

Faronics Deep Freeze Mac and the Casper Suite

Deploying, Activating, and Reporting on Faronics
Deep Freeze Mac with the Casper Suite

Technical Paper
September 2010



Faronics
DEEPFREEZEMAC™



 JAMF Software, LLC

© 2010 JAMF Software, LLC. All rights reserved.

JAMF Software has made all efforts to ensure that this guide is accurate.

JAMF Software
1011 Washington Ave South
Suite 350
Minneapolis, MN 55415
(612) 605-6625

Casper Admin, Casper Remote, Casper Suite, JAMF Software, the JAMF Software logo, and the JAMF Software Server (JSS) are trademarks of JAMF Software, LLC, registered in the U.S. and other countries.

Faronics, Deep Freeze, and Faronics Power Save are trademarks and/or registered trademarks of Faronics Corporation.

Contents

Introduction	4	Target Audience
	4	How to Use This Guide
Overview	5	
Requirements	6	
Section 1	7	Deploying and Updating Deep Freeze
	7	Step 1: Customizing the Deep Freeze Installer
	8	Step 2: Uploading the Deep Freeze Installer
	9	Step 3: Deploying the Deep Freeze Installer
Section 2	12	Thawing and Freezing Partitions
	12	Step 1: Creating a Maintenance Schedule for Deep Freeze
	12	Step 2: Running Scripts to Thaw and Freeze Partitions
Section 3	15	Reporting on Deep Freeze
	15	Step 1: Creating Extension Attributes
	16	Step 2: Updating Inventory
	17	Step 3: Viewing System State Status Information
	17	Step 4: Creating a Smart Computer Group
Section 4	19	Useful Links on Related Topics
	19	JAMF Software Links
	19	Faronics Links

Introduction

Target Audience

This guide is designed for system administrators planning to administer Faronics Deep Freeze Mac with the Casper Suite.

How to Use This Guide

This guide provides step-by-step instructions for deploying, Freezing, Thawing, and reporting on Deep Freeze with the Casper Suite. Be sure to review the information in the “Requirements” section before using these instructions.

Before using this guide, make sure you are familiar with the following Casper Suite- related concepts:

- Software installation and configuration
- Package and script management
- Policies
- Extension attributes
- Advanced computer searches
- Smart computer groups

For more information on these concepts, consult the *Casper Suite Administrator's Guide*, available at:

http://jamfsoftware.com/libraries/pdf/products/documentation/Casper_Suite_7.3_Documentation.pdf

This guide references terminology and processes specific to Deep Freeze. If you are not familiar with Deep Freeze concepts, you may want to have the *Faronics Deep Freeze Mac User Guide* available for reference. This document is available at:

http://faronics.com/Faronics/Documents/DFM_Manual.pdf

Overview

Utilizing Faronics Deep Freeze Mac requires special consideration when it comes to deploying updates and performing maintenance tasks across your environment. Deep Freeze puts clients in a Frozen state that prevents permanent changes from being made to the file system. This requires clients to be Thawed before changes can be made. Attempting to make changes to Frozen computers can result in inaccurate inventory records and inconsistencies across your environment.

The Casper Suite provides a solution to help overcome this challenge. The Casper Suite Resource Kit includes scripts to Thaw and Freeze clients whenever the need arises. Running these scripts using the Casper Suite's policy framework allows you to Thaw clients when Casper Suite maintenance tasks need to be performed and Freeze them again after maintenance is complete.

This technical paper provides a complete workflow for administering Deep Freeze with this challenge in mind.

Requirements

To deploy, Freeze, Thaw, and report on Deep Freeze with the Casper Suite, you must be running the Casper Suite v7.31 or later in your environment.

The following components are required to complete the instructions in this guide:

- Faronics Deep Freeze Mac v4.6 or later
- Casper Admin application
- Access to the JAMF Software Server (JSS)
- Casper Suite Resource Kit, available at:

<http://www.jamfsoftware.com/downloads/ResourceKit.dmg>

Deploying and Updating Deep Freeze

This section explains how to deploy and update Deep Freeze with the Casper Suite.

