

**Autodesk®**  
**Lustre® 2009**

A Discreet® Systems product

# Software Installation Guide for Windows® Workstations



**Autodesk®**

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# Introduction

## Summary

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## About This Guide

This guide provides basic information about installing Autodesk® Lustre® 2009 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/lustre-documentation](http://www.autodesk.com/lustre-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. For a detailed list of the latest documentation, see your release notes.

User Guides	Provides
<i>Autodesk Lustre 2009 User Guide</i>	Detailed instructions on using the software.
<i>Autodesk Control Surface User Guide</i>	Detailed instructions on using the Autodesk control surface and the Tangent CP100.

<b>User Guides</b>	<b>Provides</b>
<i>Autodesk Lustre 2009 New Features Guide</i>	Information about the new features for this release.
<i>Autodesk Lustre 2009 Hot Keys Card</i>	A list of the most frequently used hot keys.
<i>Autodesk Lustre 2009 Release Notes</i>	A complete list of documentation and information on late-breaking features.
<i>Autodesk Lustre 2009 Fixed and Known Bug List</i>	A complete list of fixed and known bugs for this release.
<b>Installation and Configuration Guides</b>	<b>Provides</b>
<i>Hardware Setup Guide (for your workstation)</i>	Information on how to set up your workstation and video I/O peripherals.
<i>Stone Direct Configuration Guide</i>	Detailed connectivity diagrams and configuration procedures for your Autodesk Stone® storage arrays.
<i>Stone and Wire Filesystem and Networking Guide</i>	Procedures for configuring your Autodesk Wiretap® services.
<i>Autodesk Lustre 2009 Software Installation Guide (for your operating system)</i>	Information about installing and licensing your Autodesk Lustre software.
<i>Autodesk Incinerator 2009 Installation and User Guide</i>	Information on installing, licensing, and using Autodesk® Incinerator®.
<b>Other Guides</b>	<b>Provides</b>
<i>Autodesk Lustre Sparks API Reference Guide</i>	Instructions for developing Sparks® plugins for Lustre.
<i>Autodesk Backburner 2008.1 Installation Guide</i>	Information on how to install and set up Autodesk Backburner™.
<i>Autodesk Backburner 2008.1 User Guide</i>	Information on how to use Autodesk Backburner.

Consult the Autodesk Web site at [www.autodesk.com/lustre-documentation](http://www.autodesk.com/lustre-documentation) for the latest version of guides, release notes, and fixed and known bugs documents.

## Accessing PDF Documentation

The complete documentation set is available in PDF (Portable Document Format) for online viewing and printing. On Windows® systems, use Adobe® Acrobat® Reader™ to view and print the PDF files. On Linux® workstations, use either Adobe Acrobat Reader or the Xpdf viewer. You can access the PDF files from the Lustre software CD or from [www.autodesk.com/lustre-documentation](http://www.autodesk.com/lustre-documentation).

**NOTE:** If you do not have Acrobat Reader, you can download a free copy from the Adobe Web site ([www.adobe.com](http://www.adobe.com)). If you do not have Xpdf viewer, you can download a free copy from the Xpdf Web site ([www.foolabs.com/xpdf/](http://www.foolabs.com/xpdf/)).

### From the Lustre Application CD

You can view and print the PDF files from the Lustre CD using Adobe Acrobat Reader. PDF files are located in a directory called *Documentation* at the top level of the CD.

#### To view the PDF files on the application CD:

1. Place the Lustre CD in the CD-ROM drive of your system.
2. If using the Windows version of Lustre, in Windows Explorer, go to the *Documentation* folder on the CD.
3. If using the Linux version of Lustre, open a Linux shell and navigate to the *Documentation* folder on the CD. Type:

```
/mnt/cdrom/documentation
```

4. To view one of the documentation PDF files, do one of the following:
  - If using the Windows version of Lustre, double-click the desired file.
  - If using the Linux version of Lustre, type:

```
xpdf <filename>
```

The file opens in Acrobat Reader or the Xpdf viewer.

### Accessing PDF Documentation from the Autodesk Web Site

You can also find the PDF files on the Autodesk Web site, [www.autodesk.com/lustre-documentation](http://www.autodesk.com/lustre-documentation), and download any of the available files.

## Notational Conventions

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

Convention	Example
Text that you enter in a command line or shell appears in Courier bold. You must press the Enter key after each command.	<b>rpm -qa</b>
Variable names appear in Courier, enclosed in angle brackets.	<filename>
Feedback from the command line or shell appears in Courier.	limit coredumpsize
Directory names, filenames, URLs, and command line utilities appear in italics.	<i>/usr/autodesk</i>

**NOTE:** Throughout this guide, when referring to Windows-specific file locations, the term folder will be used. When referring to Linux-specific file locations, the term directory will be used. When referring to both, directory will be used.

## Contacting Customer Support

A list of contact information for Autodesk Media and Entertainment Customer Support is available at [www.autodesk.com/support](http://www.autodesk.com/support).

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

## 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/payout. 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 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** — On the HP 8600, video I/O is provided by the AJA board, while other workstations use the DVS Centaurus board. Both video boards consist 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 *Lustre 2009 User 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, thus ensuring real-time interaction on the Lustre system.

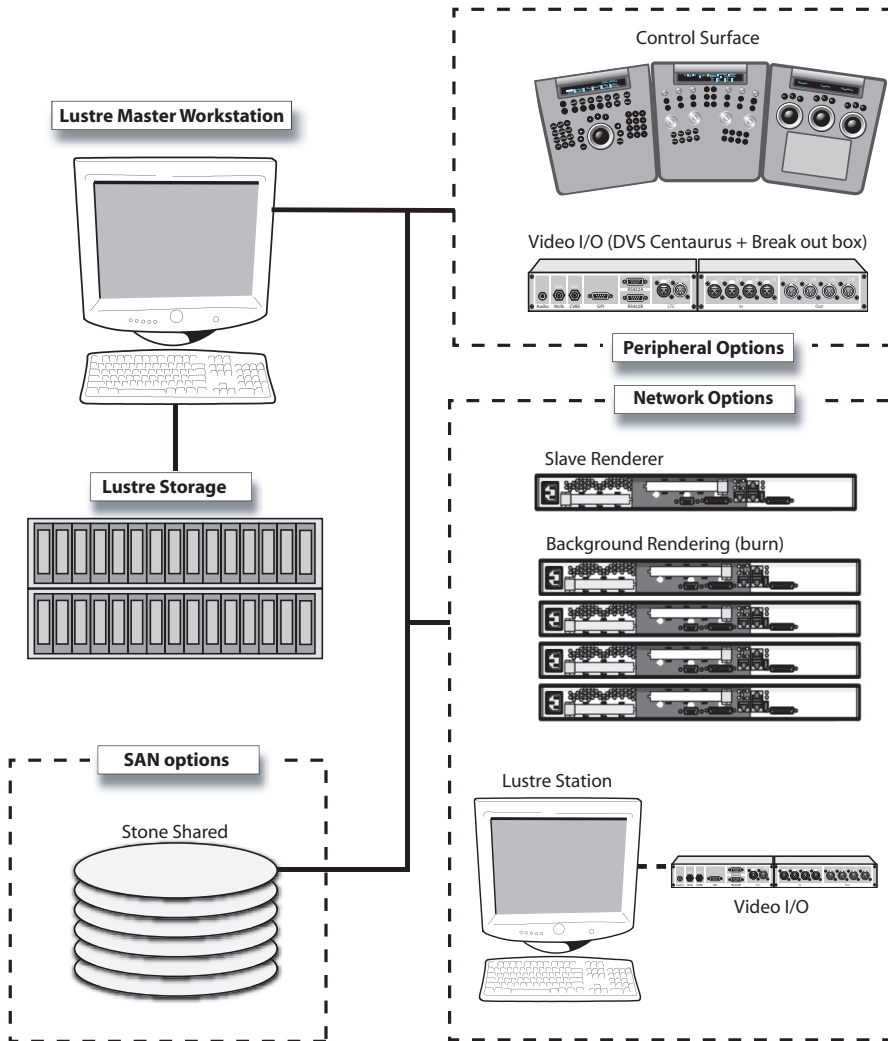
You install rendering software on the Slave Renderer.

**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 expand your system to include a Visual Effects and Finishing 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 storage connected to the Visual Effects and Finishing workstation. This feature assumes that the Visual Effects and Finishing workstation is on the same network (GigE or Infiniband) as the Incinerator® workgroup, and that the “Scans/Render Full Home” project variable is properly configured in Lustre.



# Windows System Software



## Summary


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## 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 10.

**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 10.

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:**

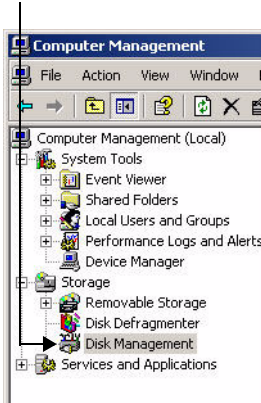
1. In the Welcome to the Found New Hardware Wizard window, select Install from a list or a specific location and click Next.
2. Insert the Storage V5 CD-ROM into your CD-ROM drive.
3. Browse to your CD-ROM drive, open the *windows\_XR\_driver* folder, select the *autodesk\_storage.inf* file, and click 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.

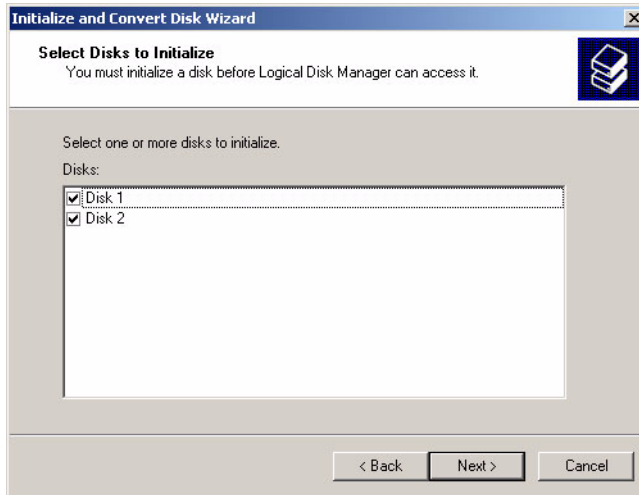


As soon as you choose Disk Management, Windows should recognize the un-initialized disks and prompt you to initialize them.

