Autodesk®
Backburner™ 2008.1

Installation Guide

Autodesk®

Autodesk® Inferno®, Autodesk® Flame®, Autodesk® Flint®, Autodesk® Fire®, Autodesk® Smoke®, Autodesk® Backdraft® Conform software

Portions relating to MXF-SDK was developed by Media, Objects and Gadgets - Soluçoes de Software e Hardware, S.A. (http://www.mog-solutions.com) in co-operation with Institut für Rundfunktechnik GmbH (http://www.irt.de).

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Autodesk® Flare™ software

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Image courtesy of Creative Bubble

1 Introduction

Summary

Welcome

Welcome to the *Autodesk Backburner Installation Guide*. Backburner™ is the Autodesk® queue manager for background processing and distributed network processing. It provides the means to submit, monitor and control rendering jobs and media I/O. Backburner is leveraged by the following Autodesk applications:

- Inferno®
- Flint®
- Smoke®
- Lustre®
- Combustion®
- Cleaner®
- Flame®
- Fire®
- Flare™
- 3ds Max®
- WiretapCentral™
- Toxik™
- Burn®
- Backdraft® Conform

This guide relates to installation and configuring. For help using Backburner itself, refer to the *Autodesk Backburner User Guide*. For information on submitting jobs to Backburner from an Autodesk application, refer to the user guide for the application of interest.

Intended Audience and Prerequisites

This guide is for the person responsible for installing and setting up Backburner. Familiarity with the following selected topics will prove helpful:

- Autodesk applications
- Linux® and/or Windows®
- Computer networking

If you require assistance during the install, please contact Autodesk Media and Entertainment customer support. See "Contacting Customer Support" on page 9.

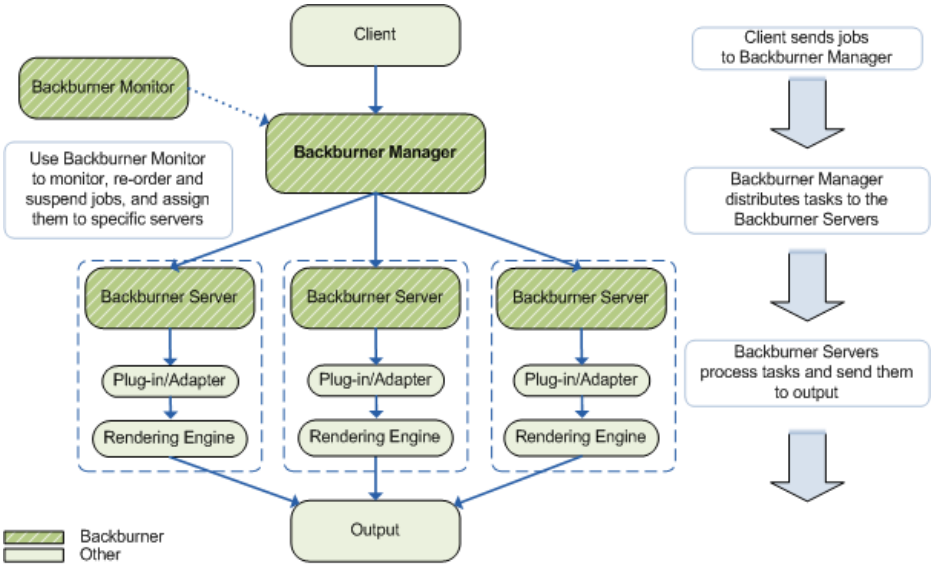
Backburner Terminology

Familiarity with following terms will be helpful in understanding the remainder of this guide.

Term	Definition
Backburner	Autodesk's distributed job management system for executing rendering and I/O jobs in the background.
Job	A set of one or more tasks submitted to Backburner for processing, such as a 3ds Max scene, Flame Batch setup or background I/O.
Backburner Manager	Coordinates jobs submitted by Wiretap® clients and delegates them to the Wiretap servers on the Wiretap network.
Backburner Windows Monitor Backburner Web Monitor	Front-end interfaces for management and control of the Backburner Manager.
Backburner Server	The slave job-processing component (daemon) of Backburner that invokes the rendering or processing engine.
Renderer Rendering Engine	The server-side process responsible for rendering frames.
Processing Engine	Similar to a rendering engine, for non-scene processing (such as background I/O).
Plug-in/Adapter	The mechanism by which renderers and processing engines integrate themselves with the Backburner Manager.

Backburner Architecture

As illustrated in the following diagram, Backburner consists of the Backburner Manager, Backburner Monitor, and Backburner (slave) servers. These operate in the greater context of clients (creative applications), plug-ins/adapters and processing or rendering engines, such as Burn.



Backburner Manager

At the centre of Backburner is the Backburner Manager. It receives jobs from the clients, which it then distributes to the render nodes on the network. The Backburner Manager maintains status information about its network of Backburner servers. It also maintains a database of submitted, active, and completed jobs.

Backburner Monitor

End-user and administrator interaction with the Backburner Manager is by way of the Backburner Monitor. It is used to monitor the progress of a job, suspend and restart jobs, and perform administrative tasks.

Render Nodes

Render nodes consist of a Backburner (slave) Server, plug-ins/adapters and rendering engines. The Backburner Server is tasked with carrying out the jobs assigned to it by the Backburner Manager. It does so by passing the jobs on to the correct rendering engine via the plug-in/adapter. The plug-in/adapter and rendering engine are furnished by the creative application. The plug-in/adapter receives instructions from the Backburner Server and controls the rendering engine.

The kinds of jobs a server can process depend on the plug-ins/adapters and processing/rendering engines installed upon it. Autodesk Visual Effects and Finishing applications share

the Burn rendering engine and Wire® processing engine. Some Autodesk applications, such as 3ds Max®, have their own rendering engine. Cleaner®, too, provides its own rendering engine.

NOTE: Installing and configuring the background/network rendering engine for particular products is beyond the scope of this document. For Inferno, Flame, Flint, Fire, Smoke, or Backdraft Conform, see the *Autodesk Burn User Guide*. For Lustre, see the *Autodesk Lustre Software Installation Guide*.

Deployment Models

There are two main deployment models for Backburner: the standalone workstation and the render farm. Often you will find everything needed for background rendering on a standalone workstation (a single machine) is already in place, since Backburner is installed by default with most creative applications. For a render farm, more research, planning and configuration is needed.

Deployment Model One: Standalone Workstation

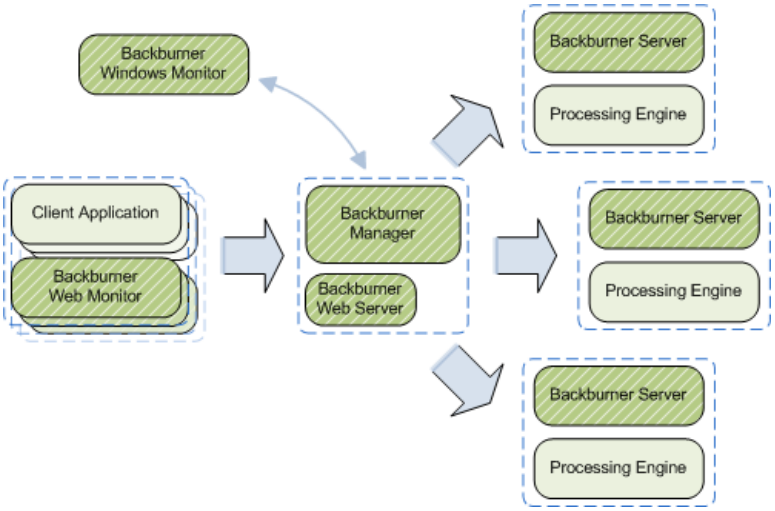
The following figure shows the simplest situation, in which all Backburner components are installed on the same workstation as the creative application.

In this scenario Backburner enables background processing with queue management for a single machine—there is no network rendering. The advantage here is the artist can continue working in the foreground while jobs are being processed in the background. Queue control is also possible. In this case resources are shared between the foreground and background tasks.

For most creative applications, this is the "default" configuration, automatically created as part of the standard install. This subject is covered in Chapter 2, "Configuring a Standalone Workstation," on page 11.

Deployment Model Two: Render Farm

The following figure shows Backburner deployed as a render farm. In this case, the off-loading and parallelization of processing increases productivity tremendously. A render farm can be created for a single creative application, or to service multiple creative applications at the same time.



The render farm deployment model requires planning and consideration. It is the subject of Chapter 3, "Setting up a Render Farm," on page 21.

Backburner SDK and Third-Party Development

The Backburner Manager is a Wiretap™ server. This makes it possible to create custom job and server monitoring and managing tools for all instances of Backburner Manager in your facility. For more information, see the *Wiretap SDK Developer Guide*.

System Requirements

NOTE: This section presents the system requirements for Backburner components. For client applications and render nodes, please refer to the specific application's installation guide, user guide and/or online help.

Component	Windows	Linux
Backburner Manager	• XP Professional SP2 • Vista (32- and 64-bit)	• Red Hat® Enterprise Linux WS 4 (and later)
Backburner Web Server	• XP Professional SP2 • Vista (32- and 64-bit)	• Red Hat Enterprise Linux WS 4 (and later)

Component	Windows	Linux
Backburner Windows Monitor	• XP Professional SP2 • Vista (32- and 64-bit)	*not applicable*
Backburner Web Monitor	• Microsoft® Internet Information Services (IIS) web server • Apache HTTP web server 2.0.59 (or later)	• Apache HTTP web server 2.0.59 (or later)

Recommendations

When setting up a render farm please note the following recommendations:

- **Dedicated Workstation for Backburner Manager**: The Backburner Manager performs best on a workstation reserved for its exclusive use. In particular, avoid running the Backburner Manager on a workstation that is also being used as a render node or by a client application.
- **Backburner Web Monitor**: For most monitoring needs the Backburner Web Monitor will suffice, and is the recommended option, since it has little impact on system performance (see "Windows Monitor versus Web Monitor" on page 26). Note that it requires that a web server be installed on the workstation running the Backburner Manager.
- **Network Card**: A network interface card is required for each workstation in the Backburner network. Backburner will work with any standard network card, but for best results we recommend one that is Gigabit Ethernet capable.

Notation Conventions

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

Convention	Example
Text that you enter in a command line or shell appears in Courier bold. You must press the Enter key after each command.	**`rpm -qa`**
Variable names appear in Courier, enclosed in angle brackets.	`<variable_name>`
Variables that appear enclosed in square brackets are optional.	`[<filename>]`
Feedback from the command line or shell appears in Courier.	`limit coredumpsize`
Directory names, filenames, URLs, and command line utilities appear in italics.	*/usr/discreet*

Related Documentation

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

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

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

Contacting Customer Support

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

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

2 Configuring a Standalone Workstation

Summary

Overview

In a standalone deployment, all the Backburner and creative application components needed for background processing are installed on a single workstation. No render farm is necessary. For some creative applications, all the necessary components are already installed. All you need to do is a little configuration.

This chapter tells you everything you need to know to set up background rendering on a standalone workstation. It takes a look at the standalone possibilities for each creative application leveraged by Backburner. It provides step-by-step instructions, and advises where to look for additional information, when needed. Its purpose is to help you determine what you can do without setting up a render farm, and provide the detailed steps on how to do it.

3ds Max

Backburner is installed by default during the 3ds Max installation. In this standalone configuration, Backburner can be used to perform background rendering with queue management on a single machine. It can also be used to break a large image into horizontal or vertical “strips” to reduce the resources—such as memory—required for rendering. The standalone configuration for 3ds Max is illustrated in the following figure.

In the standalone configuration, specifying 'network' rendering when submitting jobs from 3ds Max invokes Backburner. 3ds Max submits the job to the locally installed Backburner Manager. The Backburner Server then invokes the 3ds Max renderer, which carries out the task of rendering. The Backburner Monitor can be used to manage queued tasks.

To set up local background rendering in 3ds Max:

NOTE: This procedure assumes 3ds Max, including all Backburner components, are already installed on the workstation. If this is not the case, please refer to the 3ds Max installation guide.

1. Start the Backburner Manager by choosing Start | Programs | Autodesk | Backburner | Manager.
2. Start the Backburner Monitor by choosing Start | Programs | Autodesk | Backburner | Monitor.
3. Connect the monitor to the manager by choosing Manager | Connect and entering the following for the manager name/IP address:

   `localhost`
4. Verify the connection by choosing Manager | Properties.

   Manager details appear in a dialog box. If no connection was made, this option is greyed-out.
5. Start the Backburner Server by choosing Start | Programs | Autodesk | Backburner | Server.

   The General Properties dialog appears. If not, choose Edit | General Settings.
6. Verify the following items are set correctly in the General Properties dialog:
   - *Server Name or IP Address*: Used by the Backburner Manager to identify and communicate with the server. This field should contain the machine name or IP address of the current workstation.
   - *Automatic Search*: Unchecked.
   - *Enter Manager Name or IP Address*: Used by the Backburner Server to locate and communicate with the manager. The keyword **`localhost`** should suffice, since it resolves to the IP address of the local workstation.

7. Verify the connection in the monitor window or server window.

For more information:

- Configuring the Backburner Manager to start with the OS and run in the background: "Running Backburner Manager as a Windows Service" on page 54
- Configuring the Backburner Server to start with the OS and run in the background: "Setting Up Backburner Server as a Windows Service" on page 59
- Submitting rendering jobs for processing in the background: *3ds Max User Guide*

Inferno, Flame, Flint, Smoke, Flare & Backdraft Conform

The Visual Effects and Finishing applications leverage Backburner for the following purposes: background I/O, video encoding, network rendering and media conversion. Background I/O provides the ability to *wire* transfer, resize and generate proxies for clips as background tasks. Cleaner XL provides video encoding to a variety of formats. Burn is the rendering engine for Visual Effects and Finishing applications. In each of these cases, Backburner acts as the queue manager. WiretapCentral allows you to view and convert the media content of your facility without the need for a running Visual Effects and Finishing application. It leverages Backburner to off-load the conversion, and for scalability.

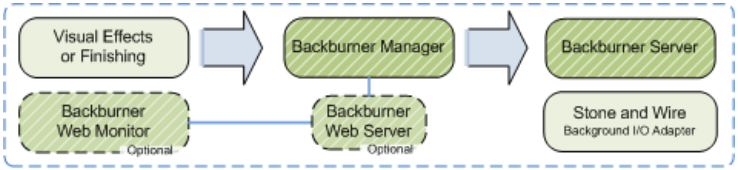
NOTE: Visual Effects and Finishing applications have some queue monitoring abilities built into the user interface. For more complete queue control you can install the Backburner Monitor.

Background I/O

Background I/O is a media management tool for performing I/O with no impact on the performance of the creative workstation. The tool has both a command-line and embedded interface, and can be used to:

- Transfer clips using Wire
- Publish clips
- Stonify soft-imported clips
- Resize clips
- Generate proxies for clips

The necessary components for background I/O are illustrated in following figure.



NOTE: 1. Stone® and Wire are automatically installed during installation of the Visual Effects and Finishing application. 2. Not all Backburner components may have been installed during product installation. 3. The Backburner Web Monitor and Backburner Web Server are optional, for the purposes of Background I/O.

Requesting a "Background Wire" transfer from the Clip Library menu invokes Backburner. The Visual Effects and Finishing application submits the job to the locally installed Backburner Manager. The Backburner Manager then invokes the Backburner Server, which calls upon the Wire daemon to carry out the task of transferring the media. Monitoring is embedded in the Visual Effects and Finishing application. It can also be done using the Backburner Web Monitor (optional).

To set up background I/O in Visual Effects and Finishing:

NOTE: This procedure assumes the Visual Effects and Finishing application and all Backburner components are already installed on the workstation. It also assumes the Backburner Manager and Backburner Server have been configured to run as daemons, and start with the workstation's operating system. If this is not the case, please install the Visual Effects and Finishing software and then proceed to "Installing the Backburner Components on Linux" on page 79.

1. Ensure the Backburner Manager and Backburner Server are installed and set to run as daemons by typing the following:

   ```
   chkconfig --list | grep -i backburner
   ```

   Output similar to the following should appear:

   ```
   backburner_manager 0:off 1:off 2:on 3:on 4:on 5:on 6:off
   backburner_server  0:off 1:off 2:on 3:on 4:on 5:on 6:off
   ```

   Levels "3", "4" and "5" must be "on" for the daemons to start automatically. If this is not the case, reinstall the Backburner components.

2. Ensure the token **`localhost`** appears in the following file:

   `/usr/discreet/backburner/cfg/manager.host`

   The **`manager.host`** file is used by the Backburner Server to locate the manager. For background I/O, it must contain a token indicating the IP address or host name of the local

machine. In this case, the token **localhost** will suffice, since it resolves to the IP address of the local workstation.

3. Restart the Backburner Manager and Backburner Server so they pick up the new settings:

   /etc/init.d/backburner restart

4. Ensure the **BackburnerManagerHostname** keyword in the folllowing file is set to the the IP address of a valid manager:

   /usr/discreet/<product_home>**/cfg/init.cfg**

   For example, in most cases you can set it to **localhost**:

   BackburnerManagerHostname localhost

   NOTE: The **BackburnerManagerHostname** keyword is also used to indicate the manager for Burn and Cleaner XL. If either of these other systems has been set up for this seat of the creative application, you can indicate that manager instead.

5. Restart the Visual Effects and Finishing application so it picks up the new configuration file setting and begins communicating with Backburner.

To verify background I/O is operational:

1. Create a new project for which proxy generation is always on or is conditional.

   Alternately, enable proxies for an existing project by editing the project's settings (in the Preferences Menu, Project Management group).

2. In the library click Import Image.

3. In the Clip Media group, enable Soft-Import Full Res.

4. In the Background Operations group, verify the Generate/Import Proxies button is enabled.

   This button is only enabled when Backburner is installed and running, and the Visual Effects and Finishing application is configured to make use of it.

   NOTE: The Proxy Generation button in this area of the software does not determine whether proxies are generated or not. It specifies *where* they are generated: in the background (with Backburner) or the foreground (Backburner not needed).

