

Autodesk®

Visual Effects and Finishing
2009 Edition

Red Hat® Enterprise Linux®
Workstation 4 Update 3
Installation and
Configuration Guide

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Introduction

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About This Guide

This guide provides instructions for installing and configuring the Autodesk® distribution of Red Hat® Enterprise Linux® Workstation 4 on the following Autodesk systems:

- Autodesk Visual Effects and Finishing workstation
- Autodesk Burn™ node
- Autodesk IBM® x345 Network Attached Storage (NAS)
- Autodesk Lustre® Master Station
- Autodesk Lustre Station
- Autodesk Lustre Slave Renderer
- Autodesk Burn for Lustre render node
- Autodesk Incinerator® Master Station
- Autodesk Lustre Media Server
- Autodesk Incinerator Node

It also includes instructions for installing the Discreet® Kernel Utility (DKU)—a set of drivers, utilities, and a customized Linux kernel—that Autodesk Visual Effects and Finishing applications require to run.

Autodesk ships Linux platforms with both Linux and the DKU already installed; if you received your system directly from Autodesk, you should not have to install Linux. However, if at any

point you must replace the system drive, you need to install Linux as well as the DKU on the new system drive, prior to installing the Autodesk application. If for any reason you must reinstall Linux, before performing the installation you should, if possible, back up all projects and media prior to the installation; system reinstallation reformats the system drive.

NOTE: If you must replace the hard disk, you need to update your application license. Contact Autodesk Media and Entertainment Customer Support for assistance.

Audience Assumptions

This guide assumes you have knowledge of the Linux operating system, preferably a distribution from Red Hat Linux. It also assumes familiarity with Linux networking terms, tools, and procedures. If you are not familiar with these areas, you should not attempt to carry out the procedures in this guide. Contact Customer Support should you require further assistance. See [“Contacting Customer Support”](#) on page 3.

Revision History

This document is updated as necessary throughout its the life cycle. This section describes all additions and modifications made to this document since its initial publication.

NOTE: Minor changes, such as typographical errors or changes to names of sections, that do not have an impact on the technical content of the guide are not included in this revision history.

Modification	Item	Page	Released At
Updated	Guide is now independent of Visual Effects and Finishing or Lustre versions	n/a	Sept. 18, 2007
Corrected	Options in the Linux installation menu	9	Feb. 1, 2007
Updated	Preparation of Incinerator components	7	Dec. 20, 2006
Corrected	Usage of "workstation" vs "system" in entire guide	n/a	Nov. 20, 2006
Updated	"installation workflow" to "install process" in entire guide	n/a	Nov. 17, 2006
Updated	"standalone" to "local" in entire guide	n/a	Nov. 17, 2006
Corrected	/dev/cdrom to read /mnt/cdrom	10	Nov. 17, 2006
Added	Revision History	2	Nov. 17, 2006
Updated	Entire guide to apply to all products	n/a	Nov. 17, 2006
Updated	Install procedure to describe new install menu	8	Nov. 17, 2006

Notation Conventions

A number of style conventions are used throughout this guide. These conventions and examples of their use are shown as follows.

Convention	Example
Text that you enter in a command line or shell appears in Courier bold. You must press the Enter key after each command.	rpm -qa
Variable names appear in Courier, enclosed in angle brackets. No spaces are allowed in variable names.	<variable_name>
Variables that appear enclosed in square brackets are optional.	[<filename>]
Feedback from the command line or shell appears in Courier.	limit coredumpsize
Directory names, filenames, URLs, and command line utilities appear in italics.	<i>/usr/discreet</i>

Related Documentation

This release has documentation that helps you install, configure, and use the software. The documentation is available from your application DVD, on the Autodesk web site, and installed with the product (as PDF files and as an HTML help system).

For a list of all the documentation available, visit <http://www.autodesk.com/me-documentation>. From this page you can access the complete documentation library.

You should also refer to your product's release notes for all late-breaking release information.

Contacting Customer Support

For contact information for Autodesk Media and Entertainment Customer Support, consult your release notes, or visit <http://www.autodesk.com/support>.

Customer support is also available through your Autodesk reseller. To find a reseller near you, consult the reseller look-up database at <http://www.autodesk.com/resellers>.