Step 1: Customizing the Deep Freeze Installer

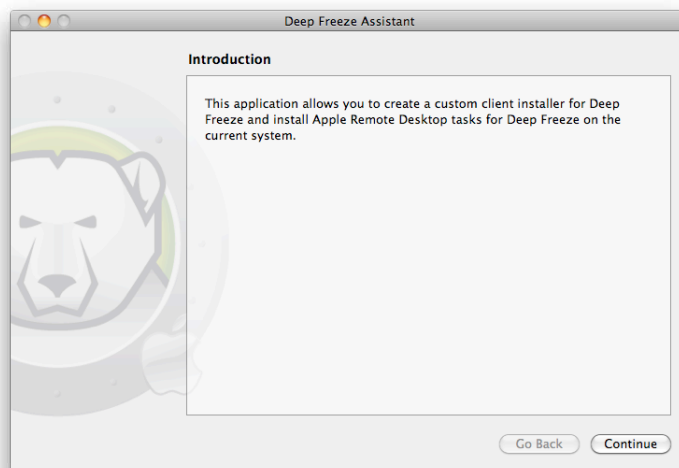
The first step to deploying Deep Freeze with the Casper Suite is to customize the Deep Freeze Installer. This is done using the Deep Freeze Assistant in the Deep Freeze Installer media.

The Deep Freeze Assistant lets you customize the installer by:

- Creating the Deep Freeze administrator account
- Licensing the product
- Creating a maintenance schedule

To customize the Deep Freeze Installer:

1. Open the Deep Freeze Installer media.
2. Open the Deep Freeze Assistant.
3. Follow the onscreen instructions to customize the installer.
For detailed instructions on using the Deep Freeze Assistant, see the *Faronics Deep Freeze Mac User Guide*.



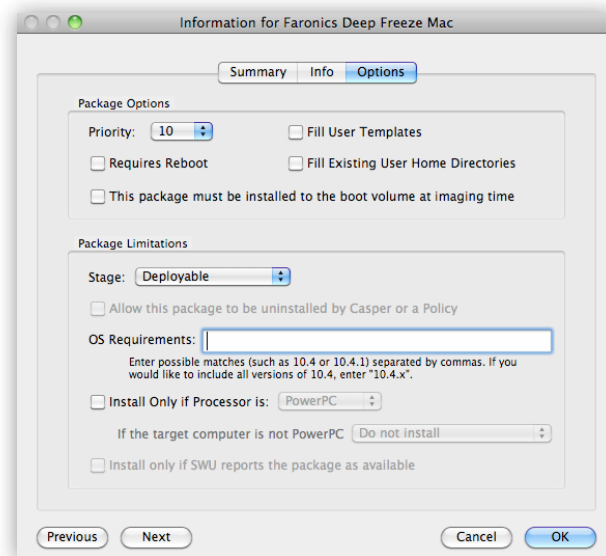
Note: It is recommended that you select the **Boot Frozen** option when configuring the status of Deep Freeze with the Deep Freeze Assistant. This automatically puts clients in the Frozen state when Deep Freeze is activated.

Step 2: Uploading the Deep Freeze Installer

Before deploying the customized Deep Freeze Installer, it must be uploaded to the JSS using the Casper Admin application.

To upload the Deep Freeze Installer:

1. Open Casper Admin.
2. Drag the Deep Freeze Installer into Casper Admin.
3. Select the package name in the list and click the **Info** button in the toolbar.
4. Click the **Info** tab and assign the package to a category.
5. Configure additional options as needed and click the **OK** button.
6. Click the **Options** tab and assign a priority.
The default priority of 10 is recommended for install packages. For more information on priorities, see the “Managing Packages” section in the *Casper Suite Administrator’s Guide*.
7. Select the **Requires Reboot** option.



8. If you are planning to deploy the package during the imaging process, select the **This package must be installed to the boot volume at imaging time** checkbox.
9. When Casper Admin is finished uploading the installer, save your changes by typing **Command + S** and quit the application.

