Parallels Desktop Enterprise Edition

IT Administrators Guide

Build 10.1.2-28859 or later

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CHAPTER 1

Introduction

Welcome to Parallels Desktop for Mac Enterprise Edition. Built on the world's best-selling, top-rated, most-trusted solution for running Windows applications on the Mac, Parallels Desktop Enterprise Edition adds the capabilities that help IT administrators and purchasing agents save time and money.

In This Chapter

Enterprise Features Overview

With Parallels Desktop for Mac, your Mac users can seamlessly run both Windows and OS X applications side-by-side with speed, control and confidence. Business users can experience as much or as little Windows as they want. Multiple view modes make it possible for users to customize the level of integration between Mac and Windows without compromising performance. Best of all, IT can lock down, secure, and control the settings that matter most.

Parallels Desktop Enterprise Edition Features Highlights

- Simplified license management.
- Maintain corporate compliance with restricted virtual machines.
- Set an expiration date for a virtual machine.
- Run virtual machines in the background ("head-less" mode).
- Mass deployment of virtual machines and management through Microsoft SCCM.
- Business-level support including 24/7 phone and email support options.

Parallels Desktop Enterprise Edition Feature Matrix

See how Parallels Desktop Enterprise Edition compares to Parallels Desktop standard edition.

Feature	Enterprise Edition	Standard Edition
World's most powerful, best-performing solution for running Windows applications on a Mac	x	x

Full support for OS X 10.9 Mavericks, 10.10 Yosemite and Windows 8.1	x	x
Coherence view mode allows to run Windows applications on a Mac, just like if they were native Mac applications	x	x
In-product downloads of security and anti-virus trial software for Windows and Mac		x
Licensing and Support		
License management via Licensing Portal (coming Fall 2014)	x	
Simple deployment with unified volume license key	x	
Business class support with 24/7 priority phone and email access	x	
Annual subscription includes free upgrades	x	
Customizable in-product "Request Support" option	x	
Removed in-product notifications and third-party offerings	x	
Configurable software update policy and local update server options	x	
Security		
Restrict end-users from changing virtual machine settings	x	
Restrict end-users from creating new virtual machines	x	
Create expiring virtual machines	x	
Enforce USB device policies	x	
Configurable policies via SCCM and Parallels Mac Management	x	
Advanced		
Run virtual machines in "head-less" mode	x	
Support for mass-deployment of virtual machines	x	
Ability to assign Asset ID to a virtual machine BIOS	x	
NetBoot and FileVault 2 support in Mac X OS virtual machines	x	
Configurable boot delay for a virtual machine	x	
Customizable Parallels Control Center user interface	x	

CHAPTER 2

Parallels Business Account and License Management

Parallels Business Account provides functionality to help you better manage your Parallels Desktop Enterprise Edition licenses.

With Parallels Business Account you can:

- Register you Parallels Desktop Enterprise Edition license keys.
- Automatically add licensed computer information to the account during Parallels Desktop Enterprise Edition deployment.
- See the detailed license key information including the number of licenses it provides, the number of licenses used and remaining, and the license key expiration date.
- See the list of computers with active licenses.
- Export the computer list to a CSV file.
- Deactivate a license on a computer.
- Blacklist a computer.
- Download Parallels Desktop Enterprise Edition documentation and the latest build.
- Contact Parallels Support.

The chapter describes how to register a Parallels Business Account, add a license key to it, and then manage licensed computers in your organization.

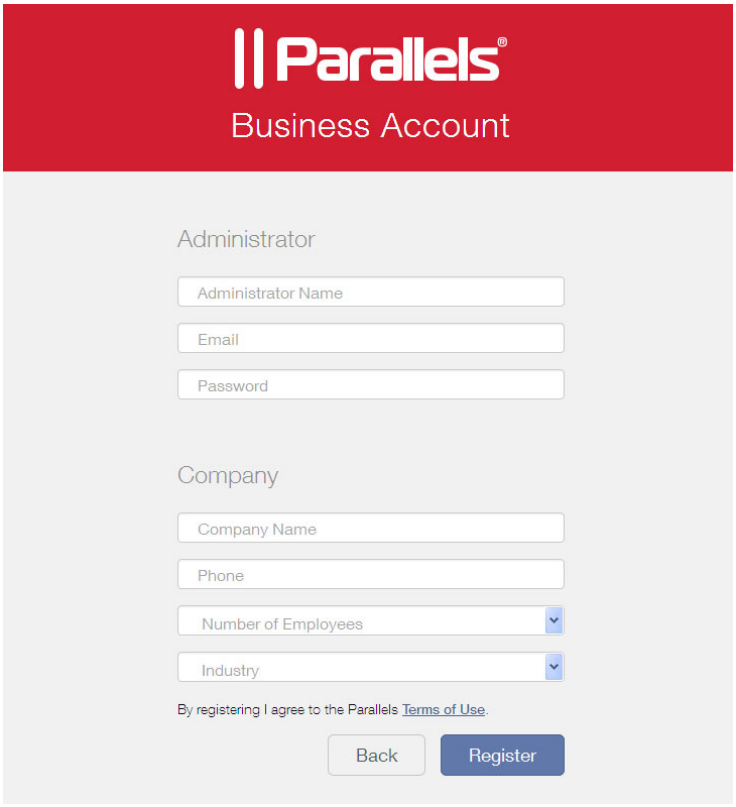
In This Chapter

Registering a Parallels Business Account and Adding License Keys

To register a Parallels Business Account, enter the following URL into your Web browser:

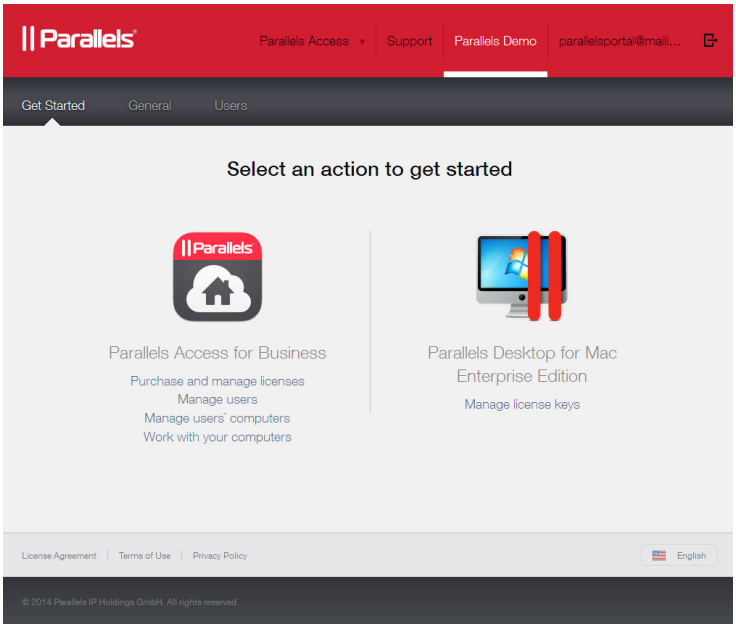
```
https://account.parallels.com/#/register_ba
```

The URL opens the Business Account registration page:

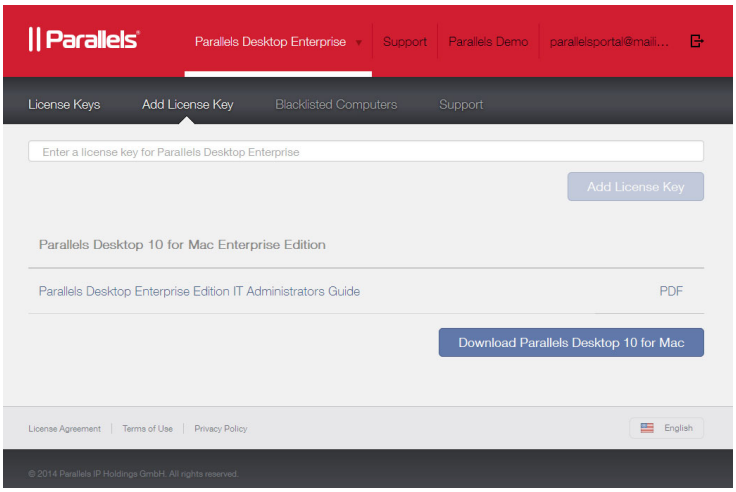


Use the page to provide information about yourself and your company and click **Register**.

Once the account is registered, you will see the following page.



Click the **Manage license keys** link located in the **Parallels Desktop for Mac Enterprise Edition** section. On the page that opens, click the **Add License Key** tab.



Enter your license key in the box provided and then click the **Add License Key** button. The license information will appear on the **License Keys** tab page. If you are not redirected to the page automatically, click the **License Keys** tab.

Deploying Parallels Desktop Enterprise Edition on Macs

After you register your Parallels Business Account and add one or more Parallels Desktop Enterprise Edition license keys to it, you can deploy Parallels Desktop Enterprise Edition on Macs in your organization. Please read the **Mass Deployment of Parallels Desktop and Virtual Machines** section (p. 39) to learn how to do it. Once Parallels Desktop Enterprise is deployed on a Mac, the Mac information will be automatically added to your Parallels Business Account. The following section describes how you can manage your Macs using your Parallels Business Account.

Managing Mac Computers Using a Parallels Business Account

This section describes how to use your Parallels Business Account to manage licensed Mac computers in your organization.

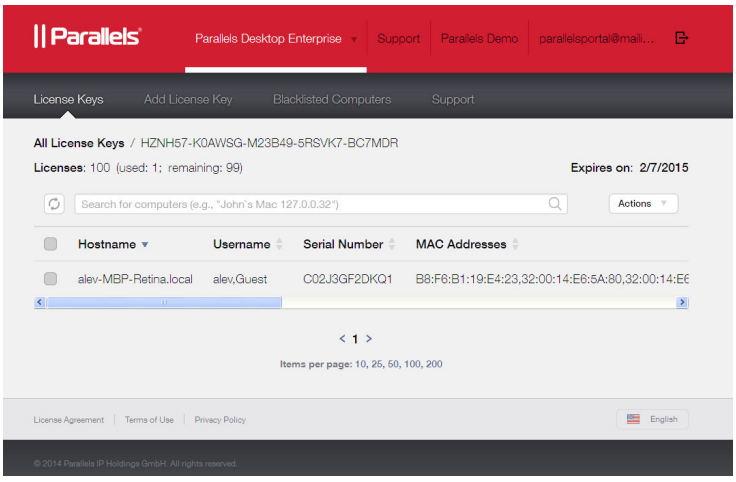
Signing In and Viewing License Key and Computer Information

If you are not currently signed in to your Parallels Business Account, please do so by entering to following URL into your web browser:

`https://account.parallels.com`

The URL opens the **Sign In** page.

Enter your Parallels Business Account email address and password and click **Sign In**.You will see your Parallels Business Account page:



The **License Keys** tab page contains your license key information and the list of licensed computers. You may need to scroll the list horizontally to see the complete computer information. Please read the following sections to learn how to work with licensed computers using your Parallels Business Account.

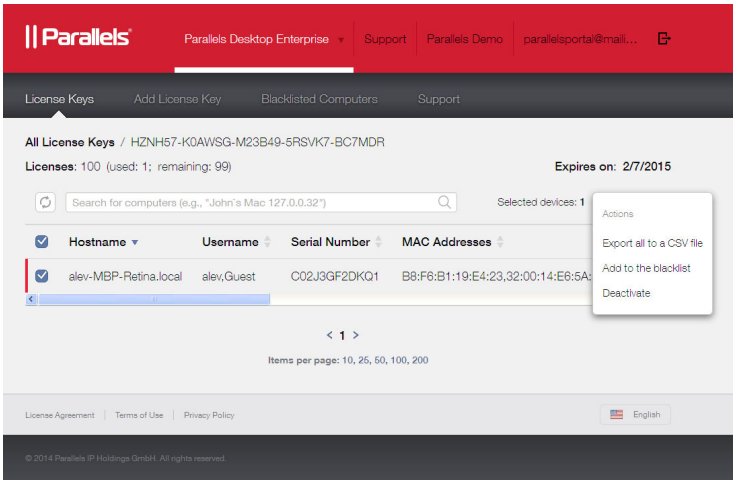
Deactivating a License

To deactivate a license on a Mac computer:

1 Make sure you are on the **License Keys** tab page.

2 In the computer list, select the computer on which you want to deactivate the license.

3 Click the **Actions** drop-down menu and then click **Deactivate**.



Note: Parallels Desktop Enterprise Edition will continue to run on the affected computer until the computer checks in with the licensing server. This could be anywhere from a few minutes to seven days. If you want to deactivate the license on a computer immediately, you can log in to it and run the following command in Terminal:

```
prlsrvctl deactivate-license
```

After the license is deactivated, it goes back to the license key pool and can be used to activate Parallels Desktop Enterprise Edition on a different (or the same) computer. You can monitor the available licenses for a given license key at the top of the **License Keys** tab page.

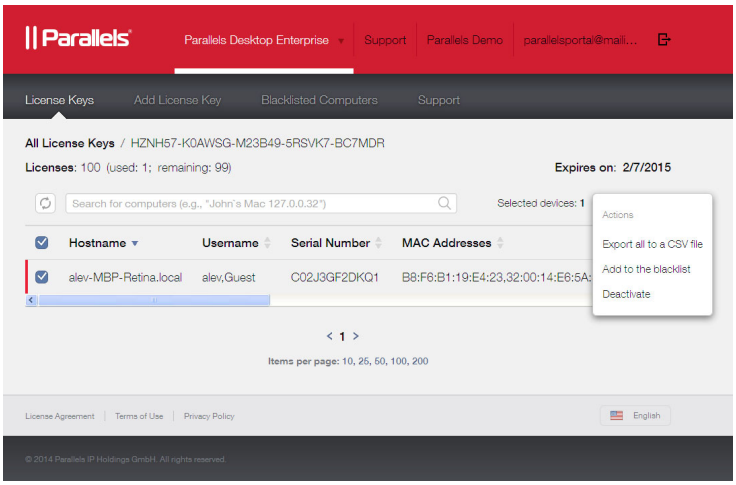
Blacklisting a Computer

If you want to deactivate a given license key on a computer without the possibility of re-activating it later, you can add it to the blacklist. Please note that Parallels Desktop Enterprise Edition will continue to run on the affected computer until the computer checks in with the licensing server. This could be anywhere from a few minutes to seven days.

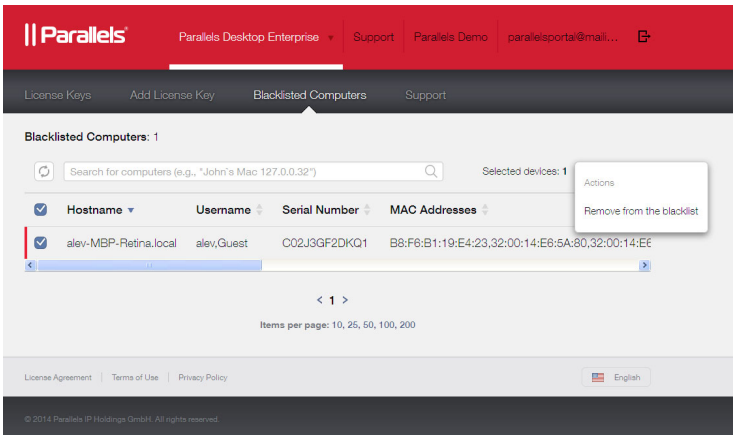
To blacklist a computer:

1 On the **License Keys** tab page, select the computer that you want to blacklist.

2 Click the **Actions** drop-down menu and then click **Add to blacklist**.

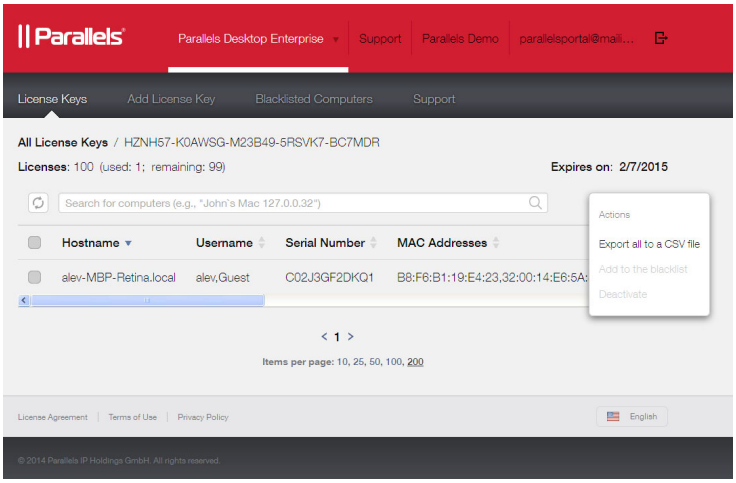


To view the list of blacklisted computers, click the **Blacklisted Computers** tab. To remove a computer from the list, select it and then click **Remove from blacklist** in the **Actions** drop-down menu.



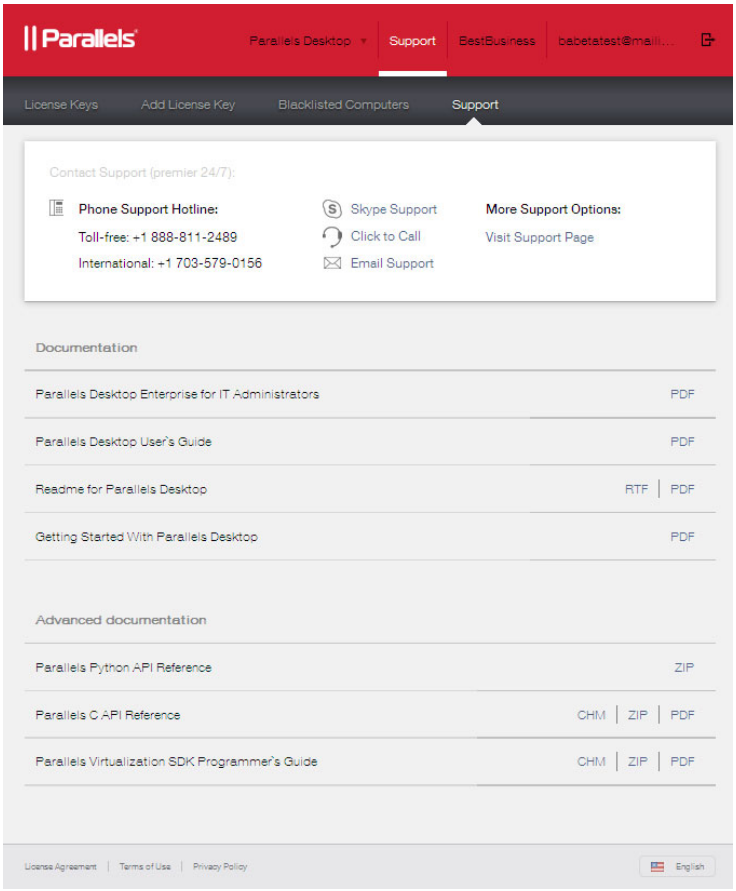
Exporting Computer Information to a CSV File

To export the complete computer information table to a CSV file, click the **Actions** drop-down menu and select **Export all to a SCV file**.