For more information:

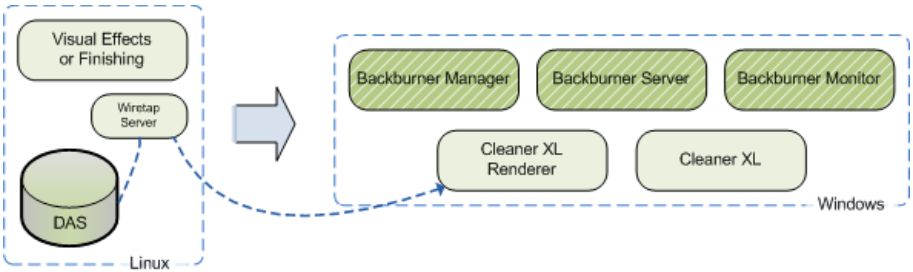
- Installing and configuring the Backburner Web Server: Chapter 7, "Backburner Web Monitor – Linux," on page 83
- Configuring Backburner Manager behavior: Appendix A, "Backburner Manager Configuration Settings," on page 89

- Setting up the Backburner Web Monitor: Chapter 7, "Backburner Web Monitor – Linux," on page 83
- Submitting background I/O jobs: Application-specific user guide

Cleaner XL

Cleaner XL encodes jobs to a variety of formats, including Quicktime®, Windows Media® and Real®. It receives jobs from the creative application, and saves the output files to disk. For Visual Effects and Finishing applications, Backburner provides the communication between the creative application and the Windows workstation running Cleaner XL.

The following diagram shows a typical setup for a Visual Effects or Finishing workstation and Cleaner XL.



As you can see, for a Visual Effects and Finishing application, the setup is not strictly speaking "standalone", since a separate workstation is required. Visual Effects and Finishing applications run under Linux, while Cleaner XL is a Windows application (it can be run on a laptop). Note that the Wiretap daemon is installed by default during the Visual Effects and Finishing installation, and is used by Cleaner XL to acquire media from the creative workstation's direct attached storage (DAS). The Backburner components are normally installed during the Cleaner XL installation process.

The action of sending a clip from the Visual Effects or Finishing application to Cleaner XL invokes Backburner. The Backburner Manager receives the job and invokes the Backburner Server on the Windows machine. The server, in turn, calls upon the Cleaner XL renderer to carry out the task of encoding the media.

An important element in the workflow is the role played by Cleaner XL "output profiles". Output profiles specify the type of encoding desired, audio and video filter settings, and the output destinations. Output profiles must be created in Cleaner XL and manually transferred to the Linux workstation.

Note that the Cleaner XL renderer pulls raw uncompressed RGB data from the Linux workstation's storage, by way of the Wiretap daemon. As a result, the Linux and Windows machines must be on the same subnet/switch, or severe network bottlenecks can occur.

To set up a Visual Effects or Finishing application for Cleaner XL:

NOTE: This procedure assumes the Visual Effects and Finishing application, Cleaner XL and Backburner components are already installed on their respective workstations. If this is not the case, please refer to the application-specific installation guide.

1. On the Windows workstation, start the Backburner Manager by choosing Start | Programs | Autodesk | Backburner | Manager.
2. Start the Backburner Monitor by choosing Start | Programs | Autodesk | Backburner | Monitor.
3. Connect the monitor to the manager by choosing Manager | Connect and entering the following for the manager name/IP address:

   `localhost`
4. Verify the connection by choosing Manager | Properties.

   Manager details appear in a dialog. If no connection was made, this option is greyed out.
5. Start the Backburner Server by choosing Start | Programs | Autodesk | Backburner | Server.

   The General Properties dialog appears. If not, choose Edit | General Settings.
6. Verify the following items are set correctly in the General Properties dialog:
   - *Server Name or IP Address*: Used by the Backburner Manager to identify and communicate with the server. This field should contain the machine name or IP address of the current workstation.
   - *Automatic Search*: Unchecked.
   - *Enter Manager Name or IP Address*: Used by the Backburner Server to locate and communicate witht he manager. The keyword **`localhost`** should suffice, since it resolves to the IP address of the local workstation.
7. Verify the connection in the monitor window or server window.
8. On the Linux workstation, configure the Visual Effects and Finishing application to point to the Backburner Manager by editing the following file:

   `/usr/discreet/``<product_home>`**`/cfg/init.cfg`**
9. In **`init.cfg`**, set the **`BackburnerManagerHostname`** keyword as follows:

   `BackburnerManagerHostname``<WindowsWorkstation>`

where `<WindowsWorkstation>` is the machine name or IP address of the Windows workstation where Cleaner XL and Backburner are installed.

For more information:

- Detailed setup instructions and troubleshooting: *Using Autodesk Cleaner XL with Autodesk Effects and Finishing Applications*.
- Sending jobs to Cleaner XL: Application-specific user guide.
- Details on encoding using Cleaner XL: *Autodesk Cleaner XL User Guide*.

Burn

Burn is the rendering engine shared by Visual Effects and Finishing applications. When you submit rendering jobs to the Backburner network from a creative application, it is Burn that performs the rendering. There is no standalone deployment model for Burn. It is always deployed as a render farm.

For more information:

- Guidelines for network rendering: Chapter 3, "Setting up a Render Farm," on page 21
- Detailed instructions: *Burn Installation and User Guide*

WiretapCentral

Visual Effects and Finishing applications use WiretapCentral to read and decode formats such as OpenEXR and Red Raw (.r3d) files, to a Stone FS or Standard FS filesystem. WiretapCentral leverages Backburner to offload transcoding. In a standalone installation, all the background processing components—Backburner server, Backburner Manager and the MIO Adapter—are installed on the same workstation as the Visual Effects and Finishing application.

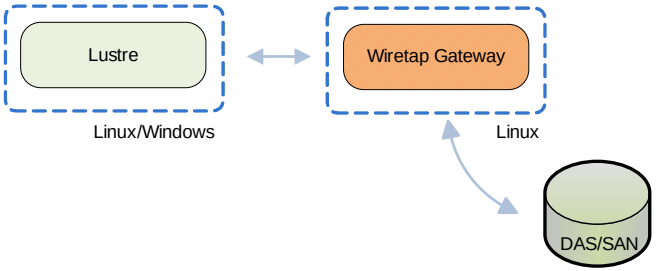
This is the simplest configuration, since all components are automatically installed and set up by the Visual Effects and Finishing installer. However, since all media processing is performed locally, it can have a significant impact on system performance. The standalone configuration is best-suited for occasional media encoding and decoding. For more demanding uses, a render farm is the recommended configuration.

For more information:

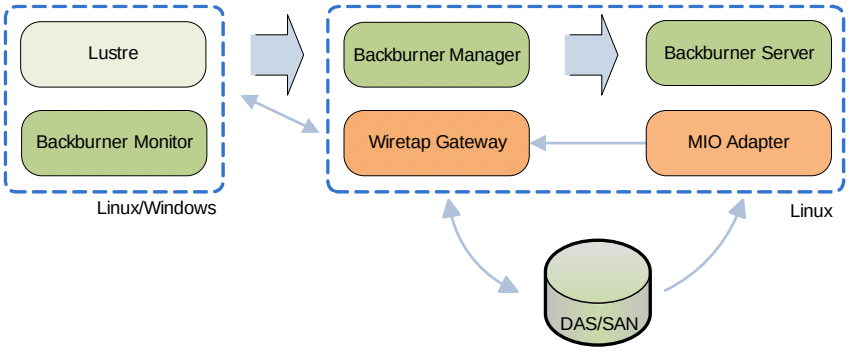
- Detailed installation, setup and configuration instructions: *WiretapCentral Installation Guide*.

Lustre

Lustre can work with streaming media—such as Red Raw (.r3d) files—in two distinct ways. In the simplest configuration Lustre reads material natively through the Wiretap Gateway. In this case, the Wiretap Gateway decodes the media on-the-fly, immediately returning proxy-quality images for use in Lustre. As shown in the following illustration, Backburner is not needed.



High-resolution background transcoding of streaming media formats is made possible by leveraging Backburner, as shown in the following illustration.



As in the native workflow, Lustre browses storage devices via the Wiretap Gateway. Here, however, transcoding jobs are sent directly from the Lustre UI to the Backburner Manager. The Backburner Manager sends the job to the Backburner Server, which invokes the Autodesk MIO Adapter processing engine to carry out the transcoding. The MIO Adapter reads from storage directly and writes its results to the Wiretap Gateway. The Backburner Monitor can optionally be used to monitor job progress.

For more information:

- Intstallation instructions (Windows): *Autodesk Lustre Software Installation Guide for Windows Workstations*.
- Intstallation instructions (Linux): *Autodesk Lustre Software Installation Guide for Linux Workstations*.

- Guidelines for transcoding using a render farm: "Lustre Background Transcoding" on page 41.

Combustion

Backburner is installed by default during the Combustion installation, but is not needed for local rendering, or for local encoding using Cleaner XL. The following table summarizes the role of Backburner in Combustion.

Processing Option	Backburner
Local rendering using the Autodesk Combustion Render Queue™	n/a
Network rendering using the Autodesk Combustion Render Queue	n/a
Network rendering using Backburner	*Yes*
Local encoding with Cleaner XL	n/a
Network encoding with Cleaner XL	*Yes*

See Chapter 3, "Setting up a Render Farm," on page 21.

Toxik

There is no standalone deployment model for Backburner with Toxik, since Backburner is not needed for local background rendering. In Toxik, Backburner is used for network rendering only.

See Chapter 3, "Setting up a Render Farm," on page 21.

3 Setting up a Render Farm

Summary

Overview

Backburner can accommodate a number of different render farm deployment models and network topologies. Your goal may be to set up one or more render nodes for a single creative application; or, you may be planning to roll out a larger render farm to service numerous creative seats simultaneously. Whatever your goal, the guiding principles for establishing a render farm are similar.

First, you must determine a location for the Backburner Manager. The main factor affecting its location is the deployment model. A render farm dedicated to a single creative seat, and one to be shared by multiple seats do not have the same needs. When planning a larger render farm, it is important to consider the effect of network traffic upon the Backburner Manager.

Second, you must establish monitoring and control of the farm by installing and configuring the Backburner Monitor. The monitor comes in two versions, one running under Windows, and a browser based version. Your choice of which to use depends on your deployment model, traffic expectations, user management goals, and other factors.

Finally, you must create the render nodes. This involves installing the processing engine and Backburner Server on each workstation to serve as a render node. For some creative applications, such as 3ds Max, creative seats themselves can be enlisted as render nodes. For others, such as the Visual Effects and Finishing applications, render nodes are always separate workstations.

An additional—often critical—consideration is the ability of the network and storage to handle the flow of "bulk" data—that is, scene, texture or frame data. Each creative application has distinct bulk data needs. Taking them into consideration when designing the render farm will help to maximize its efficiency.

This chapter presents the design and configuration issues associated with a Backburner render farm. It begins with the general layout of a typical render farm—one not tied to any particular application. Next, it presents the steps to creating a render farm: isolating the Backburner Manager, setting up monitoring, and installing and configuring the servers. It then examines the more advanced subject of how to accommodate bulk data. The final sections provide instructions for setting up render farms for each of the creative applications leveraged by Backburner, with cross-references to detailed installation instructions, should they be required.

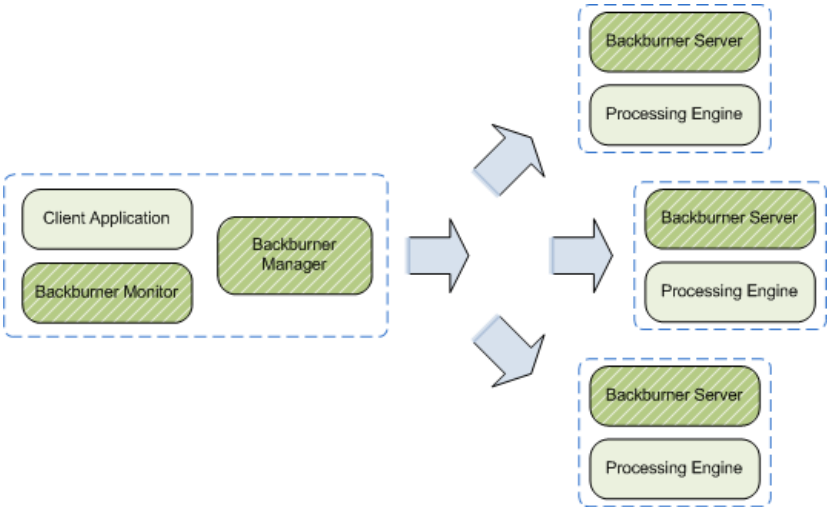
Render Farm Deployment Options

There are two basic forms of the render farm. The first is a render farm dedicated to a single creative seat. In the second, usually larger, render nodes are shared by multiple creative seats. This section presents an overview of each option.

Dedicated Render Farm

In a dedicated render farm, multiple render nodes service a single creative application. In this case, the creative seat serves as the "master" workstation that oversees and controls all jobs on the render farm. For this reason, both the Backburner Manager and Backburner Monitor are installed on the creative seat. Each render nodes contains the Backburner Server and appropriate processing engine.

The dedicated render farm is illustrated in the following figure.

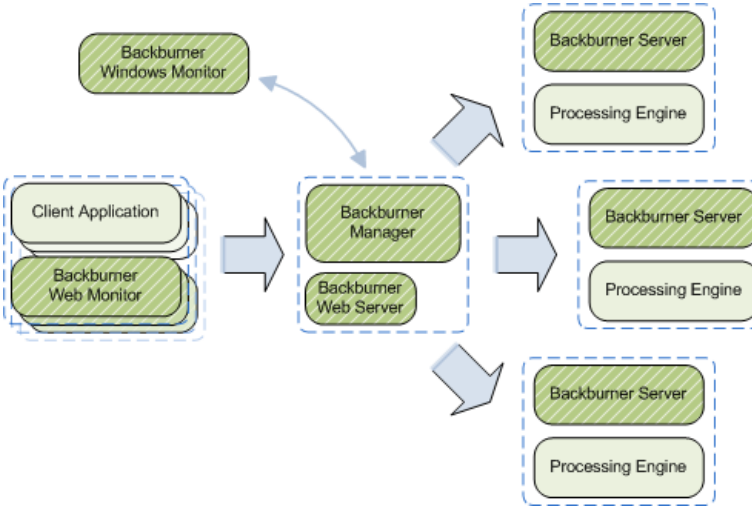


The render nodes in a dedicated render farm can include workstations used as creative seats, depending on the application. For 3ds Max, for example, you can take advantage of unused processing power of creative workstations during off-peak hours, using Backburner Manager's scheduling abilities. This is not the case for Visual Effects and Finishing applications—Burn requires exclusive use of the render node.

Shared Render Farm

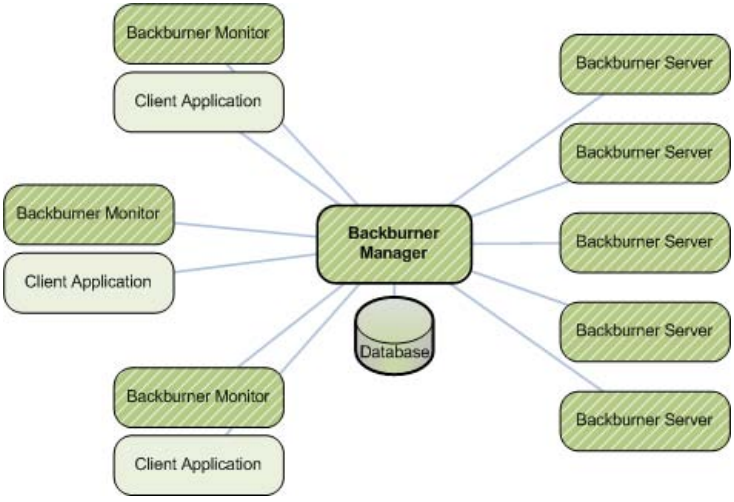
In a shared render farm, the render nodes service more than one seat of a creative application. In this case it is recommended that you install the Backburner Manager on a workstation reserved exclusively for its use. The resource intensive Backburner Windows Monitor can reside on the same machine as the manager, designated as a "master" workstation. Each non-master creative application can make use of the less resource-intensive Backburner Web Monitor to monitor and control jobs.

This is illustrated in the following diagram.



Isolating the Backburner Manager

The Backburner Manager coordinates jobs submitted by the creative applications and delegates them to the servers on the render farm. Its role as a central point of communication is illustrated in the following diagram, showing a shared render farm consisting of three seats of the creative application and five render nodes.



The Backburner Manager has the following duties:

- Receiving processing requests from client applications.
- Receiving status reports as tasks are completed on the servers.
- Handling requests from the Backburner Monitors.
- Updating its database with all transactions.

For a render farm built for a single seat of a creative application, there is no need to isolate the Backburner Manager on a separate workstation, since the traffic does not warrant it. For one built to serve multiple seats of a creative application, it is good practice to isolate the manager on a dedicated workstation, no matter what size render farm you are building or how many creative seats are served by it.

To set up the Backburner Manager on a dedicated workstation, you use the standalone version of the installer, if available. Once it is set up and running, you need to configure the creative applications to point to the new location. If setting up a render farm from scratch, note that installation of the servers is greatly simplified if the manager is already running, since their successful installation and launch can be easily verified in the manager.

For more information:

- Installing and configuring the Backburner Manager:
  - Chapter 4, “Backburner Components – Windows,” on page 49
  - Chapter 6, “Backburner Manager – Linux,” on page 79
- Configuring the creative application to point to the relocated Backburner Manager: The application-specific user guide (e.g. *Autodesk Smoke User Guide*).

Setting up Monitoring

Monitoring is the means by which you observe and control jobs and render nodes on the Backburner network. The Backburner Monitor provides an interface for user interaction with the functionality of the Backburner Manager. This interaction includes pausing, restarting and reassigning jobs and tasks to different render nodes. It also includes creating and managing render node groups. During initial setting up of a new render farm, monitoring is one of the ways you can quickly verify that the servers are up and running.

