AUTODESK®
LUSTRE® 2008

A Discreet® Systems product

Software Installation Guide for Windows® Workstations

Autodesk®

Trademarks

Disclaimer

Published by:

Autodesk Canada Co./Autodesk, Inc.

111 Mclnnis Parkway

San Rafael, CA 94903, USA

Title:	Autodesk Lustre 2008 Software Installation Guide for Windows Workstations
Document Version:	1
Date:	October 15, 2007

contents

Contents

1 Introduction

Summary

About This Guide

This guide provides basic information about installing Autodesk® Lustre® 2008 application software on the hardware components in your Lustre system. Use this guide in conjunction with the *Hardware Setup Guide* for your platform to install and configure the hardware and software components of your Lustre system.

The most up-to-date versions of all guides are available in PDF format from the Web at *www.autodesk.com/discreet-documentation*. For the best results viewing and printing these PDF files, use Adobe® Acrobat® Reader™ 6 or later.

NOTE: In most cases, both hardware setup and application installation is done on delivery by an authorized technician, so you may not need to perform all of the procedures in these guides.

Related Documentation

The following table describes the documentation associated with your application.

User and Reference Guides	Description
Autodesk Lustre 2008 User's Guide	Detailed instructions on using the software.
Autodesk Control Surface User's Guide	Detailed instructions on using the modular Control Surface and the Tangent CP100.
Autodesk Lustre 2008 What's New	A complete list of the new features for this release.
Autodesk Lustre 2008 Hot Keys Card	A list of the most frequently used hot keys.

User and Reference Guides	Description
Autodesk Lustre 2008 and Autodesk Incinerator 2008 Release Notes	A complete list of documentation and information on late-breaking features.
Autodesk Lustre 2008 and Autodesk Incinerator 2008 Fixed and Known Bug List	A complete list of fixed and known bugs for this release.

Installation and Configuration Guides	Description
Hardware Setup Guide (for your workstation)	Information on how to set up your workstation's video I/O components and other peripherals.
Linux RHEW 4 Update 3 Installation and Configuration Guide	Information on how to install and configure the Linux® operating system on your workstation, should you be required to do so.
Autodesk Stone Direct 2008 Configuration Guide	Detailed connectivity diagrams and configuration procedures for your Autodesk Stone® storage arrays.
Autodesk Stone and Autodesk Wire 2007 Filesystem and Networking Guide	Procedures for configuring your Autodesk Wiretap™ services.
Autodesk Lustre 2008 Software Installation Guide for Linux Workstations	Information about installing and licensing your Autodesk Lustre software.
Discreet Storage Manager Installation and User's Guide	Information on how to configure the LUNs on your IR-series storage using the Discreet® Storage Manager.
Autodesk Stone Direct Storage Manager User's Guide	Information on how to configure the LUNs on your XR-series storage using the Autodesk Stone Storage Manager.

Other Product Reference Guides	Description
Autodesk Lustre Sparks API Reference Guide	Instructions for developing Autodesk Sparks® plugins for Lustre.
Autodesk Backburner 2007 Installation and User's Guide	Information on how to install, set up, and use Autodesk Backburner™.

Consult the Autodesk Web site at *www.autodesk.com/discreet-documentation* for the latest version of user's guides, release notes, and fixed and known bugs documents.

Lustre Hardware and Software Components

A Lustre system consists of a number of different hardware and software components. This section describes each of the hardware components in a Lustre installation, and the software associated with each component. You may or may not have all of the components listed here in your Lustre installation. The type of workgroup, as well as the feature set you purchase for each of the workstations in that workgroup, determine the components in your installation.

Lustre Workstations

There are three kinds of Lustre workstations: the Master Station, the HD Station, and the Lustre Station. Every Lustre installation is built around either a Master Station or an HD Station. The optional Lustre Station offers a way to improve the efficiency and cost-effectiveness of a pipeline by offloading tasks that do not require the full feature set of the Master Station or HD Station.

Master Station

The Master Station is designed for GPU-accelerated sessions where the colorist works together with the cinematographer. It includes an extensive creative toolset for elaborate visual design and grading, using up to 4K resolution and 16-bit files and for completing tasks like dust busting, conforming, rotoscoping, and capture/playout. It also includes SD and HD I/O, dual link and HSDL video formats, and the DI Pack, which consists of infrared channel dust removal and support for all standard input and output resolutions and bit-depths.

The Master Station can support up to three panels of the Autodesk Control Surface and, with an additional license, a Slave Renderer. You can also purchase licenses for plug-ins.

You install the Lustre application on the Master Station.

HD Station

The HD Station is a cost-effective GPU workstation for conforming, preparing, grading, and mastering short-form and long-form HDTV projects, as well as HD film projects, and mastering to different formats. It does not include the DI Pack. File input is limited to 10-bit 2K resolution, and file output is limited to SD and 10-bit HD resolution.

The HD Station can support up to three panels of the Autodesk Control Surface and, with an additional license, a Slave Renderer. Dual link and HSDL video formats are available with the purchase of a separate video I/O license. You can also purchase licenses for plug-ins.

You install the Lustre application on the HD Station.

Lustre Station

Tasks that do not require the direct intervention or supervision of the colorist can be efficiently handled by a Lustre Station. Multiple Lustre Stations can work in parallel to increase throughput and can be used for tasks such as dust-busting, preparatory work, fine-tuning creative sessions, conforming data from EDLs, updating editorial changes, and mastering to different formats using the real-time deliverables function. The Lustre Station includes the DI Pack, along with full dust removal functionality, and the ability to create geometries and masks.

Primary colour grading on the Lustre Station requires a separate license. The following features also require an additional license: SD and HD I/O, dual link and HSDL video formats, and plug-ins.

The Lustre Station does not support the Autodesk Control Surface or the Slave Renderer.

You install the Lustre application on the Lustre Station.

Other Components

You can expand the features of your Lustre system and improve the efficiency of your workflow by adding any of the following components.

Control Surface — The Autodesk Control Surface provides improved interactivity when colour grading film and video footage. You can perform many of the same tasks you do in the Lustre user interface using the Control Surface.

You connect the Autodesk Control Surface to a Master Station or HD Station, and configure the Control Surface on the workstation to which it is connected.

Video I/O Board and Breakout Box — Video I/O is provided by the DVS Centaurus board, which consists of an HD/SD board and a breakout box. This configuration provides real-time SDI input and output of uncompressed 8- or 10-bit HD or SD video in both YUV (4:2:2) and RGB formats (4:4:4 or 4:2:2). For a list of supported video formats, see the *Autodesk Lustre 2008 User's Guide*.

The drivers for the video board and breakout box are installed by the Discreet Kernel Utility, as part of the Red Hat® Linux installation procedure.

Slave Renderer — The Slave Renderer is a rack-mounted server that is connected directly to the Lustre workstation. It frees system resources by off-loading render tasks on an 'as-needed' basis, thus ensuring real-time interaction on the Lustre system.

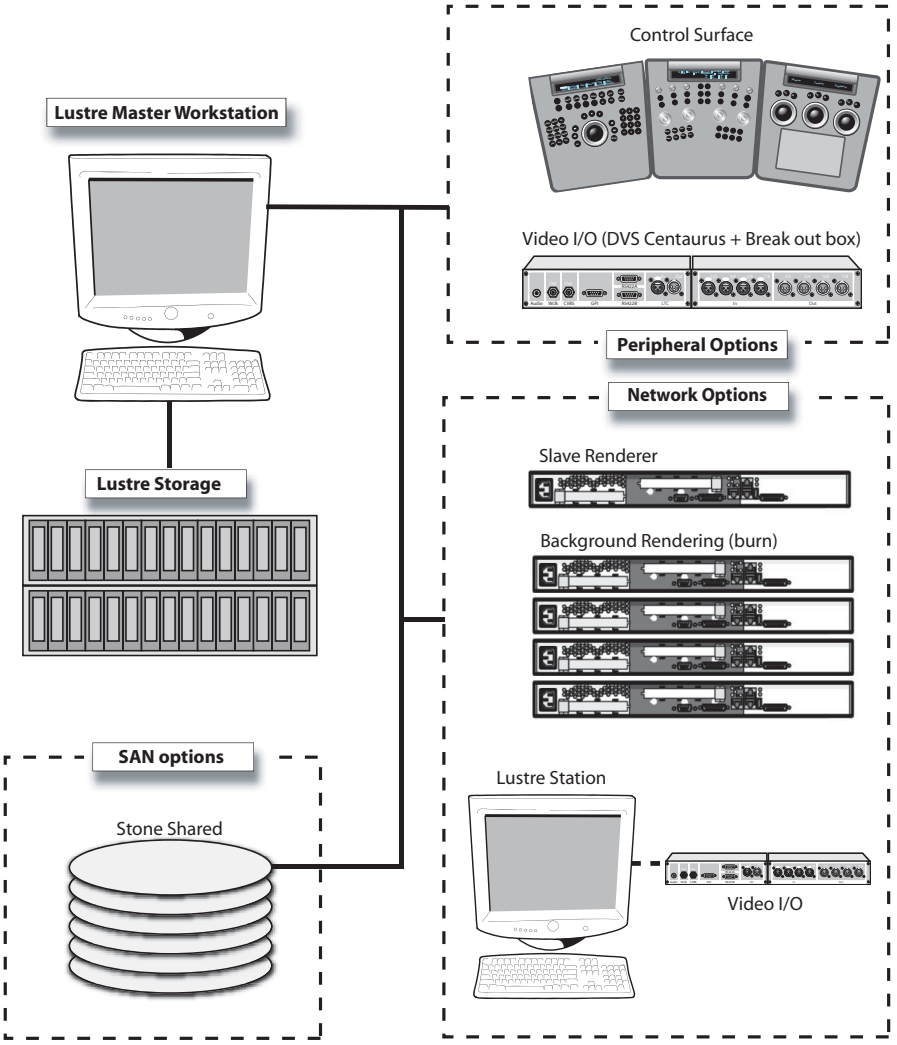
You install rendering software on the Slave Renderer.

Background Renderer — Background rendering frees up Lustre workstations for colour grading. You can use up to eight background rendering machines to process your final frames.

You install background rendering software on each background render node.

Typical Workgroup Configuration

The following illustration shows a typical workgroup configuration built around a Master Station. It includes a Lustre Station, and other optional components.



NOTE: Although not illustrated, you can also expand your system to include an Effects and Editing workstation. If you do so, you must install and configure BrowseD and Autodesk Wiretap™ on that workstation to enable Lustre read/write access to the Autodesk Stone® connected to that workstation. This feature assumes that the Effects or Editing workstation is on the same GigE network as the Incinerator workgroup, and that the "Scans/Render Full Home" project variable is properly configured in Lustre.

Contacting Customer Support

You can contact Autodesk Media and Entertainment Customer Support at *www.autodesk.com/support* or in one of the following ways.

Location:	Contact Information:
Within the Americas:	Hotline (North America): 1-800-925-6442 Direct dial: 415-507-5256 (Country code = 1) 8 AM to 8 PM EST Monday to Friday, excluding holidays *me.support@autodesk.com*
Within Europe, Middle-East and Africa:	Hotline (from London, UK): +44-207-851-8080 9 AM to 5:30 PM (local time) Monday to Friday, excluding holidays *me.emea.support@autodesk.com*
Within Asia Pacific: (Excluding India, China, Australia, New Zealand and Japan)	Hotline (from Singapore): +65-6555-0399 9 AM to 6 PM (local time) Monday to Friday, excluding holidays *me.support.singapore@autodesk.com*
Within India:	Hotline (from Mumbai): +91-22-6695-2244 9:30 AM to 6:30 PM (local time) Monday to Friday, excluding holidays *me.support.india@autodesk.com*
Within Japan:	Hotline (from Tokyo): 0120-107-290 Direct dial: +81-3-6221-1810 10 AM to 6 PM (local time) Monday to Friday, excluding holidays *med-sys-support-jp@autodesk.com*
Within China:	Direct dial: +86-10-6505-6848 9 AM to 6 PM (local time) Monday to Friday, excluding holidays *me.support.china@autodesk.com*
Within Australia and New Zealand:	Hotline (within Australia to Melbourne): +1-300.36.8355 Hotline (within New Zealand to Melbourne): 0800 555 301 Direct dial: +61.3.9876.8935 8 AM to 6 PM AEST Monday to Friday, excluding certain holidays *me.support.anz@autodesk.com*

Customer support is also available through your Autodesk reseller. To find a reseller near you, consult the reseller look-up database on the Autodesk Web site at *www.autodesk.com/resellers*.

2 Windows System Software

Summary

Overview

This chapter describes how to install and configure Windows XP for Lustre. It also explains how to create users, configure your monitor, and set up your storage.

About Drivers

All of the drivers required for Lustre are stored in *c:\drivers*. If necessary, you can re-install the drivers on your system using the files provided.

WARNING: Do not upgrade the drivers on your system with the latest provided by the manufacturer unless you are specifically advised to do so by Customer Support.

Installing Windows XP

Lustre requires Windows XP Professional SP2.

NOTE: If your workstation is an IBM® IntelliStation® Z Pro 6223, you must install the SCSI drivers before you install Windows. See "Installing Driver for IBM 6223 SCSI Device" on page 8.

To install Windows XP:

1. Install Windows XP, as described in the Microsoft documentation, using a standard install.
2. If you are using IR-series storage, you must install Internet Information Services (IIS) to run Discreet Storage Manager (DSM). See "Installing IIS for DSM" on page 8.

For specific information concerning the operating system install, refer to the installation documentation provided with your version of Windows XP Professional.

Installing Driver for IBM 6223 SCSI Device

The IBM IntelliStation Z Pro 6223 features a SCSI hard disk and an on-board SCSI controller device. However, the Windows XP installation wizard does not recognize the SCSI device (the Windows XP CD does not contain the correct driver for it). Because the Windows installation requires a hard disk, the wizard's inability to recognize the SCSI device causes the installation to fail.

It is not possible to install the driver for the SCSI controller from a CD or other device. The Windows XP installation wizard will only accept the driver from a floppy disk. Because the IntelliStation 6223 does not ship with a floppy disk, you must install an internal or USB floppy prior to installing Windows XP. As part of the preparation, on another machine, copy the SCSI controller device driver from the CD labelled *IBM Device Drivers IntelliStation Z-Pro Type 6223* to the root directory of a floppy disk.

To install the on-board SCSI controller device:

1. Boot the system from the Windows XP CD.

   HINT: If the CD drive is not being read at start-up, check the BIOS option to enable Read CD at Startup.