Documentation and Support

The **Support** tab page provides download links to the latest build of Parallels Desktop Enterprise Edition and the documentation. The page also provides Parallels contact information that you can use to talk to or email with Parallels Support.



CHAPTER 3

Parallels Desktop Enterprise Edition Features

This chapter explains how to use the advanced features of Parallels Desktop Enterprise Edition.

In This Chapter

Setting Asset Tag in Virtual Machine BIOS

Asset tags help identify, control, and track computer assets in the organization. Parallels Desktop Enterprise Edition provides the ability to set an asset tag in the virtual machine BIOS, which can then be read using the standard tools of the guest operating system. You can set an asset tag using the Parallels Desktop graphical user interface or the **prlctl** command line utility that comes with Parallels Desktop.

To set an asset tag using Parallels Desktop GUI:

1. On the Parallels Desktop menu bar, select **Actions** > **Configure** to open the virtual machine configuration dialog.
2. Select **Hardware** > **CPU & Memory**.
3. Use the **Asset tag** field to specify the desired tag.

To set an asset tag using the **prlctl** command line utility, use the following syntax:

```
prlctl set ID|name --asset-id tag
```

where `ID|name` is the virtual machine ID or name, and `tag` is the asset tag to set.

To obtain the asset tag in Windows, use the WMIC.exe command:

```
WMIC SystemEnclosure get SMBIOSAssetTag
```

For the complete syntax of the WMIC utility please see the Microsoft documentation.

Once set, the asset tag never changes. Even if you perform such virtual machine operations as cloning, template manipulation, registering, or any other, the asset tag always stays the same. If you do want to change an existing asset tag for any reason, you can do it manually using of the methods described above.

Customizing Parallels Desktop Control Center User Interface

Parallels Desktop Control Center is a part of the Parallels Desktop graphical user interface. It's a window that lists registered virtual machines that the Mac user can run and use. By default, the design of this window (graphics, text, etc) is provided by Parallels and looks like the following:

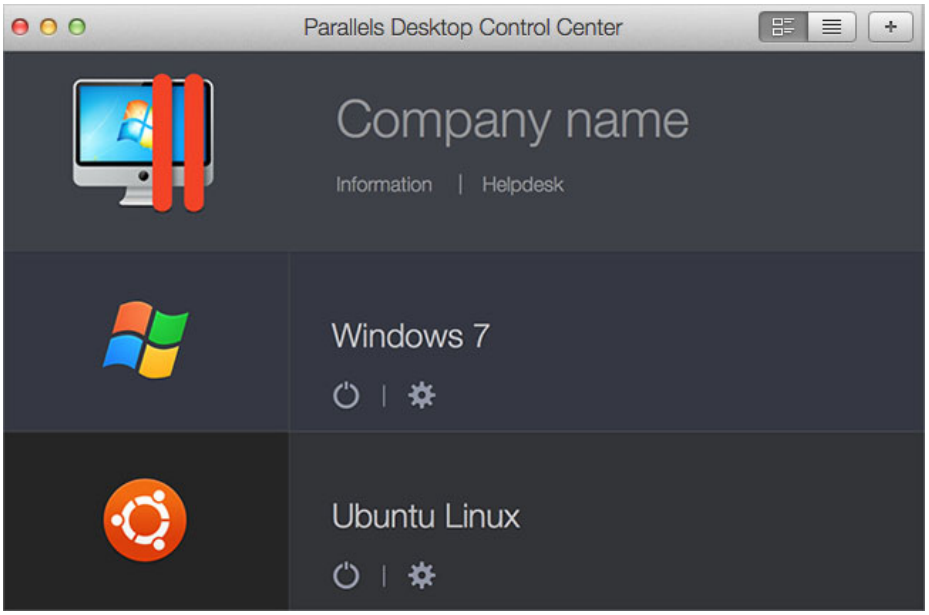
You can customize the design by specifying a URL to your own HTML document that will be displayed as a banner at the top of the window. The HTML page can contain text, graphics, and links such as your company logo, a welcome message, a link to a support page, etc. The HTML document format doesn't have any specific requirements.

The URL must be specified during the preparation stage of the Mass Deployment process (p. 39). Specifically, you need to specify the URL string and the HTML page size using the following variables in the mass deployment configuration file (`deploy.cfg`):

- `control_center_banner_url`
- `control_center_banner_height`
- `control_center_banner_min_width`

For the description of how to specify the variables and their values, please see **Changing Deployment Configuration Options** (p. 45). The variables are described in the **Virtual Machines** section.

The following is an example of Parallels Desktop Control Center displaying a custom banner at the top.



You can download a sample HTML document defining the banner from the following URL:

`http://download.parallels.com/desktop/tools/header.zip`

Protecting Virtual Machine Configuration

Parallels Desktop Enterprise Edition provides the ability to password-protect the configuration settings of a virtual machine. When deploying Parallels Desktop, you can set the password in the source virtual machine before adding it to the deployment package. The deployed virtual machines will retain the password and the Mac users will not be able to modify the configuration without providing the correct password.

Using Parallels Desktop Graphical User Interface to Set the Password

The password is set using the Parallels Desktop graphical user interface as follows:

1. In OS X, open Parallels Desktop and select the desired virtual machine.
2. On the Parallels Desktop menu bar, select **Actions** > **Configure** to open the virtual machine configuration dialog.
3. Select **Security**.

4 Click the **Restrict Editing: Turn On** button.

5 Enter the password, then enter it again to verify and click **OK**.

To change or remove the password:

- To change the password, click **Restrict Editing: Change Password**, then enter the old and the new passwords.
- To remove the password, click **Restrict Editing: Turn Off**, then enter the current password to remove the configuration lock.

If the password is set and the user tries to view or modify the virtual machine configuration, a dialog will be displayed asking to provide the password. Without the correct password, the user will be denied access to the virtual machine configuration dialog.

Using Command Line Tools to Set the Password

In addition to the graphical user interface, you can use the `prlctl` command-line utility to set, reset, and view the password protection of a virtual machine.

To set the password, type the following command in Terminal:

```
prlctl set "vm_name" --password-to-edit
```

where `vm_name` is the virtual machine name in quotes.

You'll be asked to enter a password and then confirm it.

```
Please enter a new password:
Please confirm password:
```

To change or remove the password, type the following command:

```
prlctl set "vm_name" --password-to-edit
```

where `vm_name` is the virtual machine name in quotes.

You'll be asked to enter the current password.

```
Please enter current password:
```

You will then be asked to enter and confirm a new password. To remove the password, leave the line blank and press **Enter** twice (when asked to enter and confirm the password).

```
Please enter a new password:
Please confirm password:
```

To view the current protection status, type the following command:

```
prlctl list "vm_name" -i
```

The output will look similar to the following:

```
Encrypted: no
Edit restricted: yes
```

Compatibility with Other Parallels Desktop Versions

The configuration protection functionality works only in Parallels Desktop 7 or later. If you set a password in a virtual machine and then open the virtual machine in an earlier version of Parallels Desktop, the protection will NOT work (i.e. the user will be able to view and modify the virtual machine configuration).

You can only set or remove the password in the Enterprise Edition of Parallels Desktop. However, if the password is set and the virtual machine is opened in the Standard Edition of Parallels Desktop, the password will continue to work (i.e the virtual machine configuration will remain locked).

Locking Virtual Machine on Suspend

To avoid possible security and privacy issues, a suspended Windows virtual machine can be completely locked from user interaction and viewing. When this option is enabled and a virtual machine is suspended, the Windows desktop in the virtual machine window (and in the Parallels Desktop Control Center) is replaced with a black background and the Windows session is interrupted. When the virtual machine is resumed, the Windows session is remained locked and the user will have to enter their user ID and password to unlock it and to see the Windows desktop.

To enable or disable this option:

1. In OS X, open Parallels Desktop and select the desired virtual machine (e.g. the source virtual machine when preparing it for mass deployment).
2. On the Parallels Desktop menu bar, select **Actions** > **Configure** to open the virtual machine configuration dialog.
3. Click the **Security** tab.
4. Depending on your needs select or clear the **On Suspend: [ ] Always lock Windows** option.
5. Close the dialog.

Note: The **On Suspend: [ ] Always lock Windows** option is available only for virtual machine running Windows with Parallels Tools installed. For all other virtual machines, the option will be hidden.

Encrypted Virtual Machines

A Parallels virtual machine can be encrypted using the Parallels Desktop graphical user interface. You can also use the `prlctl` command line utility (included with Parallels Desktop) to perform the full set of encryption operations on a virtual machine.

The following encryption command line options are available:

- Encrypt a virtual machine

```
prlctl encrypt <ID | NAME>
```

- Decrypt a virtual machine

```
prlctl decrypt <ID | NAME>
```

- Change the encryption password

```
prlctl change-passwd <ID | NAME>
```

The `<ID | NAME>` parameter can be either the virtual machine ID or the virtual machine name. When encrypting a virtual machine, you'll be asked to enter a password phrase, which will be used to encrypt the machine. When decrypting a virtual machine, you will be asked to enter the current password. When changing the password, you'll be asked to enter the old password and then the new password.

The encryption password will also be required to perform any other command line operation on an encrypted virtual machine, including starting, stopping, restarting, pausing, suspending, cloning, deleting a virtual machine, etc. For example, to start an encrypted virtual machine, you'll use the following command:

```
$ prlctl start my_virtual_machine
```

After executing the command above, you'll be asked to enter the password:

```
Virtual machine "my_virtual_machine" is encrypted - password required to continue
operation
Please enter password:
```

After typing in the correct password, you'll see the following output:

```
Starting the VM...
The VM has been successfully started.
```

If you need to execute a command remotely without having to enter the password on every Mac, you can send the password via standard input (stdin) as shown in the following example:

```
$ echo mypass | prlctl start my_virtual_machine
Virtual machine 'my_virtual_machine' is encrypted - password required to continue
operation
Please enter password:
Starting the VM...
The VM has been successfully started.
```

If you need to provide two passwords (as with the `change-passwd` command that changes the password), you can save the passwords to a text file and then use the following syntax:

```
$ cat /tmp/pass | prlctl change-passwd my_virtual_machine
Virtual machine 'my_virtual_machine' is encrypted - password required to continue
operation
Please enter password:
Please enter new password:
The password has been successfully changed.
```

The `/tmp/pass` file in the example above should contain the old password on the first line and the new password on the second line:

```
$ cat /tmp/pass
mypass
newpass
```

Running Virtual Machines in the Background (head-less mode)

Parallels Desktop Enterprise Edition allows to run virtual machines as background processes without the graphical user interface displayed on the Mac desktop. This is sometimes called the head-less mode. Parallels Desktop is also run as a background process (service) in this mode and is able to start the virtual machines automatically on Mac startup.

With this functionality you can run multiple virtual machines on a single high-performance Mac providing virtual machine access to your users. The users can connect to their designated virtual machines via VNC, RDP, SSH, or other remote tools.

This chapter describes how to set up and run Parallels Desktop and the virtual machines as background processes.

System Requirements

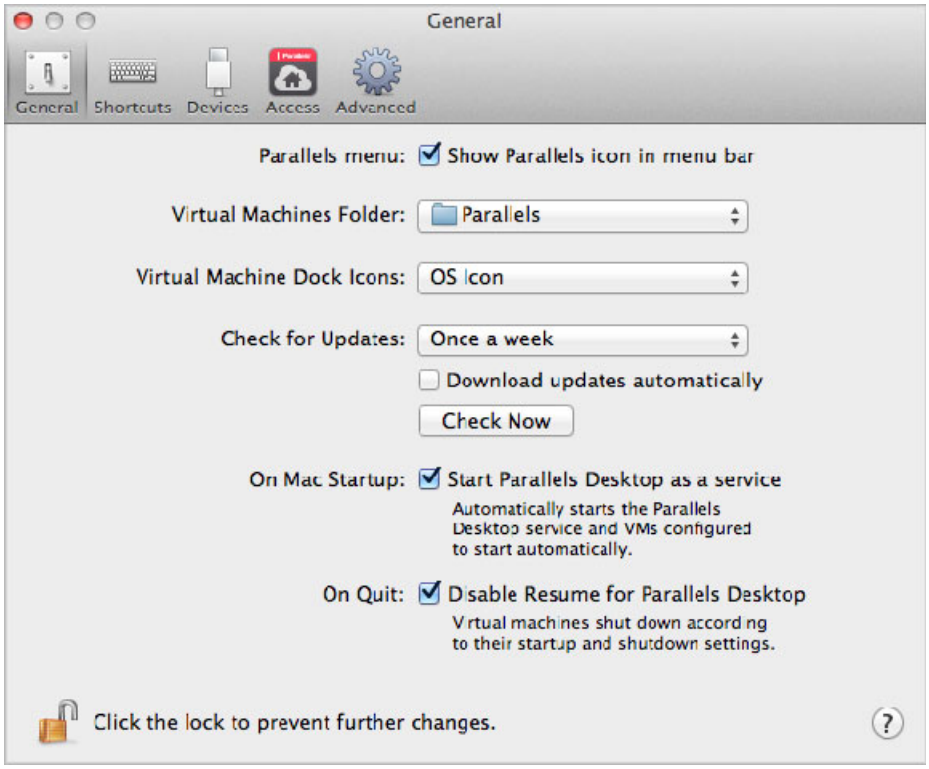
To run Parallels Desktop as a service, you need:

- Parallels Desktop build 9.0.23350 or later.
- OS X 10.7.4 or later.

Configuring Parallels Desktop to Run as a Service

By default, Parallels Desktop is installed as an OS X application with a graphical user interface. To configure it to run as a service, do the following:

1 Open Parallels Desktop and click **Parallels Desktop** > **Preferences** in the menu bar. The preferences window opens.



2 On the **General** tab page, select the **On Mac Startup: [ ] Start Parallels Desktop as a service** option.

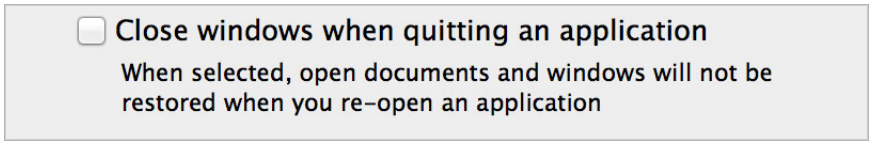
3 Select the **On Quit: [ ] Disable Resume for Parallels Desktop** option. When this option is selected, a virtual machine will be shut down according to its startup and shutdown settings. If this option is cleared, the virtual machine will be either suspended or stopped regardless of its startup and shutdown settings or the user input. The rule of thumb is, if you want your virtual machines to continue running after the Parallels Desktop application is closed, you should select the **Disable Resume for Parallels Desktop** option.

To better understand this feature, consider the following scenario:

1. Parallels Desktop is running as a service.
2. The Mac user opens the Parallels Desktop application (the graphical user interface) to change some setting or to look at the virtual machine window.

3. The user then closes the virtual machine window. Depending on the virtual machine startup and shutdown settings (see **Configuring Virtual Machines to Run in the Background** (p. 24)), it will be either kept running in the background, suspended, stopped, or a message will be displayed to the user asking what to do.

4. Suppose the message above is displayed and the user clicks **Keep Running** to keep the virtual machine running in the background. If the user then closes the Parallels Desktop application and the **Disable Resume for Parallels Desktop** option is cleared, the virtual machine may be suspended or stopped depending on the OS X system preferences settings. This can happen regardless of the virtual machine startup and shutdown settings or the user input. The OS X system setting that control this behavior can be found in **System Preferences** > **General** > **Closing windows when quitting an application**.



This option is disabled by default in OS X 10.7 and enabled in OS X 10.8. The **Disable Resume for Parallels Desktop** option, when selected, overrides this OS X setting for Parallels Desktop (other OS X applications are not affected). Therefore, if you don't want your virtual machines to be suspended or stopped, you should either disable the **Closing windows when quitting an application** setting in OS X preferences or select the **Disable Resume for Parallels Desktop** option in Parallels Desktop preferences.

4 Restart the Parallels Desktop application to start the Parallels Desktop service.

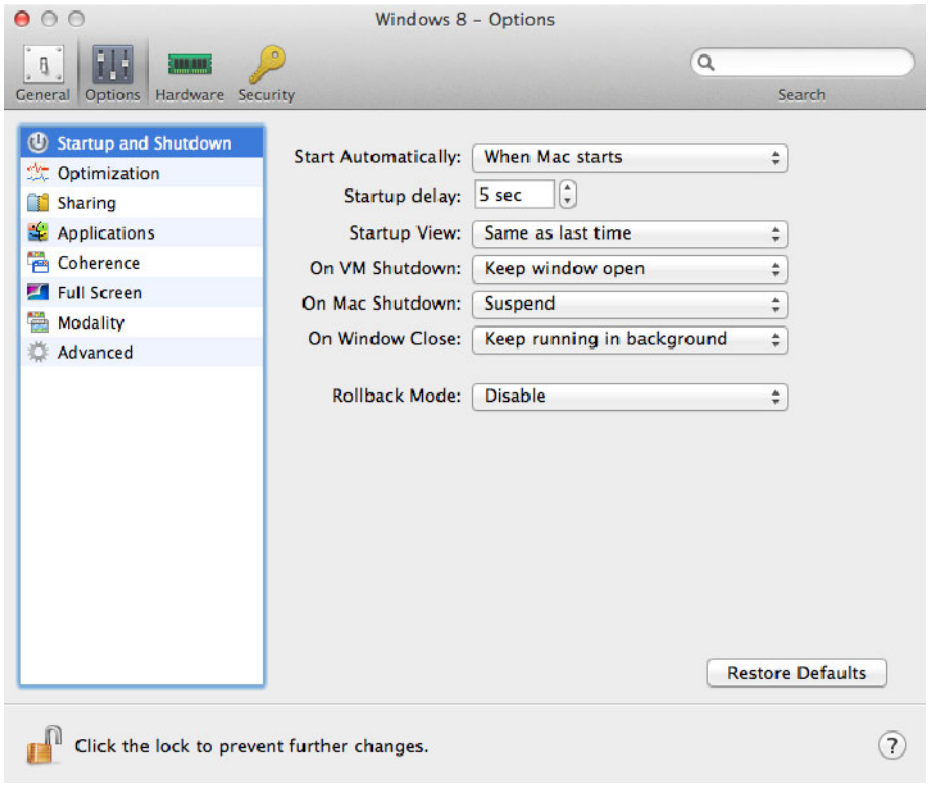
You now need to configure your virtual machines to run in the background. The following section describes how to do it.

Configuring Virtual Machines to Run in the Background

To configure a virtual machine to run in the background, follow these steps:

1 Open the virtual machine configuration dialog.

2 Click **Options** and then select **Startup and Shutdown**.



3 In the **Start Automatically** menu, select **When Mac starts**. This tells the Parallels Desktop service to start the virtual machine automatically when OS X starts.