The initial goal when setting up a render farm is to install the Backburner Monitor and establish a connection to the Backburner Manager. If your network will be making use of the Windows version of the Backburner Manager, it can be helpful to install the Backburner Monitor on the same workstation. This allows you to easily start the manager and monitor and work out any connection details. As you set up each server, you can then observe as they come

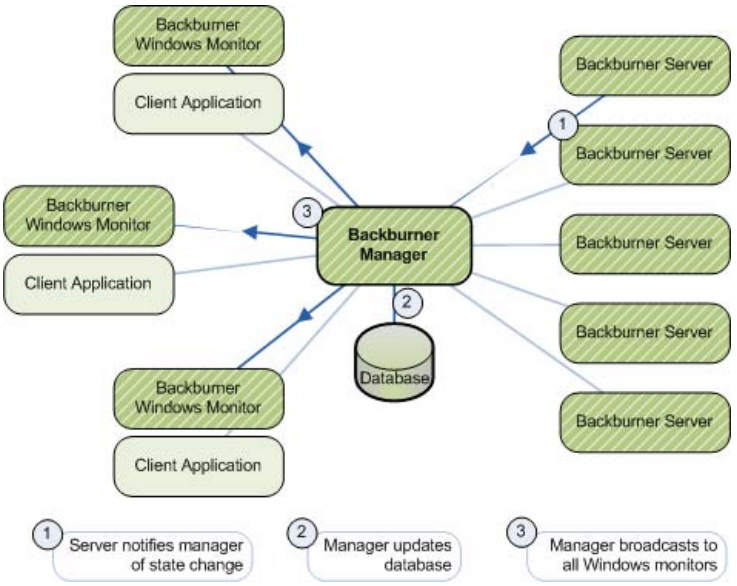
online, from one central location. On a large render farm, this could later be designated as the integrated administrator workstation.

Windows Monitor versus Web Monitor

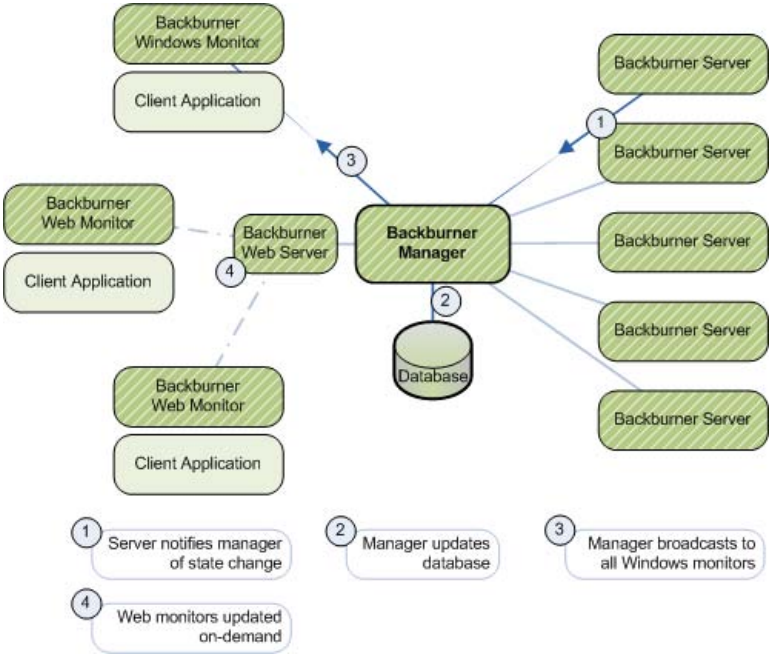
The Backburner network can be monitored via a Windows-based or browser-based monitor. The Windows monitor is well-suited for a small render farm with a single creative workstation, or the administrator workstation on a larger render farm. The browser-based monitor is designed for the non-administrator workstations on a larger render farm. The following table summarizes the major differences.

	Backburner Windows Monitor	Backburner Web Monitor
Operating System	• Windows OS	• OS independent (browser-based)
Update Mechanism	• Automatic via broadcasts from Backburner Manager	• On demand via end-user requests
Queue Control	• Obtained by first monitor to connect to the manager • Also, by request made from a non-controlling monitor	• On demand when changes are requested
User Management	• n/a	• User account required to log in to web monitor
Suitability	• Small render farm with single creative workstation • Administrator workstation on larger render farm	• Non-administrator workstations on larger render farm

Consider the activity associated with the Backburner Manager. The Backburner Manager maintains a database, which it updates with every change of state of the render nodes. It then broadcasts the changes to every workstation running a Windows monitor, whether the end-user is actively viewing it or not. The result is a steady stream of data from the manager to the Windows monitors, as illustrated in the following diagram.



A more efficient model emphasizes web monitors over Windows monitors. Web-based monitors gracefully handle the increased traffic on busier render farms, since they are not updated with each change to the manager's database. Rather, a web-based monitor receives updates on demand, when the end-user explicitly refreshes the view. In addition, all traffic between the manager and the web monitor is channeled through a web server, which is well-equipped to handle increases in traffic. This scenario is illustrated in the following diagram (some connectivity lines have been omitted, for clarity).



The number of Windows-based monitors a system can sustain depends on numerous factors. These include the amount of Backburner Server activity, the type and size of jobs sent to the manager, the size of the objects pushed through the manager, etc. In most cases, a single instance of the Backburner Windows Monitor will suffice. This is the recommended configuration.

Backburner Web Monitor and User Management

The Backburner Web Monitor operates by connecting to a Backburner Web Server installed on the machine where the Backburner Manager is running. Upon connection, the Backburner Web Server requires a user name and password, information it uses to determine the kinds of operations that can be performed. If you will be setting up for monitoring using the Backburner Web Monitor, you must also create user accounts on the Backburner Web Server.

By default end-users have complete control over the jobs they themselves submit to Backburner. They can perform all job operations upon them, such as restarting, deleting and archiving. In order to control *all* jobs on the Backburner network you must log on to the server with administrator privileges.

Generally speaking, the name used to log in to the workstation is associated with all jobs submitted to Backburner from that workstation. However, some applications pass on the account name used to start the *application* instead. In Smoke, for example, if the artist starts the

application as user *smoke*, *smoke* owns the jobs. It is therefore necessary to create accounts on the web server with the same names. By matching the log in or application user names with the web server user names, you ensure the artist has control over the jobs he or she submits.

For more information:

- Installing and configuring the Backburner Monitor:
  - Chapter 5, "Backburner Web Monitor – Windows," on page 63
  - Chapter 7, "Backburner Web Monitor – Linux," on page 83
- Configuring the creative application to point to the Backburner Windows Manager: The application-specific user guide (e.g. *Autodesk Smoke User Guide*).
- Ensuring web monitor users have the permissions they need to manage their jobs:
  - "Setting Up Access to the Backburner Web Monitor" on page 67 (Windows)
  - "Setting Up Access to the Backburner Web Monitor" on page 85 (Linux)

Setting Up Render Nodes

The final step is setting up a render farm is establishing the render nodes. To this end, the Backburner Server must reside on each workstation you intend to use as a render node. On Windows workstations, the server can run as an application (foreground) or as a service (background). On Linux it runs as a daemon.

The server is delivered and installed with the application-specific renderer. For example, with 3ds Max it is installed at the same time as 3ds Max. For Visual Effects and Finishing applications it is installed with Burn. Depending on the creative application, it may be possible to explicitly select the Backburner Server for installation, it may be installed automatically as part of a "render node" installation option, or it may be installed by default, transparently or otherwise.

NOTE: Under normal circumstances there should be no need to install the server separately. The exception is when using Backburner's *cmdjob* utility to run custom jobs on remote workstations. In this case, Backburner operates as a pure queue manager, and you could install the Backburner Server without any associated rendering or processing application. See the *Autodesk Backburner User Guide*.

Once a server is installed, the next step is establishing a connection to the Backburner Manager, and optionally observing the connection by way of the Backburner Monitor. You can then set up multiple servers to service one client, or create a pool of renderers for multiple clients. In each case the basic approach is the same: install the Backburner Server with the rendering software, and configure it to connect to the Backburner Manager.

NOTE: Whatever deployment option you adopt, render nodes must have the same directory structures as the workstation (or workstations) originating the requests for network rendering. The Backburner subdirectory should be in the same place on each render node, for example. If it is on the C: drive on the creative workstation, it cannot be installed on the D: drive on the render nodes. This path is included as part of the job metadata that is sent to the render node. If the render node cannot find the directories, the job will fail. For similar reasons, any media server or output server should be mounted in the same manner for each render node.

For more information:

- Install the Backburner Server for background I/O: The application-specific installation guide (e.g. *Autodesk Smoke Software Installation Guide*)
- Install the Backburner Server for Burn: *Autodesk Burn Installation and User Guide*
- Configure the Backburner Server: Chapter 4, "Starting and Configuring Backburner Server," on page 55
- Operating Backburner Server with Combustion: *Autodesk Combustion User Guide for Windows*
- Operating Backburner Server with other applications: *Autodesk Backburner User Guide*

Handling Bulk Data

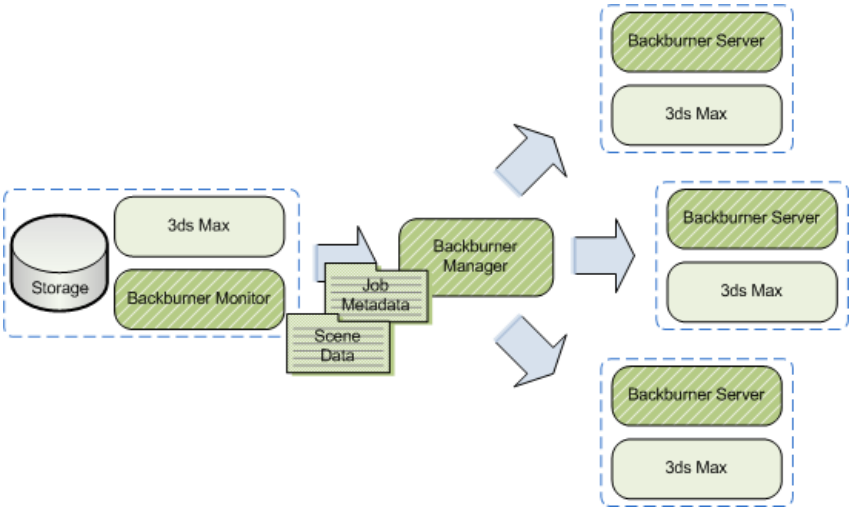
There are two distinct data flows on a Backburner render farm: job metadata and "bulk" data. Job metadata consists of the task descriptions sent to the render nodes and status data received from them. Bulk data refers to the heavier data required by the nodes to carry out their tasks. For 3ds Max/VIZ, Combustion and Toxik, these are scenes, textures, motion capture, etc. For Visual Effects and Finishing applications, this is the media to be processed. Each creative application type has different bulk data needs, in terms of storage and network capacity. It is the system designer or administrator's job to map out the flow of this data and to plan storage and network capacity accordingly.

3ds Max and VIZ

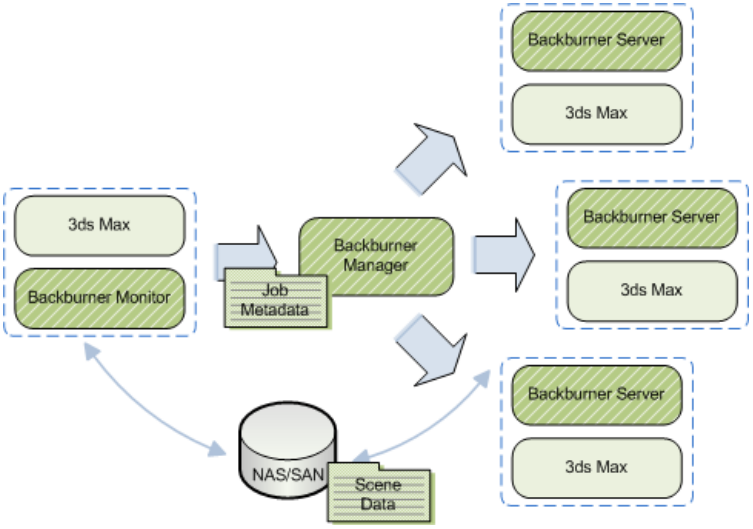
For 3ds Max/VIZ it is important to avoid allowing bulk data to reside on locally attached storage. To illustrate, consider a small render farm that has been set up for a single creative seat of 3ds Max. In single-artist studios, it may be common to store scene data on the creative workstation's direct attached storage. In this case, a bottleneck will occur at the creative seat's direct attached storage when each render nodes tries to obtain the needed scene data. In addition, the heavy I/O will result in a general slow-down on the creative workstation submitting the job.

Note that the situation worsens if the texture map is included in the scene file. In this case it is passed to the manager as part of the job, possibly creating an I/O bottleneck on that machine, if there is insufficient memory on the workstation and the manager needs to store it locally. In addition, the Backburner Manager is not designed for sending bulk data across the network. Its job is to send job descriptions and tasks to the render nodes and to report on job status to the monitors.

This scenario is represented by the following diagram.



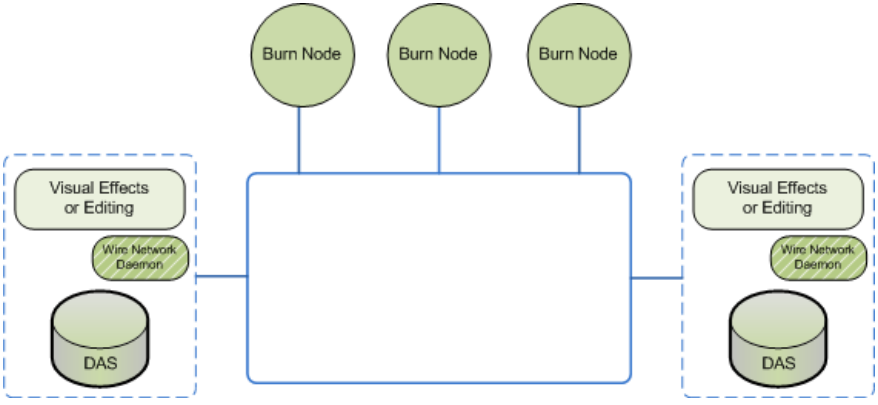
The solution is to ensure the creative applications are set up so all bulk data does not reside locally, but on a NAS (Network Attached Storage) or SAN (Storage Area Network), where it is equally accessible to the creative workstation and all render nodes. The preferred solution is shown in the following diagram. Note that in this case, care must be taken to balance the I/O rate of the NAS with the network speed.



Visual Effects and Finishing

During a render, each Burn node requires access to the full-resolution version of the frames requiring processing. This results in a great deal of data moving across the Backburner network, particularly for projects involving higher-resolutions, such as HD, or 2K or 4K film frames. As a result, for these applications the constraining factor is network bandwidth. Whether your frames are stored on a direct attached storage (DAS) system, Network Attached Storage (NAS) or a Storage Area Network (SAN), similar considerations apply.

The following diagram serves to illustrate the discussion.



As you add new render nodes to the farm, the limitations of a DAS system are felt early on. On the one hand, Visual Effects and Finishing applications have built-in bandwidth protection for

access to this kind of storage. On the other hand, the Wire network daemon provides the Burn nodes with independent access to obtain media for processing. Thus, there may be not contention for the creative workstation's CPU, but competition for network resources can arise.

For example, consider a creative seat that has submitted a job for processing on the render farm. As the Burn nodes process the job, they make repeated access to the DAS of the originating workstation. If the workstation then tries to access media on a remote workstation, for example, performance will degrade. The same problem arises if a remote workstation attempts to retrieve media from the originating workstation.

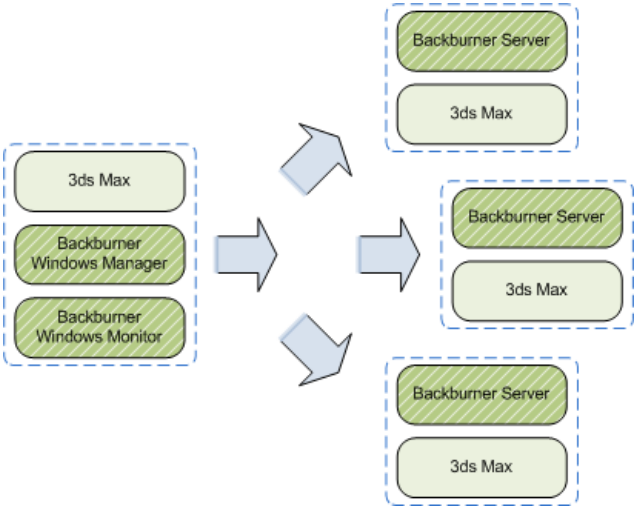
One solution can be to centralize media on a NAS or SAN. The design and establishment of a render farm making use of SAN storage is complex, and beyond the scope of this document. Autodesk Professional Services is available and experienced in the design of storage solutions to meet the needs of the facility.

3ds Max

To create a render farm for 3ds Max, you install 3ds Max (including the Backburner option) on each render node. There are two main options. In the first scenario, a render farm is created to service a single 3ds Max creative seat. In the second, multiple creative seats are serviced by the render farm.

3ds Max Dedicated Render Farm

The following diagram illustrates a typical 3ds Max render farm. In this case, a render farm has been created for a single seat of 3ds Max.



To set up a dedicated render farm for 3ds Max:

NOTE: This procedure assumes 3ds Max including all Backburner components are already installed on the creative workstation. If this is not the case, please refer to the 3ds Max documentation first.

1. Start the Backburner Manager on the creative workstation by choosing Start | Programs | Autodesk | Backburner | Manager.
2. Start the Backburner Monitor on the creative workstation by choosing Start | Programs | Autodesk | Backburner | Monitor.
3. Connect the monitor to the manager by choosing Manager | Connect, deselecting the Automatic Search checkbox, and entering the following for the manager name/IP address:

   `localhost`
4. Verify the connection by choosing Manager | Properties.

   Manager details appear in a dialog. If no connection was made, this option is greyed-out.
5. Verify the connection by choosing Manager | Properties.