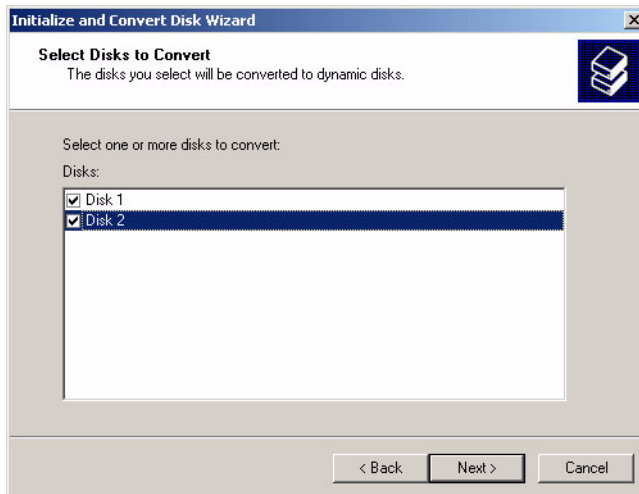
3. In the Welcome to the Initialize and Convert Disk Wizard window, click Next to continue.



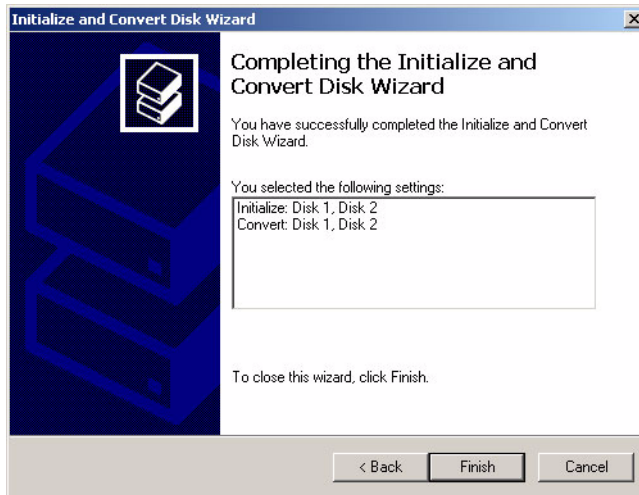
4. By default, Windows selects all un-initialized disks. Click Next to initialize all selected disks.



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.



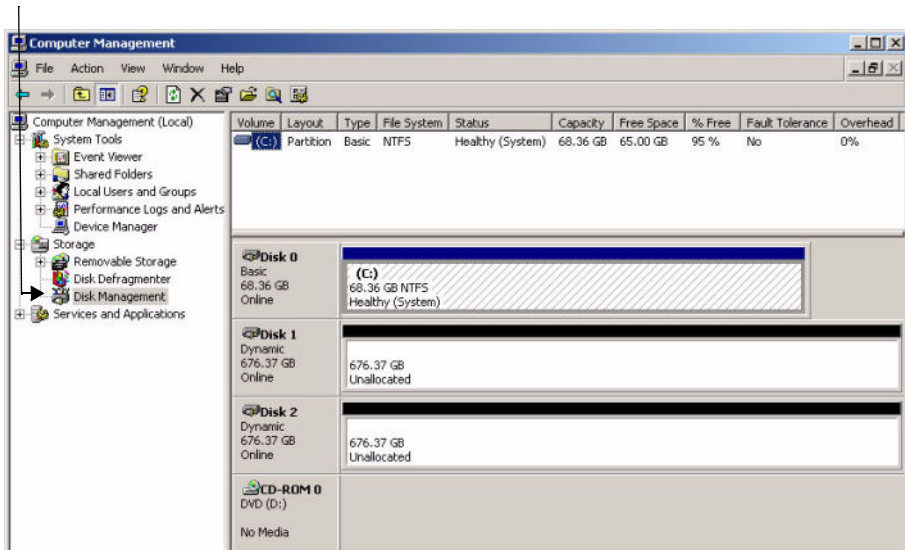
## Formatting the Storage Volume

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:**

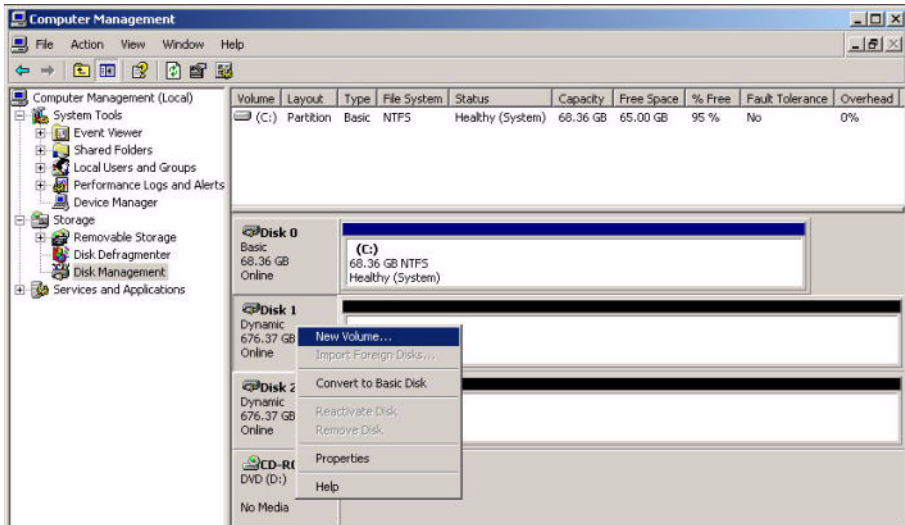
1. Right-click My Computer on your Desktop and choose Manage.
2. In the Computer Management window, select Disk Management in the Storage folder.



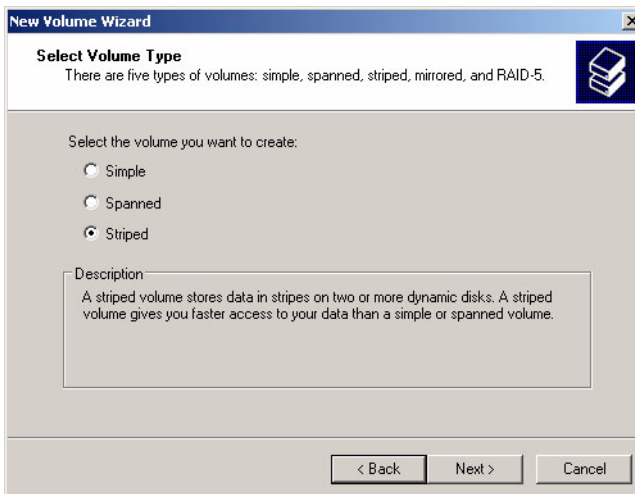
3. Verify that all storage disks are labelled as:

- Dynamic
- Online
- Unallocated

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

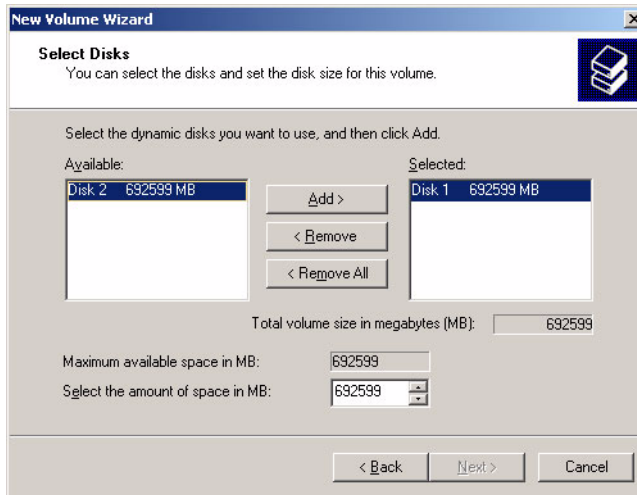


- In the Welcome dialog box, click Next to start the Wizard.
- In the Select Volume Type dialog box, select Striped and click Next.



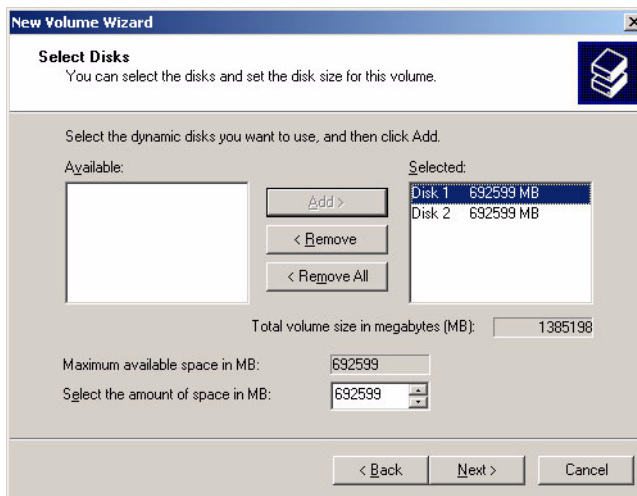
**NOTE:** The Striped option creates a RAID 0 stripe set from multiple disks.

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.

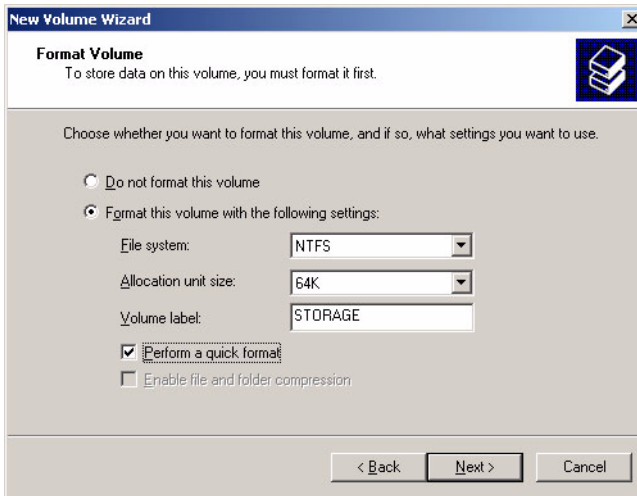


9. In the Assign Drive Letter or Path dialog box, select Assign the following drive letter option, select a drive letter, and click Next.

