Autodesk®
Backburner™ 2010.2

User Guide

Autodesk®

Autodesk® Smoke® 2010 For Mac OS® X

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Part 1: Preparation

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DUCKLING

Introduction

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Welcome to Backburner

Welcome to the *Autodesk Backburner User Guide*. Backburner™ is the Autodesk® queue manager for background processing and distributed network processing. It allows multiple jobs, such as I/O operations, grading, composites and animation scenes to be processed by many computers working collectively on the same network. Backburner also provides the means to monitor and control the jobs you submit, as well as the tools for managing the Backburner network itself.

Backburner is leveraged by the following Autodesk applications:

■ Flint®	■ Flame®	■ Inferno®	■ Smoke®	■ Flare™	■ WiretapCentral™
■ 3ds Max®	■ Lustre®	■ Maya®	■ Cleaner®	■ Burn®	■ Backdraft® Conform
■ Smoke® For Mac® OS® X					

This guide relates to using Backburner to monitor and control background processing and distributed network processing. For information on submitting jobs to Backburner from an Autodesk application, refer to the user guide for the application of interest. For information on installation and configuring, refer to the *Autodesk Backburner Installation Guide*.

NOTE This guide documents the Backburner Windows Monitor and Backburner Web Monitor. Autodesk applications that leverage Backburner often have basic job queue monitoring abilities built in to the user interface. Fore more information, see the application-specific User Guide.

Intended Audience and Prerequisites

This guide is for the person or people responsible for monitoring, managing or maintaining the Backburner network. It is also for anyone interested in the details of how Backburner processes jobs. Whatever your interests, familiarity with the following selected topics will prove helpful:

- The Autodesk application(s) from which jobs will be submitted
- Linux® and/or Windows® and/or Mac OS X
- Computer networking

NOTE If you are new to Backburner, it is recommended that you read the *Backburner Installation Guide* before continuing with this guide. It contains valuable information on a number of key Backburner concepts. This includes the differences between its two main deployment models: the standalone workstation, and the render farm. It also provides details on how Backburner is used by each of the applications that leverages it.

If you require assistance, please contact Autodesk Media and Entertainment customer support. See Contacting Customer Support on page 8.

Backburner Terminology

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

Backburner	Definition
Backburner	The Autodesk distributed job management system for execution of 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 job.
Task	The smallest unit of work that can be sent to a render node for processing. This could be a single frame, a portion of a frame, or an entire background I/O job, depending on the job type and the creative application submitting it.
Block	A group of tasks sent to a render node as a unit. For example, when you submit a Burn job from Smoke, each render node normally receives a number of frames for processing at once.
Backburner Manager	Coordinates jobs submitted by creative applications and delegates them to the Backburner servers on the Backburner network.
Backburner Windows Monitor Backburner Web Monitor	Front-end interfaces for management and control of the Backburner Manager.

Backburner	Definition
Backburner Server	The job-processing component of Backburner, residing on each render node, that invokes the local processing engine.
Adapter	The means by which job-specific processing engines are integrated into Backburner. Sits between the Backburner server and the processing engine.
Processing Engine	The server-side process responsible for carrying out the tasks assigned by the Backburner Manager—rendering animations, scenes and frames, or performing background I/O. A renderer is a particular kind of processing engine.
Server Group	A named collection of Backburner servers.

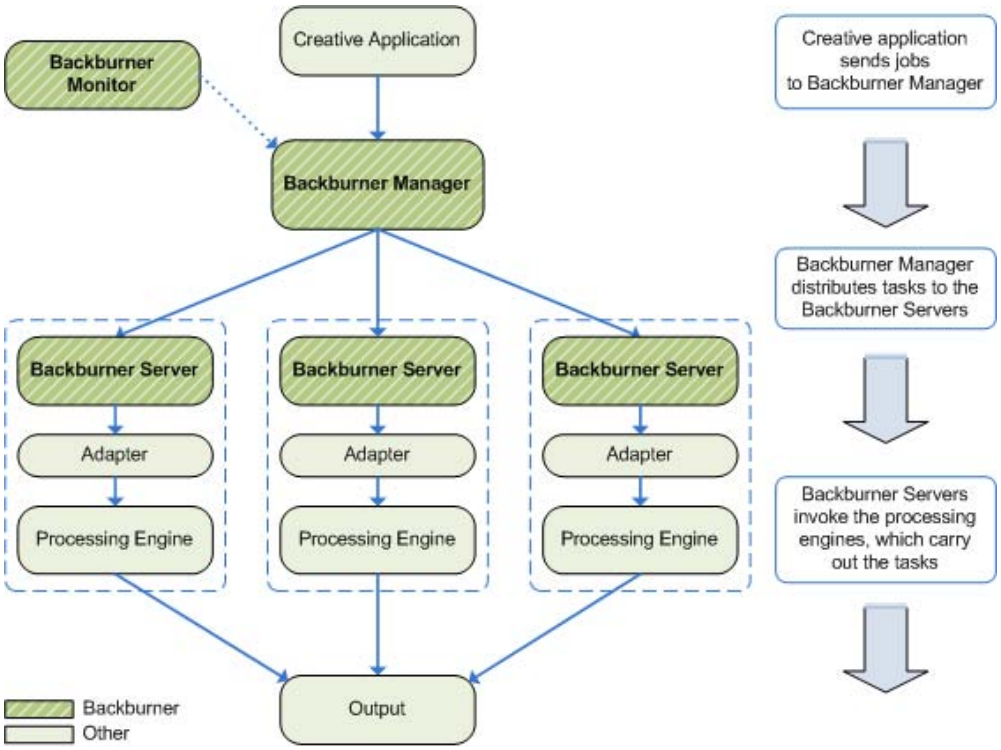
Packets, Buckets and Backburner

In other industry literature, the term *packet* is sometimes used to mean the number of frames sent to a render node for processing. A "packet" size of 5, for example, means 5 frames are sent to each available render node. In Backburner, the term *packet* retains its traditional meaning under TCP/IP. In Backburner, the blocks of tasks automatically sent to render nodes for processing are similar to what other software manufacturers call packets.

Similarly, *bucket rendering* is a commonly used term for the concept of explicitly dividing a single image into slices (or tiles), for processing on different render nodes. The same concept applies in Backburner (for 3ds Max), but no particular term is used to describe the process. Backburner simply receives jobs from its render clients, and sends them to the render nodes for processing as blocks of tasks. Whether tasks represent entire frames, or portions of frames, is transparent to its operation.

Backburner Architecture

As illustrated in the following diagram, Backburner consists of the Backburner Manager, Backburner Monitor, and Backburner Servers. These operate in the greater context of creative applications (such as Autodesk Visual Effects and Finishing applications) and processing engines (such as Burn™).



Backburner Manager

At the centre of Backburner is the Backburner Manager. It receives jobs from the client applications—such as Smoke, Flame, 3ds Max, Maya—which it then distributes, as sets of *tasks*, 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, depending on your settings, 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 Server, adapters and processing engines. The kinds of jobs a render node can process depend on the adapters and processing/rendering engines installed upon it. Autodesk Visual Effects and Finishing applications, including Smoke for Mac OS X, 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. For efficiency, you can group render nodes together in named groups, called *server groups*. Particular jobs can then be processed by the nodes in a named group only, leaving nodes outside the group free for other uses.

Command-Job Utility

The Backburner command-job utility, *cmdjob*, lets you submit batch, executable or script files to Backburner as "custom" jobs from the command line, for execution on render nodes. Two distinct command-job adapters

are installed on the render nodes to handle the custom jobs. One adapter executes jobs as the *root* user. The other retains the user account of the user that submitted the job. For more information, see Advanced Operations on page 67.

What's New

This section presents new features and changes implemented in Backburner 2010.2.

Backburner on Mac OS X

In previous releases, Backburner was deployable on both the Linux and Windows operating systems. With Backburner 2010.2, Backburner adds Mac OS X to its list of supported platforms. The Backburner Manager, Backburner Server, and Backburner *cmdjob* command-line utility are all included in the port, enabling Mac-based Autodesk applications to leverage Backburner for render farms consisting of managers and render nodes on Mac workstations.

New Backburner Web Monitor

This release of Backburner features a new version of the Backburner Web Monitor. The new Web Monitor is a full-featured, desktop-like application that runs entirely inside a web browser. It is an Adobe Flash Player compatible application that replaces the older html-based Backburner Web Monitor, no longer available as of this release.

Support for Smoke 2010 for Mac OS X

Backburner is now leveraged by the new Autodesk Smoke for Mac OS X, in both standalone and render-farm deployments. In the standalone deployment, Smoke for Mac OS X uses Backburner for background I/O, including proxy generation. In the render farm deployment, Smoke for Mac OS X can submit jobs to a render farm consisting of Burn render nodes installed on Linux workstations.

Support for Maya 2010 on Mac OS X

In the previous release, Maya leveraged Backburner for network rendering on Linux and Windows workstations. With Maya 2010 and Backburner 2010.2, network rendering is also supported on the Mac OS X platform. Network rendering allows animation scenes to be rendered by many computers working collectively on the same network.

New Command-Job Adapter

The Backburner *cmdjob* command line utility lets you submit batch, executable or script files to Backburner as “custom” jobs. This release introduces a new command-job adapter—two distinct command-job adapters are now installed. The first runs all received jobs as the *root* user. The second runs its jobs as the submitter account. Those concerned with security now have the option of removing the older adapter.

Combustion Compatibility Break

With this release, Combustion network rendering using Backburner is no longer supported. Note, however, that Backburner is not needed for local rendering, nor 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	not supported
Local encoding with Cleaner XL	n/a
Network encoding with Cleaner XL	*supported*

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 appears in Courier bold. You must press the Enter key after each command.	**`rpm -qa`**
Variable names appear in Courier, enclosed in angle brackets. No spaces are allowed in variable names.	`<variable_name>`
Variables that appear enclosed in square brackets are optional.	`[<filename>]`
Feedback from the command line appears in Courier.	`limit coredump-size`
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. For a list 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 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*.

Getting Started

2

Topics in this chapter:

- Overview on page 9
- Backburner Windows Monitor on page 11
- Backburner Web Monitor on page 14
- Working with Jobs on page 17
- Working with Render Nodes on page 18

Overview

As noted in the introduction, end-user and administrator interaction with the Backburner network is mainly by way of the Backburner Monitor. This is the means by which you carry out the daily tasks of observing and controlling jobs and managing render nodes. For jobs, it includes pausing, stopping and restarting jobs, changing job priorities, archiving and restoring jobs, and so on. For render nodes it includes setting render node availability schedules and assigning particular render nodes to particular jobs. It also includes creating and managing *server groups*—named collections of render nodes that can assist in implementing a job processing strategy, for render farms serving more than one creative application.

NOTE Autodesk applications that leverage Backburner often have basic job queue monitoring abilities built in to the user interface. Fore more information, see the application-specific User Guide.

The Backburner Monitor is available in two forms:

- **Backburner Windows Monitor**. A feature-rich UI to the Backburner network. It can be installed and launched from any Windows workstation on the network, and leverages the complete functionality of the Backburner Manager. This monitor is well-suited for a small render farm with a single creative workstation, or the administrator workstation on a larger render farm.

- **Backburner Web Monitor**. Designed for non-administrator workstations on a large render farm, this lightweight monitor allows you to manage jobs and render nodes from a web browser. Its UI is a

desktop-like application that runs entirely inside the browser. Its advantages over the Backburner Windows Monitor are two-fold. First, it can run on any workstation with a web browser, rather than a Windows workstation only. Second, it has minimal impact on the Backburner Manager.