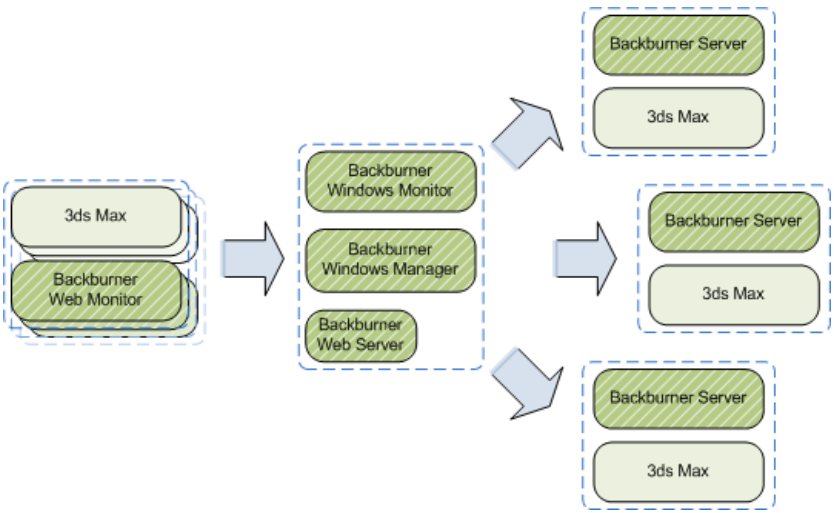
   Manager details appear in a dialog. If no connection was made, this option is greyed out.
6. On each render node, install the Backburner components using the 3ds Max installation disk.
7. On each render node, start the Backburner Server by choosing Start | Programs | Autodesk | Backburner | Server.

The General Properties dialog appears. If not, choose Edit | General Settings.

8. Verify the following items are set correctly in the General Properties dialog:
   - *Server Name or IP Address*: Used by the Backburner Manager to identify and communicate with the server. This field should contain the machine name or IP address of the current workstation.
   - *Automatic Search*: Unchecked. Employing automatic searching is not recommended, since it makes extensive use of network resources and can take some time.
   - *Enter Manager Name or IP Address*: Used by the Backburner Server to locate and communicate with the manager. Note that this cannot be **`localhost`**—as used above—since the manager is not local to any of the servers.
9. Verify the connection in the monitor window or server window.
10. Optional: Configure the Backburner Server on each render node as a Window's service, so it starts with workstations's operating system and runs in the background, as described in "Setting Up Backburner Server as a Windows Service" on page 59.

3ds Max Shared Render Farm

When the render farm is designed to service more than one creative seat of 3ds Max, it is recommended that you install the Backburner Windows Monitor on another workstation, designated as the master workstation. Each of the creative seats can instead use the Backburner *Web* Monitor, reducing the load on the Backburner Manager. This scenario is illustrated in the following diagram.



NOTE: The procedures in this section assume you have experience setting up a dedicated render farm for a single creative seat of 3ds Max. This allows the procedures to focus on the major steps while omitting some details.

On the creative workstation:

➤ Install 3ds Max.

On the master workstation:

1. Install the Backburner Components. The Backburner Manager and Backburner Monitor are required.

   See "Installing the Backburner Components on Windows" on page 50.

2. Install the Apache HTTP server or Microsoft® Internet Information Services (IIS) web server on the master workstation.

3. Install and configure the Backburner Web Server, and verify the Backburner Web Monitor is accessible to the default administrator user.

4. Set up end-user access to the Backburner Web Monitor.

5. Optional: Assign administrator privileges to selected end-users.

   For steps 2–5, see Chapter 5, "Backburner Web Monitor – Windows," on page 63.

6. Connect the Backburner Windows Monitor to the Backburner Manager.

   See "Starting and Configuring the Backburner Windows Monitor" on page 55.

On each render node:

1. Install the Backburner Components. The Backburner Server is required.

   See "Installing the Backburner Components on Windows" on page 50.

2. Connect the Backburner Server to the Backburner Manager running on the master workstation.

   See "Starting and Configuring Backburner Server" on page 55.

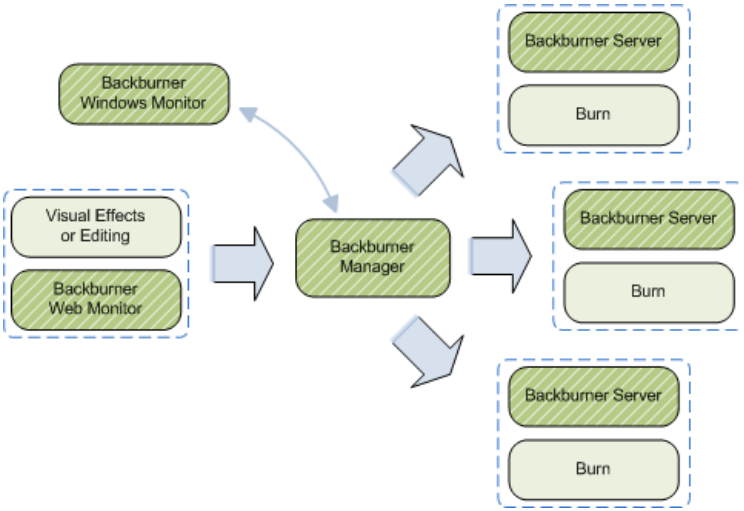
3. Optional: Configure the server to start as a Windows service.

   See "Setting Up Backburner Server as a Windows Service" on page 59.

Visual Effects and Finishing

To create a render farm for a Visual Effects or Finishing application, you install Backburner Server and Burn on each workstation designated to serve as a render node. As indicated in the following diagram, the Backburner Manager should reside on a dedicated workstation. In

addition, the Windows version of the Backburner Monitor can be installed, either on the same workstation as the Backburner Manager, or offloaded to a separate workstation. Whether you are setting up for a single creative seat or multiple seats, the process is virtually the same.



NOTE: As noted earlier, Visual Effects and Finishing applications can leverage Backburner in four distinct ways: for background I/O, encoding using Cleaner XL, network rendering using Burn, and media conversion using WiretapCentral. In a facility where more than one of these systems is operating it can be efficient to allow the systems to share the same Backburner Manager. In this way, the user with administrator privileges can monitor and control each of the 'sub-systems' from a central location.

On the dedicated workstation:

1. Install the Backburner Components.

   The Backburner Manager is required, while the Backburner Monitor optional, depending upon the design of your render farm.

   See:

   - "Installing the Backburner Components on Windows" on page 50.
   - "Installing the Backburner Components on Linux" on page 79.

2. To enable use of the Backburner Web Monitor from the creative workstation(s), install the Apache HTTP server (Windows/Linux) or Microsoft® Internet Information Services (IIS) web server (Windows only).

3. Install and configure the Backburner Web Server, and verify that the Backburner Web Monitor is accessible to the default administrator user.
4. Set up end-user access to the Backburner Web Monitor.
5. Optional: Assign administrator privileges to selected end-users.

   For steps 2–5, see:

   • Chapter 5, "Backburner Web Monitor – Windows," on page 63.

   • Chapter 7, "Backburner Web Monitor – Linux," on page 83.
6. Optional: Connect the Backburner Windows Monitor to the Backburner Manager.

   See Chapter 4, "Backburner Components – Windows," on page 49.

On a Windows workstation used for monitoring (optional):

1. Install the Backburner components. The Backburner Windows Monitor is required.

   See Chapter 4, "Installing the Backburner Components on Windows," on page 50.
2. Connect the Backburner Windows Monitor to the Backburner Manager.

   See "Starting and Configuring the Backburner Windows Monitor" on page 55.

On each render node:

1. Install Burn and the Backburner components. The Backburner Server is required.

   See the *Autodesk Burn User Guide*.
2. Connect the Backburner Server to the Backburner Manager running on the dedicated workstation.

   See the *Autodesk Burn User Guide*.
3. Restart the Backburner Server so it picks up the new settings:

   `/etc/init.d/backburner restart`

On the creative workstation(s):

1. Install the Visual Effects and Finishing application.

   See the *Autodesk Visual Effects and Finishing Software Installation Guide*.
2. Configure the Visual Effects and Finishing application for Burn.

   See the *Autodesk Burn Installation and User Guide*.
3. Monitor the Backburner network using the Backburner Web Monitor.

   See *Autodesk Backburner User Guide*.

Visual Effects and Finishing with Cleaner XL

Cleaner XL encodes the entire job on the same workstation. Thus, it is important to consider the workflow of which it will be a part before creating a render farm. When encoding a single job, for example, the presence of additional workstations does not improve efficiency. However, when encoding multiple jobs at the same time, additional jobs are routed to different available workstations. As a result, it is recommended to set up Cleaner XL in a stand-alone configuration for Visual Effects and Finishing applications, as presented in Chapter 2, "Configuring a Standalone Workstation," on page 11.

Visual Effects and Finishing with WiretapCentral

In a render farm configuration, WiretapCentral leverages Backburner for scalability of streaming media transcoding. As in a Burn render farm, WiretapCentral submits jobs to Backburner, which are sent for processing on render nodes. However, for transcoding of streaming media, each render node must be equipped with the Backburner Server and MIO Adapter (supplied with Burn).

As a result, the same design and planning considerations for a Burn render farm apply here. In fact, WiretapCentral can easily make use of an already-installed Burn render farm, since the needed MIO Adapter can be automatically installed alongside Burn. For older Burn render farms, you can add the MIO Adapter to the render node in a separate installation operation.

For more information:

• *Autodesk WiretapCentral Installation Guide*

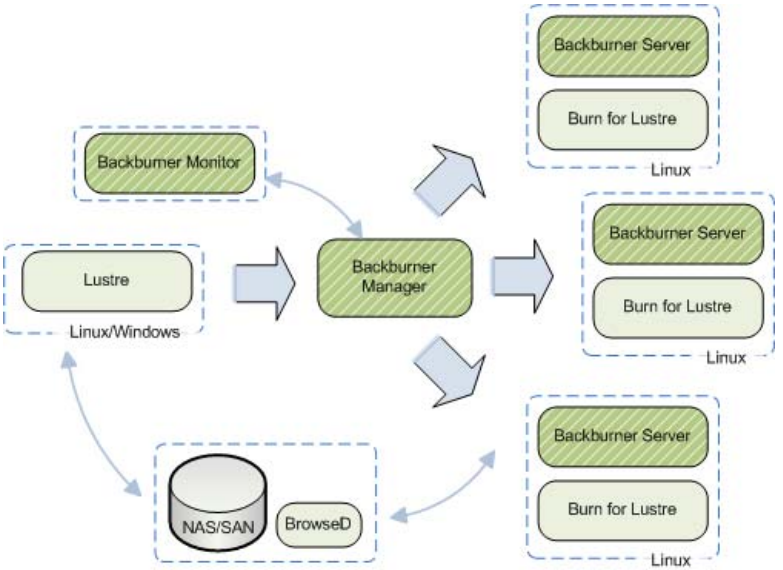
Lustre

There are two render farm possibilities for Lustre. The first is for network rendering of all shots in the timeline using Burn for Lustre. This frees up Lustre stations for interactive colour grading. The second is for background transcoding of streaming media, such as Red Raw (.r3d) files. In this case, a Backburner render farm off-loads the work associated with transcoding and ingesting complex and CPU-intensive streaming media formats.

Lustre Background Rendering

To set up background rendering for Lustre, create a Backburner network with render nodes consisting of Linux workstations running the Backburner Server and Burn for Lustre. To view and manage jobs on the network you use Backburner Monitor. Off-loading rendering activities to Backburner frees Lustre stations for interactive color grading, and speeds up background rendering by splitting jobs amongst the render nodes.

The following diagram shows a typical Backburner network for Lustre.The Backburner Manager is shown residing on a dedicated workstation (recommended); however, it can also run on a Lustre workstation. Similarly, there are different installation options for the Backburner Monitor. Lustre's BrowseD file server is used to provide the render nodes access to storage, shown here as a NAS or SAN.



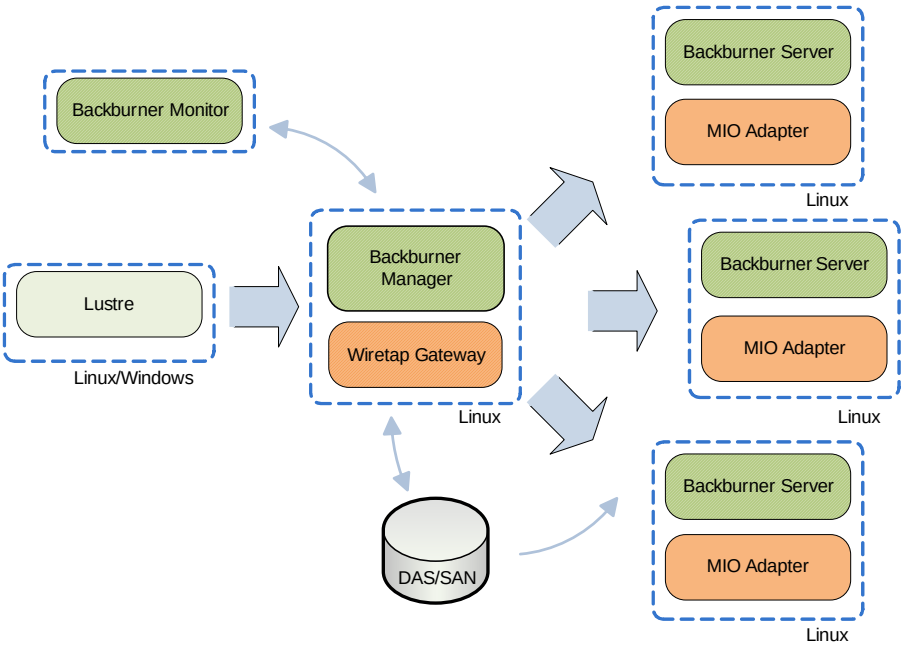
For more information:

- Setting up Lustre for network rendering: *Autodesk Lustre Software Installation Guide for Windows Workstations*.
- Installing Backburner components (Windows): "Installing the Backburner Components on Windows" on page 50.
- Configuring Backburner Manager (Window): "Starting and Configuring Backburner Manager" on page 51.
- Setting up Backburner Manager as a Windows service: "Running Backburner Manager as a Windows Service" on page 54.
- Configuring the Backburner Monitor to detect the Backburner Manager: "Starting and Configuring the Backburner Windows Monitor" on page 55.
- Installing Backburner components (Linux): "Installing the Backburner Components on Linux" on page 79.
- Configuring Backburner Manager (Linux): "Starting and Configuring Backburner Manager" on page 81.

• Installing and configuring Backburner Web Monitor (Linux): Chapter 7, “Backburner Web Monitor – Linux,” on page 83.

Lustre Background Transcoding

To set up a render farm for background transcoding of streaming media formats, create a Backburner network with render nodes consisting of Linux workstations running the Backburner Server and MIO Adapter, as shown in the following illustration.



Lustre browses storage devices via the Wiretap Gateway, and submits transcoding jobs directly from its UI to the Backburner Manager. The Backburner Manager distributes the jobs to its render nodes., where the Backburner Server invokes the MIO Adapter processing engine to carry out the transcoding. The MIO Adapter reads from storage directly and writes its results to the Wiretap Gateway.

The Backburner Manager can reside on the Lustre workstation, or a dedicated workstation (recommended). Similarly, there are different installation options for the Wiretap Gateway and Backburner Monitor. You can optionally monitor job progress using the Backburner Monitor.

For more information:

- For general considerations on setting up a render farm, please refer to the procedures for Visual Effects and Finishing: "Visual Effects and Finishing" on page 36.
- Installation instructions (Windows): *Autodesk Lustre Software Installation Guide for Windows Workstations*.
- Installation instructions (Linux): *Autodesk Lustre Software Installation Guide for Linux Workstations*.

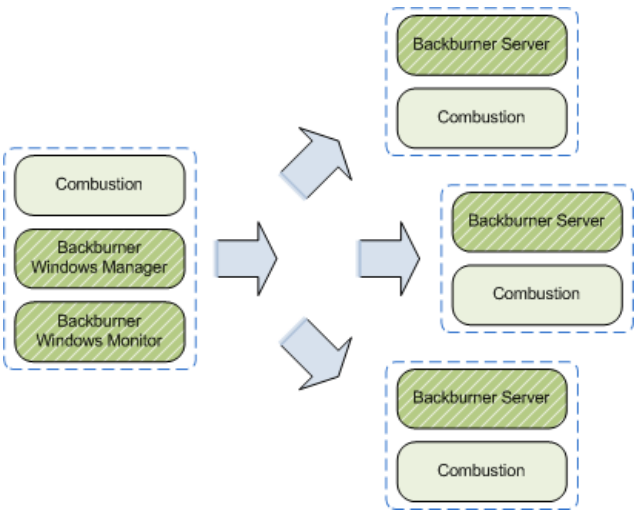
Combustion

To create a render farm for Combustion, you install Combustion (including the Backburner option) on each render node. There are two main options. In the first scenario, a render farm is created to service a single Combustion creative seat. In the second, multiple creative seats are serviced by the render farm.

NOTE: Backburner is not available on Mac® OS.

Combustion Dedicated Render Farm

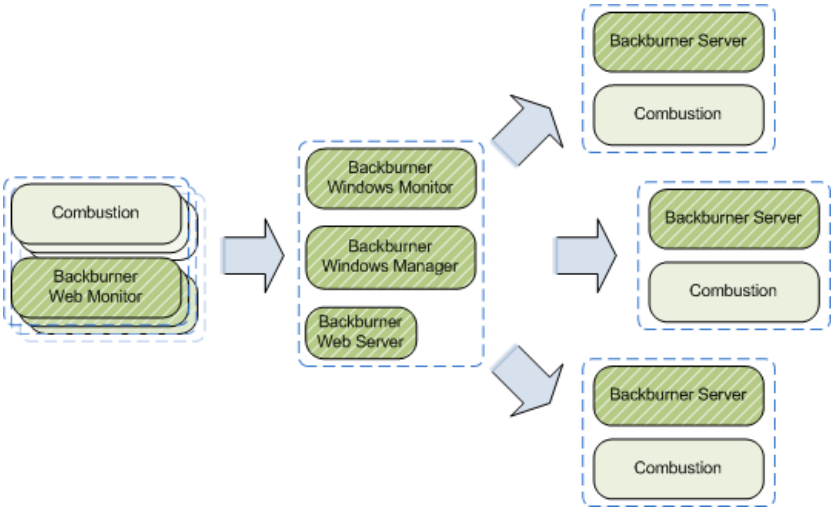
The following diagram illustrates a typical Combustion render farm. In this case, a render farm has been created for a single seat of Combustion.



For instructions on setting up a dedicated render farm for Combustion, please refer to the procedures for 3ds Max, "3ds Max Dedicated Render Farm" on page 33.

