance SMA deployment. You can define the policies for your authentication servers and realms, resources and access rules, web and tunnel access methods, end-point control, and so on.

 **NOTE:** The steps in this section are optional.

To define the central policy:

- 1 On the CMS, go to the **Managed Appliances > Configure > Define policy** page.

Security Administration

Access Control
Review and manage your access control rules.

Resources
Manage web, network, and file system resources. Manage resource groups and variables.

Users & Groups
Manage users and groups

User Access

Realms
A realm references an authentication server and determines which access agents are provisioned to your users and what end point control restrictions are imposed.

Network Tunnel Service
Manages TCP/IP connections from the network tunnel clients (Connect Tunnel and OnDemand Tunnel).

Web Proxy Service
Manages HTTP and TCP/IP connections from web browsers, OnDemand, and Connect Tunnel.

WorkPlace
Manage workplace shortcuts, shortcut groups, sites, appearance, and settings.

Agent Configuration
Manage access agents and other agents.

End Point Control
Manage end point control settings.

Capture Advanced Threat Protection
Manage Capture Advanced Threat Protection settings.

System Configuration

Administrators
Manage AMC administrator accounts. Accounts are mapped to administrator roles.

Authentication Servers
Authentication servers are referenced by a realm to authenticate users.

CA certificates
CA certificates are used to establish a trust relationship with an Active Directory or LDAP connection that is secured with SSL, a connection to a back-end HTTPS Web server, or to validate a connection from an end user who is authenticating with a client certificate.

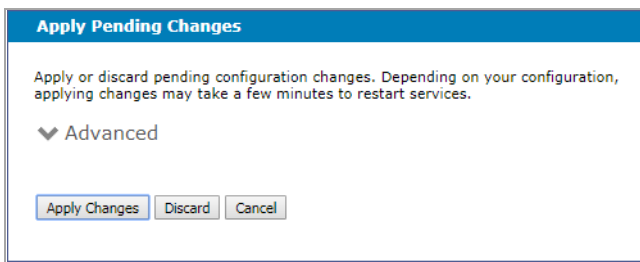
OCSF
The Online Certificate Status Protocol (OCSF) can be used to verify the status of client certificates.

- 2 Define the policies you want.

See the following sections for instructions on defining server certificates, authentication servers, and tunnel address pools:

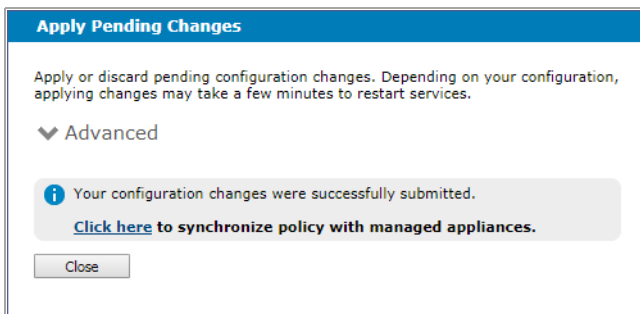
- [Enabling Cached Credentials](#)
- [Using Distributed Authentication Servers](#)
- [Varying Tunnel Address Pools](#)

- When you have finished defining your policy, click **Pending Changes**. The **Apply Pending Changes** dialog displays.