The aim of this chapter is to introduce the UIs and general features of the monitors, with details on launching them and connecting to a Backburner Manager. It also introduces the main categories of the tasks you can perform: those that are related to jobs, and those for working with render nodes. Details on using the monitors are left for later chapters.

Monitor Comparison

The following table summarizes the major differences between the monitors.

	Windows Monitor	Web Monitor
Operating System	■ Windows OS	■ OS independent (browser/Adobe Flash Player-compatible)
Monitoring Mechanism	■ Automatic via broadcasts from Backburner Manager	■ On demand via end-user requests
Control of Job Queue	■ 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 Accounts	■ Not applicable. All users operate with admin privileges	■ 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

Before You Begin

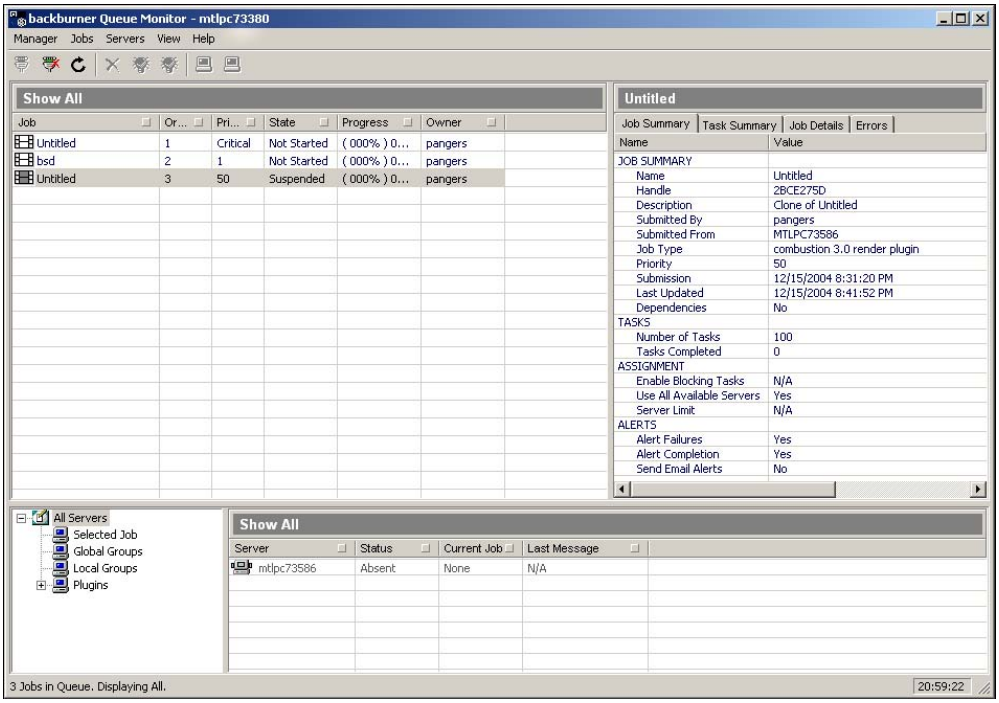
Please note the following general points:

- **User Account and Password**. Depending upon how Backburner has been installed and configured, you may need a user account and password to gain access to the chosen monitor.
- **Administrator Privileges**. Depending on the monitor used, you may need a user account with administrator privileges to actively manage all jobs and render nodes.
- **Manager Name or IP Address**. The Backburner monitor obtains its information from the Backburner Manager. In order to connect the Backburner Monitor to a Backburner Manager, you require the Backburner Manager host name, or IP address.

NOTE The above points are dependent on how your Backburner network is set up, and the monitor type in use. For example, the Backburner Windows Monitor automatically acquires administrator privileges when it obtains control of the job queue. No special account is needed.

Backburner Windows Monitor

The feature-rich Backburner Windows Monitor can be launched from any Windows workstation on the network where it has been installed. It leverages the complete functionality of the Backburner Manager, and is well-suited for the adminstrator workstation of a larger render farm.



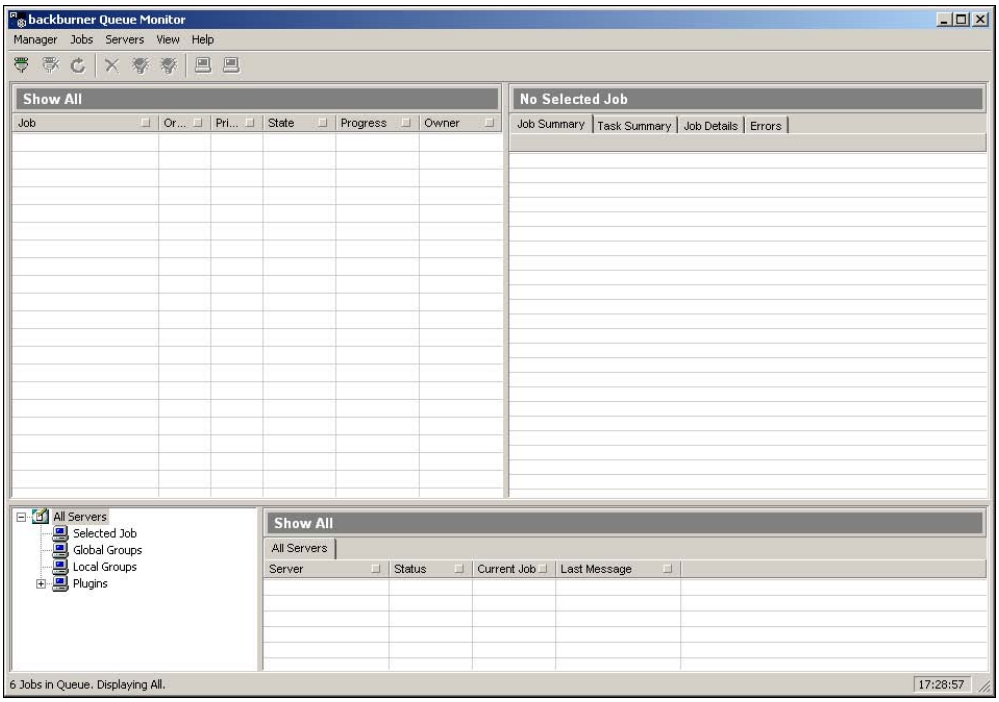
Like the other monitors, the Windows Monitor operates by connecting to a Backburner Manager. The first Windows monitor making the connection has full control over the job queue and Backburner network—that is, “queue control”. Subsequent connections by other Windows Monitors have more limited functionality. See Obtaining Queue Control on page 13.

NOTE Due to the internal monitoring mechanism, it is suggested you avoid running the Backburner Windows Monitor on more than one or two workstations, since this can degrade network performance. Non-administration workstations can make use of the Backburner Web Monitor instead. For more information, see the *Backburner Installation Guide*.

To launch the Backburner Windows Monitor:

1. From the Start menu, choose Programs, Autodesk, Backburner, and then Monitor.

   The Backburner Monitor appears. If this is your first time running the application, no network or job details are present, since it is not yet connected to a Backburner Manager.



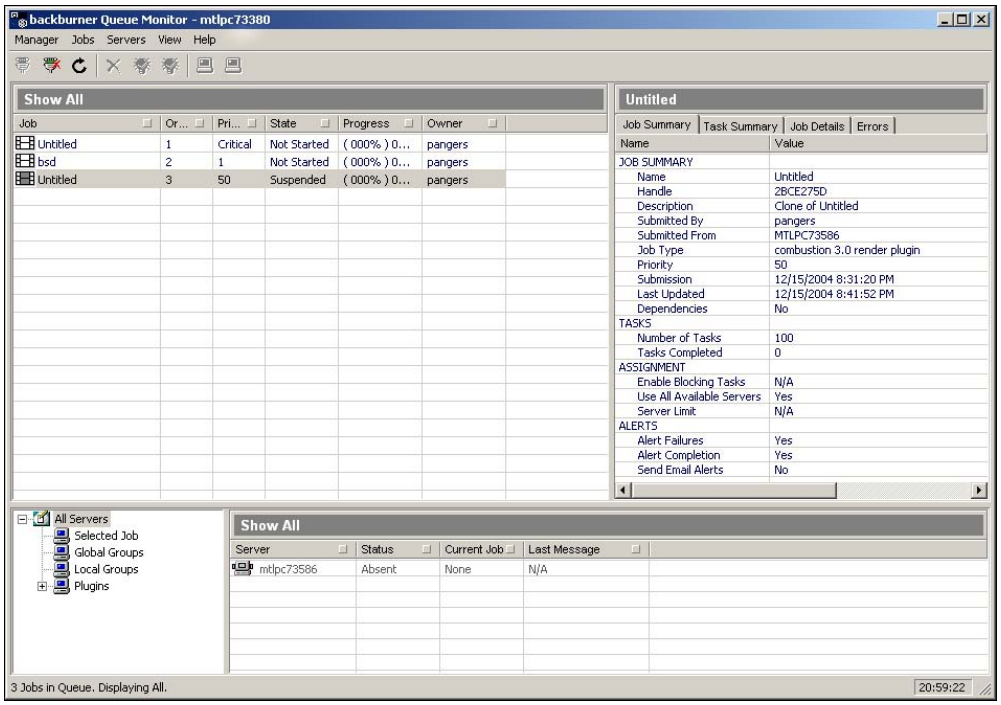
2 Connect to a Backburner Manager. From the Manager menu, choose Connect.

3 In the Connect to Manager dialog that appears, uncheck the *Automatic Search* checkbox, and enter the host name or IP address of the Backburner Manager in the *Enter Manager Name or IP Address* text field.

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

4 Click OK to initiate the connection.

   The monitor connects to the selected manager, and the UI is populated with job and server details for the Backburner network.



NOTE If the title bar displays "Read Only", this indicates another user has already connected to the manager via a Backburner Windows Monitor. To perform all common tasks, you will need queue control. See Obtaining Queue Control on page 13.

5 Verify the connection. From the Manager menu, choose Properties.

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

6 Optional: Set the monitor to connect to its manager automatically at start-up. From the Manager menu, choose Autoconnect.

7 When finished, end the session. From the Manager menu, choose Disconnect.

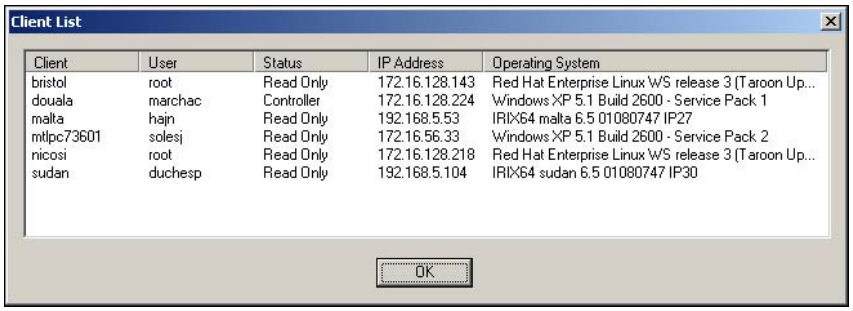
Obtaining Queue Control

The Backburner monitor enforces a simple queue control mechanism to avoid conflicting requests from different users of the Backburner Windows Monitor. The first monitor establishing a connection to the manager is automatically granted queue control, and can perform all job-related activities, including stopping, restarting, or deleting jobs. Subsequently, other monitors connect in read-only mode, allow them to observe the activity on the Backburner network only. This section describes how to obtain queue control.

To obtain queue control:

1 From the Manager menu, choose Request Client List.

A Client List dialog appears, showing the status of all users connected to the manager via the Backburner Windows Monitor.