4 In the **Startup delay** field, set the automatic startup delay, in second. If you have multiple virtual machines with no autostart delay set, they will start concurrently when you start or restart the host computer. By using the autostart delay you can reduce the load on the host during startup. The autostart delay option can also be helpful when one or more virtual machines depend on a service running in another virtual machine. By setting the autostart delay option for virtual machines, you can ensure that the virtual machine providing the service is up and running before the other virtual machines are started. You can also set the startup delay using a command line interface (see below).

5 In the **On Mac Shutdown** menu, select **Suspend**. This tells the Parallels Desktop service to suspend the virtual machine when the Mac is shut down or restarted.

6 In the **On Windows Close** menu, select **Keep running in background** (or **Ask me what to do** if you want a dialog displayed when you close the virtual machine window). This way the virtual machine will not be accidentally shut down or suspended when you open and close its window while Parallels Desktop is running as a service.

7 Set the rest of the options according to your usual preferences.

8 Close the virtual machine configuration dialog and start the virtual machine.

You may now close the virtual machine window and the Parallels Desktop application. This will only close the graphical user interface. The Parallels Desktop service and the virtual machines will continue to run in the background (provided the virtual machines and Parallels Desktop were configured correctly as described in this and previous sections of this guide).

Setting Startup Delay Using CLI

To set an automatic startup delay for a virtual machine using a command line interface:

prlctl set *ID|name* **--autostart-delay** *number*

where *ID|name* is the virtual machine ID or name, and *number* is the startup delay in seconds.

Managing the Parallels Desktop Service

You can manage the Parallels Desktop service using `launchctl`, the standard OS X command line utility that allows to manage daemons, applications, processes, etc. The name of the Parallels Desktop service is `com.parallels.desktop.launchdaemon`. See usage examples below.

Examples of using launchctl:

To see if the Parallels Desktop service is running:

```
$ sudo launchctl list | grep parallels
8421  -   com.parallels.desktop.launchdaemon
```

To stop the Parallels Desktop service:

```
$ sudo launchctl stop com.parallels.desktop.launchdaemon
```

To start the service

```
$ sudo launchctl start com.parallels.desktop.launchdaemon
```

If Parallels Desktop is running as a service and you want to change the Parallels Desktop or a virtual machine preferences (or you simply want to see a virtual machine window), you can open the Parallels Desktop application (the graphical user interface) at any time by double-clicking the Parallels Desktop icon. While the application is running, you can work with it as usual. When you are done, you can close the virtual machine window and the Parallels Desktop application. The Parallels Desktop service will keep running in the background. The virtual machine will keep running if configured to do so (described in the previous sections of this document).

You can also view and modify Parallels Desktop and virtual machine settings using the standard Parallels Desktop command line tools. This may be helpful if you can't access the Mac directly (e.g. it is located in a different building, it doesn't have a monitor and keyboard, etc.). Simply connect to the Mac using SSH (or some other client) and use the `prlsrvctl` utility to manage Parallels Desktop and `prlctl` utility to manage virtual machines. The documentation for both utilities is included with Parallels Desktop and is available via command line.

If Parallels Desktop is running as a service and you want to change it to run as an application, open the Parallels Desktop application (by double clicking the Parallels Desktop icon) and modify the **Start Parallels Desktop as a service** option as described in the previous section. Restart the Parallels Desktop application for the changes to take effect.

Configuring Expiring Virtual Machine

You can set an expiration date for a virtual machine. This can be a useful option if you are preparing a virtual machine for a contractor (or a third party user) and want to make sure that it works only for the duration of the contract.

To set an expiration date for a virtual machine:

1. In OS X, open Parallels Desktop and select the desired virtual machine.
2. On the Parallels Desktop menu bar, select **Actions** > **Configure** to open the virtual machine configuration dialog.
3. Select the **Security** tab.
4. An expiration date can only be set on an encrypted virtual machine. If your machine is not yet encrypted, click **Encryption: Turn On**, specify an encryption password, and click **OK**. Make sure to record the password or you will not be able to start the virtual machine. Wait until the encryption process finishes.
5. To set an expiration date for the virtual machine, click **Expiration Date: Set Date**, specify a password and click **OK**. Make sure to record the password to be able to change the expiration settings later. You should keep this password secret to prevent the prospective user of the virtual machine from changing the expiration date.
6. On the next screen, specify the following options:
   - **Do not allow this VM start after:** specifies the virtual machine expiration date.
   - **Contact info:** specifies the system administrator email, phone number, or other contact information. This information will be included in the message that will be displayed to the user when the virtual machine is about to expire. You can include each piece of information on a separate line.
   - **Time Server:** specifies the time server URL. The virtual machine expiration time will be checked against this server. The default time server is https://parallels.com.
   - **Date Check Frequency:** specifies how often the date and time should be verified against the time server. You can specify it in minutes, hours, or days.
   - **If unable to check date, use VM for:** specifies for how long the virtual machine should be kept working if the time server cannot be reached. For the duration of this period, the virtual machine will continue to check the date. If it succeeds before this period is over, the counter is reset and the virtual machine will continue to work normally.
7. Click **OK** when done entering the expiration info.

8 To modify the current expiration date or password, click **Expiration Date: Change Date** or **Expiration Date: Change Password** and enter the new values.

Note: When giving the virtual machine to a contractor, make sure to provide them the encryption password, which is needed to start the virtual machine. Please note that this is NOT the expiration date password you've set in step 5 above. This is the password you set when you encrypted the virtual machine.

When the expiration date approaches, the virtual machine user will be notified as follows: a message will begin to be displayed seven days before the expiration date. The message will be shown to the user every 24 hours and additionally on every virtual machine startup. Once the date is reached, the virtual machine will be locked, so the user will not be able to start or resume it anymore.

Resetting Guest OS User Password

If a virtual machine user forgets the password of their guest OS account (e.g. Windows user password), it can be reset outside the virtual machine using the command line interface.

To use this functionality the following conditions must be met:

- Parallels Tools must be installed in the guest OS.
- The virtual machine must be running. If it's stopped, start it and wait until you see the guest OS login prompt.
- Depending on your requirements, the following option can be selected or cleared in the virtual machine configuration dialog: **Security** > **Require Password to: [ ] Change guest OS password via CLI**. If this option is selected, you will be asked to provide the OS X administrator password to change the guest OS password from the OS X command line. If the option is cleared, the administrator password will not be required. By default, the option is cleared.

To reset the password, open Terminal in OS X and enter the following command:

```
prlctl set vm_name --userpasswd username:new_password
```

where:

- `vm_name` is the virtual machine name. To obtain the list of virtual machines installed on this Mac, type `prlctl list`.
- `username` is the guest OS user name.
- `new_password` is the new password.

Example:

```
prlctl set My_Win8_VM --userpasswd JohnDoe:A12345
```

If the **Require Password to: Change guest OS password via CLI** option is selected in the virtual machine configuration dialog (see above), the command will display the following text and prompt:

```
Only host administrator can change user password in the guest OS.
```

```
Confirm your administrator credentials.
Username:
```

Enter the name of the OS X user with administrative privileges and press the Enter key. Type the user password and press Enter again.

Once the new password is set, you can use it to log in to the guest OS.

Creating Linked Clones

A clone is a copy of an existing virtual machine. The result of a cloning operation is a virtual machine that is identical to the original virtual machine. A clone has the same configuration as the original, the same guest OS, and the same installed applications and data. The only exception is the virtual machine UUID and the MAC address of the network adapter, which are reset automatically during the cloning operation.

There are two types of cloning operations in Parallels Desktop:

- **Full cloning**. When you create a full clone, all of the files comprising the virtual machine are copied, so the new virtual machine is created as completely independent from the original virtual machine.
- **Linked cloning**. A linked clone is a virtual machine that shares the read-only areas of the virtual hard disk with the original virtual machine. When you create a linked clone, the original virtual hard disk file is not copied. Instead, both the original virtual machine and the clone use the same hard disk with the shared areas of it marked as read-only. When any of the virtual machines make any changes to the hard disk data, a new independent storage is created for it which only that virtual machine can read from and write to. The unaffected areas of the original virtual hard disk are continued to be shared between the original virtual machine and the clone. This functionality allows to save a considerable amount of disk space on the Mac hosting the virtual machines.

Before Your Create a Linked Clone

Before creating a linked clone of an existing virtual machine, make sure that:

- The original virtual machine is stopped.
- The original virtual machine is not encrypted.

Creating a Linked Clone

To create a linked clone of an existing virtual machine:

1. In **Parallels Desktop Control Center**, select the virtual machine you want to clone.
2. On the Parallels Desktop menu bar, select **File** > **New Linked Clone**.
3. Select the target folder. By default, Parallels Desktop saves clones in the **Documents** > **Parallels** folder.

4 Click **Save** to begin the cloning operation.

Creating a Linked Clone from a Snapshot

In addition to creating a linked clone from the current virtual machine state, you can choose an existing snapshot of a virtual machine and create a linked clone from it. You don't have to revert the original virtual machine to the snapshot to create a clone from it.

To create a linked clone from a snapshot:

1 In **Parallels Desktop Control Center**, select the virtual machine you wish to clone and open its window.

2 On the Parallels Desktop menu bar, select **Actions** > **Manage Snapshots**.

3 Select a snapshot from which you wish to create a clone.

4 Click the **New Linked Clone** button.

5 Select the target folder. By default, Parallels Desktop saves clones in the **Documents** > **Parallels** folder.

6 Click **Save** to begin the cloning operation.

Working with Linked Clones

From the user point of view, a linked clone is just like a regular, completely separate virtual machine. A user of a linked clone doesn't see what's going on in the original virtual machine and other linked clones, and vice versa. The virtual hard disk sharing and independent storage management is done in the background transparently to the virtual machine users.

When you create a linked clone, the virtual hard disk is shared almost completely between the original and the clone(s). When the users of the linked clones begin to install applications, add data, or make any other changes inside their virtual machines, a dedicated disk space is allocated to them where these changes are saved. As a result, the total usage of the host's disk space increases. Still, a large portion of the system and application data on the original virtual disk continues to be shared between the original virtual machine and the linked clones, so the overall host's disk usage remains much lower than if these were independent virtual machines. Provided that the virtual machine users don't do anything drastic, like installing a different operating system, the linked clones normally take much less disk space than independent virtual machines.

For the linked clones to work, the following must be observed:

- You must not delete the original virtual machine. If you do, the linked clones will no longer work.
- If you created a linked clone from a virtual machine snapshot, the snapshot and its entire history in the original virtual machine must not be deleted.
- You should not encrypt the original virtual machine if there are existing linked clones that were created from it. Doing so will make the linked clones inoperable.

NetBoot Support for OS X Virtual Machines

NetBoot is a technology from Apple that allows to boot a Mac computer from a network. Parallels Desktop Enterprise provides NetBoot support for OS X virtual machines. Using this functionality, you can boot a virtual machine from a network and install (or reinstall) a desired version of OS X on it.

To NetBoot an OS X virtual machine, the following requirements must be met:

1. A NetBoot server hosting a NetBoot or NetInstall image must be set up and running on your network. If you don't know how to do it, read the NetBoot documentation from Apple first.
2. Parallels virtual machines can boot from the default image only, which means that the default image on the NetBoot server must be the one you want your VMs to boot from.
3. A virtual machine must be of the **Mac OS X** type. When creating a new virtual machine, select **Mac OS X** as the operating system.
4. Unlike physical Macs, a virtual machine will NOT boot from a network if you hold down the **N** key. A virtual machine will choose a boot device (hard disk, CD/DVD, network) according to its boot order list. The following scenarios need to be considered:
   - If a virtual machine is blank (OS X is not installed on it yet), it will try to boot from the hard disk first, then the CD/DVD, and then the network (the default boot order). Since there's no OS X on either the hard disk or the CD/DVD, the boot from these devices will fail and the VM will boot from the network (NetBoot).
   - If a virtual machine has a bootable disk but you want it to boot from a network instead, **Network** must be specified as the first item in the VM's boot order list. To make this modification, open the virtual machine configuration dialog, select **Hardware** > **Boot Order**, and then move the **Network** item to the top of the boot order list.
5. When the virtual machine boots from the network, you can use the standard OS X utilities to install or reinstall the operating system on it.

Setting Up Local Update Server

With the Enterprise Edition of Parallels Desktop you can set up a local update server on your network from which Mac users can get Parallels Desktop updates. Updates are released periodically to improve the performance and reliability of Parallels Desktop. To reduce Internet traffic when downloading updates, you can set up a local update server, download the available updates to it, and then set up individual Macs on your network to take the updates from it instead of the Internet. Read on to learn about setting a local update server.

Installing Web Server

To set up a Parallels Desktop update server, you'll need a local Web server. Install a Web server on a computer connected to your network (or use an existing one).

Creating Parallels Update XML File

Create a file named `parallels_updates.xml` on the Web server where it can be accessed via HTTP. The file is an XML document that should contain specifications for a particular Parallels Desktop update available on your local updated server.

To create your own document, use the following sample XML document and the XML document specification that follows it as a reference.

Sample parallels_updates.xml file

```
<?xml version="1.0" encoding="UTF-8"?>
<ParallelsUpdates schemaVersion="1.0">
  <Product>
    <ProductName>Parallels Desktop</ProductName>
    <UpdateEnabled>1</UpdateEnabled>
    <Version>
      <Major>8</Major>
      <Minor>0</Minor>
      <SubMinor>12494</SubMinor>
      <SubSubMinor>262214</SubSubMinor>
      <StringRepresentation>Sumer</StringRepresentation>
      <Update uuid="desktop.8.0.13291.237436.en_US.parallels.mac">
        <UpdateType>0</UpdateType>
        <UpdateName>Build 13291 is available!</UpdateName>
        <UpdateDescription>Update description goes here</UpdateDescription>
        <FilePath>URL to the update file goes here</FilePath>
        <FileSize>219515</FileSize>
        <Status>0</Status>
        <DateTime>2012-06-17 01:23:00</DateTime>
        <Chargeable>0</Chargeable>
        <LocaleName>en_US</LocaleName>
        <DistributorName>parallels</DistributorName>
        <OsType>mac</OsType>
        <Ancestry>
          <Ancestor>desktop.8.0.12927.482436.en_US.parallels.mac</Ancestor>
          <Ancestor>desktop.8.0.12473.274921.en_US.parallels.mac</Ancestor>
          <Ancestor>desktop.8.0.12262.823647.en_US.parallels.mac</Ancestor>
        </Ancestry>
      </Update>
    </Version>
  </Product>
</ParallelsUpdates>
```

XML Document Specification

Name	Type	Description
`ParallelsUpdates`		Root element.

Product		Container for Parallels Desktop information.
ProductName	string	Use "Parallels Desktop".
UpdateEnabled	int	Specifies whether the automatic updates are enabled. To enable updates, specify 1.
Version		Container for Parallels Desktop version information.
Major	int	Major version number. For Parallels Desktop 7, specify 7. For Parallels Desktop 8, specify 8.
Minor	int	Minor version number. Specify 0.
SubMinor		Build number. This element may be empty.
SubSubMinor		Revision number. This element may be empty.
StringRepresentation		Product codename. This element may be empty.
Update		Container for the information about the Parallels Desktop update. **Attributes:** `uuid` — string; a globally unique ID identifying the product. The `uuid` attribute is very important and must contain the correct information for the update to work. The attribute value consists of the following parameters (substrings) separated by periods (see the provided XML example): `desktop` — specify "desktop". `major` — major version number (8). `minor` — minor version number (0). `build` — build number. `revision` — revision number. `locale` — locale ("en_US", "de_DE", etc). `vendor` — vendor ("parallels"). `platform` — platform ("mac").
UpdateType	int	Update type. Specify 0.
UpdateName	string	The name for the update, user-defined.
UpdateDescription	string	The update description.
FilePath	string	A URL to the update file on your local update server. The actual update files can be obtained from Parallels.
FileSize	int	The update file size, in megabytes.
Status	int	Specify 0.
DateTime	string	Date and time when the updated was published. Use the following format: yyyy-mm-dd hh:mm:ss

`Chargeable`	int	Specify 0.
`LocaleName`	string	Locale name ("en_US", "it_IT", etc).
`DistributorName`		The update distributor name. Specify "parallels".
`OsType`		Operating system type. Specify "mac".
`Ancestry`		Container for the list of updates that directly preceded this update.
`Ancestor`	string	An individual Parallels Desktop update information. This element may appear more than once in the same document, one for each update. The value is combined using the following parameters (substrings) separated by periods (see the provided XML example): `desktop` — specify "desktop". `major` — Parallels Desktop major version number. `minor` — minor version number. `build` — build number. `revision` — revision number. `locale` — locale ("en_US", "ru_RU", etc.) `vendor` — vendor ("parallels"). `platform` -— platform ("mac").

Configuring Individual Macs

The next step involves configuring individual Macs to take their updates from the local update server. This can be done automatically during the mass deployment of Parallels Desktop by modifying the appropriate deployment configuration option. Please see the **Changing Deployment Configuration Options** section (p. 45) for the complete info (see the description of the **Software Updates** section of the configuration file).

If you have an existing Parallels Desktop installation that was not configured for automatic updates during deployment, then read on to learn how to do it manually.

Note: The information provided here applies only to Parallels Desktop installations that were not configured for automatic updates during the mass deployment process.

To configure the Parallels Desktop automatic updates, you need to modify the Parallels Desktop property list file on a Mac as follows:

1 Find the `com.parallels.Parallels Desktop.plist` file located in the `Library/Preferences` sub-folder in the user's home folder. This is the Parallels Desktop property list file that contains the user-specific information.

2 Open the file using the Property List Editor application (included with OS X).

3 Set the update policy by modifying the `Application Preferences.VolumeLicenseUpdatePolicy` property. If the property doesn't exist, add it to the file specifying its data type as String. Set the property value using one of the following options (see also the **Notes** subsection below):

- "Parallels" — when this value is set, the updates will be downloaded from the Parallels update server via the Internet. The value is case-sensitive.
- Complete URL of the `parallels_updates.xml` file residing on your local update server. For example, "http://10.0.0.1/pdfm/v8/en_us/parallels/parallels_updates.xml". When the URL is specified, the updates will be obtained from the local update server.
- "None" — automatic updates are disabled. The value is case-sensitive.

4 Specify how often Parallels Desktop should check for updates. This is done by modifying the `Application Preferences.Check for updates` property. If the property doesn't exist, add it to the file specifying its data type as Number. Specify the property value using one of the following options:

- 0 -— Never.
- 1 — Once a day.
- 2 — Once a week.
- 3 — Once a month.

5 Set the automatic download option. Find the `Application preferences.Download updates automatically` property. If it doesn't exist, add it to the file specifying its data type as Boolean. Set the property value using one of the following options:

- true — Download updates automatically. Specify this value when using a local update server.
- false — Notify the user about the updates but don't download them automatically. This option is useful only when updates are downloaded from the Parallels update server and the user has full control over the update functionality.