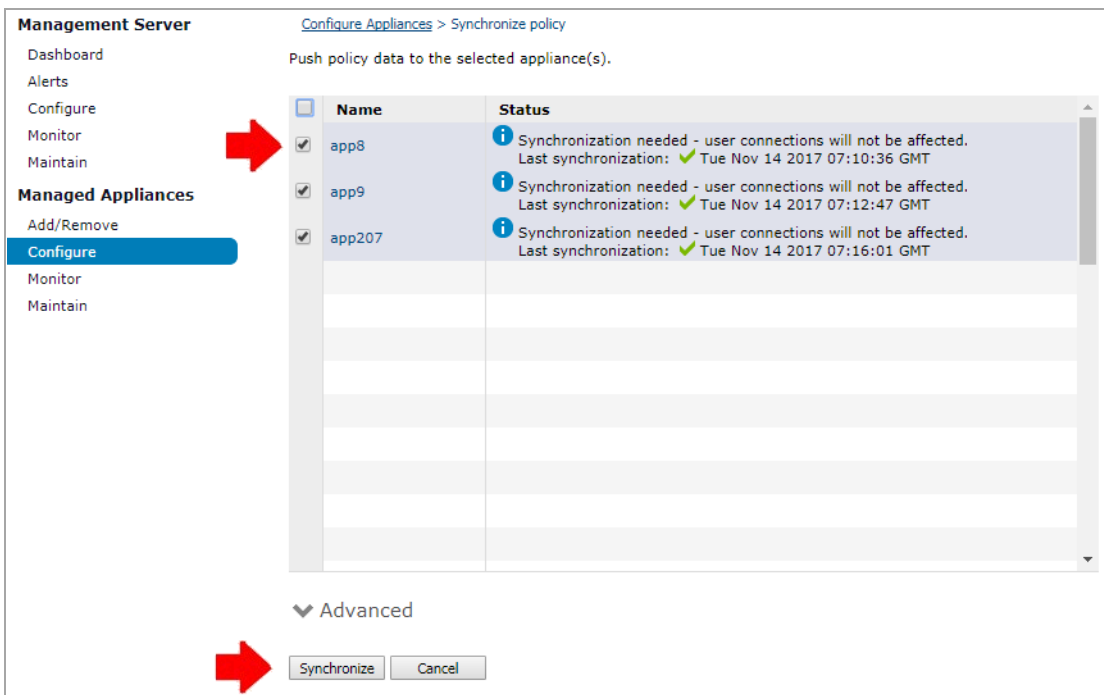


Expand the **Advanced** section if you want to schedule when you want the pending changes will be applied.

- Click **Apply Changes**.
- Select the link in **Click here to synchronize policy with managed appliances** to synchronize the policy across all of the appliances managed by the CMS.



- On the **Synchronize policy** page, select the checkbox for the SMA appliance you want to synchronize.



Expand the **Advanced** section if you want to schedule when you want the pending changes will be applied.

- Click **Synchronize**.

The message, “Synchronizing data, please wait...” appears as the policy is overwritten by the central policy.

Management Server | Maintain Appliances | **Maintenance Tasks**

Maintenance is in progress

View, reschedule or delete maintenance tasks. All times are in the [server time zone GMT](#)

Current task

Synchronize policy with app9

Name	Status
app9	⚙️ Policy sync in progress...

8 When policy synchronization has completed, the screen displays the **Status** as **Synchronization finished**.

Management Server | Maintain Appliances | **Maintenance Tasks**

View, reschedule or delete maintenance tasks. All times are in the [server time zone GMT](#).

Task log

Filters (reset)

Start Date: 11/14/2017 | End Date: 11/15/2017 | Refresh

Time	Task	Run at	Status	Message
11/15/2017 16:59:35	New! Synchronize policy with app9	11/15/2017 16:51 GMT	✔ Succeeded	
11/15/2017 16:57:13	Synchronize policy with app9	11/15/2017 16:51 GMT	✔ Succeeded	
11/15/2017 16:54:29	Synchronize policy with app9	11/15/2017 16:51 GMT	✔ Succeeded	
11/14/2017 07:27:41	Synchronize policy with app8, app9, app207	11/14/2017 07:21 GMT	✔ Succeeded	
11/14/2017 07:16:18	Synchronize policy with app8, app9, app207	11/14/2017 07:07 GMT	✔ Succeeded	
11/14/2017 07:15:09	Restart app207	11/14/2017 07:10 GMT	✔ Succeeded	
11/14/2017 05:40:36	Synchronize policy with app8, app9, app207	11/14/2017 05:33 GMT	✔ Succeeded	

You can now type the GTO service name into the address bar of any standard Internet Web browser, anywhere in the world, and sign in to securely access the configured resources.

Extending GTO Deployment

Topics

- [Adding Additional SMA Appliances](#)
- [Enabling Cached Credentials](#)
- [Using Distributed Authentication Servers](#)
- [Varying Tunnel Address Pools](#)
- [Additional Deployment Notes](#)

Adding Additional SMA Appliances

Additional SMA appliances can be added to the basic GTO configuration by following the steps in [Setting up GTO](#). Each SMA appliance that is added automatically begins serving new requests for GTO user connections.

When a new SMA appliance is added to a different location than the existing appliances, it becomes available to GTO. When GTO evaluates a new user relative to the available SMA appliances, it includes the new appliance at the different location, and directs the new connection to the appropriate SMA appliance. This evaluation is repeated each time a user connects. GTO may connect users to different SMA appliances in different circumstances.