Combustion Shared Render Farm

When the render farm is designed to service more than one creative seat of Combustion, it is recommended that you install the Backburner Windows Monitor on another workstation, designated as the master workstation. Each of the creative seats can instead use the Backburner *Web* Monitor, reducing the load on the Backburner Manager. This scenario is illustrated in the following diagram.



For instructions on setting up a shared render farm for Combustion, please refer to the procedures for 3ds Max, "3ds Max Shared Render Farm" on page 35.

Toxik

To create a render farm for Toxik, you install Toxik and the Backburner Server on each workstation to serve as a render node. There are two main options. In the first scenario, a render farm is created to service a single Toxik creative seat. In the second, multiple creative seats are serviced by the render farm. In both scenarios, take care to install Backburner in the same manner on each render node, and to configure Toxik so it makes use of Backburner. To render using Backburner, you publish the clip using the Backburner publish mode.

Toxik render nodes must have the same directory structures as the workstation(s) originating the requests for network rendering. The Backburner executable must be on the same path on each render node. On Windows, for example, if the creative workstation has installed the Backburner executables on the C: drive, they cannot be installed on the D: drive on the render nodes. The path to the Backburner root directory is included as part of the job metadata that is sent to the render node. If the render node cannot find the directories, the job will fail. For

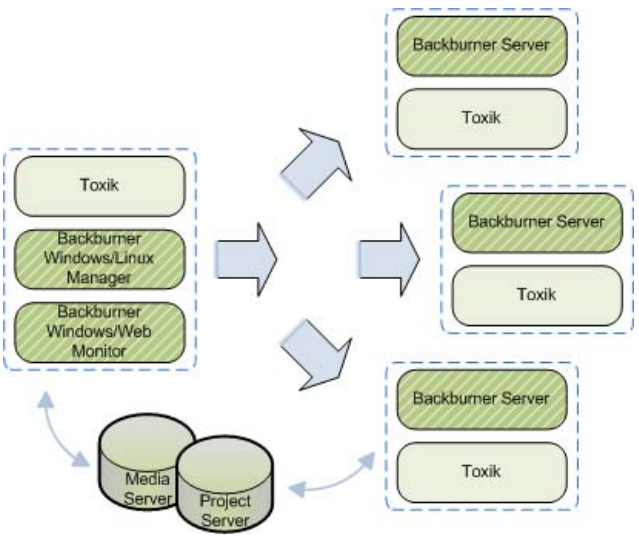
similar reasons, the media server and project server (if used) should also be mounted in the same manner for each render node.

You must also ensure that on each creative workstation Toxik is set up to take advantage of network rendering using Backburner. Ensure the render executable command line is set to invoke Backburner, and that it indicates the machine name of the workstation where the Backburner Manager is installed. Also, ensure the *publish* directory is a shared folder accessible by all the render nodes.

Toxik features a built-in progress bar indicating the progress of the rendering process and a means for observing jobs running in the background. However, for more detailed information, and full control over Backburner jobs, the Backburner Monitor can be used. Toxik allows you to created a shortcut to the Backburner Monitor executable, so you can invoke it from the Toxik UI. This will allow you to quickly bring up the Backburner Monitor when rendering using Backburner. To do so, set the monitor executable value in the Project Preferences window, Site Preferences tab.

Toxik Dedicated Render Farm

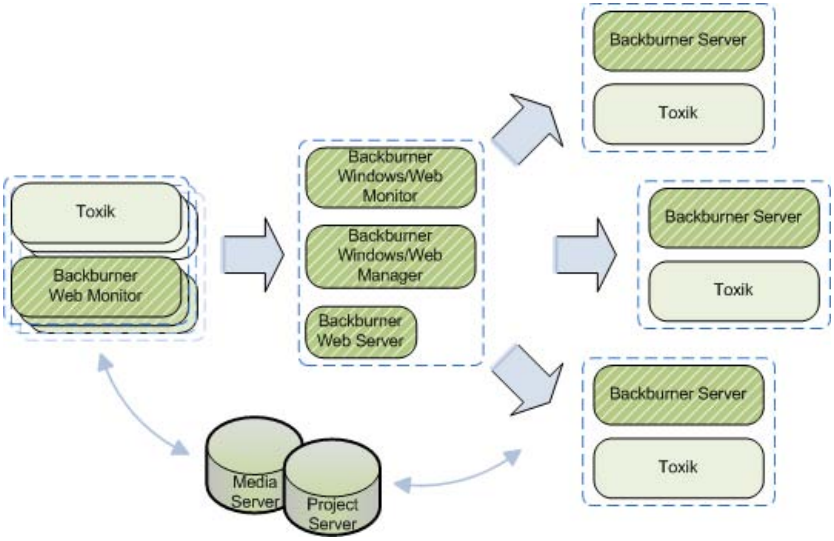
The following diagram illustrates a typical Toxik render farm created for a single creative seat. In this scenario, the Backburner Manager and Backburner Monitor reside on the same workstation as the Toxik creative application.



For instructions on setting up a dedicated render farm for Toxik on Windows, please refer to the procedures for 3ds Max, "3ds Max Dedicated Render Farm" on page 33.

Toxik Shared Render Farm

When the render farm is designed to service more than one creative seat of Toxik, it is recommended that you install the Backburner Windows Monitor on another workstation, designated as the master workstation. Each of the creative seats can instead use the Backburner *Web* Monitor, reducing the load on the Backburner Manager. This scenario is illustrated in the following diagram. On a render farm serving multiple creative workstations, the Backburner Manager should be installed on a dedicated workstation.



Section 2
Installation Reference

Image courtesy of B Sky B Creative Services

4 Backburner Components – Windows

Summary

Overview

Recall that the first step in setting up a render farm is installing the Backburner Manager, which can include relocating it from a workstation it shares with the creative application to a dedicated workstation. This is a very necessary step, since the Backburner Manager must be running before you can properly establish monitoring or configure render nodes. The second step is setting up monitoring of the Backburner network. The third step is setting up the render nodes.

Once the render farm is running smoothly, it can be convenient to set the Backburner Manager and Backburner Server to run as Windows *services*. This causes the applications to start with the workstation's operating system, and to run unobtrusively in the background. No GUI is presented on the workstation when an application runs as a service.

This chapter's primary aim is to assist in the above steps for a Windows-based Backburner render farm. It begins with instructions on installing the Backburner components. Next, it covers setting up the Backburner Manager, Backburner Monitor, and Backburner Server. It also contains instructions on setting up the Backburner Manager and Backburner Server as Windows services.

Backburner Manager

The following procedure shows the general workflow for setting up Backburner Manager in a render farm.

NOTE: There should be just one instance of the Backburner Manager running on the network at a time.

To set up Backburner Manager:

1. Install Backburner Manager on the Windows workstation.
   See "Installing the Backburner Components on Windows" on page 50.
2. Start and configure Backburner Manager.
   See "Starting and Configuring Backburner Manager" on page 51.
3. Optional: Set Backburner Manager to run as a Windows service.
   See "Running Backburner Manager as a Windows Service" on page 54.

Backburner Server

The following procedure shows the general workflow for setting up Backburner Server.

To set up Backburner Server:

1. Install Backburner Server on the Windows workstation.
   See "Installing the Backburner Components on Windows" on page 50.
2. Start and configure Backburner Server.
   See "Starting and Configuring Backburner Server" on page 55.
3. Optional: Set Backburner Server to run as a Windows service:
   See "Setting Up Backburner Server as a Windows Service" on page 59.

Installing the Backburner Components on Windows

In most cases, Backburner is installed by default with the creative application, or is an installation option. When this is not the case, you can use the procedure here to install the Backburner components manually.

NOTE: This procedure presents a generalized method for installing the Backburner components on a Windows workstation from the Autodesk creative application CD. In most cases, an installation wizard appears automatically upon insertion of the CD, in which case that can be used instead. In other cases, some of the steps may need to be adapted to your particular circumstances.

To install Backburner on a Windows workstation:

1. Log in to the workstation with administrator privileges.
2. In Windows Explorer, locate the *.zip* file for Backburner installation package on the creative application's installation CD.

   NOTE: Depending on the creative application, the installation package may be provided as a backburner.exe file instead. In this case no extraction of contents is necessary — simply copy the executable to the workstation.

3. Extract the contents of the *.zip* file to a temporary folder on the workstation, making sure to preserve the path names stored in the archive.
4. Open the folder and double-click the Backburner installation file, *backburner.exe*.

   The Backburner installation wizard appears.

   NOTE: If there is an earlier version of Backburner on the system you are prompted to uninstall it.

5. Follow the prompts to install Backburner on the workstation.

   NOTE: It is recommended that you install Backburner components in the same destination folders on all machines.

6. Upon completion, the following shortcuts appear in the Windows Start menu.

Menu Item	Application
Manager	Backburner Manager
Monitor	Backburner Monitor
Server	Backburner Server

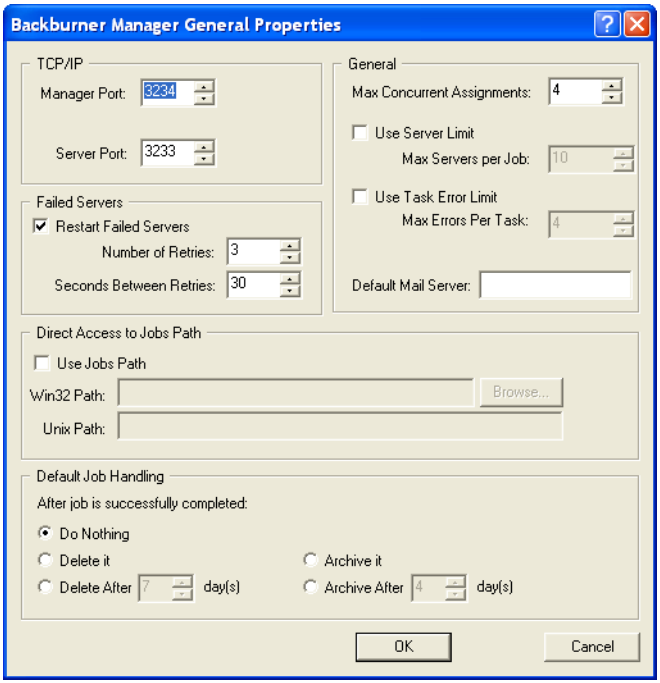
Starting and Configuring Backburner Manager

Once the Backburner components have been installed, you are ready to install and configure the Backburner Manager.

To start and configure Backburner Manager:

1. Choose Start | Programs | Autodesk | Backburner | Manager.

   The first time you start the application, the General Properties dialog appears.



   The dialog can be viewed at any time by choosing Edit | General Settings in the Backburner Manager UI.

2. Configure the manager as desired.

   For most purposes the default settings should suffice. If not, see Appendix A, "Backburner Manager Configuration Settings," on page 89 for details.

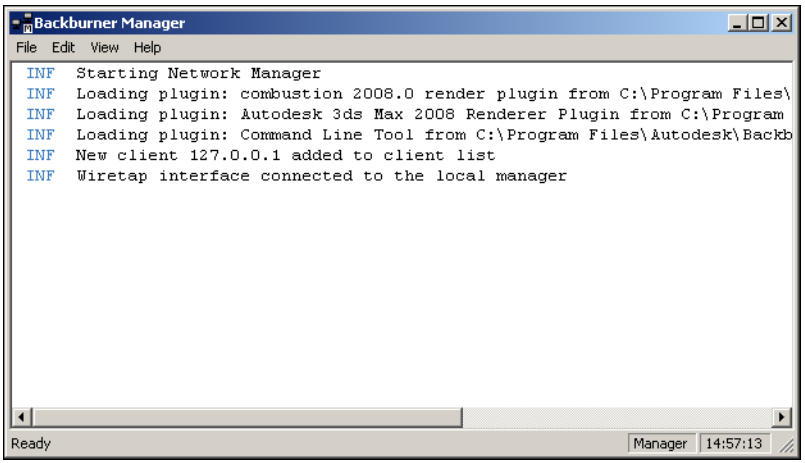
3. Click OK to start the application.

   The configuration settings are written to the Backburner configuration file, *backburner.xml*, in a */backburner* subdirectory of the per-user application data directory. For example, in Windows XP:

   C:\Documents and Settings\<user>\Local Settings\Application Data\backburner\backburner.xml

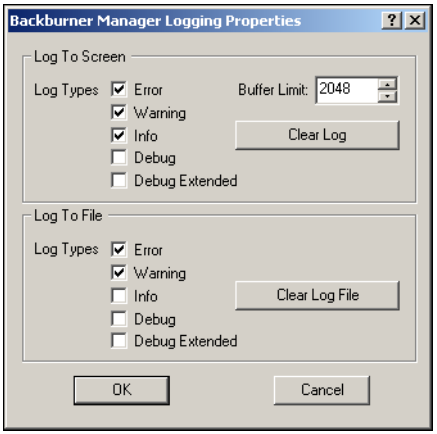
   HINT: To restore the default settings, simply delete the *backburner.xml* file. Note that this file contains the configuration settings for all Backburner components installed on the same machine.

The Backburner Manager GUI appears, displaying startup messages.



4. To change the information that gets displayed in the GUI and/or written to the log file, choose Edit | Log Settings.

   The Logging Properties dialog appears.



The settings in this dialog effect logging of the following events:

- Connection and registration between the Manager and Server(s)
- New job assignments
- The workstation that is the queue controller
- Frames assigned/rendered
- Acknowledge packets sent between the Manager and Server(s)

- Manager/Server(s) shutting down
- Rendering errors encountered

5. Click OK to save your changes, or Cancel to close the dialog without committing the changes.

   The configuration settings are written to the Backburner configuration file, **`backburner.xml`**.

6. You must restart the Backburner Manager for the changes to take effect.

Running Backburner Manager as a Windows Service

You can set up Backburner Manager to run as a Windows service so that it starts with the workstation's operating system and runs in the background. When running as a service, no GUI is presented—events are logged to the log file only. A utility, **`managersvc.exe`**, has been provided to facilitate the setup process.

NOTE: Depending on how Windows is configured, it may be necessary to log on to a Windows account for the service to load.

NOTE: Running the Backburner Manager as a service changes the location of the *backburner.xml*, *wiretap.cfg* and log files to */backburner* subdirectories of the per-user application data directory subdirectories belonging to the *Local Service* user. These directories are hidden to non-administrative level users. For example, on Windows XP:

C:\Documents and Settings\Local Service\Local Settings\Application Data\backburner\backburner.xml

To set up Manager as a Windows service:

1. Open a Command Prompt (DOS) shell and navigate to the Backburner root directory:

   C:\Program Files\Autodesk\Backburner

2. Register the Backburner Manager executable as a service by typing the following at the command prompt:

   ```
   managersvc -i
   ```

   The following message appears:

   ```
   Backburner Manager
   Service Installed
   ```

3. To remove Backburner Manager type the following:

   ```
   managersvc -r
   ```

4. To start the service without rebooting, choose Start | Settings | Control Panel | Administrative Tools | Services.

   The Services dialog appears.

5. Right-click the entry for the Backburner Manager, and choose Start.

   Windows starts the manager, and updates its status in the dialog.

   NOTE: By right-clicking the entry for Backburner Manager and choosing Properties, you can set a number of parameters, including the account under which the service logs on, and recovery options.

6. The next time you start the workstation and/or log on to Windows, Backburner Manager is started automatically.

Starting and Configuring the Backburner Windows Monitor

The following procedure provides abbreviated instructions for launching the Windows version of the Backburner Monitor and connecting it to the Backburner Manager. For detailed instructions, see the *Autodesk Backburner User Guide*.

To launch the Backburner Windows Monitor:

1. Start the Backburner Monitor by choosing Start | Programs | Autodesk | Backburner | Monitor.
2. Connect the monitor to the manager by choosing Manager | Connect, deselecting the Automatic Search checkbox and entering the manager name/IP address of the workstation running the Backburner Manager.
3. Verify the connection by choosing Manager | Properties.

   Manager details appear in a dialog. If no connection was made, this option is greyed out.

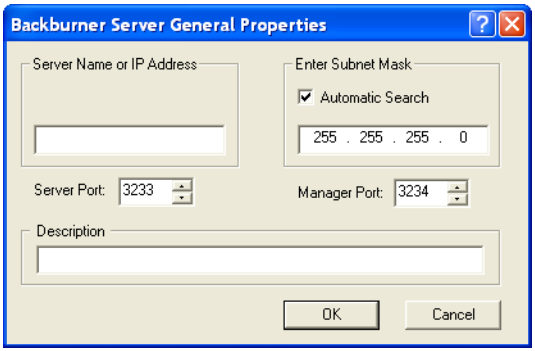
Starting and Configuring Backburner Server

Once the Backburner Manager is running and you have set up monitoring, you are ready to start and configure Backburner Server. When this step is complete on each render node, the render farm is ready.

To start and configure Backburner Server:

1. Choose Start | Programs | Autodesk | Backburner | Server.

   The first time you start the application, the General Properties dialog appears.



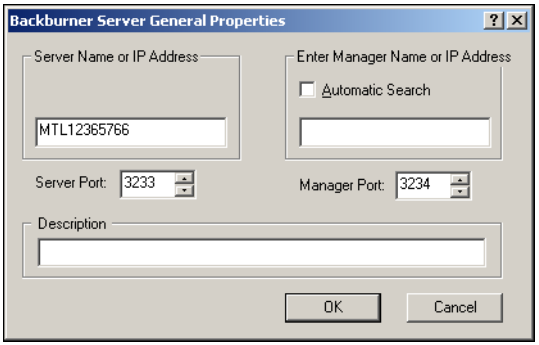
   The dialog can be viewed at any time by choosing Edit | General Settings in the Backburner Server UI.

2. Entering the host name, server name or IP address of the Backburner Server in the *Server Name or IP Address* field.

   This is the address that is used by the manager to communicate with the server.

3. Uncheck the *Automatic Search* checkbox, and enter the host name, server name or IP address of the Backburner Manager in the *Enter Manager Name or IP Address* field.

   Employing automatic searching is not recommended, since it makes extensive use of network resources and can take some time.

