Parallels Desktop for Mac Business Edition

IT Administrator's Guide

v17

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Introduction

Welcome to Parallels® Desktop for Mac Business Edition, a straightforward and high-performing solution optimized for business and learning environments to run Windows applications on an Intel or Apple M1 chip Mac.

> **Note:** This guide refers to Parallels Desktop v17. If you are using a newer version of Parallels Desktop (including updates), please download the latest guide from the Parallels website.

In This Chapter

Parallels Desktop Business Edition Features Overview

With Parallels Desktop for Mac, your Mac users can seamlessly run both Windows and Mac 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 and options 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 Business Edition feature highlights

- License management portal (Parallels My Account)
- Split license keys into sublicenses
- Maintain corporate compliance with restricted virtual machines
- Set an expiration date for a virtual machine
- Mass deployment of Parallels Desktop and virtual machines
- Provision a corporate VM image from a link specified in Parallels My Account
- Business-level support including 24/7 phone and email support options

Parallels Desktop Business Edition feature matrix

See how Parallels Desktop Business Edition compares to Parallels Desktop Standard and Pro editions.

Feature	Standard	Pro	Business
Straightforward and high-performing solution to run Windows applications on an Intel or Apple M1 chip Mac.	●	●	●
Merge the coolness of Mac with the utility of Windows. Seamlessly utilize Mac features inside Windows and leverage Windows' strengths on your Mac.	●	●	●
Advanced networking tools. Create virtual networks for complex network scenarios and testing, including simulating various network scenarios.		●	●
Mass deploy and mass manage Parallels Desktop and Windows VMs for your employees.			●
Use the invitation email feature to invite users to install Parallels Desktop on their Mac computers.			●
Provision a corporate VM image from a link specified in Parallels My Account.			●
Single Application Mode. A special Parallels Desktop deployment option allowing Mac users to run a Windows application without being aware of Parallels Desktop and Windows running in a virtual machine.			●
Licensing and Support			
Premium 24/7 phone and email support	First 30 days	●	●
Centralized license management via Licensing Portal			●
Simple deployment with unified volume license key			●
Extended grace period to accommodate a possible license renewal delay without disrupting the business			●
Customizable in-product Support Center option			●
Removed in-product notifications			●
Configurable software update policy and local update server options			●
Security			
Restrict end-users from changing virtual machine settings		●	●
Restrict end-users from creating new virtual machines		●	●
Allow to disallow major Parallels Desktop version upgrades			●
Create expiring virtual machines			●

Enforce USB device policies			•
Configurable policies via Configuration Manager and Parallels Device Management			•
Advanced			
Assign up to 32 vCPU and 128 GB vRAM per virtual machine and control resources on the fly		•	•
Command line interface to control Parallels Desktop and virtual machines. Command line interface allows you to work with Parallels plugins for popular development tools including Vagrant and Jenkins		•	•
Customize the Parallels Control Center to include custom graphics, text, and links.			•

Deploying Parallels Desktop for Mac Business Edition

This chapter describes how to deploy Parallels Desktop Business Edition to Mac computers in your organization. The deployment can be performed using one of the following methods:

- **Using an invitation email**. This is a simple and straightforward method. You send an invitation email to your users from your Parallels business account and they perform the installation themselves. You also have an option to provide users with a corporate virtual machine using configuration profiles (p. 44). It's a great choice if you don't need to make any customization to Parallels Desktop settings.

- **Using Mac management tools**. This is a highly customizable deployment method that gives you access to many advanced options which you can configure according to your needs. You should use this option if you want to customize Parallels Desktop settings or apply restrictions.

The subsequent sections describe each method in detail.

In This Chapter

Deploying via an invitation email

To invite users to install Parallels Desktop via email:

1 Log in to your Parallels account at https://my.parallels.com/.

2 On the **Dashboard** page, locate the **Parallels Desktop for Mac Business Edition** product card and click the **Invite Users** button.
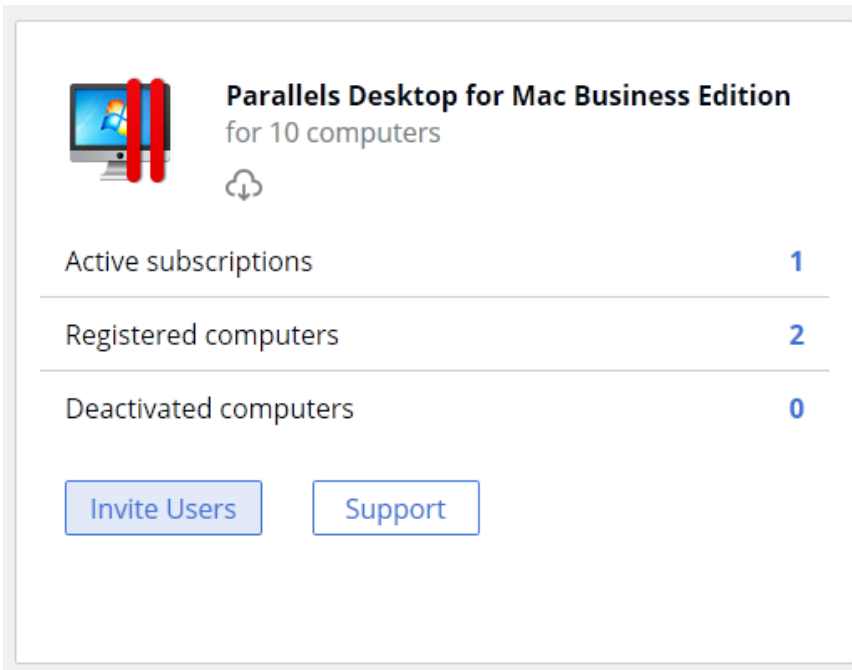
3 In the dialog that opens, select a license key that you want to use to activate Parallels Desktop on users' computers and click **Next**.

4   In the **Invite Parallels Desktop Users** dialog, specify the following options:

- **Language of Invitation:** Select a language for the instructions in the invitation email.

- **Invitation Expires in:** Use the drop-down list to select when the invitation should expire. After it expires, the temporary activation code included in it will no longer work.

- **Email address:** Type a user's email address and click **Add**. Repeat for all intended users. You can also specify a CSV file containing email addresses of your users. The CSV file must contain a single column (a valid email address) with multiple rows (one email address on each row). Please note that if the number of users included in this list exceeds the number of available licenses for the specified key, the activation of Parallels Desktop will happen on a first-come, first-served basis.

- The **Download Invitations** button allows you to save the invitation email information to a CSV file. The information includes email addresses that you specified, a temporary activation code (generated individually for each user), and the Parallels Desktop download URL (also generated individually for each user). As an example, you can use the information in the downloaded file to create your own invitation email or to answer helpdesk questions, should any arise.

Hint: To see how the invitation email looks and to test it, you can send it to yourself first.

5   Click **Send Invitations** to send the email to users.

The invitation email that the users receive contains the following information:

- Installation instructions and a link from which a user can download the Parallels Desktop installation file.

- The temporary activation code. The code will be used automatically when a user installs Parallels Desktop on their computer. If for any reason automatic activation fails, the user can use the code included in the mail to manually activate Parallels Desktop. Please note that this is not the actual license key that you selected when you created the invitation email. This is only a temporary activation code with a limited scope and duration. The real license key is never shown to your Parallels Desktop users.

Once the users install and activate Parallels Desktop on their computers, you can see the list of active installations in your Parallels account.

Setting up a virtual machine

Once Parallels Desktop is installed on a Mac computer, the user needs to set up a virtual machine to run Windows on their Mac. This can be accomplished using one of the following methods:

- A user can create and configure a virtual machine and install Windows in it manually. This can be a viable method for tech savvy users.

- An administrator can prepare a virtual machine and put it on a corporate network storage from where users can download it to their computers.

- An administrator can set up a Configuration Profile and provision a virtual machine to end users through it. For more information see **Using Configuration Profiles** (p. 44) and **Provisioning a corporate VM image** (p. 48). This is a recommended method for most users.

Mass deployment using Mac management tools

This section describes how to mass deploy Parallels Desktop Business Edition using Mac management tools.

Prerequisites

Parallels Desktop installation image

To mass deploy Parallels Desktop Business Edition, you will need the Parallels Desktop for Mac installation image file (.dmg) and a Parallels Desktop for Mac Business Edition license key.

You can download the installation image from
https://www.parallels.com/products/business/download/.

Parallels Desktop autodeploy package

The Parallel Desktop autodeploy package is used to configure the deployment of Parallels Desktop. The package can be downloaded from https://www.parallels.com/products/business/download/.

Please note that if you already have a configured autodeploy package from an earlier version (or build) of Parallels Desktop, don't use it because it may not be compatible with your build of Parallels Desktop. Always download the latest version of the package from the Parallels website using the link above.

Supported guest OS versions

If you are deploying one or more virtual machines together with Parallels Desktop, please keep in mind the differences in supported guest operating systems on Mac computers with the Apple M1 chip and Mac computers with an Intel processor. For the latest information, see system requirements at https://www.parallels.com/requirements/.

Kernel extensions

If Mac computers in your organization run macOS High Sierra, macOS Mojave, or macOS Catalina, a Mac user will need to approve kernel extensions before they can launch Parallels Desktop. For more information, please read the following KB article: https://kb.parallels.com/en/128435.

Supported Mac management tools

Parallels Desktop Business Edition can be deployed to Mac computers using one of the following Mac management tools:

- Jamf Pro
- Parallels Device Management for Configuration Manager
- Kandji
- Apple Remote Desktop (ARD)
- Munki

This chapter includes detailed instructions on how to deploy Parallels Desktop using Jamf Pro, Parallels Device Management for Configuration Manager, and Apple Remote Desktop. For instructions on how to use other tools, please see their respective documentation.

Preparing the autodeploy package

To prepare the autodeploy package, you need to add the following required and optional components to it:

- Parallels Desktop installation image (required).

- Parallels Desktop Business Edition license key (required).

- One or more virtual machines. This step is optional. A virtual machine can be installed later or downloaded by the user via the link in a configuration profile (p. 44).

- One or more Windows application stubs (optional). Stubs are special links to Windows applications installed in a virtual machine that can be added to the Dock in macOS during deployment.

- You can also configure deployment options according to your needs by modifying the configuration file included in the autodeploy package.

The subsequent sections describe how to add the necessary components and how to configure autodeploy package options.

Download the autodeploy package

If you haven't already, download the Parallels Desktop Autodeploy Package to a Mac computer from https://www.parallels.com/products/business/download/.

The autodeploy package archive contains a folder named "Parallels Desktop Business Edition mass deployment package vxxx", where "vxxx" is the autodeploy package version number.

The folder contains the following files:

- **Changelog.txt** — contains a record of changes that were made to the autodeploy package over time.

- **Parallels-Desktop-Business-Edition-Administrators-Guide.pdf** — the version of the guide that matches the autodeploy package version (otherwise, it's the same guide you are reading now).

- **Parallels Desktop Autodeploy.pkg** — this is the actual autodeploy package that you need to prepare for mass deployment of Parallels Desktop. To view the package contents, right-click it and choose **Show Package Contents**.

Read on to learn how to add the necessary components to the autodeploy package.

Add the Parallels Desktop installation image

To add the Parallels Desktop installation image file to the autodeploy package:

1   Right-click the **Parallels Desktop Autodeploy.pkg** file and choose **Show Package Contents**.

2   Open the **Parallels Desktop DMG** folder and copy the Parallels Desktop installation image file to it (the .dmg file). If you don't have the file, you can download it from
https://www.parallels.com/products/business/download/

The package should now look like the following:
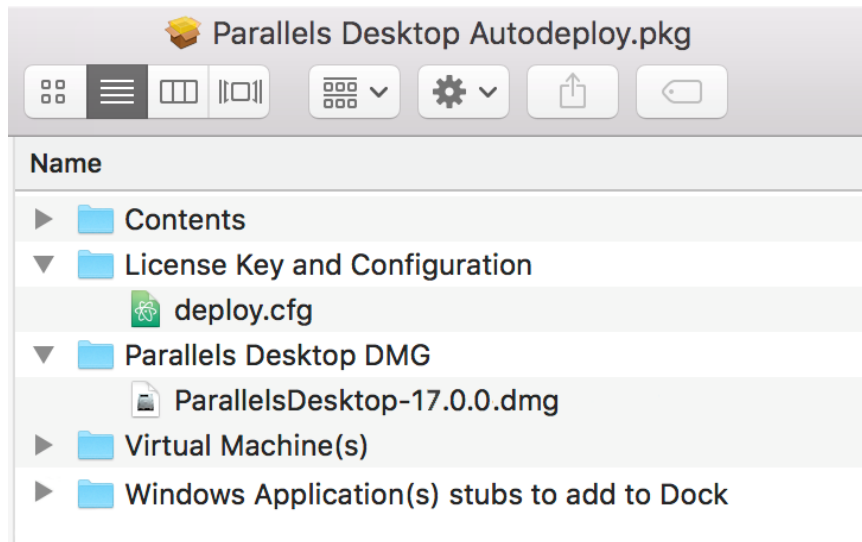
Please note that the Parallels Desktop installation image file name on the screenshot above is just an example. In your case, the file name will also include the current build number information.

Specify a license key

Parallels Desktop Business Edition license key is required to activate Parallels Desktop on target Macs. The key must be specified in the autodeploy package.

To specify the license key:

1 In the autodeploy package, expand the **License Key and Configuration** folder.

2 Open the `deploy.cfg` file in a text editor.

3 Find the `License` section (second from the top) and enter your Parallels Desktop Business Edition license key as a value of the `license_key` variable. The key must be supplied in the following format: "XXXXXX-XXXXXX-XXXXXX-XXXXXX-XXXXXX" (including quotes and dashes).

4 Save the `deploy.cfg` file.

To learn about other configuration parameters in the `deploy.cfg` file, please see **Configure deployment options** (p. 19).