Using Standby Appliances

You can configure one or more appliances in your CMS to function as a standby appliance.

Global HA will monitor the health of your SMA appliances to determine whether a disaster is happening and automatically activate the standby appliance (usually within 15 minutes). To further improve your disaster recovery capabilities with your Global HA environment, the standby appliance(s) can be located in a different datacenter than your other SMA appliances.

A standby appliance has access to all of the central user licenses. However, the standby appliance counts toward the maximum number of licensed appliances that can be managed by the CMS license.

Under normal operational conditions, a standby appliance does not receive user connections made to the GTO service.

Topics:

- [How a Standby Appliance Works](#)
- [Adding a Standby Appliance to the CMS](#)

How a Standby Appliance Works

If the active appliance fails, and the CMS continues to be in service:

- The standby appliance is activated and will accept new connections that are made to the GTO service name
- The administrator is notified through an alert on the console.

However, if the CMS fails and the active appliance continues to be in service, the standby appliance will not be activated.

If the both CMS and the active appliance fail:

- The standby appliance will be activated and will accept new connections made to the GTO service name
- If the active appliance is undergoing maintenance by the CMS (such as for a configuration change, hotfix installation, or firmware upgrade), and user connections cannot be serviced, the standby appliance will be automatically activated.

When a standby appliance gets activated:

- Existing user sessions from any failed appliances may be resumed on the newly activated appliance and will be allowed to continue until the sessions are either terminated by users or by timing out.
- SMA clients, such as Connect Tunnel and Mobile Connect, will detect a connection failure and automatically reconnect to the GTO service.
- Web-based client applications will reconnect to the standby appliance when users refresh the browser window.
- ActiveSync client requests will get directed to the standby appliance.

Using a Configuration Extension Mechanism (CEM) will allow for a quicker activation of standby appliances by the CMS when the CMS is unable to communicate with the active SMA appliances.

i **NOTE:** Without the CEM, a standby appliance is guaranteed to activate 10 - 15 minutes after all designated GTO appliances lose communication with the Standby appliance.

i **NOTE:** Using the CEM may result in a standby appliance becoming active more frequently in situations where transient network glitches interfere with CMS communication with appliances.

- The CEM will have an effect only when applied to a CMS with GTO enabled and configured with at least one standby appliance.
- The CEM name will be `MGMT_STANDBY_APPLIANCE_ACTIVATION_MINUTES`.
- The CEM value should be an integer that represents the number of minutes after which communication is continually lost with all designated GTO appliances a standby appliances becomes active.
 - When the CEM value is in the range 11 - 15, a standby appliance may become active sooner than the CEM value specifies, possibly as quickly as 10 minutes after a disaster begins.
 - The CEM has no effect if the value is outside the range 0 - 15, or if the value is not an integer.
- When the CEM is in use, a standby appliance that is in communication with the CMS is guaranteed to become active a maximum of *X* minutes (where *X* is the value specified for the CEM) after the CMS detects that it cannot communicate with all of the designated GTO appliances.
- If the CMS becomes disconnected from an appliance during a disaster, the CEM will have no effect on the appliance.

Adding a Standby Appliance to the CMS

NOTE: Before you can configure an appliance to operate as a standby appliance, the appliance must be configured so that it is managed by the CMS. (See [Enabling Central Management and Registering an SMA Appliance with the CMS](#) for instructions for doing this.)

- In order to configure an SMA appliance as a standby appliance, there must be more than one SMA appliance in the CMS cluster.
- An active appliance with ongoing user sessions can be configured to become a standby appliance. Once the appliance becomes a standby appliance, new user connections to the GTO service name are no longer directed to that appliance.
- A standby appliance can be configured to become an active appliance by an administrator only from the Central Management Console.

To add a standby appliance to the CMS:

- 1 In the CMS, navigate to **Managed Appliances > Add/Remove**.
- 2 Click on the name of the appliance that you want to configure as a standby appliance. The **Edit Appliance Settings** dialog displays.