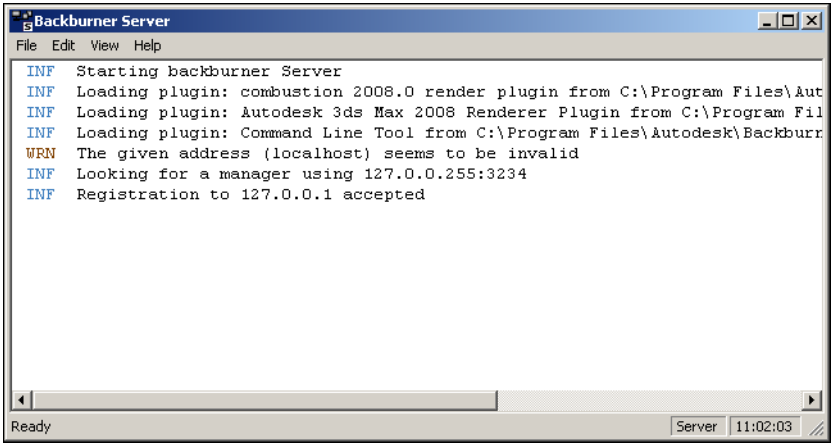


4. Modify other configuration settings the manager as desired.

   For settings details see "Configuring the Backburner Server" on page 58 for details.

5. Click OK to start the application.

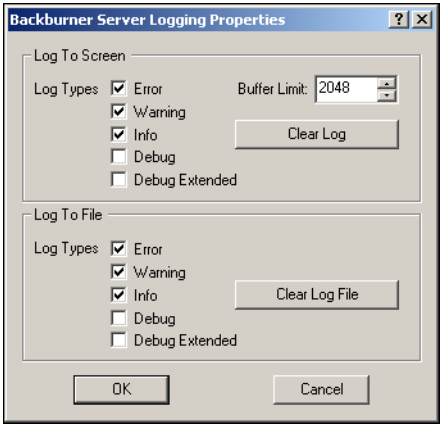
The Backburner Server GUI appears, displaying startup messages as it loads plug-ins and connects to the Backburner Manager.



Ensure a connection is established with the Backburner Manager before continuing.

6. To change the information that gets displayed in the GUI and/or written to the log file, choose Edit | Log Settings.

   The Logging Properties dialog appears.



The settings in this dialog effect logging of the following events:

- Connection and registration between the Manager and Server(s)
- New job assignments
- Frames assigned/rendered

- Acknowledge packets sent between the Manager and Server(s)
- Manager/Server(s) shutting down
- Rendering errors encountered

7. Click OK to save your changes, or Cancel to close the dialog without committing the changes.

   The configuration settings are written to the Backburner configuration file, **`backburner.xml`**, in a **`/backburner`** subdirectory of the per-user application data directory. For example, in Windows XP:

   C:\Documents and Settings\<user>\Local Settings\Application Data\backburner \backburner.xml

   HINT: To restore the default settings, simply delete the *backburner.xml* file. Note that this file contains the configuration settings for all Backburner components installed on the same machine.

8. You must restart the Backburner Server for your changes to take effect.

Configuring the Backburner Server

The following describes each of the elements in the Backburner Server General Properties dialog.

Server Name or IP Address — The host name or IP address the Backburner Server uses to identify itself to the Backburner Manager. Helpful when a render node has more than one network interface card, hence more than one IP address.

Manager Port — The port number used by Backburner Manager. Changing this port number from its default value is not recommended. When using a different port, be sure to change the value on each Backburner component.

Server Port — The port used by the render node. Changing this port number from its default value is not recommended. When using a different port, be sure to change the value on each Backburner component.

NOTE: Make sure to configure any firewall to allow access to the manager and server ports. Otherwise, Backburner components will not be able to communicate.

Automatic Search — Enable to allow Backburner Server to search for a Backburner Manager using the TCP/IP subnet mask shown. It connects to the first manager found.

Disabling this option reduces Backburner network traffic, and is the recommended option. You must then specify Backburner Manager explicitly in the *Enter Manager Name or IP Address* field.

Enter Manager Name or IP Address — The name of the workstation on which the Backburner Manager is running. Alternately, its IP address or Domain Name System (DNS) name can be used.

This option can be used to address issues arising from running multiple Backburner Managers on the same TCP/IP subnet. For example, you can enter the Manager system's IP address to avoid any problems or conflicts caused by improper implementation of DNS. You can also use this option to segment your render farm by specifying the Backburner Manager to which each Render Node connects.

Setting Up Backburner Server as a Windows Service

Similarly to the Backburner Manager, it can be convenient to set up Backburner Server to run as a Windows service so that it starts with the workstation's operating system and runs in the background. When running as a service, no GUI is presented—events are logged to the log file only. A utility, **`serversvc.exe`**, has been provided to facilitate the setup process.

Recall that the server requires access to network mountpoints in order to obtain texture maps, media, etc., and to write results to output directories. By default, Windows services operate as local system accounts, which do not have the necessary remote access privileges. As a result, you must create a user account, assign it to the Backburner service, and give the account read/write access to the needed network mountpoints. These steps are outlined below.

To set up Backburner Server:

1. Create a 'privileged' user account to give the Backburner Server access to the network mountpoints containing the needed frames, textures, scenes, storage, etc.
   See "Creating a Privileged User Account" on page 60.
2. Configure Backburner Server as a Windows service using the **`serversvc.exe`** utility.
   See "Configuring Backburner Server as a Windows Service" on page 60.
3. Assign the privileged user account to the service so it starts as that user.
   See "Assigning the Privileged User Account to the Service" on page 61.
4. Grant the user account read/write access to the needed mountpoints.
   See the appropriate Windows documentation.

NOTE: The procedures in this section are based on Windows XP Professional displaying a Classic Windows interface.

Creating a Privileged User Account

You create a user account for use by the Backburner Server service using the functionality of the Windows Control Panel. It is important to create the identical account on all workstations serving as render nodes. Then, when you give that account read/write access to network mountpoints, all render nodes will have the same access.

To create a special user for the Backburner Server service:

1. Log in to the workstation with administrator privileges.
2. In the Windows Start menu, choose Start | Settings | Control Panel.
3. In the Control Panel navigate to Administrative Tools | Computer Management.
4. In the Computer Management dialog, navigate to System Tools | Local Users and Groups | Users.
5. Choose Action | New User.

   The New User dialog appears.
6. Create the new user as described in the following table.

Item	Requirement
User name	Use the same name for all render nodes.
Full name	not needed
Description	not needed
Password / Confirm password	Must be the same for all render nodes.
User must change password at next logon	disable
Password never expires	enable

7. Set up read/write access for the user on all needed network mountpoints, as described in Windows documentation.

Configuring Backburner Server as a Windows Service

The following procedure explains how to set up Backburner Server as Windows service. A utility, **`serversvc.exe`**, has been provided to facilitate the setup process.

NOTE: Depending on how Windows is configured, it may be necessary to log on to a Windows account for the service to load.

NOTE: Running the Backburner Server as a service changes the location of the *backburner.xml* and and log files to */backburner* subdirectories of the per-user application data directory subdirectories belonging to the *Local Service* user. These directories are hidden to non-administrative level users. For example, on Windows XP:

C:\Documents and Settings\Local Service\Local Settings\Application Data\backburner \backburner.xml

To install and register Backburner Server as a service:

1. Open a Command Prompt (DOS) shell and navigate to the Backburner root directory: *C:\Program Files\Autodesk\Backburner*.
2. Register the Backburner Server executable as a service by typing the following at the command prompt:

   ```
   serversvc -i
   ```

   The following message appears:

   ```
   Backburner Server
   Service Installed
   ```

3. To remove Backburner Server type the following:

   ```
   serversvc -r
   ```

4. To start the service without rebooting, choose Start | Settings | Control Panel | Administrative Tools | Services.

   The Services dialog appears.

5. Right-click the entry for the Backburner Server, and choose Start.

   Windows starts the server, and updates its status in the dialog.

   NOTE: By right-clicking the entry for Backburner Server and choosing Properties, you can set a number of parameters, including the account under which the service logs on, and recovery options.

6. The next time you start the workstation, Backburner Server is started automatically.

Assigning the Privileged User Account to the Service

Once you have created the user account and configured the Backburner Server to run as a service, you are ready to assign the user account to the service. Assigning the account enables the service to assume the privileges associated with that account. Perform this procedure on each render node.

To assign a user to the Backburner Server service:

1. In the Windows Start menu, choose Start | Settings | Control Panel.
2. In the Control Panel double-click Administrative Tools, then Services.
3. In the Services dialog, right-click the Backburner Server item and choose Properties.
4. On the Log On tab, choose This Account and enter the name of the privileged user you created earlier.

   If a user account was created on the domain, enter [domain name]\[user name] as This Account, or browse the domain for the user.
5. In the Password and Confirm Password fields, enter the password for the user account.
6. Click OK to exit the Properties dialog.
7. If the service is started, stop it by right-clicking the item and choosing Stop.
8. Right-click the item and choose Start to restart the service with the newly assigned user.
9. Close the Services dialog.
10. Give this user access privileges to the network mountpoints containing frames, textures, etc.

5 Backburner Web Monitor – Windows

Summary

Overview

The Backburner Web Monitor allows users to manage jobs and render nodes using a browser. Its advantage over the Backburner Windows Monitor is two-fold. First, it can run on any workstation with a web browser, rather than a Windows workstation only. Second, it has little impact on the Backburner Manager. In a render farm servicing numerous creative seats, it is recommended that you equip most workstations with access to the Backburner Web Monitor.

Before users can access the Backburner Web Monitor, you must install the following software on the workstation running the Backburner Manager:

- Apache HTTP server (Linux/Windows) or Microsoft Internet Information Services (IIS) (Windows only)
- Backburner Web Server

This chapter provides installation and configuration information for the Backburner *Web* Monitor. The first section gives the instructions for installing the Backburner Web Server under Apache. The second section provides instructions for Microsoft IIS.

For more information:

- A comparison of the Windows and web versions: "Windows Monitor versus Web Monitor" on page 26
- Installing the Backburner Windows Monitor: "Installing the Backburner Components on Windows" on page 50
- Connecting the Backburner Windows Monitor: "Starting and Configuring the Backburner Windows Monitor" on page 55

Apache HTTP Server

The following procedure shows the general workflow for installing and configuring the Apache HTTP server and Backburner Web Server on a Windows workstation.

To install and configure the Apache HTTP and Backburner Web servers:

1. If necessary, download and install the Apache HTTP server on the Windows workstation where Backburner Manager is installed.

   See "Installing the Apache HTTP Server for Windows" on page 64.

   NOTE: Installing the Apache HTTP server and the Backburner Web Server on the same workstation as the Backburner Manager is the recommended configuration. Do not install the web servers on multiple workstations.

2. Install and configure the Backburner Web Server for Apache.

   See "Installing the Backburner Web Server for Apache" on page 65.

3. Configure the Backburner Web Server so it can connect to the Backburner Manager.

   See "Configuring the Backburner Web Server" on page 65.

4. Set up end-user access.

   See "Setting Up Access to the Backburner Web Monitor" on page 67.

5. Specify which users have Backburner Web Monitor administrator privileges.

   See "Assigning Backburner Web Monitor Administrator Privileges" on page 69.

Installing the Apache HTTP Server for Windows

The first step in setting up the Backburner Web Monitor under Apache is to download and install the Apache HTTP server on the workstation where the Backburner Manager is located.

To download and install the Apache HTTP server:

1. On the Windows workstation designated as the Backburner Manager, open a Web browser and go to *http://httpd.apache.org*.

2. Download the Microsoft Windows Installer (MSI) file for Apache 2.0.59 or later. For Apaches 2.0.59 this file is called *apache_2.0.59-win32-x86-no_ssl.msi*.

3. Double-click the installer to start the installation.

   The Apache Installation Wizard appears.

4. Once you have reviewed the license agreement and the Read This First information, follow the Installation Wizard's on-screen prompts, keeping all settings at their default values.

5. Once the installation process is complete, click Finish.

The Apache HTTP server is installed and started. You can monitor its status and control the service by double-clicking the icon that appears in the Windows system tray, or by choosing Start | Programs | Apache HTTP Server 2.0.59 | Control Apache Server | Monitor Apache Servers.

Installing the Backburner Web Server for Apache

Once you have installed Apache, you are ready to install the Backburner Web Server. In this step you configure Apache to access the Backburner Web Server for a Backburner Web Monitor user on the network.

To install the Backburner Web Server:

NOTE: This procedure assumes the Backburner Manager is installed and running on the workstation. If this is not the case, please refer to "Installing the Backburner Components on Windows" on page 50 and Chapter 4, "Backburner Components – Windows," on page 49.

1. Navigate to the folder where Backburner is installed, by default *C:\Program Files\Autodesk\Backburner*.

   NOTE: If you are running Windows XP Professional 64-bit Edition, Backburner may be installed in the folder *C:\Program Files(x86)\Autodesk\Backburner*.

2. Copy the entire *backburner_html* folder to *C:\Program Files\Apache Group\Apache2\htdocs*.
3. Rename the *backburner_html* folder you copied in step 2 as *backburner*.

   You should now have a *C:\Program Files\Apache Group\Apache2\htdocs\backburner* folder.
4. Copy the following files from *C:\Program Files\Autodesk\Backburner* to *C:\Program Files\Apache Group\Apache2\cgi-bin*:

   • *monitorCGI.cfg*

   • *monitorCGI.cgi*

Configuring the Backburner Web Server

With Apache and the Backburner Web Server installed, you can now configure the Backburner Web Server to connect to the Backburner Manager.

To configure the Backburner Web Server:

1. Identify the full name of the workstation (such as *saturn.sol.com*) running the Backburner Manager.
2. Navigate to *C:\Program Files\Apache Group\Apache2\cgi-bin*, and then open the *monitorCGI.cfg* file in an XML or a text editor such as *Notepad*.

The *monitorCGI.cfg* file contains Backburner Manager settings for the Backburner Web Server. You must configure this file so that a Backburner Web Monitor can access the Backburner Manager.

3. Locate the following line in the *monitorCGI.cfg* file:

   ```
   <!-- Default Manager Hostname -->

   <Manager>localhost</Manager>
   ```

4. Replace the value for `localhost` in this line with the full computer name of the workstation running Backburner Manager, as determined in step 1.

   For example, if the name of the workstation running Backburner Manager is *saturn.sol.com*, the line appears as:

   ```
   <Manager>saturn.sol.com</Manager>
   ```

5. Locate the following line in the *monitorCGI.cfg* file:

   ```
   <!-- Port that the manager is running on -->

   <Port>3234</Port>
   ```

6. If necessary, replace the value in this line with the port number used to communicate with Backburner Manager.

   Check the Backburner Manager General Properties dialog or the *backburner.xml* file if you are unsure what port number is being used by the Backburner Manager. See "Starting and Configuring Backburner Manager" on page 51.

   NOTE: The default Backburner Manager port number is 3234. Changing this port number is not recommended.

7. Save and close the *monitorCGI.cfg* file.

8. To test the Backburner Web Server, open a Web browser and enter the following in the address line:

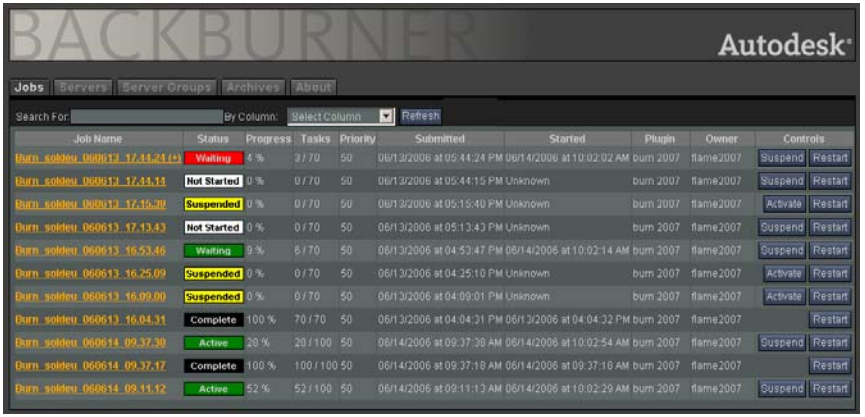
   `http://``<machinename>`**`/backburner`**

   All users on the network can use this Web address to access the Backburner Web Monitor. For example, if the machine name is *managerhost*, enter:

   `http://managerhost/backburner`

9. Enter a user name and password when prompted (**`backburner`** and **`backburner`** by default).

The Web Monitor appears in the browser.



NOTE: If you cannot connect to the Backburner Web Server, try restarting the Backburner service and/or the Apache service in Windows.

With the Backburner Web Server working, you are now ready to set up access to it for other users.

Setting Up Access to the Backburner Web Monitor

Backburner Web Server requires all users to provide a login name and password to access the Backburner Web Monitor. Setting up access to the Backburner Web Monitor requires that you:

- Create Backburner Web Monitor user accounts.
- Configure Backburner Web Server to authenticate users.

The first procedure in this section describes how to create a Backburner Web Monitor user account. The second describes how to delete a Backburner Web Monitor user account. The third describes how to configure Backburner Web Server to authenticate users at login.

To create Backburner Web Monitor user accounts:

1. Create a sub-folder called *auth* in the main Apache folder, *C:\Program Files\Apache Group\Apache2*.

   You should have a *C:\Program Files\Apache Group\Apache2\auth* folder. Next, set up a password file for the Backburner Web Server in this folder.

2. Open a command prompt (DOS) shell, and then navigate to the *C:\Program Files\Apache Group\Apache2\bin* folder by typing the following:

```
cd "C:\Program Files\Apache Group\Apache2\bin"
```

HINT: Use quotation marks in a command to access folders or files with non-standard names, such as folders with spaces like *C:\Program Files*.

You use the *htpasswd.exe* utility in this folder to set up user names and passwords for all Backburner users.

3. Create a password file that contains the username and password of the first user. Type:

   htpasswd.exe -b -c ..\auth\backburner.auth <username> <password>

   where <username> and <password> are the respective username and password.

   A text file called *backburner.auth* is created in the folder, *C:\Program Files\Apache Group\Apache2\auth*. This file contains the list of user names and encrypted passwords for all network users.

4. Set the username and password for remaining users by typing the following for each network user:

   htpasswd.exe -b ..\auth\backburner.auth <username> <password>

   The username and password for each user is appended to the *backburner.auth* file that you created in step 5. Once you have set up logon credentials for all network users, you are ready to run the Backburner Web Server.