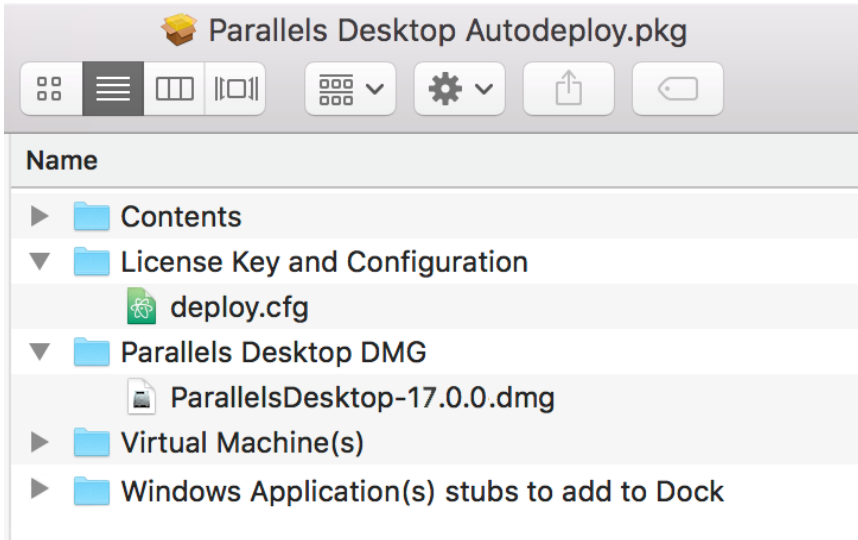> **Note:** Parallels Desktop activation requires Internet access. You need to make sure that **port 443** is opened on target Mac computers, so they can communicate with Parallels License Server. You can also verify that the Mac computers can reach the Parallels License Server at https://desktop.parallels.com

Add a virtual machine

Choosing a method of deploying virtual machines

Adding a virtual machine to the autodeploy package is optional. You can mass deploy Parallels Desktop only and install virtual machines on individual Mac computers later. Consider the following possible scenarios:

- If you are deploying Parallels Desktop on either Intel or Apple M1 based Macs (but not both at the same time), you can include a virtual machine in the autodeploy package, so it will be installed on a Mac as part of the deployment process.

- If you have both Apple M1 and Intel based Macs in your organization and would like to deploy Parallels Desktop with a virtual machine on all of them, you need to create two autodeploy packages (one for Apple M1 and another for Intel based Macs) and deploy them separately.

- The recommended scenario deploys Parallels Desktop without any virtual machines in the autodeploy package. In this case, you can provision a corporate VM image using a Configuration Profile in Parallels My Account. This method is especially recommended when you plan to deploy Parallels Desktop on both Apple M1 and Intel based Mac computers at the same time. For more information, please see **Using Configuration Profiles** (p. 44) and **Corporate VM Image Provisioning** (p. 48).

Adding a virtual machine

To add a virtual machine to the autodeploy package, simply copy the virtual machine file to the **Virtual Machine(s)** folder. You can add a regular (.pvm) or archived (.pvmz) virtual machine. See the **Note** below for details. More than one virtual machine can be added to the autodeploy package if needed.

> **Note:** To decrease network load during mass deployment, it is recommended to archive a virtual machine before adding it to the autodeploy package. Archiving must be done in Parallels Desktop by right-clicking a virtual machine in Control Center and clicking **Archive**, which will compress the virtual machine file and give it the ".pvmz" extension. Please note that other archives (like .zip), are not supported and must not be used. When a package is deployed on a Mac computer, the archived virtual machine will be automatically unarchived to the standard ".pvm" format.

Before adding a virtual machine to the autodeploy package, you can configure it according to your needs. The subsections that follow this one describe the modifications that you can make to the virtual machine configuration.

Please note that the virtual machine must be fully stopped before adding it to the autodeploy package (it cannot be paused or suspended). This is necessary because deployment configuration options are applied to a virtual machine on a target Mac and this can only be done if the virtual machine is stopped.

After you add a virtual machine to the autodeploy package, the package folders should look like the following:
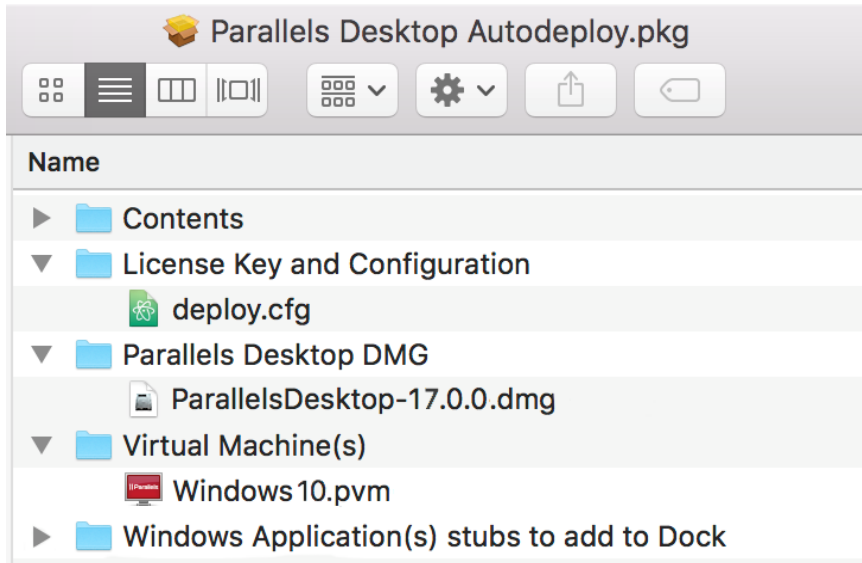
Read on to learn about modifications that you can make to the virtual machine configuration before adding it to the autodeploy package. If you are not planning on configuring a virtual machine at this time, you can skip to the **Adding Windows application stubs** section (p. 17).

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. For instructions on how to install Parallels Tools, please see https://kb.parallels.com/en/115835.

Common 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:

- **CPU & Memory.** Beginning with Parallels Desktop 17, you can configure a virtual machine to select CPU and memory settings automatically depending on the available hardware resources. To make sure that the virtual machine uses an optimal amount of resources on all Macs in your organization, you can enable this option in the source virtual machine configuration. To enable the option, open the virtual machine configuration, select **Hardware** > **CPU & Memory**. In the right pane, select **Use optimal resources** (both CPU and memory settings will be selected automatically) or select **Custom** and select **Auto** for either CPU or RAM.

- **Shared Folders and Profiles**. Parallels Desktop offers great flexibility in bridging the capabilities of macOS 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.

- **Enforce USB Device Policies**. Specify what types of USB devices can be connected to the virtual machine. See **Enforcing USB device policies** (p. 63) for complete details.

- **Installing Applications**. You can install all the necessary applications in the virtual machine before deploying it.

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

Adding Windows application stubs

Windows application stubs are special links to Windows applications installed in a virtual machine that can be added to the Dock in macOS during deployment.

About application stubs

Application stubs are created in macOS when you create a virtual machine and install Parallels Tools in it. To see applications stubs for a virtual machine:

1 In macOS, navigate to `/Users/<user-name>/Applications (Parallels)`

2   Expand a desired virtual machine folder. For example, **Windows 10 Applications**, as shown in the screenshot below:
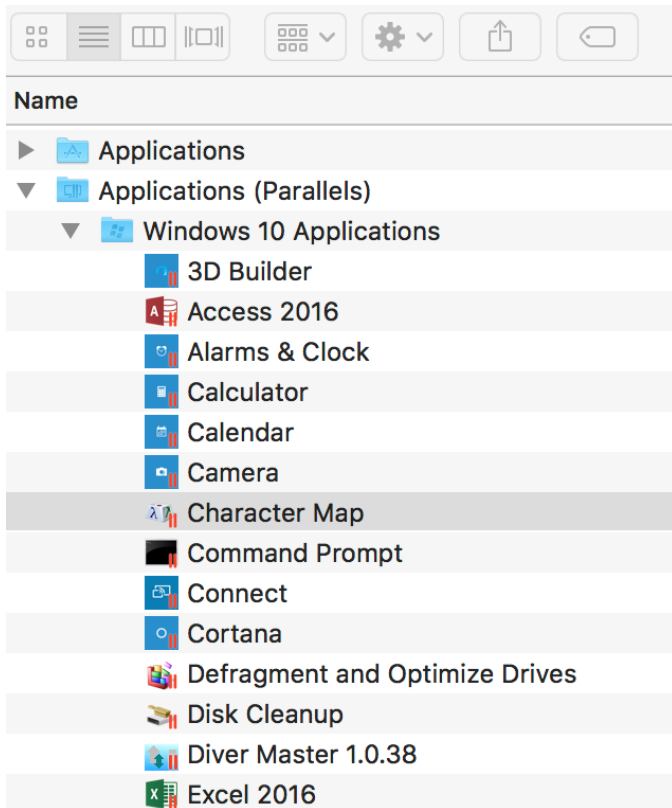
The icons that you see in the folder are Windows application stubs. If you double-click an icon, the corresponding Windows application will be started in the virtual machine.

You can add one or more application stubs to the autodeploy package to be added to the Dock on a target Mac computer. For example, if your Mac users will use a particular application most of the time, it would make sense to add it to the Dock, so they can quickly launch it without dealing with the Windows user interface.

Windows application stubs are specifically used when you deploy Parallels Desktop using Single Application Mode. For more information, please see the **Single application mode** section (p. 26).

Adding an application stub to the autodeploy package

To add one or more application stubs to the autodeploy package, simply copy it to the **Windows Application(s) stubs to add to Dock** folder, as shown on the screenshot below:
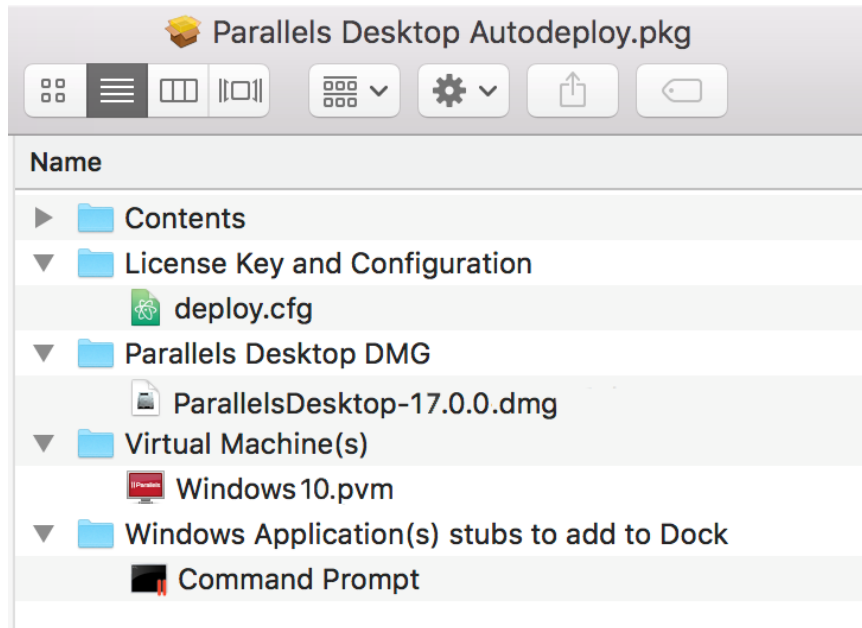
Configure deployment options

The autodeploy package contains a special script, which is automatically executed on a target Mac after the package is transferred to it. When executed, the script reads the configuration parameter values from the `deploy.cfg` file, which you can modify according to your needs.

To modify the parameters, expand the **License Key and Configuration** folder in the autodeploy package and open the **deploy.cfg** file in a text editor. The configuration parameters are organized in sections, which are described below.

License

The **License** section is used to specify the Parallels Desktop Business Edition license key.

Variable	Description
`license_key`	Specifies the Parallels Desktop license key. See **Specify a License Key (p. 13)** for more info.

Virtual Machines

The **Virtual Machines** section is used to specify virtual machine deployment options.

Variable	Description
`vm_register_mode`	Specifies the registration mode for the deployed virtual machines. Accepted values: `"Private"` — The virtual machines will be registered for the active user only. The virtual machines will be copied to the `/Users/<username>/Parallels` folder. `"Shared"` — The virtual machines will be registered for all users of a Mac. The virtual machines will be copied to 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 SMBIOS 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 machine(s) will be copied or moved from the autodeploy package to their destination folder on a Mac (see the explanation below). Accepted values: `"Copy"` — Copy the virtual machine(s). `"Move"` — Move the virtual machine(s). If your autodeploy package contains one or more virtual machines, they need to be copied or moved to their destination folder on a Mac during deployment (see `vm_register_mode` and `vm_destination_folder` variables). Moving a virtual machine file is almost instantaneous, while copying it will take a considerable time due to the large size of a typical virtual machine. The option you specify here depends on the following: • If the deployment tool that you are using copies the entire autodeploy package to a Mac computer before running it, you can use the fast "Move" option. Jamf Pro, Parallels Device Management, and Apple Remote Desktop all copy packages to a Mac before running them, so you can use the "Move" option when using these tools. Note that the package and the destination folder must be located on the same mount point on a Mac for the "Move" operation to be fast; otherwise, it'll be essentially a copy-and-delete operation, hence slow.

	• If you are running the autodeploy package from a network share mounted on a Mac (e.g. manually), then you should use "Copy" because moving a virtual machine from a remote location will be as slow as copying it, plus the virtual machine will be removed from the package if you move it, so the package will become incomplete (you want it to stay intact if you want to install it on other Macs). Note that since macOS 10.13, the "Copy" mode supports the APFS feature "clone file". This means that if the target FS is APFS, the "clone" feature is used to reduce the time and disk space when deploying a VM. Please note that when testing the autodeploy package on a local Mac, it is better to use "Copy" to avoid removing a virtual machine from the package.
`vm_destination_folder`	Allows you 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 you to change the default folder while keeping the selected virtual machine registration mode.
`vm_password_to_edit`	**Note:** Beginning with Parallels Desktop 15, all restrictions are stored inside a VM bundle, therefore this configuration parameter is not considered. Specifies a password that will be required to modify the configuration of a virtual machine. For more information, please see **Restricting Virtual Machine configuration with a custom password** (p. 55).

`<VM_file_name>`	The parameter in this section allows you to change the default target location and/or name of a virtual machine when it is copied to a Mac computer.
	
	By default, virtual machines included in the autodeploy package are copied to the default location on a Mac, which is determined by the `vm_register_mode` variable (or the `vm_destination_folder` variable if it's present). If you have more than one virtual machine, you can specify a different destination location and/or name for each desired virtual machine. To do so, you must include a variable/value pair as shown in examples below.
	