Edit Appliance Settings

Display Name*	<input type="text" value="sma50"/>	The display name for this appliance
Host Name*	<input type="text" value="sma50"/>	The host name for this appliance
Management address*	<input type="text" value="172.24.24.50"/>	An appliance IP address or host name that is reachable from the CMS
Public IP*	<input type="text" value="172.24.24.50"/>	The appliance IP address that is routable from the Internet, typically this is the appliance external IP address
Public IPv6	<input type="text"/>	The appliance IPv6 address that is routable from the Internet, typically this is the appliance external IPv6 address
Pool IP	<input type="text"/>	The appliance IP address that is reachable by other managed appliances. This is only required if the appliance Public IP is not reachable by other managed appliances.
Country or region	<input type="text" value="N/A"/>	The country or region where this appliance is located
Location	<input type="text"/>	The city, state or province where this appliance is located
<input checked="" type="checkbox"/> Enable Global Traffic Optimizer Service		Participate in the global high availability service qa.gha.com
DNS name: sma50.qa.gha.com		The unique DNS name for this appliance
i This appliance is a public DNS delegation target for qa.gha.com and must be manually delegated in public DNS		
<input checked="" type="checkbox"/> DNS authoritative server		This appliance will serve as a DNS authoritative server for qa.gha.com
! This appliance will operate in standby mode. Users connecting to qa.gha.com will not be routed to this appliance unless all designated appliances serving GTO users are unavailable. This appliance must be configured as a DNS authoritative server for the GTO service qa.gha.com.		
<input checked="" type="checkbox"/> Standby appliance		Users connecting to qa.gha.com will not be routed to this appliance unless all designated appliances serving GTO users are unavailable.
<input type="button" value="Save"/> <input type="button" value="Cancel"/>		

- 3 Select **Standby appliance**.

NOTE: When you select **Standby appliance**, **DNS authoritative server** is automatically selected. Leave this option selected.

- 4 Click **Save**.

This appliance will now start operating as a standby appliance and stop processing user connections until activated.

Enabling Cached Credentials

If your security settings allow cached credentials on end-user devices, you can assign nearly-seamless failover and high-availability capabilities to Connect Tunnel clients and Mobile Connect SSL VPN Tunnel clients. You can do this even if the SMA appliances are in different locations (and therefore do not share an internal network).

To enable cached credentials:

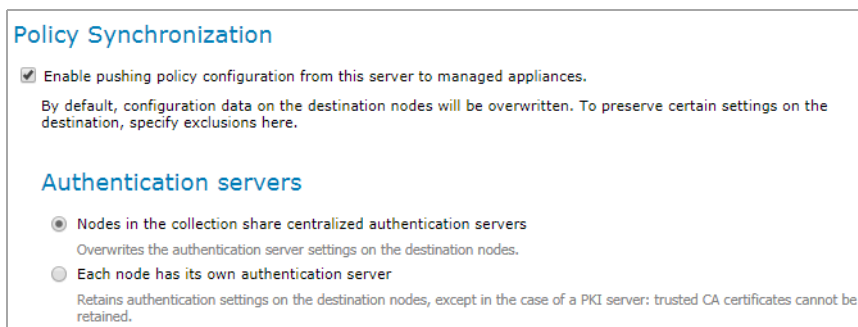
- 1 Go to the **Managed Appliances > Configure** page.
- 2 Go to **Realms > Community > Access Methods > Tunnel**.
- 3 Click the **Configure** button.

Using Distributed Authentication Servers

The latency and reliability of authentication services can be improved in some situations by replicating authentication servers in widely-distributed locations, and configuring specific SMA appliances to use a nearby replicated authentication server instead of the central instance, which might be on another continent.

To accomplish this:

- 1 Establish the authentication server settings in the central policy and then synchronize the central policy with all the managed SMA appliances. See [Setting up a Basic GTO Service](#).
- 2 On the **Management Server > Configure > Central Management Settings** page, change the **Policy synchronization** settings so that the **Each node has its own authentication server** option is selected.



- 3 Click **Save**.
- 4 Click **Pending changes**. The **Apply Pending Changes** dialog box displays.
- 5 Click **Apply Pending Changes**.

Now the central authentication server settings will only be pushed to appliances during policy synchronization if an authentication server of the same name does not already exist at the SMA managed appliance. Stated another way, if an SMA appliance already has an authentication server setting whose name matches a name configured at the CMS, that setting will not be touched during policy synchronization.

For each SMA appliance that needs local modifications to authentication server settings, log onto the management console at that appliance and adjust the configuration of the existing authentication server(s).