2. During the boot process, when prompted to specify Additional Services, press **F6**.
3. Press **S** to add a system disk driver and insert the disk containing the SCSI controller driver into the floppy drive.
4. From the list of devices presented, select the Adaptec Ultra 320 SCSI Cards (Win XP/Server 2003 IA-32).
5. Continue with the XP installation.

Installing IIS for DSM

Internet Information Services (IIS) is required by the DSM. DSM allows you to view information about your storage devices in a Web browser.

To install IIS for DSM:

1. After Windows is installed, choose Start | Control Panel | Add/Remove Programs and select Add/Remove Windows Components.
2. Select Internet Information Services (IIS) and click Next.
3. Follow the instructions that appear on screen to complete the installation.

Installing the XR-Series Storage Drivers

After you connect your XR-Series storage as described in the latest version of the *Autodesk Stone Direct Configuration Guide* and reboot Windows, you must install the XR-Series drivers. The Found New Hardware Wizard launches as soon as you re-start Windows. Use this wizard to install the drivers.

To install XR-Series storage drivers:

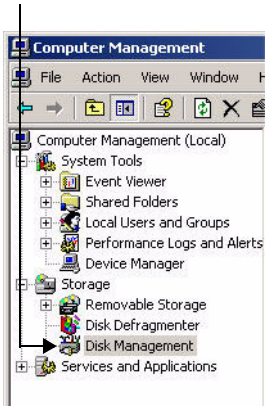
1. In the Welcome to the Found New Hardware Wizard window, select Install from a list or a specific location and click Next.
2. Insert the Storage V4 CD-ROM into your CD-ROM drive.
3. Browse to your CD-ROM drive, open the *windows_XR_driver* folder, select the *autodesk_storage.inf* file, and click open.
4. Follow the on-screen wizard to complete the installation of your storage driver.

Converting and Initializing New Storage Disks

You must initialize your new storage before you can create the storage volume.

To convert and initialize new storage disks:

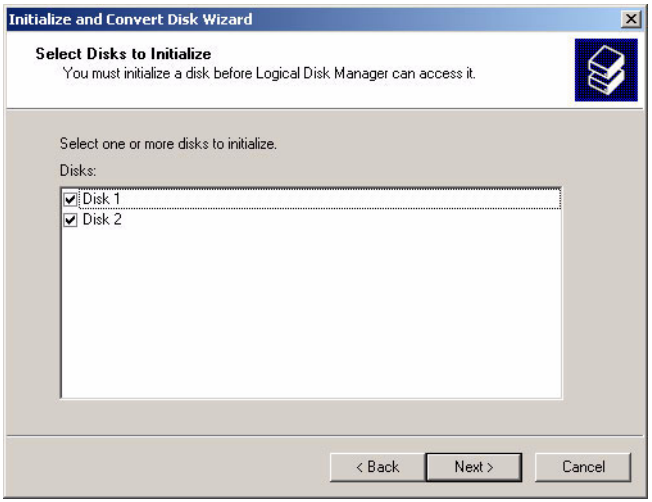
1. Right-click My Computer on your Desktop and choose Manage.
2. In the Computer Management window, select Disk Management in the Storage folder.



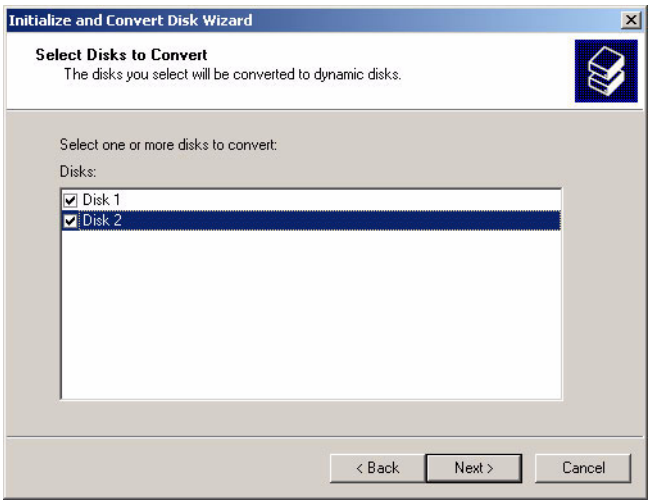
As soon as you choose Disk Management, Windows should recognize the un-initialized disks and prompt you to initialize them.

3. In the Welcome to the Initialize and Convert Disk Wizard window, click Next to continue.

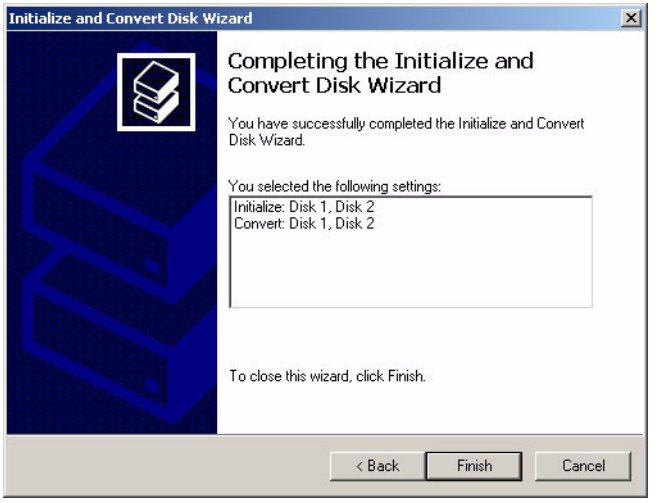
4. By default, Windows selects all un-initialized disks. Click Next to initialize all selected disks.



5. In the Select Disks to Convert dialog box, select all storage disks to convert them to dynamic disks and click Next.



6. In the Completing the Initialize and Convert Disk Wizard dialog box, verify that all disks you want to include in your storage volume are listed and click Finish.



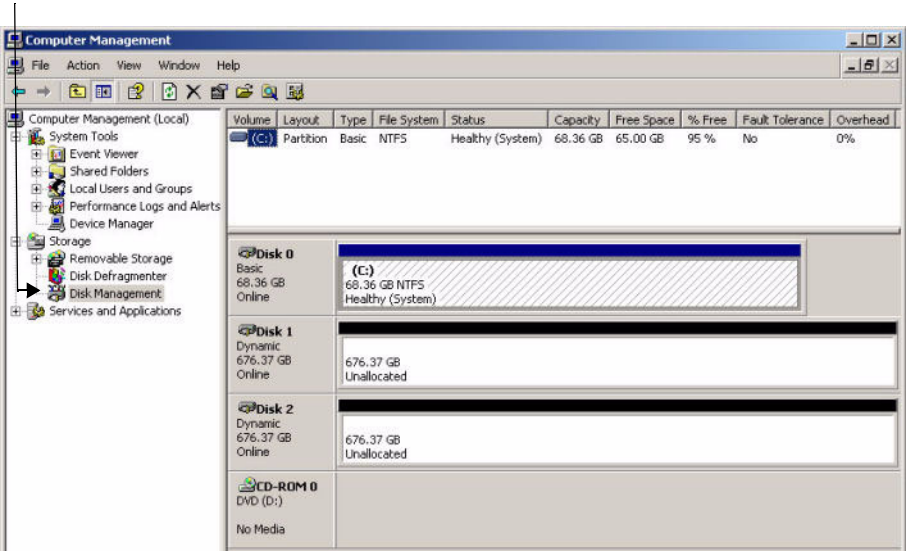
Formatting the Storage Volume

Once your storage is converted and initialized you are ready to create a single storage volume by striping the disks together.

NOTE: For hardware RAID, your Logical Disks must be configured before you format the storage. Logical Disks are configured by Autodesk before they are shipped to you. To view the Logical Disks on your system, you can use the DSM for IR-Series storage or the Autodesk Stone Storage Manager (SSM) for XR-Series storage. For information on using DSM, see the *Discreet Storage Manager Installation and User's Guide*. For information on using SSM, see the *Autodesk Stone Direct Storage Manager User's Guide*.

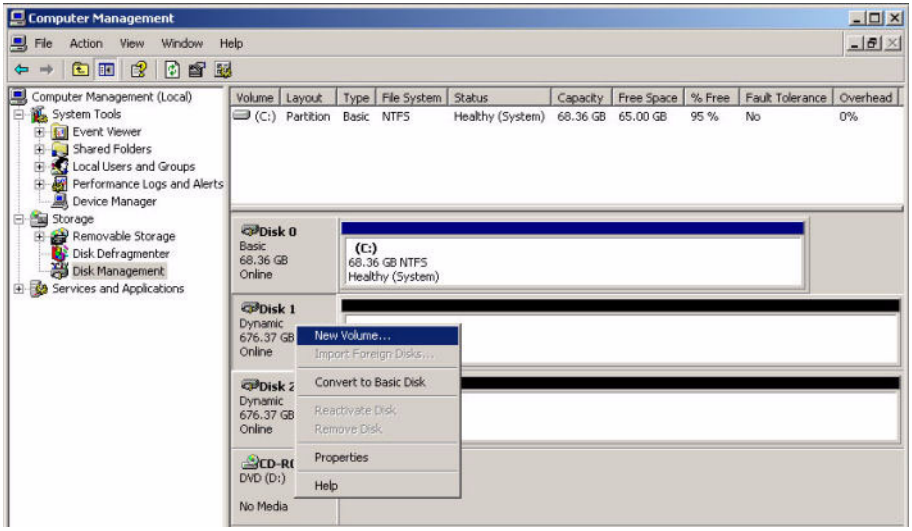
To format the storage volume:

1. Right-click My Computer on your Desktop and choose Manage.
2. In the Computer Management window, select Disk Management in the Storage folder.



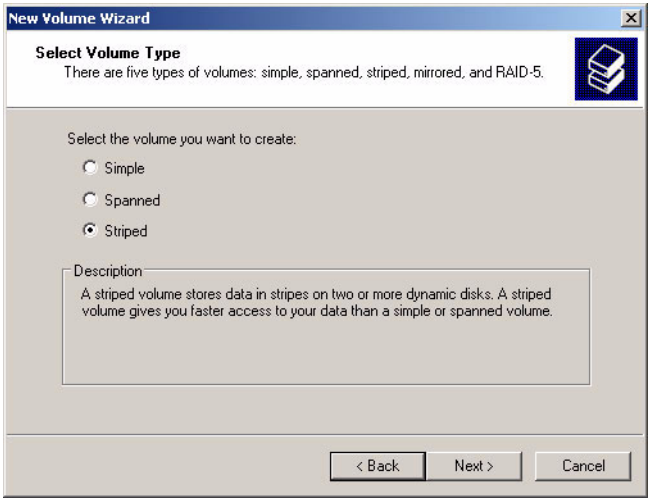
3. Verify that all storage disks are labelled as:
   - Dynamic
   - Online
   - Unallocated

4. Right-click one of the storage disks and choose New Volume to launch the New Volume Wizard.



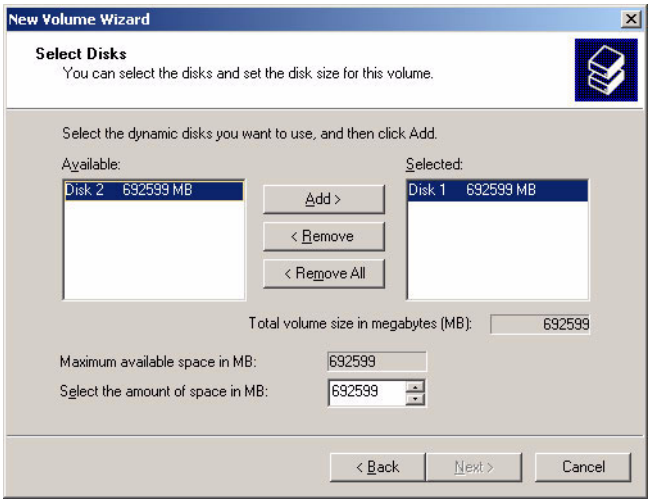
5. In the Welcome dialog box, click Next to start the Wizard.

6. In the Select Volume Type dialog box, select Striped and click Next.



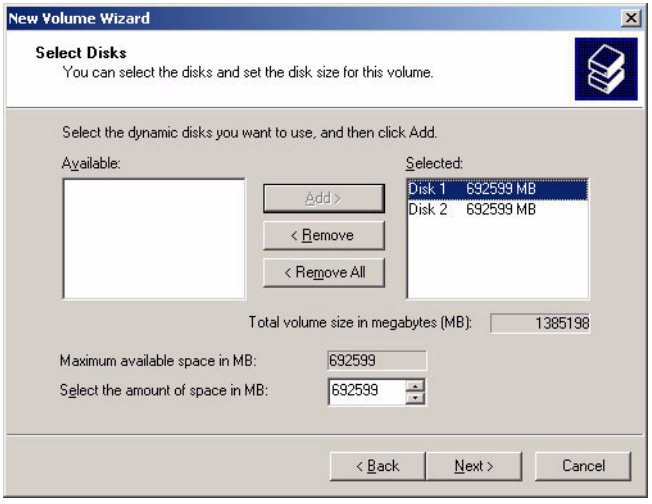
NOTE: The Striped option creates a RAID 0 stripe set from multiple disks.

7. Select every storage disk you want to include in the storage volume from the Available column and click Add to move them to the Selected column.



NOTE: By default, Windows selects only the disk you right-clicked to launch the Wizard.

8. When you have selected all the disks you want to include, click Next.

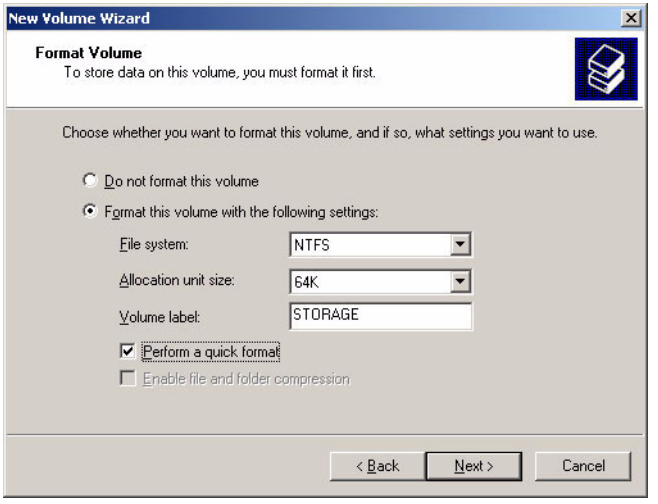


9. In the Assign Driver Letter or Path dialog box, select Assign the following drive letter option, select a drive letter, and click Next.

