Casper NetInstall Image Creator

Version 3.2

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Contents

Overview

The Casper NetInstall Image Creator was developed to optimize the imaging process and automate the creation of a NetBoot image.

Benefits

Using the Casper NetInstall Image Creator provides the following benefits:
- It does not create shadow files on the NetBoot server.
- Users do not have full access to the Finder unless permission is granted by the administrator.
- The boot image is created automatically.

Requirements

The Casper NetInstall Image Creator is designed to convert OS packages created with Composer or Disk Utility to NetInstall images without requiring manual configuration. It is recommended that you begin the process with a fully bootable OS package and let the Casper NetInstall Image Creator optimize the image automatically.

This tool currently supports OS packages created on the following platforms:
- Mac OS 10.4.x image created on PPC hardware running Casper 5.x and earlier
- Mac OS 10.4.x image created on Intel hardware running Casper 5.x and earlier
- Mac OS 10.5.x image created on PPC hardware
- Mac OS 10.5.x image created on Intel hardware
- Mac OS 10.6.x image created on Intel hardware

Building your OS package on the newest version of hardware available to you ensures all drivers and resources are installed for backward compatibility with old hardware.

Mac OS 10.4 images require a separate image for each processor type—one for Intel and one for PPC. While Mac OS 10.5 images support universal booting, you should make sure the image is booted on each processor type (PPC and Intel) prior to using this tool.

Note: Operating system images running Mac OS 10.4.x are not compatible with Casper Imaging 6.x or later. Casper Imaging 6.x can only run properly on Mac OS 10.5.x or later when using NetInstall images.

Concepts

Before using this tool, make sure you are familiar with the following tools and services: System Image Utility and NetBoot.

System Image Utility

To understand how NetInstall images are created, you should be familiar with the System Image Utility included in the Mac OS Server toolkit.

System Image Utility creates NetInstall images by

- converting the images to read/write format
- modifying the images to utilize the Bootp (NetBoot) protocol
- placing the images in a location that can be served using the NetBoot server

NetBoot

For detailed information on managing and troubleshooting NetBoot, refer to Apple's *Mac OS X Server Administrator's Guide*.

Creating a NetInstall Image

Casper NetInstall Image Creator modifies an existing OS packages built with Composer or Disk Utility to NetInstall images by

■ converting the image to a read/write format

■ removing components that are not essential to the NetInstall process

■ generating scripts that configure the image for the NetInstall boot process and launching Casper Imaging on startup

■ creating booter/kernel extension files according to the architecture on which the image was built. For example:

If the image was built on Mac OS 10.5, the tool recognizes this and configures the image to be "Universal."

■ creating the NetBoot image property list file (configure the image index, enabled status, etc)

■ adding the Casper Imaging application to the image

■ creating the Casper Imaging preference file

To create a NetInstall image:

1 Select an OS package created with Composer or Disk Utility.

This must be a DMG-style package with the .dmg file extension.

2 Specify a name for the image.

This name will be listed under the **NetBoot Service** pane in Server Admin.

3 Enter an image index.

• If you are not planning to host the image on multiple servers for load balancing, select an index between1–4001.

• If you are going host the image on multiple servers, select an index between 4002–9999.

4 Select the **Enabled** checkbox to enable the NetInstall image immediately after it is created.

Note: If NetBoot is already running and you are saving the image to a location that is currently enabled on the NetBoot server, the image is enabled immediately after creation.