To delete a Backburner Web Monitor user account:

1. Open a command prompt (DOS) shell, and then navigate to the *C:\Program Files\Apache Group\Apache2\bin* folder by typing the following:

   ```
   cd "C:\Program Files\Apache Group\Apache2\bin"
   ```

   HINT: Use quotation marks in a command to access folders or files with non-standard names, such as folders with spaces like *C:\Program Files*.

2. Delete a username and password for a user by typing the following:

   htpasswd.exe -D ..\auth\backburner.auth <username>

   The username and password for the user is deleted from the *backburner.auth* file.

To configure Backburner Web Server to authenticate users:

1. Navigate to the *C:\Program Files\Apache Group\Apache2\conf* folder and then open the *httpd.conf* file in a text editor such as *Notepad*.

2. Go to the end of this file and then add the following lines:

```
<Location /cgi-bin/monitorCGI.cgi>

AuthType Basic

AuthName Backburner

AuthUserFile "C:\Program Files\Apache
Group\Apache2\auth\backburner.auth"

<Limit GET POST>

</Limit>

require valid-user

</Location>
```

NOTE: If you are viewing this document online, to avoid any typographical errors, you should cut and paste these lines from this document. If you are running Windows XP Professional 64-bit Edition, the path in the AuthUserFile line may be *"C:\Program Files(x86)\Apache Group\Apache2\auth\backburner.auth"*.

3. Save and close the *httpd.conf* file.
4. To test that the Backburner Web Server performs authentication, open a Web browser and enter the following in the address line:

   http://<machinename>**/backburner**

   You are prompted to log in to the Backburner Web Monitor.
5. Enter the username and password for a Backburner Web Monitor user account.

   The Backburner Web Server checks the logon credentials that you supply against the username and password in the *backburner.auth* file. If these match, the Backburner Web Monitor appears. Otherwise, you are prompted again for a username and password.

Assigning Backburner Web Monitor Administrator Privileges

Users without administrator privileges can fully manage their own jobs, but can only monitor the status of other jobs in the Backburner Web Monitor. Those with administrator privileges can manage all jobs and render nodes. For a complete list of tasks that require administrator privileges, refer to the *Autodesk Backburner User Guide*.

To assign administrator privileges to a Backburner Web Monitor user account:

1. Navigate to the Backburner Wiretap server configuration file, *wiretap.cfg*, located in the */backburner* subdirectory of the per-user application data directory. For example, in Windows XP:

   C:\Documents and Settings\<user>\Local Settings\Application Data\backburner

2. Open the *wiretap.cfg* file in a text editor such as *Notepad*.

3. Scroll down to the [SECURITY] section. This section contains the keyword BackburnerAdministrators, which specifies the user accounts with administrator privileges. For example, the following assigns administrator privileges to the user account *backburner*:

   ```
   BackburnerAdministrators=backburner
   ```

4. Edit the BackburnerAdministrators keyword, separating account names with a comma. For example, the following assigns administrator privileges to the user accounts *backburner*, *loic*, and *solenn*:

   ```
   BackburnerAdministrators=backburner,loic,solenn
   ```

5. Save and exit the file.

   When users *backburner*, *loic*, and *solenn* log in to the Backburner Web Monitor, the system management tools appear in the user interface, indicating the user account has administrator privileges. For the location of the system management tools in the user interface, refer to the section "Accessing System Management Tools from the Backburner Web Monitor" in the *Autodesk Backburner User Guide*.

Microsoft Internet Information Services

The following procedure shows the general workflow used to install and configure the Microsoft Internet Information Services (IIS) server and Backburner Web Server on a Windows workstation.

To install and configure the IIS and Backburner Web servers:

1. If necessary, install the IIS Web server on the Windows workstation where Backburner Manager is installed. See "Installing the Microsoft Internet Information Services" on page 71.

   NOTE: Installing the Microsoft IIS server and the Backburner Web Server on the same workstation as the Backburner Manager is recommended. Do not install these Web servers on multiple workstations.

2. Install the Backburner Web Server for IIS. See "Installing the Backburner Web Server for Microsoft IIS" on page 72.

3. Configure security in IIS so the Backburner Web Server can run as a Web application. See "Setting Up IIS Security for the Backburner Web Server" on page 72.
4. Configure the Backburner Web Server to connect to and communicate with the Backburner Manager. See "Configuring the Backburner Web Server" on page 74.
5. Set up access to the Backburner Web Monitor users so network users can manage jobs and Render Nodes through the Web Monitor. See "Setting Up Access to the Backburner Web Monitor" on page 76.
6. Specify which users have Backburner Web Monitor administrator privileges. See "Assigning Backburner Web Monitor Administrator Privileges" on page 78.

   NOTE: Users without administrator privileges can only monitor the status of Backburner jobs in the Backburner Web Monitor. Users with administrator privileges can actively manage all jobs and render nodes. For a complete list of the tasks that require administrator privileges, refer to the *Autodesk Backburner User Guide*.

Installing the Microsoft Internet Information Services

Install the Microsoft IIS on a Windows workstation using the following procedure. This procedure assumes you are installing IIS and Backburner Web Server on the same workstation as Backburner Manager. You must install Microsoft IIS from your Windows CDs, if it is not already installed.

To install Microsoft IIS:

1. Log in as an administrator or super-user.
2. Choose Start | Settings | Control Panel | Add or Remove Programs.
3. Click the Add/Remove Windows Components button on the left side of the dialog.

   The Windows Components dialog appears, showing the components currently installed on the workstation. If the Internet Information Services is checked, IIS is already installed; go to "Installing the Backburner Web Server for Microsoft IIS" on page 72. Otherwise, do the remainder of this procedure.
4. Choose Internet Information Services and then click Next.
5. Follow the prompts to install IIS on your system.

   You may be prompted to insert your Windows CDs to install this component.

Installing the Backburner Web Server for Microsoft IIS

Install the CGI application for the Backburner Web Server under the Microsoft IIS server using the following procedure. This procedure configures IIS to access the Backburner Web Server for a Backburner Web Monitor user on the network.

To install the Backburner Web Server files for IIS:

NOTE: This procedure assumes the Backburner Manager is installed and running on the workstation. If this is not the case, please refer to "Installing the Backburner Components on Windows" on page 50 and Chapter 4, "Backburner Components – Windows," on page 49.

1. Copy the *C:\Program Files\Autodesk\Backburner\backburner_html* folder to *C:\Inetpub\wwwroot* using Explorer or My Computer.

   NOTE: If you are running Windows XP Professional 64-bit Edition, Backburner may be installed in the folder *C:\Program Files(x86)\Autodesk\Backburner*.

2. Rename the *backburner_html* folder you copied in step 1 as *backburner*.

   You should have a *C:\Inetpub\wwwroot\backburner* folder.

3. Create a sub-folder called *cgi-bin* in *C:\Inetpub\wwwroot*.

4. Copy the following files from *C:\Program Files\Autodesk\Backburner* to the *C:\Inetpub\wwwroot\cgi-bin* folder:

   • *monitorCGI.cfg*

   • *monitorCGI.cgi*

5. If you are running Windows XP Professional 64-bit Edition, then you must perform the following steps to allow the *.cgi* extension to appear as a Web service extension in the Internet Information Services Manager.

   a) In Windows, from the Control Panel, open Administrative tools then start the IIS Manager.

   b) In the folders listed under your Local Computer, go to the "Web Service Extensions" folder, click on "All Unknown CGI Extensions", and then click "Allow".

   This allows you to view the Web Monitor page correctly.

Setting Up IIS Security for the Backburner Web Server

Configure the security for the Backburner Web Server in IIS using the following procedure. This procedure ensures that the Web Server has the proper security clearance from IIS to run as a Web application over the network.

To configure IIS and set the security for the Backburner Web Server:

1. Using Windows Explorer or My Computer, navigate to the *C:\Inetpub\wwwroot* folder.
2. Right-click the *backburner* folder and choose Properties.
3. In the dialog that appears, open the Web Sharing panel, and then enable Share This Folder.

   You are prompted to set the security for the *backburner* folder.
4. Leave all settings at their defaults and click OK twice to return to the *C:\Inetpub\wwwroot* folder.
5. Right-click the *C:\Inetpub\wwwroot\cgi-bin* folder and choose Properties.
6. In the dialog that appears, open the Web Sharing panel, and then enable Share This Folder.

   You are prompted to set the security for the *cgi-bin* folder.
7. From the dialog that appears, select Execute (including scripts) and then click OK.
8. Click OK again to return to the *C:\Inetpub\wwwroot* folder.

   Next, set up the security for the shared *backburner* and *cgi-bin* folders in IIS using the Computer Management Console tool.
9. Choose Start | Settings | Control Panel | Administrative Tools | Computer Management.

   The Computer Management Console appears. You use this application to configure services and applications (such as IIS) for your Windows workstation.
10. Choose Services and Applications | Internet Information Services | Web Sites.

    IIS-managed Web sites appear in the right pane. If you just installed IIS, only one site (the Default Web Site) appears. Otherwise, all IIS-administered Web sites appear in the panel.
11. Right-click Default Web Site and choose Properties.
12. In the dialog that appears, open the Documents panel and then click Add.
13. Enter *index.html* in the Add Default Document dialog and click OK.

    index.html is added to the list of documents, enabling IIS to handle browser requests for a Web page with this specific name.

    NOTE: The *index.html* entry must be added to the document list for the Backburner Web Server to work. The Web Server does not work with the default *index.htm* entry.
14. Click OK, and double-click Default Web Site.

    Icons for the shared *backburner* and *cgi-bin* folders appear in the right pane.
15. Right-click the *backburner* icon and choose Properties.

16. In the dialog that appears, open the Directory Security panel, and then click Edit in Anonymous Access and Authentication Control.
17. In the dialog that appears, enable Anonymous Access and click OK.

    The *backburner* folder contains a file that connects the Backburner Web Monitor to the Backburner Web Server as well as the files that control the look of the Monitor. Allow anonymous access to this folder to:

    • Redirect the Backburner Web Monitor to the Backburner Web Server.

    • Permit any Web browser to load the Backburner Web Monitor page.
18. Click OK to return to the Computer Management Console.
19. Right-click the *cgi-bin* icon and choose Properties.
20. In the dialog that appears, open the Directory Security panel, and then click Edit in Anonymous Access and Authentication Control.
21. In the dialog that appears, enable Anonymous Access and click OK.
22. Click OK again to return to the Computer Management Console.
23. Close the Computer Management Console.

Configuring the Backburner Web Server

Configure the Backburner Web Server to connect to the Backburner Manager. This procedure allows a Backburner Web Monitor user to connect to the network managed by the Backburner Manager.

To configure the Backburner Web Server:

1. Identify the full computer name (such as *saturn.sol.com*) of the workstation running the Backburner Manager using either of the following methods:

    • Choose Start | Settings | Control Panel | System, open the Computer Name panel in the System Properties dialog and view the workstation name in the Full Computer Name field.

    • Test the connection to the Backburner Manager workstation using the *ping* utility and then view the workstation name that appears in the utility output.

    HINT: You can also use the *ping* utility to check that the workstation running the Backburner Manager is online.
2. Navigate to *C:\Inetpub\wwwroot\cgi-bin*, and then open the *monitorCGI.cfg* file in an XML or a text editor such as *Notepad*.

The *monitorCGI.cfg* file contains settings for the Backburner Web Server. You must configure this file so that a Backburner Web Monitor can access the Backburner Manager.

3. Locate the following line in the *monitorCGI.cfg* file:

   ```
   <!-- Default Manager Hostname -->

   <Manager>localhost</Manager>
   ```

4. Replace the value for `localhost` in this line with the full computer name of the workstation running Backburner Manager.

   For example, if the name of the workstation running Backburner Manager is *saturn.sol.com*, the line appears as:

   ```
   <Manager>saturn.sol.com</Manager>
   ```

5. Locate the following line in the *monitorCGI.cfg* file:

   ```
   <!-- Port that the manager is running on -->

   <Port>3234</Port>
   ```

6. If necessary, replace the value in this line with the port number used to communicate with Backburner Manager.

   Check the Backburner Manager General Properties dialog or the *backburner.xml* file if you are unsure what port number is being used by the Backburner Manager. See "Starting and Configuring Backburner Manager" on page 51.

   NOTE: The default Backburner Manager port number is 3234. Changing this port number is not recommended.

7. Save and close the *monitorCGI.cfg* file.

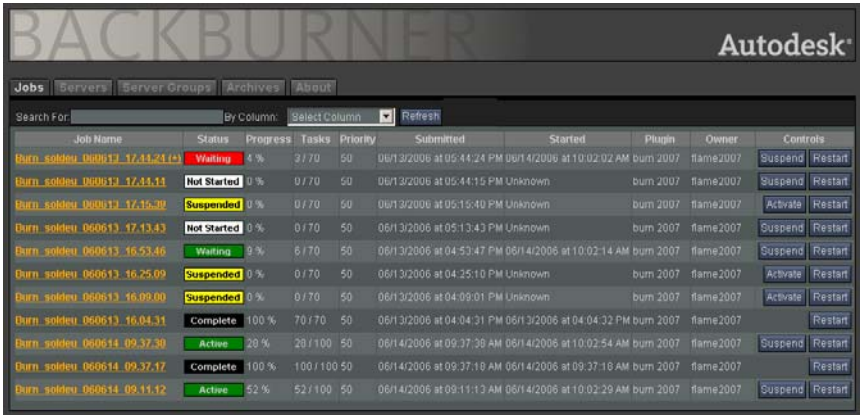
8. To test the Backburner Web Server, open a Web browser and enter the following in the address line:

   `http://``<machinename>`**`/backburner`**

   All users on the network can use this Web address to access the Backburner Web Monitor. For example, if the machine name is **`renderhost`**, enter:

   `http://renderhost/backburner`

If the Backburner Web Server is working, you are prompted to enter a user name and password. When you enter these login credentials, the Web Monitor appears in the browser.



NOTE: If you cannot connect to the Backburner Web Server, try restarting the Backburner service and/or the IIS service in Windows.

With the Backburner Web Server working, you are now ready to set up user names and passwords for users.

Setting Up Access to the Backburner Web Monitor

Backburner Web Monitor allows network users on Windows- and Linux-based workstations to manage Backburner jobs and render nodes. Backburner Web Server requires all users to provide a login name and password to access the Backburner Web Monitor. Setting up access to the Backburner Web Monitor requires that you:

- Create Backburner Web Monitor user accounts.
- Configure Backburner Web Server to authenticate users.

The first procedure in this section describes how to create a Backburner Web Monitor user account. The second describes how to delete a Backburner Web Monitor user account. The third describes how to configure Backburner Web Server to authenticate users at login.

To set up access to the Backburner Web Monitor:

1. Choose Start | Settings | Control Panel | Administrative Tools | Computer Management. The Computer Management Console appears.
2. Choose Services and Applications | Internet Information Services | Web Sites | Default Web Site.

3. Select the *cgi-bin* folder for the Default Web Site.

   The *monitorCGI.cgi* file appears in the right panel.

4. Right-click *monitorCGI.cgi* and choose Properties.

   Web site properties for the authenticated Backburner Web Server appear in a dialog.

5. In the dialog that appears, open the File Security panel, and then click Edit in Anonymous Access and Authentication Control.

6. In the dialog that appears, do the following:

   • Disable Anonymous Access

   • Enable Integrated Windows authentication

   NOTE: These settings allow anyone who can log in to the Windows workstation to use the Backburner Web Server. If you want to provide access to users who do not have accounts on the Windows workstation, refer to the Microsoft IIS documentation for help setting up Microsoft IIS user accounts.

7. Click OK to exit the dialog, click OK again to return to the Computer Management Console and then close this application.

   You have configured IIS so the Backburner Web Server may run in authenticated mode. Next, configure the Web Server itself to run in authenticated mode and then test this mode using the Backburner Web Monitor.

8. Navigate to *C:\Inetpub\wwwroot\cgi-bin*, and then open the *monitorCGI.cfg* file in an XML or text editor such as *Notepad*.

   The *monitorCGI.cfg* file contains settings for the Backburner Web Server, including a setting for running the Web Server in authenticated mode.

9. Make the following modifications to the `<AuthorizedSite>` entry in the *monitorCGI.cfg* file. If the entry is missing from the file, add it.

   `<AuthorizedSite>monitorCGI.cgi</AuthorizedSite>`

   All users connecting to Backburner through the Backburner Web Monitor are required to provide a username and password.

10. To test that the Backburner Web Server is running in authenticated mode, go to a workstation on the Backburner network, then open a Web browser and enter the following in the address line:

    `http://``<machinename>`**`/backburner`**

    If the Backburner Web Server is running in authenticated mode, you are prompted to log on to the Web Monitor.

11. When prompted, enter your Windows username and password.

    The Backburner Web Server checks your logon credentials against your Windows username and password. If these match, the Backburner Web Monitor appears. Otherwise, you are prompted again for your username and password.

Assigning Backburner Web Monitor Administrator Privileges

Users without administrator privileges can only monitor the status of Backburner jobs in the Backburner Web Monitor. Users with administrator privileges can actively manage all jobs and render nodes. For a complete list of tasks that require administrator privileges, refer to the *Autodesk Backburner User Guide*.

To assign administrator privileges to a Backburner Web Monitor user account:

1. Navigate to the Backburner Wiretap server configuration file, *wiretap.cfg*, located in the */backburner* subdirectory of the per-user application data directory. For example, in Windows XP:

   C:\Documents and Settings\<user>\Local Settings\Application Data\backburner

2. Scroll down to the [SECURITY] section. This section contains the keyword BackburnerAdministrators, which specifies the user accounts with administrator privileges. For example, the following assigns administrator privileges to the user account *backburner*:

   `BackburnerAdministrators=backburner`

3. Edit the BackburnerAdministrators keyword, separating account names with a comma. For example, the following assigns administrator privileges to the user accounts *backburner*, *loic*, and *solenn*:

   `BackburnerAdministrators=backburner,loic,solenn`

4. Save and exit the file.

   When users *backburner*, *loic*, and *solenn* log in to the Backburner Web Monitor, the system management tools appear in the user interface, indicating the user account has administrator privileges. For the location of the system management tools in the user interface, refer to the section "Accessing System Management Tools from the Backburner Web Monitor" in the *Autodesk Backburner User Guide*.