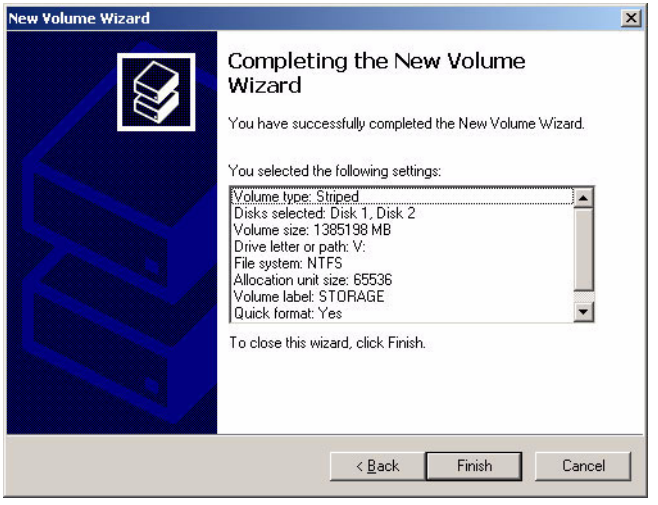
   Autodesk recommends that you assign the letter V to the storage volume.

10. In the Format the Volume dialog box, select Format this Volume with the following settings and choose the following settings.

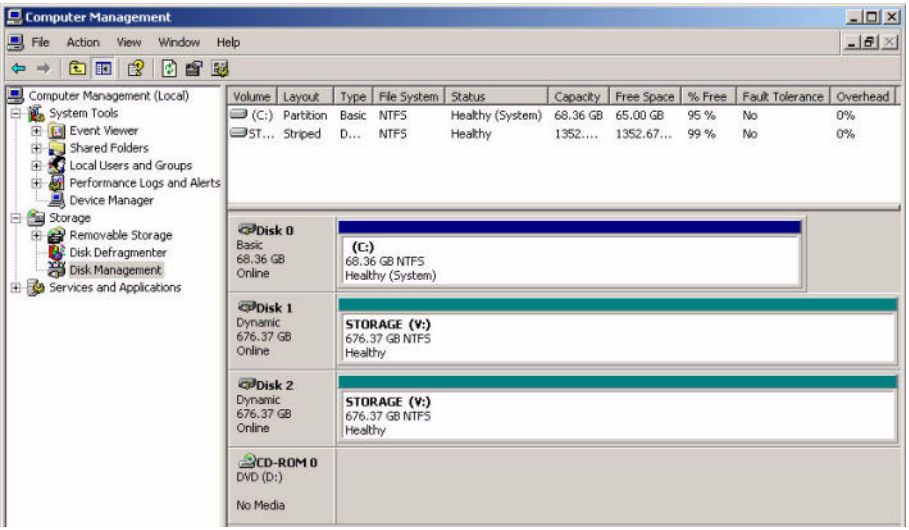
- Choose NTFS from the Filesystem list.
- Choose 64K from the Allocation unit size list.
- Enter a volume label. Autodesk recommends you use “Storage” for your label.
- Choose Perform quick format.
- Click Next.



11. In the Completing the New Volume Wizard, click Finish to close the Wizard.



After the volume is created and formatted, the storage disks should now be part of a shared volume and should be labelled “Healthy”.



Setting the Display

You must set the display properties of your graphics card to suit your monitor.

To set the display:

1. Right-click anywhere on the desktop and choose Properties.
2. Click the Settings tab.
3. Click Advanced.
4. Click the tab for your graphics card:
   - NVIDIA® Quadro® FX5500
   - NVIDIA Quadro FX4000
5. Choose Screen Resolutions & Refresh Rates from the menu.
6. Set the display to 1920x1200, 32-bit. Set the refresh rate to a value supported by your monitor.

Monitor	Refresh Rate
LCD	60 Hz or 48 Hz
CRT	72 Hz

7. Apply the changes.

Creating and Setting User Permissions

To operate a Lustre workstation, all users must log in as Administrator, or as a Power User with additional privileges—Modify, Read, and Write. It is recommended that you create individual users and then add them to the Power User group rather than allow all operators to work in Administrator mode.

You must also set security for Power Users on all drives that are accessed by Lustre (video drives for all workstations, the Lustre Station drive, the Master Station drive, and the HD Station drive).

To perform the following procedures, log in as a local administrator on the workstation.

NOTE: You must set up user accounts with the same level of privileges on all workstations that Lustre connects to, such as the Slave Renderer and the Burn™ for Lustre render nodes.

To create users in the Power Users group:

1. Right-click My Computer and choose Manage.
2. In Local Users and Groups, right-click Users and choose New User.
3. Enter a user name and password, and then disable the "User Must Change Password at Next Logon" check box.

   NOTE: For DSM and the Background Renderer to operate properly, you must set a password for each user.
4. Enable the "User Cannot Change Password" and "Password Never Changes" check boxes.
5. Click Create.
6. Click Close when you are finished creating new users.

To add users to the Power Users group:

1. Right-click My Computer and choose Manage.
2. Expand Local Users and Groups, and select Groups.
3. Right-click Power Users and choose Add to Group.
4. In the Power Users Properties window, click Add, and then add the new users.
5. Click Ok.

To set security for the Power Users group on a drive accessed by Lustre:

1. In a Windows Explorer window, right-click a Lustre drive (for example, the local system drive) and choose Properties.
2. Click the Security tab, and then click Add.

   NOTE: If you do not see the Security tab, click Tools and choose Folder Options. In the Folder Options window, show the View panel, and then disable the Use Simple File Sharing (Recommended) check box.

3. In the Select Users, Computers, or Groups menu, click Advanced, set the correct location, and then click Find Now to locate and select the Power Users group. Click Ok.
4. In the Security panel, select Power Users and then enable Modify, Read, and Write to add these permissions to the Power Users group.
5. Click Ok.

Configuring Windows XP for Optimal Performance

Autodesk applies a number of configurations to Windows XP to ensure optimal performance in your system. If you must re-install the operating system, you must apply these changes manually.

Location	Setting
Control Panel | System | Advanced tab | Performance Settings	Select Adjust for best performance
Control Panel | System | Automatic Updates tab	Select Turn off automatic updates
Control Panel | Taskbar and Start Menu | Start Menu	Select Classic Start Menu
Control Panel | Taskbar and Start Menu	Select Show Quick Launch Unselect Hide inactive icons.
Control Panel | Network Connections	Select each network interface one at a time, right-click and choose Properties. Click the Advanced tab, click the Settings button, and then select turn off Windows Firewall.
Control Panel | Network Connections	Rename each network adapter to reflect its use. For example, if you have a slave rendering machine, rename the port connected to the machine as “slave”.

Location	Setting
Control Panel | Display | Desktop | Color | Others	• Hue: 193 • Sat: 21 • Lum: 60 • Red: 67 • Green:58 • Blue: 59
Control Panel | Display | Desktop | Browse	Select the Lustre.bmp image in the application folder for the background image.
Explorer | Tools | Folder Options | View	Unselect Use simple file sharing.

The following settings can be enabled using Power Toys Tweak UI, available from the following Web site: *http://windowsxp.mvps.org/tweakui.htm*.

Location	Setting
Explorer | Settings	Select Clear document history on exit Unselect Prefix "ShortCut" on new shortcuts
Explorer | Shortcut | Shortcut overlay	Select None
Desktop | Desktop Icons	Unselect Internet Explorer Unselect My Documents
Desktop | Desktop Icons | First Icon	Select My Computer
Internet Explorer	Select Include path search in address bar

3 Installing Lustre on Windows

Summary

Workflow for Installing Lustre on Windows

You must install Lustre software on the Lustre Master Station, the Lustre HD Station, the Lustre Station, the Slave Renderer, and the BrowseD server. The recommended steps for installing Lustre software is in the following table.

Step:	Refer to:
1. Install Lustre software on each component in your workgroup.	"Installing Lustre 2008 Software" on page 22.
2. (Optional) Install Autodesk Control Surface Tablet driver on your Lustre workstations.	"Installing the Autodesk Control Surface Tablet Driver" on page 23.
3. Ensure upgrade compatibility among users, projects, configuration files, and other setups	"Ensuring Upgrade Compatibility" on page 24.
4. Install WinPcap for workstations connected to a Control Surface.	"Installing WinPcap on Workstations Connected to a Control Surface" on page 25.
5. Install the licenses for all your Lustre workstations.	"Acquiring and Installing a License" on page 26.

Step:	Refer to:
6. Upgrade your DVS firmware if you are upgrading Lustre.	"Upgrading the DVS Firmware" on page 28.
7. Upgrade the DVS driver on all workstations with a DVS board for video I/O	"Upgrading the DVS Driver" on page 29.
8. Upgrade the NVIDIA graphics card driver if you are upgrading from a version of Lustre prior to Lustre 2008.	"Upgrading the NVIDIA Graphics Card Driver" on page 30.
6. (Optional) Remove or upgrade Lustre.	"Upgrading or Removing Lustre" on page 31.

Installing Lustre 2008 Software

Use the Lustre 2008 installer to install Lustre 2008 on the following components:

- Lustre Master Station
- Lustre HD Station
- Lustre Station
- Slave Renderer. After you install and license the Slave Renderer, you must configure it. See Chapter 4, "Configuring Slave Rendering," on page 33.
- BrowseD Server. After you install and license the Slave Renderer, you must configure it. See Chapter 6, "Configuring BrowseD," on page 59.

To install Lustre:

1. Place the Lustre 2008 CD in your CD-ROM drive.
2. Open an Explorer window to display the Lustre CD's contents.
3. Open the folder that contains the Lustre package and double-click *Lustre_2008.exe* to launch the install procedure.

   The Lustre installer is launched and the Lustre splash screen appears.
4. Read the End User License Agreement and choose to either Accept or Decline. To proceed with the Installation, click Next.
5. Click Next to install Lustre into the default directory, or click Change to specify another destination.
6. Select which component of Lustre you want to install.

Select:	To install:
Master Station	The software required for the Master Station.
Lustre Station	The software required for the Lustre Station.

Select:	To install:
HD Station	The software required for the HD Station.
Render (slave)	The software necessary to perform rendering on the Slave Renderer. Do not install the Slave Renderer on the Master Station, HD Station, or Lustre Station. If you are installing a Slave Renderer on a machine that has a previous renderer version already installed, the previous version must be disabled before running the new one. See "Disabling a Previous Version of the Slave Render Software" on page 42.
Plugins	Lustre plugins.
Online Help	The browser-based online help files only. You can also use this option to install the online help independently of the software. This option is enabled by default when installing the Master or Lustre Station options.
Browsed Server	The Lustre network file server that provides fast file transfers between workstations and centralized storage. For more information on the BrowseD server, see Chapter 6, "Configuring BrowseD," on page 59.

Click Next.

7. Click Install.

   The selected components are installed.

   NOTE: If this is the first time you are installing Lustre, you are now prompted to install Lustre Color Management. Refer to the *Lustre Color Management User's Guide*.

8. Click Finish to exit the install wizard.

9. A dialog box opens recommending you to restart your computer.

If:	Then:
You are installing Lustre on a workstation that is connected to a Control Surface	Leave the dialog box open while WinPcap is installing. You can restart your computer after the installation of WinPcap. See "Installing WinPcap on Workstations Connected to a Control Surface" on page 25.
You are installing the BrowseD server or Slave Renderer	Restart your computer now.

Installing the Autodesk Control Surface Tablet Driver

If you require the use of the pen and tablet functions of the Autodesk Control Surface, you must install the tablet driver on your Lustre workstations.

Install the tablet driver after you install Lustre.

To install the Autodesk Control Surface tablet driver:

1. Download the driver upgrade package to a temporary location on your system. You can find the driver package here:

   ftp://ftp.discreet.com/pub1/release/lustre/lustre2008/drivers/cons4.94-3a_int.exe

   NOTE: Contact Customer Support if you have any problems downloading the driver package. See "Contacting Customer Support" on page 6.

2. Double-click *cons4.94-3a_int.exe*.
3. In the Self-Extractor window, click Setup.
4. In the Pen Tablet – License Agreement window, click Accept.
5. In the Install Pen Tablet window, click OK.

   The cons4.94-3a driver is now installed on the Lustre workstation.

Ensuring Upgrade Compatibility

To ensure compatibility with users, projects, configuration files, and other setups from a prior version of Lustre, you must copy several files and directories from the release directory of the previous version installed on your system, to the new install directory.

To copy the required files from the release directory to the new install directory:

1. On the Master Station, copy the following files and directories from the *C:\Program Files\discreet\lustre<prior_version>* directory to the *C:\Program Files\Autodesk\Lustre<new_version>* directory.

Item Type	Item Name
File	*browsed.config*
File	*filmtype.config*
File	*wt.config*
File	*init.config*
Directory	*user*
Directory	*lut*
Directory	*project*

2. On the Slave Renderer, copy the following files and directory from the *C:\Program Files\discreet\lustre<prior_version>* directory to the *C:\Program Files\Autodesk\Lustre<new_version>* directory.

Item Type	Item Name
File	*browsed.config*
File	*wt.config*
Directory	*lut*

3. On the Render Nodes, copy the following file and directory from the *C:\Program Files\discreet\lustre<prior_version>* directory to the *C:\Program Files\Autodesk\Lustre<new_version>* directory.

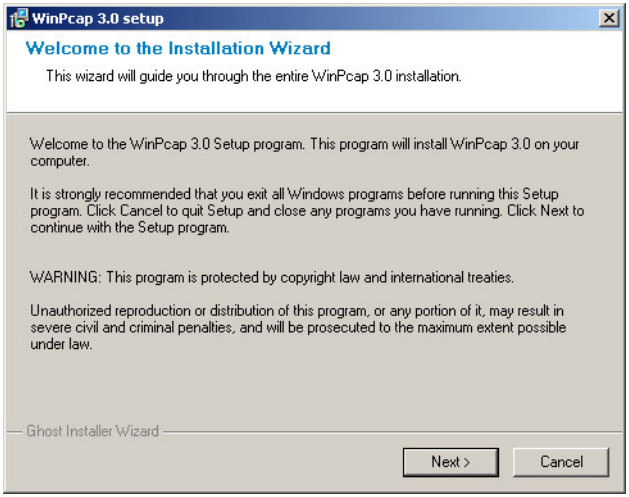
Item Type	Item Name
File	*browsed.config*
Directory	*lut*

Installing WinPcap on Workstations Connected to a Control Surface

After Lustre software is installed on the Lustre Master Station, Lustre HD Station, or the Lustre Station, the installer for WinPcap is launched automatically. Lustre uses WinPcap to capture and send raw data from a network card to the Control Surface. It allows rapid communication between the Lustre workstation and the Control Surface.

To install WinPcap:

1. After the installer installs Lustre and creates the desktop icon, it begins installing WinPcap automatically. Click Next to continue with the installation.