The Status column indicates the user with control of the queue.

2 Dismiss the dialog, then obtain queue control. From the Manager menu, choose Request Queue Control.

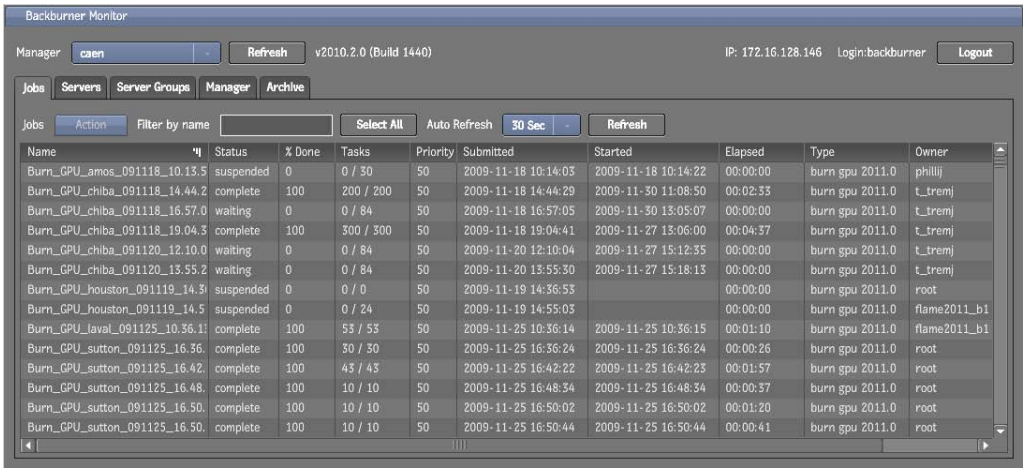
The manager transmits the request to the user currently with queue control. A message similar to the following appears on the remote machine.

3 As indicated in the dialog, the user has 10 seconds to actively refuse the request; otherwise, control of the queue passes over to you, and the status at the other workstation reverts to “read-only”.

4 You can now perform all operations on jobs and servers in on the Backburner network.

Backburner Web Monitor

The Backburner Web Monitor is desktop-like application that runs entirely inside a web browser. It provides similar functionality to the Windows-based Backburner Windows Monitor, but can be launched from any web browser with access to the Backburner network. For the user with administrator privileges, the available functionality is identical to the Backburner Windows Monitor. For non-administrator users, most administration-level functionality is available, but only for jobs they themselves submit.



Before You Begin

Before launching the Backburner Web Monitor, please note the following points:

- **User Account and Password**. Depending on your system configuration, you may need a user name and password to access the Backburner Web Monitor.
- **Administrator Privileges**. All users can perform common tasks on the jobs they themselves submit. For advanced tasks, and to modify jobs submitted by others, an account with administrator privileges is required.
- **Queue Control**. Unlike the Backburner *Windows* Monitor, the Backburner *Web* Monitor does not enforce queue control. However, if a Backburner Windows Monitor is running and connected to the same manager, advanced operations—such as archiving and restoring jobs—are not permitted, and a "queue control" warning is returned. When wait a few seconds and try the operation again. The Web Monitor automatically requests queue control from the Windows Monitor when required.

Required Privileges for Common Tasks

The following table indicates the privilege level required for tasks related to jobs.

Job Task	Normal User (Own Jobs)	Normal User (Other Jobs)	Admin User (All Jobs)
Activate	•	•	•
Suspend	•	•	•
Restart	•	•	•
Archive/Restore	•		•
Modify Settings	•		•
Delete	•		•

The following table lists the tasks related to render nodes (servers). All render node-related tasks require administrator privileges.

Server Task	Admin User
Shift jobs between servers/server groups	•
Delete absent server	•
Set server availability schedule	•
Create server groups	•
Manage server group settings	•

Launching the Backburner Web Monitor

To launch the Backburner Web Monitor:

1. Open a web browser on a workstation that has access to the Backburner network.

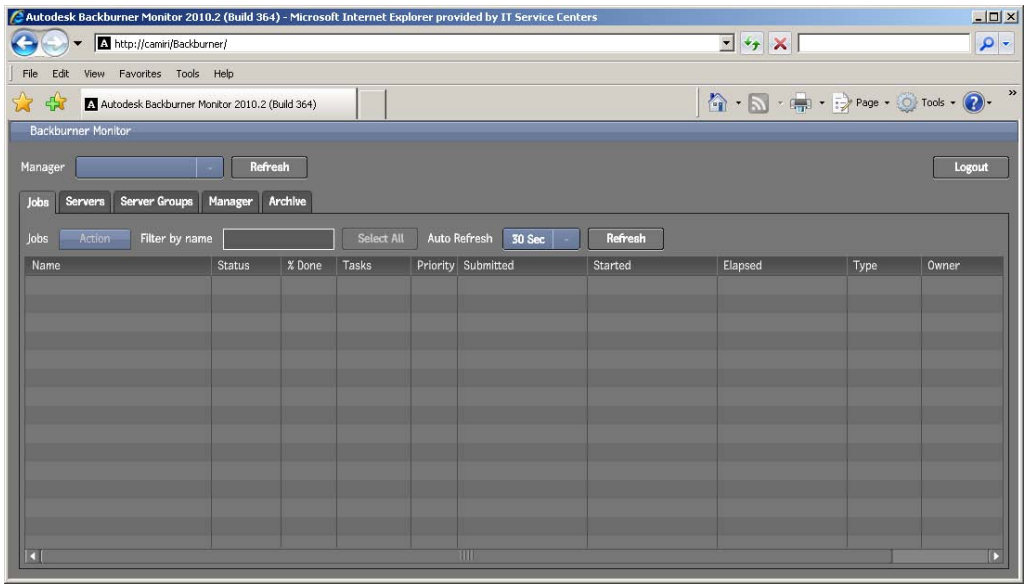
2 In the browser's address field, enter *http://*`<machinename>`*/Backburner*, where `<machinename>` is the name of the workstation running the Apache server. For example, if the name of the workstation is *caen*, the address is *http://caen/Backburner*.

NOTE The address is case-sensitive. 'Backburner' takes an upper-case 'B'.

A pop-up dialog appears, prompting for a user name and password.

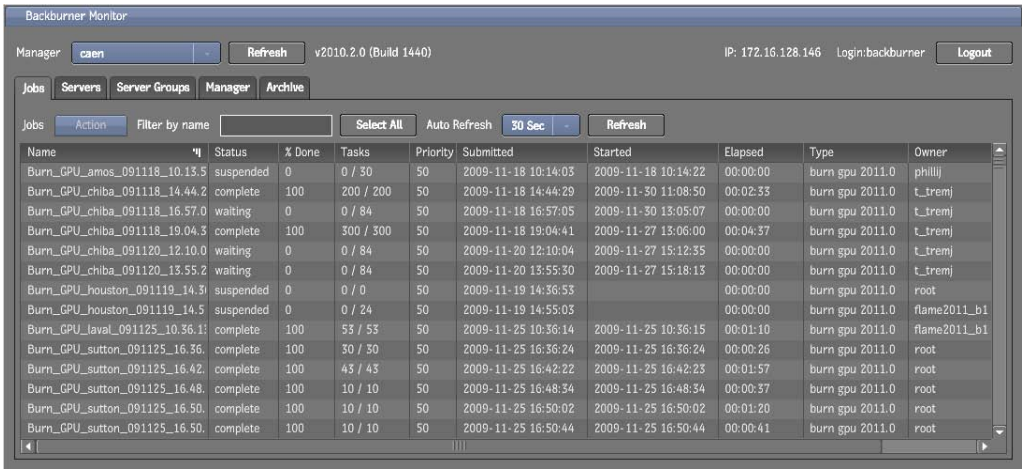
3 Enter a user name and password and then click OK.

The Backburner Web Monitor appears in the browser. No network or job details are present, since it is not yet connected to a Backburner Manager.



4 From the Manager drop-down list, select the Backburner Manager of interest.

The UI and Jobs tab are populated with information automatically.



5 The following table summarizes the contents of each tab in the interface:

Tab	Description
Jobs	The Jobs tab presents high-level information relating to all jobs associated with the selected Backburner Manager. Use it to view and control the jobs you yourself submit to Backburner, as well as to view jobs submitted to Backburner by other Autodesk applications. Double-click any job in the list to view its details and settings.
Servers	The Servers tab provides an overview of the general health of each render node, the adapters installed on it, and so on. It also provides access to server details, where you can set an availability schedule, for example.
Server Groups	A server group is a named collection of render nodes that is treated, for the most part, as if it were a single node. Use this tab to manage all aspects of server groups, including creating new ones.
Manager	Use the Manager tab to set options related to the Backburner network, such logs, server assignments criteria, job retries, and the tasks performed when a job finishes, such as archiving.
Archive	The Archive tab presents information pertaining to all archived jobs. From here, you can delete and re-activate old jobs.

6 You can update the display manually by clicking the Jobs tab Refresh button, or you can set a refresh rate from the Auto Refresh menu.

7 To perform an operation on a job, select the job in the Jobs tab, then select the desired operation from the Action menu.

Shift-click or **Ctrl-click** to perform the same operation on more than one job at a time.

8 To view job details, double-click the job of interest, or select a job and choose Settings from the Action menu.

9 When finished, end the session by logging out of the UI and closing the browser (or tab).

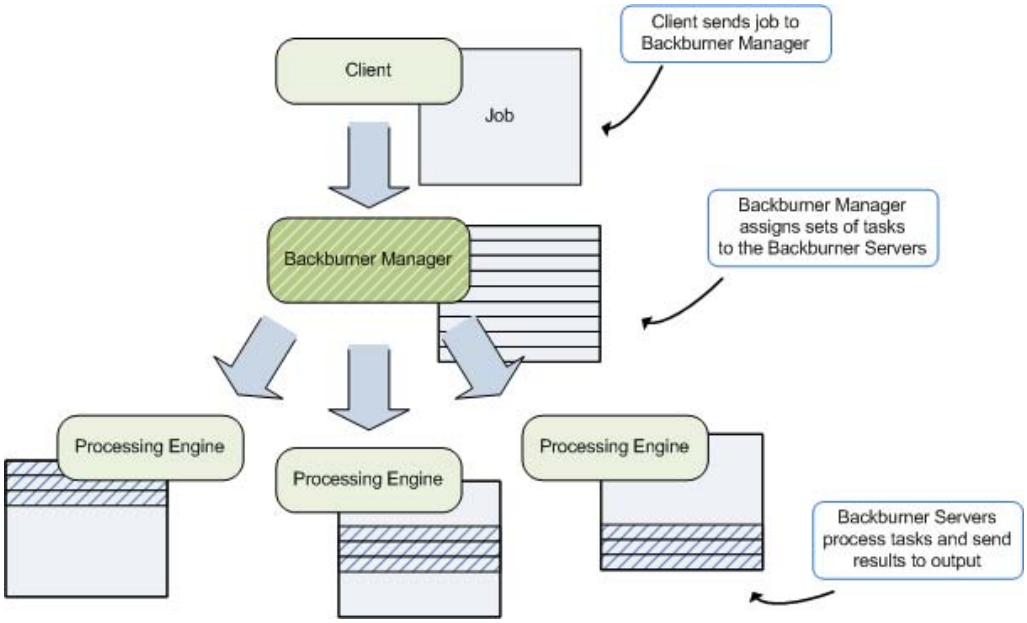
Working with Jobs

Stated briefly, a job flows from creative application to processing engine as follows. The creative application—Smoke, 3ds Max, Lustre, etc.—submits the job to the Backburner Manager, which is then distributed as blocks of tasks to the Backburner Servers with the corresponding adapter installed, residing

on the render nodes. The servers invoke the appropriate processing engine, which carries out its assigned tasks.