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:

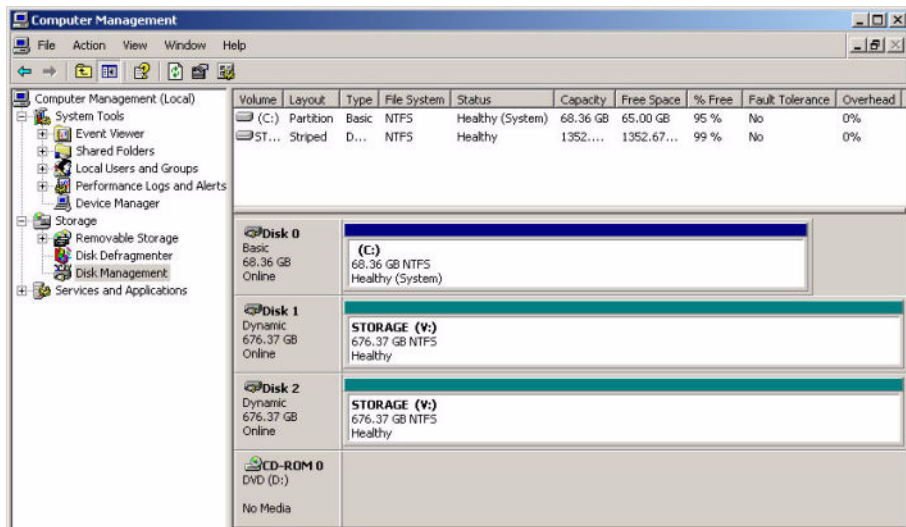
- Choose NTFS from the Filesystem list.
- Choose 64K from the Allocation unit size list.
- Enter a volume label. Autodesk recommends you use “Storage” for your label.
- Choose Perform quick format.
- Click Next.



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® FX5600
  - NVIDIA Quadro FX5500
  - NVIDIA Quadro FX4000
5. Click Start the NVIDIA Control Panel, chose Standard, and click Ok.
6. Chose Display and then Change resolution.

- 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

- 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:

- Right-click My Computer and choose Manage.
- In Local Users and Groups, right-click Users and choose New User.
- 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.

- Enable the “User Cannot Change Password” and “Password Never Expires” check boxes.
- Click Create.
- 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.
5. In the Select Users, Computers, or Groups menu, click Advanced, set the correct location, and then add user(s) to the Enter the object name to select text box and click Check name. Click Ok
6. 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 Location, set the current location and click Ok. Click Find now to locate and select Power Users Group, click Ok then click Ok again.
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".
Control Panel   Display   Desktop   Color   Others	<ul style="list-style-type: none"> <li>• Hue: 193</li> <li>• Sat: 21</li> <li>• Lum: 60</li> <li>• Red: 67</li> <li>• Green:58</li> <li>• Blue: 59</li> </ul>
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

<a href="#">Workflow for Installing Lustre on Windows</a> .....	23
<a href="#">Installing Lustre 2009 Software</a> .....	24
<a href="#">Installing the Autodesk Control Surface Tablet Driver</a> .....	25
<a href="#">Acquiring and Installing a License</a> .....	26
<a href="#">AJA Driver Install</a> .....	27
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### 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.

<b>Step:</b>	<b>Refer to:</b>
1. Install Lustre software on each component in your workgroup.	<a href="#">"Installing Lustre 2009 Software"</a> on page 24.
2. (Optional) Install Autodesk Control Surface Tablet driver on your Lustre workstations.	<a href="#">"Installing the Autodesk Control Surface Tablet Driver"</a> on page 25.
3. Install the licenses for all your Lustre workstations.	<a href="#">"Acquiring and Installing a License"</a> on page 26.
4. Upgrade your DVS firmware if you are upgrading Lustre.	<a href="#">"Upgrading the DVS Firmware"</a> on page 28.
5. Upgrade the DVS driver on all workstations with a DVS board for video I/O.	<a href="#">"Upgrading the DVS Driver"</a> on page 29.

Step:	Refer to:
6. Upgrade the NVIDIA graphics card driver if you are upgrading from a version of Lustre prior to Lustre 2009.	<a href="#">“Upgrading the NVIDIA Graphics Card Driver”</a> on page 30.
7. (Optional) Remove or upgrade Lustre.	<a href="#">“Removing Lustre”</a> on page 41.

## Installing Lustre 2009 Software

Use the Lustre 2009 wizard to install Lustre 2009 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 43.
- BrowseD Server. After you install and license the Slave Renderer, you must configure it. See [Chapter 6, “Configuring BrowseD.”](#) on page 67.

On the Lustre Master Station, Lustre HD Station, or the Lustre Station, the wizard also installs WinPcap. 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.

**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*.

### To install Lustre:

1. Place the Lustre 2009 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 *Lustre2009Setup.exe* to launch the installation wizard.
4. Follow the on-screen instructions.
5. When prompted to select a Lustre component, use the following table.

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

Select:	To install:
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 <a href="#">"Disabling a Previous Version of the Slave Render Software"</a> on page 52.
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 <a href="#">Chapter 6, "Configuring BrowseD,"</a> on page 67.

6. Once the wizard finishes, restart the workstation.

## 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 4.

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.

## 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 61.

### 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 26.
6. Install the license codes. See [“Installing the License Codes”](#) on page 27.

## 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](http://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 eight 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*

## AJA Driver Install

If you have installed an AJA video card in your HP 8600, you must install new video card drivers.

**To install the AJA driver:**

1. Download the AJA driver upgrade package to a temporary location on your system. Contact Customer Support to download the driver package. See [“Contacting Customer Support”](#) on page 4.
2. Open the Device Manager. Right-click My Computer, select Manage, and then click Device Manager.

3. Right-click the Multimedia Video Controller with a yellow exclamation mark, and select Update Driver.
4. Follow the on-screen instructions.
5. When asked: “Can windows connect to windows update to search for software?”, select No.
6. When asked: “What do you want to do?”, select “Install from a list or a specific location (advanced).”
7. Select “Search for the best driver in these locations.”
8. Browse to the location where you downloaded the AJA driver upgrade package, and then click Next.
9. Once the update finishes, restart the workstation.

## DVS Upgrades

If your workstation uses a DVS video card (only HP 8400 or IBM workstations), use the following sections to upgrade its firmware and drivers.

If your workstation uses an AJA card. You do not need to follow the instructions below.

### Upgrading the DVS Firmware

Lustre can require 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 DVScnf 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 you are 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.

### 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 the NVIDIA device and select Properties. The Properties dialog box opens.
3. Click the Driver tab and verify the driver version is *165.45*.
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.  
Contact Customer Support to download the driver package. See [“Contacting Customer Support”](#) on page 4.
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.

## SDP over Infiniband Support

To be able to have a high speed IB connection, you need to install the latest Windows IB driver on the Lustre workstation and the latest Linux IB driver on the Editing and Effects workstation. You will need the following:

- Lustre 2008 SP2 or higher
- Autodesk® Smoke® or Autodesk® Flame® 2008 Service Pack 4 or higher (with DKU version 3.5.0)

Lustre 2009 supports a socket direct protocol (SDP) over IB connection in addition to the continued support of the IP over IB connection. The performance advantage of the SDP over IB solution is the ability to transfer up to 2K 10-bit source footage in real-time over Wiretap.

For SDP over IB support, the Editing and Effects application your Lustre workstation connects to must be either Smoke/Flame 2008 Service Pack 4 or 2009 with the latest DKU (the latest DKU has the new IB driver). For full details about Smoke/Flame requirements, see the Release Notes for Smoke/Flame 2008 Service Pack 4 or higher.

**NOTE:** If using an SDP over IB connection and you choose to manually configure specific Wiretap servers in the *init.config* file, make sure you input the Gigabit Ethernet IP addresses of the Wiretap host machines and not the Infiniband IP addresses.

## Driver and Firmware Requirements for the IB Switch and Editing and Effects Workstation

The following lists the required drivers and firmware for the Infiniband Switch and Linux driver on your Editing and Effects application.

Device	Device Requirements
IB switch	Silverstorm 9024 DDR and SDR switch firmware 4.1.1.1.11
Lustre system IB HCA	Silverstorm PCI-X SDR 7000 series firmware 3.5.000
Smoke/Flame system IB HCA	Silverstorm PCI-E DDR 9000 series firmware 4.8.200
Editing and Effects workstation	Silverstorm PCI-E DDR 9000 series Linux driver 4.1.1.3.1
Lustre workstation (Windows)	Silverstorm HCA Windows driver 3.2.0055.14

## SDP over Infiniband Driver and Firmware Installation

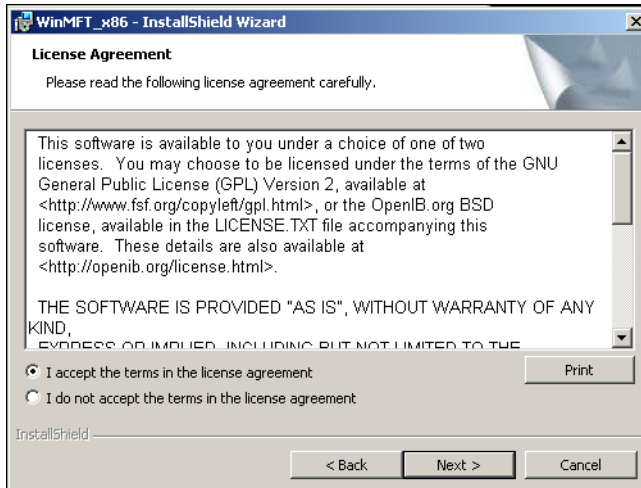
Perform the following workflow to acquire and install the appropriate firmware and drivers for SDP over IB support on your Lustre workstation.