2. Read the End User License Agreement and click Yes to accept the license agreement. To proceed with the Installation, click Next.

   WinPcap is installed.

3. A warning states that if an older version of WinPcap is already on the system, it is strongly recommended to reboot the system.

   Click Next.

4. Click Ok when the installation is complete.

   The software is installed.

Acquiring and Installing a License

Before you can run Lustre software, you must get and install the required license codes. To get the required license codes, you must provide the Flexlm HostID of all the workstations to the Autodesk Media and Entertainment Licensing Department.

For information on licensing background rendering, see "Installing and Configuring Burn for Lustre" on page 51.

To acquire and install license:

1. After you have installed Lustre, navigate to the *C:\Program Files\Autodesk\Lustre<new_version>* directory.
2. Double-click the *lmhostid.bat* program.

   A DOS shell appears and contains your machine's custom Flex lmHost ID.
3. Take note of the ID number.

   HINT: You can copy the number by selecting it and pressing **ENTER**.
4. Close the DOS shell window.
5. Request a license from the Autodesk Media and Entertainment Licensing Department. See "Requesting License Codes" on page 27.
6. Install the license codes. See "Installing the License Codes" on page 28.

Requesting License Codes

You can obtain application license codes by registering the application with the Autodesk Media and Entertainment Licensing Department by e-mail, telephone, or fax. All license codes obtained by e-mail, fax or telephone are temporary 30-day licenses that you use until your permanent license is confirmed and delivered.

NOTE: For emergencies, you can acquire an immediate temporary license code through the Autodesk Registration Web page (*www.autodesk.com*). Click the Support link, select your product, click Register Your Product, and then follow the step-by-step instructions. A 4-day license code is emailed to the address you provide.

To obtain license codes by e-mail or fax:

1. Prepare an e-mail or fax with the following information:
   - Company name
   - Contact name (with e-mail and phone contact information)
   - lmHost ID
   - Type of license from the following: Master Station, Lustre Station, Slave Renderer, BrowseD server, or Background Renderer
   - Requested term

   NOTE: If you want background rendering licenses, you must provide the Flexlm host ID for each rendering machine.

2. Send the completed form by e-mail or fax to submit the request.

To submit the form by:	Use:
E-mail	me.support@autodesk.com
Fax	1-514-954-7254

You will receive your temporary license code within 8 business hours.

To obtain license codes by telephone:

➤ Call the Licensing Department toll-free in North America at 1-800-925-6442 between 9 AM and 5:30 PM eastern standard time (EST). Outside of North America, call 1-514-954-7199 between 7 AM and 3 PM EST.

Installing the License Codes

After you receive the license codes from Autodesk, you must install them.

To install the license codes:

➤ Copy the license codes you receive into the following file:

• Windows: *C:\Program Files\Autodesk\Lustre<new_version>\license\license.dat*

Upgrading the DVS Firmware

Lustre now requires a DVS firmware upgrade. If your DVS is a Centaurus 1, see "To upgrade your Centaurus 1 DVS firmware:" on page 28. If your DVS is a Centaurus 2, see "To upgrade your Centaurus 2 DVS firmware:" on page 29.

NOTE: The DVS firmware update is not required for users previously running Lustre 2007 Extension 2 SP2.

To upgrade your Centaurus 1 DVS firmware:

1. Copy the new DVS Centaurus 1 firmware (*irisup_2.1.50b_36.exe*) from the release package to the local drive of the Lustre station. The DVS firmware (*irisup_2.1.50b_36.exe*) is located in the *DVS\firmware\centaurus I* directory within the package.
2. Double-click the *irisup_2.1.50b36.exe* file.

   A DOS shell will be opened and the DVS firmware procedure will be launched.
3. When the 'Are you sure that you want to continue?' message is displayed, type 'y' and then hit the **ENTER** key in the DOS shell.
4. Once the upgrading operation is complete, reboot the computer.

To upgrade your Centaurus 2 DVS firmware:

1. Copy the new DVS Centaurus 2 firmware (*lucyup_3.2.68.3_7_1.exe*) from the release package to the local drive of the Lustre station. The DVS firmware (*lucyup_3.2.68.3_7_1.exe*) is located in the *DVS\firmware\centaurus II* directory within the package.
2. Double-click the *lucyup_3.2.68.3_7_1.exe* file.

   A DOS shell appears and the DVS firmware procedure is launched.
3. When the 'Are you sure that you want to continue?' message is displayed, type 'y' and then hit the **ENTER** key in the DOS shell.
4. Once the upgrading operation is complete, reboot the computer.

Upgrading the DVS Driver

You might be required to upgrade the DVS driver on all Lustre workstations that have a DVS board for video input/output. Refer to the "Required Drivers for this Release" section in the *Release Notes* to see if you have the supported DVS driver version. If your driver is an older version, please upgrade your DVS driver.

NOTE: You can upgrade your DVS driver before, or after, you upgrade Lustre.

To verify the version of the DVS driver running on your system:

1. Open the Device Manager. Right-click My Computer and select Manage, and then click Device Manager.
2. In the Sound, video, and game controllers folder, right-click your DVS device and select Properties. Your DVS device may appear as Centaurus or HD Station.

   The Properties dialog box opens.
3. Click the Driver tab and verify that you have the correct driver version.
4. If you are using another version of the driver, you must upgrade it to the one supported for this release.

To upgrade the DVS driver:

1. In Windows Explorer, open the Bin folder for the current DVS driver. For example: *C:\Drivers\dvs\sdk2.7p28\win32\bin*
2. Double-click *dvsconf.exe*.
3. Click Unload in the DVSconf properties window.

4. Close the *dvsconf.exe* application.
5. Open the DVS\driver folder from the package.
6. Copy the *sdk2.7p57.zip* file to a temporary location on your computer.
7. Use a compression utility like Winzip to decompress the driver upgrade package and extract it into the DVS driver folder on the computer. For example:

   C:\Drivers\dvs
8. In Windows Explorer, open the Bin folder of the new DVS driver. For example:

   C:\Drivers\dvs\sdk2.7p57\win32\bin
9. Double-click *dvsconf.exe*.
10. Click Browse.
11. In the browser window, go to the DVS *sdk2.7p57* driver folder. For example:

    C:\Drivers\dvs\sdk2.7p57\win32\driver
12. Select the *dvswin2k.sys* file and click Open.
13. Click Load.
14. Close the *dvsconf.exe* application.

    The sdk2.7p57 DVS driver is now installed on the Lustre workstation.

Upgrading the NVIDIA Graphics Card Driver

If upgrading from a previous version of Lustre, upgrade your NVIDIA graphics card driver before you upgrade Lustre. You must upgrade the NVIDIA driver on all Lustre workstations that run the Lustre user interface.

NOTE: The NVIDIA graphics card driver upgrade is not required for users previously running Lustre 2007.

To identify the version of the NVIDIA driver running on your system:

1. Open the Device Manager. Right-click My Computer, select Manage, and then click Device Manager.
2. In the Display Adapters folder, right-click your NVIDIA device and select Properties.

   The Properties dialog box opens.
3. Click the Driver tab and verify the driver version is right for your workstation.

4. If you are using another version of the driver, you must upgrade it to the one supported for this release.

To upgrade your NVIDIA graphics card driver:

1. Download the driver upgrade package to a temporary location on your system.

   You can find the appropriate driver package here:

   ftp://ftp.discreet.com/pub1/release/lustre/lustre2008/drivers/Nvidia_<version>.zip

   NOTE: Contact Customer Support if you have any problems downloading the driver package. See "Contacting Customer Support" on page 6.

2. Use a compression utility like Winzip to decompress the driver upgrade package and extract it to a folder on your system.
3. Open the folder that contains the upgrade package you extracted and double-click *setup.exe* to start the driver update.

   The NVIDIA Install Shield Wizard opens.

4. Click Next to continue the upgrade procedure.

   A Hardware Installation warning message appears.

5. Click Continue Anyway.
6. Select Yes, I want to restart my computer now, and click Finish.

   After you reboot, the NVIDIA graphics card driver is installed.

Upgrading or Removing Lustre

To upgrade or reinstall the same version of Lustre, you must first remove the existing version from your system. When you remove Lustre, only the executable files and configuration files remain unmoved and unmodified. This means that you do not have to retrieve or reconfigure these files when you upgrade Lustre.

WARNING: If you are upgrading your Lustre application, make sure you save the old version of the files and directories listed in the section "Ensuring Upgrade Compatibility" on page 24, in a unique location before you remove the old version of Lustre.

To reinstall Lustre on a machine that already has the software installed:

1. Place the Lustre 2008 CD in your CD-ROM drive.
2. From Windows Explorer, double-click the *Lustre_2008.exe* file.

   The Lustre installer is launched. The previous version is detected and a dialog box appears.

3. Select one of the following options from the dialog box.

Select:	To:
Modify	Add files to the existing installation.
Repair	Add files and update existing files.
Remove	Remove all Lustre files in preparation for a clean installation. This option is strongly recommended.

4. Follow the on-screen instructions to complete the procedure.

4 Configuring Slave Rendering

Summary

Workflow for Configuring Slave Rendering

The slave rendering machine runs a service that renders modified frames when the artist moves to the next shot on the timeline from the Master Station or HD Station. With slave rendering, playback is enabled without compromising the interactivity of the Master Station or HD Station during creative sessions.

See the following table for a summary of the steps necessary to configure slave rendering.

Step:	Refer to:
1. Connect the slave rendering machine to the Master Station or HD Station.	The *Hardware Setup Guide* for your platform.
2. Install the slave rendering software and license.	Chapter 3, "Installing Lustre on Windows," on page 21.
3. On the Lustre Master Station or HD Station, configure the network port that is connected to the slave rendering machine.	"Configuring the Slave Rendering Network Port on the Master/HD Station" on page 34.
4. Share the storage on the Master Station or HD Station so that it can be accessed by the slave rendering machine.	"Sharing Lustre Master or HD Station Storage" on page 35.

Step:	Refer to:
5. On the slave rendering machine, configure the network port that is connected to the Master Station or HD Station.	"Configuring the Network Port on the Slave Rendering Machine" on page 37.
6. Start the slave render service.	"Starting and Stopping the Slave Render Service Manually" on page 38.
7. Set up the slave rendering machine to log in to the Master Station or HD Station.	"Setting Up the Slave Renderer to Connect to the Master or HD Station" on page 40.
8. Set up the configuration file so that Lustre projects can use slave rendering.	"Setting Up Lustre Projects to Use Slave Rendering" on page 41.
9. (Optional) If you have a previous version of the slave render software installed, you must disable it to ensure that the latest version works as expected.	"Disabling a Previous Version of the Slave Render Software" on page 42.
10. Render shots as you work.	The *Autodesk Lustre 2008 User's Guide*.

Configuring the Slave Rendering Network Port on the Master/ HD Station

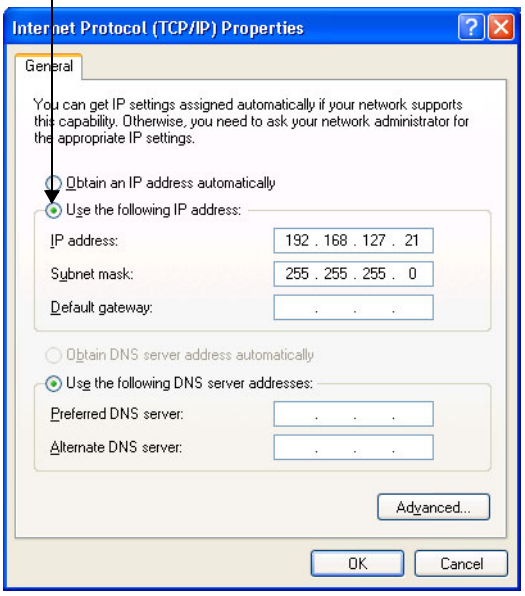
To enable communication over the crossover cable that connects the Lustre Master Station or HD Station to the slave rendering machine, you must configure the IP address of the network port on both machines.

The IP addresses of the network ports that connect the two machines must be on the same network. For example, you can use 192.168.127.21 for the Master or HD Station and 192.168.127.22 for the slave rendering machine.

To configure the IP address for the slave rendering network port on the Master or HD Station:

1. On the Master/ HD Station, open the Control Panel.
2. Double-click Network Connections.
3. Right-click the local area network connection to the slave renderer and choose Properties.
4. Select Internet Protocol (TCP/IP) in the Local Area Connection Properties dialog box and click Properties.

5. Choose the Use the following IP address option.



6. In the IP address field, type the IP address for the network port. For example, consider using the following for the Master or HD Station:

   192.168.127.21

7. Click OK to close the dialog box and activate your changes.

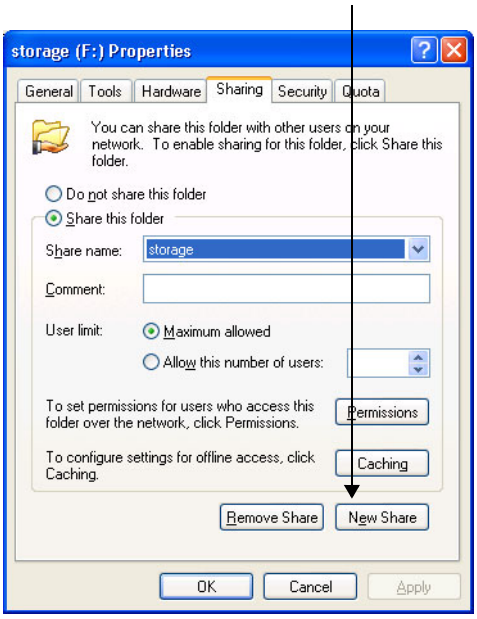
Sharing Lustre Master or HD Station Storage

You must share the storage attached to the Lustre Master or HD Station for the slave rendering machine to be able to process footage stored on either the Lustre Master or HD Station.