5   Select the **Default** checkbox to use the NetInstall image as the default image on the server.
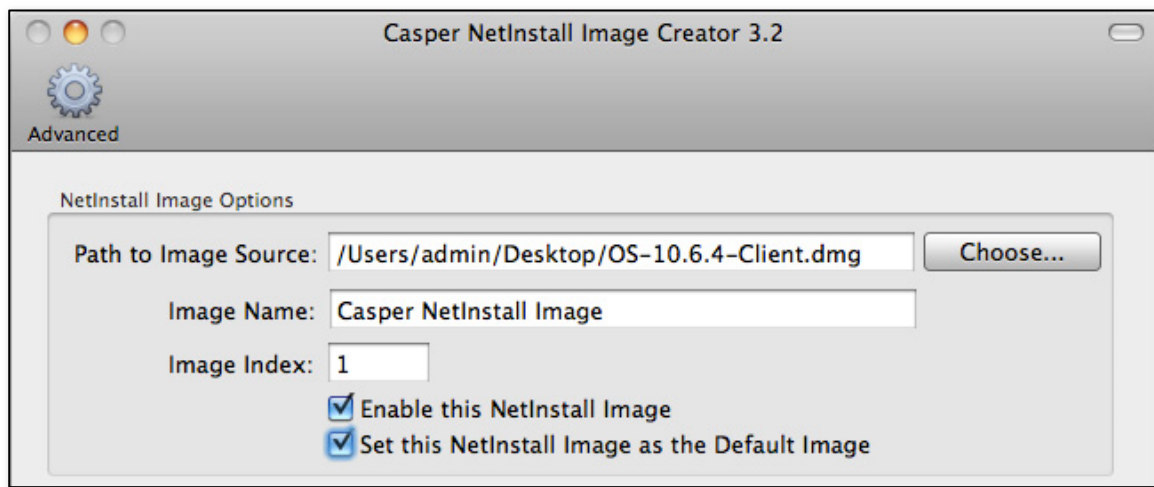
6   Click the **Choose** button and choose the version of Casper Imaging you want to include in the NetInstall image.

To ensure the best performance, choose the latest version of the application.

7   Select the **Create Casper Preference File** checkbox to create a preference file for Casper Imaging. This creates the following file automatically:

~/Library/Preferences/com.jamfsoftware.jss.plist

This ensures that Casper Imaging connects to your JSS automatically when computers boot from the NetInstall image.

8   Click the **Create** button and choose the location to which you want to publish the NetBoot folder (NBI folder).

By default, the folder is published to the default share point location on Mac OS X Server:

`/Library/NetBoot/NetBootSP0/`

> *Note:* If the image is going to be served from a share point on another machine, save the image locally and move it to the location rather than saving the image directly to the network location.
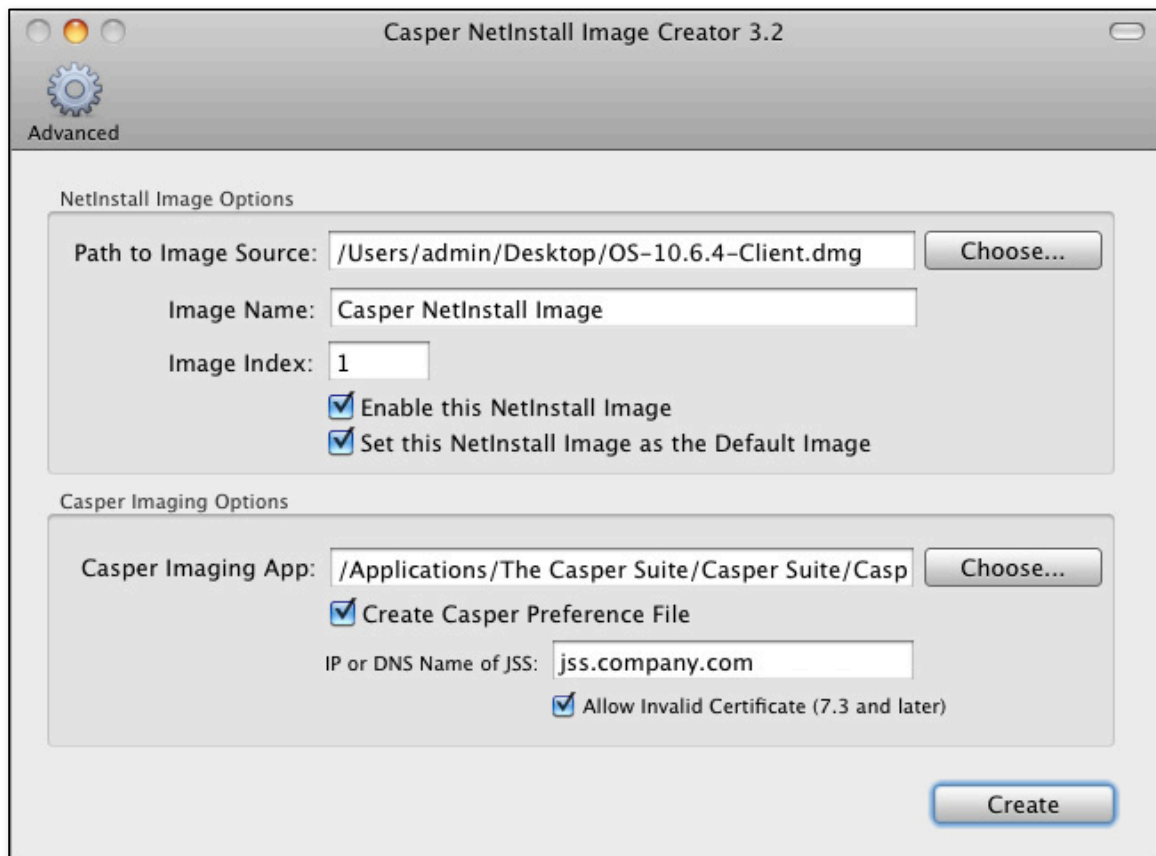
Managing Advanced Options