Step 3: Deploying the Deep Freeze Installer

The Deep Freeze Installer can be deployed in several ways:

- Remotely using a policy
- Remotely using Casper Remote
- During the imaging process

For more information on methods, see the *Casper Suite Administrator's Guide*.

After installing Deep Freeze, clients must reboot to activate the software. You can initiate reboots manually, using a policy or Casper Remote.

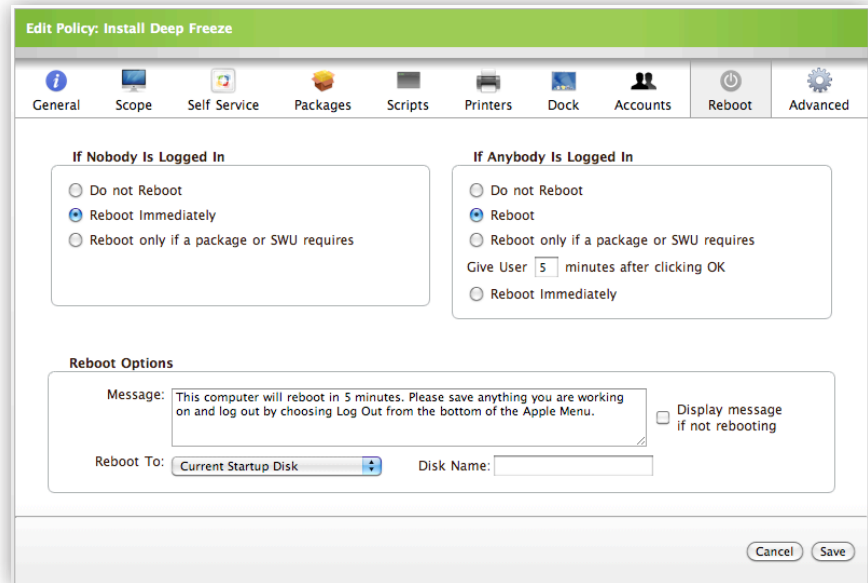
If you selected the **Boot Frozen** option when you customized the installer (as recommended in the previous section), clients are Frozen after being rebooted.

Note: If you are deploying a Deep Freeze update, you can use a smart computer group to quickly scope the deployment. For more information on creating a smart computer group for Deep Freeze, see the "Reporting on Deep Freeze" section of this guide.

To deploy Deep Freeze remotely using a policy:

1. Log in to the JSS.
2. Click the **Management** tab.
3. Click the **Policies** link.
4. Click the **Create Policy** button in the toolbar.
5. Make sure the **Install or uninstall a package** option is selected and click the **Continue** button.
6. Follow the onscreen instructions to configure the rest of the policy.
7. Click the **Edit Manually** button.

8. Click the **Reboot** tab and configure the desired reboot options.



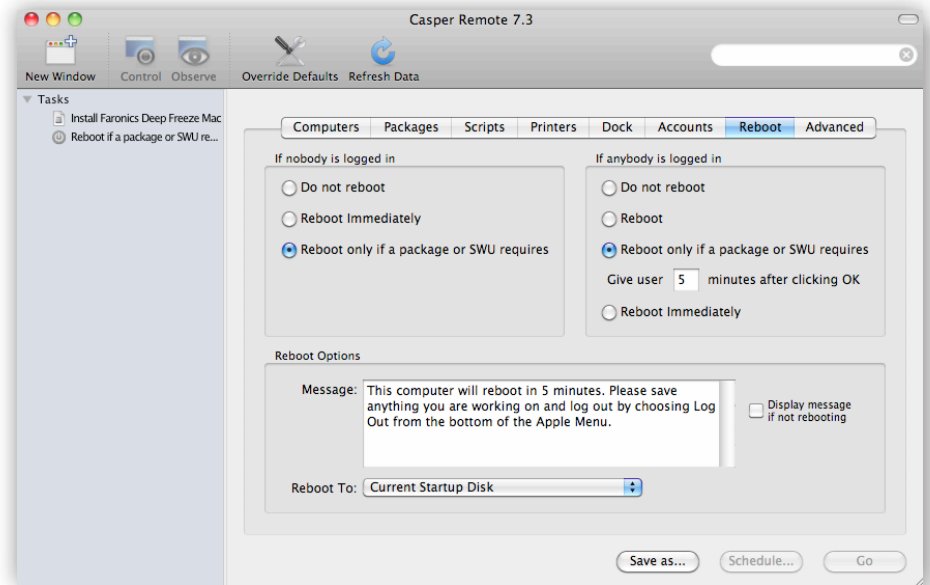
Since you selected the **Requires Reboot** option when you configured the installer package in Casper Admin, clients reboot automatically if no users are logged in. If users are logged in on the clients, a dialog box appears prompting the users to reboot. Clients reboot 5 minutes after the **OK** button in the dialog is clicked.