While it is the creative application that specifies the number of tasks in a particular job, once the job is on the Backburner network, it becomes the responsibility of the Backburner Manager. For example, it is the manager that decides how many tasks each render node is asked to carry out, in what order tasks are sent out, etc.

This is illustrated in the following diagram:



The process just described is largely automated and can operate entirely without user intervention. That being said, once a job is on the Backburner network, you can intervene in a number of ways. Aside from passively monitoring jobs, the most common job activity is to suspend a job, change its settings, and restart the job.

For more information:

- Windows Monitor: Managing and Modifying Jobs – Windows on page 21
- Web Monitor: Managing and Modifying Jobs – Web on page 45

Working with Render Nodes

Render nodes are responsible for processing the tasks assigned to them by the Backburner Manager. The monitors provide several tools for managing the Backburner network at the level of the render nodes. These are aimed at making the Backburner network and job processing more efficient. For example, you can easily speed up processing of a large job by assigning new render nodes to it.

For more information

- Windows Monitor: Managing Render Nodes – Windows on page 33
- Web Monitor: Managing Render Nodes – Web on page 55

Part 2: Backburner Windows Monitor Reference

Part 2 includes these chapters:

- Managing and Modifying Jobs – Windows on page 21
- Managing Render Nodes – Windows on page 33

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Managing and Modifying Jobs – Windows

3

Topics in this chapter:

- Overview on page 21
- Finding and Monitoring Jobs on page 22
- Customizing the Job List on page 24
- Suspending and Reactivating Jobs on page 24
- Modifying Job Settings on page 25
- Restarting Jobs on page 27
- Cloning Jobs on page 28
- Archiving Jobs on page 29
- Deleting Jobs on page 30

Overview

The procedures in this chapter describe how to interact with jobs already submitted to Backburner for processing, using the Backburner Windows Monitor. For information on submitting jobs to Backburner from an Autodesk application, refer to the user guide for the application of interest.

NOTE If the Backburner Windows Monitor title bar displays "Read Only", this indicates another user has already connected to the manager via a Backburner Windows Monitor. To perform most of the tasks described in this chapter, you will need to obtain queue control. See Obtaining Queue Control on page 13.

Finding and Monitoring Jobs

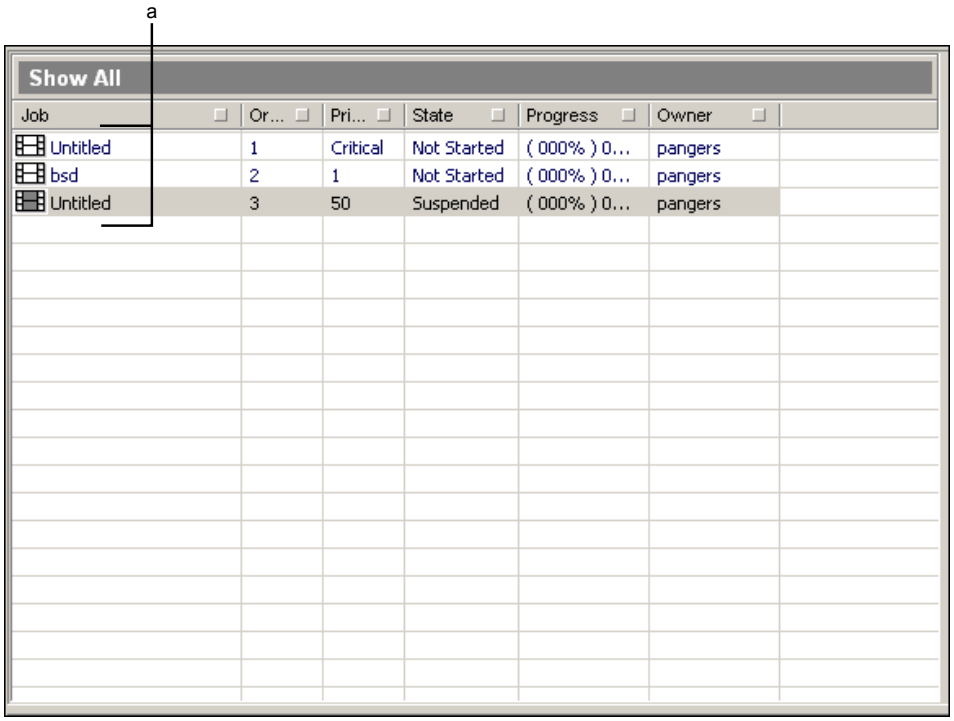
Basic monitoring allows you to view all the jobs submitted to Backburner, ensure jobs are being executed in the desired order, check the status of particular jobs, observe progress, etc. It is the starting point for all other interactions.

This section describes how to view all the jobs known to the Backburner Manager, their status and job details.

To find jobs and view their status:

1 Start the Backburner Monitor and connect to a Backburner Manager. See Backburner Windows Monitor on page 11.

The Job List area displays all the current jobs on the Backburner network. Their status, progress, and other information is also displayed.



(a) Job list

The icon beside each job provides a visual indication of its state.

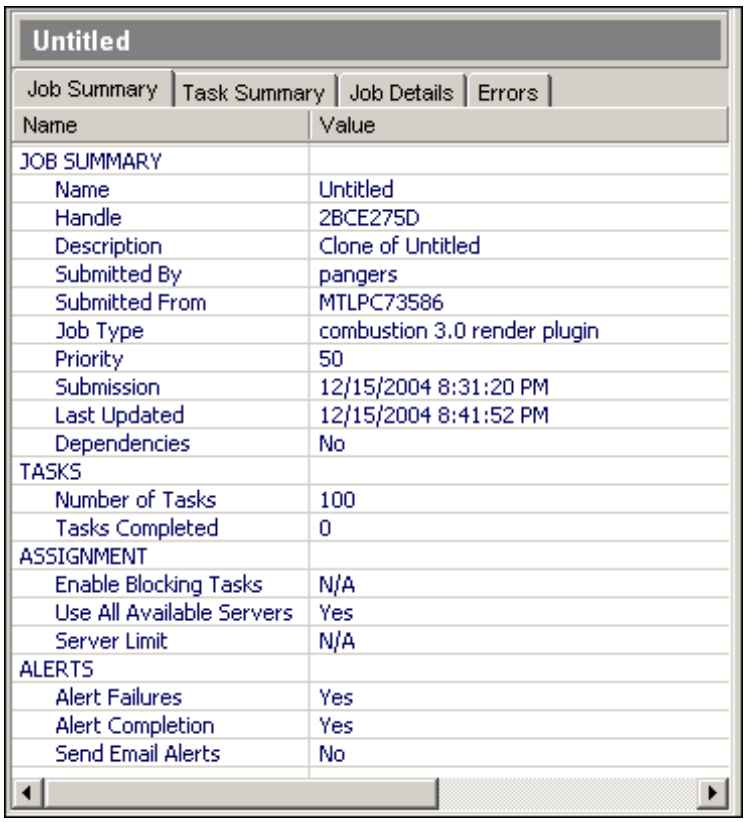
Icon Color	State
White	Not Started
Green	Active
Yellow	Suspended
Red	Error
Black	Completed

2 To find a job in the Job list:

- Scroll through the entries using the scroll bars.

- Reorder the list in ascending or descending order by clicking a column heading.
- Filter the list by first clicking the square on the right side of each column in the Job list. Enter filtering criteria in the dialog that appears.

3 Click on a job of interest to display its details in the Job Information area.



The Job Information area contains the following panels (information will vary depending on the job type).

Panel	Description
Job Summary	Lists important job-related information, including job options settings and output settings.
Task Summary	Lists tasks in the job (under “Task ID”) along with each task's status, processing time, render node, and date and time of assignment. Right-click the task you wish to view under “Task ID” to view its output file. This is available only for completed tasks.
Job Details	Lists the job's rendering parameters, statistics, and settings.
Errors	Lists each frame for which an error occurred, which server registered the error, and a description of the error, such as missing maps, missing texture coordinates, or invalid output directories.

TIP You can also create a new rendering job in the Backburner Monitor by pressing **Alt+N**, if the application-specific adapter supports this functionality.

Customizing the Job List

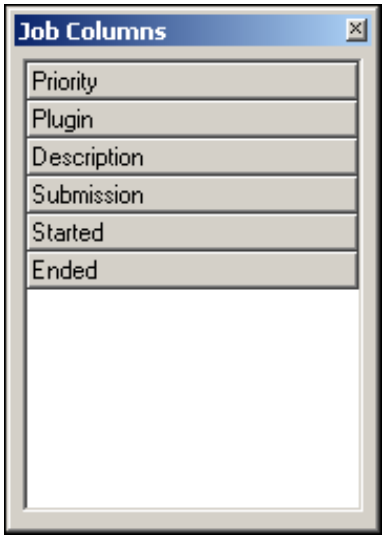
You can add, remove and rearrange columns in the Job List to suit your preferences and needs.

To customize the Job list:

1 To add a new column:

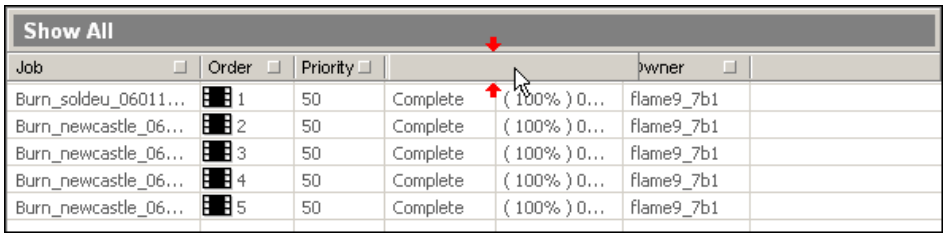
- From the Jobs menu, choose Column Chooser.
- Right-click any job in the list and choose Column Chooser.

The Job Columns dialog appears, presenting the columns that can be added.



2 Drag and drop the column of interest to the column title bar in the Job list.

Arrows appear when you are over a drop area.



Dropping the column adds it to the UI and populates its rows with information for each job.

3 To rearrange the columns, drag and drop the column of interest to its new location.

4 To remove a column, right-click the column title, and choose Remove Column.

NOTE You cannot remove the Job or Order columns.

Suspending and Reactivating Jobs

Suspending and reactivating jobs is commonly used to quickly improve job throughput and network efficiency. For example, you might suspend one job to temporarily assign its render nodes to another that is more urgent. Or, if you observe a particular job is taking too long, you can suspend it until off-peak hours,

allowing shorter jobs to complete in the meantime. Sometimes, a low-priority job can 'grab' a processing node during the brief moment when it is between tasks—in such a case, suspending the low-priority job will return system resources to jobs with higher priorities.

Use the following procedures to suspend and reactivate jobs.

To suspend a rendering job:

1. Select one or more jobs in the Job list.
2. Do one of the following:
   - In the toolbar, click the Suspend button (or press **Ctrl+S**).
   - From the Jobs menu, choose Suspend.
   - Right-click a job in the Job list and choose Suspend.

   The selected job is suspended. The icon for the job turns yellow to indicate the job's new status.

   NOTE If one of the selected jobs is completed, the Suspend button is disabled.

To reactivate a suspended rendering job:

1. Select a suspended job (indicated by a yellow icon).
2. Do one of the following:
   - In the toolbar, click the Activate button (or press **Ctrl+A**).
   - Right-click the job and choose Activate.
   - From the Jobs menu, choose Activate.