	The variable name must be the same as the original virtual machine file name (including the ".pvm" or ".pvmz" extension). The value should contain a name and path where you want the virtual machine to be copied on a Mac.
	
	Please note the following:
	
	• The path must be relative if `vm_register_mode` is set to "Shared".
	
	• The target VM extension must be ".pvm", even if the original is ".pvmz" (because an archived virtual machine will be automatically unarchived on a Mac during deployment).
	
	Examples:
	
	`"Shared VM.pvm"="./Shared VM.pvm"`
	
	`"Private VM.pvm"="~/Parallels/Private VM.pvm"`
	
	`"Archived Shared VM.pvmz"="./Shared.pvm"`
	
	`"Archived Private VM.pvmz"="~/Parallels/Private.pvm"`

`control_center_banner_url`	This and two variables below are grouped together and allow you to customize Parallels Desktop Control Center by displaying a custom HTML banner at the top of its window. For additional information, see **Using custom graphics and links in the Control Center** (p. 58). 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.
`vm_set_hv_mode_apple_forcibly_since_macos_11_0`	Specify whether the installer should override the hypervisor type of each deployed VM to 'Apple' on macOS 11.0 Big Sur and newer. All macOS versions since macOS Big Sur require a Mac reboot to run a VM with a hypervisor type other than 'Apple'. To forcibly change the hypervisor type to 'Apple', use the following setting: `vm_set_hv_mode_apple_forcibly_since_macos_11_0="yes"`

Software updates

The **Software Updates** section is used to configure Parallels Desktop automatic updates.

Please note that a configuration profile (p. 44) can be used to control upgrades over major versions of Parallels Desktop. But if the `updates_url` variable is used (see the table below), then the configuration profile option is ignored. The recommended approach is not to use the `updates_url` variable, and use a configuration profile to enable upgrades when the IT feels confident about the new version.

Variable	Description
`updates_url`	Specifies the update URL. Possible values are: `"Parallels"` — Download updates from the Parallels website over the Internet. Updates are downloaded from a special server hosting Parallels Desktop Business Edition updates, which become available on the server at a slightly later date compared to Parallels Desktop Pro edition. This is the default and recommended option. For more info, please see **Configuring Parallels Desktop update options** (p. 70). `"None"` — Turn off automatic updates. `<URL>` — Specifies a custom update URL. You can use this option in one of the following two cases: 1) If you have a local update server, specify a complete URL (in quotes) of

	the `parallels_updates.xml` file on your local Web server. For more information, please see **Setting up a local update server** (p. 65).
	2) If you don't want to wait until Parallels Desktop Business Edition updates become available, you can specify the URL to download updates intended for Parallels Desktop Standard and Pro editions, which are released a bit earlier. For more info, please see **Configuring Parallels Desktop Update Options**. The URL is as follows (when assigning it to the variable, put it in quotes): https://update.parallels.com/desktop/v16/parallels/parallels_sbscr_updates.xml
	Note: The "v16" part in the URL above indicates the current Parallels Desktop version number. If you are using a later version, substitute it with the correct number.
`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 updates automatically. This value should be specified when using a local update server. `"off"` — Notify the user about 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 is used to specify the action for the **Help** > **Support Center** menu item 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 > Support Center** 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 Support Center options** (p. 71).
`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 is used to specify whether Parallels Desktop problem reports should contain screenshots of the macOS and virtual machine desktops. You can exclude the screenshots for security reasons.

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

Customer experience

The **Customer Experience** section allows you to specify whether the Macs should participate in the Parallels 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. For more information, please see https://www.parallels.com/pcep/.

Variable	Description
`cep_participation`	`"off"` — participation in the program is turned off. `"on"` — participation in the program is turned on. See also **Participating in Customer Experience program** (p. 72).

Security

The **Security** section allows you to enable or disable the password requirement for a number of Parallels Desktop operations.

Variable	Description
The following set of parameters allows you set a custom password and then specify whether this password is required to perform a corresponding action in Parallels Desktop. For more information about this feature, please see **Restricting user actions in Parallels Desktop with a custom password** (p. 54).	
`current_password`	The current password (if one is already set in target Parallels Desktop installations). Use this key if you want to disable or change the current password, or if you want to enable/disable any of the protected actions when the password is already set. For the following cases, both the "current_password" and the "new_password" (see below) keys must be uncommented and set accordingly: 1. To disable the password completely, the "current_password" key must contain the current password and the "new_password" key must be set to "" (empty string). 2. To change the password, the "current_password" key must contain then current password and the "new_password" key must contain the new

	password.
	3. To enable/disable any of the actions without changing the password, both the "current_password" and the "new_password" keys must contain the current password.
`new_password`	Custom password. If no password is currently set, use this key to specify the password. If a password is currently set, see the description above.
`password_to_edit_prefs`	`"on"` — require the password to open the Parallels Desktop Preferences dialog. `"off"` — the password is not required.
`password_to_create_vm`	`"on"` — require the password to create a new virtual machine. `"off"` — the password is not required.
`password_to_add_vm`	`"on"` — require the password to add an existing virtual machine. `"off"` — the password is not required.
`password_to_remove_vm`	`"on"` — require the password to remove a virtual machine. `"off"` — the password is not required.
`password_to_clone_vm`	`"on"` — require the password to clone a virtual machine or converting it to a template. `"off"` — the password is not required.
The following set of parameters allows you to specify whether a local Mac administrator password is required to perform a corresponding action in Parallels Desktop. Please note that the parameters described above provide a higher level of security since they allow you to use a custom password.	
`admin_password_to_edit_prefs`	**Note:** Supported since Parallels Desktop 15. `"on"` — require a local Mac administrator password to modify Parallels Desktop preferences. `"off"` — a password is not required.
`admin_password_to_create_vm`	`"on"` — require a local Mac administrator password to create a virtual machine. `"off"` — a password is not required.
`admin_password_to_add_vm`	`"on"` — require a local Mac administrator password to add an existing virtual machine. `"off"` — a password is not required.
`admin_password_to_remove_vm`	`"on"` — require a local Mac administrator password to remove a virtual machine from Parallels Desktop. `"off"` — a password is not required.
`admin_password_to_clone_vm`	`"on"` — require a local Mac administrator password to clone a virtual machine. `"off"` — a password is not required.
`hide_license_request_params`	Hide hostname in activation/heartbeat requests. `"on"` — hide. `"off"` — don't hide.

User experience

The User Experience section allows you specify options related to user experience.

Variable	Description
enable_single_application_mode	Specifies whether to enable Single Application Mode. For more information, please see **Single application mode** (p. 26).
	Possible values:
	`"yes"` — enable Single Application Mode.
	If the parameter is commented out, Parallels Desktop will be deployed using the "standard" mode.
	When using the Single Application Mode, it is recommended to prepare Windows guest operating system to have auto login enabled.
	NOTE: Please note that you cannot redeploy Parallels Desktop with this option set to `"no"` or commented out to disable Single Application Mode. For that, you will need to completely remove Parallels Desktop from your Mac computers and then redeploy Parallels Desktop with this option commented out.
show_developers_menu	Specifies whether to show or hide developer tools in the Parallels Desktop GUI. For more information, please see **Hiding Developer Tools in Parallels Desktop GUI** (p. 59)
	Possible values:
	`"no"` — hide developer tools.
	`"yes"` — show developer tools.
	Please note that this setting will be applied to every virtual machine included in the autodeploy package. You can also configure each virtual machine to hide (or show) developer tools prior to deployment, but with this option you can apply the setting automatically during deployment.

Single application mode

Overview

Single Application Mode is a special Parallels Desktop deployment option that allows you to completely hide Parallels Desktop and Windows on a Mac and make a Windows application appear like it's a native macOS app. This mode is designed for system administrators who want Mac users in their organization to run one or more Windows applications without being aware of Parallels Desktop or Windows running in a virtual machine.

When Parallels Desktop is deployed using Single Application Mode:

- A Mac user will not see the Parallels Desktop icon, user interface, or the virtual machine window at any time.

- A Windows application icon is added to the Dock. When the user clicks on the icon, the application will run on a Mac desktop like a native macOS application.

- The Mac location sharing feature is disabled in Parallels Desktop when deployed in Single Application mode. This means that the user will never see a Parallels Desktop message about using their current location in Windows.

- A Mac user will never know that Parallels Desktop and Windows are running on their Mac computer.

Configuring deployment options

To deploy Parallels Desktop using Single Application Mode, do the following:

1 Add a virtual machine to the autodeploy package. For instructions, see **Add a Virtual Machine** (p. 14). Please take note of the following:

- You can add only ONE virtual machine when using Single Application Mode.

- The virtual machine must be properly shut down before adding it to the autodeploy package (i.e. you need to properly shut down Windows). DO NOT simply close it, as this will be detected as a crash by Windows and a Mac user will have to deal with it at startup.

2 Add a Windows application stub to the autodeploy package that will be used to run a desired Windows application on a Mac. If you want to deploy more than one Windows application, add a corresponding stub for each one. For details, please see **Adding Windows Application stubs** (p. 17).

3 To enable Single Application Mode, set the `enable_single_application_mode="yes"` parameter in the `deploy.cfg` file, as described in **Configure deployment options** (p. 19). The parameter is included in the **User Experience** section of the `deploy.cfg` file.

4 Deploy Parallels Desktop to Mac computers as described in **Deploying Parallels Desktop and Virtual Machines to Mac Computers** (p. 29).

Configuring Windows

For Windows to be completely hidden on a Mac, you need to make some changes manually because they cannot be automated. The following list describes these changes:

- **Enable auto logon in Windows**. Make sure that Windows in the virtual machine doesn't ask the user to log on. If this is not done, a Mac user will see the Windows logon screen when Windows starts or reboots.

- **Configure file associations in Windows**. This is necessary so that Windows doesn't open another Windows application when the user tries to open a file from the primary application. For example, let's say you deployed Outlook for Windows. A Mac user may try to open a text file attachment in Outlook. Normally, the file will open in Notepad in Windows, which may confuse the user. To prevent this, you can associate text files with TextEdit (a macOS application) in a virtual machine. The ability to associate file extensions with macOS applications is a standard Parallels Desktop feature available in Windows in a virtual machine. In addition, we recommend that you have as little applications installed in Windows as possible in order not to create additional file associations.

- **Use the Productivity profile**. When creating a virtual machine for Single Application Mode, choose the **Productivity** profile in the virtual machine Installation Assistant. If you are using an existing virtual machine, change its profile by going to **Configuration** > **General** > **Configure for**, clicking **Change** and then selecting **Productivity**.

Please note that there's a known issue when users may see Windows screens when Windows is installing updates.

Configuring macOS

If you are deploying Parallels Desktop on macOS Hight Sierra, macOS Catalina, or macOS Mojave, you need to make sure in advance that Parallels Desktop kernel extensions are either approved or don't require user consent on each Mac. This is particularly important when using the Single Application Mode because if the extensions are not approved, Mac users will see warning messages about them when they try to run a Windows application for the first time. For more information, please see https://kb.parallels.com/en/128435.

Testing the autodeploy package

Once you have the Parallels Desktop autodeploy package configured, you can test it on a single Mac before you mass deploy it to other Mac computers in your organization.

To test the package:

1 Copy it to a Mac on which you want to test it. The Mac should have a configuration similar to other Mac computers on which you'll be deploying Parallels Desktop. Specifically, if your target Mac computers don't have Parallels Desktop and virtual machines installed, the test Mac shouldn't have them installed either. If target Macs have an older version of Parallels Desktop, the test Mac should have it installed too, so you can see what will be the results.

2   To speed up the execution of the package during testing, consider running it from the command line using /System/Library/CoreServices/Installer.app. When executed this way, the package will not be tested by macOS whether it is signed and the usual verification of the package will be skipped. Please note that if you run the package by double-clicking on it, macOS will complain that the package is not signed and will not install it. If you run the package by right-clicking and choosing **Open**, the check whether the package is signed will be skipped but the verification of the package will take a long time if you have one or more virtual machines in it (because of the large size of a typical virtual machine). When you use the Installer.app to run the package, the installation will begin immediately without any checks or verifications. All of the above only applies when you run the package manually. When you mass deploy it on Mac computers, verification is not performed and the installation is completely silent.

3   When the installation is complete, verify that Parallels Desktop is installed, activated, and is functioning properly. If your package is configured to deploy Parallels Desktop in Single Application Mode, try running the application and see that it starts and runs as it should.

4   Please note that when the package is executed, it writes logs into /var/log/install.log. If you experience issues, examine the logs. If that doesn't help, you can contact Parallels Support for business customers, which is available 24/7.

Read on to learn how to mass deploy the package using one of the Mac management tools.

Deploying Parallels Desktop and virtual machines to Macs

This section contains instruction on how to deploy the Parallels Desktop autodeploy package using the following solutions:

- Jamf Pro (p. 29)
- Parallels Device Management for Configuration Manager (p. 36)
- Apple Remote Desktop (p. 37)
- Deploying macOS image using NetBoot (p. 42)

> **Note:** In some cases, when deploying Parallels Desktop autodeploy package on a computer running macOS Catalina, you may get an error that "Parallels Desktop Autodeploy.pkg cannot be opened because the developer cannot be verified". To work around this issue, please do the following. After you prepared the autodeploy package (but before you deploy it), right-click the package and select **Open** from the context menu. In the dialog that opens, click the **Open** button and wait until macOS completes the file verification. Once the file is verified, use the deployment tool of your choice to deploy the package. See also https://kb.parallels.com/124989

Deploying with Jamf Pro

Jamf Pro includes the Software Distribution functionality that you can use to deploy the Parallels Desktop package to Mac computers in your organization. To deploy the package you need:

- Jamf Pro server installed and configured.
- Target Mac computers enrolled in Jamf Pro.

- A distribution point (cloud or file share) configured and be accessible from the target Mac computers.

Add a distribution point

A distribution point is a server that hosts files for distribution to computers. If your Jamf Pro installation doesn't have a distribution point, you need to add one to host the Parallels Desktop autodeploy package.