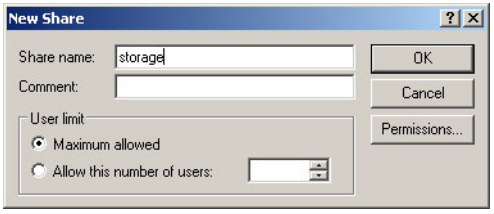
To share Lustre Master or HD Station storage:

1. Open Windows Explorer.
2. Right-click your storage disk and choose Properties.

3. Open the Sharing tab and click New Share.

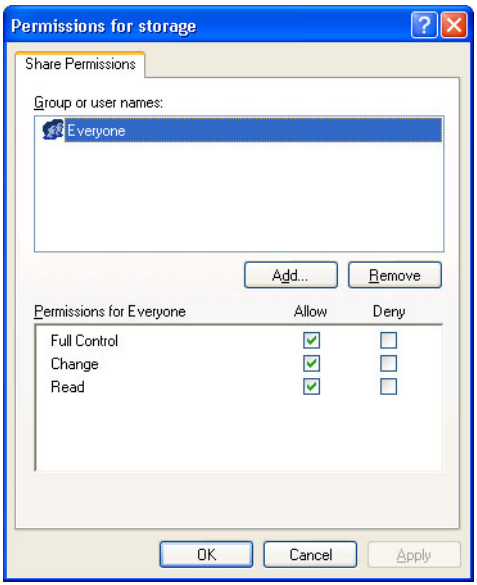


4. In the New Share dialog box, enter a Share name and set the User limit to at least one. You can set the User limit to Maximum allowed.



5. Click the Permissions button to open the Permissions dialog box.

6. Enable full read and write access to all users. Select the Allow option for Full Control, Change, and Read permissions.



7. Click OK to activate your changes and close all dialog boxes.

Configuring the Network Port on the Slave Rendering Machine

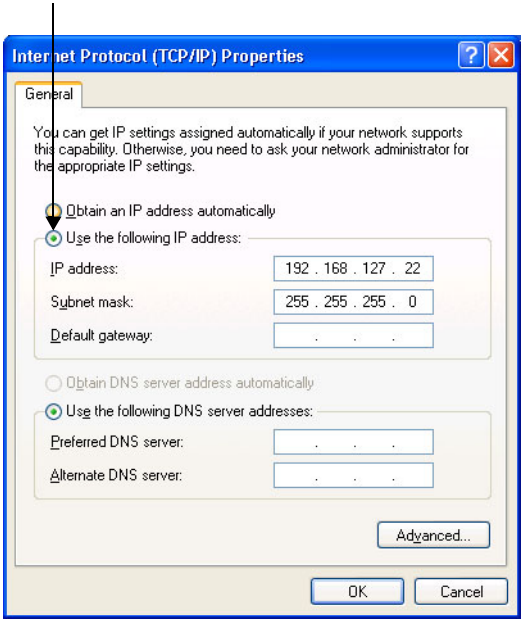
After you have configured the IP address of the network port and shared the storage on the Master or HD Station, you are ready to configure the IP address of the network port on the slave rendering machine.

The IP addresses of the network ports that connect the two machines must be on the same network. For example, you can use 192.168.127.21 for the Master or HD Station and 192.168.127.22 for the slave rendering machine.

To configure the IP address for the network port on the slave rendering machine:

1. On the slave rendering machine, open the Control Panel.
2. Double-click Network Connections.
3. Right-click the local area network connection to the slave renderer and choose Properties.
4. Select Internet Protocol (TCP/IP) in the Local Area Connection Properties dialog box and click Properties.

5. Choose the Use the following IP address option.



6. In the IP address field, type the IP address for the network port. For example, consider using the following for the slave rendering machine:

   192.168.127.22

7. Click OK to close the dialog box and activate your changes.

   HINT: To verify that the slave rendering machine can access the storage from the Master or HD Station, you can mount the storage on the slave rendering machine.

Starting and Stopping the Slave Render Service Manually

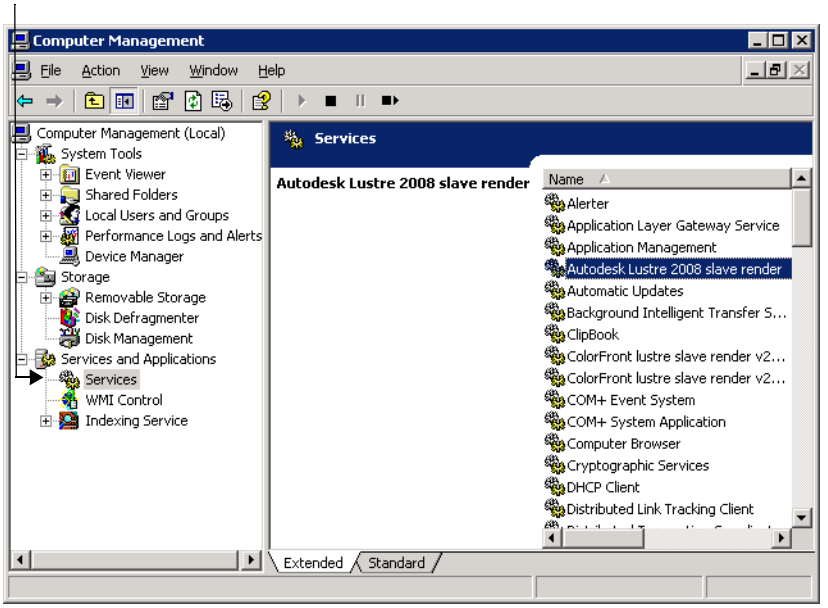
By default, the slave render service starts automatically whenever you restart the slave rendering machine.

You can manually start the service using the Microsoft Windows Computer Management tools.

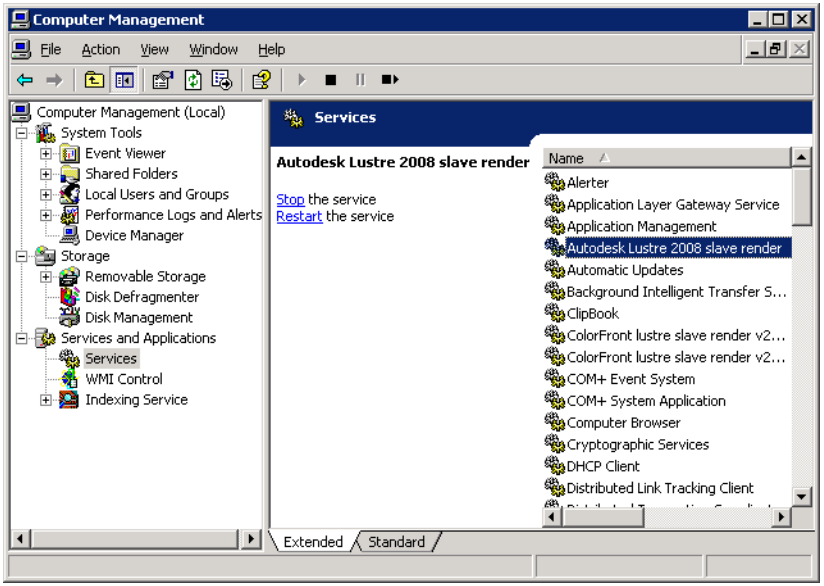
NOTE: If you have a previous version of the slave render service running on your system, you must disable it before you can run the latest versions. See "Disabling a Previous Version of the Slave Render Software" on page 42.

To start and stop the slave render service manually:

1. On the slave rendering machine, right-click My Computer and choose Manage.
2. In the Computer Management application, expand Services and Applications and then click Services.



3. From the list of Services, select Autodesk Lustre 2008 slave render.



4. Click the action you want to perform.

Click:	To:
Start	Start the slave render service.
Restart	Stop and start the slave render service.
Stop	Stop the slave render service.

When the service has started, the slave render icon appears in the Notification area of the Taskbar.

Setting Up the Slave Renderer to Connect to the Master or HD Station

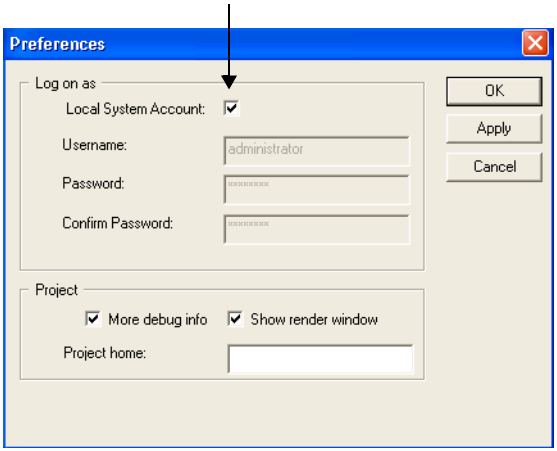
For the slave rendering machine to connect to the Master or HD Station, you must set up the Master or HD Station user name and password in the slave render preferences.

To set up the slave rendering machine to connect to the Master or HD Station:

1. In the Notifications area of the Windows Taskbar on the slave rendering machine, right-click the slave render icon and choose Preferences.

2. In the Preferences dialog box, disable the Local System Account option.

   NOTE: This option is enabled by default.



3. In the Username and Password fields, type the user name and password for the Administrator user on the Master or HD Station.
4. Click OK to accept the changes and close the dialog box.

Setting Up Lustre Projects to Use Slave Rendering

After you have configured the Master or HD Station and the slave rendering machine to communicate, you must set up your projects to use slave rendering:

- To configure all new projects to use slave rendering, you must set up the *init.config* file.
- To configure select projects to use slave rendering, you must set up the *lustre.config*file.

The following keywords control the communication between the Lustre Master or HD Station and the slave rendering machine. For more information on the configuration file keywords, see Appendix A, "Software, Project, and Wiretap Configuration Files," on page 65.

Keyword	Description
#SlaveRender	Enables/disables slave rendering by default. • If this keyword is uncommented, slave rendering is on by default. • If this keyword is commented, the slave rendering is off by default and users must activate it manually from Lustre.
#SlaveRender_HostName	The IP address or host name of the slave rendering machine.

Disabling a Previous Version of the Slave Render Software

You cannot run two versions of the slave render software on the same machine at the same time. If you are running the slave render software on a machine that has a previous version already installed, you must disable the previous version before you execute the newly installed version of the slave render software.

To disable a previous version of the slave render software:

1. Right-click My Computer and choose Manage.
2. Select Services and Applications and then Services.
3. Right-click the "ColorFront slave render <version#>" service and choose Stop.
   The slave render service stops running.
4. Right-click the "ColorFront slave render <version#>" service and choose Properties.
5. Set the start-up type of the service to be disabled and apply the change.
   The slave render service will not start again automatically at system start-up.

5 Configuring Background Rendering

Summary

About Background Rendering

During background rendering, all shots on the timeline are rendered by multiple computers over a background rendering network. This is different from the Slave Renderer, which renders shots on a shot-by-shot basis as they are colour graded to enable playback performance.

Background rendering in Lustre is performed using Burn for Lustre. This application is specific to Lustre and provides asynchronous background processing of Lustre render jobs. By off-loading rendering activities to remote Linux® servers, Lustre stations are freed up for interactive colour grading, while background rendering is sped up by splitting the task among multiple hosts.

Background Rendering Related Documentation

The procedures in this chapter reference the following documents.

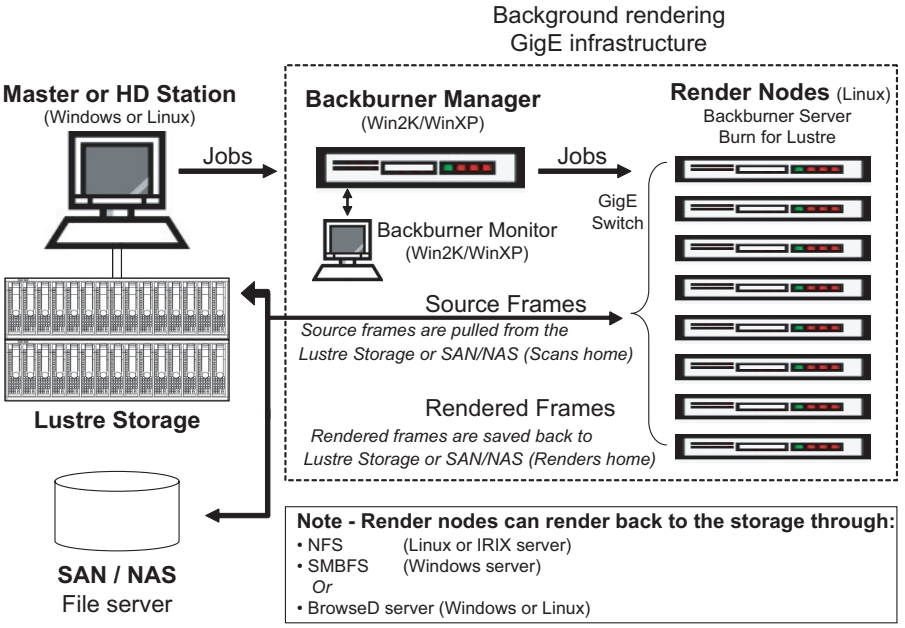
Autodesk Backburner 2007 Installation and User's Guide — Provides information on installing and configuring Backburner 2007. Use this guide to obtain Backburner information that does not relate directly to Lustre background rendering, such as details on setting up Web monitoring and troubleshooting tips.

Linux RHEW 4 Update 3 Installation and Configuration Guide — Provides instructions for installing Linux on the render node.

Background Rendering Components

The components of the basic background rendering package include Lustre, a background management and monitoring application running on a Windows 2000 or Windows XP Professional system (such as Backburner Manager and Backburner Monitor), and several Burn for Lustre rendering nodes running on Linux servers. The Windows and Red Hat Linux operating systems may be connected through an SMB mount point over a TCP/IP network. The TCP/IP network connections coordinate the operation of the Lustre background rendering system components.

The background rendering components are illustrated as follows.



NOTE: You can have up to eight render nodes on the background rendering network.

For faster access to remote locations for footage and metadata, BrowseD can be used instead of SMB mount points. BrowseD is covered in detail in Chapter 6, "Configuring BrowseD," on page 59. The other background rendering components are described as follows.

Lustre application — This is the client application. Running on a Windows workstation, Lustre rendering jobs are submitted for background rendering through the Render | Backburner menu.

Backburner Manager — This is the hub of the background rendering workgroup. Backburner Manager resides on a Windows 2000 or Windows XP workstation, which can be on the same system as the Master Station or on one of the Lustre Stations. When jobs are submitted from Lustre to Backburner Manager, Backburner Manager breaks each submitted job into tasks and distributes the tasks to the rendering servers on the network. To view the progress of the tasks, use Backburner Monitor.

You can either run Backburner Manager manually or run it as a Windows service. Running the Manager as a Windows service starts it automatically when the system is booted. Backburner Manager then runs continuously until either the workstation is shut down or the service is stopped.

Backburner Monitor — This is the user interface for the Backburner rendering network. It allows you to view and control jobs currently being processed. You can stop, restart, reorder or remove jobs completely using the Monitor. You also use Backburner Monitor to identify any render nodes that are not working and check the overall status of the rendering network.

Backburner Monitor runs natively on a Windows workstation but can also be run through a Web browser from any workstation on the network.