   The selected job is reactivated and its icon changes from yellow to green. If another job is already being processed, the selected job becomes pending, and its icon turns white.

Modifying Job Settings

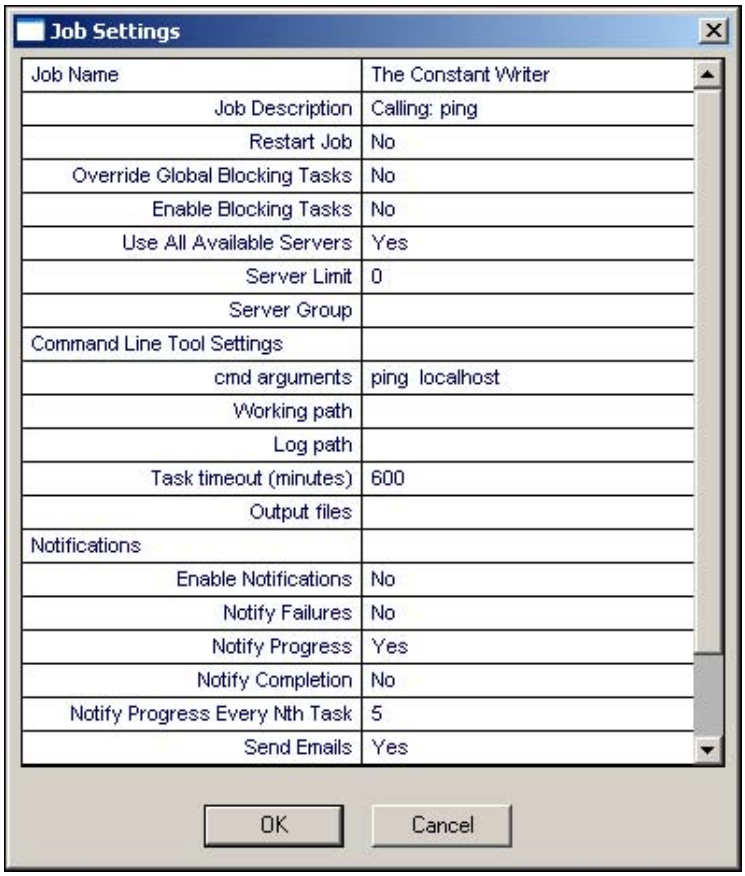
Modify a job's settings to customize its properties, specify email notifications, change render node (server) assignments, or to set job dependencies.

Use the following procedure to modify job settings.

To modify job settings:

1. Select the job of interest in the Job list.
2. Display the current settings for the selected job:
   - From the Jobs menu choose Edit Settings.
   - Right-click the job and choose Edit Settings.
   - Press **Ctrl+J**.

   Settings for the job appear in a dialog similar to the following.



NOTE Job settings vary, depending on the job type and processing engine.

3 Double-click the field of interest, and modify it as desired.

If the job setting can be modified, you are allowed to change it. Otherwise, the setting remains unchanged.

4 Modify the Job properties as desired:

Item	Description
Description	The description provided when the job was submitted to Backburner.
Priority	The job priority, from 0 to 100. Zero is the highest priority. 100 means the job is suspended.
Override Task Blocks Setting	Depending on how your system administrator has configured the Backburner Manager, it either i) assigns multiple tasks to each render node—that is, *blocks* of tasks (the default setting), or ii) assigns each render node one task at a time. Enable to override the manager's configuration, for this particular job.
Enable Task Blocks	Enable to cause the manager to send render nodes blocks of tasks, for this job. Disable if you want each render node to receive only one task at a time, for this job. For example, enabling for frame-based render jobs results in each render node receiving a block of several frames to render at once. Disabling results in frames being sent one at a time. For this setting to have an effect, you must also enable *Override Task Blocks Setting*.

Item	Description
Use All Available Servers	Overrides any Backburner Manager settings that restrict the maximum number of servers that can work on this job at any one time.
Server Limit	The maximum number of servers that can work on this job at any one time. Set this to zero to run on all servers.
Server Group	The server group to which the job is assigned. Only servers in the specified server group will work on the given job, unless the group is set to use idle non-group servers.

5 The Backburner Manager can send job success, failure and other notifications to the email addresses you specify in the Notifications area.

Item	Description
Enable Notifications	Turns on/off notifications for the job.
Notify Failures	Enable to be notified on job failure.
Notify Progress	Enable for notification by email as each render node completes its block of tasks.
Notify Completion	Enable for email notification on job completion.
Notify Progress Every *N*th Task	Enable for email notification when each *n*th task is completed.
Send Emails	Enable email notification. To receive email notifications, both this setting and the Enable Notifications must be enabled.
Alert Email From	Return address used by the Backburner Manager when sending notification email.
Alert Email To	Destination address.
Alert Email Server	Server where the smtp mailer daemon is running.

6 Click OK to apply the modified settings to the job.

If the job is currently being processed, the new settings only apply to the work remaining; tasks in progress and completed tasks are unaffected.

TIP To apply your changes to all a job's tasks, reprocess the job from the beginning. See Restarting Jobs on page 27.

Restarting Jobs

While the most common workflow is to suspend a job, change its settings, then re-activate the job, restarting a job is another possibility. Re-activating a suspended job picks up processing from where it left off. That is, tasks already completed are not re-done. In contrast, restarting a job halts all processing for the job, clears the server of all job-related temporary files (including completed tasks), and restarts the job from its first task. It is identical to resubmitting the job from the creative application, without the need for that application to be running.

Use the following procedure to restart jobs.

To restart a job:

1. Select the job(s) of interest.
2. Do one of the following to restart the selected job(s):
   - From the Jobs menu, choose Restart Job.
   - Right-click the job and then choose Restart Job.
3. When prompted, click OK to restart the job(s).

   The selected jobs are restarted and their icons change to green. If another job is already being processed, the restarted jobs becomes pending, and their icons turn white.

Cloning Jobs

Cloning a job creates a 100% duplicate job that is independent of the original, but inherits all its qualities, including its status and settings. Cloning is a convenient means for experimenting with changes to job settings or testing render nodes, since changes made to the clone do not affect the original. Note the following suggested uses and restrictions:

- **3ds Max**: Cloning is an efficient means to compare the results generated by different processing engines, using exactly the same source models and materials.
- **Lustre**: Cloning is ideal for reprocessing a half-resolution Lustre job at full-resolution, once you receive approval from the colorist.
- **Cleaner XL**: Cloning can be used to test and compare the transcoding times of different workstations.
- **Visual Effects and Finishing**: Cloning is allowed, but not generally recommended. For efficiency, the Visual Effects and Finishing applications pre-allocate space on the destination storage device for the frames resulting from all Burn and background I/O jobs. Since the clone is a duplicate of the original job, its results would overwrite those of the original job.

Use the following procedure to clone a job.

To clone a job:

1. Select the job of interest.
2. Do one of the following:
   - From the Jobs menu choose Clone Job.
   - Right-click the job and then choose Clone Job.

   The job is duplicated and its clone appears in the Job list with the same name and job status. The description field indicates the job is a clone.
3. Modify job settings for the clone, as desired. See Modifying Job Settings on page 25.

   The job settings for a clone are identical to those of its parent job. You can modify these settings to customize how the clone is to be processed by the system.
4. Depending on the status of the clone, you may wish to take further action, as indicated in the following table.

Status	Suggested Action
Pending	Allow the job to be processed following the normal sequence of events. No action necessary.
Suspended	Restart or reactivate the job. See Suspending and Reactivating Jobs on page 24.

Status	Suggested Action
Completed	Restart the job. See Restarting Jobs on page 27.

Archiving Jobs

Archiving conveniently removes completed jobs from the job queue. It is a practical means for keeping the job queue organized by reducing clutter. Its advantage over deleting completed jobs is in preserving all the information needed to re-submit the jobs at a later date. You can also restore an archived job simply to examine job details, such as the render nodes that processed it. This can assist in identifying problems—if unexpected or unsatisfactory results occurred, for example. Archiving can also be part of a facility backup strategy, since the archive represents a job history, in compact form. Note, however, that the job archive contains metadata (job details) only—it does not contain source material or rendered frames.

Use the following procedures to archive a job, restore an archived job, or delete a job from the archive. Jobs can be archived automatically, when the manager has been configured to do so. You can also archive jobs directly from the monitor, as explained here. Note that archiving a job has no effect upon the associated media. The job archive contains job metadata only; that is, it contains the information needed to restart a job, but not the source media.

To archive a job:

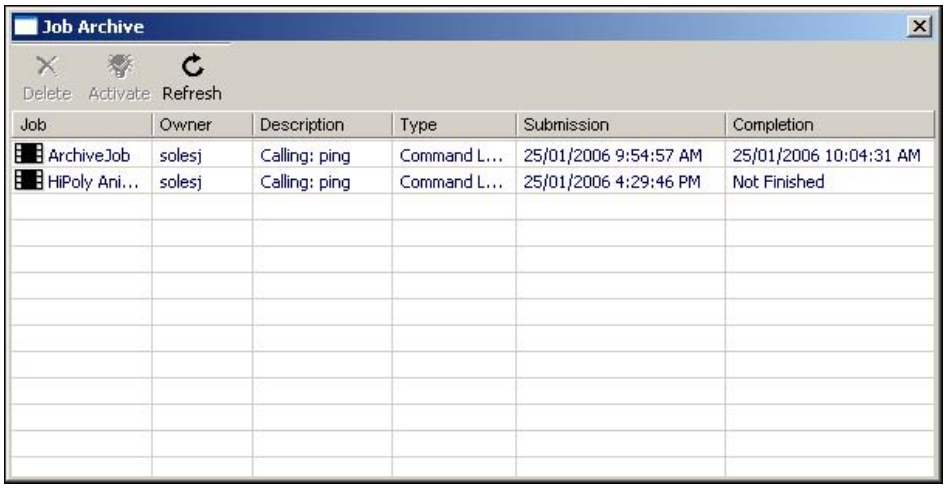
1. Select the job of interest.
2. Do one of the following to archive the selected job:
   - From the Jobs menu choose Archive Job.
   - Right-click the job and then choose Archive Job.
3. When prompted, click OK.

   The job is archived and removed from the Job list. By default, archived jobs are saved to the *Network\Archive* folder where the Backburner Manager is installed.

To restore or delete a job from the archive:

1. Display the Job Archive dialog:
   - From the Jobs menu, choose Job Archives.
   - Right-click any job in the Job list and choose Job Archives.

   The Job Archive dialog appears, presenting information for all archived jobs. The columns and information presented are fixed.



TIP Click Refresh if you do not see all the jobs expected.

2 Select a job (or jobs) and perform the desired action, as explained in the following table.

Action	Result
Delete	Removes the job from the archive. Since deletion cannot be undone, you are asked to confirm your action.
Activate	Restores a selected job to the job queue, removing it from the archive. You can then choose to modify its settings and restart the job. Jobs reappear in the job queue with the settings they had when archived. This includes job status. If a job was suspended or completed when it was archived, once restored you must re-activate or restart it to start the processing again.
Refresh	Updates the display with the most recently archived jobs.

3 Once finished, close the Job Archives dialog to return to the Backburner Windows Monitor.

Deleting Jobs

Deleting completely removes a job from the job queue and Backburner system. It does not, however, destroy source material or rendered results.

Use the following procedure to delete jobs from the job queue.

NOTE Deleting cannot be undone. If you think you may need to run the job again in the future, or examine job details, consider archiving it instead. See Archiving Jobs on page 29.