6 Save the file and close the Property List Editor application.

Note: If Parallels Desktop is running while you are modifying the `plist` file, it will have to be restarted for the changes to take effect.

Notes

On initial Parallels Desktop activation using an Enterprise Edition key, the Parallels Desktop update properties will be absent from the `com.parallels.Parallels Desktop.plist` file. In such a case, a Mac user will be able to configure Parallels Desktop automatic updates using the Parallels Desktop graphical user interface.

When the update-related properties are added to the `com.parallels.Parallels Desktop.plist` file, the automatic updates will be performed according to the specified values. In addition, the value of the `Application Preferences.VolumeLicenseUpdatePolicy` property will affect the Parallels Desktop update-related elements in the Parallels Desktop graphical user interface as follows:

- If the property contains a URL of the local update server or "None", the Parallels Desktop update-related controls will be disabled (grayed out) in the Parallels Desktop graphical user interface. The displayed settings will have no effect on how the Parallels Desktop updates are carried out. Therefore, the user will not be able to configure automatic updates or check for updates manually.
- If the property doesn't exist, has no value, or contains "Parallels" as a value, the Parallels Desktop update controls will be enabled in the user interface giving the user the ability to configure automatic updates and check for updates manually.

Note: The `Application Preferences.VolumeLicenseUpdatePolicy` property value has no effect when Parallels Desktop is activated using the Parallels Desktop Standard Edition license key.

Customizing Request Support Option

The Parallels Desktop graphical user interface has a menu option named **Help** > **Request Support**. By default, this option opens a screen with the Parallels technical support information. With the Enterprise Edition of Parallels Desktop you can customize the action performed by this menu option.

The following choices are available:

- The menu option can display the following default text message: "Please contact your system administrator for assistance." The message cannot be modified.
- The menu option can open a custom URL, such as a corporate Help Desk or a wiki page. The system administrator can specify a custom URL (read below).

The customization can be done during mass deployment of Parallels Desktop by modifying the appropriate deployment configuration parameter. Please see the **Changing Deployment Configuration Options** section (p. 45) for the complete info (see the description of the **Help and Support** section of the configuration file).

You can also make these changes manually on an individual Mac as follows:

1. Log in to the Mac.
2. In the Finder, navigate to the `/Users/<User_Name>/Library/Preferences` directory and locate the `com.parallels.Parallels Desktop.plist` file.
3. Open the file using the Property List Editor application, which is included with OS X.

4 Find the `SupportRequestUrl` property in the file. If the property doesn't exist, add it to the file specifying its data type as String.

5 To specify the action that should be performed by the **Help** > **Request Support** menu, set the value of the `SupportRequestUrl` property:

- To display the default text message, clear the property value.
- To open a URL, specify the full URL to the desired Web page or a resource.

Note: The `SupportRequestUrl` property value has no effect when Parallels Desktop is activated using the Parallels Desktop Standard Edition license key.

Participating in Customer Experience Program

The Parallels Customer Experience Program is a feedback solution that allows Parallels Desktop to automatically collect usage statistics and system information that will help Parallels to develop new features and updates for future releases. When you install Parallels Desktop on a Mac computer, it is automatically set up to participate in the Customer Experience Program. If you want to turn the participation off, you can use the `prlsrvctl` command line utility and execute the following command on every Mac after installing Parallels Desktop:

```
prlsrvctl set --cep off
```

To turn the participation in the Customer Experience Program back on, execute the following command:

```
prlsrvctl set --cep on
```

The same actions can also be done through the Parallels graphical user interface by clicking **Parallels Desktop > Preferences > Advanced** and then selecting (or un-selecting) the **Feedback** option.

If you are using the Parallels mass deployment package to deploy Parallels Desktop, you can set this option in the deployment configuration file (p. 45). When that's done, Parallels Desktop will be installed on a Mac with this option already set as desired.

Parallels Desktop License Renewal

A Parallels Desktop Enterprise Edition license is renewed automatically via the Internet. When Parallels Desktop is running on a Mac, it sends a license renewal request to the Parallels Key Administrator server at random intervals. Once a license update is available, it is automatically downloaded and installed.

Parallels Desktop uses port 443 (the standard SSL port) to communicate with the Parallels Key Administrator server from which it obtains license updates. If you are not using the most recent version of Parallels Desktop, please read the **Note** section below for additional information.

Note

Port 443 is used for license renewal by Parallels Desktop 8 build 8.0.18345.820589 and newer. Older versions of Parallels Desktop use a non-standard port 5224.

For more information about the Parallels Desktop Enterprise Edition licensing, please contact your Parallels sales representative

CHAPTER 4

Mass Deployment of Parallels Desktop and Virtual Machines

This chapter describes mass deployment of Parallels Desktop Enterprise Edition. It provides step-by-step instructions on how to prepare the deployment package and how to deploy it using the available deployment tools.

In This Chapter

Prerequisites

To mass deploy Parallels Desktop Enterprise Edition you'll need:

- A Mac computer on which you'll prepare the Parallels Desktop deployment package. The Mac must have Parallels Desktop installed in order create and configure virtual machines to be deployed together with Parallels Desktop itself.
- A Windows or a Mac computer from which you'll be performing the deployment. If you are using Parallels Mac Management for SCCM, you'll be deploying Parallels Desktop from a Windows computer running the Configuration Manager console. If you are using Apple Remote Desktop, you'll be deploying Parallels Desktop from a Mac running the Apple Remote Desktop Admin. For other remote deployment tools, see their respective system requirements.
- The Parallels Desktop for Mac installation image file (the file with the ".dmg" extension). This is the same image file that you use to install Parallels Desktop on a single Mac.
- A Parallels Desktop for Mac Enterprise Edition license key provided to you by your Parallels sales representative.
- The `Parallels Desktop Autodeploy.pkg` file contained in the same .zip file that contains this documentation. The file is an OS X installation package that contains the framework for deploying Parallels Desktop. If for any reason you cannot find it, you can download the .zip file containing it from the following location:

  http://download.parallels.com/desktop/tools/pd-autodeploy.zip

Note: If you've deployed Parallels Desktop in the past and have a prepared deployment package from that time, don't use it because it may not be compatible with your build of Parallels Desktop. Always download the latest version of the `Parallels Desktop Autodeploy.pkg` from the Parallels website using the link above.

Download or copy the deployment package file to the Mac computer where you'll be preparing it for the deployment of Parallels Desktop and virtual machines.

For the list of hardware and operating system requirements for running Parallels Desktop, please refer to **Parallels Desktop User's Guide**.

Supported Deployment Tools

Parallels Desktop Enterprise Edition can be deployed to Macs using one of the available Mac package deployment tools. The available options are described below.

Parallels Mac Management for Microsoft SCCM 2012

Parallels Mac Management for Microsoft System Center Configuration Manager (SCCM) is an optimal solution that offers comprehensive management of Mac devices throughout the company. One of the features of Parallels Mac Management is the ability to deploy Parallels Desktop on managed Mac computers.

The complete instructions on how to use Parallels Mac Management to deploy Parallels Desktop are provided later in this guide.

Other Mac Management Tools

If you don't use Parallels Mac Management for Microsoft SCCM to manage your Macs, you can use one of the following tools to deploy Parallels Desktop:

- Apple Remote Desktop (ARD)
- JAMF Casper Suite
- IBM Endpoint Manager

The complete instructions on how to use Apple Remote Desktop are provided later in this guide. For the instructions on how to use other tools, please see their respective documentation.

Preparing Parallels Desktop Deployment Package

Before the Parallels Desktop deployment package can be deployed on target Macs, the Parallels Desktop installation image must be added to it and the Parallels Desktop license key must be specified. When deploying virtual machines, the virtual machine files must also be included in the package. The deployment configuration options can then be customized according to your requirements.

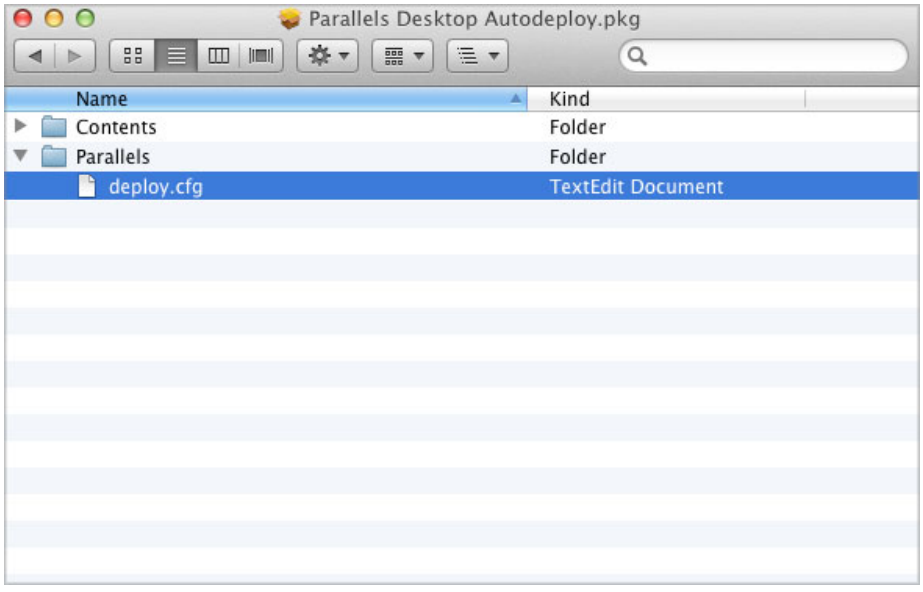
The following sections describe how to add the necessary files and how to make the desired modifications to the Parallels Desktop deployment package.

Adding Parallels Desktop Installation Image

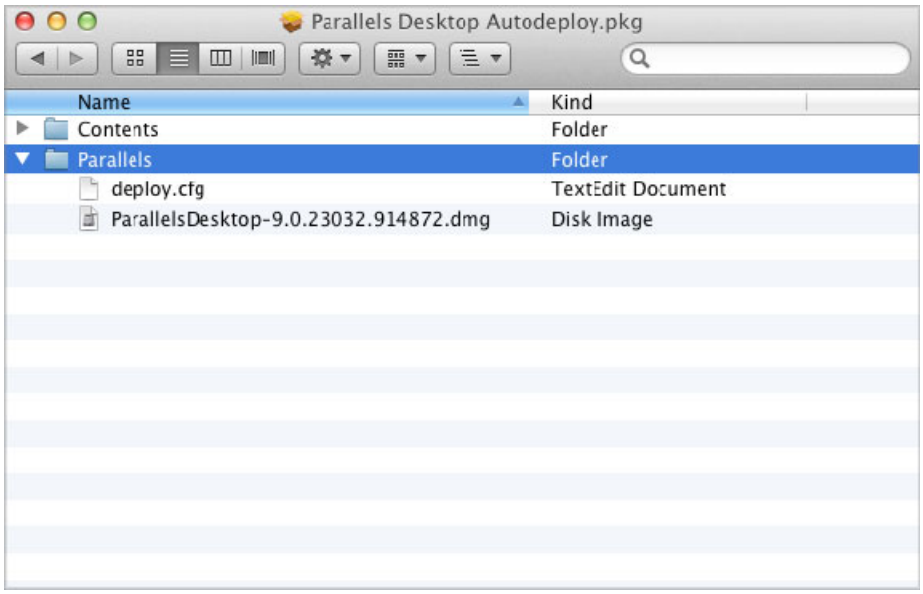
To deliver the Parallels Desktop installation image to target Macs, you need to include it in the deployment package.

To add the image file to the package:

1. On a Mac computer to which you've downloaded the `Parallels Desktop Autodeploy.pkg` file, right-click the file and then click **Show Package Contents**.
2. Expand the `Parallels` folder to see its contents. The folder should contain the `deploy.cfg` file. This is the deployment configuration file, which you will modify later.

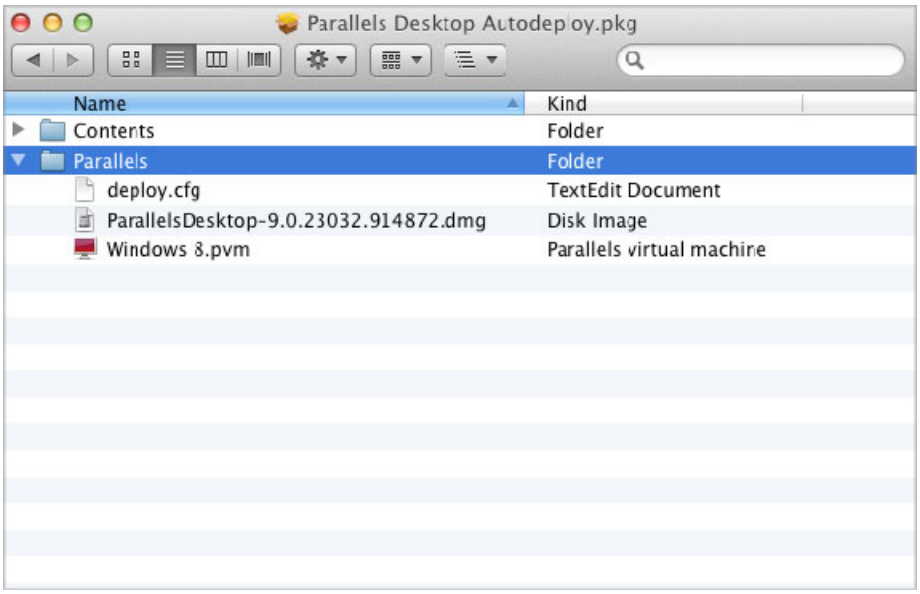


3 Copy the Parallels Desktop installation image file to the `Parallels` folder. Your package contents should now look like this:



Adding Virtual Machines

To add a virtual machine to the deployment package, simply copy its file to the `Parallels` folder (the same folder in the package that contains the `deploy.cfg` file and the Parallels Desktop installation image). You can include more than one virtual machine. Once the virtual machine is added, your package contents should look similar to the following:



Before copying a virtual machine to the deployment package, you should configure it according to your needs. Read the following subsections for the information about the modifications that you can make to the virtual machine configuration prior to deploying it.

Installing Parallels Tools

Parallels Tools is a collection of utilities and drivers that vastly improve the virtual machine performance and enable some features that are not available otherwise. Parallels Tools are included with every copy of Parallels Desktop and are highly recommended to be installed in every virtual machine right after an operating system is installed in it. Your source virtual machine should have Parallels Tools installed.

Generating Windows SID and Computer Name

When you deploy a virtual machine that runs Windows as a guest operating system, the deployed copies of Windows will have the same Windows Security ID (SID) and computer name as the source. You can set up Windows in the source virtual machine in such a way that the SID and computer name will be reset in each deployed copy of Windows on its initial startup.

Using Sysprep to Reset SID and Computer Name

Microsoft System Preparation (Sysprep) is a Microsoft tool that can be used to prepare Windows to be deployed on other computers. If your virtual machine is running Windows 8, Windows 8.1, Windows Server 2012, or Windows Server 2012 R2, use the `Sysprep.exe` command-line utility.

To reset the security ID (SID), include the `/generalize` option as shown in the following example:

```
Sysprep /generalize
```

To change the computer name, use the `/oobe` option that enables the user to customize their Windows operating system, including naming the computer:

```
Sysprep /generalize /shutdown /oobe
```

For the complete description of the command-line version of Sysprep, please refer to Microsoft documentation.

If your virtual machine is running another version of Windows, download the latest version of Sysprep for that version from the Microsoft website and use it according to Microsoft instructions.

Other Configuration Options

When preparing a source virtual machine for mass deployment, you may change any of its configuration settings according to your needs. The following list describes a few common options:

- **Shared Folders and Profiles**. Parallels Desktop offers great flexibility in bridging the capabilities of OS X and your guest operating system by configuring shared folders and profiles. Think over which files and folders you wish to share between the two operating systems and set up them in advance.

- **Configuring USB Settings**. Hardware devices that connect through USB ports including printers and removable drives can only be used by one operating system at a time. By default, Parallels Desktop will ask the user which OS to connect the device to when a new device is detected. This default can be changed by making all USB devices connect only to OS X or to the guest operating system.
- **Installing Applications**. You can install all the necessary applications in the virtual machine before deploying it.
- **Parallels Desktop Enterprise Edition Options**. Parallels Desktop Enterprise Edition provides additional configuration options. With the Enterprise Edition you can:
  - Password-protect the virtual machine configuration.
  - Set up a local update server and specify the Parallels Desktop automatic update options.
  - Customize the "Request Support" option.
  - Configure participation in the Customer Experience program.

  For the information on how to configure these options, see **Changing Deployment Configuration Options** (p. 45) and **Parallels Desktop Enterprise Edition Features** (p. 16).

For the complete information about Parallels virtual machine configuration, please refer to the **Parallels Desktop User's Guide**.

Supplying Parallels Desktop License Key

Parallels Desktop Enterprise Edition license key is required to activate Parallels Desktop on target Macs. The key must be embedded in the deployment package.

To embed the license key in the deployment package:

1. Right-click the `Parallels Desktop Autodeploy.pkg` file and then click **Show Package Contents**.
2. Expand the `Parallels` folder to see its contents. The `deploy.cfg` file contained in the folder is a deployment configuration file. One of the parameters is used to specify the Parallels Desktop license key.
3. Open the `deploy.cfg` file in a text editor.
4. Find the `License` section in the file and enter your Parallels Desktop Enterprise Edition license key as a value of the `license_key` variable. The license must be supplied in the following format: "XXXXXX-XXXXXX-XXXXXX-XXXXXX-XXXXXX" (including the quotes and dashes).
5. Save the `deploy.cfg` file.

   To learn about other configuration parameters in the `deploy.cfg` file, please read the **Changing Deployment Configuration Options** section (p. 45).

Note: Parallels Desktop activation requires Internet access. The Parallels Desktop activation routine uses **port 443** to communicate with Parallels licensing server. Please make sure that the Macs on which you plan to deploy Parallels Desktop can communicate through this port.

Changing Deployment Configuration Options

The deployment package contains a special script, which is automatically executed on a target Mac after the package is transferred and the Parallels Desktop software is installed on it. The script performs the necessary actions on the Mac to finalize the deployment. The script reads the configuration parameter values from the `deploy.cfg` file contained in the Parallels folder of the `Parallels Desktop Autodeploy.pkg` file. You can modify the configuration parameters as needed.

The following tables describe the configuration parameters in the `deploy.cfg` file. You can open the file for editing in a text editor.

License

The **License** section is used to specify a Parallels Desktop Enterprise Edition license key:

Variable	Description
`license_key`	Specifies the Parallels Desktop license key. See **Supplying Parallels Desktop License Key** (p. 44) for more info.