Backburner Server — This is a server that runs on a Linux workstation with Burn for Lustre. Backburner Server accepts commands from Backburner Manager to start and stop rendering tasks. Backburner Server communicates through a plug-in to execute rendering tasks.

Burn for Lustre — This is the Linux rendering engine that renders one or more frames from Lustre render jobs.

Shared storage mount point — This is the mount point on each Linux server that allows Burn for Lustre to transfer rendered frames/files to the Lustre storage system. It allows files to be exchanged between systems running either Windows, Linux, or IRIX® operating systems.

NOTE: The storage does not have to be mounted on the Burn for Lustre render nodes if you are using BrowseD for background rendering. See Chapter 5, "Configuring Background Rendering," on page 43.

Workflow for Setting Up Background Rendering

Burn for Lustre and the Backburner components interact across Windows and Linux workstations over the network. As a result, you must install Burn for Lustre and Backburner components on each of these workstations.

The following outlines the general workflow for installing and configuring background rendering.

Step:	Refer to:
1. Enable sharing on the system storing the Lustre project and render files.	"Setting Up Read/Write Access to the Storage on Windows" on page 46.
2. Install and configure Backburner Manager and Backburner Monitor.	"Installing Backburner Manager and Backburner Monitor" on page 47.
3. Connect Lustre to Backburner Manager so that it can receive render jobs.	"Configuring Lustre to Detect Backburner Manager" on page 48.
4. Set up the components of the render node.	"Setting Up Render Nodes" on page 48.
5. Specify the mount point of the background rendering nodes in Lustre.	"Specifying the Background Rendering Path in Lustre" on page 57.

Setting Up Read/Write Access to the Storage on Windows

For background rendering nodes to read and write files to the Lustre storage, you must set up the Lustre storage drive for shared access.

To share the storage:

1. In a Windows Explorer window, right-click the Lustre storage drive and choose Properties.
2. In the Properties window, click the Sharing tab.

   NOTE: If you do not see the Sharing tab, click Tools and choose Folder Options from the Windows Explorer menu. In the Folder Options window, show the View panel, and then disable the "Use Simple File Sharing (Recommended)" check box.

3. Enable Share This Folder.
4. Click New Share.
5. Enter a share name in the New Share dialog box.

   This name is used when defining a mount point.

6. Set the User limit to at least one. You can set the User limit to Maximum allowed.
7. Click the Permissions button.
8. In the Permissions for Everyone section, select the Full Control, Change, and Read options.
9. Click OK to close all windows.

Installing Backburner Manager and Backburner Monitor

You can install Backburner Manager on any Windows 2000 or Windows XP system attached to the same network as Lustre. Render jobs handled by Backburner can be viewed using Backburner Monitor from any Windows 2000 or Windows XP system or through a Web browser from any workstation on the network.

During installation, the Backburner Server application is also installed on the same Windows system. This Backburner Server is not used for Lustre background rendering and can be ignored.

NOTE: If Backburner is installed on a station where Lustre is also installed, performance degradation will occur due to Backburner conducting background processing at the same time that Lustre is running.

To install Backburner Manager and Backburner Monitor:

1. On the Windows system, navigate to the Lustre package directory and access the *Backburner_2007* folder.
2. Double-click the *backburner.exe* file.

   The Backburner for Windows installation program is launched.
3. Follow the on-screen prompts by clicking Next.
4. Click Finish to complete the installation.

Starting and Configuring Backburner Manager

To start and configure Backburner Manager, see "Starting Backburner Manager" and "Configuring Backburner Manager" in the "Installing Backburner" chapter of the *Autodesk Backburner 2007 Installation and User's Guide*.

Setting Up Backburner Manager as a Windows Service

You can set up Backburner Manager as a Windows service so it starts with the workstation. See "Setting Up Backburner Manager as a Windows Service" in the "Installing Backburner" chapter of the *Autodesk Backburner 2007 Installation and User's Guide*.

Configuring the Backburner Monitor to Detect Backburner Manager

In order to view Backburner Manager jobs and network status, you must connect the Backburner Monitor to Backburner Manager. See "Viewing Rendering Network Activity" in the "Managing a Rendering Network" chapter of the *Autodesk Backburner 2007 Installation and User's Guide*.

Configuring Lustre to Detect Backburner Manager

For Backburner Manager to receive render jobs, you must set up Lustre to connect to the Backburner Manager workstation:

- To configure all new projects to use background rendering, you must set the IP address of the Backburner Manager workstation in the *init.config* file. This value will be copied to the configuration of all subsequently created projects.
- To configure select or existing projects to use background rendering, you must set the IP address of the Backburner Manager workstation in the *lustre.config* file.

For more information on the configuration file keywords, see Appendix A, "Software, Project, and Wiretap Configuration Files," on page 65.

To configure Lustre to detect Backburner Manager:

1. In a text editor on the Master Station, open the configuration file.
2. Uncomment the following lines:

   ```
   #BurnManager_HostName 192.168.0.12
   ```

3. In the `BurnManager_HostName` line, enter the IP address of the Windows system on which Backburner Manager is installed. For example:

   ```
   BurnManager_HostName 172.19.23.161
   ```

   NOTE: Do not add any extra spaces or extra lines to this file, or its functionality will be compromised.

4. Save the configuration file.

Setting Up Render Nodes

You can set up as many as eight render nodes for background rendering with Lustre. On each Linux system intended for background rendering, you must do the following.

Step:	Refer to:
1. Verify that the render nodes meet the minimum system requirements.	"Render Node Hardware and Software Requirements" on page 49.
2. Install the appropriate Red Hat operating system (Enterprise Linux Workstation 3.0 Update 5).	*Linux Installation and Configuration Guide for RHEW 3 Update 5 for Discreet Lustre and Autodesk Incinerator*.
3. Configure each Linux server to mount the storage that contains the project render files.	"Mounting the Storage on the Render Nodes" on page 49.

Step:	Refer to:
4. Install Burn for Lustre.	"Installing Burn for Lustre" on page 51.
5. Connect the render nodes to Backburner Manager.	"Configuring Backburner Server to Detect Backburner Manager" on page 52.
6. Start the Backburner Server on each render node.	"Starting Backburner Server" on page 53.

Render Node Hardware and Software Requirements

The recommended minimum hardware requirements for Burn for Lustre render nodes are listed as follows.

Processor:	1 or 2 Xeon Intel Processor DP
Memory:	2 GB
Hard drive:	20 GB
Ethernet:	100/1000 Mbps
OS:	Red Hat Enterprise Linux Workstation 3.0 Update 5

Mounting the Storage on the Render Nodes

After Red Hat is installed, you must mount the Lustre storage on each render node using a Samba mount point. This involves identifying the IP address of the system that manages the storage and setting a mount point on each render node that points to the correct path on the storage. Also, for this mount point to be available when you restart the system, you must add an entry in the *fstab* file.

If the system that stores the render files is different from the system that stores the Project Home directories, you need two (or more) mount points. For example, if, in the Project Setup menu, the Project Home path is E:\SCENES and the Renders Full Home path is H:\RENDERS located on a central storage system, you must define a mount point for each path.

The BrowseD service can also be used to allow background render nodes to access the workstation's storage. BrowseD allows for fast access and requires a separate license. If you are using BrowseD for background rendering, you do not have to mount the storage on the render nodes. See Chapter 6, "Configuring BrowseD," on page 59.

To mount the storage on a render node:

1. Determine the IP address of the computer that manages the Lustre storage.

   If you are using direct attached storage only, this is the IP address of the Lustre Master Station or Lustre HD Station. You must also determine the IP address of your centralized file server if you are also using a server area network (SAN) or network attached storage (NAS).

2. On the Linux render node, log in as *root*.
3. Go to the root directory. In a Linux shell, type:

   ```
   cd /
   ```

4. Create a directory for the mount point. For example, type:

   ```
   mkdir /mnt/Lustre_storage
   ```

   NOTE: The directory name must be the same for the mount point on each Linux server. Also, the directory should not be created in the */root* directory, but in the *mnt* directory.

5. Change the permissions on this folder to allow read/write access. For example, type:

   ```
   chmod 666 /mnt/Lustre_storage
   ```

6. Mount the storage to the mount point. Type:

   ```
   mount -t smbfs -o username=<admin username>,password=<admin password>,rw //<IP address>/<share name> /<mount point>
   ```

   where:

   - `<IP address>` is the IP address of the storage system.
   - `<share name>` is the share name entered in the Sharing panel of the Properties window on the storage system. See "Setting Up Read/Write Access to the Storage on Windows" on page 46.
   - `<mount point>` is the path of the local mount point you created in step 4 of this procedure.

   For example, type:

   ```
   mount -t smbfs -o username=Administrator,password=danny,rw //172.16.60.226/storage /mnt/Lustre_storage
   ```

   HINT: If the command fails, make sure that the smbfs package was installed with Linux. This is a Samba filesystem and is required for setting up mount points.

To add an entry in the *fstab* file:

1. In a Linux shell, type:

   ```
   vi /etc/fstab
   ```

2. Press **INSERT** on the keyboard, and then add a line for your new mount point:

   ```
   //<IP address>/<share name> /<mount point><filesystem><mount options><dump options>
   ```

   For example, type:

```
//172.16.60.226/storage /mnt/Lustre_storage smbfs
username=Administrator,password=danny,rw 0 0
```

NOTE: Both examples are single lines.

3. To save the file, press **ESC**, type **:wq!**, and then press **ENTER**.
4. Restart the render node.

   When you restart your system, this remote location will mount automatically.

Installing and Configuring Burn for Lustre

Install and configure Burn for Lustre on each Linux render node. To install and configure Burn for Lustre, you must:

- Install Burn for Lustre
- Add the IP address of the machine where Backburner Manager is installed to the *manager.host* file on each render node
- Start the Backburner Server on each render node
- License Burn for Lustre

Installing Burn for Lustre

Launch the executable that installs Burn for Lustre on each Linux render node.

NOTE: When you install Burn for Lustre, the Backburner Server application is also installed on the Linux render node. This application communicates with Backburner Manager.

To install Burn for Lustre:

1. Open a Linux shell and log in as *root*.
2. Insert the Autodesk Lustre 2008 CD into the CD-ROM drive.
3. Go to the CD-ROM. Type:

   ```
   cd /mnt/cdrom
   ```

4. Copy the *Lustre_2008_Renderer* directory from the CD to a temporary directory on the host. For example, type:

   ```
   cp Lustre_2008_Renderer -r /usr/tmp
   ```

5. Go to the directory where you moved the directory. For example, type:

   ```
   cd /usr/tmp
   ```

6. Uninstall the old version of Lustre Burn by typing:

   ```
   ./INSTALL_<older Lustre package name> -uninstall
   ```

The older version of the Lustre package uninstalls.

7. Start the installation script by typing:

   ```
   ./INSTALL_LUSTRE_2008_BURN
   ```

   The Lustre package is installed. For instructions on obtaining and installing a Burn license, see "Licensing Burn for Lustre" on page 53.

8. Repeat this procedure on all Linux render nodes.

Configuring Backburner Server to Detect Backburner Manager

Backburner Server needs to be able to detect the location of Backburner Manager in order to provide status information concerning the render jobs. Set this in the *manager.host* configuration file located in the */usr/discreet/backburner/cfg* directory on each Burn for Lustre render node.

NOTE: This file should only contain the IP address of Backburner Manager.

To configure the Backburner Server to detect Backburner Manager:

1. On the Backburner Manager workstation, open a DOS shell by choosing Start | Run | Command.

2. Determine which IP address the Backburner Manager workstation uses to connect to the network. Type:

   ```
   ipconfig /all
   ```

   Information about all the network adapters is displayed. You will find the required IP address in the section Ethernet Adapter Local Area Connection under the IPAddress entry.

3. On each render node, open a shell and log in as *root*.

4. Type:

   ```
   cd /usr/discreet/backburner/cfg
   ```

5. Use a Linux text editor such as *vi* to edit the file. For example, type:

   ```
   vi manager.host
   ```

6. Specify the IP address of the host where Backburner Manager is installed. For example:

   ```
   172.19.23.161
   ```

7. To save the file, press **ESC**, type `:wq!`, and then press **ENTER**.

Starting Backburner Server

You must start the Backburner Server daemon on each Linux system for the first time. Once it is started the first time, the daemon will start automatically.

To start Backburner Server:

1. Log in to your Linux system as *root*.
2. In a Linux shell, type:

   ```
   cd /
   ```

3. Type:

   ```
   /etc/init.d/backburner_server start
   ```

4. You can verify that Backburner Server is properly configured by checking the log file *backburnerServer.log*. Type the following to view the file:

   ```
   tail -f /usr/discreet/backburner/log/backburnerServer.log
   ```

   The file should contain the following lines:

   ```
   <INF>: Loading plugin: Lustre 3.0 renderer plugin
   ```

5. To stop viewing the file, press **Ctrl+C**.
6. Repeat these steps to start Backburner Server on each Linux server participating in the background rendering network.

   If you cannot start the Backburner Server, contact Customer Support.

NOTE: If you need to stop or restart Backburner Server, use one of these commands:

```
/etc/init.d/backburner_server stop
```

```
/etc/init.d/backburner_server restart
```

Licensing Burn for Lustre

You need a license for Burn on each Linux render node. You have two possible licensing schemes:

- Node-locked, which means that each render node has its own license
- Floating, which means that licenses are centralized on a license server

To obtain Burn for Lustre node-locked licenses for each Linux Burn node:

1. Navigate to the */usr/autodesk/lustre2008* directory. Type:

   ```
   cd /usr/autodesk/lustre2008
   ```

2. Type:

```
./lmhostid
```

The following lines appear:

```
lmhostid - Copyright (c) 1989-2003 by Macrovision
Corporation. All rights reserved.The FLEXlm host ID of this
machine is "00025567c66f"
```

3. Take note of the host ID number.
4. Repeat the previous steps on all other Linux render nodes to obtain their host IDs.
5. Request license codes from the Autodesk Media and Entertainment Licensing Department. See "Requesting License Codes" on page 27.

To install a node-locked license on each render node:

1. Log in to the render node as root.
2. Create a directory to which the license file will be copied. Type:

   ```
   mkdir -p /usr/local/flexlm/licenses/
   ```

3. Navigate to the directory. Type:

   ```
   cd /usr/local/flexlm/licenses/
   ```

4. In a Linux text editor such as *vi*, create a file called *DL_license.dat*. For example, type:

   ```
   vi DL_license.dat
   ```

5. Press **INSERT** to enter insert mode.
6. Enter the information provided by the Licensing Department in this file.
7. To save the file, press **ESC**, type **`:wq!`**, and then press **ENTER**.
8. Repeat this procedure for each Burn node.

   NOTE: The license directory and filename are case-sensitive and must be created and named exactly as specified.