Installing Linux



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Installation Workflow

This section describes the major steps involved in installing the Autodesk distribution of Red Hat Enterprise Linux Workstation (WS). The remainder of the chapter provides details on each of these steps.

To install the Autodesk distribution of Linux:

1. Locate the installation media. See [“Locating the Installation Media”](#) on page 6.
2. Prepare your system. See [“Preparing Your System”](#) on page 7.
3. Install Linux. See [“Installing Red Hat Enterprise Linux Workstation”](#) on page 8.
4. Install the Discreet Kernel Utility (DKU). [“Installing the Discreet Kernel Utility”](#) on page 10.

NOTE: If you are using a centralized install process to install Linux in an Incinerator configuration, this step is only necessary when you are installing on the Lustre Media Server. When you are installing on a workstation or Incinerator node, the DKU is installed automatically after the Red Hat Linux installation completes.

5. Configure the time zone for your geographic location. By default, the time zone is set to North American Eastern Standard Time (EST). If necessary, consult the Red Hat online documentation to configure this setting.

6. Configure the network settings for your facility. Consult your application *Release Notes* or the Red Hat online documentation to configure these settings.

NOTE: If you are installing on an Incinerator configuration using a centralized install process, you only need to configure network settings if you do not want to use the default network hostnames and addresses set during the Linux installation. In this case, refer to the Incinerator documentation.

7. Perform any required post-installation procedures.
Consult the *Release Notes* for your application to determine whether you must update firmware and/or software drivers for devices. All required post-installation procedures are documented in the *Release Notes* for your application.

Locating the Installation Media

You require the following media to install Linux on an Autodesk system. If you cannot locate the media or do not have the correct DVD distribution, contact Customer Support or your local sales representative.

- *Autodesk distribution of Red Hat Enterprise Linux Workstation 4*,
One DVD, included with your release shipment. The Autodesk distribution installs the Linux software packages Autodesk applications require; these applications do not run under the commercial distribution of Red Hat Enterprise Linux WS 4 . If you received a new system with this release, your shipment also included the CD set for the commercial distribution of Red Hat Enterprise Linux WS 4 . Do not use this commercial distribution; use the DVD distribution instead. You can use the commercial distribution to activate your Red Hat subscription if it is not already activated.
- *Discreet Kernel Utility*
The Discreet Kernel Utility is located on your Autodesk Visual Effects and Finishing applications DVD. The Discreet Kernel Utility (DKU) is a set of drivers, utilities, and a customized Linux kernel, that Autodesk applications require to run. If you are not sure whether the DKU version you have is the correct one for your release, consult the *Release Notes* for your application. The *Release Notes* contain the most recent information about your release. For Visual Effects and Finishing applications, if the *Release Notes* do not specify the version of the Discreet Kernel Utility (DKU) your release requires, refer to the *Software Installation Guide* for your application.

NOTE: You can also download the Discreet Kernel Utility from the Autodesk FTP site. For information, contact Customer Support.

Preparing Your System

The Linux installation procedure assumes that the system disk on your system can be reformatted, and that your hardware is in a specific state. The following procedure describes how to prepare your system.

To prepare your system for Linux installation:

1. If possible, back up all user settings, project settings, and media from the system to another system or to a network drive. The installation of Linux erases and formats the system disk so this information is lost if it is not backed up.
2. Make sure your system is in the following state:
 - Mouse, keyboard and graphics monitor are connected and the graphics monitor is powered on.
 - Other peripherals, such as the tablet and video breakout box are connected and powered on.
 - If you are using a KVM switch, it is connected to the component on which you want to install Linux.
 - Visual Effects and Finishing workstations only: If the DVI-Ramp is part of your configuration, the DVI-Ramp is connected and powered on.
 - Standalone Lustre workstations only: The Lustre control surface is disconnected from the workstation.
 - Incinerator: The only network to which the system is connected is the Incinerator network. Each Incinerator component connects to the Incinerator network through port 0 of their onboard house network card. On the workstation, port 0 is the only port on the house network card. On the Lustre Media Server, port 0 is the right-hand port. On the nodes, port 0 is the left-hand port.
3. Shut down and power off the system.
4. Disconnect storage from the system.
 - If your system is equipped with external storage, disconnect the optical cables for all external storage devices from the ports on the fibre-channel card. If available, insert LC optical loopback adapters in the ports on the fibre-channel card to terminate those ports. Terminating the ports eliminates the two minutes per port the system spends attempting to establish communication with the storage. This speeds up the installation process significantly, as the process may require more than one reboot.
 - If your system is equipped with internal storage, open the side panel of the system and disconnect the main connector for the internal storage drives (SAS or SCSI). Make sure

you do not disconnect the system drive. For more information on internal storage, refer to the *Autodesk Stone Direct Configuration Guide* for your release.