To delete a job:

1 Select the job(s) of interest.

2 Do one of the following:

- In the toolbar, click the Delete button (or press **Delete**).
- From the Jobs menu, choose Delete.
- Right-click a job in the Job list and choose Delete.

3 When prompted to confirm your action, click OK.
The selected jobs are deleted.

Managing Render Nodes – Windows

4

Topics in this chapter:

- Overview on page 33
- Monitoring Render Nodes on page 33
- Customizing the Render Node List on page 36
- Shifting Nodes Between Jobs on page 37
- Deleting Offline Render Nodes on page 37
- Setting Render Node Availability on page 38
- Working with Server Groups on page 39

Overview

The procedures in this chapter relate to managing the render farm at the level of its render nodes, using the Backburner Windows Monitor.

NOTE If the Backburner Windows Monitor title bar displays "Read Only", this indicates another user has already connected to the manager via a Backburner Windows Monitor. To perform most of the tasks described in this chapter, you will need to obtain queue control. See Obtaining Queue Control on page 13.

Monitoring Render Nodes

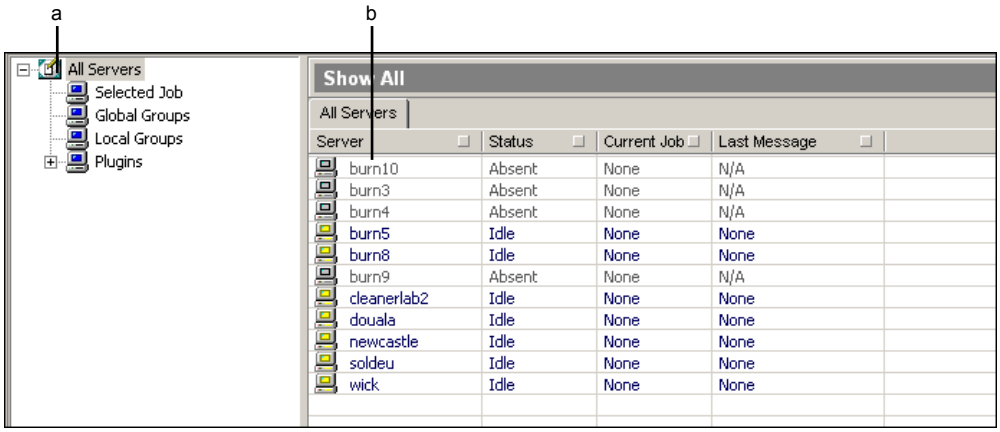
Monitoring allows you to view the overall health of each render node on the Backburner network. Hardware details presented for each render node include the total RAM installed, and remaining disk space. Node status—*available*, *unavailable, idle, busy*, etc.—is also displayed, as well as details on any job the node is currently processing. Render nodes that have previously connected with the Backburner Manager but are no longer seen by it are easily identified, and can be removed, if desired.

Use the following procedure to monitor the status of render nodes.

To view render node status:

1 Start the Backburner Monitor and connect to a Backburner Manager. See Backburner Windows Monitor on page 11.

The Server List area occupies the lower panes in the monitor. This area shows nodes organized in a hierarchical tree view and as a list.



(a) Tree View (b) List View

The tree view presents a hierarchical list of all node groups, as well as the plug-ins available for the system. You can use this area to see which render nodes are available to render jobs, as well as manage groups of nodes.

The list of render nodes shows all nodes assigned to the group selected in the tree view. If no group is selected, all render nodes on the system appear in this area. By default, this area shows the following information for each node:

- The name and current status of the node.
- The job the node is currently processing.
- The most recent message sent by the node to the Backburner Manager.

The icon beside each server provides a visual indication of its state.

Icon Color	State
Green	OK
Yellow	Idle
Grey	Absent
Red	Error

2 Customize the information shown in the list of render nodes, as desired. See Customizing the Render Node List on page 36.

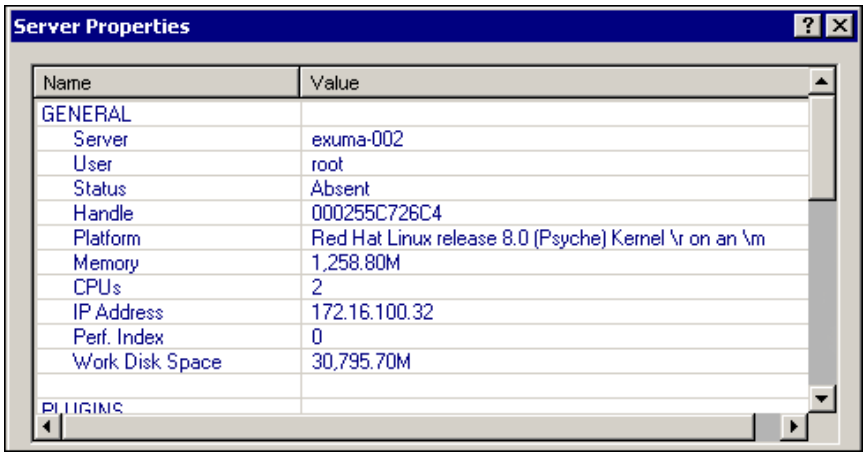
3 To locate a render node, do any of the following:

- Scroll through the entries using the scroll bars.
- Reorder the list in ascending or descending order by clicking a column heading.

- Filter the list by first clicking the square on the right side of each column in the Job list. Enter filtering criteria in the dialog that appears.

4 Right-click a render node and choose Properties (or press **Ctrl+N**).

The Server Properties dialog appears, showing hardware and software information for the node.



Item	Description
General	
Server	Server host name.
User	User account name under which the Backburner Server was launched.
Current Job	The current job as assigned by the Backburner Manager.
Status	Current server activity.
Handle	Server ID, used internally and in log files.
Platform	Operating system details.
Memory	Installed RAM.
CPUs	The total number of CPUs installed on the system.
IP address	The server's IP address. This is used by the Backburner Manager to communicate with the server.
Perf. Index	A value in the range [0–1] indicating the performance level of the render node, relative to the other servers on the same job. A score of 1 indicates this is the best-performing server.
Available Disk Space	Disk space available for rendering.
Plugin Summary	
burn, mio, Command Line Tool, Wire, etc.	A list of adapters installed on the render node, for example: ■ burn: The Burn renderer. ■ mio: The Media I/O adapter used by WiretapCentral. ■ Command Line Tool: The adapter associated with cmdjob.
Module Info	

Item	Description
Server	Backburner Server software version.
Backburner API	DSO version. Should match the Backburner software version.
Plugin	Backburner Adapter version and platform info.

Customizing the Render Node List

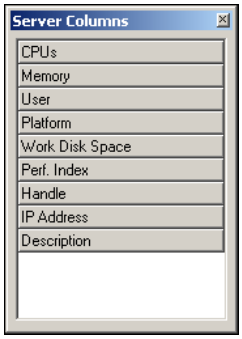
Similarly to the Job list, you can add, remove, and rearrange columns in the render node list to suit your preferences and needs.

To customize the render node list:

1 To add a new column:

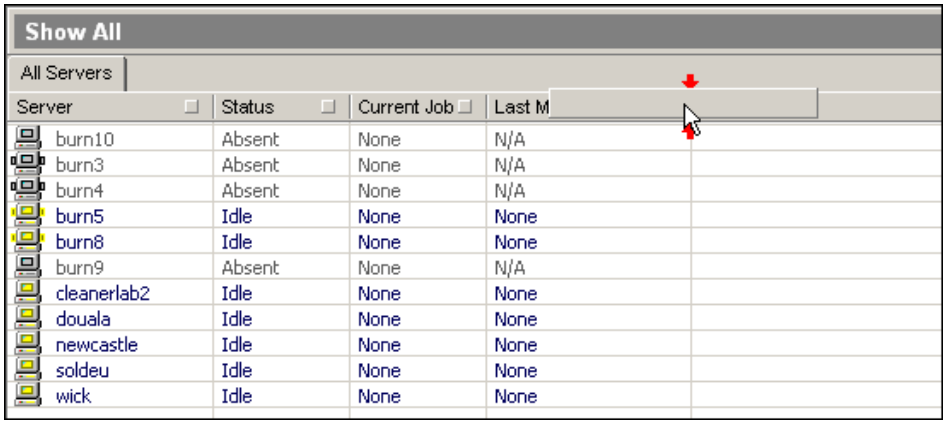
- From the Server menu choose Column Chooser.
- Right-click any node in the list and choose Column Chooser.

The Server Columns dialog appears, presenting the columns that can be added.



2 Drag and drop the column of interest to the column title bar in the Job list.

Arrows appear when you are over a drop area.



Dropping the column adds it to the UI and populates its rows with information for each node.

3 To rearrange the columns, drag and drop the column of interest to its new location.

4 To remove a column, right-click the column title, and choose Remove Column.

NOTE You cannot remove the Server column.

Shifting Nodes Between Jobs

As noted, when a job is submitted by a creative application to Backburner for processing, the Backburner Manager automatically sends it as sub-jobs, called *tasks*, to render nodes for processing. Visual Effects and Finishing render tasks are sent to nodes on which Burn has been installed, 3ds Max tasks are sent to nodes equipped with 3ds Max, and so on. A task can consist of a single frame, a set of frames, or an entire clip, depending on the creative application and the nature of the work required.

Use the following procedure to shift a render node from one job to another.

To shift a render node:

1. Select the node in the server list, then click the Remove Server icon on the toolbar.
   The node ends its current processing task and becomes available for other jobs.
2. In the job list, select the job to which you want to assign the node.
3. Assign the render node to the job:
   - Select the unassigned node and then, from the Servers menu, choose Assign To Selected Jobs.
   - Right-click the unassigned node node choose Assign To Selected Jobs from the popup menu.

   The selected render node begins working on the new job. It remains assigned to the new job until the entire job is complete.

Deleting Offline Render Nodes

When a Backburner Server connects to the Backburner Manager for the first time, the manager records the server's presence on the Backburner network in its database. If the server subsequently fails to reconnect to the manager during a new session, or goes offline for any reason, the manager marks it as *absent*. Servers can go offline temporarily for any number of reasons: during a render node shutdown or reboot, network glitches, hardware updates, and so on. The next time the server comes online, it will simply re-connect to the manager and appear as available once again.

However, if you know a render node will be offline permanently, or for a considerable time, you can delete it from the network. For example, if you uninstall the Backburner Server, it will remain listed in the manager's database. The old registration will cause a “ghost” node to appear in the list of servers, marked *absent*. The “ghost” can safely be deleted.

Deleting the node removes its entry from the database—it does not remove any software from the node itself. Some caution is nevertheless merited. Deleting a node can make it more difficult to troubleshoot jobs with problems, since it will be more difficult to determine which node carried out the flawed work. Before deleting a node, consider archiving jobs that made use of it, to preserve job details, including the nodes to which tasks were sent.

Use the following procedure to delete offline render nodes from the system. Deleting a render node removes its entry from the database maintained by the Backburner Manager. It does not delete any software from the node itself.

To delete a render node:

1. Select the render node(s) of interest.

Only nodes marked by the system as *absent* can be deleted.

2 Do one of the following:
   - From the Servers menu, choose Delete Server.
   - Right-click node and choose Delete Server.

   The node is deleted and are removed from the list.

Setting Render Node Availability

By default, nodes are always available for processing. However, you can easily limit render node availability, to manage network resources. For some creative applications, such as 3ds Max and Maya, creative seats themselves can be set up as render nodes. In such cases it can be helpful to limit rendering activity on those workstations to after hours.