Step	Action
1.	Contact your local Autodesk support office for details on how to: <ul style="list-style-type: none"> <li>• acquire the correct drivers, firmware, and utilities</li> <li>• upgrade your switch firmware</li> </ul>
2.	Perform an update of your Windows HCA firmware (see <a href="#">"To update your Windows HCA firmware:"</a> on page 32).  <b>WARNING:</b> This update must be done with the previous IPoIB-only driver currently installed on your Lustre workstation.
3.	Uninstall all previous IB drivers (see <a href="#">"To remove an older IB driver:"</a> on page 34).
4.	Install the HCA driver (see <a href="#">"To install the HCA driver:"</a> on page 34).
5.	Install the IP over IB device (see <a href="#">"To install the IP over IB device:"</a> on page 37).
6.	Configure SDP (see <a href="#">"To configure SDP:"</a> on page 38).
7.	Verify SDP services and provider are installed and running (see <a href="#">"To verify SDP services and SDP provider are installed and running:"</a> on page 40).

### To update your Windows HCA firmware:

1. Double click the file called *WinMFT\_x86-1\_0\_1.msi*.  
The WinMFT\_x86 - InstallShield wizard is launched.

2. Read and accept the license agreement and input the required installation information in the wizard.



**NOTE:** Accept the default installation path.

3. Unzip the firmware and copy `fw-23108-3_5_000-MHXL-CF128-T.bin` to `C:\Program Files\Mellanox\MFT\bin`.
4. In a Windows command shell, type:

```
cd C:\Program Files\Mellanox\MFT\bin
```

```
flint -d mt23108_pciconf0 -skip_is -i fw-23108-3_5_000-MHXL-CF128-T.bin burn
```

The following confirmation message appears:

*You are about to replace current PSID in flash - " with a different PSID - "MT\_0030000001".  
Is it OK? <y/n> [n]:*

Type **y** to confirm the action, then hit **ENTER**.

5. To confirm the card has been flashed, in the command shell, type:

```
flint -d mt23108_pciconf0 verify
```

A successful flash results in the following system response:

```

c:\ Command Prompt (2)
The invariant sector can not be burnt in a failsafe manner.
To force burn of the invariant sector, rerun with -nofs flag.
You can also continue to update the FW without updating the invariant sector.
See the firmware release notes for more details.

Do you want to continue ? y
Read and verify PPS/SPS in flash           - OK
Repairing: Copy primary image to secondary OK
Burning first   FW image without signatures - OK
Restoring first   signature                 - OK

C:\Program Files\Mellanox\MFT\bin>flint -d mt23108_pciconf0 verify

Failsafe image:

Invariant      /0x00000028-0x000006f7 <0x0006d0>/ <BOOT2> - OK
Primary Image /0x00010000-0x00010107 <0x000108>/ <Pointer Sector>- OK
              /0x00030028-0x00030b3b <0x000b14>/ <BOOT2> - OK
              /0x00030b3c-0x00034a77 <0x003f3e>/ <BOOT2> - OK
              /0x00034a78-0x00035c13 <0x00119c>/ <Configuration> - OK
              /0x00035c14-0x00035c47 <0x000034>/ <GUID> - OK
              /0x00035c48-0x00035ead3 <0x00928c>/ <DDR> - OK
              /0x00035ead4-0x0004d77b <0x00e8a8>/ <DDR> - OK
              /0x0004d77c-0x0005770f <0x009f94>/ <DDR> - OK
              /0x00057710-0x0005a74h <0x00303c>/ <DDR> - OK
              /0x0005a74c-0x0006fach <0x015380>/ <DDR> - OK
              /0x0006facc-0x0007c3ef <0x00c924>/ <DDR> - OK
              /0x0007c3f0-0x0007c4db <0x0000ec>/ <Configuration> - OK
              /0x0007c4dc-0x0007c51f <0x000044>/ <Jump addresses> - OK
              /0x0007c520-0x0007c687 <0x000168>/ <FW Configuration> - OK

Secondary Pointer Sector /0x00020000/ - invalid signature <00000000>

FW Image verification succeeded. Image is OK.

C:\Program Files\Mellanox\MFT\bin>

```

#### To remove an older IB driver:

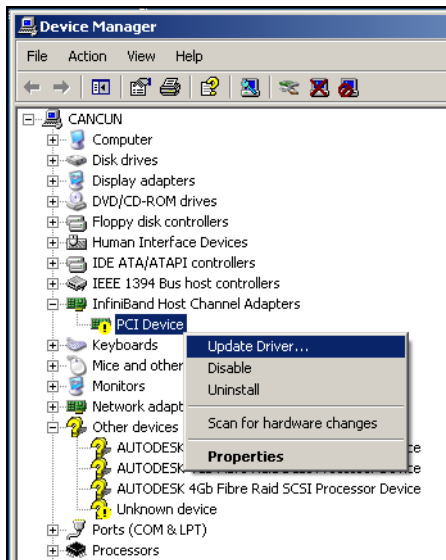
1. Stop all I/O traffic.
2. Exit the Lustre application.
3. From the Device Manager, uninstall the following:
  - all IPoIB adapter instances
  - InfiniBand Fabric device (under the System Device category)
  - all InfiniBand Host Channel adapters
4. In the Control Panel, select Add/Remove Programs.
5. Remove *SilverStorm HCA*.
6. Reboot.

#### To install the HCA driver:

1. Double-click the *SilverStorm 3.2.0055.14* driver package on your target system to install the HCA driver.

**NOTE:** Accept the default settings.

2. In the Device Manager, under Infiniband Host Channel Adapters, right-click PCI Device and select Update Driver.

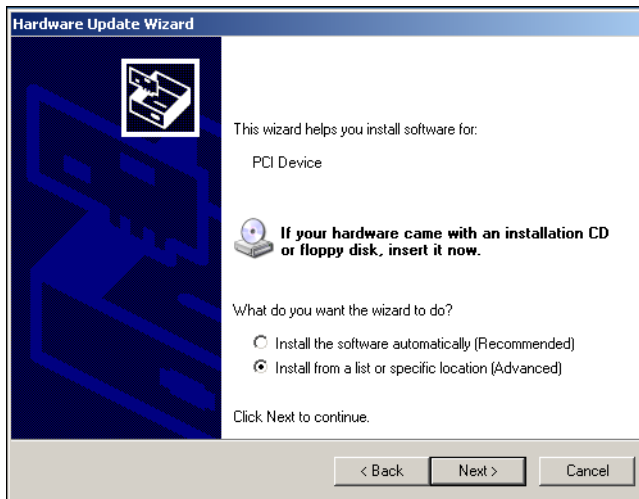


The Hardware Update Wizard appears.

3. Select No, not this time for Windows Update and click Next

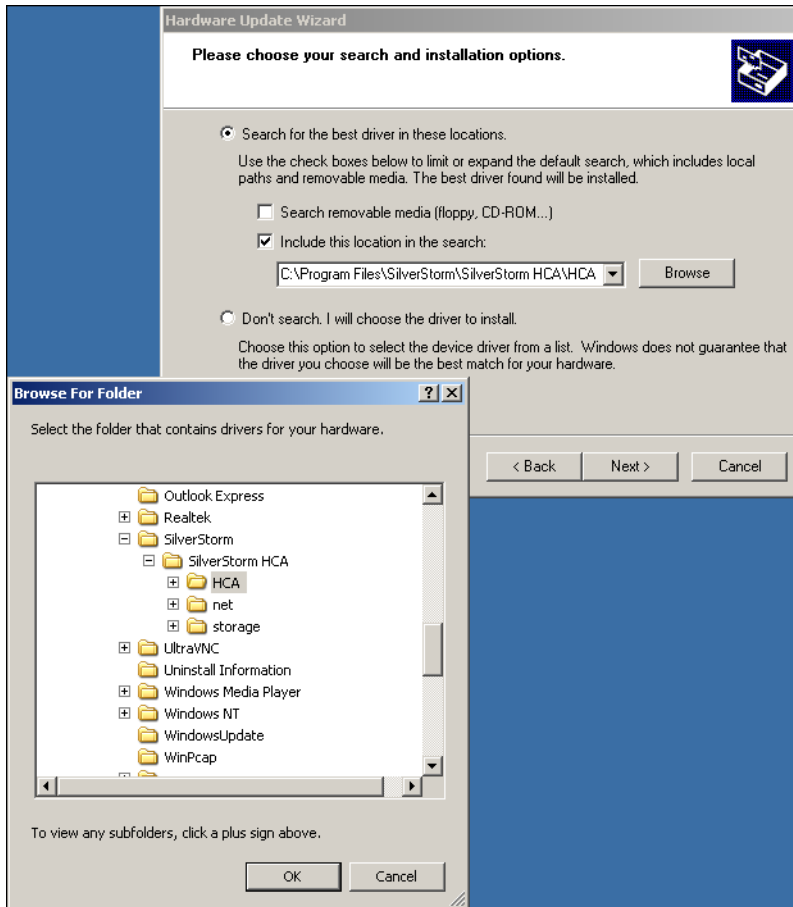


4. Select Install from a list or specific location (Advanced) and click Next.



5. Uncheck Search removable media.
6. Check Include this location in the search.

- Browse to `C:\Program Files\SilverStorm\SilverStorm HCA\HCA` and click Next.



Your Infinihost MT23108 installation HCA installation is now complete.

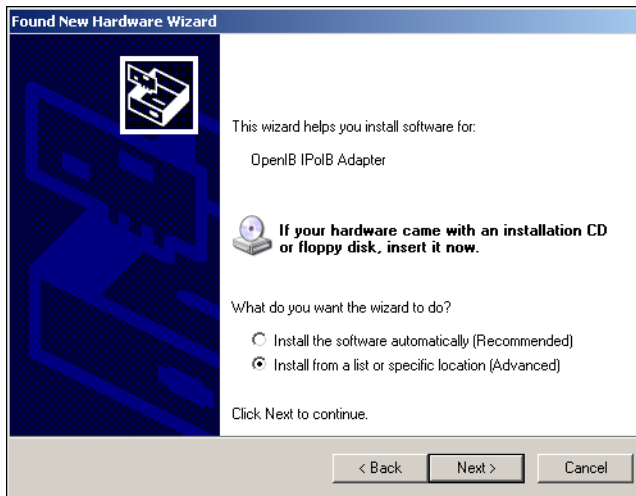
Two new IPoIB adapters will now be automatically detected.