Virtual Machines

The **Virtual Machines** section allows to modify the virtual machine deployment options:

Variable	Description
`vm_register_mode`	Specifies the registration mode for the deployed virtual machines. Possible values: `"Private"` — The virtual machines will be registered for the active user only. The virtual machines will be placed into the `/Users/<user>/Documents/Parallels` folder. `"Shared"` — The virtual machines will be registered for all users of a Mac. The virtual machines will be placed into the `/Users/Shared/Parallels` folder. The default destination folder for virtual machines can be modified using the `vm_destination_folder` variable (see below).
`vm_reset_hwid`	Specifies whether the virtual machine SMBOIS ID (hardware ID) will be regenerated. Each Parallels virtual machine is assigned a universally unique SMBIOS ID when it is created. When you deploy a virtual machine to many Macs, each resulting copy of the machine will have the same SMBIOS ID. This is the default behavior and should not be normally changed. If your enterprise management system relies on unique SMBOIS IDs, you can change the value of the `vm_reset_hwid` variable as follows: `"no"` — Keep the original SMBIOS ID. "yes" — Regenerate the ID.

`vm_deploy_mode`	Specifies whether the virtual machines will be copied or moved from the deployment package to their target folders on a Mac. Possible values: `"Copy"` — Copy the virtual machine from the package to the destination folder. `"Move"` — Move the virtual machine from the package to the destination folder. Before a virtual machine can be registered in Parallels Desktop, it needs to be copied (or moved) from the deployment package to a folder on the Mac. You can specify whether to use a Copy or a Move operation. Copying is slower but must be used if the deployment package is read-only or is placed on a network share. The virtual machine file will not be removed from the package after it's been copied to a Mac. Moving is fast and can be used when the deployment package is copied directly to a Mac. If the virtual machine destination folder and the deployment package are placed on the same mount point, the move operation completes almost instantly. The virtual machine is removed from the package as a result. Note that moving will be as slow as copying if the virtual machine destination folder and the deployment package are placed on different mount points.
`vm_destination_folder`	Allows to change the default destination folder for virtual machines. The default folder is determined by the value of the `vm_register_mode` variable (see above). The `vm_destination_folder` variable allows to change the default folder while keeping the selected virtual machine registration mode.

`<VM_file_name>`	This variable takes a name of a virtual machine file and allows you to change the destination location and/or name of the target virtual machine.
	
	The virtual machines contained in the Parallels folder of the deployment package will be copied to a default location on a Mac, which is determined by the `vm_register_mode variable` (or the `vm_destination_folder variable` if is present). If you have more than one virtual machine in this folder, you can specify a different destination location and/or name for a specific virtual machine if needed.
	
	To specify a different location, you need to define a variable/value pair as shown in the examples below. The variable name should be the same as the virtual machine file name (including the ".pvm" extension). The variable value should contain an absolute path where you want the virtual machine to be copied on a Mac. You can specify a different destination location, a different virtual machine name, or both. Note that only the specified virtual machine will be copied to the specified location. All other virtual machines will be copied to the default location.
	
	Examples:
	
	`"Shared_VM.pvm"="/Users/Shared/Shared VM.pvm"`
	
	`"Private_VM.pvm"="~/Documents/Parallels/Private VM.pvm"`

The following three variables belong to the same sub-section which allows to customize the Parallels Desktop Control Center by displaying a custom HTML banner at the top of its window. For additional information, see **Customizing Parallels Desktop Control Center** (p. 17).	
`control_center_banner_url`	The URL of a custom HTML page to be displayed as a banner in the Parallels Desktop Control Center window. To disable the banner, comment out the variable or specify an empty string as a value.
`control_center_banner_height`	The banner height, in pixels. The recommended value is 350. To use the current value (if you are updating Parallels Desktop on a Mac), comment out the variable.
`control_center_banner_min_width`	The banner minimum width, in pixels. When resizing the Control Center window, its minimum width will be limited accordingly. The recommended value is 350. To use the current value (if you are updating Parallels Desktop on a Mac), comment out the variable. To disable the minimum width limitation, comment out the variable or specify 0 (zero) as a value.

Launch Options

The **Launch Options** section allows to configure Parallels Desktop to start as a service on host startup:

Variable	Description
`start_pd_as_service`	Specifies whether Parallels Desktop should run as an application or as a service.

	The value of "yes" specifies that Parallels Desktop will run as a service. The service will start automatically on host startup and will stop on host shutdown. The service can be managed by **launchctl** (the standard OS X command line utility that allows to manage daemons, applications, processes, etc.). The value of "no" specifies that Parallels Desktop will run as an OS X application. The user will have to start and exit Parallels Desktop manually. Depending on whether Parallels Desktop is already installed on a target Mac or not, the following will happen: - If Parallels Desktop is already installed on a Mac as a service and the value of "no" is specified, the new installation will set up Parallels Desktop to run as an application. - If this option is commented out and Parallels Desktop is already installed on a Mac, no changes will be made to the way Parallels Desktop runs. - If this option is commented out and Parallels Desktop is not installed on a Mac, it will run as an application.

Software Updates

The **Software Updates** section allows to configure the Parallels Desktop automatic updates:

Variable	Description
`updates_url`	Specifies where the updates will be downloaded from. Possible values: `"Parallels"` — Download the updates from the Parallels website over the Internet. `"None"` — Turn off automatic updates. `<URL>` — Download the updates from a local update server. The variable should contain a complete URL (in quotes) of the `parallels_updates.xml` file on your local Web server. For more information, please see **Setting Up Local Update Server** (p. 31).
`updates_auto_check`	Specifies how often Parallels Desktop should check for updates. Possible values: `"0"` — never `"1"` — once a day `"2"` — once a week `"3"` — once a month
`updates_auto_download`	Specifies the automatic update download options: `"on"` — Download the updates automatically. This value should be specified when using a local update server. `"off"` — Notify the user about the updates but don't download them automatically. This option is useful only when updates are downloaded from the Parallels website and the user has full

	control over the update functionality.

Help and Support

The **Help and Support** section allows to configure the "Request Support" option in the Parallels Desktop graphical user interface.

Variable	Description
`support_url`	Specifies a URL of a page that will be displayed when user selects the **Help > Request Support** menu option in the Parallels Desktop graphical user interface. To display the default message, specify an empty string (this is the default behavior). To display your own Web page (help desk, wiki, etc.), specify its URL. See also **Customizing Request Support Option** (p. 36).
`lic_admin_url`	Specifies a URL that will be included in error message dialogs related to licensing operations. The URL should point to a web page or a resource that the user can visit to get help with the problem. The error message appears when there's a problem with activating, renewing, or deactivating a Parallels Desktop license. If you specify a URL using this variable, it will be included in the message dialog in the form "For details click <URL>". If you don't specify a URL (comment out the variable or specify an empty string), the default "Contact your system administrator" message will be displayed.

Problem Reporting

The **Problem Reporting** section allows to specify whether Parallels Desktop problem reports should contain screenshots of the OS X and the virtual machine desktops. You may wish not to include the screenshots in the problem reports for security reasons.

Variable	Description
`report_allow_screenshots`	Possible values: `"yes"` — Include screenshots of the OS X and the virtual machine desktops in Parallels Desktop problem reports. `"no"` — Do not include the screenshots.

Customer Experience

The **Customer Experience** section allows to specify whether the participation in the Parallels Customer Experience Program is turned on or off. The Parallels Customer Experience Program is a feedback solution that allows Parallels Desktop to automatically collect usage statistics and system information that will help Parallels to develop new features and updates for future releases.

Variable	Description
`cep_participation`	Possible values: `"off"` — participation in the program is turned off.

	`"on"` — participation in the program is turned on. See also **Participating in Customer Experience Program** (p. 37).

Deploying Parallels Desktop and Virtual Machines on Macs

Once the deployment package contains all the necessary files and is configured as desired, you can deploy it to Macs using one of the available remote Mac management tools. This section provides instructions on how to deploy Parallels Desktop using the following tools:

- Parallels Mac Management for Microsoft SCCM 2012 (p. 50)
- Apple Remote Desktop (p. 52)

Note: If you are looking for the information on how to use NetBoot to deploy an OS X image with Parallels Desktop pre-installed, please read the **Deploying OS X Image Using NetBoot** section (p. 56).

Deploying with Parallels Mac Management for SCCM 2012

Parallels Mac Management for Microsoft SCCM 2012 provides facilities to deploy Parallels Desktop on Mac computers from the Configuration Manager console. The deployment is done through the SCCM Software Distribution feature. To use this functionality, you need Microsoft System Center Configuration Manager 2012 fully deployed and operational and the Parallels Mac Management software installed and running. For the complete information about Parallels Mac Management for SCCM, please read the administrator's guide that came with it.

The basic steps involved in deploying Parallels Desktop are:

1. Prepare the Parallels Desktop deployment package. We've described this step earlier in this guide.
2. Create a software distribution package using the Configuration Manager console.
3. Send the package to a distribution point.
4. Deploy the package.

The following describes steps 2-4 in detail.

Creating a Software Distribution Package

The Parallels Desktop deployment package is distributed to Macs using the standard Configuration Manager functionality:

1. In the Configuration Manager console, navigate to **Administration / Overview / Application Management / Packages**.
2. On the toolbar, click **Create Package**.
3. Use the **Create Package and Program Wizard** to create a software distribution package and a program.
4. On the **Package** page, specify the package name, description, and other information. Select the **This package contains source files** option and then click the **Browse** button. Browse for and select the `Parallels Desktop Autodeploy.pkg` folder. When done, click **Next**.
5. On the **Program Type** page, select the **Standard program** item and click **Next**.
6. On the **Standard Program** page, specify the information about the program. Type the following in the **Command line** field:

```
chmod 700 "Parallels Desktop
Autodeploy.pkg/Contents/Resources/postflight" && installer -pkg
"Parallels Desktop Autodeploy.pkg" -target /
```

7. When done specifying the program information, click **Next**.
8. Click **Next** on the **Requirements** page.
9. Review the summary and click **Next** to create the package.

Sending the Package to a Distribution Point

To send a copy of the package to a distribution point, right-click the package of interest and click **Distribute Content** in the pop-up menu. Use the **Distribute Content Wizard** to specify a distribution point to which you want to send the package.

Please make sure that the distribution point is properly configured. For more information, see the Parallels Mac Management Administrator's Guide.

Deploying Parallels Desktop

To deploy Parallels Desktop:

1. In the Configuration Manager console, right-click the package and then click **Deploy** in the pop-up menu. The **Deploy Software Wizard** opens.
2. On the **General** page, click the **Browse** button next to the **Collection** field and select the collection containing your Macs (e.g. **All Mac OS X Systems**). Click **OK** and then click **Next.**
3. On the **Content** page, verify the distribution point info and click **Next**.
4. Click **Next** on the **Deployment Settings** page.
5. On the **Scheduling** page, specify the schedule for this deployment. Click **New** to specify the assignment schedule. When done, click **Next**.
6. Use the default values on the rest of the wizard pages and complete the wizard.

The package will be advertised to Macs in the specified collection and will be distributed to them according to the specified schedule.

Deploying with Apple Remote Desktop

To use Apple Remote Desktop, you need Apple Remote Desktop Admin, which should run on your administrator Mac, and Apple Remote Desktop client, which should run on client Macs.

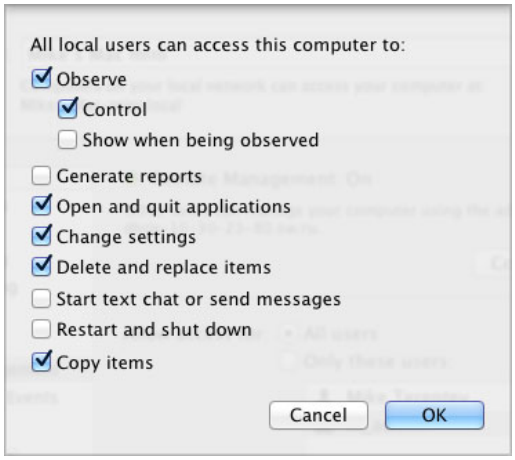
Apple Remote Desktop Admin doesn't come standard with OS X. You will have to obtain the software from Apple and install it on a Mac from which you are deploying Parallels Desktop. Apple Remote Desktop client is installed during the standard OS X installation.

Note: Before continuing, please verify that the versions of Apple Remote Desktop Admin and each instance of Apple Remote Desktop client match. If they don't, update the necessary software.

Configuring Remote Management Services on Target Macs

For a remote management tool (ARD in our case) to be able to distribute the software, the Remote Management Services have to be configured in OS X on each individual Mac. In order to do so, you need to log in to each Mac and perform the following steps:

1. In OS X, open **System Preferences**.
2. Click **Sharing**.
3. In the Service list, select **Remote Management**.
4. Click **Options**.
5. Select the following options: **Observe**, **Control**, **Open and quit applications**, **Change settings**, **Delete and replace items**, **Copy items** (see the picture below).



6. Click **OK**.
7. Close **System Preferences**.

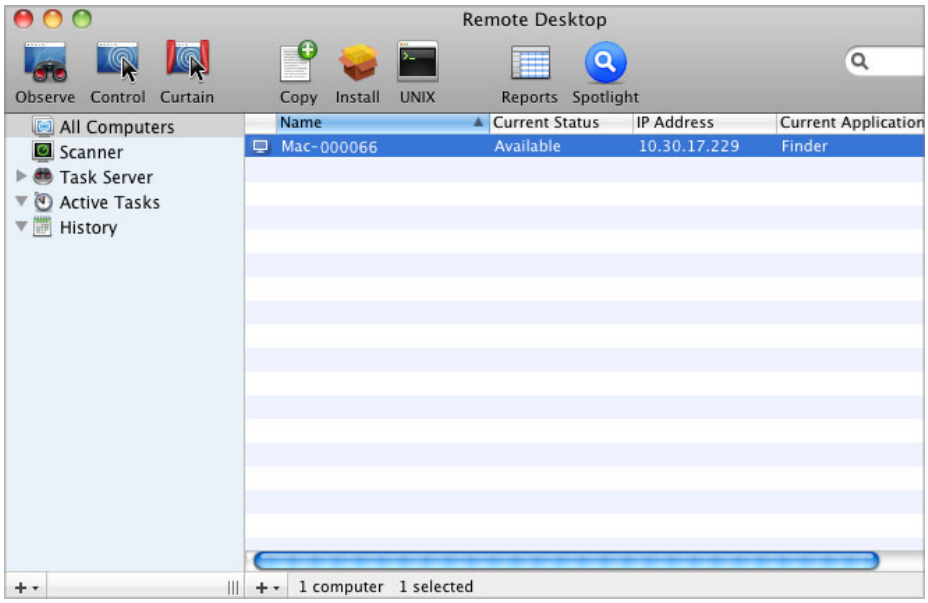
Deploying the Package

To deploy the package to Macs:

1 On the administrator Mac, open the Finder and click **Applications** > **Remote Desktop** to display the main window of Apple Remote Desktop.

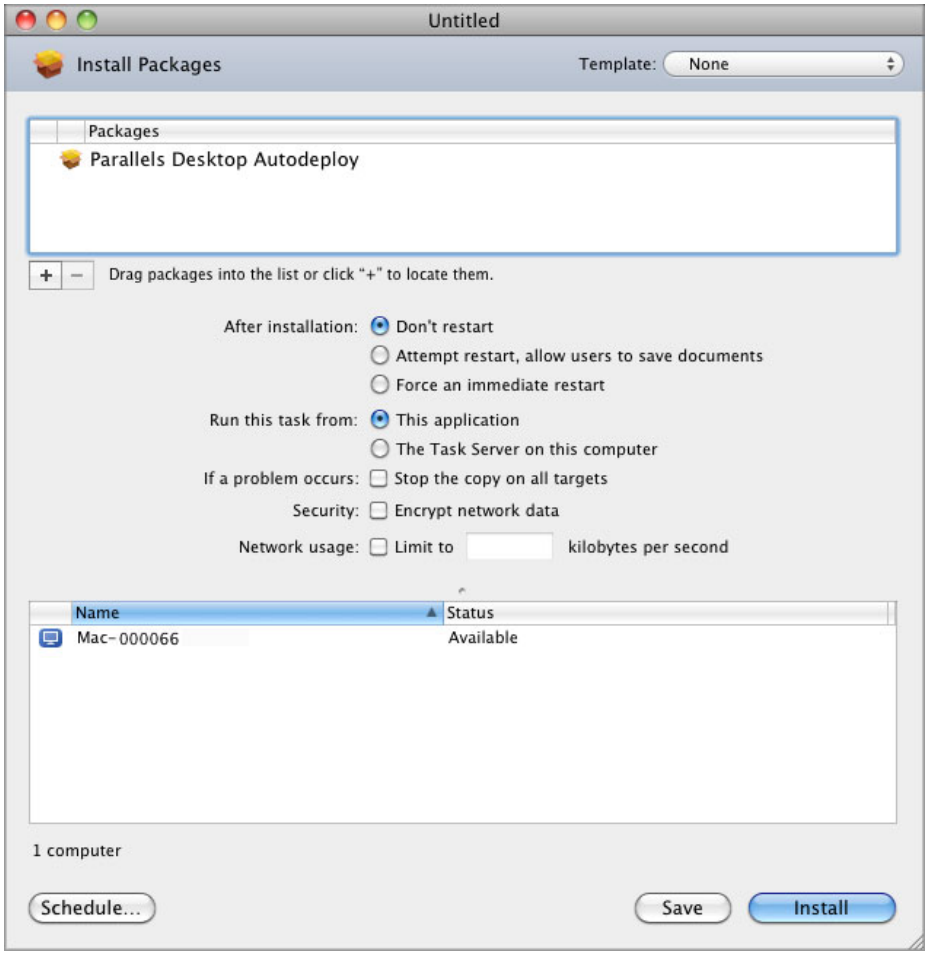
> **Note**: If you have set up a Task Server, you can deploy the package from that server.

2 Click **All Computers** in the left section of the ARD main window. The Mac computers connected to your network are displayed in the right pane of the window.



3 Select the desired destination Macs and click **Install** in the ARD toolbar (or select **Manage** > **Install Packages** menu). The **Install Packages** window opens.

4 Add the `Parallels Desktop Autodeploy.pkg` file to the **Packages** list either by dragging it there with the mouse or by locating the package using the '+' button



5 Click **Install** to distribute the deployment package to selected Macs. The installation progress is displayed in the main window. The result of the package distribution to each individual Mac is displayed in the **Status** column.

When the package is distributed to a Mac, it runs on it and installs Parallels Desktop and the virtual machine(s). It then activates Parallels Desktop using the supplied license key.

Using Apple Remote Desktop Templates

Apple Remote Desktop allows to save package installation settings as templates. This feature may be useful if you need to deploy Parallels Desktop more than once using different settings. For example, you may have a virtual machine specifically configured for your developers and another one configured for your graphics designers or quality assurance engineers. Instead of modifying the deployment package every time you need to deploy Parallels Desktop to a specific group of Mac users, you can create separate packages and save them as templates.