To add a distribution point:

1 Open the Jamf Pro console and log in to your Jamf server.

2 Click the gear icon in the upper right and then click **Server Infrastructure** in the left pane.
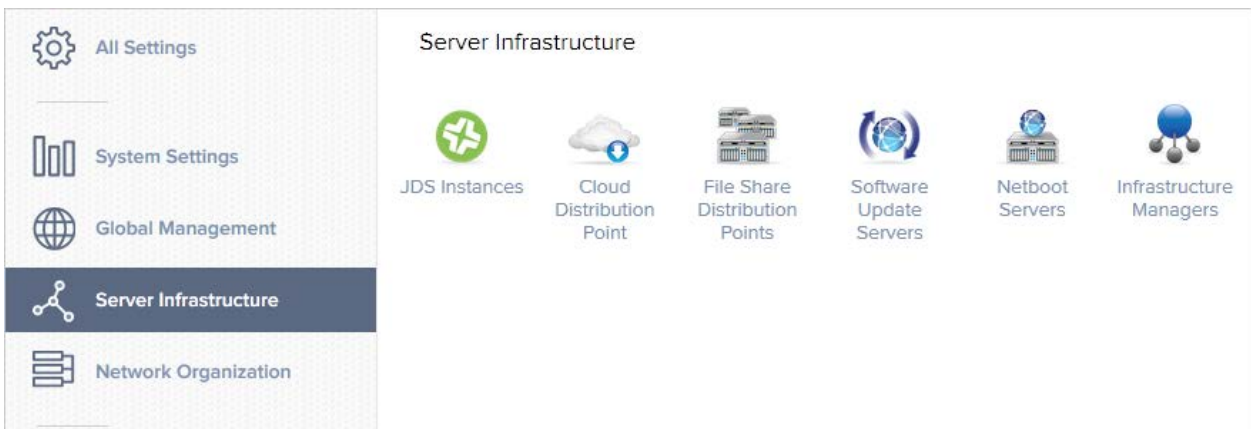
3 Jamf Pro supports cloud-based (content delivery networks) and file share distribution points. Depending on what is available to you, click the **Cloud Distribution Point** or the **File Share Distribution Points** icon. The instructions below are for setting up a file share distribution point. If you would like to set up a cloud distribution point, please consult Jamf Pro documentation for details.

4 After you click the **File Share Distribution Point** icon, click **New**.

5 On the **General** tab page:

- Type a name for the distribution point.
- Specify the IP address or the host name of the distribution point server.
- Select the **Use as master distribution point** option.

6 Click the **File Sharing** tab and specify the following:

- **Protocol:** Select AFP or SMB depending on which protocol is used on your server for file sharing.
- **Share name:** Specify the share name. For example, if your server name is MYSERVER and your full share name is \\MYSERVER\JAMF-SHARE, specify JAMF-SHARE in this field.
- **Port:** In most cases the default value is what a given protocol normally uses. If you know that your server uses a different port number, specify it here.

- **Read/Write Account:** Specify credentials of an account that has read/write access to the share.

- **Read-Only Account:** Specify credentials of an account that has read-only access to the share.

7   If your server supports HTTP downloads, select the **HTTP/HTTPS** tab and then select the **Use HTTP downloads** option. Based on our own and other users' experience, HTTP/HTTPS-enabled distribution points are more reliable than AFP/SMB shares, but you can try both options and see which one works better for you.

8   Click **Save** to save the settings and add the distribution point to your Jamf Pro installation.

Add the autodeploy package to the distribution point

Note: The instructions below describe uploading of the autodeploy package using the Jamf Admin app. If you are using the web-based tool and the Google Chrome browser, you should zip the package before uploading it. This is necessary because ownership and permissions of the content files in an unzipped package may change during upload, which in turn may corrupt the autodeploy package itself. Please note that this behavior has been observed when using the Google Chrome browser. If you are using Safari or the Jamf Admin app, you don't need to zip the package prior to uploading it.

To add the autodeploy package to the distribution point:

1   Open the Jamf Admin app on a Mac and log in to your Jamf Pro server.

2   Drag the package to the main repository area (the middle area in the right pane).

3 The package will be uploaded to the master distribution point and will appear in Jamf Admin.
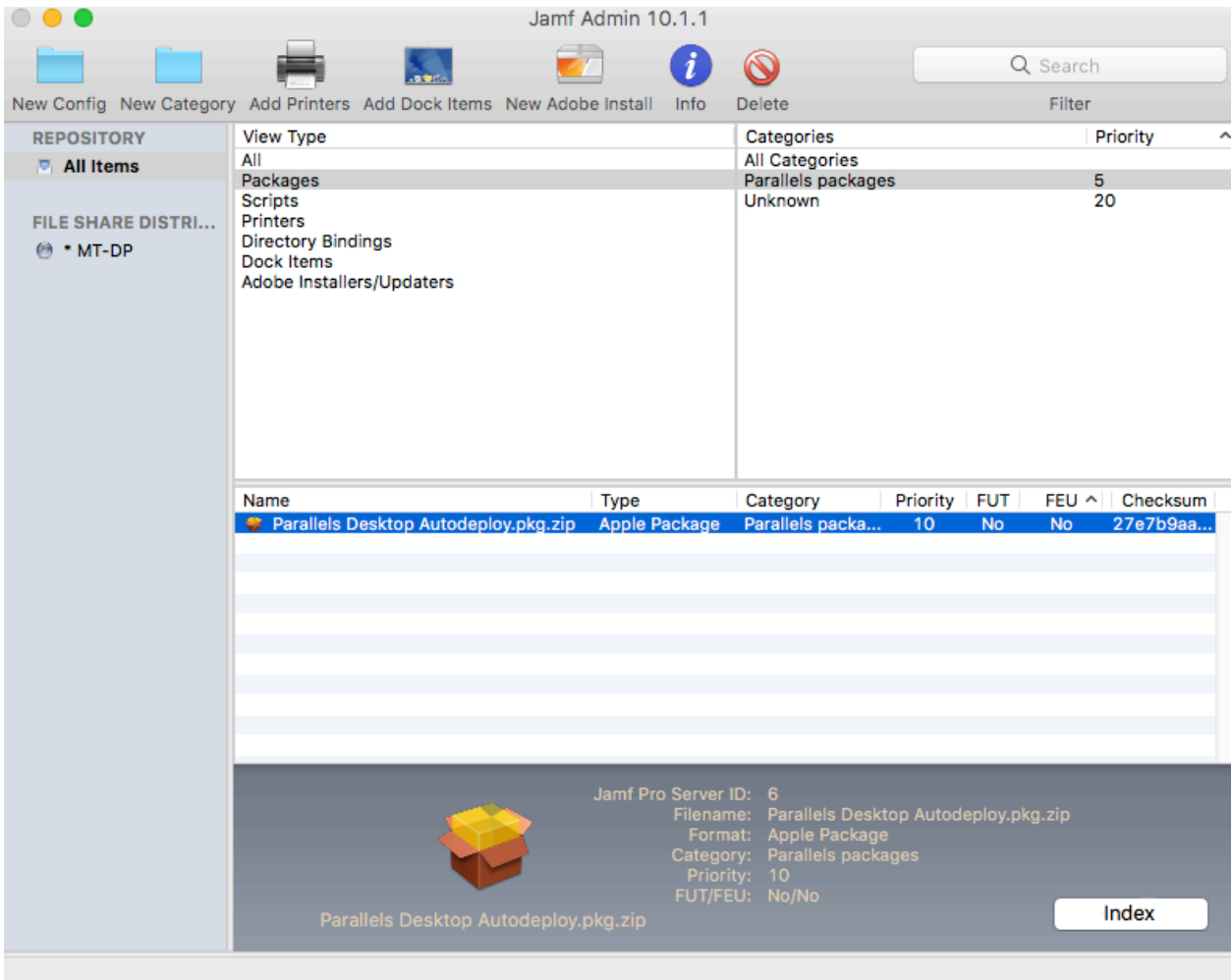
4 You can set other options if needed, such as add a package to a category or change the package priority. Indexing the package is not necessary for the purpose of deploying it on Macs.

5 Close the Jamf Admin when done.

To verify that the package has been added to the distribution point:

1 Open the Jamf Pro console and login to Jamf Pro server.

2 Click the gear icon in the upper right and select **Computer Management** in the left pane.

3 Click **Packages** in the right pane. You should see the **Parallels Desktop Autodeploy.pkg.zip** package in the list.

4 If needed, you can modify the package display name and other settings. To do so, click the package and then click the **Edit** button in the lower right. Modify any of the settings as you require (except the file name). All settings are optional. If not sure, simply leave them unchanged.

Install the package

You can install the package on Mac computers using a policy or you can use the Jamf Remote app that works similar to Apple Remote Desktop. This section contains instructions on how to install a package using a policy. For Jamf Remote instructions, please refer to the Jamf Pro documentation.

Create a policy

To create a policy:

1 In the Jamf Pro console, click the **Computers** tab in the left pane and then click **Policies**.
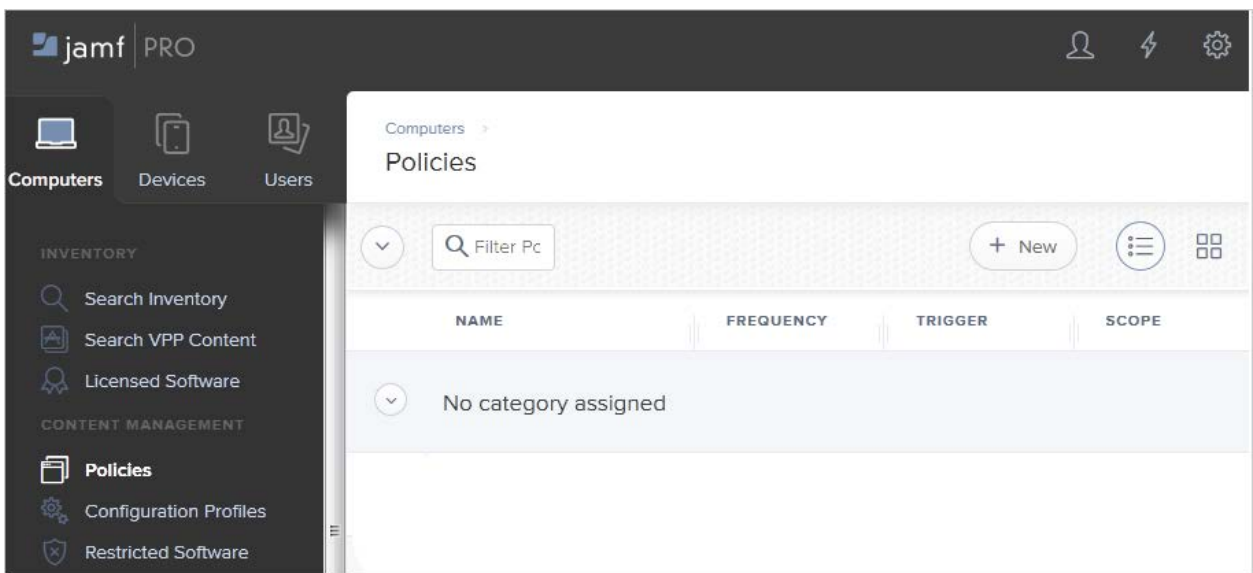
2 In the right pane, click **New**. The **New Policy** pane loads where you can define the policy.

3 In the **General** payload, specify the following:

- Type a name for the policy.

- Select the **Enabled** option.

- Specify a category (optional).

- In the **Trigger** section, select one or more events that should trigger the policy retrieval on target Mac computers.

- In the **Execution Frequency** drop-down list, select a frequency at which to run the policy. Since Parallels Desktop has to be installed just once, you may select **Once per computer** or **Once per user** (to install Parallels Desktop for each user if a Mac has more than one).

- The **Target Drive** option allows you to specify the drive on which to run the policy. You would normally use the default option, which will run the policy on the boot drive.

- Other options in the **General** payload allow you to configure limitations on when the policy can and cannot run. This includes server-side and client-side limitations. You can specify them according to your needs or you can leave them blank.

4 To specify a package for the policy, click the **Packages** payload and then click the **Configure** button in the right pane. The pane will be populated with the list of available packages.

5 Locate the **Parallels Desktop Autodeploy.pkg.zip** package and click **Add**.
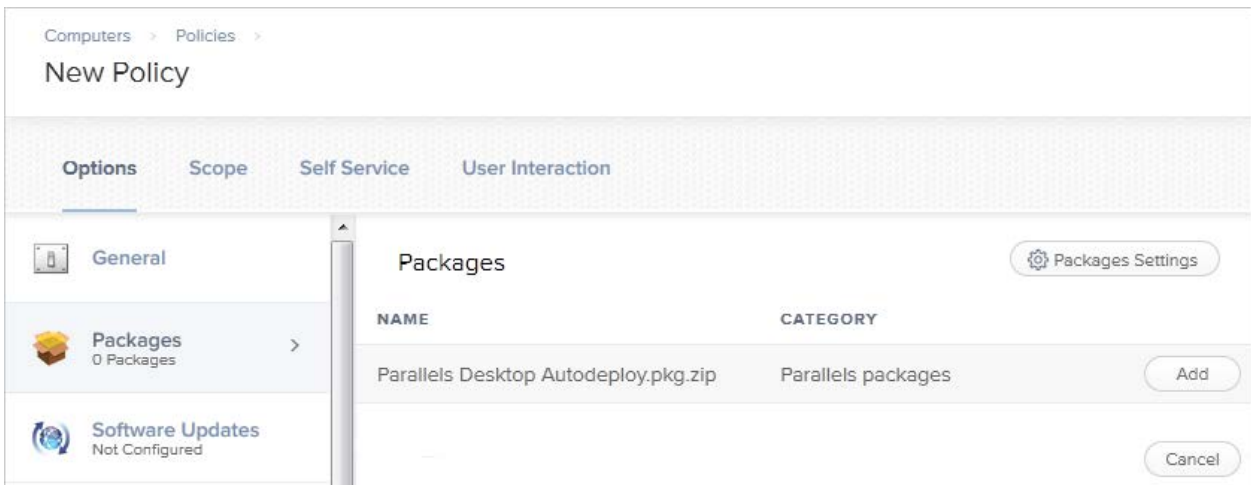
6 Select a distribution point that contains the Parallels Desktop package. If you select the **Specific file share distribution point** option, choose the distribution point. If the distribution point is both an AFP/SMB and HTTP share, Jamf will try to use the HTTP option to download the package to target Macs. If needed, you can force it to use the AFP/SMB share by selecting the **Force file sharing over AFP/SMB** option. Based on our observations, HTTP shares work more reliably in Jamf, but you can try different options if you are experiencing issues with mounting shares on Mac computers during the policy execution.