- Reboot your workstation.

**To install the IP over IB device:**

- Upon reboot, the New Hardware wizard discovers two IPoIB devices, one per HCA port, and begins installation.
- Select No for Windows Update and click Next.

3. Select Install from a list or specific location (Advanced).

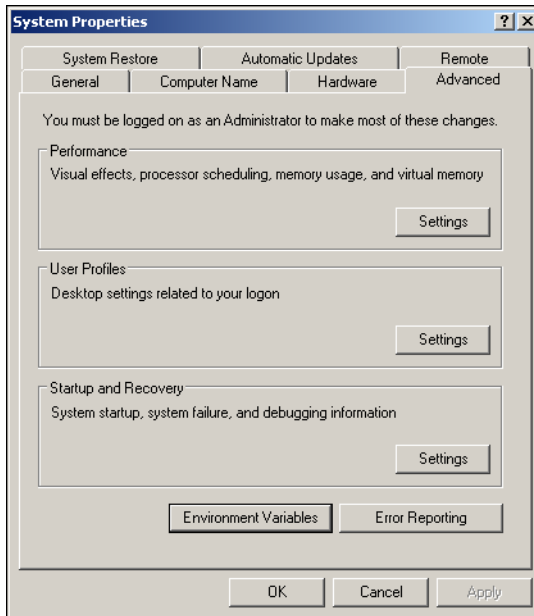


4. Browse to *C:\Program Files\SilverStorm\SilverStorm HCA\net* and click Next.
5. Complete the New Hardware wizard to complete the IPoIB device installation.
6. Open Windows Explorer and browse to *C:\Program Files\SilverStorm\SilverStorm HCA\net\*.
7. Locate and right-click *netipoib.inf*.
8. Select Install.

**To configure SDP:**

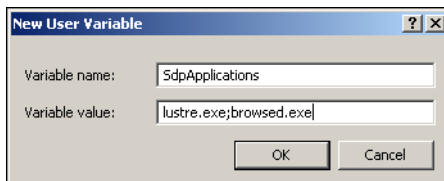
1. Open Windows Explorer and browse to *C:\Program Files\SilverStorm\SilverStorm HCA\net\*.
2. Locate and right-click *instsdp.inf*.
3. Select Install.
4. Browse to *C:\Program Files\SilverStorm\SilverStorm HCA*.
5. Double-click *Autodesk-SDP-Config.bat*.  
A confirmation dialog box is displayed.
6. Confirm the action by clicking Yes.  
An event dialog box is displayed confirming *Autodesk-SDP-Reg.reg* has been entered into the registry.

7. Click OK.
8. On the desktop, right-click My Computer and select Properties.
9. Select the Advanced tab and click Environment Variables.



10. Click New under User Variables and add:

- *SdpApplications=lustre.exe;browsed.exe*
- *SdpAddresses=<wiretap-server IB address >* (for example, *SdpAddresses=10.10.11.203*)



**NOTE:** Any additional Lustre-related processes over IB SDP should also be added, separated by a semi-colon.

Socket applications will now use the SDP Provider.

11. Install the SDP provider in a Window command shell. Type:

```
cd C:\Program Files\Silverstorm\SilverStorm HCA\net\x86
```

```
InstallSdpProvider -i
```

12. Reboot your system.

**To verify SDP services and SDP provider are installed and running:**

1. In a Windows command shell, type:

```
net start sdp
```

If SDP services are running, the system response will be:

*The requested service has already been started.*

2. In the command shell, type:

```
cd C:\Program Files\SilverStorm\SilverStorm HCA\net\x86  
InstallSdpProvider -i
```

If the SDP Provider is properly installed, the system response will be:

*Provider already installed, <doing nothing>*

## Related Infiniband Procedures

In addition to the workflow procedures, listed above, there are several procedures that are relevant to SDP over IB or IP over IB. They are as follows:

- performing a clean driver uninstall of the IP over IB driver (outside the context of the above workflow) (see [“To perform a clean IP over IB driver uninstall:”](#) on page 40)
- stopping the SDP service manually (see [“To stop the SDP service manually:”](#) on page 41)
- removing SDP (see [“To remove the SDP Provider:”](#) on page 41)

**To perform a clean IP over IB driver uninstall:**

1. Stop all I/O traffic.
2. Exit the Lustre application.
3. In a Windows command shell, type:  

```
net stop sdp
```
4. From the Device Manager, uninstall the following:
  - all IPoIB adapter instances
  - InfiniBand Fabric device (under the System Device category)
  - all InfiniBand Host Channel adapters
5. In the command shell, type:

```
cd C:\Program Files\SilverStorm\SilverStorm HCA\  
CleanUninstall-Batch.bat x86
```

A confirmation dialog box is displayed.

**NOTE:** This batch file uninstall removes the SDP Provider, IB related keys in the registry, device drivers, and dynamic link libraries.

6. Click Yes to confirm the action.  
An event dialog box is displayed confirming that information in *Delete-IB-Reg.reg* has been deleted.
7. Click OK.
8. In the Control Panel, select Add/Remove Programs.
9. Remove *SilverStorm HCA*.
10. Reboot.

**To stop the SDP service manually:**

- In a Windows command shell, type:

```
net stop sdp
```

The system returns the following message:

*The QLogic SDP Driver service was stopped successfully.*

**To remove the SDP Provider:**

- In a Windows command shell, type:

```
cd C:\Program Files\SilverStorm\SilverStorm HCA\net\x86  
InstallSdpProvider -r
```

The system returns the following message:

*Removing Installed Layered Providers.*

*Removing layered provider protocol chains.*

## Removing Lustre

To 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.

**To remove Lustre:**

- Use Start > Control Panel > Add or Remove Programs.  
Follow the on-screen instructions to complete the procedure.

# Configuring Slave Rendering



## Summary

<a href="#">Workflow for Configuring Slave Rendering</a> .....	43
<a href="#">Configuring the Slave Rendering Network Port on the Master/HD Station</a> ..	44
<a href="#">Sharing Lustre Master or HD Station Storage</a> .....	45
<a href="#">Configuring the Network Port on the Slave Rendering Machine</a> .....	47
<a href="#">Starting and Stopping the Slave Render Service Manually</a> .....	48
<a href="#">Setting Up the Slave Renderer to Connect to the Master or HD Station</a> .....	50
<a href="#">Setting Up Lustre Projects to Use Slave Rendering</a> .....	51
<a href="#">Disabling a Previous Version of the Slave Render Software</a> .....	52

## 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.

<b>Step:</b>	<b>Refer to:</b>
1. Connect the slave rendering machine to the Master Station or HD Station.	The <i>Hardware Setup Guide</i> for your platform.
2. Install the slave rendering software and license.	<a href="#">Chapter 3, "Installing Lustre on Windows,"</a> on page 23.
3. On the Lustre Master Station or HD Station, configure the network port that is connected to the slave rendering machine.	<a href="#">"Configuring the Slave Rendering Network Port on the Master/HD Station"</a> on page 44.
4. Share the storage on the Master Station or HD Station so that it can be accessed by the slave rendering machine.	<a href="#">"Sharing Lustre Master or HD Station Storage"</a> on page 45.

Step:	Refer to:
5. On the slave rendering machine, configure the network port that is connected to the Master Station or HD Station.	<a href="#">“Configuring the Network Port on the Slave Rendering Machine”</a> on page 47.
6. Start the slave render service.	<a href="#">“Starting and Stopping the Slave Render Service Manually”</a> on page 48.
7. Set up the slave rendering machine to log in to the Master Station or HD Station.	<a href="#">“Setting Up the Slave Renderer to Connect to the Master or HD Station”</a> on page 50.
8. Set up the configuration file so that Lustre projects can use slave rendering.	<a href="#">“Setting Up Lustre Projects to Use Slave Rendering”</a> on page 51.
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.	<a href="#">“Disabling a Previous Version of the Slave Render Software”</a> on page 52.
10. Render shots as you work.	The <i>Autodesk Lustre 2009 User's Guide</i> .

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

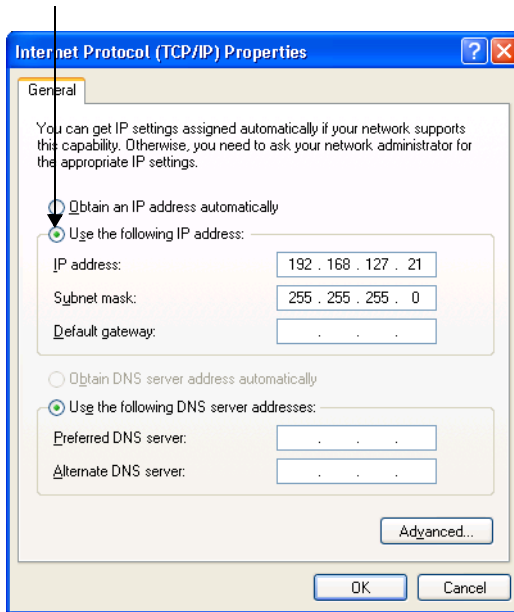
To enable communication over the crossover cable that connects the Lustre Master Station or HD Station to the slave rendering machine, you must configure the IP address of the network port on both machines.

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.

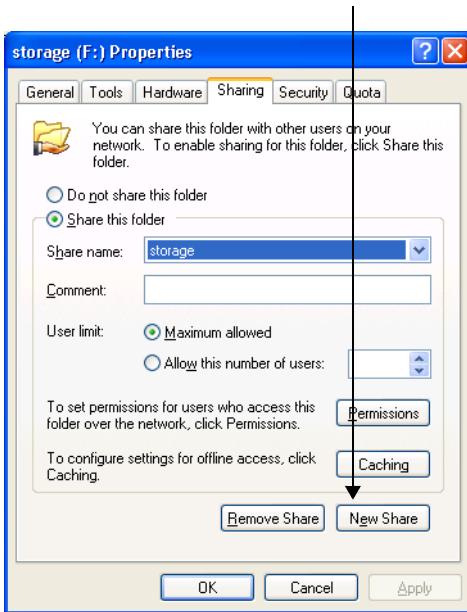
## Sharing Lustre Master or HD Station Storage

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.