For others, such as the Visual Effects and Finishing applications (including Smoke for Mac OS X), render nodes are always separate workstations. Nevertheless, scheduling can be useful. Burn nodes, for example, require access to the full resolution versions of the frames needing processing. This can result in a great deal of data moving across the network. Scheduling some Burn nodes for only off-peak availability can assist in balancing network traffic levels until a more permanent network solution is put in place.

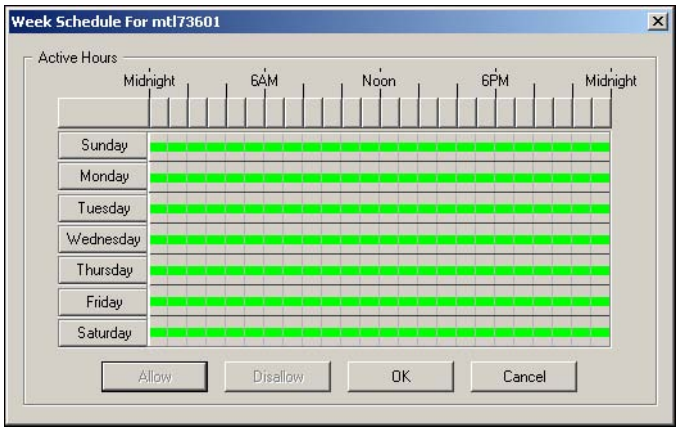
Use the following procedure to schedule the availability of a render node.

To schedule the availability of a render node:

1 Select the render node(s) of interest.

2 Do one of the following:
   - Right-click the node and choose Week Schedule.
   - From the Servers menu, choose Week Schedule.

   The schedule for the render node appears.



   Periods of time that are green indicate the node is available to process jobs. By default, nodes are always available.

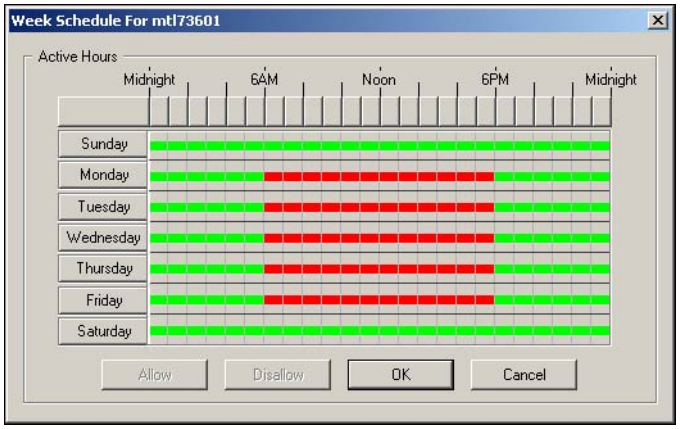
3 Select the time of interest:
   - Select a single hour by clicking the hour of interest.
   - Select the same hour for each day with one click using the hour buttons.
   - Click and drag to select a number of hours at once.

- Select a whole day using the days-of-the-week buttons.
- Select the entire week by clicking the button at the top left.
  The selected time is shown in white.

4 Click the Allow or Disallow buttons, as desired.

Green indicates node availability. Red indicates processing is prohibited during this time.

The following schedule shows a render node that is available weekdays at night and 24 hours a day on weekends. This might be the case for a creative workstation used as a render node after-hours, for example.



5 Click OK to update the schedule for the node and close the dialog.

Working with Server Groups

A server group is a named collection of render nodes that is treated, for the most part, as if it were a single node. Recall that by default, jobs are submitted by creative applications to the Backburner network as a whole. It is the Backburner Manager that determines the specific render nodes to which they are sent, based on job type and node availability. However, certain Autodesk applications can be configured to submit jobs to a specific server group.

Server groups can be used to implement a job-processing strategy. For example, consider a facility with two Visual Effects and Finishing applications, and a render farm consisting of 8 Burn nodes, 4 or which are GPU-enabled. In such a situation, you might create two server groups, one each for the non-GPU and GPU-enabled Burn nodes. By assigning each Visual Effects and Finishing workstation to a different server group, you can reserve the GPU-enabled Burn nodes for the workstation with higher priority or more demanding jobs.

It should be understood that server groups do not restrict your ability to assign render nodes to particular jobs as you see fit. When a creative application is configured to submit its jobs to a server group, additional nodes can be assigned to it, automatically, or manually, once the job is on the network. Conversely, you can always remove individual nodes from a job, regardless of their relationship to a server group.

Use the following procedures to create or delete a named collection of render nodes, called a *server group*, and to assign a server group to a job.

NOTE Two kinds of server groups can be created, *local* groups and *global* groups. In almost all cases, you will want to create global server groups only. Local groups serve a particular purpose for 3ds Max, under a specific Backburner configuration. The configuration in question has all three of 3ds Max, the Backburner Manager and Backburner Monitor installed and running on the local machine. In this case, a local group is a shortcut to a list of render nodes individually selectable from within the 3ds Max application. In all other cases—and for all other Autodesk applications—create global groups, as described in this section.

NOTE For information on configuring a creative application to submit jobs to a server group, see the User Guide for application of choice. To configure a Visual Effects and Finishing application to submit its jobs to a server group, set the optional *BackburnerManagerGroup* keyword in the application's *init.cfg* file. For more information see the *Burn Installation and User Guide*.

Server Group Customization

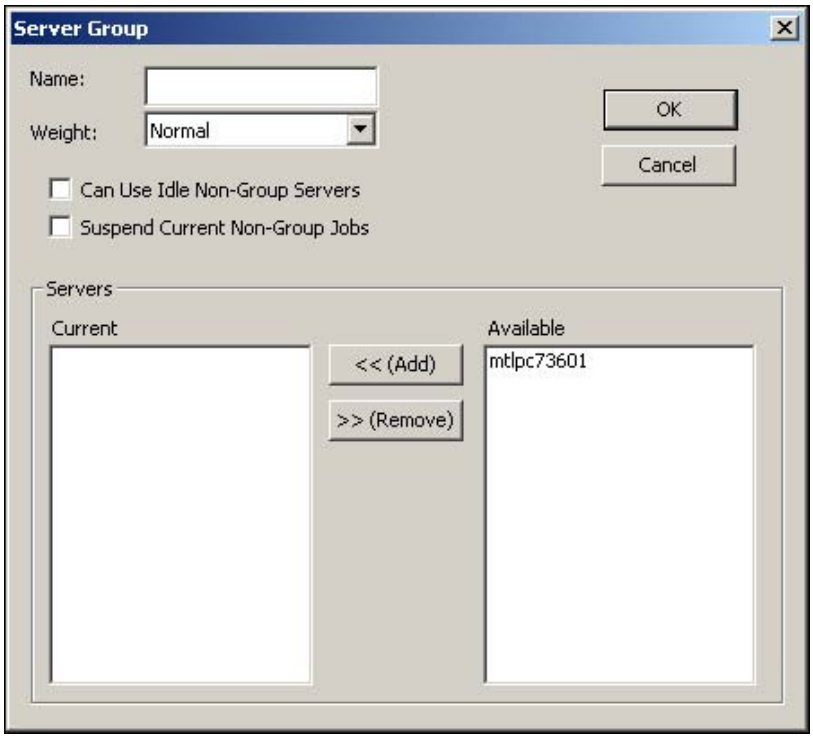
Customizing server group behaviour is made possible by way of two key options. First, you can configure a server group to automatically make use of non-group render nodes that are sitting idle. That is, when you have configured the creative application to submit jobs to a named server group, the Backburner Manager will send the job to any available non-group render nodes too. Second, by default the nodes in a server group are available to all jobs submitted to the Backburner network. You can configure a server group to give priority to the jobs submitted to it specifically. Once configured, when the Backburner Manager receives a job for a server group, non-group jobs are immediately suspended, freeing up the nodes for the “server group” job.

To create a server group:

1 Right-click All Servers in the server list and choose Global Group from the popup menu.

If the option is greyed-out, connect to a Backburner Manager then try again.

The Server Group dialog appears.



2 Configure the behaviour of the group as desired.

Item	Description
Name	The name of the server group as it will appear in the UI.
Weight	Adjusts the priority of jobs assigned to the server group. Jobs assigned to a high-weight server group are given higher priorities than jobs assigned to lower-weight groups. In fact, a job assigned to a high-weight group may be rendered ahead of non-group jobs—even if the non-group jobs have higher priorities at the job-level.
Can Use Idle Non-group Servers	Enable to allow the Backburner Manager to temporarily assign idle non-group render nodes to the group. Enabling this option increases the rendering power of the group.
Suspend Non-Current Group Jobs	Enable to allow the Backburner Manager to suspend the processing of non-group jobs running on group nodes, when a new job is submitted specifically to the group. Enabling this option allows a render node group to automatically switch from non-group jobs to new group-jobs.

3 Add render nodes to the group by selecting them in the *Available* list and clicking Add.

The render nodes are added to the group.

TIP You can add render nodes directly from the Server list area by dragging and dropping them onto an already existing group.

4 Once you are satisfied with your choices, click OK to commit the changes.

The render node group is added to the Global Groups list.

To assign a server group to a job:

1 Select the job(s) of interest in the Job list.

2 In the Server list, right-click the server group and choose Assign Group to Selected Jobs.

The server group is assigned to job.

- If nodes in the group are busy, they complete their currently-assigned jobs before working on the new job to which you have assigned them. Otherwise, they begin working on the new job immediately.
- If the "Suspend current non-group jobs" option is enabled for the group, all nodes in the Server group drop their current rendering job and begin processing the assigned job immediately.

To shift a server group between two jobs:

1 Select all jobs in the Job list.

2 In the Global Groups list, right-click the render node group to be reassigned and choose Remove Group From Selected Jobs.

Each render node in the group ends its current assignment and becomes available for other jobs. If *Suspend current non-group jobs* option is enabled for the group, the jobs are dropped immediately.

NOTE Server groups are subject to the same job assignment and completion rules and restrictions as individual render nodes. See Shifting Nodes Between Jobs on page 37.

3. In the Job list, select the job to which you want to assign the group.
4. In the Server list, right-click the server group and choose Assign Group to Selected Jobs.

   The render node group is assigned to the new job and begins rendering.

   If *Can use idle non-group servers is enabled* for the group, the Backburner Manager adds nodes to the group temporarily, as they become available from other jobs.

To delete a Server group:

1. In the Global Groups list, right-click the render node group of interest and choose Delete Group.
2. When prompted to confirm your action, click Yes.

   The group is deleted from the Server list. The render nodes themselves remain untouched, and can be assigned to other groups, as needed.

Part 3: Backburner Web Monitor Reference

Part 3 includes these chapters:

- Managing and Modifying Jobs – Web on page 45
- Managing Render Nodes – Web on page 55

FIN
Finish

Managing and Modifying Jobs – Web

5

Topics in this chapter:

- Overview on page 45
- Finding and Monitoring Jobs on page 45
- Viewing Job Details and Job Tasks on page 47
- Suspending and Reactivating Jobs on page 51
- Restarting Jobs on page 51
- Archiving Jobs on page 51
- Deleting Jobs on page 53
- Setting Email Notifications for a Job on page 53

Overview

The procedures in this chapter describe how to interact with jobs already submitted to Backburner for processing, using the Backburner Web Monitor. For information on submitting jobs to Backburner from an Autodesk application, refer to the user guide for the application of interest.

NOTE If the Backburner Web Monitor returns a message indicating queue control is needed, it indicates a Backburner *Windows* Monitor is already connected to the Backburner Manager. Wait a few moments, then try the operation again. The Web Monitor automatically obtains queue control when needed.