7 In the **Action** drop-down list, select how the package should be downloaded and installed on Mac computers:

- **Install** — when the policy runs, the package is downloaded and installed on a Mac computer as a single operation. Note that if you have a large number of Macs and the policy runs on all of them simultaneously, all of them will try to download the policy at the same time. For this reason, you may consider the options below to avoid overloading your network.

- **Cache** — when the policy runs, the package is downloaded to a Mac computer but is not installed at that time.

- **Install Cached** — a policy with this action installs the package that has been downloaded previously using the **Cache** option. You can use this and the "Cache" options if you are deploying Parallels Desktop on a large number of Macs. First, you "cache" the autodeploy package on each Mac at a convenient time. Once that's done, you run the "Install Cached" policy to install the package, which will be a completely local operation for each Mac. This way, you can ensure that Parallels Desktop is deployed on each Mac at roughly the same time (e.g. on the weekend) without delays.

8 The rest of the payloads are not required for Parallels Desktop package deployment.

9 To specify target Mac computers, click the **Scope** tab at the top of the pane. You can specify targets by computer name or user name (or both).You can also set limitations and exclusions to further narrow down the target list.

> **Note:** If you are deploying Parallels Desktop on both Apple M1 and Intel based Macs and your autodeploy package contains a virtual machine for one of the processor types, you need to select computers of a corresponding type. This can be done using Smart Groups. For more information, please see the following article on the Jamf website: https://docs.jamf.com/best-practice-workflows/jamf-pro/managing-macos-updates/Creating_a_Smart_Computer_Group_to_Identify_Target_Computers.html. If you are deploying just Parallels Desktop (without any virtual machines), then this step is unnecessary.

10 If you would like the package to appear in the **Self Service** app on a Mac, click the **Self Service** tab, select the **Make the policy available in Self Service** option, and specify additional options if needed. The **Self Service** app allows the user to initiate the policy retrieval manually without waiting for it to trigger.

11 The **User Interaction** tab page allows you to specify messages that will be displayed to a Mac user when the policy runs on their Macs. If you want the installation to be completely silent, you can skip this page.

12 When done, click **Save** to save the policy.

Deploy the package

Once the policy is retrieved by a Mac computer, it will install and activate Parallels Desktop on it. Once completed, the Mac user can begin using Parallels Desktop.

If you are testing your policy, you can wait for it to trigger or you can run it manually using the **Self Service** app on a Mac. The app is installed when a Mac is enrolled in Jamf Pro and can be opened from the Applications folder in macOS. If there errors executing the policy, you can review them in the app. Please also note that when testing a policy, don't try to run it on the same Mac that you use as a distribution point because an attempt to mount a share on the same Mac that hosts it will fail.

Deploying with Parallels Device Management for Configuration Manager

Parallels Device Management for Configuration Manager enables you to deploy Parallels Desktop to Mac computers via the Configuration Manager Software Distribution functionality. For the complete information about Parallels Device Management, please read the Administrator's Guide that can be downloaded from https://www.parallels.com/products/device-management/resources/.

The basic steps of deploying Parallels Desktop using Parallels Device Management are:

1   Prepare the Parallels Desktop autodeploy package (described earlier in this guide).

2   Create a software distribution package using the Microsoft Configuration Manager console.

3   Send the package to a distribution point.

4   Deploy the package.

The following describes steps 2-4 in detail.

Create a software distribution package

The Parallels Desktop autodeploy 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 and an optional description, manufacturer, language, and version information. Select the **This package contains source files** option and click **Browse**. Select the folder that contains the `Parallels Desktop Autodeploy.pkg` folder. Please note that you must select the parent folder of the `Parallels Desktop Autodeploy.pkg` folder, NOT the `.pkg` folder itself.

5   Click **Next**.

6   On the **Program Type** page, select the **Standard program** item and click **Next**.

7   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 /
```

8 When done specifying the program information, click **Next**.

9 Click **Next** on the **Requirements** page.

10 Review the summary and click **Next** to create the package.

Upload the package to the distribution point

To upload a copy of the package to the distribution point, right-click the package and choose **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 Device Management Administrator's Guide.

Deploy the package

To deploy the package:

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**).

> **Note:** If you are deploying Parallels Desktop on both Apple M1 and Intel based Macs and your autodeploy package contains a virtual machine for one of the processor types, you need to select a collection containing computers matching the corresponding type. If your autodeploy package doesn't contain any virtual machines, this step is unnecessary.

3 Click **OK** and then click **Next.**

4 On the **Content** page, verify the distribution point info and click **Next**.

5 Click **Next** on the **Deployment Settings** page.

6 On the **Scheduling** page, specify the schedule for this deployment. Click **New** to specify the assignment schedule. When done, click **Next**.

7 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 macOS. 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 macOS 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.

Configure 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 macOS on each individual Mac. In order to do so, you need to log in to each Mac and perform the following steps:

1 In macOS, 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).
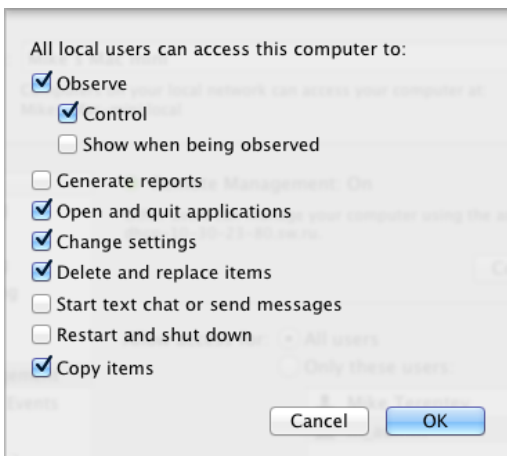
6 Click **OK**.

7 Close **System Preferences**.

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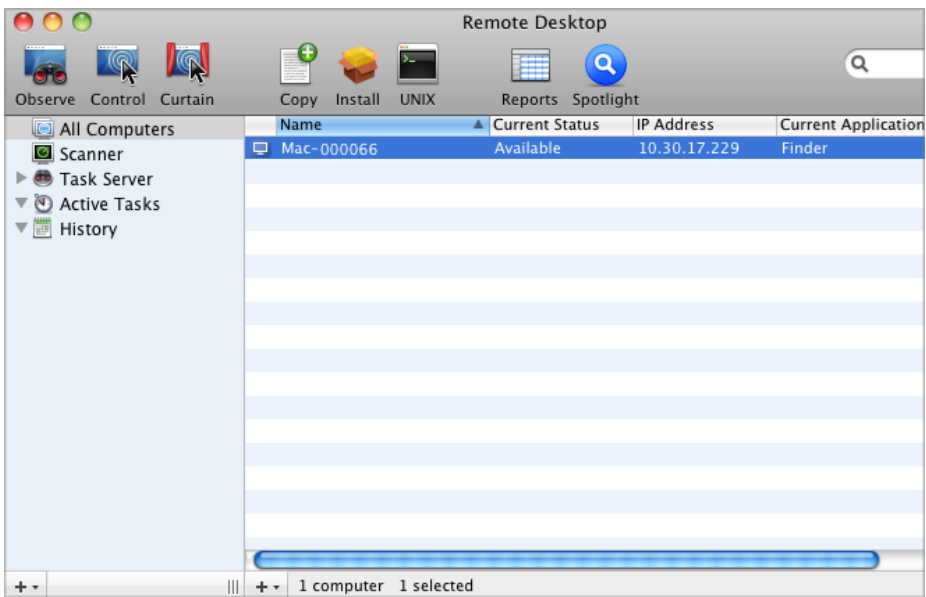
3 Select the desired destination Macs and click **Install** in the ARD toolbar (or select **Manage** > **Install Packages** menu). The **Install Packages** window opens.

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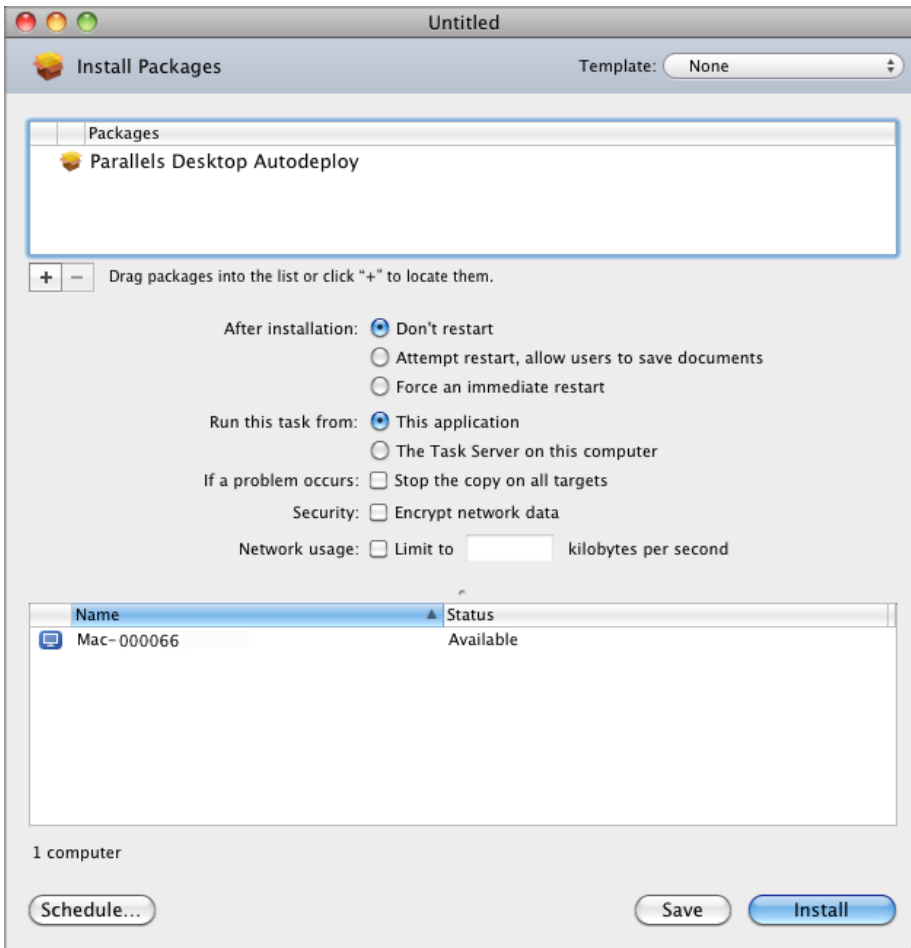
5   Click **Install** to distribute the autodeploy package to selected Macs. The installation progress is
displayed in the main window. The result of the package distribution to each individual Mac is
displayed in the **Status** column.

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 you 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
autodeploy 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 autodeploy package is to be installed and click **Install** in the ARD toolbar.

4 In the **Install Packages** window, add the desired Parallels Desktop autodeploy 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.
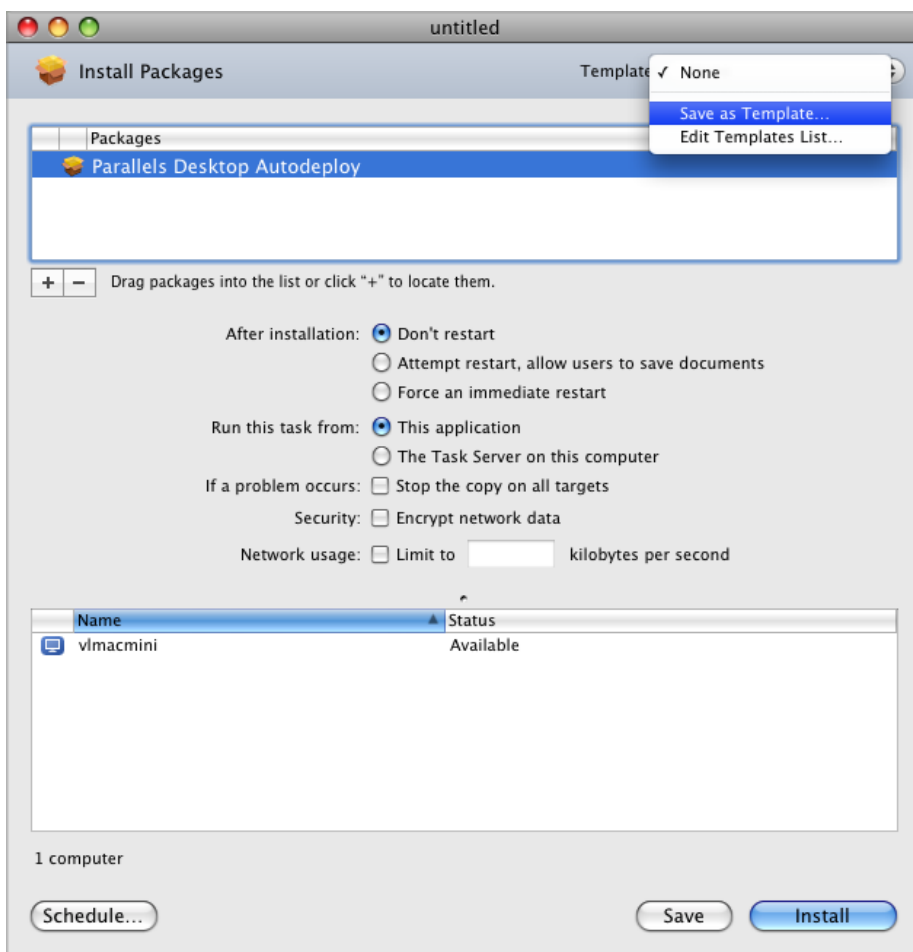
6 In the displayed window, specify the name that you would like to use for the template and click **OK**.

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 macOS image using NetBoot

If you are using NetBoot to deploy a macOS image with Parallels Desktop Business Edition preinstalled, some additional steps need to be taken to properly activate a copy of Parallels Desktop on individual Macs.

The following steps describe the process of installing Parallels Desktop and creating an image from it suitable for NetBoot deployment:

1 Install macOS on a Mac.

2 Install Parallels Desktop Business Edition.

3 Make sure your Mac can connect to the Internet.

4 Activate Parallels Desktop using your Business Edition license key.

5 Tune Parallels Desktop settings and add or create virtual machines according to your needs.

6 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 Business Edition license key.

On success, you should see the following output:

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

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.

You can now create a macOS image from this system and deploy it to other Macs in your enterprise using NetBoot.

Using a script to Change VM options

When you need to change configuration settings of all virtual machines that are already registered on a Mac computer, you can use the Parallels desktop command-line interface. To do so, you first need to create a script to perform a desired configuration modification. You can then execute the script on a Mac computer using one of the remote Mac management tools described earlier in this chapter.

The following is a script example that disables the auto pausing option for all virtual machines registered on a Mac computer:

```
for i in $( prlctl list -a --info | grep "ID" | sed 's/.....//;s/.$//' ); do
  prlctl set $i --pause-idle off
done
```

The script above uses the `prlctl list` command to first obtains a list of registered virtual machines and then (inside the loop) sets the `--pause-idle` option for every VM to "off", which disables pausing of an idle virtual machine.

The complete command-line reference is documented in the **Parallels Desktop Command Line Interface** chapter.

Parallels Desktop for Mac Business Edition Features

This chapter describes features that are specific to Parallels Desktop for Mac Business Edition.

In This Chapter

Using Configuration Profiles

Overview

A configuration profile in Parallels Desktop for Mac Business Edition is a set of parameters that can be applied remotely to a Parallels Desktop installation and modify the appearance or behavior of Parallels Desktop according to organization policies. Configuration profiles are created in an organization's Parallels business account. You must be the administrator of the account to create and manage configuration profiles. License administrators (admins who are allowed to manage specific licenses) cannot manage configuration profiles.

At the time of this writing, configuration profiles can be used to enable and configure the following functionality in Parallels Desktop for Mac Business Edition:

- **Provisioning a corporate virtual machine image**

- **Enabling major version upgrades**

We'll talk in detail about the functionality listed above later in this part of the guide. This and the following two sections talk about configuration profiles in general and describe how to create and apply them.

Configuration profile payloads

Payloads in a configuration profile contain settings specific to a particular functionality. For example, the **VM for M1 Mac** and **VM for Intel Mac** payloads allow you to configure virtual machine image provisioning, while **Product Updates** payload allows you to manage Parallels Desktop updates. The configuration profile itself is created and configured the same way regardless of which of its payloads are configured and enabled.

A configuration profile can have one or more payloads configured and enabled. For example, you can configure and enable a particular payload in one profile and a different payload in another profile. This allows you to enable one functionality for one group of users and another functionality for a different group (see below how configuration profiles are applied to Mac computers). You can create as many profiles as necessary.

Applying configuration profiles to Mac computers

Configuration profiles are applied to registered Mac computers based on a license or sublicense key that computers are using to run Parallels Desktop. After you create a configuration profile, you need to apply it to one or more license or sublicense keys in your subscription. By doing so, you are essentially applying the profile to Mac computers on which Parallels Desktop was activated using that license key.

The rest of this part of the guide describes how to:

- Create a configuration profile

- Apply the configuration profile to a license or sublicense key

- Configure individual payloads

Create a configuration profile

To create a configuration profile:

1 Log in to your Parallels business account.

2 In the **Parallels Desktop for Mac Business Edition** product card, click **Registered computers**.

3 Click the **More** item in the main menu (top right) and choose **Configuration Profiles** as shown on the screenshot below.
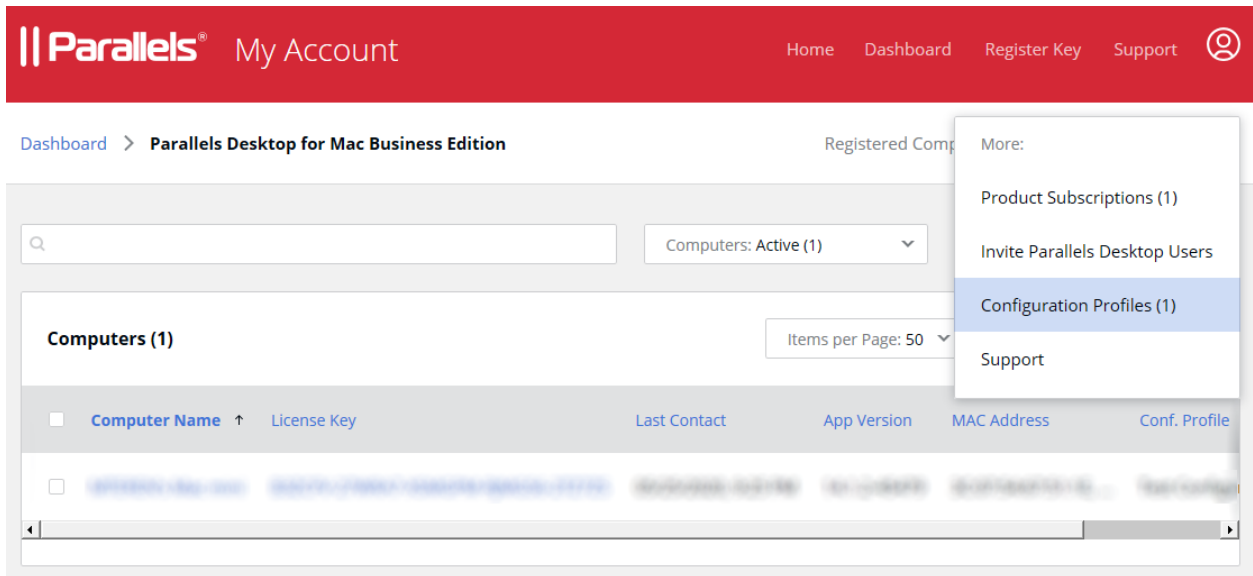
4 The page listing configuration profiles opens. If you haven't created any profiles yet, the list will be empty.

5 Click the **Create Profile** button. A dialog opens where you can configure the profile.
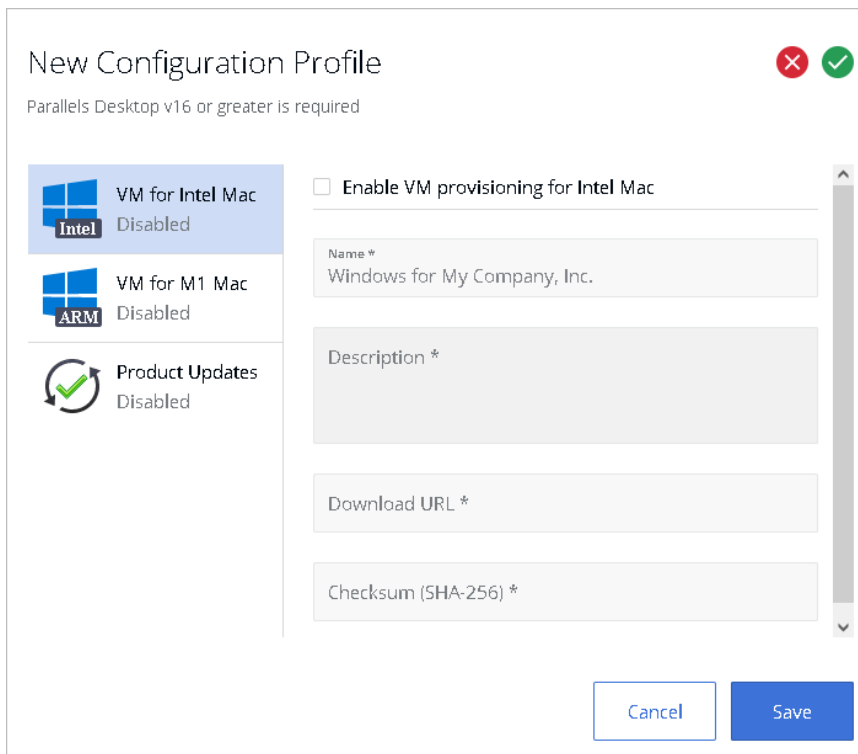
6 To replace the default profile name (top left), simply erase the default name (New Configuration Profile) and type a new one.

7 The payloads are listed in the left pane. To configure a payload, select it and then specify the necessary settings in the right pane. Each payload has the "Enable..." option at the top of the right pane. This option enables or disables a payload, but doesn't change or discard the payload settings. When a payload is enabled, it is included in the configuration profile when the profile is applied to Mac computers. When a payload is disabled, it is not included, so Mac computers don't receive it.

8 When done, click **Save** to save the configuration profile.

At this point we will not configure any of the payloads yet and will go straight to applying the configuration profile to a license or sublicense keys (it is allowed to create a profile with all payloads disabled). Once you learn how to create and apply a configuration profile, we'll talk about how to configure and use each individual payload.
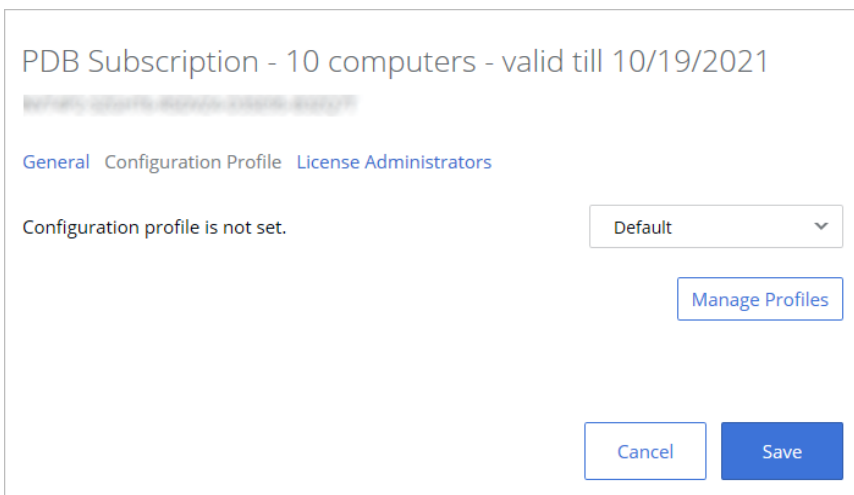
Applying a configuration profile to a license key

Configuration profiles are applied to registered Mac computers based on a license or sublicense key that they are using to run Parallels Desktop. By applying a configuration profile to a license or sublicense key, you are essentially applying it to Mac computers that use (or will use in the future) that key.

Note: You can apply a configuration profile to one or more license or sublicense keys. However, a single license key can have just one configuration profile applied to it.

To apply a configuration profile to a license or sublicense key:

1 In Parallels My Account, click **Dashboard** in the top menu and then click **Active subscriptions** inside the **Parallels Desktop for Mac Business Edition** product card.

2 Click a subscription to open a page containing the subscription information.

3 In the **License Keys** list, choose a license or sublicense key and click the "gear" icon at the end of the row. This opens a dialog containing the license key information and settings. In the dialog, select the **Configuration Profile** tab.

PDB Subscription - 10 computers - valid till 10/19/2021

General   Configuration Profile   License Administrators

Configuration profile is not set.

Default

Manage Profiles

Cancel   Save

4 Initially, the tab page will say that "Configuration profile is not set" and the drop-down menu next to it will contain the "Default" profile. This is because you haven't applied a custom configuration profile to this license key yet.

> **Info:** "Default" is a built-in profile that Parallels Desktop is using internally. It doesn't contain any payloads that you can configure when you create a custom profile. If you don't have any custom profiles assigned to a license key, the "Default" profile is used.

5 Expand the drop-down menu and select the configuration profile that you created earlier.

6 Click **Save**.

> **Note:** If you apply a configuration profile to a primary license key (not a sublicense), all derived sublicenses are automatically associated with the same configuration profile. However, if later a different configuration profile is applied to the primary license key, the profile association on sublicenses will not be affected (i.e. the profile assigned to them originally will remain). You can apply a different configuration profile to a sublicense key at any time if needed.

Once a configuration profile is applied to a license key, the following will happen on Mac computers that use this key:

- The next time Parallels Desktop communicates with Parallels cloud, it will receive the configuration profile and will save the data that it contains locally.

- When an action is performed (by the user or by a scheduled event) that has to do with one of the configuration profile payloads, the data is read from the local storage and is used accordingly depending on the payload and its settings. This is described in more detail in topics that describe individual payloads.

This concludes the description of how to create a configuration profile and how to apply it to a license or sublicense key. The subsequent sections describe how to configure individual payloads and how to use the corresponding functionality when managing Parallels Desktop installations in your organization.

Provisioning a corporate VM image

Beginning with Parallels Desktop 16 for Mac Business Edition, IT administrators have an option to provision a corporate Parallels Desktop virtual machine image from a link that they specify in Parallels My Account.

> **Note:** Due to differences in supported operating systems on Mac computers with the Apple M1 chip and Mac computers with an Intel processor, different VM images must be used depending on the processor type. For the information about supported guest operating systems, please visit https://www.parallels.com/requirements/.

Here's a quick overview of how this functionality works:

1 An administrator first creates a Parallels virtual machine image with the operating system installed. The virtual machine will serve as a corporate VM image to be deployed on users' computers to run Windows applications used in the organization.

2 The virtual machine is then saved as an archive (ZIP or PVMP, we'll talk about archive formats later) and is placed on a server from which Parallels Desktop users can download it to their computers via HTTP or HTTPS.

3 The administrator creates a configuration profile (p. 45) in Parallels My Account and specifies the download URL of the virtual machine image (together with other required parameters).

4 When a Parallels Desktop user initiates the process of creating a new virtual machine, Parallels Desktop checks if a configuration profile with the VM image link exists and is applicable to the Parallels Desktop license key used by this Mac computer. If the profile exists, a dialog is shown to the user inviting them to download and install the corporate virtual machine image. If the user accepts, the virtual machine is downloaded to the user's computer and is registered in Parallels Desktop.

The subsequent sections describe how to perform the steps above.

Create a VM image

To create a VM image:

1 First, create a Parallels virtual machine, install the operating system in it, and configure the virtual machine according to your requirements. Note that if you have Apple M1 and Intel based Macs in your organization, you need to create a separate virtual machine for each processor type. For the list of supported operating systems, please visit https://www.parallels.com/requirements/.

> **Note**: Boot Camp-based virtual machines, archived virtual machines, and linked clones cannot be used for deployment.

2 Make sure the virtual machine is shut down.

3 If your virtual machine has snapshots, it is recommended that you remove them. This will significantly reduce the virtual machine size. Moreover, these snapshots may be unusable on another computer because of hardware differences.

4 When the virtual machine is ready, it needs to be saved as an archive before you make it available for download to your users. Choose from the following options:

- **ZIP** — simply archive the virtual machine bundle (.pvm) as a .zip file. In general, you can use any archiving format that can be extracted using the `tar -xf` command. For example, zip, tar.gz, tar.bz2.

  Please note that you will also need to calculate an SHA-256 checksum for the ZIP file. You can use the `shasum` command or another third-party tool. For instructions on how to use the `shasum` command, please see **Calculating SHA-256 checksum** below.

- **PVMP** — this is a Parallels own archiving format that was first introduced in Parallels Desktop 16. It is primarily used to transfer virtual machines from one computer to another and is optimized for archiving Parallels virtual machine bundles. For instructions on how to create a PVMP archive, please see below.

Creating a PVMP archive

To create a PVMP archive of a virtual machine, do the following:

1 Open the Parallels Desktop Control Center.

2 Right-click the virtual machine that you want to transfer and select **Prepare for Transfer**. Parallels Desktop starts packing the virtual machine. This process may take some time depending on the virtual machine size.

3 Once the package is created, you can right-click it and choose to show where it is stored in the Finder. The package has the .pvmp extension.

4 An SHA-256 checksum for the virtual machine package is calculated automatically and saved as VmName.sha256.txt file in the same folder. You will need it when creating a configuration profile for the VM image provisioning later. You can also calculate the checksum by executing the `shasum` command. For more info, please see **Calculating SHA-256** checksum below.

Calculating SHA-256 checksum

When creating a configuration profile for VM image provisioning (described later in this chapter), you will need to specify an SHA-256 checksum for the VM image archive. As was mentioned in the previous subsection, the checksum is calculated automatically for the PVMP archive. If you are archiving a virtual machine bundle using a different archiving format (or if you need to calculate the checksum again for the PVMP format) you can execute the following command from the command line:

```
shasum -a 256 <path>/"<archive_name>"
```

For example:

```
shasum -a 256 /Users/<your_user>/Parallels/"Windows.zip"
```

The output will look similar to the following:

```
63a90c3c38cc8c358221da339068fc1292b10bf7c00ed8449787b0e6019d706b
/Users/parallels/Parallels/Windows.zip
```

Upload the image

Once you have a virtual machine saved as a ZIP or PVMP archive, upload it to the server from which Parallels Desktop users can download it to their Mac computers via HTTP or HTTPS. Note that the server might serve a number of simultaneous downloads, which can negatively affect the speed of a download (depending on the number of end users). For this reason, CDN is recommended for very large deployments.

Create a configuration profile

To create a configuration profile for VM image provisioning:

1 Begin creating a new configuration profile as described in the **Create a Configuration Profile** section (p. 45).

2 When you have the new configuration profile dialog open, select **VM for Intel Mac** or **VM for M1 Mac** payload, depending on the image type that you want to provision.

3 In the right pane, select the **Enable VM image provisioning** option and specify the following properties:

- **Name:** Type a name for the VM image as you want it be called in this profile. This is the name your users will see in Parallels Desktop when they receive an invitation to download it. This field is mandatory.

- **Description:** An optional description. End user will see this description in Parallels Desktop. For example, if a VPN connection is required to download the image, you may include this information here.

- **Download URL:** The VM Image download URL. Mac users must be able to download the image via HTTP or HTTPS using this URL. This field is mandatory. For additional info, please see **Create a VM Image** (p. 49).

- **Checksum (SHA-256)**: The VM image checksum. This field is mandatory. If you used the PVMP format to archive the virtual machine, then the checksum was calculated automatically and saved as VmName.sha256.txt file. If you archived the virtual machine using the ZIP or other supported format, you'll need to calculate the checksum. For the info about the PVMP format and how to calculate the checksum, please see **Create a VM Image** (p. 49).

4 Click **Save** to save the configuration profile.

The configuration profile now needs to be applied to a license or sublicense key. If you haven't done so already, use the instructions in **Applying a configuration profile to a license key** (p. 47) and apply the profile.

Installing VM image on a Mac computer

The corporate VM image policy is checked every time a new VM creation process is started by the user in Parallels Desktop on a Mac computer. If the corporate VM image policy is set (a configuration profile with the **VM for Intel Mac** or **VM for M1 Mac** payload exists and has been applied to the license key used by this Parallels Desktop installation), the Parallels Desktop Control Center displays a message inviting the user to download the corporate VM image. If the user accepts the invitation, the VM image download begins and the progress indicator is displayed (note that because of the large size of a VM, the download may take some time). If the user declines, he/she is taken to the Installation Assistant where they can create a virtual machine from scratch.

After the VM image download completes, the image is unpacked and the virtual machine is registered in Parallels Desktop.

Enabling major version upgrades

Prior to Parallels Desktop 16, users were not automatically upgraded to the next major Parallels Desktop version. Starting with version 16, this option became available.

In the past, to upgrade Parallels Desktop for Mac Business Edition to a newer version, an IT administrator would need to set up a local update server or use a remote management tool, or install the new version manually on a Mac computer. With this new option, administrators have the ability to automate major version upgrades if the organization policy allows it.

Here's a quick overview of how this feature works:

1 You create a configuration profile in Parallels My Account and configure the **Product Updates** payload where you enable or disable the "Allow upgrade..." option.

2 You then apply the configuration profile to a license or sublicense key.

3 Parallels Desktop periodically checks if a new major version is available. If it is, depending on how updates are configured in Parallels Desktop, the user will see a notification (with an option to upgrade or postpone) or the upgrade will be performed silently. When the upgrade is initiated, the new major version of Parallels Desktop is downloaded to the Mac computer and is installed on it. After that, Parallels Desktop restarts completing the upgrade.

> **Note:** If a local update server is configured in your organization, the functionality described here will have no effect, even if you create a configuration profile and apply it to a license key used by Mac computers. For more info about local updates, see **Setting up a local update server** (p. 65).

The subsequent topics describe in detail how to configure and use the major version upgrade functionality.

Create a configuration profile

To create a configuration profile for enabling major version upgrades, do the following:

1   Begin creating a new configuration profile as described in the **Create a configuration profile** section (p. 45).

2   When you have the new configuration profile dialog open, select the **Product Updates** payload in the left pane.
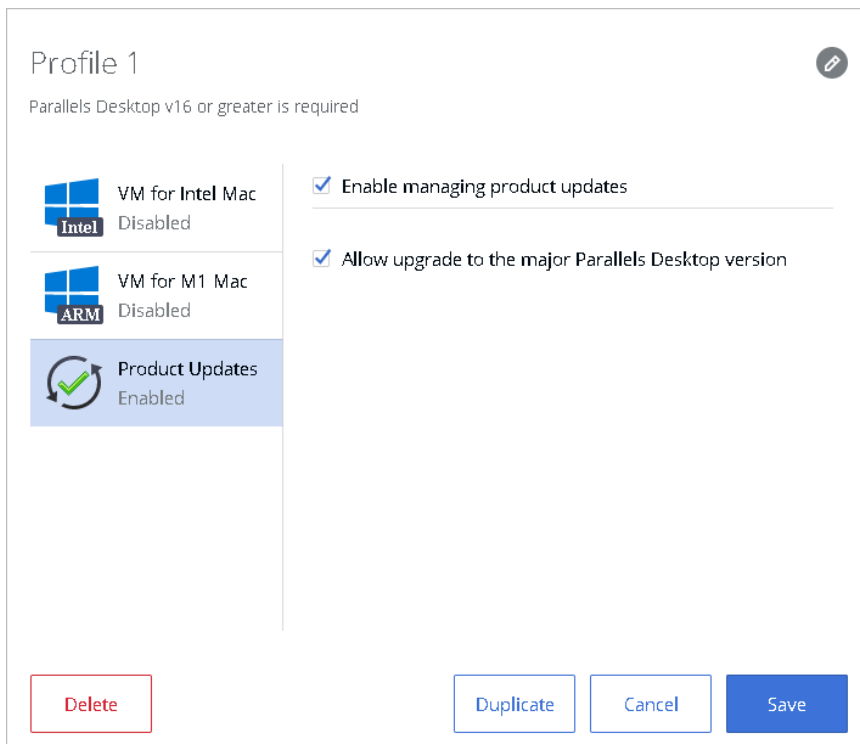
3   In the right pane, select the **Enable managing product updates** option. This will enable the payload, so when the configuration profile is sent to Mac computers, they will receive it.

4   To enable major version upgrades, select the **Allow upgrade to the major Parallels Desktop version** option.

5   Click **Save** to save the configuration profile.

The configuration profile now needs to be applied to a license or sublicense key. If you haven't done so already, use the instructions in **Applying a configuration profile to a license key** (p. 47) and apply the profile.

Restricting User Actions in Parallels Desktop with a Custom Password

As an administrator of Parallels Desktop Business Edition, you have the ability to restrict the following user actions in Parallels Desktop:

- Creating a new virtual machine.

- Adding an existing virtual machine.

- Removing a virtual machine.

- Cloning a virtual machine or converting it to a template.

- Opening the Parallels Desktop Preferences dialog.

You can set a custom password (i.e. it can be different from the local Mac administrator password) and specify which user actions from the list above should require it. Once you apply these settings, even the local Mac administrator will not be able to perform these actions without specifying the password that you set.

To set the password and specify the actions:

1   In the Parallels Desktop menu bar, click **Parallels Desktop** > **Preferences**.

2   Click the **Security** tab.

3   Click the **Custom password: Turn On...** button.

4   In the dialog that opens, type a password. This becomes the custom password that will be required to perform actions that you will select in the next step. Click **OK**.

> **Note:** If later you need to change this password, click the **Change Password** button and follow the instructions on the screen.

5   Back in the **Security** dialog, select the user action(s) you want to restrict.

6   Close the dialog to apply the settings.

If a Mac user now tries to perform any of the actions that were password-protected (e.g. creating a virtual machine, etc.), they will be required to enter this custom password. To select or deselect an action in the Parallels Desktop Preferences dialog will also require the password.

The steps described above allow you to set the password and restrict user actions in Parallels Desktop on a particular Mac. If you want to apply these settings on multiple Mac computers in your organization, you can do it using the mass deployment process. For more information, please see **Mass Deployment of Parallels Desktop and Virtual Machines** (p. 7). Specifically, these options are set in the Security section of the `deploy.cfg` file, as described in **Configure Deployment Configuration Options** (p. 19).

Restricting a Virtual Machine Configuration with a Custom Password

Parallels Desktop Business Edition provides you with the ability to protect the configuration of a virtual machine with a custom password. When a password is set, even a local Mac administrator will be required to enter it in order to modify virtual machine settings.

Using the Parallels Desktop graphical user interface to set the password

To set a password in the Parallels Desktop graphical user interface:

1 Open Parallels Desktop and select a 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 Custom password: Turn On... button.

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

To change or remove the password:

- To change the password, click the Change Password button and follow the instructions on the screen.

- To remove the password, click Custom password: Turn Off and follow the instructions on the screen.

If the password is set and the user tries to view or modify the virtual machine configuration, they will be required to enter this custom password.

Using the command line utility to set the password

In addition to the graphical user interface, you can use the `prlctl` command-line utility to set a custom password for editing the virtual machine configuration.

> **Note:** The command option described below is available since Parallels Desktop 15. Older versions of Parallels Desktop used the `--password-to-edit` option, which is no longer supported.

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

```
prlctl set "vm_name" --custom-pwd
```

where vm_name is the virtual machine name in quotes. You'll be asked to enter a password and then confirm it.

To change or remove the password, type the same command as above:

```
prlctl set "vm_name" --custom-pwd
```

You'll be asked to enter the current password and then a new password.

To view the current protection status for a virtual machine, type the following command:

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

In the output, search for the **Security** section and look at the **Custom password protection** property. It will be either set to "on" or "off".

Using the mass deployment process to set the password

If you are mass deploying Parallels Desktop and one or more virtual machines, you can simply set the custom password in the source virtual machine. When a virtual machine is deployed on Mac computers, the password will be retained.

> **Note:** Prior to Parallels Desktop 15, the custom password needed to be set in the deploy.cfg file (a part of the Parallels Desktop autodeploy package) using the `password-to-edit` parameter. The parameter is no longer supported.

Locking a 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 credentials or authenticate (depending on how Windows is set up) to unlock it and see the Windows desktop.

To enable or disable this option:

1   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 **Always lock Windows on suspend** option.

5   Close the dialog.

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

Setting an Asset Tag in the Virtual Machine BIOS

Asset tags help identify, control, and track computer assets in an organization. Parallels Desktop for Mac Business 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 the Parallels Desktop GUI:

1   On the Parallels Desktop menu bar, select **Actions** > **Configure** to open the virtual machine configuration dialog.

2   Select **Business**.

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.

Using Custom Graphics and Links in the Control Center

Parallels Desktop Control Center is a part of the Parallels Desktop graphical user interface. It's a window from which a Mac user launches virtual machines. By default, the Control Center displays the list of the available virtual machines, as in the following example:


You can customize the Control Center by specifying a URL to your own HTML document, which will be embedded at the top of the Control Center window. The HTML page can contain text, graphics, and links such as your company logo, custom text, 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. 7). Specifically, you need to specify the URL 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 values, please see **Configure Deployment Configuration Options** (p. 19). 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.
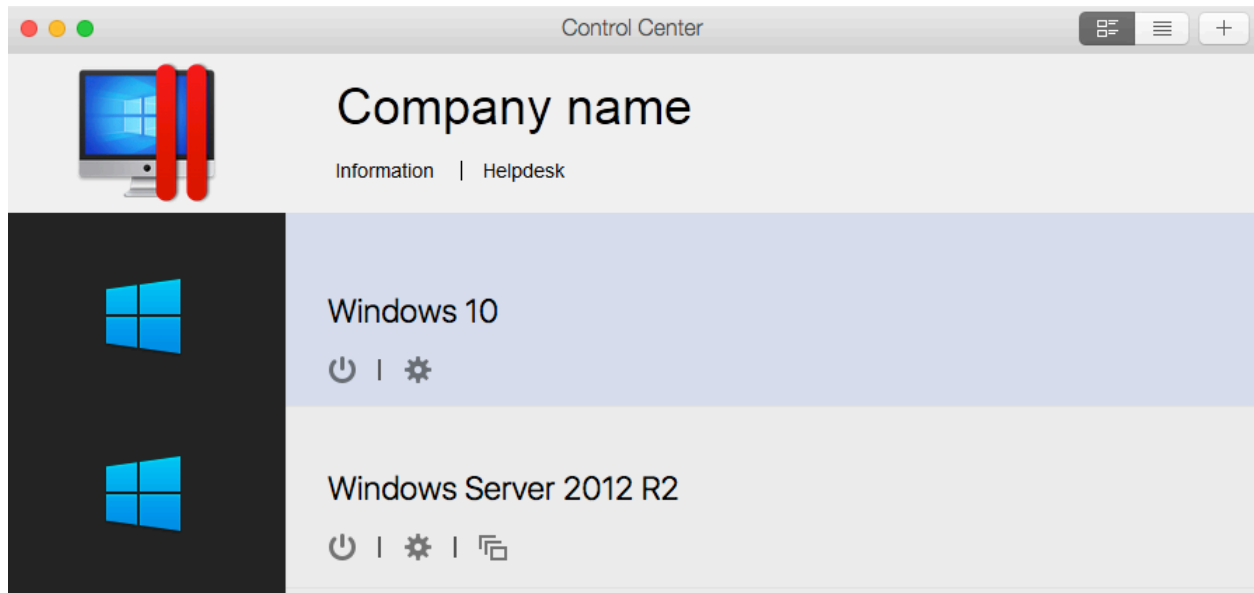
You can download a sample HTML document defining the banner using the following URL:

https://download.parallels.com/desktop/tools/header13.zip

Hiding Developer Tools in the Parallels Desktop GUI

Parallels Desktop Business and Pro editions include developer tools which are aimed at software developers using Parallels Desktop as their development platform. The tools are accessed by clicking the **Develop** menu on the virtual machine menu bar and then choosing one of the available options (e.g. **Start SSH Session**, **Start Debugging Session**, and others). If users in your organization are not using these tools, you can hide the **Develop** menu altogether. The reason you would want to do this, some of these features (if used accidentally) may start a debugging session or engage some other development-specific task that may temporarily disrupt a normal Parallels Desktop operation.

This option is a part of a virtual machine configuration and can be set using the Parallels graphical user interface as follows:

1   Open the virtual machine configuration dialog (click the gear icon or choose **Actions** > **Configure**).

2   In the dialog, click **Options** (at the top) and then click **More Options** in the left pane.

3 In the right pane, select or clear the **Show developer tools** option. This will show or hide the **Develop** menu on the virtual machine menu bar (you don't have to restart a virtual machine if it's running).

To modify this setting from the command line, execute the following command in Terminal:

```
prlctl set ID/Name --show-dev-tools on|off
```

where *ID/Name* is the GUID or name of a target virtual machine.

When mass deploying Parallels Desktop on Mac computers in your organization, you can configure the autodeploy package to apply this settings to all included virtual machines automatically. For details, see **Configure deployment options** (p. 19).

Encrypting a Virtual Machine from the Command Line

A Parallels virtual machine can be encrypted from the Parallels Desktop graphical user interface. This is done from the **Security** tab of the virtual machine configuration dialog.

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

The following 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
```

Single Application Mode

Single Application Mode is a special Parallels Desktop deployment option that allows you to completely hide Parallels Desktop and Windows on a Mac and make a Windows application appear like it's a native macOS app. This mode is designed for system administrators who want Mac users in their organization to run one or more Windows applications without being aware of Parallels Desktop or Windows running in a virtual machine.

To make Parallels Desktop run in Single Application Mode, you need to deploy it on Mac computers via the autodeploy package. This includes preparing the autodeploy package in a special way and then either deploying it on Mac computers using Mac management tools or running it manually on a Mac.

For more information about how to use the autodeploy package and how to deploy Parallels Desktop in Single Application Mode, please see the following sections of this guide:

- **Mass deployment using Mac management tools** (p. 7)

- **Single application mode** (p. 26)

Setting an Expiration Date for a 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   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.

Enforcing USB Device Policies

When configuring USB device settings for a virtual machine, you can enforce what types of USB devices are allowed to be connected. For example, if storage devices (in general) are not allowed, the Mac user will not be able to connect an external hard disk or thumb drive to the virtual machine. This functionality is available in Parallels Desktop Business edition only and is absent in other editions.

To enforce USB device policies, open the virtual machine configuration window and select **Hardware** > **USB & Bluetooth**.
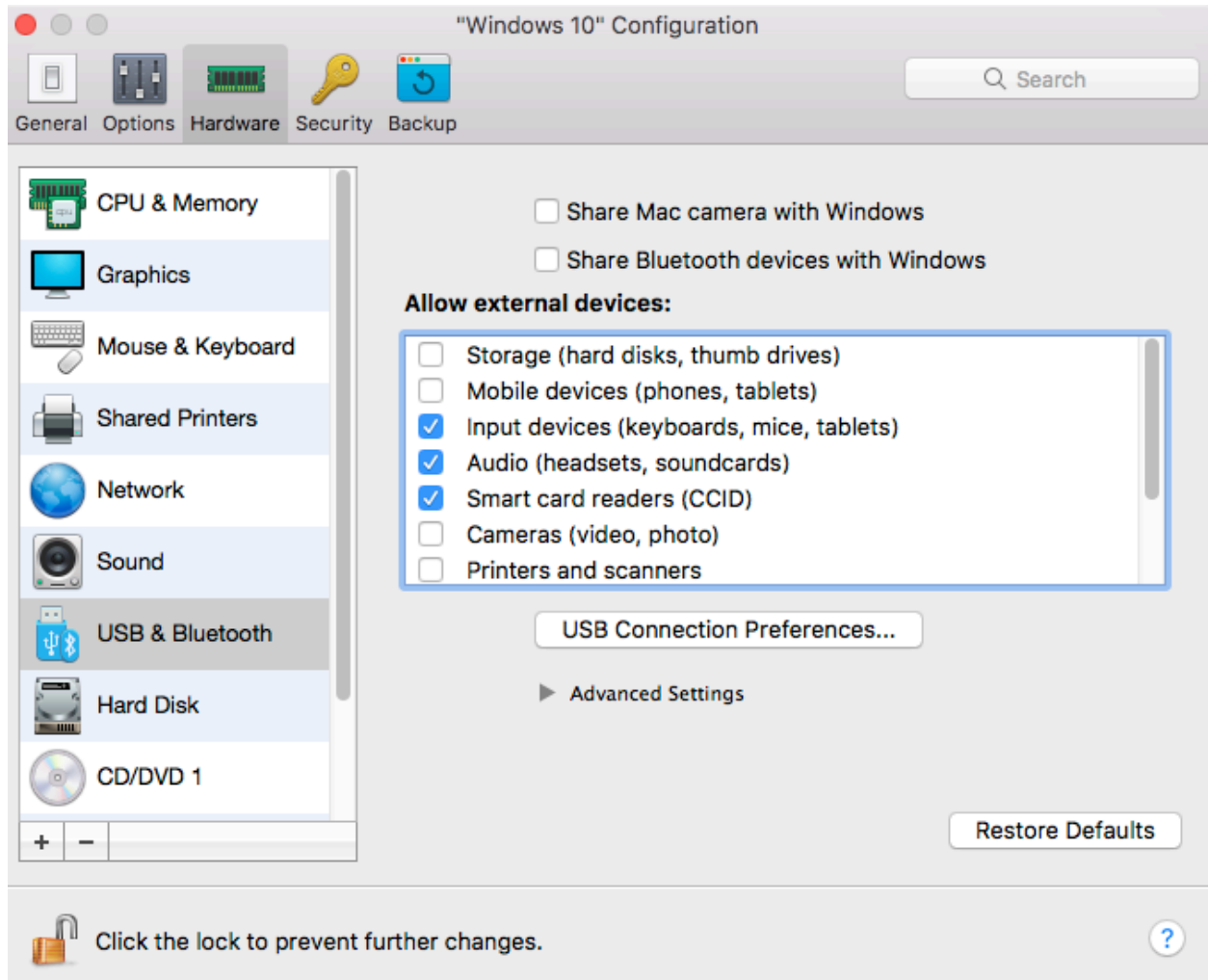
In the **Allow external devices** list:

- Clear the types of devices that you don't want Mac users to connect to the virtual machine.

- Select the types of devices that should be allowed.

Resetting the Guest OS Password

If a virtual machine user forgets the password of their guest OS account (e.g. a 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 macOS administrator password to change the guest OS password from the 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 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 macOS 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.

Setting Up a Local Update Server

With Parallels Desktop Business Edition 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 a 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 the 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>12</Major>
      <Minor>0</Minor>
      <SubMinor>12494</SubMinor>
      <SubSubMinor>262214</SubSubMinor>
      <StringRepresentation>Sumer</StringRepresentation>
      <Update uuid="desktop.13.0.13291.237436.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>2017-06-17 01:23:00</DateTime>
        <Chargeable>0</Chargeable>
        <LocaleName>en_US</LocaleName>
        <DistributorName>parallels</DistributorName>
        <OsType>mac</OsType>
        <Ancestry>
          <Ancestor>desktop.13.0.12927.482436.en_US.parallels.mac</Ancestor>
          <Ancestor>desktop.13.0.12473.274921.en_US.parallels.mac</Ancestor>
          <Ancestor>desktop.13.0.12262.823647.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 (e.g. 13)
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 (e.g. 13) 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 user-defined update name.
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 (e.g. "en_US") `vendor` — vendor ("parallels"). `platform`-— platform ("mac").

Configuring individual Macs

The next step is to configure 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 **Configure Deployment Configuration Options** (p. 19) 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 to use automatic updates during the mass deployment process.

To configure 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` subfolder 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 Xcode).

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, "https://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 a Business 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.

Configuring Parallels Desktop update branch

By default, Parallels Desktop Business Edition downloads updates from a special location on the Parallels website dedicated to hosting Parallels Desktop Business Edition updates. Parallels Desktop Standard and Pro editions download their updates from a different location. As an administrator, you have an option to choose the location from which Parallels Desktop Business Edition downloads updates. The reason why you would want to do this is explained below.

When Parallels Desktop updates are released by Parallels, they become immediately available for Parallels Desktop Standard and Pro Editions. Updates for Parallels Desktop Business Edition are released at a slightly later date (from a few days to 1-2 weeks from the initial release). The delay is necessary for additional testing of business features of Parallels Desktop to ensure they meet the highest quality standards. During this period, we even give an updated version of Parallels Desktop to some of our business clients, who test and evaluate it in their real-world business environments.

We recommend that you use the default configuration and download Parallels Desktop Business Edition updates when they are finalized and available for download. However, if for any reason you don't want to wait, you can configure Parallels Desktop Business Edition to download updates from the Parallels Desktop Pro location. The updates are the same regardless of where you download them from. The only difference is, the updates downloaded from the Parallels Desktop Pro location will not be fully tested in a business environment.

When you mass-deploy Parallels Desktop, you can set the desired Software Update options in the deployment configuration file. Mass Deployment of Parallels Desktop is described later in this guide. For more information, please read the entire Mass Deployment chapter (p. 7) and specifically the **Configure Deployment Configuration Options** section (p. 19). Look for the **Software Updates** section in the parameter table.

If you need to modify Parallels Desktop software update options on a specific Mac without using the Mass Deployment procedure, you can do this as described below.

To configure Parallels Desktop to download updates from the Parallels Desktop Pro location, execute the following command on a Mac:

```
defaults write com.parallels.Parallels\ Desktop.plist Application\
preferences.VolumeLicenseUpdatePolicy
https://update.parallels.com/desktop/v16/parallels/parallels_sbscr_updates.xml
```

The command above writes the specified URL (the parameter in the second part of the command) into the Parallels Desktop plist file. Please note that the "v16" part of the URL indicates the current Parallels Desktop version number. If you are using a later version, substitute this part with the correct number.

To switch back to the default Parallels Desktop Business download location, execute the following command:

```
defaults write com.parallels.Parallels\ Desktop.plist Application\
preferences.VolumeLicenseUpdatePolicy Parallels
```

Notes

Options described above only work in Parallels Desktop Business Edition. Other editions can only download software updates from their default locations.

When you configure Parallels Desktop to download updates from a custom URL (i.e. the Parallels Desktop Pro download location), the **Check for Updates** option in the Parallels Desktop GUI becomes disabled. This means that a Parallels Desktop Business Edition user will not be able to check for and install updates manually.

Customizing the Support Center option

When users run Parallels Desktop Business Edition, they can get support at any time by clicking the **Help** > **Support Center** menu. By default, this will open one of the following:

- If you are a large organization with your own Help Desk, the menu will open a message box saying that the user should contact the system administrator for assistance.

- If you are a small organization without a Help Desk or if you are using a trial version of Parallels Desktop, the menu will open the Parallels Desktop support web page.

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You can change the default behavior described above and make the **Help** > **Support Center** menu open a custom URL, such as your corporate Help Desk page or any other web page that you desire.

The customization can be done during mass deployment of Parallels Desktop by modifying the corresponding deployment configuration parameter. Please see **Configure deployment configuration options** (p. 19) for the complete info (see the description of the **Help and Support** section of the configuration file).

You can also make the customization 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 Xcode.

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** > **Support Center** 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 the 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 will ask you if you want to participate in the Customer Experience Program. If later you decide to change the participation parameter, you can do this by executing the following command on a Mac:

```
prlsrvctl set --cep on|off
```

The same action can also be done through the Parallels graphical user interface by navigating to **Parallels Desktop** > **Preferences** > **Advanced** and then selecting (or clearing) the **Feedback** option.

If you are using the Parallels autodeploy package to deploy Parallels Desktop, you can set the participation parameter in the deployment configuration file (p. 19).

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