WARNING: All storage devices (such as external disk arrays or internal storage) must be disconnected from the system to prevent the Red Hat installer from attempting to reformat them as part of the installation process.

Installing Red Hat Enterprise Linux Workstation

The following procedure describes how to install the Autodesk distribution of Red Hat Enterprise Linux WS on your system.

To install Red Hat Enterprise Linux WS 4, :

1. Verify the system is prepared as described in [“Preparing Your System”](#) on page 7.
2. Power on your system, insert the DVD of the Autodesk distribution of Red Hat Enterprise Linux WS in the DVD-ROM drive and reboot the system.
3. If the system does not boot from the DVD, reboot it and configure it to boot from the DVD-ROM drive as follows:
 - When the system starts to boot, press **F12** (IBM systems) or **F10** (HP systems) to enter the BIOS. If the keyboard is connected to the system through a KVM switch, you may have to press this key repeatedly or hold it down to enter the BIOS.
 - Change the First Startup Device to CD/DVD-ROM (use the arrow keys to navigate the boot menus, and press **ESC** to exit menus).
 - Select Save Settings and press **ENTER** to reboot the system from the DVD.
4. At the installation menu screen, press **F8** to display the Autodesk Red Hat Linux installation menu.

NOTE: This menu does not appear for HP 8400 Visual Effects and Finishing workstations.

5. At the boot prompt in the Red Hat Linux installation menu, type one of the following commands and then press **ENTER** to launch the Linux installation

Type:	To install on:
iffbsbc	A Visual Effects and Finishing workstation. NOTE: The following command achieves the same results: linux ks=cdrom
burn	A Visual Effects and Finishing Burn node.
nas	An IBM x346 Network Attached Storage (NAS).
burnlustre	An Autodesk Burn for Lustre node.
lustrews	A Lustre workstation.
lustreslave	A Lustre Slave Renderer.
inclms	A Lustre Media Server.
incws incws=<x>	An Incinerator workstation in a centralized install process, where <x> is an integer you assign to the workstation to distinguish it from other workstations in the configuration. For example, the following assigns the number "2" to this workstation: incws incws=2
incws_cd incws=<x>	An Incinerator workstation in a local install process, where <x> is an integer you assign to the workstation to distinguish it from other workstations in the configuration. For example, the following assigns the number "2" to this workstation: incws_cd incws=2
incnode incnode=<x>	An Incinerator node in a centralized install process, where <x> is an integer you assign to the node to distinguish it from other nodes in the configuration. For example, the following assigns the number "9" to this node: incnode incnode=9
incnode_cd incnode=<x>	An Incinerator node in a local install process, where <x> is an integer you assign to the node to distinguish it from other nodes in the configuration. For example, the following assigns the number "9" to this node: incnode_cd incnode=9

NOTE: The system spends several minutes loading drivers.

6. If you replaced your system disk with an uninitialized disk, when prompted, confirm initialization of the disk.
7. If you are installing on an Incinerator Node or Lustre workstation using a centralized install process and receive an error that "The directory could not be mounted from the server", the

default IP address for the Lustre Media Server is not working. Click OK and when prompted, enter the following information, then press **ENTER**:

In the field:	Type:
NFS server name	The IP address of the Lustre Media Server. For example, if you are using the default IP address for the Lustre Media Server, enter 10.10.10.1
Red Hat Enterprise Linux directory	/root/iso/rh4u3_64

NOTE: If this error occurs when the IP address *is* correct, the problem may be hardware connections. Verify all hardware connections between the component and the Lustre Media Server are properly seated, then reboot the machine and restart the Linux installation.

- When prompted with “Congratulations, the installation is complete”, eject the DVD, and click Reboot to reboot the system.

NOTE: After the system reboots, you may be prompted by the Kudzu hardware setup utility to set up new hardware detected for your system. You can ignore these prompts and allow the utility’s count-down to expire since the hardware for the system is unchanged.