9. Click the **Save** button.

To deploy Deep Freeze remotely using Casper Remote:

1. Open Casper Remote.
2. In the **Computers** list, select the checkbox next to each client on which you want Deep Freeze installed.
3. Click the **Packages** tab.
4. In the **Packages** list, select the checkbox next to the Deep Freeze Installer.

5. Click the **Reboot** tab and configure the desired reboot options.



Since you selected the **Requires Reboot** option when you configured the installer package in Casper Admin, clients reboot automatically if no users are logged in. If users are logged in on the clients, a dialog box appears prompting the users to reboot. Clients reboot 5 minutes after the **OK** button in the dialog is clicked.

6. Click the **Go** button.

To deploy the Deep Freeze during imaging:

1. Open Casper Admin.
If you selected the **This package must be installed to the boot volume at imaging time** checkbox while uploading the installer to Casper Admin, it can be installed during the imaging process.
2. Drag the Deep Freeze Installer from the list of packages to the imaging configuration in the sidebar.
3. Save your changes by typing **Command + S** and quit the application.
Casper Imaging automatically detects that the installer package requires a reboot and reboots the clients after Deep Freeze is installed.

Thawing and Freezing Partitions

Running policies on clients that have Deep Freeze installed requires special consideration. Only clients in the Thawed state can execute policies. If a policy runs on a client that is Frozen, changes on the client are reverted at reboot.

To change the state of a partition (to Thawed or Frozen), you must do the following:

- First, create a maintenance schedule during which policies can be run on clients.
- Then, run a script to Thaw or Freeze the client.

Step 1: Creating a Maintenance Schedule for Deep Freeze

It is recommended that you create a maintenance schedule when customizing the Deep Freeze Installer. If you are new to Deep Freeze deployment, see the *Faronics Deep Freeze Mac User Guide* for more information on maintenance schedules and how to create them using the Deep Freeze Assistant.

Step 2: Running Scripts to Thaw and Freeze Partitions

Clients must be Thawed before changes can be made to the file system. If a policy runs on a Frozen partition, the changes are not permanently written to the disk and are lost.

After the necessary changes are made, partitions can be Frozen again to prevent further changes.

Partitions can be Thawed and Frozen by running one of the following scripts with a policy:

- `bootThawed.sh`—Thaw a client
- `bootFrozen.sh`—Freeze a client

These scripts are available in the Casper Suite Resource Kit.

It is not recommended that you run Thaw and Freeze scripts when other Casper Suite policies are being run on the clients. For example, if other Casper Suite policies run between 10:00 p.m. and 6:00 a.m., run the Thaw or Freeze script after 6:00 a.m. This gives the clients enough time to run the script and reboot.