To confirm that the node-locked licenses were properly installed:

➤ Test a few Command Line Renderer commands on each Burn node. For example, type:

```
./render -s a -g a -r full
```

This command will likely produce a few error messages. These can be disregarded. Among the messages is the following line that confirms that the node-locked license is properly installed:

```
Flexlm: Found license.
```

Installing Floating Licenses for Background Rendering

As an alternative to licensing Lustre background rendering stations by installing a license on each machine individually, you can install a single network license on a license server that will automatically provide a license to all registered machines.

The license server can be any of the render nodes on the rendering network.

To obtain the Lustre network license, contact the Licensing Department with the *lmhostID* and host name of the license server.

To obtain the network license:

1. Navigate to the */usr/autodesk/lustre2008* directory. Type:

   `cd /usr/autodesk/lustre2008`

2. Type:

   `./lmhostid`

   The following lines appear:

   ```
   lmhostid - Copyright (c) 1989-2003 by Macrovision
   Corporation. All rights reserved.The FLEXlm host ID of this
   machine is "00025567c66f"
   ```

3. Take note of the host ID number.

4. Request license codes from the Autodesk Media and Entertainment Licensing Department. See "Requesting License Codes" on page 27.

To install the license server:

1. Log in to the license server as *root*.

2. Navigate to the directory containing the license server installation script. Type:

   `cd /mnt/cdrom`

   `cd Lustre2008_Renderer_license_daemon`

3. Check the contents of the directory by typing:

   `ls`

4. Verify that the directory contents include the installation script file *INSTALL_LINUX*.

5. Start the installation script by typing:

   `./INSTALL_LINUX`

To start the license server:

1. Log in to the license server as root.
2. Go to the *licenses* directory by typing:

   ```
   cd /usr/discreet/licserv/licenses/
   ```

3. In a Linux text editor such as *vi*, create a file called *DL_license.dat* by typing:

   ```
   vi DL_license.dat
   ```

4. In this file, enter all the information submitted to you by the Licensing Department upon your registration.
5. Save and close the file.
6. Start the license server by running the following commands:

   ```
   /etc/init.d/license_server start
   ```

   NOTE: The license server starts/stops automatically when the machine is booted/shut down. You can stop and restart the server manually by running one of the following commands:

   ```
   /etc/init.d/license_server stop
   ```

   ```
   /etc/init.d/license_server restart
   ```

Use the following procedure for each Linux render node on which Lustre is installed.

To enable the render nodes to contact the license server:

1. Log in to each Linux render node as root.
2. Navigate to the license directory. Type:

   ```
   cd /usr/local/flexlm/licenses/
   ```

3. In a Linux text editor such as *vi*, open the *DL_license.dat* file and type:

   ```
   vi DL_license.dat
   ```

4. In this file, copy the first three lines of the information submitted to you by the Licensing Department upon your registration. For example:

   ```
   SERVER burn-01 000255c720ce
   ```

   ```
   VENDOR lustre
   ```

   ```
   USE_SERVER
   ```

5. Save and close the file.

   NOTE: Each render node must be able to contact the license server. Use ping from each node to the license server to confirm that the two machines can communicate.

Specifying the Background Rendering Path in Lustre

For the last step in setting up background rendering, you must specify the mount point in the Lustre | Render Backburner menu that the background render nodes use to mount the Lustre project folders.

To add the storage path in Lustre:

1. Start Lustre.
2. In the Main menu, click Render, and then click Backburner.

   The Render Backburner menu appears.
3. Enter the location of the Project Home, Scans Full Home, Scans Half Home, Renders Full Home and Renders Half Home as seen from the Linux render nodes. You only need to enter those locations that are defined for the project in the local project setup, located in the Setup | Project menu.

   The path required in these fields is comprised of the directory defined for the mount point (see "Mounting the Storage on the Render Nodes" on page 49) and the actual storage folder. For example, if the Project Home is *E:\SCENES* in the Project Setup menu, and the Linux mount point directory is named *Lustre_storage*, the Project Home path to enter in this menu is:

   /mnt/Lustre_storage/SCENES
4. Press **ENTER**.
5. To verify that you have entered the proper path for each project, look at the project configuration file in *C:\Program Files\Autodesk\Lustre2008\project*<`project_name`>*\home.config*. The value in the `burn_project_home` line is sent to the Linux render node. This value must match a mount point on the background render nodes.

6 Configuring BrowseD

Summary

About BrowseD

BrowseD is a Lustre file server with its own high level protocols that optimize network transfers. BrowseD provides Lustre workstations and background render nodes with high-speed access to centralized storage.

Consider using BrowseD if your facility uses a storage area network (SAN), network attached storage (NAS), or a network file server. In these configurations, you install and configure BrowseD on the computer that is connected to the centralized storage and configure all workstations to use the BrowseD server to access Lustre project files.

The recommended Lustre configuration in a digital film or high-resolution workflow is to store the full-resolution images on a SAN, NAS, or file server, and the proxies locally. For information on configuring your projects, see the *Autodesk Lustre 2008 User's Guide*.

NOTE: You can run BrowseD on the Lustre Master Station or Lustre HD Station to provide Burn for Lustre background render nodes high-speed access to local storage for background rendering. However, this is not recommended. The BrowseD process requires extra bandwidth from the storage and adds extra load on the host system's CPU. Real-time functionality cannot be guaranteed with this setup—2K playback speed and video input and output will not function correctly.

Workflow for Configuring BrowseD

See the following table for a summary of the steps necessary to configure BrowseD.

Step:	Refer to:
1. Install and license BrowseD on the computer that is connected to the storage.	Chapter 3, "Installing Lustre on Windows," on page 21.
2. Start the BrowseD server.	"Starting and Stopping the BrowseD Service" on page 60.
3. On all machines (like the Lustre Master Station, the Lustre HD Station, and background render nodes), configure the *browsed.config* file to connect to the BrowseD server.	"Configuring Workstations to Use the BrowseD Server" on page 62.
4. Make the remote storage accessible from the file browser on the Lustre workstations.	"Making BrowseD Directories Accessible from the Lustre Browser" on page 63.
5. Configure background rendering to use the BrowseD server.	"Using BrowseD for Rendering with Burn for Lustre" on page 64.

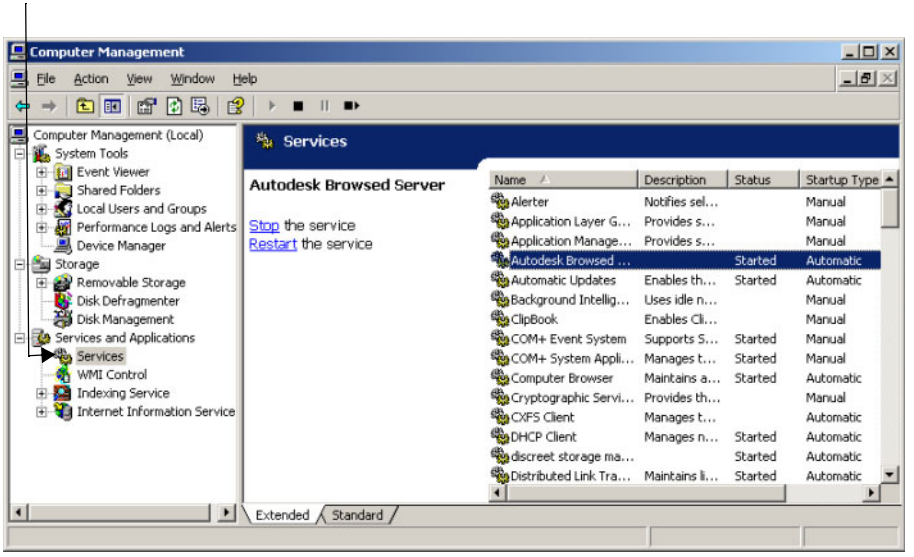
Starting and Stopping the BrowseD Service

The BrowseD service starts automatically after you install it. You can manually start the service using the Microsoft Windows Computer Management tools or the command line interface. The service starts automatically whenever the computer running BrowseD restarts.

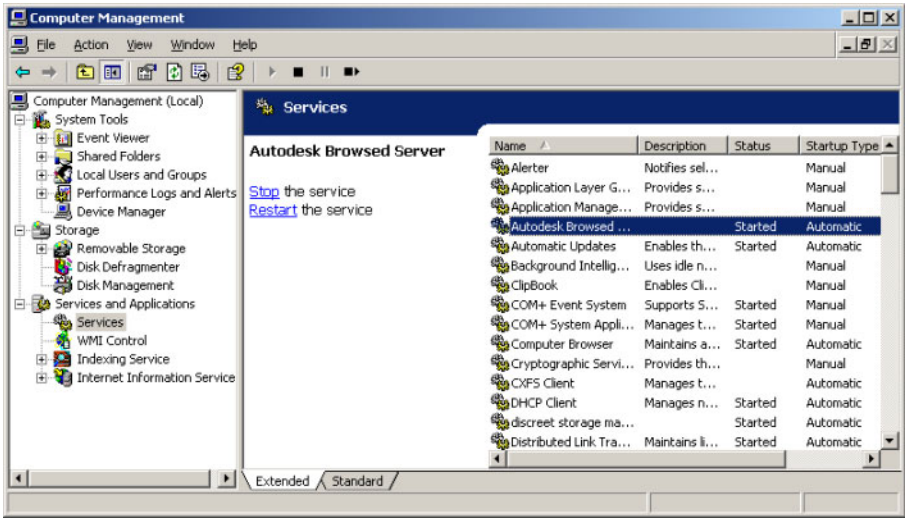
For instructions on installing and licensing BrowseD, see Chapter 3, "Installing Lustre on Windows," on page 21.

To start or stop BrowseD through My Computer:

1. Right-click My Computer and choose Manage.
2. In the Computer Management application, expand Services and Applications and then click Services.



3. From the list of Services, select Autodesk Browsed Server.



4. Click the action you want to perform.

Click:	To:
Start	Start the BrowseD service.
Restart	Stop and start the BrowseD service.
Stop	Stop the BrowseD service.

To start or stop BrowseD using the Command window:

1. Choose Start | Run.
2. In the Run dialog box, enter **cmd** and then click OK.
3. In the Command window, enter **C:\Program Files\Autodesk\<version>** and then press **ENTER**.
4. Do one of the following:
   - To start BrowseD, type the following and then press **ENTER**:

     ```
     >browsed.exe /start
     ```

   - To stop BrowseD, type the following and then press **ENTER:**

     ```
     >browsed.exe /stop
     ```

Configuring Workstations to Use the BrowseD Server

You must configure the *browsed.config* file for all workstations, such as Burn render nodes or Lustre workstations, that will use the BrowseD server to access centralized storage.

Use a text editor to edit the *browsed.config* file:

- On Linux workstations (including Burn render nodes), the *browsed.config* file is stored here:

  /usr/autodesk/<version>

- On Windows workstations, the *browsed.config* file is stored here:

  C:\Program Files\Autodesk\<version>

Use the following table as a reference when configuring the *browsed.config*.

Keyword	Required values
Username <username>	Enter the administrative user on the BrowseD server, for example, *root* on Linux and *Administrator* on Windows.
Password <password>	Enter the password for the administrative user as defined above.

Keyword	Required values
Port <port#>	All computers on the BrowseD network must use the same port to communicate. Set to 1055, the default.
#Host <IP_address>	If configuring *browsed.config* on a Lustre workstation, uncomment the keyword and add the BrowseD host's IP address. This makes centralized storage directories appear in the Lustre browser. If configuring a render node, leave the keyword commented out.

Making BrowseD Directories Accessible from the Lustre Browser

When using centralized storage, you must make the directories on the BrowseD server accessible to all Lustre workstations through the browser. To do this, you must uncomment the Host keyword in the *browsed.config* file and provide the IP address of the BrowseD server. See "Configuring Workstations to Use the BrowseD Server" on page 62.

The mapped directory will appear in the Lustre browser.

Using BrowseD for Rendering with Burn for Lustre

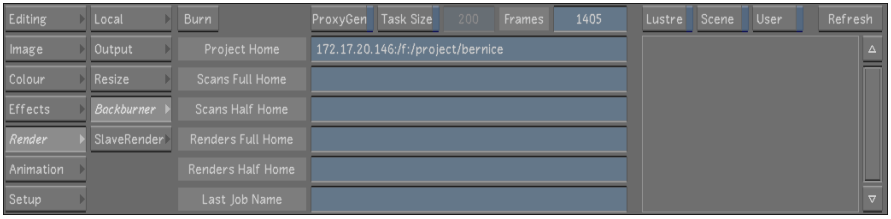
You must configure the Lustre Render Backburner paths with the IP address of the BrowseD server to use BrowseD to render with Burn for Lustre.

For information on configuring background rendering for Lustre, see Chapter 5, "Configuring Background Rendering," on page 43.

To use BrowseD for rendering with Burn for Lustre:

1. In Lustre, set the local project paths in the Setup Project menu. For information on configuring your projects, see the *Autodesk Lustre 2008 User's Guide*.
2. Open the Render Backburner menu and add the IP address of the BrowseD server to each path.

   For example, if your Project_Home is set to the *bernice* folder on drive *f*: of a station that has an IP address of *172.17.20.146*, the Project_Home path on the Render | Remote page should read *172.17.20.146:/f:/project/bernice*.



A

Software, Project, and Wiretap Configuration Files

Summary

Configuration File Overview

The configuration files define all the necessary settings Lustre needs to recognize various hardware and software settings on the Master Station or Lustre HD Station, and on the dedicated render station. Lustre uses three configuration files. Two are identical but are used at different times. The third is used specifically for accessing remote Stone filesystems.

Edit this file:	To edit settings for:
On Windows: *C:\Program Files\Autodesk\lustre*<version number>\	All of Lustre. These will be the default settings used if no project is loaded or recognized.
On Windows: *C:\Program Files\Autodesk\lustre*<version number>*project*\<project name>\	The specific project. The settings defined in this configuration file will only be used if the project is loaded in Lustre.
On Windows: *C:\Program Files\Autodesk\lustre*<version number>\	Stone filesystem access. The host IP addresses defined here will make it possible to access the contents of remote Stone filesystems from the Lustre file browser.

When creating new projects, the newly created *lustre.config* file will take all the default values from the *init.config* file. Therefore, if you change a value in the *init.config* file, the change must also be made in the *lustre.config* files.

The configuration file can be opened with a text editor and edited quite easily. Once changed, the file must be saved and Lustre restarted.

In addition to the configuration files, a file called *.lustresetup* is documented for here for troubleshooting purposes only. See "The .lustresetup File" on page 74.