To create an ARD template:

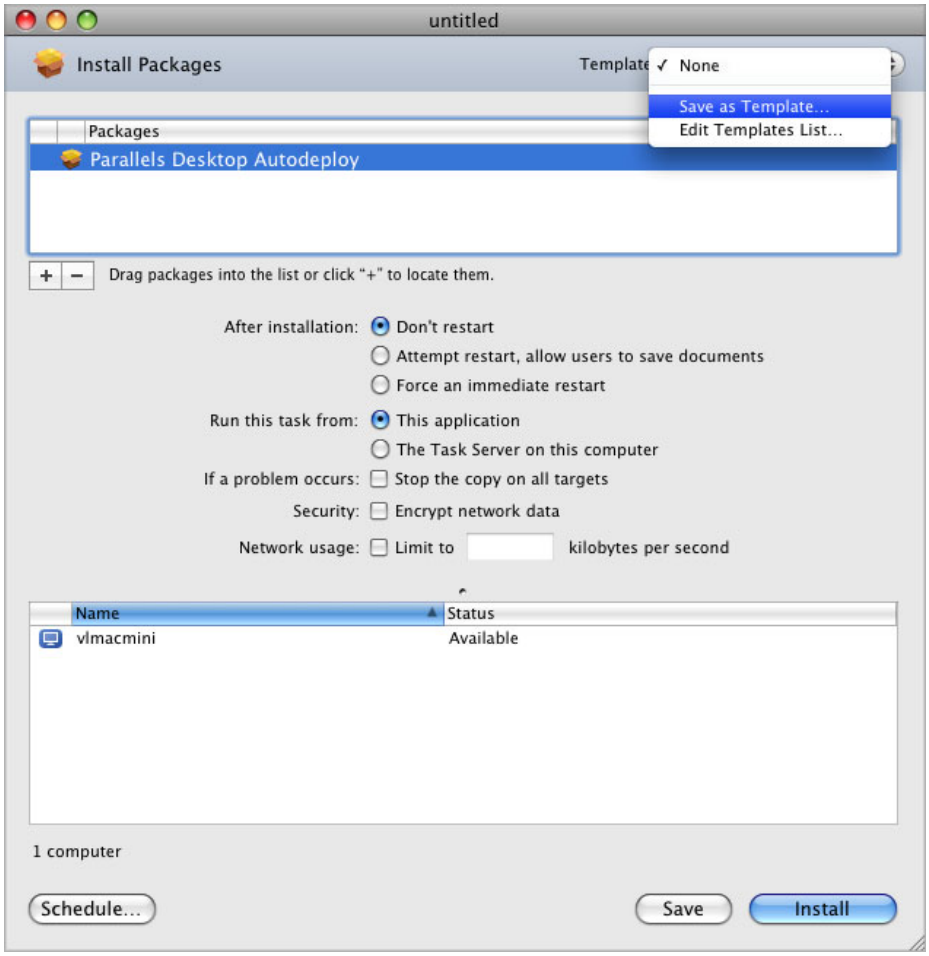
1 On the administrator Mac, open Apple Remote Desktop.

2 Click **All Computers** in the left pane of the ARD main window.

3 Select the computers where the deployment package is to be installed and click **Install** in the ARD toolbar.

4 In the **Install Packages** window, add the desired Parallels Desktop deployment package either by dragging it to the top area of the displayed window or locating it by using the '+' button.

5 Save current installation setup as a template by selecting **Save as Template** from the **Template** pop-up menu located in the upper right-hand corner of the **Install Packages** window.



6 In the displayed window, specify the name that you would like to use for the template and click **OK**.

The next time when you are ready to deploy Parallels Desktop to a specific group of Mac users, simply select the desired template from the same **Template** pop-up menu in the **Install Packages** window and then click **Install**.

Deploying OS X Image Using NetBoot

If you are using NetBoot to deploy an OS X image with Parallels Desktop Enterprise Edition pre-installed, some additional steps need to be taken to properly activate a copy of Parallels Desktop on individual Macs.

The following describes the process of installing Parallels Desktop in OS X and creating an image from it suitable for NetBoot deployment:

1. Install OS X on a Mac.
2. Install Parallels Desktop Enterprise Edition.
3. Make sure your Mac can connect to the Internet.
4. Activate Parallels Desktop using your Enterprise Edition license key.
5. Tune Parallels Desktop settings and install and configure virtual machines according to your needs.
6. In OS X, open Terminal and deactivate the Parallels Desktop license by typing the following command:

   ```
   prlsrvctl deactivate-license
   ```

   On successful license deactivation, you should see the following output:

   ```
   The License has been successfully deactivated
   ```
7. Quit Parallels Desktop.
8. In Terminal, type the following command to prepare Parallels Desktop to activate a license in deferred mode:

   ```
   prlsrvctl install-license --key <key> --deferred
   ```

   where `<key>` is the Parallels Desktop Enterprise Edition license key.

   On success, you should see the following output:

   ```
   The License has been successfully prepared for deferred activation.
   ```

   This means that the next time Parallels Desktop starts, it will try to activate the license automatically. The Internet connection is required for activation. If a Mac can't connect to the Internet, the Parallels Desktop license activation will be postponed until the Internet connection is available.
9. You can now create an OS X image from this system and deploy it to other Macs in your enterprise using NetBoot.

CHAPTER 5

Parallels Desktop Command Line Interface

Parallels Desktop Enterprise Edition comes with two command-line utilities: `prlsrvctl` and `prlctl`.

prlsrvctl

The `prlsrvctl` utility is used to administer Parallels Desktop. The tasks that can be performed include getting general information about Parallels Desktop and its configuration settings, modifying Parallels Desktop preferences, getting a list of users, obtaining statistics, installing a license, and others.

prlctl

The `prlctl` utility is used to perform administration tasks on virtual machines. The utility supports a full range of tasks from creating and administering virtual machines to installing Parallels Tools, getting statistics, and generating problem reports.

The rest of this chapter provides detailed technical information about the commands and options available with each utility.

In This Chapter

Parallels Desktop Management

Parallels Desktop is managed using the `prlsrvctl` command-line utility, which is installed on the Mac during the Parallels Desktop installation.

General Syntax

The `prlsrvctl` command-line utility is used to perform management tasks on Parallels Desktop. The tasks include getting the Parallels Desktop information, modifying Parallels Desktop preferences, installing a license, obtaining statistics and problem reports, and some others.

Syntax

prlsrvctl *command* [*options*] [**-l**,**--login** *user*[**:***passwd*]**@***server*] [**-v**, **--verbose** *number*]

Parameters

Name	Description
`command`	The name of the command to execute.
`options`	Command options. See individual commands for available options.
`-l, --login`	Connect to a remote Parallels Desktop. If this parameter is omitted, the command will be executed on the local machine.
user	Name of the user on the remote Mac.
passwd	The user password. If the password is omitted, you will be prompted to enter it.
server	The remote Mac IP address or hostname.
`-v, --verbose` *number*	Show verbose output. The greater the *number*, the more verbose output will be produced.

Remarks

To display help, enter `prlsrvctl` on the command line without any parameters.

prlsrvctl info

Displays the host computer and Parallels Desktop configuration information.

Syntax

prlsrvctl info

Remarks

The information returned by the `info` command includes the following:

- Host machine name.
- Parallels Desktop version number.
- Host operating system type and version.
- The default virtual machine directory name and path.
- Parallels Desktop memory limits.
- Parallels Desktop minimum allowable security level.
- The default backup directory name and path for virtual machines.
- Parallels Desktop license information.

- Host machine hardware configuration information.
- Other miscellaneous info.

Links

General Syntax (p. 57)

prlsrvctl install-license

Installs Parallels Desktop license on the host computer.

Syntax

prlsrvctl install-license -k,--key *key* [**-n,--name** *name*] [**-c,--company** *name*] [**--deferred**]

Parameters

Name	Description
`-k, --key` *key*	License key.
`-n, --name` *name*	License user name.
`-c,--company` *name*	License company name.
`--deferred`	The license will be activated the next time Parallels Desktop is started. If a license has already been activated, it should be deactivated first before using this option. See prlsrvctl deactivate-license (p. 59)

Links

General Syntax (p. 57)

prlsrvctl deactivate-license

Deactivates Parallels Desktop license.

Syntax

prlsrvctl deactivate-license

Links

General Syntax (p. 57)

prlsrvctl net

The `prlsrvctl net` command is used to create and configure virtual networks.

Subcommands

Name	Description
net add	Creates a new virtual network
net set	Configures the parameters of an existing virtual network.
net del	Removes an existing virtual network.
net list	List the available virtual networks.

net add

The `prlsrvctl net add` command is used to create a new virtual network.

Syntax

```
prlsrvctl net add vnetwork_id [-i,--ifname if] [-m,--mac mac_address]
                              [-t,--type bridged|host-only]
                              [-d,--description description]
```

Parameters

Name	Description
`vnetwork_id`	A user-defined name that will identify the new virtual network.
`-i,--ifname` *if*	The name of a physical network adapter on the host to which this virtual network should be bound.
`-m,--mac` *mac_address*	The MAC address of a virtual network adapter on the host to which this virtual network should be bound.
`-t,--type` *value*	The type of the virtual network to create. Possible values are: • `bridged`. A virtual machine connected to this type of virtual network appears as an independent computer on the network. • `host_only` (default). A virtual machine connected to this type of virtual network can access only the host and the virtual machine connected to the same virtual network.
`-d,--description` *description*	A user-defined description of the virtual network.
`--ip-scope-start` *IP_address* `--ip-scope-end` *IP_address*	Sets the start and end IP addresses for the DHCP pool. The virtual machines connected to the network you are creating will automatically receive their IP addresses from this DHCP pool.

Links

General Syntax

net set

The `prlsrvctl net set` command is used to modify an existing virtual network.

Syntax

```
prlsrvctl net set vnetwork_id [-i,--ifname if] [-m,--mac mac_address]
                    [-t,--type bridged|host-only]
                    [-d,--description description]
                    [-n, --name new_name]
```

Parameters

Name	Description
`vnetwork_id`	The name of the virtual network to modify.
`-i,--ifname` *if*	The name of a physical network adapter on the host to which this virtual network should be bound.
`-m,--mac` *mac_address*	The MAC address of a virtual network adapter on the host to which this virtual network should be bound.
`-t,--type`	The type of the virtual network to create. Possible values are: • `bridged`. A virtual machine connected to this type of virtual network appears as an independent computer on the network. • `host_only`. A virtual machine connected to this type of virtual network can access only the host and the virtual machines connected to the same virtual network.
`-d,--description` *description*	A user-defined description of the virtual network.
`-n, --name` *new_name*	A new name for the virtual network. Use this parameter if you would like to rename the virtual network.

Links

General Syntax

net del

The `prlsrvctl net del` command is used to delete an existing virtual network.

Syntax

```
prlsrvctl net del vnetwork_id
```

Parameters

Name	Description
`vnetwork_id`	The name of the virtual network to delete.

Links

General Syntax

net list

The `prlsrvctl net list` command lists the existing virtual networks.

Syntax

prlsrvctl net list

Links

General Syntax

prlsrvctl problem-report

Obtains the Parallels Desktop problem report and displays it on the screen.

Syntax

prlsrvctl problem-report

Parameters

The command accepts no parameters.

Remarks

The command collects technical data about the Parallels Desktop and displays the report on the screen (the output can also be piped to a file). The report can then be directed to Parallels technical support for analysis.

Links

General Syntax (p. 57)

prlsrvctl set

Allows to modify Parallels Desktop preferences.

Syntax

```
prlsrvctl set [--mem-limit auto|size]
              [-s,--min-security-level low|normal|high]
              [-c,--cep on|off]
              [--mng-settings allow|deny]
              [{--device device --assignment host|vm}]
              [--backup-storage user[[:passwd]@server[:port]]]
              [--backup-path path]
              [--default-encryption-plugin plugin-id] |
                          [--reset-default-encryption-plugin]
              [--allow-attach-screenshots on|off]
```

Parameters

Name	Description
`--mem-limit`	Sets the upper limit of the memory size that can be reserved for Parallels Desktop operations. The following options are available: • `auto` -- if this option is used, the memory size will be calculated automatically. • `size` -- user-defined memory size, in megabytes.
`-s,--min-security-level`	The lowest allowable security level that can be used to connect to the Parallels Desktop. The following options are available: • `low` -- plain TCP/IP (no encryption). • `normal` -- most important data is sent and received using SSL over TCP/IP (user credentials during login, guest OS clipboard, etc.) Other data is sent and received using plain TCP/IP with no encryption. • `high` -- all of the data is sent and received using SSL.
`-c,--cep`	Enables/disables the participation in the Customer Experience Program. The following options are available: • `on` -- enables CEP. • `off` -- disables CEP.
`--mng-settings`	Allows to grant or deny permission to new users to modify Parallels Desktop preferences. By default, only

	administrators of the host OS can modify Parallels Desktop preferences. When a new Parallels Desktop user profile is created (this happens when a user logs in to Parallels Desktop for the first time), he/she will be granted or denied this privilege based on the default setting. This parameter allows to set that default setting. Please note that this parameter only affects new users (the users that will be created in the future). The profiles of the existing users will not be modified.
`--device` *device* `--assignment`	Allows to set the assignment mode for the specified VTd device. The following options are available: • `host` -- assign the device to host. • `vm` -- assign the device to virtual machines.
`--backup-storage`	The default backup server where virtual machine backups will be stored.
user	Name of the user on the backup server.
passwd	The user password.
server	The backup server IP address or hostname.
port	Port number. If omitted, the default port number will be used.
`--backup-path` *path*	Name and path of the default directory on the backup server where virtual machines backups will be stored.
`--default-encryption-plugin` *plugin-id*	Allows to specify which encryption plug-in should be used by default. An encryption plug-in implements an encryption algorithm, which is used to encrypt a virtual machine. Use this option to specify the ID of the plug-in, which should be used by default.
`--reset-default-encryption-plugin`	Resets the default encryption plug-in assignment and sets the built-in plug-in to be used by default.
`--allow-attach-screenshots`	Specifies whether to attach screenshots to problem reports: • `on` -- attach screenshots. • `off` -- do not attach screenshots.

Links

General Syntax (p. 57)

prlsrvctl shutdown

Shuts down Parallels Desktop.

Syntax

prlsrvctl shutdown [**-f, --force**]

Parameters

Name	Description
`-f, --force`	Specifies whether the shutdown operation should be forced. If one or more virtual machines are running, clients are connected, or some tasks are currently in progress, then forcing the shutdown will stop all processes automatically and will shut down the Parallels Desktop.

Links

General Syntax (p. 57)

prlsrvctl statistics

Obtains Parallels Desktop statistics.

Syntax

prlsrvctl statistics [**-a, --all**] [**--loop**] [**--filter** *name*]

Parameters

Name	Description
`-a, --all`	*This parameter is not currently used.*
`--loop`	Subscribes to receive statistics on the periodic basis. Once you execute the command with this option, the statistics will be displayed in your console window every time a new set of values is collected. To unsubscribe, press the **Enter** key or **Ctrl-C** in your console window.
`--filter` *name*	*This parameter is not currently used.*

Links

General Syntax (p. 57)

prlsrvctl usb

The `prlsrvctl usb` command is used to permanently assign a USB device to a specific virtual machine. A permanently assigned USB device will be connected to the virtual machine automatically on server restart.

Subcommands

Name	Description

usb list	Lists USB devices connected to the host together with the information about their virtual machine assignments for the current user.
usb set	Permanently assigns a USB device to the specified virtual machine.
usb del	Removes a previously created USB device assignment.

usb list

Lists the USB devices connected to the host.

Syntax

prlsrvctl usb list

Options

None.

Returns

A list of USB devices in tabular format with the following columns:

Name — the USB device name.

ID — a string that uniquely identifies the USB devices on the physical server. The ID never changes even if the device is disconnected from the server and then reconnected again. Please note that if a device ID is listed in quotes, they are a part of the ID and must be included in other calls that use it as an input parameter.

VM UUID — a universally unique ID of the virtual machine to which this USB device is permanently assigned. If a USB device is not assigned to any virtual machine, this column will be empty.

usb set

Permanently assigns a USB device to the specified virtual machine. A permanently assigned USB device will be connected to the virtual machine automatically on server restart. The USB device assignment is performed for the current user only. Other users may create their own USB device assignments.

Syntax

prlsrvctl usb set *<usb_dev_ID> <vm_ID|vm_name>*

Options

Name	Description
<usb_dev_ID>	The USB device ID.
<vm_ID|vm_name>	The universally unique ID or name of the virtual machine to which to assign the USB device.

usb del

Deletes a USB device assignment. The USB device assignment is performed on the user level, so if you remove an assignment, it will only be removed for the current user. Other users may have their own USB devices assignments, which will not be affected.

Syntax

prlsrvctl usb del *<usb_dev_ID>*

Options

Name	Description
<usb_dev_ID>	The USB device ID.

prlsrvctl user list

Displays the list of Parallels Desktop users.

Syntax

prlsrvctl user list [**-o,--output** *name*[,*name*...]]

Parameters

Name	Description
-o,--output *name*	Names of the fields to include in the output. The following fields are available: • `name` -- User name. • `mng_settings` -- Indicates whether the user is allowed to modify Parallels Desktop preferences. • `def_vm_home` -- The user default virtual machine folder. The fields must be specified using the lower case letters.

See Also

`prlsrvctl user set`

Links

General Syntax (p. 57)

Virtual Machine Management

Parallels virtual machines can be managed using the `prlctl` command-line utility, which is installed on a Mac during the Parallels Desktop installation.

General Syntax

The `prlctl` utility is used to perform administration tasks on virtual machines. The utility supports a full range of tasks from creating and administering virtual machines to getting statistics and generating problem reports.

Syntax

prlctl *command ID|name* [*options*] [**-v, --verbose** *number*]

Parameters

Name	Description
`command`	The name of the command to execute (see the table below for the complete list of commands).
ID	The ID of the virtual machine on which to perform the operation. To obtain the list of the available virtual machines, use the `prlctl list` command (p. 79).
name	The name of the virtual machine on which to perform the operation. To obtain the list of the available virtual machines, use the `prlctl list` command (p. 79).
options	Command options. See individual commands for available options.
`-v, --verbose` *number*	Show verbose output. The greater the *number*, the more verbose output will be produced.

Remarks

To display help, enter `prlctl` without any parameters.

prlctl backup

Backs up a virtual machine.

Syntax

```
prlctl backup vm_id|vm_name [-f,--full] [-i,--incremental]
              [-s,--storage user[[:passwd]@server[:port]]
              [--description desc]
```

Parameters

Name	Description
vm_id|*vm_name*	The UUID or the name of the virtual machine to back up.
`-s,--storage`	This option is used to specify the backup server connection and login parameters. If this option is omitted, the backup will be saved on the default backup server. The default backup server can be configured using the `prlsrvctl set` command (p. 63).
user	The name of the user on a remote backup server.
passwd	The user password. If omitted, the user will be prompted to enter a password.
server	Server hostname or IP address.
port	Port number. If omitted, the default port number will be used.
`--description` *desc*	Backup description.
`-f,--full`	Create a full backup of the virtual machine. A full backup contains all virtual machine data.
`-i,--incremental`	Create an incremental backup of the virtual machine. An incremental backup contains only the files changed since the previous full or incremental backup. This is the default backup type.