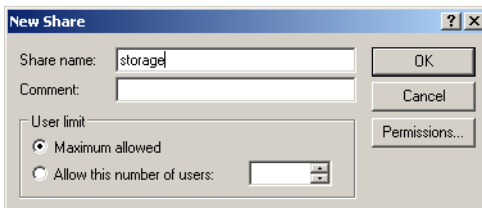
### To share Lustre Master or HD Station storage:

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

3. Open the Sharing tab and click New Share.

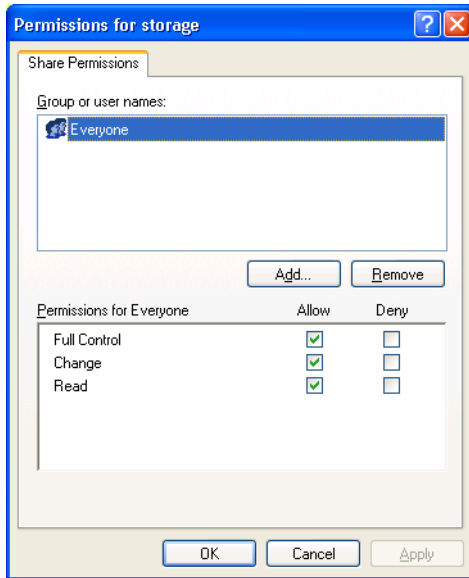


4. In the New Share dialog box, enter a Share name and set the User limit to at least one. You can set the User limit to Maximum allowed.



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

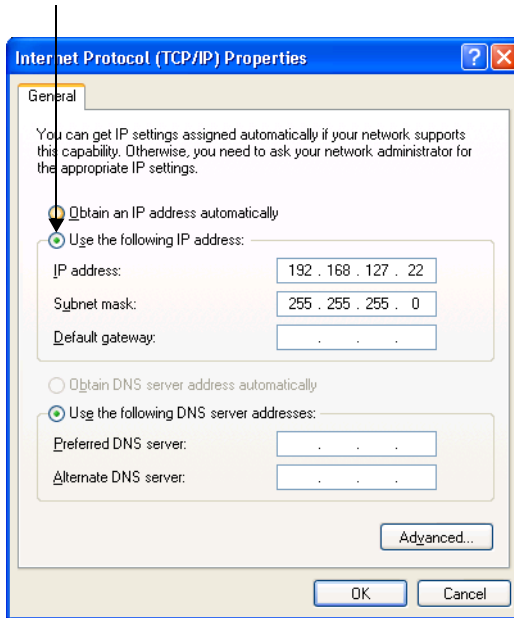
After you have configured the IP address of the network port and shared the storage on the Master or HD Station, you are ready to configure the IP address of the network port on the slave rendering machine.

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

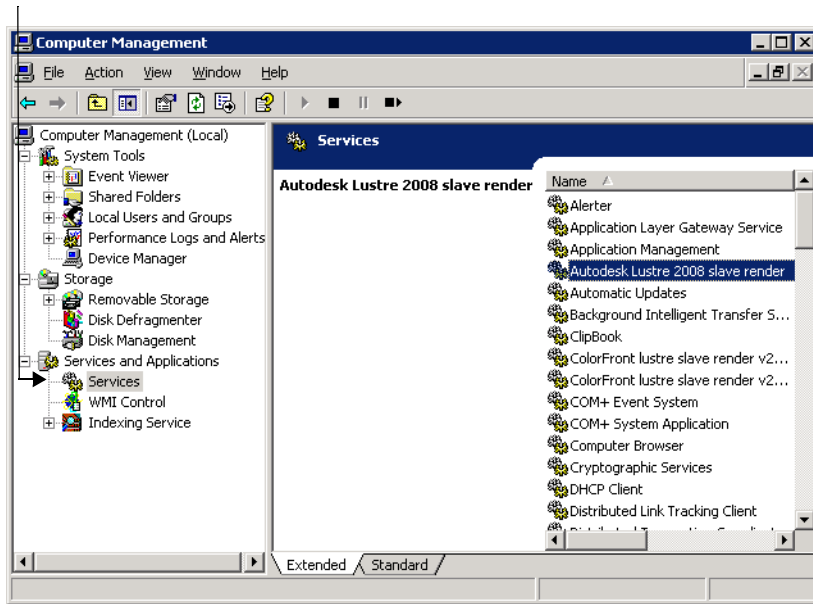
By default, the slave render service starts automatically whenever you restart the slave rendering machine.

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

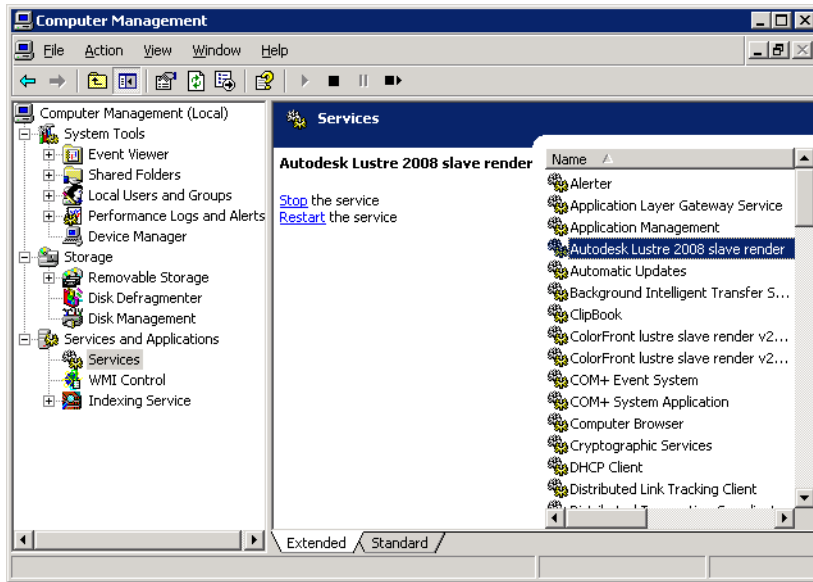
**NOTE:** If you have a previous version of the slave render service running on your system, you must disable it before you can run the latest versions. See [“Disabling a Previous Version of the Slave Render Software”](#) on page 52.

**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.



- From the list of Services, select Autodesk Lustre 2009 slave render.



- 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.

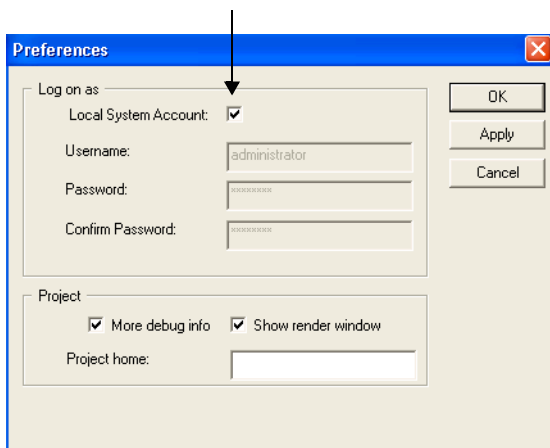
**To set up the slave rendering machine to connect to the Master or HD Station:**

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:

- Configure the SlaveRenderer keyword with the slave rendering machine IP address in the *init.config* file. See [Appendix A, “Software, Project, and User Configuration Files.”](#) on page 73.
- Enable slave rendering for the project. See the Project Management chapter in the user guide.

## 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 “Autodesk slave render <version#>” service and choose Stop.  
The slave render service stops running.
4. Right-click the “Autodesk 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

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<a href="#">Background Rendering Components</a> .....	54
<a href="#">Workflow for Setting Up Background Rendering</a> .....	55
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### About Background Rendering

During background rendering, a shot on the timeline is rendered by 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.

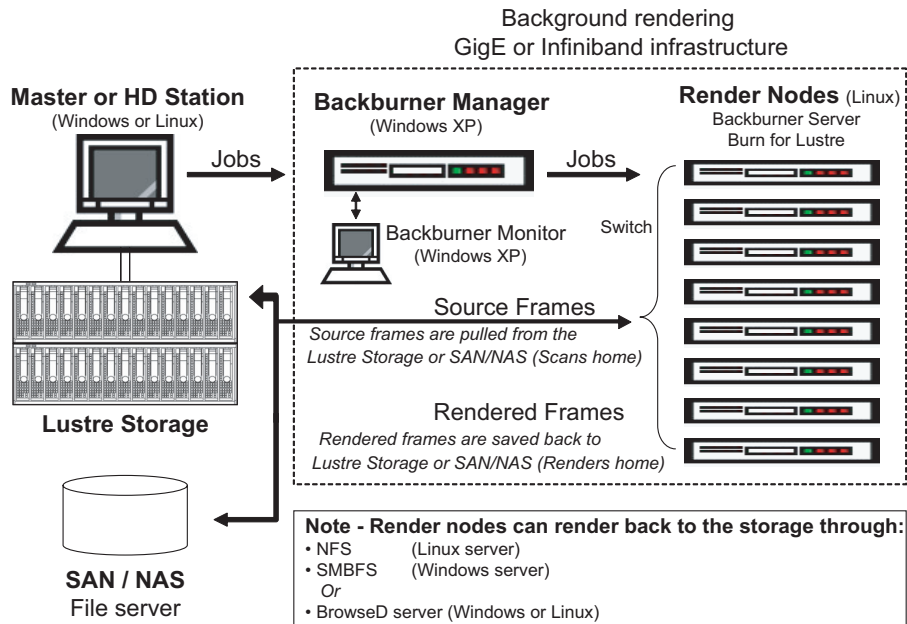
**Autodesk Backburner 2008.1 Installation Guide and Autodesk Backburner 2008.1 User guide** — Provide information on installing and configuring Backburner 2008.1. Use the guides to obtain Backburner information that does not relate directly to Lustre background rendering, such as details on setting up 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 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 67. 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 53.