As long as each central policy authentication server has a corresponding SMA policy authentication server with the same name, your local changes will be preserved. Don't create or delete authentication servers from the SMA policy as you cannot modify other parts of the local configuration that reference these servers. Those changes will be overwritten the next time CMS synchronizes the central policy with this SMA.

Varying Tunnel Address Pools

The preferred tunnel address pool policy for GTO deployments is a single DHCP pool replicated to all SMA appliances, with no specific DHCP server mentioned in the policy. This is done using the **Routed address pool - dynamic** setting after clicking **New** in the **IP address pools** section on the **Managed Appliances > Configure > Define Policy > User Access > Network Tunnel Service** page and not specifying a DHCP server (as shown below), so that appliances send broadcast requests to locate DHCP servers that can allocate addresses. This requires DHCP services to be available on the internal network that the appliances are on. Other policies are possible, but CMS does not help maintain them.

Management Server [Services > Configure Network Tunnel Service > Configure IP Address Pool](#)

Dashboard
Alerts
Configure
Monitor
Maintain

Managed Appliances
Add/Remove
Configure
Monitor
Maintain

Create or modify an IP address pool used by the network tunnel clients.

Name:* Description:

Translated address pool (Source NAT)

IP address: Application protocols (such as VoIP or FTP) or other protocols that transmit IP addresses may not function properly with NAT address pools, which behave like a NAT device.

Routed address pool - dynamic

DHCP server: To dynamically allocate IP addresses from a DHCP server, enter its IP address. If none is specified, the appliance sends broadcast requests to locate DHCP servers that can allocate addresses.

User-mapped address pool Use this to assign an address issued during RADIUS authentication or configured for a local user.

A tunnel address pool in the SMA policy will not be overwritten during policy synchronization if there is a corresponding tunnel address pool in the central policy with the same name. Be aware though, that the CMS will not synchronize with an SMA appliance at all if a tunnel address pool exists at the SMA appliance, but not in the CMS configuration. So the trick here is to create a tunnel address pool at the CMS, synchronize the central policy to all SMA appliances (to create the pool there), then adjust the configuration of that pool at each individual SMA appliance.

NOTE: You can adjust the parameters of pools (such as the address ranges in static pools or the NAT-from address in a NAT pool), but you cannot change the pool's type.

Additional Deployment Notes

Topics:

- [Notes on SMA Appliances](#)
- [Web Limitations if an Appliance Fails](#)

Notes on SMA Appliances

It is recommended that you configure a minimum of two SMA appliances, and that you delegate them in DNS as authoritative servers to minimize the likelihood that your users ever lose DNS resolution of the GTO service.

You must enable UDP 53 on your firewall for all traffic that is sent to CMS-managed appliances that are configured as authoritative servers.

Web Limitations if an Appliance Fails

Web users may face some limitations with GTO if an appliance fails. GTO services should DNS-resolve to more than one MA node, and web browsers given a multi-address DNS response should connect to the first address that works. When CMS finds an MA unresponsive for a minute, it instructs the DNS authoritative server nodes to reconfigure around the broken MA, but during that reconfiguration time, the broken MA node can still appear in DNS responses. If this situation occurs and the user's Workplace session fails, the user sees what looks like a typical failure of a website. The user needs to reconnect by retyping the GTO service name. They are redirected through a different node and can access that web site again.

Support

- [SonicWall Support](#)

SonicWall Support

Technical support is available to customers who have purchased SonicWall products with a valid maintenance contract and to customers who have trial versions.

The Support Portal provides self-help tools you can use to solve problems quickly and independently, 24 hours a day, 365 days a year. To access the Support Portal, go to <https://www.sonicwall.com/support>.

The Support Portal enables you to:

- View knowledge base articles and technical documentation
- View video tutorials
- Access MySonicWall
- Learn about SonicWall professional services
- Review SonicWall Support services and warranty information
- Register for training and certification
- Request technical support or customer service

To contact SonicWall Support, visit <https://www.sonicwall.com/support/contact-support>.

About This Document

Legend



WARNING: A WARNING icon indicates a potential for property damage, personal injury, or death.



CAUTION: A CAUTION icon indicates potential damage to hardware or loss of data if instructions are not followed.



IMPORTANT, NOTE, TIP, MOBILE, or VIDEO: An information icon indicates supporting information.

Central Management Server with Global High Availability Administration Guide
Updated - September 2018
Software Version - 12.2
232-004370-00 Rev A

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