Links

General Syntax

prlctl backup-delete

Deletes a virtual machine backup.

Syntax

```
prlctl backup-delete {{vm_id|vm_name} | -t,--tag backup_id}
                     [-s,--storage user[[:passwd]@server[:port]]
```

Parameters

Name	Description
vm_id | *vm_name*	The UUID or the name of the virtual machine. With this option, the command will delete all backups of the specified virtual machine. To delete a specific backup, you need to additionally specify its ID using the `--tag` option (described below).
`-t,--tag` *backup_id*	The ID of the backup to delete.
`-s,--storage`	The backup server connection and login parameters. If this option is omitted, the backups will be searched for on the default backup server. The default backup server can be configured using the `prlsrvctl set` command (p. 63).
user	The name of the backup server user.
passwd	The user password.
server	Backup server hostname or IP address.
port	Port number. If this option is omitted, the default port will be used.

Links

General Syntax

prlctl backup-list

Lists the available backups for the specified virtual machine.

Syntax

prlctl backup-list [*vm_id*|*vm_name*] [**-f, --full**]
[**-s, --storage** *user*[[**:***passwd*]**@***server*[**:***port*]]

Parameters

Name	Description
vm_id | *vm_name*	The UUID or the name of the virtual machine for which to list the available backups.
`-f, --full`	Display full backup information.
`-s,--storage`	Backup server connection and login parameters. If this option is omitted, the backups will be searched for on the default backup server. The default backup server can be configured using the `prlsrvctl set` command (p. 63).
`--localvms`	List only the backups of the virtual machines that were residing on the local server .
user	The name of the backup server user.

passwd	The user password.
server	Backup server hostname or IP address.
port	Port number. If omitted, the default port is used.

Links

General Syntax

prlctl capture

Captures the screen of a virtual machine desktop and saves it to a file on the client machine. The data is saved in the Portable Network Graphics (PNG) format.

Syntax

prlctl capture *ID|name* **--file** *name*

Parameters

Name	Description
ID	The virtual machine ID.
name	The virtual machine name.
`--file` *name*	Name and path of the file to which the image should be saved. You should include the file extension (.png) or the file will be saved without one.

Links

General Syntax

prlctl change-passwd

Changes the encryption password for the specified virtual machine.

Syntax

prlctl `change-passwd` *ID|name*

Parameters

Name	Description
ID	Virtual machine ID.
name	Virtual machine name.

Remarks

The command can be used to change the password that was used to encrypt a virtual machine. A user will be asked to enter the current and the new password.

The virtual machine must be currently encrypted for this command to work. If you would like to encrypt an unencrypted virtual machine, use the `encrypt` command (p. 76).

Links

General Syntax

prlctl convert

This command is used to convert third-party virtual machines and disks to Parallels virtual machines and disks. The following third-party virtual machines and disks are supported:

- Microsoft Hyper-V
- Microsoft Virtual PC
- Virtual Box
- VMware

Syntax

prlctl convert *<path>* [**--dst** *<path>*] [**--force**]

Options

Name	Description
<path>	Full path to the third-party virtual machine's configuration file on the local server.
--dst=*<path>*	Set the destination directory for the resulting virtual machine and its configuration file. If omitted, the default directory (`/var/parallels`) is used.
--force	Convert the third-party virtual machine even if its guest OS cannot be identified.

prlctl clone

Creates an exact copy of the specified virtual machine.

Syntax

prlctl clone *ID|name* **--name** *new_name* [**--template**] [**--dst** *path*] [**--changesid**]
[**--linked**] [**--detach-external-hdd** **yes|no**]

Parameters

Name	Description
ID	ID of the virtual machine to clone
name	Name of the virtual machine to clone.
`--name` *new_name*	Name to be assigned to the new virtual machine.
`--template`	Create a virtual machine template instead of a real virtual machine. Templates are used as a basis for creating new virtual machines.
`--dst` *path*	Name and path of the new virtual machine directory. If this parameter is omitted, the new virtual machine will be created in the default directory.
`--changesid`	Generate a new Windows security identifier (SID) for a Windows-based virtual machine. For this parameter to work, Parallels Tools must be installed in the virtual machine.
`--linked`	Create a linked virtual machine.
`--detach-external-hdd yes|no`	If set to `no`, hard disks located outside a source virtual machine are not removed from the configuration of the resulting clone. Setting the parameter to `yes` removes outside hard disks from the configuration. **Note**: Outside hard disks are not copied to the cloned virtual machine.

Links

General Syntax

prlctl create

Creates a new virtual machine. A virtual machine can be created from scratch or from a virtual machine template. When created from scratch, the target operating system type or version must be specified. To create a virtual machine from a template, the template name must be passed to the command.

Syntax

```
prlctl create name {--ostype name|--distribution {name|list}} [--location path]
prlctl create name --ostemplate name [--location path]
```

Parameters

Name	Description
name	User-defined new virtual machine name. If the name consists of two or more words separated by spaces, it must be enclosed in quotes.

`-o, --ostype` *name*	The name of the family of the operating system that will be installed in the virtual machine. Select from one of the following: • `windows` • `linux` • `macos` • `feebsd` • `os2` • `msdos` • `netware` • `solaris` • `other` (specify this option if the operating system you are planning to install is not listed above).

`-d, --distribution` *`name`*`|list`	The operating system version that you are planning to install in the virtual machine. To display the list of known operating systems, supply the `list` value instead of the OS name. Or supply one of the following values (grouped by family): **Windows** • `win-311` • `win-95` • `win-98` • `win-me` • `win-nt` • `win-2000` • `win-xp` • `win-2003` • `win-vista` • `win-2008` • `win-7` • `win` (specify this option if the Windows OS version you are using is not listed above). **Linux** • `rhel` • `rhel3` • `suse` • `debian` • `fedora-core` (specify this option for all Fedora Core distributions except for Fedora Core 5). • `fc-5` • `ubuntu` • `mandriva` • `centos` • `redhat` • `opensuse` **Mac OS** • `macos-10.4` • `macos-10.5` • `snowleopard` **FreeBSD** • `freebsd-4` • `freebsd-5` • `freebsd-6`

`--ostemplate` *name*	The name of the virtual machine template from which to create the new virtual machine. Use the `prlctl list --template` command to obtain the list of the available templates.
`--location` *path*	Name and path of the directory where to store the new virtual machine files. If this parameter is omitted, the files will be crated in the default virtual machine directory.

Remarks

When creating a virtual machine from scratch, you may specify the operating system family or version. If an operating system version is specified using the `--distribution` parameter, the virtual machine will be configured for that operating system. If an operating system family is specified using the `--ostype` parameter, the virtual machine will be configured for the default version of this OS family. The default versions are determined internally by Parallels and are kept in sync with other Parallels management tools such as Parallels Management Console. The best way to find out the default versions used in your Parallels installation is by creating a sample virtual machine.

Links

General Syntax

prlctl delete

Deletes a virtual machine from the <host computer>. The command removes a virtual machine from the Parallels Service registry and permanently deletes all its files from the host. Once completed, this operation cannot be reversed.

Syntax

prlctl delete *ID|name*

Parameters

Name	Description
ID	The ID of the virtual machine to delete.
name	The name of the virtual machine to delete.

Links

General Syntax

prlctl encrypt, decrypt

Encrypt and decrypt a virtual machine.

Syntax

```
prlctl encrypt ID|name [--dry-run]
prlctl decrypt ID|name [--dry-run]
```

Parameters

Name	Description
ID	The ID of the virtual machine to encrypt or decrypt.
name	The name of the virtual machine to encrypt or decrypt.
`--dry-run`	Allows to run the encryption or decryption operation using a simulation. Use this option to verify that the operation can be performed and that there are no current limitations with the host computer or the virtual machine that can make the operation invalid. For example, if you don't have enough space on the host computer, the simulated run will inform you of this, so you can correct it before running the actual operation.

Remarks

The `encrypt` command will encrypt the specified virtual machine and all its data. A user will be prompted to enter an encryption password after the command is executed from the command line.

The decrypt command will decrypt the specified virtual machine. A user will have to enter a password that was selected when the virtual machine was encrypted.

The encryption password can be modified for an encrypted virtual machine using the `change-passwd` command (p. 71).

Links

General Syntax

prlctl enter

Creates a command prompt channel to a virtual machine. By using this command, you can create a command prompt channel and execute commands in a virtual machine. Parallels Tools must be installed in a virtual machine to use this utility.

Syntax

```
prlctl enter exec vm_id|vm_name
```

Parameters

Name	Description
vm_id|*vm_name*	The UUID or the name of the virtual machine.

Links

General Syntax

prlctl exec

Executes a command inside a virtual machine. Parallels Tools must be installed in a virtual machine to use this utility. Commands in Linux guests are invoked with `bash -c`.

Syntax

prlctl exec *vm_id|vm_name command*

Parameters

Name	Description
vm_id|vm_name	The UUID or the name of the virtual machine.
command	A command to execute.

Links

General Syntax

prlctl installtools

Installs Parallels Tools in the specified virtual machine.

Syntax

prlctl installtools *ID|name*

Parameters

Name	Description
ID	The ID of the target virtual machine.
name	The name of the target virtual machine.

Notes

To use this command, the target virtual machine must be running.

Links

General Syntax

prlctl list

Obtains a list of virtual machines on the host computer. The command allows to obtain a summary list containing only the virtual machine ID, name, and status, or to obtain a detailed information about a specific or all virtual machines.

Syntax

```
prlctl list [--all] [--template] [--no-header]
            [-o, --output name[,name...]] [-s, --sort name|-name]

prlctl list --info [ID|name]
```

Parameters

Name	Description
`-a, --all`	List all, running, stopped, suspended, and paused virtual machines. If this and the rest of the parameters are omitted, only the running virtual machines will be displayed.
`-t, --template`	List the available virtual machine templates. The real virtual machines will not be included in the output.
`--no-header`	Do not display column headers.
`-o, --output name`	Display one (or any combination) of the following fields: • `uuid` -- Virtual machine ID. • `name` -- Virtual machine name. • `status` --Virtual machine status (running, stopped, etc.). The above fields can be combined in a single command using comma separator (e.g. `uuid, name`). The excluded fields will not be displayed. The field names must be typed in lower case.
`-s, --sort name`	Sort the virtual machine list by the specified parameter in ascending order.
`-i, --info`	Display detailed information about a virtual machine.
ID	The ID of the virtual machine for which to display the detailed information. If not specified, the information will be displayed for all registered virtual machines.
name	The name of the virtual machine for which to display the detailed information. If not specified, the information will be displayed for all registered virtual machines.

Links

General Syntax

prlctl pause, suspend, resume

Pause, suspend, and resume a virtual machine.

Syntax

```
prlctl pause ID|name
prlctl suspend ID|name
prlctl resume ID|name
```

Parameters

Name	Description
ID	The ID of the virtual machine to pause, suspend, or resume.
name	The name of the virtual machine to pause, suspend, or resume.

Remarks

The `pause` command pauses a virtual machine. To continue the virtual machine operation, use the `prlctl start` command (p. 98).

The `suspend` command suspends the virtual machine operation. When a running virtual machine is suspended, the state of the virtual machine processes is saved to a file on the host. After that, the machine is stopped. To resume the machine, use the `resume` command.

Links

General Syntax

prlctl problem-report

Obtains a problem report for the specified virtual machine and displays it on the screen.

Syntax

```
prlctl problem-report ID|name <-d,--dump|-s,--send [--proxy
[user[:password]@proxyhost[:port]]] [--no-proxy]>
```

Parameters

Name	Description
ID	The ID of the virtual machine for which to obtain the problem report.
name	The name of the virtual machine for which to obtain the report. If the name consists of separate words, it must be enclosed in

	quotes.
`-d, --dump`	Collect technical data about a virtual machine and display it on the screen. You can also pipe the output to a file and then send it to the Parallels technical support to analyze your problem.
`-s, --send`	Send the generated problem report to the Parallels technical support.
`--proxy` *`user:password@proxyhost:port`*	Use the specified information to send the generated report through a proxy server, if you use one to connect to the Internet.
`--no-proxy`	Do not use a proxy server to send the generated report. This is the default behavior, so you can omit this parameter.

Links

General Syntax

prlctl register, unregister

The `register` command is used to register a virtual machine with Parallels Service.

The `unregister` command removes a virtual machine from the Parallels Service registry.

Syntax

prlctl register *path*
prlctl unregister *ID|name*

Parameters

Name	Description
path	An absolute path to the virtual machine directory.
ID|name	The ID or the name of the virtual machine to remove from the Parallels Service registry.

Remarks

Use the `register` command when you have a virtual machine on the host that doesn't show up in the list of the virtual machines registered with the Parallels Service. This can be a machine that was previously removed from the registry or a machine that was manually copied from another location.

The `unregister` command removes a virtual machine from the Parallels Service registry but does not delete the virtual machine files from the host. You can re-register such a machine with the Parallels Service later using the `register` command.

Links

General Syntax

prlctl restore

Restores a virtual machine from a backup.

Syntax

```
prlctl restore {{vm_id|vm_name} | -t,--tag backup_id}
                  [-s,--storage user[[:passwd]@server[:port]]
                  [-n, --name new_name] [--dst path]
```

Parameters

Name	Description
vm_id|*vm_name*	The UUID or the name of the virtual machine. If this option is specified, the command will restore it from the latest available backup. To restore a virtual machine from a specific backup, omit this option and specify the backup ID using the `--tag` option (described below).
`-t,--tag` *backup_id*	The backup ID from which to restore a virtual machine.
`-s,--storage`	The backup server connection and login parameters. If this option is omitted, the backups will be searched for on the default backup server. The default backup server can be configured using the `prlsrvctl set` command (p. 63).
user	The name of the backup server user.
passwd	The user password.
server	The backup server hostname or IP address.
port	Port number. If omitted, the default port will be used.
`-n, --name` *new_name*	A new name to assign to the restored virtual machine. If omitted, the virtual machine will be restored with the original name.
`--dst`	Restore the virtual machine to the specified directory on the Parallels server. If you omit this option, the virtual machine will be restored to `/var/parallels/`*vm_name*.

Links

General Syntax

prlctl server

Obtains information about the host computer and Parallels the Parallels Desktop installed on it. Also, allows to shut down the Parallels Desktop.

Syntax

```
prlctl server shutdown|info
```

Parameters

Name	Description
`info`	Displays the Parallels Desktop information.
`shutdown`	Shuts down Parallels Desktop. If one or more virtual machines are running, clients are connected, or some tasks are currently in progress then the shutdown operation will be aborted.

See Also

`prlsrvctl info` (p. 58)

`prlsrvctl shutdown` (p. 64)

Links

General Syntax

prlctl set

The `prlctl set` command is used to modify the configuration of a virtual machine and manage virtual machine devices and shared folders. The following subsections provide technical information on how to use the command to perform these tasks.

Modifying Virtual Machine Configuration

The `prlctl set` command can be used to modify virtual machine configuration parameters, including virtual CPU availability, RAM and video memory size, startup and shutdown options, and some others.

Syntax

```
prlctl set ID|name [--cpus number] [--memsize number]
           [--videosize number] [--description description]
           [--autostart on|off|auto] [--autostart-delay number]
           [--autostop stop|suspend]
           [--start-as-user administrator|owner|user:passwd]
           [--tools-autoupdate on|off]
           [--userpasswd os_user:new_pass]
      [--asset-id tag]
```

Parameters

Name	Description
ID	Target virtual machine ID.
name	Target virtual machine name.
`--cpus` *number*	Number of virtual CPUs in the virtual machine. If the host has more than one CPU, this option allows to set the number of virtual CPUs to be available in the virtual machine.
`--memsize` *number*	The amount of memory (RAM) available to the virtual machine, in megabytes.
`--videosize` *number*	The amount of video memory available to the virtual machine graphics card.
`--description` *VM_description*	Short description of the virtual machine.
`--autostart on|off|auto`	Defines the virtual machine start-up options: • `on` -- the virtual machine is started automatically on the Parallels Service startup. • `off` -- the autostart is off. This is the default virtual machine start-up mode. • `auto` -- resume the virtual machine state prior to the Parallels Service shutdown. If you set this option to `on` or `auto`, you must additionally specify the `--start-as-user` option (see below).
`--autostart-delay` *number*	Sets the time delay used during the virtual machine automatic startup.
`--autostop stop|suspend`	Sets the automatic shutdown mode for the specified virtual machine: • `stop` -- the virtual machine is stopped when you shut down the Parallels Service. • `suspend` -- the virtual machine is suspended when the Parallels Service is shut down.
`--start-as-user` `administrator|owner|`*user*`:`*passwd*	Specifies the account to use to autostart the virtual machine: • `administrator` -- start the virtual machine as the administrator of the host operating system. • `owner` -- start the virtual machine as

	the virtual machine owner. • *user:passwd* -- start the virtual machine as the specified user.
--tools-autoupdate on|off	Turns on/off automatic updating of Parallels Tools in the guest operating system. If this option is set to ON, Parallels Tools updates will be performed automatically every time an update is available for your Parallels Desktop. If this option is set to OFF, no automatic Parallels Tools updates will be performed, so that you can do it manually at a convenient time.
--userpasswd *os_user*:*new_pass*	Resets the password for the specified user of the guest OS running in a virtual machine. The parameters are: os_user -- guest OS user name. new_pass -- new password.
--asset-id *ID*	Sets an asset ID (aka asset tag) in the virtual machine BIOS. Asset IDs are used for computer identification and inventory purposes.

Links

General Syntax

Managing Virtual Devices

The prlctl set command allows to add virtual devices to a virtual machine and to modify and delete existing virtual devices.

General Syntax

```
prlctl set ID|VM_name --device-add dev_type options
prlctl set ID|VM_name --device-set name options
prlctl set ID|VM_name --device-del name
```

Parameters

Name	Description
ID	The virtual machine ID.
VM_name	The virtual machine name.
--device-add *dev_type options*	Adds a virtual device to the specified virtual machine. The *dev_type* parameter specifies the virtual device type (hdd, cdrom, fdd, net, etc.). The *options* parameters specifies device-type

	specific options.
`--device-set` *name options*	Modifies the configuration of an existing virtual device in the specified virtual machine. The *name* parameter specifies the virtual device name. The *options* parameters specifies device-type specific options.
`--device-del` *name*	Deletes a virtual device from the virtual machine. The *name* parameter specifies the name of the virtual device to delete.

Remarks

All device-related parameters can be subdivided into the following categories:

- Hard disk drives (p. 86)
- Optical disk drives (p. 88)
- Network cards (p. 90)
- Floppy disk drives (p. 90)
- USB devices (p. 94)
- Serial ports (p. 92)
- Parallel ports (p. 93)
- Sound cards (p. 94)

Each group of parameters is explained in the following subsections in detail.

Notes

All operations on virtual machine devices (adding, modifying, or removing a device) must be performed on a stopped virtual machine. An attempt to perform any of these operations on a running virtual machine will result in error.