## 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.	<a href="#">“Setting Up Read/Write Access to the Storage on Windows”</a> on page 56.
2. Install and configure Backburner Manager and Backburner Monitor.	<a href="#">“Installing Backburner Manager and Backburner Monitor”</a> on page 57.
3. Connect Lustre to Backburner Manager so that it can receive render jobs.	<a href="#">“Configuring Lustre to Detect Backburner Manager”</a> on page 57.
4. Set up the components of the render node.	<a href="#">“Setting Up Render Nodes”</a> on page 58.
5. Specify the mount point of the background rendering nodes in Lustre.	<a href="#">“Specifying the Background Rendering Path in Lustre”</a> on page 66.

## 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 XP system attached to the same network as Lustre. Render jobs handled by Backburner can be viewed using Backburner Monitor from any 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\_2008.1* 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.

Refer to the *Autodesk Backburner 2008.1 Installation Guide* for information on configuring Backburner. It explains how to:

- Start and configure Backburner Manager.
- Set up Backburner Manager as a Windows service.
- Configure the Backburner Monitor to detect Backburner Manager.

## 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 User Configuration Files.”](#) on page 73.

**To configure Lustre to detect Backburner Manager:**

1. In a text editor on the Master Station, open the configuration file.
2. Locate the Backburner keyword.
3. In the `HostName` line, set the `string` to the IP address of the Windows system where Backburner Manager is installed. For example:

```
<HostName string="172.19.23.161" />
```

**NOTE:** Do not forget the quotes, or its functionality will be compromised.

4. Save and close 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.	<a href="#">“Render Node Hardware and Software Requirements”</a> on page 58.
2. Install the appropriate Red Hat operating system (Enterprise Linux Workstation 4 Update 3).	<i>Linux Installation and Configuration Guide for RHEW 4 Update 3.</i>
3. Configure each Linux server to mount the storage that contains the project render files.	<a href="#">“Mounting the Storage on the Render Nodes”</a> on page 59.
4. Install Burn for Lustre.	<a href="#">“Installing Burn for Lustre”</a> on page 61.
5. Connect the render nodes to Backburner Manager.	<a href="#">“Configuring Backburner Server to Detect Backburner Manager”</a> on page 61.
6. Start the Backburner Server on each render node.	<a href="#">“Starting Backburner Server”</a> on page 62.

## 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 4 Update 3

## 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 67.

### To mount the storage on a render node:

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

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

```
chmod 666 /mnt/Lustre_storage
```
- 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 56.
- <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 2009 CD into the CD-ROM drive.
3. Go to the CD-ROM. Type:

```
cd /mnt/cdrom
```

4. Copy the *Lustre\_2009\_Renderer* directory from the CD to a temporary directory on the host. For example, type:

```
cp Lustre_2009_Renderer -r /usr/tmp
```

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

```
cd /usr/tmp
```

6. Start the installation script by typing:

```
./INSTALL_LUSTRE_2009_BURN
```

The Lustre package is installed. For instructions on obtaining and installing a Burn license, see [“Licensing Burn for Lustre”](#) on page 63.

7. 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 2009 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/lustre_2009` directory. Type:

```
cd /usr/autodesk/lustre_2009
```

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 26.

**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. In a shell, run the *dlhostid* utility to generate a unique *lmhostid* for the machine. Type:

```
dlhostid
```

A message appears that includes a line indicating the *lmhostid* of the machine:

```
The lmhost ID of this machine is "<lmhostid>" (eth0)
```

For example, in the following line the *lmhostid* is 000d6016cf34:

```
The lmhost ID of this machine is "00E0ED11C798" (eth0)
```

2. Take note of the *lmhostid*.
3. Request license codes from the Autodesk Media and Entertainment Licensing Department. See [“Requesting License Codes”](#) on page 26.

**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 Lustre_2009_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 each project that uses background rendering. Under the Project menu, in Network Rendering, define Project Home, Scans Full Home, Scans Half Home, Renders Full Home, and Renders Half Home. See the Project Configuration Settings section of the Project Management chapter in the *Lustre 2009 User Guide*.

# Configuring BrowseD



## Summary

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## 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 2009 User 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.	<a href="#">Chapter 3, “Installing Lustre on Windows,”</a> on page 23.
2. Start the BrowseD server.	<a href="#">“Starting and Stopping the BrowseD Service”</a> on page 68.
3. On all machines (like the Lustre Master Station, the Lustre HD Station, and background render nodes), configure the <i>browsed.config</i> file to connect to the BrowseD server.	<a href="#">“Configuring Workstations to Use the BrowseD Server”</a> on page 70.
4. Make the remote storage accessible from the file browser on the Lustre workstations.	<a href="#">“Making BrowseD Directories Accessible from the Lustre Browser”</a> on page 71.
5. Configure background rendering to use the BrowseD server.	<a href="#">“Using BrowseD for Rendering with Burn for Lustre”</a> on page 71.

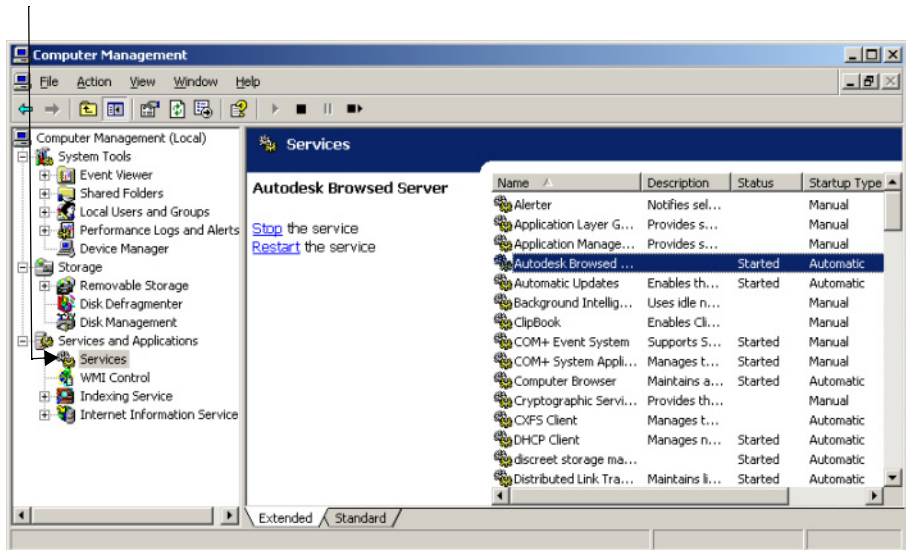
## Starting and Stopping the BrowseD Service

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.

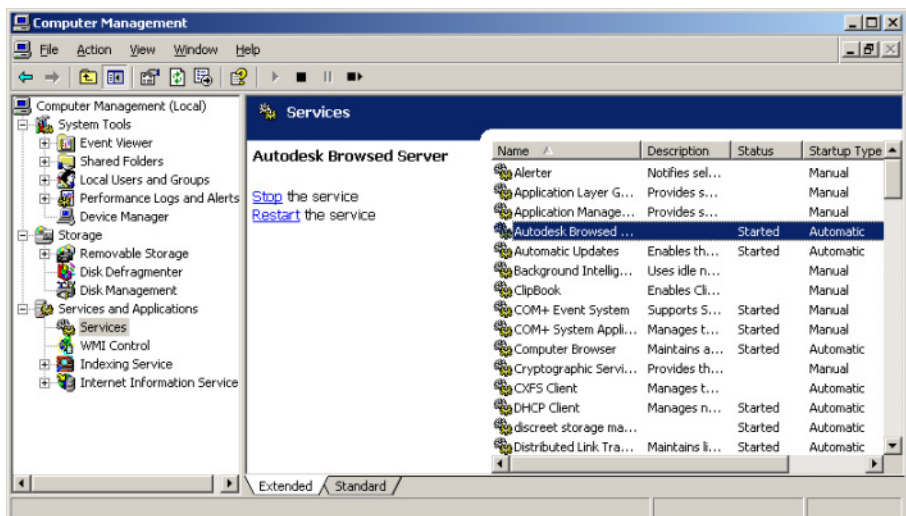
For instructions on installing and licensing BrowseD, see [Chapter 3, “Installing Lustre on Windows,”](#) on page 23.

**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.



- 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:

- Choose Start | Run.
- In the Run dialog box, enter **cmd** and then click OK.
- In the Command window, enter **C:\Program Files\Autodesk\<version>** and then press **ENTER**.
- 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 *init.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 *init.config* file, located at *C:\Program Files\Autodesk\Lustre <version>*.

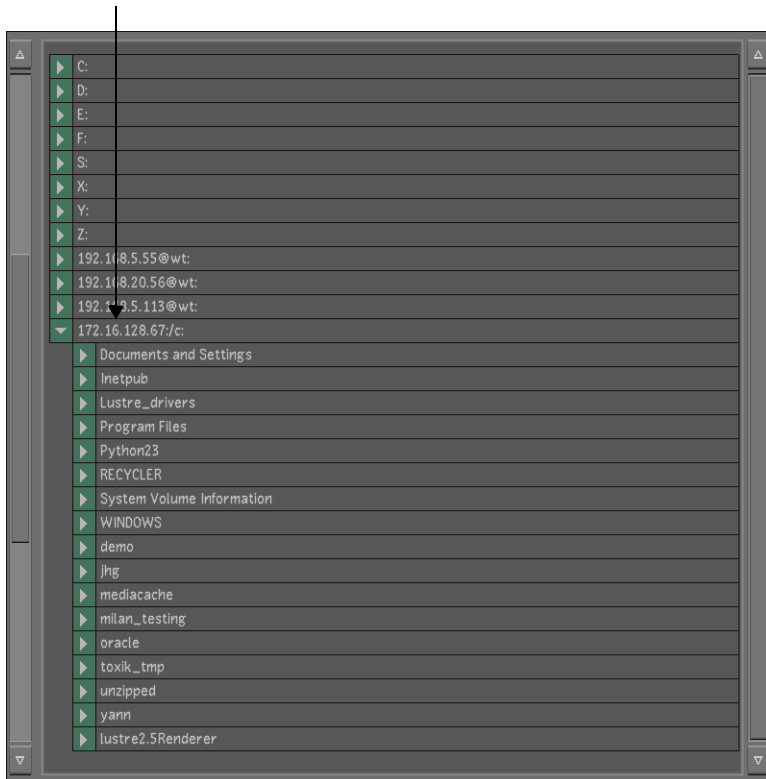
Use the following table as a reference when configuring the *init.config*.