To Thaw a partition by running the `bootThawed.sh` script:

1. Open the Casper Suite Resource Kit.
If you do not have the Casper Suite Resource Kit, you can download it at:
<http://www.jamfsoftware.com/downloads/ResourceKit.dmg>
2. Navigate to Remote Management > Configuration Scripts > Deep Freeze and open the `bootThawed.sh` script.
3. Use the Text Edit or Terminal application to modify the following parameters:
 - `dfUsername` – The Deep Freeze administrative account username
 - `dfPassword` – The Deep Freeze administrative account password
4. Save your changes and quit the application.
5. Upload the script to Casper Admin.
For more information on uploading scripts to Casper Admin, see the “Managing Scripts” section in the *Casper Suite Administrator’s Guide*.
6. Open the JSS and create a policy to run the `bootThawed.sh` script and reboot the client.
7. (Conditional) If you are using the Policy Assistant, click the **Edit Manually** button to display the manual policy interface.
8. On the **General** pane, click the disclosure triangle next to **Date and Time Limitations** and set time restrictions on the policy.
9. Click the **Reboot** tab and configure the desired reboot options.
10. Click the **Save** button.

To Freeze a partition by running the `bootFrozen.sh` script:

1. Open the Casper Suite Resource Kit.
If you do not have the Casper Suite Resource Kit, you can download it at:
<http://www.jamfsoftware.com/downloads/ResourceKit.dmg>
2. Navigate to Remote Management > Configuration Scripts > Deep Freeze and open the `bootFrozen.sh` script.
3. Use the Text Edit or Terminal application to modify the following parameters:
 - `dfUsername` – Username for the Deep Freeze administrator account
 - `dfPassword` – Password for the Deep Freeze administrator account

4. Save your changes and quit the application.
5. Upload the script to Casper Admin.
For more information on uploading scripts to Casper Admin, see the “Managing Scripts” section in the *Casper Suite Administrator’s Guide*.
6. Open the JSS and create a policy to run the `bootFrozen.sh` script and reboot the client.
7. (Conditional) If you are using the Policy Assistant, click the **Edit Manually** button to display the manual policy interface.
8. On the **General** pane, click the disclosure triangle next to **Date and Time Limitations** and set time restrictions on the policy.
9. Click the **Reboot** tab and configure the desired reboot options.
10. Click the **Save** button.

Reporting on Deep Freeze

After deploying Deep Freeze, you can use the Casper Suite to report on the system state status of the software. These reports can be used to:

- Ensure policies only run when clients are in the Thawed state
- Freeze clients that are in the Thawed state

This section explains how to report on Deep Freeze's system state status.

Step 1: Creating Extension Attributes

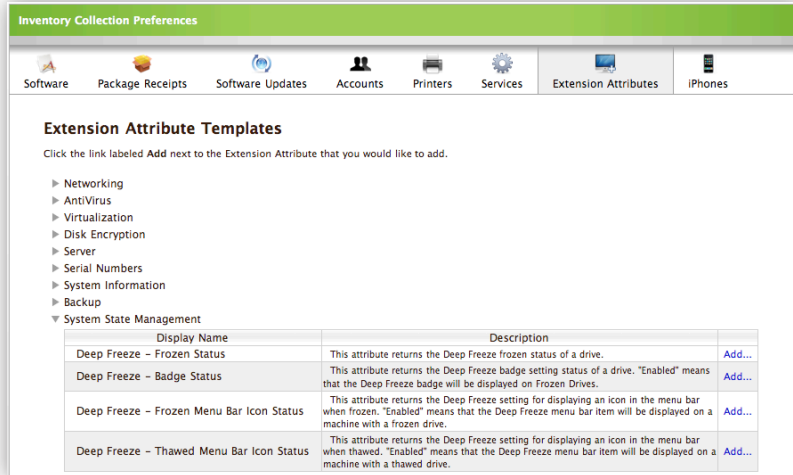
Creating extension attributes for Deep Freeze allows you to collect system state status information from each client with Deep Freeze installed. This information is used to generate reports.

Extension attribute templates for Deep Freeze are built right into the Casper Suite, allowing extension attributes to be created quickly and easily.

To create extension attributes for Deep Freeze:

1. Log in to the JSS with a web browser.
2. Click the **Settings** tab.
3. Click the **Inventory Options** link.
4. Click the **Inventory Collection Preferences** link.
5. Click the **Extension Attributes** tab.
6. Click the **Add Extension Attribute From Template** link.