Installing the Discreet Kernel Utility

The procedure in this section describes how to install the Discreet Kernel Utility (DKU). The DKU installation:

- Installs the Autodesk-customized kernel.
- Configures certain Linux services.
- Installs or updates software drivers needed by hardware components such as graphics boards and fibre-channel cards.
- Installs Linux utilities that are not installed by default.

NOTE: If you are using a centralized install process to install Linux in an Incinerator configuration, you only need to install the DKU on the Lustre Media Server. When you are installing on a workstation or Incinerator node, the DKU is installed automatically after the Red Hat Linux installation completes.

Installing the DKU from the application DVD

This section describes the installation of the DKU from a Visual Effects and Finishing application DVD. If you do not have this DVD, see [“Installing the DKU from a Downloaded tar File”](#) on page 12.

To install the Discreet Kernel Utility from the DVD:

1. Log in as root and open a terminal.

NOTE: On graphics systems, installing the customized Linux kernel in graphics mode with the X server running is highly recommended.

2. Insert the Visual Effects and Finishing DVD.
3. Verify that the DVD-ROM drive is mounted by typing:

```
df | grep cdrom
```

If you see `/mnt/cdrom` in the system response, the DVD-ROM drive is mounted. If the drive is not mounted, mount it manually by typing:

```
mount /mnt/cdrom
```

NOTE: If your system has multiple CD-ROM or DVD-ROM drives, the drive containing the Visual Effects and Finishing DVD may not be mapped as `/mnt/cdrom`. You can use any mapped DVD-ROM drive for this procedure by using the appropriate mount point for the DVD-ROM drive in your system in these steps.

4. Go to the DKU directory of the mounted DVD-ROM by typing:

```
cd /mnt/cdrom/DKU_<version_number>
```

where `<version_number>` represents the version of the DKU, for example:

```
cd /mnt/cdrom/DKU_3.0.0
```

5. Launch the DKU installation script by typing:

```
./INSTALL_DKU
```

6. Wait for the DKU installation script to complete.

NOTE: When the script completes for Visual Effects and Finishing workstations, a warning to update the DVS board, AJA board, or DVI-Ramp may appear, depending on your hardware configuration, and you are returned to the command prompt.

7. Return to the root directory by typing:

```
cd /
```

8. Eject the DVD by typing:

```
eject /mnt/cdrom
```

9. Before rebooting the system, do the following:
 - Ensure the Wacom® tablet is connected.
 - If storage devices (external disk arrays or internal storage) were previously disconnected, as part of an operating system installation, reconnect them and power them up.

NOTE: Wait for all the disks in the storage devices to power up before rebooting the system. The green light for each disk stops flashing once it is fully powered up.

10. Reboot the system. Type:

```
reboot
```

Installing the DKU from a Downloaded *tar* File

This section describes how to install the DKU from a *tar* file downloaded from Autodesk. Follow these steps to download the file, unpack the DKU, and install it.

To install the DKU from a *tar* file:

1. Download the DKU *tar* file from Autodesk. Make sure you get the correct DKU version for your release of the Autodesk application.

NOTE: To find out the correct DKU version, and the download link for it, consult the *Release Notes* and release announcement for your release.

2. Go to the directory where the *tar* file was downloaded, and unpack it by typing:

```
tar -zxvf DKU_<version_number>.tar.gz
```

where *<version_number>* is the version of the DKU, for example:

```
tar -zxvf DKU_3.0.0.tar.gz
```

The DKU *tar* file is unpacked into a new directory.

3. Go to the newly-created DKU installation directory, and launch the DKU installation script:

```
./INSTALL_DKU
```

4. Wait for the DKU installation script to complete.

NOTE: When the script completes for Visual Effects and Finishing workstations, a warning appears for updating the DVS board, AJA board, or DVI-Ramp, and you are returned to the command prompt.

5. Before rebooting the system, do the following:
 - Ensure the Wacom® tablet is connected.
 - If storage devices (external disk arrays or internal storage) were previously disconnected, as part of an operating system installation, reconnect them and power them up.

NOTE: Wait for all the disks in the storage devices to power up before restarting the system. The green light for each disk stops flashing once it is fully powered up.

6. Reboot the system. Type:

reboot