Configuration File Default Options

The following table describes all the options available in the configuration file. Options preceded by a pound symbol (#) are commented out; that is, their value is ignored by Lustre. To enable the parameter, simply delete the # symbol.

Parameter	Default	Function
#Printerlight calibration		
PrinterLight_Step	6.25	Changes the code values corresponding to one lab light.
PrinterLight_HalfStep	3.125	Allows a finer control step for more precision when adjusting the printer light.
PrinterLight_Base	25	This value is used as the base light, corresponding to the unity setting.
#PrinterLight_Inverse	commented out	Enable to switch the printer light density mode.
#ControlPanel config		
EthernetCardNumber	1	The port number in which the Ethernet card is installed. If you are experiencing problems with the connection for the Tangent CP100 Control Surface, try entering another port number here.
ControlPanelFreq	24	Defines the communication speed between the Tangent CP100 Control Surface and the Master Station.
#Calibration config		
Calibration_Steps	10	Specifies the number of monitor calibration steps performed.
#Undo mechanism		
#ChangeShot	EmptyUndoBuffer	When enabled, the undo buffer is flushed after changing the shot.
#ChangeShot	Do	When enabled, Lustre forces a Do after changing the shot.
DefaultMaskType	Saturated	Specifies the type of default mask. Choices are grayscale (default) and saturated.
PanScanUpdate	Continuous	When enabled, Lustre immediately updates Pan&Scan changes.
#Backup settings		

Parameter	Default	Function
#History	commented out	When enabled, a history of all the saved versions of the current scene is saved in the current scene's *sacc_data/bak* directory.
#Backup_To_System	commented out	When enabled, a copy of all the metadata is saved on the system disk in the Lustre home install directory.
#Autosave	5	When enabled, your work is saved every 5 minutes, unless another minute value is entered for this parameter. This feature is commented out by default.
PixelAspect	1.0	Changes the default aspect ratio of the second display. 1.0 is the default value for film and HD. NTSC uses a 0.9 pixel aspect ratio and PAL uses 1.07. Anamorphic uses a value of 2.
DualType	Stretch	Defines how the image is displayed on the secondary monitor. Options are: - Stretch: fits the image to use the entire monitor (aspect ratio change). - Fit: enlarges the image as much as possible and keeps the aspect ratio. - Centre: centres the image without any zooming.
#CalibWait	500	Defines the timeout for the Xrite calibration.
BWMonitorMarkers	95 685	Defines the values of the lines set in the histogram and waveform monitor.
#ReferenceImage	v:/project1/scene1/00163.dpx	Uses a path to set a reference image. Once set, press **SHIFT+K** to load the image into the single filesystem for reference. Afterward, view the image by pressing **L**.
#DisableGradeBinMagnifier	commented out	Disables the magnifying pop-up when you hover an item in the Grade bin.
#MustReparse	commented out	When enabled, Lustre is forced to reparse the project structure and source material at start-up.
FirstLastKeyMove	commented out	When enabled, moving a keyed parameter automatically moves the first or last key.
#TimelineCenterDisable	commented out	Disables the timeline in the Animation menu. Selecting a shot will no longer centre the active new shot.
#TimelineBigCenterDisable	commented out	Disables the big timeline in the Animation menu. Selecting a shot will no longer centre the active new shot.

Parameter	Default	Function
#KeepImagePosition	commented out	When disabled, images can no longer be moved in the interface.
#LinearDefault	commented out	If enabled, inserting a new shot into the timeline will switch off its log-to-lin conversion by default.
#FirstFrameNumber	1	Defines the first frame's number in the timeline display.
#StartShotFrameNumber	0 1	Defines the default frame number at the start of a shot.
#SceneConsistency	AutoCheck	This setting has two modes: AutoCheck and AutoRepair. - AutoCheck: when set, this option makes Lustre check the cut files when loading to check for inconsistencies in the metadata. Results are printed out to the console window. - AutoRepair: when set, in addition to the above, inconsistencies will be repaired.
#HideRenderFlag	commented out	When enabled, Lustre does not display the render flag in the upper-left corner of the screen.
#OpenHomeAtStart	commented out	When enabled, the Editing | Browse menu will display the content of your project home directory. That is, it will open the project home directory by default instead of displaying files at the drive level.
#SlaveRender	commented out	When enabled, sets the Slave Renderer to be on by default.
#SlaveRender_HostName	192.168.1.2	This address is set to the Slave Renderer's computer name or IP address.
#BurnManager_HostName	192.168.0.12	This address is set to your Burn Manager machine's IP network name or IP address.
#BurnPriority	50	Defines the priority of a job sent to Backburner.
#BurnSkipErrors	commented out	Skips the automatic abort on error when using Backburner.
#Video Sync Modes		
#SyncMode InternalSync	commented out	Enables a free-running, internal sync for SD and HD.
#SyncMode ExternalSync	commented out	Locks to the available SDI input signal.
#SyncMode AnalogSDSync	commented out	Genlocks to the analog sync connected to the sync input. Available for SD only.

Parameter	Default	Function
#SyncMode DigitalSDSync	commented out	Genlocks to the digital sync connected to the sync input. Available for SD only.
#SyncMode Bilevel03volt	commented out	Genlocks to the bilevel sync. Bilevel signal 0.3V peak. Available for HD only.
#SyncMode Bilevel4volt	commented out	Genlocks to bilevel sync. Bilevel signal 4V peak. Available for HD only.
#SyncMode TrilevelSync	commented out	Genlocks to trilevel sync connected to the sync input. Available for HD only.
#SyncMode TTLHFVF	commented out	Genlocks to HV sync signal. Horizontal falling, vertical falling. Available for HD only.
#SyncMode TTLHRVF	commented out	Genlocks to HV sync signal. Horizontal rising, vertical falling. Available for HD only.
#SyncMode TTLHRVR	commented out	Genlocks to HV sync signal. Horizontal rising, vertical rising. Available for HD only.
#HorizontalDelay	0	Sets the number of pixels by which the horizontal sync output is delayed in relation to the incoming sync. Half pixel increments are available for SDTV devices, whereas two-pixel increments are available for HDStationPRO. The maximum delay is one line length.
#VerticalDelay	0	Sets the number of pixels by which the vertical sync output is delayed in relation to the incoming sync. Half pixel increments are available for SDTV devices, whereas two-pixel increments are available for HDStationPRO. The maximum delay is one line length.
#Enabling and configuring the new Autodesk Panel		
#AutodeskPanels	commented out	Instructs Lustre to enable the Autodesk Control Surface. If the keyword is not entered, Lustre will look for the Tangent CP100 Control Surface.

Parameter	Default	Function
#Panel-BT<Panel_IP>	commented out	Enables the Colour Grading panel. After entering the keyword, enter the panel IP address. This combines the first three numbers of the IP address of the system to which the panel is connected, and the panel ID. For example, if the first three numbers of the Master Station are 192.168.127 and the panel ID is 10, then the panel IP address is 192.168.127.10. This number must be different from the IP address of the Ethernet interface. If they are the same, change the Ethernet interface IP address.
#Panel-K <Panel_IP>	commented out	Enables the Function panel. After entering the keyword, enter the IP address. This combines the first three numbers of the IP address of the system to which the panel is connected, and the panel ID. For example, if the first three numbers of the Master Station are 192.168.127 and the panel ID is 9, then the panel IP address is 192.168.127.9. This number must be different from the IP address of the Ethernet interface. If they are the same, change the Ethernet interface IP address.
#Panel-T <Panel_IP>	commented out	Enables the Navigation panel. After entering the keyword, enter the IP address. This combines the first three numbers of the IP address of the system to which the panel is connected, and the panel ID. For example, if the first three numbers of the Master Station are 192.168.127 and the panel ID is 8, then the panel IP address is 192.168.127.8. This number must be different from the IP address of the Ethernet interface. If they are the same, change the Ethernet interface IP address.
#Preventing the user to hit unallowed CC functions while in gpu mode		
GpuNoAutoSwitch	commented out	Prevents you from being switched to CPU mode when you use a feature that is not supported by GPU preview processing while in GPU preview processing mode. When you enable the keyword, all features that are unsupported by GPU preview processing are disabled and made unavailable (greyed-out) in the user interface.

Parameter	Default	Function
ClusterPlayDelay	4	Incinerator-specific keyword that defines the number of frames that will be cached from the timeline before playback begins.
#ClusterSmoothPlayback	commented out	Incinerator-specific keyword that diminishes the "pumping" effect that can occur when grades are slower than realtime. "Pumping" refers to the effect produced when nodes render all frames at an equal rate even when the frame rate is reduced. This keyword estimates the rate at which Lustre receives the rendered frames, and then attempts to adjust the playback speed to the estimated rate.

Configuration File Supplemental Options

The following table describes options that can be added to the configuration file to supplement Lustre functionality.

Parameter	Function
AudioPlaybackRate	Allows users to lock *.wav* file playback speed (fps) to a specific value, thereby making the audio fps rate independent of the video fps rate. For example: AudioPlaybackRate 25. By default, Lustre plays both video and audio tracks at the same rate.
ControlPanelNoAuto	Disables automatic detection of the Tangent CP100 Control Surface.
DisableEject	Disables automatic tape eject during EDL capture.
DisplayType LCD/CRT	Indicates the type of monitor being used. This keyword is required in order to calibrate an LCD monitor from the Setup Calibrate menu, as the application defaults to CTR setup, unless otherwise configured. For an LCD monitor, enter DisplayType LCD in the *init.config* file. For a CRT monitor, enter DisplayType CRT.
PlayoutHighSpeed	Disables screen updates during playout.
WtServerNoAuto	Disables automatic detection of Stone filesystems on the network.
NoAutoDustLoad	Ensures that dust metadata is not automatically loaded when you load the grade file.

Parameter	Function
BlackClipColor	Allows the user to define the black clip colour. After entering the BlackClipColor keyword, enter the following four numbers: the colour's bit depth, followed by the red, green and blue bit depth ranges. For example: BlackClipColor 8 152 215 058.
KeepSettingsAfterCapture	Ensures that the colour space architecture you specify in your project-level and output settings are maintained after you perform a video capture.
DPXReelname	Matches the EDL reelname to the reelname in the DPX header during EDL assembly.
MarryType PrimText	Ensures that the Marry files are text based and saves the primary offsets as 10-bit code values.
Backrender_RefreshTime	Sets the number of seconds that elapse before the Slave Renderer progress indicator is updated. For example, to set the update interval to every three seconds, enter: Backrender_RefreshTime 3.
DisableCadenceRedetect	Allows you to disable the automatic pulldown cadence detection on every shot for capture and playout. When the keyword is enabled, Lustre detects the pulldown cadence value once and then applies it to all other capture and playout processes.
DDRSlaveDevice	Enables Lustre to control a DDR device.
EditingEverywhere	Makes editing hot keys available from all menus.
RenderFullRes	Allows you to render shots from Burn and the Slave Renderer at full resolution when working with proxies.
MatchCustom	Specifies the XML metadata field to be used by the Custom match option selected from the Browse menu. Enter the MatchCustom keyword followed by the XML field name. For example: MatchCustom DPXKeyCodeEnd.
MatrixMode ccir709digital	Maps colours for ccir709 using the full range of YUV and RGB.
MatrixMode ccir709cgr	Maps the 64-960(Y)/940(UV) range of YUV for ccir709 to the full RGB range.
MatrixMode ccir601digital	Maps colours for ccir601 using the full range of YUV and RGB.
MatrixMode ccir601cgr	Maps the 64-960(Y)/940(UV) range of YUV for ccir601 to the full RGB range. This is the PAL default.
MatrixMode smpte274digital	Maps colours for smpte274 using the full range of YUV and RGB.
MatrixMode smpte274cgr	Maps the 64-960(Y)/940(UV) range of YUV for smpte274 to the full RGB range. This is the HD default.

Parameter	Function
MatrixMode User	Allows you to specify a custom colour space conversion matrix. After the keyword, include the path for the text file that contains the matrix definition. For example: MatrixMode User "D:\Kaktusz2\MatrixDefine.txt". The matrix contains keywords and constants for each conversion. For example: R2Y 0.18256 G2Y 0.61426 B2Y 0.06201 R2V -0.10065 G2V -0.33856 B2V 0.43921 R2U 0.43921 G2U -0.39893 B2U -0.04028 All lines in the matrix definition file that begin with a # are ignored.
UseCGR	Ensures that mapping uses only the 64-940(960) range and not the whole YVU range.
NVidiaFullRange	Allows the NVIDIA card to output full 0-1023 video ranges for either single link or dual link video formats.
RepoType Lanczos	Enables the Lanczos reposition filter.
RepoType Mitchell 3 0.2 0.4	Enables the Mitchell reposition filter.
RepoType CatmullRom	Enables the CatmullRom reposition filter.
RepoType Lanczos3lobe	Enables the Lanczos3lobe reposition filter.
ProxyGenFilter Normal	Enables the Lanczos proxy generation filter.
ProxyGenFilter Mitchell 2 0.2 0.4	Enables the Mitchell 2 0.2 0.4 proxy generation filter.
ProxyGenFilter CatmullRom	Enables the CatmullRom proxy generation filter.
ProxyGenFilter Lanczos	Enables the Lanczos proxy generation filter.
ProxyGenFilter Sinc	Enables the Sinc proxy generation filter.

Configuring Wiretap to Access Remote Stone Filesystems

By default, all Stone filesystems on the network are automatically detected and displayed in the file browser. However, if your facility has numerous Stone filesystems and the automatic detection process is slowing down system performance at startup, you can disable the process by entering the WtServerNoAuto keyword in the *lustre.config* file.

When this keyword is used, you must identify each remote Stone filesystem manually. This is done by entering the host IP address of each filesystem in the *wt.config* file.

To define the host IP addresses to be browsed in Lustre:

1. Access the *wt.config* file located in the same directory as the Lustre executable.
2. Enter one IP address per line. For example:

```
#Wiretap Server Address

192.168.20.56

172.17.20.151
```

3. Save and close the file.

   Once the configuration is complete, a list of available IP addresses will appear in the Lustre browser, located on the right side of the screen.

The *.lustresetup* File

The *.lustresetup* file contains all user preferences. There are two versions of the file. Each resides in its own location and performs a specific function.

File Location:	Description
On Windows: *C:\Program Files\Autodesk\lustre*<version number>*\.lustresetup*	Records the user and project last loaded in the application. This file should be modified for troubleshooting purposes only.
On Windows: *C:\Program Files\Autodesk\lustre*<version number>*\user\<user>\.lustresetup*	Contains all user and project information. When you launch Lustre, the most recently loaded user and project are obtained from the setup file described above, and then the detailed settings are provided by this file.

Index

U

W