7. Click the disclosure triangle next to **System State Management** and click the **Add** link across from one or all of the following attributes:
 - Deep Freeze – Frozen status
 - Deep Freeze – Badge status
 - Deep Freeze – Frozen menu bar icon status
 - Deep Freeze – Thawed menu bar icon status



8. Specify credentials for the Deep Freeze administrator account, and then click **OK**.
9. Click the **Save** button.

Step 2: Updating Inventory

To generate accurate reports, the JSS must contain up-to-date inventory information for the clients with Deep Freeze installed. Clients are configured to submit inventory reports to the JSS automatically on a set schedule. (You configured this schedule when you set up the JSS using the JSS Setup Assistant.) However, you can also generate inventory reports manually using Casper Remote.

To update inventory manually:

1. Open Casper Remote.
2. In the **Computers** list, select the checkbox next to each client on which Deep Freeze is installed.
3. Click the **Advanced** tab.
4. Select the **Update Inventory** checkbox.
5. Click the **Go** button.

Step 3: Viewing System State Status Information

Performing an advanced computer search for the clients with Deep Freeze installed allows you to view system state status information across your environment. Advanced searches can also be saved for future use.

Note: To view system state status information for a single client, perform a simple computer search and click the **Details** link across from the computer in the results list.

To view system state status information for multiple clients:

1. Click the **Inventory** tab in the JSS.
2. Click the **Advanced Search** link.
3. Enter a name for your report, such as "Frozen Machines".
4. Select the **Save this Report** checkbox.
5. Click the **Display Fields** tab.
6. Select the checkbox next to each attribute you want displayed in the report.
7. Click the **Search** button.

Step 4: Creating a Smart Computer Group

When you create a smart computer group, clients that return system state status information are automatically added to the group. This allows you to easily reference and track clients that have Deep Freeze installed.

Administrators can be alerted by email whenever the membership of a smart computer group is updated or changed.

Note: If you want to generate email notifications, you must first configure an SMTP server in the JSS and make sure the JSS user you want to receive notifications has an account with email notification privileges. For more information on enabling email notifications, see the "Enabling Email Notifications" section in the *Casper Suite Administrator's Guide*.

Smart computer groups also allow you to quickly scope policies to run Thaw and Freeze scripts.

To create a smart computer group:

1. Click the **Management** tab in the JSS.
2. Click the **Smart Computer Groups** link.
3. Click the **Create Smart Group** button in the toolbar.
4. Enter a name for the smart computer group in the **Computer Group Name** field. For example, "Frozen".
5. Click the **Add (+)** button next to **Extension Attributes Information** in the list of categories.
6. Click the link for the Deep Freeze extension attribute on which you want to base your criteria.
The link you click in this step depends on which extension attribute(s) you created in the "Creating Extension Attributes" section of this guide.
7. Use the **Search Type** pop-up menu and **Criteria** text field to set a value for the criteria.

ComputerGroup Name:

Send Email Notification on Change:

Field	Search Type	Criteria	-	+
Computer Information				+
Location Information				+
Hardware Information				+
Storage Information				+
OS Configuration Information				+
Software Information				+
Purchasing Information				+
Receipts Information				+
Extension Attributes Information				
Deep Freeze - Frozen Status	is	True	-	+

Cancel Save

8. To send an email notification to an administrator when membership changes occur, select the **Send Email Notification on Change** option.
9. Click the **Save** button.

Useful Links on Related Topics

JAMF Software Links

For more information on processes related to the Casper Suite, see the *Casper Suite Administrator's Guide*, available at:

http://jamfsoftware.com/libraries/pdf/products/documentation/Casper_Suite_7.3_Documentation.pdf

The complete Casper Suite Resource Kit is available for download at:

<http://www.jamfsoftware.com/downloads/ResourceKit.dmg>

Faronics Links

For more information on Faronics Deep Freeze Mac and customizing the Deep Freeze Installer, see the *Faronics Deep Freeze Mac User Guide*, available at:

http://faronics.com/Faronics/Documents/DFM_Manual.pdf