Hard Disk Drive Management Parameters

This group of parameters is used to add and configure virtual hard disks in a virtual machine.

Syntax

```
prlctl set ID|VM_name --device-add hdd [--image name]
           [--type expand|plain][--size number][--split]
           [--iface ide|scsi][--position number]
           [--enable|--disable]

prlctl set ID|VM_name --device-add hdd --device name
           [--iface ide|scsi][--position number]
```

```
            [--enable|--disable]

prlctl set ID|VM_name --device-set hddN [--image name]
            [--type expand|plain][--size number][--split]
            [--iface ide|scsi][--position number]
            [--enable|--disable]

prlctl set ID|VM_name --device-set hddN --device name
            [--iface ide|scsi][--position number]
            [--enable|--disable]
```

Parameters

Name	Description
ID	The virtual machine ID.
VM_name	The virtual machine name.
--device-add	Adds a virtual hard disk drive to the virtual machine. You can connect up to four IDE devices and up to seven SCSI devices to a virtual machine. This includes hard disks and optical disk drives.
--device-set	Modifies the parameters of an existing virtual hard disk.
hdd	Specifies the type of the virtual device to add to the virtual machine (in this instance, a virtual hard disk).
hdd*N*	The name of the virtual hard disk to modify. Virtual hard disks are named using the hdd*N* format where *N* is the drive index number starting from 0 (e.g. hdd0, hdd1). To obtain the list of disk names, use the prlctl list command with the --info option.
--image *name*	This options is used to create a virtual hard disk using an image file. You have an option of creating a new image file or to use an existing image. • To use an existing image file, specify its name and path using the *name* parameter. • To create a new image file, omit the --image parameter. New image files are created in the virtual machine directory and are automatically named using the harddisk*N*.hdd format, where *N* is the disk index number (e.g. harddisk0.hdd, harddisk1.hdd).
--device *name*	This option is used to create a virtual hard disk based on a boot camp partition (Mac hosts). The *name* parameter must contain the boot camp partition name.
--type expand|plain	For image file based virtual disk drives, specified the disk type: • expand -- expanding disk. The image file is small initially and grows in size as you add data to it. This is the default virtual disk type. • plain -- plain disk. The image file has a fixed size from the moment it is created (i.e the space is allocated for the drive

	fully). Plain disks perform faster than expanding disks.
`--size` *number*	The size of the virtual hard disk, in megabytes. The default size is 32,000 MB.
`--split`	Splits the hard disk image file into 2 GB pieces. You should split a virtual disk if it is stored on a file system that cannot support files larger than 2 GB (e.g. FAT16).
`--iface ide|scsi`	Interface type: • `ide` -- IDE drive. • `scsi` - SCSI drive (default).
`--position` *number*	The SCSI or IDE device identifier to be used for the virtual disk. The allowed ID ranges are the following: • for IDE devices: `0:0`, `0:1`, `1:0`, `1:1`; • for SCSI device: `0:0`, `1:0`, `2:0`, `3:0`, `4:0`, `5:0`, `6:0`. You can use one of the following formats for specifying IDs: *ID*`:`*bus*, *ID*`-`*bus*, *ID*. For example, if you specify 3:0 (or 3-0 or 3) as *number* for a SCSI drive, the guest OS will see the drive as having ID 3 on SCSI bus 0.
`--enable`	Enables the specified virtual disk drive. All newly added disk drives are enabled by default (provided the `--disable` option is omitted).
`--disable`	Disables the specified virtual disk drive. The disk drive itself is not removed from the virtual machine configuration.

Links

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Optical Disk Drive Management Parameters

This group of parameters is used to add and configure virtual optical disk drives, such as DVD or CD drives.

Syntax

```
prlctl set ID|VM_name --device-add cdrom --image image_name
           [--iface ide|scsi] [--position number]
           [--enable|--disable] [--connect|--disconnect]

prlctl set ID|VM_name --device-add cdrom --device device_name
           [--iface ide|scsi] [--position number]
           [--enable|--disable] [--connect|--disconnect]

prlctl set ID|VM_name --device-set cdromN
           {--device name|--image name} [--iface ide|scsi]
           [--position number][--enable|--disable]
           [--connect|--disconnect]
```

Parameters

Name	Description
ID	The virtual machine ID.
name	The virtual machine name.
--device-add	Adds a DVD/CD drive to the virtual machine. You can connect up to four IDE devices and up to seven SCSI devices to a virtual machine. This includes virtual hard disks and DVD/CD drives.
--device-set	Modifies the parameters of an existing virtual optical disk.
cdrom	Specifies the virtual device type (in this instance, a CD or DVD drive).
cdrom*N*	The name of the DVD/CD drive to modify. The *N* postfix indicates the drive index number. To obtain the list of the available drives, use the `prlctl list` command with the `--info` option.
--device *name*	The name of the physical optical disk to connect to the virtual machine.
--image *name*	The name of an existing disk image file to mount in the virtual machine. Currently, the following image file formats are supported: `.iso`, `.cue`, `.ccd`, and `.dmg`. The image must not be compressed and/or encrypted.
--iface ide|scsi	Interface type: • `ide` -- IDE disk. • `scsi` -- SCSI disk (default).
--position *number*	The SCSI or IDE device identifier to be used for the DVD/CD drive. The allowed ID ranges are the following: • for IDE devices: `0:0`, `0:1`, `1:0`, `1:1`; • for SCSI device: `0:0`, `1:0`, `2:0`, `3:0`, `4:0`, `5:0`, `6:0`. You can use one of the following formats for specifying IDs: *ID*`:`*bus*, *ID*`-`*bus*, *ID*. For example, if you specify 3:0 (or 3-0 or 3) as *number* for a SCSI drive, the guest OS will see the drive as having ID 3 on SCSI bus 0.
--enable	Enables the specified DVD/CD drive. All newly added drives are enabled by default (provided the `--disable` option is omitted).
--disable	Disables the specified optical disk drive. The disk drive itself is not removed from the virtual machine configuration.
--connect	Automatically connect the specified optical disk drive during the virtual machine startup process.
--disconnect	Do not automatically connect the specified optical disk drive during the virtual machine startup process.

Links

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Floppy Disk Drive Management Parameters

This group of parameters is used to add floppy disk drives to a virtual machine and to modify existing virtual floppy disk drives.

Syntax

```
prlctl set ID|VM_name --device-add fdd [--device name]
           [--enable|--disable][--connect|--disconnect]

prlctl set ID|VM_name --device-set fdd [--device name]
           [--enable|--disable][--connect|--disconnect]
```

Parameters

Name	Description
ID	The virtual machine ID.
VM_name	The virtual machine name.
fdd	Specifies the type of the virtual device to add or modify (in this instance, a floppy disk drive).
--device-add	Adds a new floppy disk drive to the virtual machine. You can connect only one floppy disk drive to a virtual machine.
--device-set	Modifies the parameters of an existing virtual floppy disk drive.
--device *name*	The name of the physical floppy disk drive to connect to the virtual machine. If this parameter is omitted, a floppy drive image emulating the floppy disk drive will be created.
--enable	Enables the specified floppy disk drive. All newly added floppy drives are enabled by default (provided the --disable option was omitted during the drive creation).
--disable	Disables the specified floppy disk drive. The drive itself is not removed from the virtual machine configuration.
--connect	Connect the specified floppy disk drive automatically during the virtual machine startup process.
--disconnect	Use this option if you don't want the specified floppy disk drive automatically connected to the virtual machine on its start.
--image *path*	The name and path of an existing floppy disk image file (usually floppy.fdd) to mount in the virtual machine.

Links

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Network Adapter Management Parameters

This group of parameters is used to manage virtual network adapters in a virtual machine.

Syntax

```
prlctl set ID|VM_name --device-add net --type shared|host|bridged
           [--mac addr][--enable|--disable][--connect|--disconnect]

prlctl set ID|VM_name --device-add net --type bridged --iface name
           [--mac addr][--enable|--disable] [--connect|--disconnect]

prlctl set ID|VM_name --device-set netN --type shared|host
           [--mac addr][--enable|--disable][--connect|--disconnect]

prlctl set ID|VM_name --device-set netN --type bridged
          --iface name [--mac addr|auto][--enable|--disable]
           [--connect|--disconnect]
```

Parameters

Name	Description
ID	The virtual machine ID.
VM_name	The virtual machine name.
--device-add	Adds a new virtual network adapter to the virtual machine.
--device-set	Used to configure an existing virtual network adapter.
net	Specifies the virtual device type to add (in this instance, a virtual network adapter).
net*N*	The name of the virtual network adapter to modify. To obtain the list of the available adapters, use the `prlctl list` command with the `--info` option.
--type shared|host|bridged	Sets the networking mode for the virtual network adapter: • `shared` -- Shared networking. Select this option if you wish to enable Network Address Translation (NAT) for the adapter. The adapter will share the IP address with the host computer when communicating with external networks. • `host` -- Host-only networking. Select this option if you wish the virtual machine to communicate only with the host computer and other virtual machines included in the same network. Access to external networks is not allowed. • `bridged` -- Bridged networking. The adapter is bound to the specified physical network adapter. The virtual machine will appear as a standalone computer on the network.
--iface *name*	Used with the bridged networking mode (see above). Specifies the name of the physical network adapter to which the virtual adapter should be bound.
--mac *addr*	The MAC address to be assigned to the virtual network adapter. If this option is omitted, the MAC address will be generated automatically.
--mac *addr*|auto	Specifies the MAC address to assign to an existing network adapter. Specify a desired MAC address using the *addr* parameter value or use the `auto` option to re-generate the existing address automatically.

`--enable`	Enables the virtual network card. All newly created network adapters are enabled by default (provided the `--disable` option is omitted).
`--disable`	Disables virtual network adapter. The adapter itself is not removed from the virtual machine configuration. Please note that a disabled virtual network adapter can only be enabled in a stopped virtual machine.
`--connect`	Automatically connect the virtual network adapter during the virtual machine startup process.
`--disconnect`	Do not automatically connect the virtual network adapter during the virtual machine startup process.

Links

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Serial Port Management Parameters

This group of parameters is used to manage serial ports in a virtual machine.

Syntax

```
prlctl set ID|VM_name --device-add serial
           {--device name|--output file|--socket name}
           [--enable|--disable] [--connect|--disconnect]

prlctl set ID|VM_name --device-set serialN
           {--device name|--output file|--socket name}
           [--enable|--disable] [--connect|--disconnect]
```

Parameters

Name	Description
ID	The virtual machine ID.
VM_name	The virtual machine name.
`--device-add`	Adds a new serial port to the virtual machine. You can connect up to four serial ports to a virtual machine.
`--device-set`	Modifies the parameters of an existing serial port.
`serial`	Specifies the type of the virtual device to add (in this instance, a serial port).
`--device` *name*	The name of the physical serial port to which to connect the virtual machine.
`--output` *file*	The name and path of the output file to which to connect the virtual serial port.
`--socket` *name*	The name of the physical socket to which to connect the virtual serial port.
`--enable`	Enables the virtual serial port. All newly added serial ports are enabled by default (provided the `--disable` option is omitted).
`--disable`	Disables the virtual serial port.
`--connect`	Automatically connect the virtual serial port during the virtual machine

	startup process.
`--disconnect`	Do not automatically connect the virtual serial port during the virtual machine startup process.

Links

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Parallel Port Management Parameters

This group of parameters is used to manage parallel port in a virtual machine.

Syntax

```
prlctl set ID|VM_name --device-add parallel
           {--device name|--output file_name}
           [--enable|--disable] [--connect|--disconnect]

prlctl set ID|VM_name --device-set parallelN
           {--device name|--output file_name}
           [--enable|--disable] [--connect|--disconnect]
```

Parameters

Name	Description
ID	The virtual machine ID.
name	The virtual machine name.
`--device-add`	Adds a new parallel port to the virtual machine. You can connect up to three parallel ports to a virtual machine.
`--device-set`	Modifies the parameters of an existing virtual parallel port.
`parallel`	Specified the type of the virtual device to add (in this instance, a virtual parallel port).
`parallel`*N*	The name of the parallel port to modify. To obtain the list of ports, use the `prlctl list` command with the `--info` option.
`--device` *name*	The name of the physical parallel port to which to connect the virtual parallel port.
`--output` *file_name*	The name of the output file to which to connect the virtual parallel port.
`--enable`	Enables the specified parallel port. All newly added parallel ports are enabled by default (provided the `--disable` option was omitted during the port creation).
`--disable`	Disable the specified virtual parallel port. The port itself is not removed from the virtual machine configuration.
`--connect`	Automatically connect the specified virtual parallel port during the virtual machine startup process.
`--disconnect`	Do not automatically connect the specified virtual parallel port

	during the virtual machine startup process.

Links

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USB Controller Management Parameters

This group of parameters is used to manage the USB controller in a virtual machine.

Syntax

```
prlctl set ID|VM_name --device-add usb [--enable|--disable]
```

Parameters

Name	Description
ID	The virtual machine ID.
VM_name	The virtual machine name.
usb	The type of the virtual device to add to the virtual machine (in this instance, a USB device).
--enable	Enables the USB controller. This is the default option.
--disable	Disables the USB controller.

Links

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Sound Device Management Parameters

This group of parameters is used to manage sound devices in a virtual machine.

Syntax

```
prlctl set ID|VM_name --device-add sound --output name
                [--enable|--disable] [--connect|--disconnect]

prlctl set ID|VM_name --device-set sound --output name
                [--enable|--disable] [--connect|--disconnect]
```

Parameters

Name	Description
ID	The virtual machine ID.
VM_name	The virtual machine name.
sound	The type of the virtual device to add to the virtual machine (in this instance,

	a sound device).
`--output` *name*	The name of a physical output device to which to connect the virtual sound device.
`--input` *name*	The name of the physical input device to which to connect the virtual sound device.
`--enable`	Enables the specified sound device. All newly added sound devices are enabled by default (provided the `--disable` option is omitted).
`--disable`	Disables the specified virtual sound device.
`--connect`	Automatically connect the sound device during the virtual machine startup process.
`--disconnect`	Do not automatically connect the sound device during the virtual machine startup process.

Links

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Removing Devices from Virtual Machine

The `--device-del` option is used to remove virtual devices from a virtual machine.

Syntax

prlctl set *ID|name* **--device-del** *name*

Parameters

Name	Description
`--device-del` *name*	The name of the virtual device to delete from the virtual machine. To obtain the list of virtual devices, use the `prlctl list` command with the `--info` option.

Links

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Managing Shared Folders

The `prlctl set` command can be used to add shared folders to a virtual machine and to modify and delete existing shared folders.

Syntax

prlctl set *ID|VM_name* **--shf-host-add** *name* **--path** *path*
[**--mode ro|rw**]
[**--shf-description** *txt*]
[**--enable|--disable**]
prlctl set *ID|VM_name* **--shf-host-set** *name* [**--mode ro|rw**]

```
                                        [--path path]
                                        [--shf-description txt]
                                        [--enable|--disable]
prlctl set ID|VM_name --shf-host on|off
prlctl set ID|VM_name --shf-host-del name
prlctl set ID|VM_name --shf-guest on|off
prlctl set ID|VM_name --shf-guest-automount on|off
```

Parameters

Name	Description
ID	The virtual machine ID.
VM_name	The virtual machine name.
--shf-host-add	Shares the specified folder on the host computer with the virtual machine.
--shf-host-set	Modifies the settings of an existing shared folder.
--shf-host on|off	Turns the host folder sharing on or off.
--shf-host-del	Removes the specified shared folder from the shared folder list.
--shf-guest on|off	Turns the guest folder sharing on or off.
--shf-guest-automount on|off	Mounts or unmounts virtual disks on the host computer.
name	User-defined shared folder name.
--path	Name and path of a folder on the host computer to share with the specified virtual machine.
--mode	Sharing mode: • ro -- read-only • rw -- read and write
--shf-description	User-defined shared folder description.
--enable	Enable the shared folder.
--disable	Disable the shared folder.

Links

General Syntax

prlctl snapshot

Takes a snapshot of a running virtual machine.

Syntax

```
prlctl snapshot ID|name [-n,--name name] [-d,--description desc]
```

Parameters

Name	Description
ID	The virtual machine ID.
name	The virtual machine name.
-n, --name *name*	User-defined snapshot name.
-d, --description desc	User-defined snapshot description.

Links

General Syntax

prlctl snapshot-delete

Deletes a virtual machine snapshot.

Syntax

prlctl snapshot-delete *ID|name* **-i, --id** *snapshot_id*

Parameters

Name	Description
ID	The virtual machine ID.
name	The virtual machine name.
-i, --id *snapshot_id*	The ID of the snapshot to delete.

Note: If the specified snapshot has child snapshots that were derived from it, they will not be deleted.

Links

General Syntax

prlctl snapshot-list

Displays a list of snapshots of the specified virtual machine.

Syntax

prlctl snapshot-list *ID|name* [**-t, --tree**] [**-i, --id** *snapshot_id*]

Parameters

Name	Description

ID	The virtual machine ID.
name	The virtual machine name.
-t, --tree	Displays the snapshot list as a tree. The default display format is tabular with **Parent Snapshot ID** and **Snapshot ID** as columns.
-i, --id *snapshot_id*	The ID of the snapshot to use as a root. If this parameter is omitted, the entire snapshot tree will be displayed.

Links

General Syntax

prlctl snapshot-switch

Reverts the specified virtual machine to the specified snapshot.

Syntax

prlctl snapshot-switch *ID|name* **-i, --id** *snapshot_id*

Parameters

Name	Description
ID	The virtual machine ID.
name	The virtual machine name.
-i, --id *snapshot_id*	The ID of the snapshot to revert to.

Links

General Syntax

prlctl start, stop, restart, reset, status

Start, stop, reset, and check the status of a virtual machine.

Syntax

prlctl start *ID|name*
prlctl stop *ID|name* [**--kill**]
prlctl restart *ID|name*
prlctl reset *ID|name*
prlctl status *ID|name*

Parameters

Name	Description

ID	The ID of the virtual machine to start, stop, restart, reset, or check the status of.
name	The name of the virtual machine to start, stop, restart, reset, or check the status of.
`--kill`	Perform a 'hard' virtual machine shutdown. If this option is omitted, an attempt to perform a graceful shutdown will be made.

Remarks

The `stop` command can perform a 'hard' or a graceful virtual machine shutdown. If the `--kill` parameter is included, the 'hard' shutdown will be performed. If the parameter is omitted, the outcome of the graceful shutdown attempt will depend on the following:

- If the Parallels Tools package is installed in a virtual machine, the graceful shutdown will be performed using its facilities.
- If the Parallels Tools package is not installed, the command will try to perform a graceful shutdown using ACPI. Depending on the ACPI support availability in the guest operating system, this may work or not.

The `restart` command first gracefully shuts down a virtual machine and then starts it again.

The `reset` command first performs a 'hard' virtual machine shutdown and then starts it again.

The `start` command can be used to start a stopped virtual machine or to resume a paused virtual machine.

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