Keyword	Required values
Username	Enter the administrative user on the BrowseD server, for example, <i>root</i> on Linux and <i>Administrator</i> on Windows.
Password	Enter the password for the administrative user as defined above.
Port	All computers on the BrowseD network must use the same port to communicate. Set to 1055, the default.
BrowsedServer	Defines the IP address or DNS host name for a specific BrowseD Server.
UseInfi	Select if the networking protocol to use with BrowseD is InfiniBand.

## 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. You do this by configuring the `BrowseDServerGroup` keyword in `init.config`. See [“Configuring Workstations to Use the BrowseD Server”](#) on page 70.

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 53.

**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 *Lustre 2009 User Guide*.
2. Open the Network Rendering 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 in the Render > Remote menu should read *172.17.20.146:/f:/project/bernice*.

# Software, Project, and User Configuration Files



## Summary

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## 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.

Before doing any colour correction in Lustre, you must first log into a project with a valid user profile. See the “Project Management” chapter in the *Lustre 2009 User Guide*. When you create a user profile and project in Lustre, you are indirectly creating the *user.config*, *project.config*, and *<user>Context.config* files. However, aside from the initial system configuration in the *init.config* file that you must set before you begin working, there is no need for you to manually create or modify any of the other configuration files. All of the configuration settings are set within Lustre’s user interface (refer to “System Settings” in the “Project Management” chapter of the *Lustre 2009 User Guide*).

When you log into a particular project in Lustre for the first time, Lustre creates the *<user>Context.config* file, where *<user>* represents the user name associated with the user profile. The context file is found in the *...\\projects\\<project>\\* folder in Windows and the *.../projects/<project>/* directory in Linux. The context keywords include some attributes not defined in the Project or User configuration settings. They are saved and reloaded each time the context (same user and project) applies. The context settings include:

- Last scene
- Last shot
- Resolution
- Crop value

- Assemble frame rate / drop frame mode
- State of the surface control
- Audio file

The following is a list of the Lustre configuration files.

Configuration file	Default Location	Description
<i>init.config</i>	Windows: C:\Program files\Autodesk\Lustre2009\ Linux: /usr/autodesk/lustre2009/	This file stores system settings as well as Wiretap servers, Slave Render settings, and film stock information.
<i>login.config</i>	Windows: C:\Program Files\Autodesk\Lustre2009\ Linux: /usr/autodesk/lustre2009/	This file records the last user and last project used so at the next session, the user and project login defaults will reflect these values.
<i>project.config</i>	Windows: C:\Autodesk\projects\ <i>&lt;project&gt;</i> \ <i>project.config</i> Linux: /usr/autodesk/projects/ <i>&lt;project&gt;</i> / <i>project.config</i>	This file stores project-level information including project settings, calibration, rendering, engineering, and BackBurner and Wiretap settings specific to the project.
<i>user.config</i>	Windows: C:\Autodesk\users\ <i>&lt;user&gt;</i> \ <i>user.config</i> Linux: /usr/autodesk/users/ <i>&lt;user&gt;</i> / <i>user.config</i>	This file stores user settings specific to a particular user, such as Autosave, printer light, GUI background/gain/gamma.
<i>&lt;user&gt;Context.config</i>	Windows: C:\Autodesk\projects\ <i>&lt;project&gt;</i> \ <i>&lt;user&gt;Context.config</i> Linux: /usr/autodesk/projects/ <i>&lt;project&gt;</i> / <i>&lt;user&gt;Context.config</i>	This file stores several settings relevant to the context of a particular user working on a particular project. The purpose of storing context-specific information is that there are some parameter settings that, by their nature, are more likely to be needed in the next session, but that are not configurable in the Project Management pages.

## System Settings

Before you first log into Lustre, you must configure the system settings in the *init.config* file (refer to “Configuring System Settings” in the “Project Management” chapter of the *Lustre 2009 User Guide*). If these system settings are not configured, Lustre uses the default system settings. The following table describes the relevant system settings that should be configured before the first login.

**NOTE:** All keyword values are case-sensitive.

Parameter	Data type	Default	Function
<b>&lt;Locations&gt;</b>			
<MainProjectHome>	String		Location of the Project configuration settings folder.
<MainUserHome>	String		Location of the User configuration settings folder.
<b>&lt;Wiretap&gt;</b>			
<ServerAuto>	State	On	Specifies whether Lustre automatically scans for Wiretap servers.
<WiretapServer> (within <WiretapServer Group>)	String	0.0.0.0	The IP address or DNS host name for a specific Wiretap server. If one or more <WiretapServer> keywords are set to valid Wiretap server addresses, Lustre lists the content of these servers in the browser before the results of the auto scan. If <ServerAuto> is set to OFF, only the specified Wiretap servers are listed in the browser.
<b>&lt;MonitoringAndCalibration&gt;</b>			
<DisplayType>	Enumerated (abstract data)	LCD	Specifies the monitor display type (e.g., LCD or CRT).
<Calibration_Steps>	Integer	10	Specifies the number of monitor calibration steps performed.
<b>&lt;ControlSurface&gt;</b>			
<AutodeskPanels>	State	On	When ON, this keyword enables the Autodesk Control Surface (ACS). When OFF, Lustre enables the Tangent CP100 control surface (if applicable). You must also set the path for the control surface rules file in the Panel Setup File field (refer to "System & Menu Settings" in the "Project Management" chapter of the <i>Lustre 2009 User Guide</i> ).

Parameter	Data type	Default	Function
<PanellIDs>		function="0" grading="0" navigation="0"	The ID numbers for the Function, Navigation, and Grading panels of the ACS. You must manually configure these keywords. If your control surface is a Tangent CP100, Lustre does not use these keywords.
<PanellPTags>		function="101" grading="100" navigation="102"	
<BrowseD>			
<Port>	Integer	1055	All computers on the BrowseD network must use the same port to communicate.
<Username>	String	Administrator	Administrative user on the BrowseD server (e.g., root on Linux and Administrator on Windows).
<Password>	String	xxx	Password for the administrative user.
<UseInfi>	State	Off	Switch to ON if the networking protocol to use with BrowseD is the InfiniBand.
<ReadCacheBuffer Num>	Integer	0	
<ReadCacheThread Num>	Integer	0	
<BrowseDServer> (within <BrowseDServer Group>)	String	0.0.0.0	Defines the IP address or DNS host name for a specific BrowseD server.
<SlaveRenderer>			
<HostName>	String		The IP address or DNS host name for a specific Slave Render machine.
<Timeout>	Integer	5000	Sets the timeout duration (in milliseconds) of the automatic slave renderer detection.
<Backburner>			
<Hostname>	String		The IP address or DNS host name for a specific Backburner Manager machine.
<MatchCustomGroup>			

Parameter	Data type	Default	Function
<MatchCustom>	Name	"AliasName" type="s"	Specifies the XML metadata field to be used by the Custom match option selected from the Browse menu. "s" represents string.
<MatchCustom>	Name	"DPXTimeCode" type="tc"	"tc" represents timecode.
<MatchCustom>	Name	"DPXkeycode" type="kk"	"kk" represents keycode.
<MatchCustom>	Name	"DPXTapeNAME" type="s"	"s" represents string.
<MatchCustom>	Name	"EDLReelName" type="s"	"s" represents string.
<MatchCustom>	Name	"DL_EDLClip_ name" type="s"	"s" represents string.
<MatchCustom>	Name	"DL_edlFrameID" type="i"	"i" represents integer.
<MatchCustom>	Name	"DLEDL_startTC" type="tc"	"tc" represents timecode.
<AVIO>			
<PlayoutHighSpeed>	State	Off	When OFF, it refreshes the Player as you are performing a playout. When ON, the Player is no longer refreshed and therefore the performance of the playout improves. If you are using an IBM 6223 workstation, you must set this keyword to ON.
<WTTFirstSDLeadInCorrection>	Integer	1	Sets the delay for the SD first lead-in.
<WTTSubsequentSDLeadInCorrection>	Integer	2	Delays all the lead-ins following the SD first shot.
<WTTSDLeadInIncrement>	Integer	0	Corrects the delay after the SD third shot.
<WTTFirstHDLLeadInCorrection>	Integer	0	Sets the delay for the HD first lead-in.
<WTTSubsequentHDLLeadInCorrection>	Integer	0	Delays all the lead-ins following the HD first shot.
<WTHDLLeadInIncrement>	Integer	0	Corrects the delay after the HD third shot.

Parameter	Data type	Default	Function
<Miscellaneous>			
<DisablePanScan Frame>	State	On	
<NVidiaSDISync>	State	Off	
<NVidiaPlayoutDelay>	Integer	0	
<BlockSize>	Integer	2048	
<AudioResyncTime>	Float	-1	
<LoadingSetup>	Integer	0	
<EnableKeykode Sending>	Enumerated (abstract data)	Off	
<LoginGUIGain>	Float	1.0	
<LoginGUIImageGamma>	Float	1.0	
<ClusterPlayDelay>	Integer	0	Available for Incinerator only.
<ClusterSmooth Playback>	State	Off	Available for Incinerator only.
<Debug>			
<DumpDLEDLPath>	String		Path to place the contents of a DLEDL when it is loaded in the timeline or Shot bin.
<DumpWiretapCreate Clip>	State	Off	When ON, the attributes of a Wiretap clip are placed into a log file each time a clip is created on a Wiretap server. The file <i>WiretapClipDump.log</i> is located in the Lustre home folder. Use this keyword for debugging only.
<FilmTypeGroup>			
<FilmType>	Name		Various film types for AGFA, Kodak™, Eastman, and Fuji emulsions. It defines the relationship between the DPX film emulsion code and the DPX film code number.

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