Casper NetInstall Image Creator's advanced options let you determine what takes place when a user quits the Casper Imaging application. These options let you

- launch the Casper NetInstall LaunchPad application, the Terminal application, or shut down
- modify the desktop background in a NetInstall image
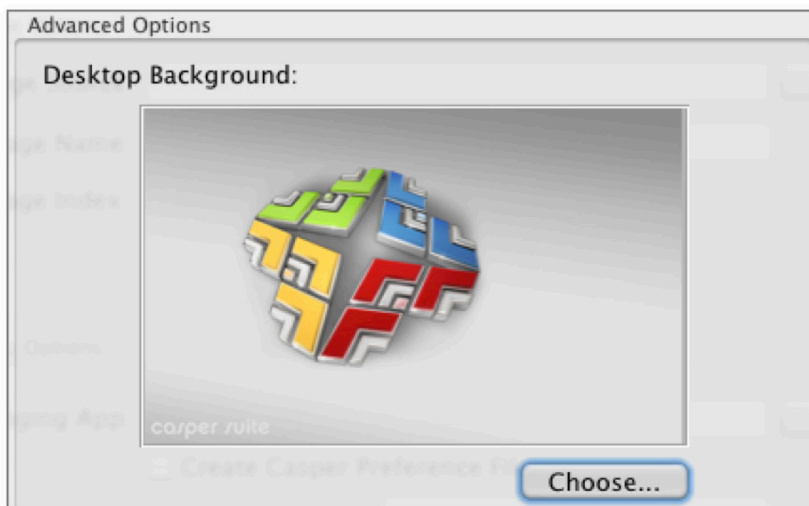- set user privileges for the NetInstall LaunchPad application

To modify the launch sequence for Casper Imaging in a NetInstall image:

1   Before creating the NetInstall image, click the **Advanced** button in the toolbar.
2   To launch Terminal when a user quits Casper Imaging, select the **Launch The Terminal** option.
3   To shut down the computer when a user quits **Casper Imaging**, select the **Shut Down** option.
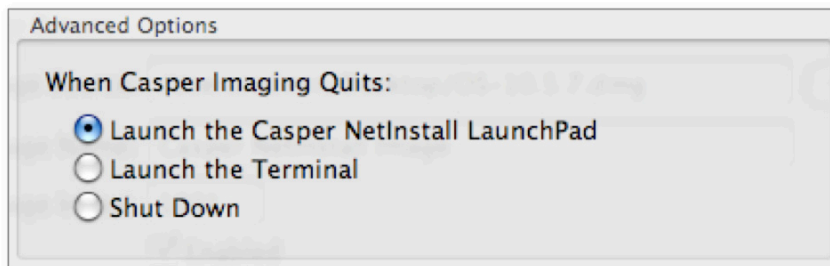
To modify the desktop background in a NetInstall image:

1   Before creating the NetInstall image, click the **Advanced** button in the toolbar.
2   Click the **Choose** button to change the image displayed on the desktop.
     The optimal format for the image is a JPEG set to a 2560 x 1600 resolution.

3   Click the **OK** button.

The desktop background is created when you build the NetInstall image.

Casper NetInstall LaunchPad

By default, the Casper NetInstall LaunchPad application appears when users quit Casper Imaging while booted to a Casper NetInstall image. This gives users an easy way to access Casper Suite and system-level utilities.

User access to these utilities can be limited using the NetInstall LaunchPad privileges.