6 Backburner Manager – Linux

Summary

Overview

The Linux installation script can be used to install all three components: the Backburner Manager, Backburner Monitor and Backburner Server. chapter's primary aim is to assist in installing and setting up the Backburner Manager on a Linux workstation that is part of a render farm. It begins with instructions on installing the Backburner components. Next, it covers setting up the Backburner Manager, Backburner Monitor, and Backburner Server. It also contains instructions on setting up the Backburner Manager and Backburner Server as Windows services.

Set up the Backburner Manager on the designated Windows or Linux workstation. Because Backburner Manager is the hub of the network, it must be running before you set up Render Clients or Render Nodes. The following procedure shows the general workflow for setting up Backburner Manager.

To set up Backburner Manager:

1. Install the Backburner components on the Linux workstation.
2. Start and configure Backburner Manager.

Installing the Backburner Components on Linux

Use the following procedure to install Backburner on a Linux workstation from your Autodesk application CD. It includes instructions on checking whether they are configured to start with the operating system, and to configure the Backburner components.

To install Backburner on a Linux workstation:

1. Log in to the workstation as *root* and open a terminal.
2. If installing from the application DVD, mount the DVD, navigate to the *dist* subdirectory of the application directory and install the Backburner packages by typing:

   ```
   rpm -Uvh backburner*386.rpm
   ```

   NOTE: If the application CD includes an installation script for Backburner, use that instead.

3. If installing from the downloaded package, navigate to the sub-directory for the installed Linux distribution and run the installation script by typing:

   ```
   ./INSTALL
   ```

4. Follow the prompts to install the Backburner Manager and/or Backburner Server, per your configuration requirements.

   Once completed, you are returned to the command prompt.

5. Use the Linux **chkconfig** command to determine if the manager and server are configured to start automatically:

   ```
   chkconfig --list | grep -i backburner
   ```

   Output similar to the following should appear:.

   ```
   backburner_manager 0:off 1:off 2:on 3:on 4:on 5:on 6:off
   backburner_server  0:off 1:off 2:on 3:on 4:on 5:on 6:off
   ```

   Levels 3, 4, and 5 must be set to "on" for the daemons to start automatically. If no output appears, or if the output is different from the above, please contact Customer Support.

6. If this is an upgrade, installation is complete. Otherwise you may need to run additional installation scripts. First, change directories:

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

7. Run the Backburner configuration script to set up the Backburner Manager and the Wiretap Server:

   ```
   ./backburnerConfig
   ```

8. Optional: Run the installation script to configure the Backburner Web Monitor:

   ```
   ./backburnerConfigWeb
   ```

   For more information see Chapter 7, "Backburner Web Monitor – Linux," on page 83.

Starting and Configuring Backburner Manager

Once the Backburner components have been installed, you are ready to configure the Backburner Manager.

To start and configure Backburner Manager:

1. Log in to the workstation as *root* and open a terminal.
2. Stop the Backburner Manager service. Type:

   `/etc/init.d/backburner_manager stop`

   The Backburner Manager service on the workstation is stopped, if it was running previously. If it was not running previously, a "Failed" error message is displayed. If you are starting Backburner Manager for the first time, do steps 3 to 6 to configure the Manager before starting it. Otherwise, go to step 7 to start the Manager.
3. Navigate to the *Network* directory of the Backburner application and view its contents by typing:

   `cd /usr/discreet/backburner/Network; ls`

   The *backburner.xml* file in this directory contains the configuration settings for the Backburner Manager. You must edit this file to configure the Manager for your facility. Before editing it, make a backup copy of this file.
4. Make a backup copy of the *backburner.xml* file. Type:

   `cp backburner.xml backburner_backup_``<date>`**`.xml`**

   where `<date>` is today's date.

   The file is created in the *Network* directory. You can refer to and/or restore this file in case of problems.
5. If necessary, edit the *backburner.xml* file in a text editor such as *vi* or an XML editor to configure Backburner Manager for your facility. See Appendix A, "Backburner Manager Configuration Settings," on page 89.
6. Save and close the edited *backburner.xml* file.
7. Start Backburner Manager by typing:

   `/etc/init.d/backburner_manager start`

The Backburner Manager service starts, using the configuration information from the *backburner.xml* file. Once Backburner Manager is running properly, you are ready to set up the Backburner Web Monitor and the Render Nodes.

HINT: All Backburner Manager events are recorded in log files in the directory */usr/discreet/backburner/Log*. You can use the *tail* command to view the contents of this log for a Linux-based Backburner Manager.

7 Backburner Web Monitor – Linux

Summary

Overview

Backburner Monitor is the user interface to the Backburner network. It is a Windows application that is installed automatically when you install Backburner Manager on a Windows system. If you install Backburner Manager on a Linux system, this application is not available.

Backburner Web Monitor is the Web-based version of Backburner Monitor. It can run on any Windows or Linux workstation. It runs in a Web browser and is accessible from any host on the network.

Although the interfaces are not identical, both Backburner Monitor and Backburner Web Monitor provide the same functionality. Both also assume the workstation on which they are running has access to the Backburner network.

Installing Backburner Web Monitor

Backburner Web Monitor relies on Web server software which you must install and configure. After you install and configure this software, users can open a browser and connect to Backburner Web Monitor. The software you must install and configure is:

- One of the following Web server applications.
  - The Apache HTTP server, which is a popular open-source Web server application available for many platforms including Windows and Linux.
  - (Windows only) The Microsoft Internet Information Server (IIS), which is a proprietary Web server application included with all versions of Windows XP Professional.

  If necessary, consult your system administrator to determine the Web server application used by your facility and for assistance with installing and configuring this application. Installing the Web server application requires an understanding of HTML or XML, an understanding of Web server configuration, and a basic understanding of Backburner's architecture.
- Backburner Web Server.

Installing the Apache HTTP Server for Linux

If your facility is running Backburner for Autodesk Visual Effects and Finishing applications on Linux, you can also run the Backburner Web server from a Linux workstation or Render Node with the Apache HTTP server for Linux.

The following procedure shows the general workflow for installing and configuring the Apache HTTP server on a Linux workstation.

NOTE: It is not necessary to install Backburner Web Server on Linux.

To install and configure the Apache HTTP servers:

1. Install the Apache HTTP server on the Linux workstation where Backburner Manager is installed. See "Installing the Apache HTTP Server for Linux" on page 84.
2. Set up access to the Backburner Web Monitor users so network users can manage jobs and Render Nodes through the Web Monitor. See "Setting Up Access to the Backburner Web Monitor" on page 85.
3. Specify which users have Backburner Web Monitor administrator privileges. See "Assigning Backburner Web Monitor Administrator Privileges" on page 86.

NOTE: You can use the *backburnerConfigWeb* installation script to perform the above steps 2) and 3) automatically. The script is located in */usr/discreet/backburner*.

Installing the Apache HTTP Server Software

Install the Apache HTTP server for a Linux workstation using the following procedure. This procedure assumes you are installing the Apache HTTP server that is included with your Linux distribution.

NOTE: You must have root access to perform the following procedure.

To install the Apache HTTP server:

1. Log in as root and open a terminal.
2. Check if the Apache HTTP server is installed. Type:

   ```
   chkconfig --list | grep -i httpd
   ```

   If the Apache HTTP server's `httpd` daemon does not appear in the output, continue to the next step. Otherwise, go to step 4.
3. Install the Apache HTTP server package (`httpd`) from your Linux distribution on the Linux workstation where Backburner Manager is installed. Refer to your Linux distribution's documentation or help system for installation instructions.

   NOTE: It is recommended that you install the Apache HTTP server on the same workstation as the Backburner Manager. Do not install these Web servers on multiple workstations on the Backburner network.
4. Make sure that the Apache HTTP server is set to start with the workstation. Type:

   ```
   chkconfig httpd on
   ```
5. Start the Apache HTTP server by typing:

   ```
   /etc/init.d/httpd start
   ```

Setting Up Access to the Backburner Web Monitor

Setting up access to the Backburner Web Monitor requires that you create Backburner Web Monitor user accounts. Backburner Web Server requires all users to provide a login name and password to access the Backburner Web Monitor.

NOTE: The default user account *backburner* is created during the installation of Backburner Manager. The password associated with this account is *backburner*.

The first procedure in this section describes how to create a Backburner Web Monitor user account. The second describes how to delete a Backburner Web Monitor user account.

To create a Backburner Web Monitor user account:

1. Log in as root and open a terminal.
2. Check if the *backburner.auth* file is in place. Type:

   `ls /etc/httpd/auth`

   If the following output appears, proceed to step 4:

   `backburner.auth`
3. If the *backburner.auth* is not in place, copy it from the backburner folder. Type:

   `cd /usr/discreet/backburner/WebMonitor`

   `cp backburner.auth /etc/http/auth`
4. Add account. Type:

   `htpasswd /etc/httpd/auth/backburner.auth` `<username>`
5. Enter a password when prompted.

   The Backburner Web Monitor can now be accessed with the account information you have entered.

To delete a Backburner Web Monitor user account:

1. Log in as root and open a terminal.
2. Delete account. Type:

   `htpasswd -D /etc/httpd/auth/backburner.auth` `<username>`

Assigning Backburner Web Monitor Administrator Privileges

Users without administrator privileges can only monitor the status of Backburner jobs in the Backburner Web Monitor. Users with administrator privileges can actively manage all jobs and render nodes. For a complete list of tasks that require administrator privileges, refer to the *Autodesk Backburner User Guide*.

NOTE: The default user account *backburner* created during the installation of Backburner Manager has administrator privileges by default.

To assign administrator privileges to a Backburner Web Monitor user account:

1. Log in as root and open a terminal.
2. Navigate to the folder containing the file that defines administrator privileges:

   `cd /usr/discreet/backburner/Network`

3. Open the file *wiretap.cfg* in a text editor and scroll down to the [SECURITY] section. This section contains the BackburnerAdministrators keyword, which specifies the user accounts with administrator privileges. For example, the following assigns administrator privileges to the user account *backburner*:

   ```
   BackburnerAdministrators=backburner
   ```

4. Edit the BackburnerAdministrators keyword, separating account names with a comma. For example, the following assigns administrator privileges to the user accounts *backburner*, *loic*, and *solenn*:

   ```
   BackburnerAdministrators=backburner,loic,solenn
   ```

5. Save and exit the file.

   When users *backburner*, *loic*, and *solenn* log in to the Backburner Web Monitor, the system management tools appear in the user interface, indicating the user account has administrator privileges. For the location of the system management tools in the user interface, refer to the section "Accessing System Management Tools from the Backburner Web Monitor" in the *Autodesk Backburner User Guide*.

A Backburner Manager Configuration Settings

Summary

Overview

The Backburner Manager can be configured in its General Properties dialog (Windows) or by editing the *backburner.xml* file (Windows/Linux).

NOTE: Backburner Manager should be stopped before configuring.

While the default settings are appropriate for most cases, you may have to adjust these settings to enable communication between Backburner Manager and other components.

NOTE: The *backburner.xml* file provides many elements that can be used to customize Backburner Manager. Take care when modifying this file directly unless you are familiar with XML and are comfortable with editing *.xml* files. Do not modify the *backburner.xml* file beyond the scope of the elements covered in the following sections, unless directed to do so by Customer Support. Otherwise, Backburner stability of may be affected.

TCP/IP Settings

Configure general TCP/IP settings for Backburner Manager by modifying either fields in the TCP/IP group of the Backburner Manager General Properties dialog, or elements in the *backburner.xml* file. The fields/elements specify the TCP/IP port numbers and subnet mask to be used by Backburner.

Port numbers are like extensions for different users of the same telephone number. They represent two channels of communication between the Render Node and the Manager. Only a trained network administrator should change these settings.

Changing these port numbers from their default values is not recommended. If you decide to use other port numbers, these values must be changed in the TCP/IP settings of each Backburner component.

Field	XML Element	Description
Manager Port	`<ManagerPort>`	Specifies the port number used by Backburner Manager. The default value is 3234.
Server Port	`<ServerPort>`	Specifies the port number used by the Render Node(s). The default value is 3233.
N/A	`<NetworkMask>`	Sets the default subnet mask used for the network. The default value is 255.255.255.0. This value can be overridden using the Windows-based Backburner Monitor; when you launch the Monitor, select Manager | Connect and enter the subnet mask in the dialog that appears.

NOTE: If you are using a firewall in your facility, make sure you configure it to allow access to the Manager and Server ports. Otherwise, Backburner componentswill not be able to communicate, receive footage, or return rendered material.

General Settings

Configure general Backburner Manager behavior by modifying either fields in the General group of the Backburner Manager General Properties dialog, or elements of the `ManagerSettings` sub-element of the `AppDetails` element of the *backburner.xml* file.

Field	XML Element(s)	Description
Max Concurrent Assignments	`<MaxConcurrentAssignments>`	Specifies the number of jobs the Manager sends out simultaneously. This number depends on the processor speed of the Manager workstation, general job size, and overall network speed. Generally, the default value of 4 is adequate. You can change this value in the following situations: • Decrease this value when rendering jobs are large and/or Backburner is struggling to keep up with jobs. • Increase this value when rendering jobs are small and/or Backburner has no trouble keeping up with jobs. Avoid increasing this value substantially; too high a value may cause an increased number of node timeouts because the jobs are sent faster than the nodes can handle them. In such cases, decrease the value.
Use Server Limit	`<UseServerLimit>` and `<ServerLimit>`	Sets the maximum number of Render Nodes that will be allocated for a specific job. This feature can override the server limit settings in some applications. For information, see the application's Advanced Settings Dialog.
Use Task Error Limit	`<UseTaskErrorLimit>` and `<TaskErrorLimit>`	Defines the number of times a Render Node retries a task before suspending it.
Default Mail Server	`<DefaultMailServer>`	Defines the default mail server used for email notification. This mail server is used only for jobs that do not already have a mail server associated with them.

Failed Node Behavior

Configure Backburner Manager to automatically restart Render Nodes with failed jobs by modifying either fields in the Failed Server group of the Backburner Manager General Properties dialog, or elements in the `ManagerSettings` sub-element of the `AppDetails` element of the *backburner.xml* file.

Field	XML Element(s)	Description
Restart Failed Servers	`<RetryFailedServers>`	Activate to enable automatic Render Node restarting. If this option is disabled, the Render Node does not attempt to render the job again after the first failure. This option is enabled by default.
Number of Retries	`<RetryCount>`	Specifies the number of times the Manager attempts to restart a failed Render Node. The number of retries is set to 3 by default. The range is between 1 and 1024.
Seconds Between Retries	`<TimeBetweenRetries>`	The time between each retry in milliseconds. This value is set to 30000 milliseconds by default. In Windows this value is adjusted to be displayed as 30 seconds.

The state of a Render Node is recorded on a per-job basis. The Backburner Manager regularly goes through the list of Render Nodes for a job, checking for failures. If Restarts Failed Servers is enabled (set as `1` in the *backburner.xml* file), the Manager keeps track of the following:

- The time a Render Node fails on a particular job.
- The elapsed time since the node failed on a particular job.

If the time elapsed is greater than the specified Seconds Between Retries, the Backburner Manager decreases the Number of Retries by one and resets the Failed flag for the Render Node. Once the failure count reaches the specified Number of Retries, the Manager stops trying to restart the Render Node for that particular job.

Once a restarted Render Node completes a frame, it is flagged as active and resumes processing until the job is complete.

Job Path Settings

Configure Backburner Manager to access jobs on specified system or network drives by modifying either fields in the Direct Access to Job Path group of the Backburner Manager General Properties dialog, or elements of the `ManagerSettings` sub-element of the `AppDetails` element of the *backburner.xml* file.

You use these fields/elements when you do not want to have jobs kept on the drive or workstation where Backburner Manager is installed. Examples of such situations are:

- You have very little drive space on the system drive where Backburner Manager is installed. Because another system drive has plenty of space, you share a folder on this drive called

MyJobs where jobs are placed when submitted. In this case, you would direct jobs to *\\computername\MyJobs*.

- You are using your workstation simultaneously as a Backburner Manager and creatives workstation. To reduce the overhead on the workstation from Backburner Manager, you set up a shared job folder on a network file server, called *backburnerJobs*. The Win32 job path would be set to *\\fileserver\backburnerJobs* and jobs you submit placed on the file server.

Field	XML Element(s)	Description
Use Jobs Path	`<EnableJobPath>`	When enabled, defines job location using the Win32 or UNIX paths. This tells the Render Nodes to get the job files from this location, minimizing the file I/O traffic on the Manager workstation.
Win32 Path	`<Win32Path>`	The Windows file path where jobs are located. You can click the Browse button in the General Properties dialog to search your system for the job location.
Unix Path	`<UnixPath>`	The Unix file path where jobs are located. You can click the Browse button in the General Properties dialog to search your system for the job location.

Default Job Handling Behavior

Configure how Backburner Manager handles completed jobs by modifying either fields in the Default Job Handling group of the Backburner Manager General Properties dialog, or elements of the `ManagerSettings` sub-element of the `AppDetails` element of the *backburner.xml* file.

You use these settings to better manage the job queue in the Manager. For example, use these settings to delete a completed job after a certain number of days or leave the job indefinitely in the queue to be archived. Archiving is useful when you submit a final version of the project and you know no additional changes are required.

NOTE: These settings can be overridden from the Advanced Settings dialog accessed from the Network Job Assignment dialog.

<DefJobHandling> Setting	State	XML Element(s)	Description
0	Do Nothing		When enabled in the General Properties dialog, a completed job is left in the queue.
1	Delete it		When enabled in the General Properties dialog, the job is deleted from the queue upon completion.

<DefJobHandling> Setting	State	XML Element(s)	Description
2	Delete After	<DeleteDays>	When enabled in the General Properties dialog, the job is kept in the queue for the specified number of days upon completion. Once the number of days has been exceeded, the job is deleted from the queue.
3	Archive it		When enabled in the General Properties dialog, the job is archived upon completion. Archive it is enabled by default for Windows Managers.
4	Archive After	<ArchiveDays>	When enabled in the General Properties dialog, the job is kept in the queue for the specified number of days upon completion. Once the number of days has been exceeded, the job is deleted from the queue.

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