To modify NetInstall LaunchPad privileges:

1   Before creating the NetInstall image, click the **Advanced** button in the toolbar.

2   Select or deselect the checkbox next to each privilege to grant or deny access to users. For example, to prevent users from accessing the full Finder while booted to a NetInstall image, deselect the **Run Full Finder** and **Open Terminal** options.
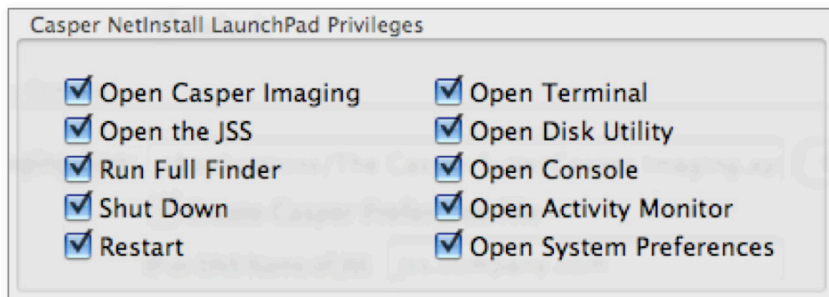
Updating a NetInstall Image

To take advantage of the new features and enhancements available with each upgrade of the Casper Imaging application, include the latest version of the application in your NetInstall image.

To update a NetInstall image:

1   Locate the NBI folder on which your NetInstall image is stored and mount the `install.dmg.sparseimage` disk image.

2   Once the image is mounted, locate the Applications folder in the disk image and replace the existing version of Casper Imaging with the newest version.

3   Unmount the install volume.

Troubleshooting

Connection Issues

If clients fail to boot when connected to the NetBoot server, verify NetBoot is started on the server and serving over the connection on which the clients are booting. Then, verify your image is enabled and set as the default image on the server.

If NetBoot was started prior to using this tool, you may need to stop the service and restart it for the server to recognize the recently created image.

If you are unable boot clients to NetBoot by holding down the *N* key during startup, try booting the client to a valid operating system. Then, navigate to **System Preferences** > **Startup Disk** and verify that the NetBoot server is displayed as an available startup disk. If the NetBoot server is not displayed as an available startup disk, there could be a firewall or the layer-3 device on the network may not be configured to pass Bootp packets to the NetBoot server.

This issue may occur if clients are booted in a subnet other than the one on which the NetBoot server resides. It can usually be resolved by creating an "IP Helper" address on the layer-3 device. For more information on this issue, refer to the following article from Apple:

http://docs.info.apple.com/article.html?artnum=107655

If the NetBoot server is displayed as an available startup disk and the client starts to boot but doesn't complete the process or kernel panics, press *Command + V* immediately after the globe begins to blink to NetBoot via verbose mode. This provides step-by-step feedback during the boot process.

If none of these resolutions are successful, check the NetBoot logs on the server through Server Admin using the NetBoot service.

Release History

Version	Change
v1.01	■ Fixed a bug where Casper.app did not fit in the disk image.
v2.0	■ Added support for Mac OS X 10.5 source images.
v2.01	■ Added support for Casper v6 where "Casper.app" was renamed to "Casper Imaging.app".
v2.02	■ Added support for PKGs and MPKGs in Casper Imaging by creating a ram disk of `/var/netboot`. ■ Changed interface label from **Path to Casper App** to **Path to Casper Imaging**. ■ Addressed an issue with Casper Imaging 6.x in which PKGs and MPKGs files did not properly installed. ■ Added keyboard shortcuts for opening an OS image and saving the NBI folder.
v3.0	■ Added the Casper NetInstall LaunchPad, providing easy access to common Casper Suite and system-related utilities while booted to a NetBoot environment. ■ Added support for SMB file share mounting from within a NetInstall image. ■ Addressed an issue with NetInstall images that were created using an OS DMG that originated from a DMG created with Composer 7.0 in which PKG and MPKG files did not properly install. ■ Addressed an issue with NetInstall images that were created using an OS DMG that originated from a DMG created with Composer 7.0 in which the `install.dmg.sparseimage` created by the NetInstall creator would mount as read-only.
v3.1	■ Added support for Max OS X Snow Leopard (10.6) base images. ■ Added ability to customize the desktop pattern. ■ Fixed an issue which would cause 10.5 NetInstall images to fill `/private/tmp` with font caches. ■ Updated the LaunchPad application to open applications without using the "open" command due to new security restrictions in 10.6.
v3.2	■ Added support for changes to the Casper Imaging preference file format and filename in Casper Imaging 7.3.