Finding and Monitoring Jobs

Basic monitoring allows you to view all the jobs submitted to Backburner, ensure jobs are being executed in the desired order, check the status of particular jobs, observe progress, etc. It is the starting point for all other interactions.

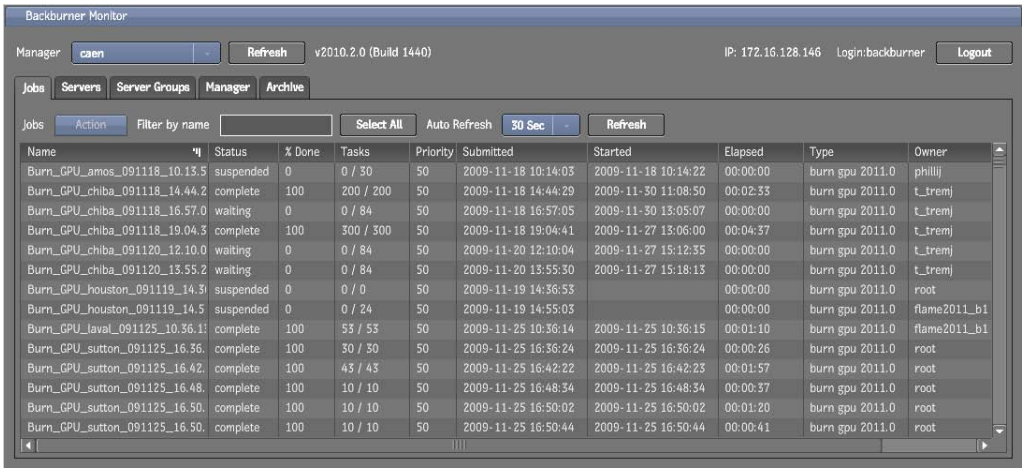
This section describes how to view all the jobs known to the Backburner Manager, their status and job details.

To find jobs and view their status:

1 Launch a web browser, log in to the Backburner Web Monitor and connect to a Backburner Manager. See Backburner Web Monitor on page 14.

2 Click the Jobs tab.

The Job list appears, showing all jobs on the system. Their status, progress, and other information is also displayed.



Name	Status	% Done	Tasks	Priority	Submitted	Started	Elapsed	Type	Owner
Burn_GPU_amos_091118_10.13.5	suspended	0	0 / 30	50	2009-11-18 10:14:03	2009-11-18 10:14:22	00:00:00	burn gpu 2011.0	phillij
Burn_GPU_chiba_091118_14.44.2	complete	100	200 / 200	50	2009-11-18 14:44:29	2009-11-30 11:08:50	00:02:33	burn gpu 2011.0	t_tremj
Burn_GPU_chiba_091118_16.57.0	waiting	0	0 / 84	50	2009-11-18 16:57:05	2009-11-30 13:05:07	00:00:00	burn gpu 2011.0	t_tremj
Burn_GPU_chiba_091118_19.04.3	complete	100	300 / 300	50	2009-11-18 19:04:41	2009-11-27 13:06:00	00:04:37	burn gpu 2011.0	t_tremj
Burn_GPU_chiba_091120_12.10.0	waiting	0	0 / 84	50	2009-11-20 12:10:04	2009-11-27 15:12:35	00:00:00	burn gpu 2011.0	t_tremj
Burn_GPU_chiba_091120_13.55.2	waiting	0	0 / 84	50	2009-11-20 13:55:30	2009-11-27 15:18:13	00:00:00	burn gpu 2011.0	t_tremj
Burn_GPU_houston_091119_14.3	suspended	0	0 / 0	50	2009-11-19 14:36:53		00:00:00	burn gpu 2011.0	root
Burn_GPU_houston_091119_14.5	suspended	0	0 / 24	50	2009-11-19 14:55:03		00:00:00	burn gpu 2011.0	flame2011_b1
Burn_GPU_laval_091125_10.36.1	complete	100	53 / 53	50	2009-11-25 10:36:14	2009-11-25 10:36:15	00:01:10	burn gpu 2011.0	flame2011_b1
Burn_GPU_sutton_091125_16.36.	complete	100	30 / 30	50	2009-11-25 16:36:24	2009-11-25 16:36:24	00:00:26	burn gpu 2011.0	root
Burn_GPU_sutton_091125_16.42.	complete	100	43 / 43	50	2009-11-25 16:42:22	2009-11-25 16:42:23	00:01:57	burn gpu 2011.0	root
Burn_GPU_sutton_091125_16.48.	complete	100	10 / 10	50	2009-11-25 16:48:34	2009-11-25 16:48:34	00:00:37	burn gpu 2011.0	root
Burn_GPU_sutton_091125_16.50.	complete	100	10 / 10	50	2009-11-25 16:50:02	2009-11-25 16:50:02	00:01:20	burn gpu 2011.0	root
Burn_GPU_sutton_091125_16.50.	complete	100	10 / 10	50	2009-11-25 16:50:44	2009-11-25 16:50:44	00:00:41	burn gpu 2011.0	root

3 The following operations are available from the Action menu.

Select	To
Settings	Open the Job Details page for the selected job. See Viewing Job Details and Job Tasks on page 47.
Activate	Resume a suspended job from where it was halted. Tasks that were already completed are left as-is, and are not redone. See Suspending and Reactivating Jobs on page 51.
Restart	Restart a suspended job and all its tasks from the beginning, setting the job status to *waiting*. See Restarting Jobs on page 51.
Suspend	Place the job on hold. See Suspending and Reactivating Jobs on page 51.
Delete	Permanently remove the job from the job queue. See Deleting Jobs on page 53.
Archive	Remove the job from the job queue and add it to the job archive. See Archiving Jobs on page 51.

4 To filter the list, type the word you want to match in the Filter by Name field.

The job list is reduced to those matching your filtering criteria.

5 The following table summarizes the contents of the interface:

Field	Description
Name	The name of the job.

Field	Description
Status	Current state of the job: ■ complete: Completed successfully. ■ active: Currently being serviced ■ suspended: On hold. ■ idle: Not scheduled for service. ■ waiting: Ready, and waiting to be serviced.
% Done	Number of tasks completed, expressed as a percentage.
Tasks	The number of tasks completed and total number of tasks.
Priority	The job priority, from 0 to 100. Zero is the highest priority.
Submitted	The time at which the job was originally submitted.
Started	The time at which the job was started, in the following format: YYYY/MM/DD HH:MM:SS. If the job has not yet started, this field is blank.
Elapsed	The time duration consumed by the task (HH:MM:SS).
Type	The processing engine required to complete the job. For example: ■ Burn: The Burn renderer. ■ Command Line Tool: The Backburner cmdjob command-line plug-in allows you to submit batch, executable, or script files to Backburner as "custom" jobs. ■ mio: The MIO adapter is the processing engine responsible for carrying out transcoding jobs. ■ Wire: Installed with Stone and Wire. Can be used to import/export media, perform Wire transfers, etc. Also used by the Wiretap SDK's background I/O tool, wiretap_bgio_tool.
Owner	The owner of the job, and the host from which it was submitted.

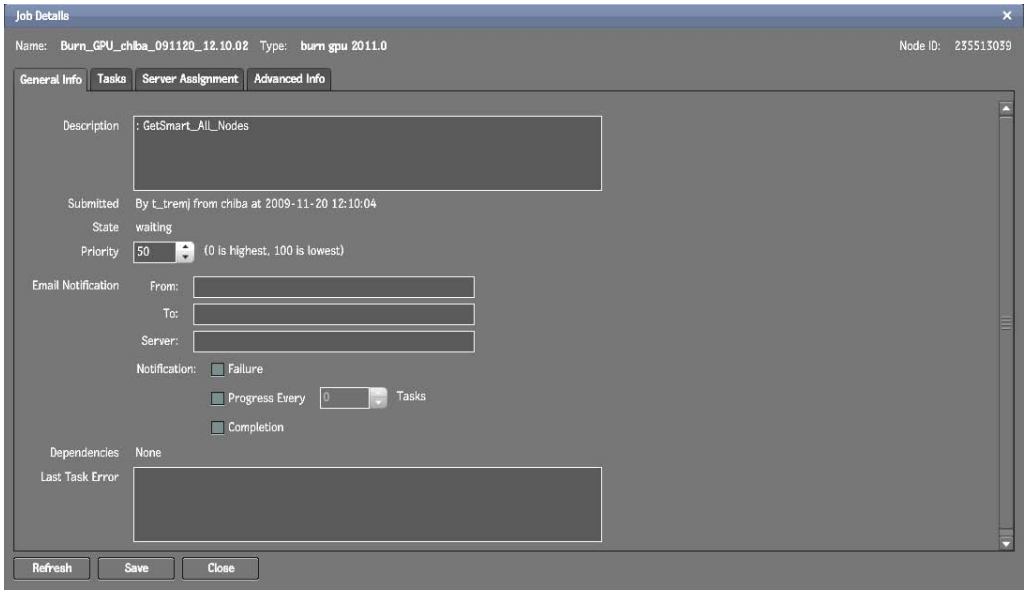
6 Double-click on a job of interest to view its details and settings. Alternately, select a job and choose Settings from the Action menu.

See Viewing Job Details and Job Tasks on page 47.

7 Click the Close button to return to the list of all jobs.

Viewing Job Details and Job Tasks

Double-clicking on a job name (or selecting a job and choosing Settings from the Action menu) opens the Job Details page where you can view additional information about a job, including its associated tasks, where the tasks have been sent for processing, and their status.



The top of the window displays the following information:

Field	Description
Name	The name of the job.
Type	The processing engine required to complete the job. For example: ■ Burn: The Burn renderer. ■ Command Line Tool: The Backburner cmdjob command-line plug-in allows you to submit batch, executable, or script files to Backburner as “custom” jobs. ■ mio: The MIO adapter is the processing engine responsible for carrying out transcoding jobs. ■ Wire: Installed with Stone and Wire. Can be used to import/export media, perform Wire transfers, etc. Also used by the Wiretap SDK’s background I/O tool, wiretap_bgio_tool.
Node ID	The job’s ID as assigned by the Backburner Manager, and used in logs, etc.

The following table summarizes the contents of each tab in the Job Details page.

Tab	Description
General Info	This tab offers additional information on the selected job, including any error messages. It also includes the ability to set email notifications, and change the job’s priority.
Tasks	Recall that the Backburner Manager sends the jobs it receives as sub-jobs, called tasks, to render nodes for processing. This tab presents the tasks associated with a job.
Server Assignment	Presents the render nodes on the network assigned to the job.
Advanced Info	Presents the job metadata sent by the client application to Backburner. Helpful when troubleshooting a job.

General Info Tab

The following table describes the information found in the General Info tab.

Field	Description
Description	Job description as entered when the job was submitted.
Submitted By	The owner of the job, and the host from which it was submitted.
State	The current state of the job: ■ complete (%): Completed successfully. The percentage is set by the Backburner Manager as each task is completed. ■ active: Currently being serviced. ■ suspended: On hold. ■ idle: Not scheduled for service. ■ waiting: Ready, and waiting to be serviced.
Priority	The job priority, from 0 to 100. Zero is the highest priority. 100 means the job is suspended. Default is 50.
Email Notification	The address to which job progress, completion or failure notifications are sent. When using this feature, be sure to set the location of the mailer daemon too. See Setting Email Notifications for a Job on page 53.
Dependencies	List of jobs that must be completed before the selected job can be processed.
Last Task Error	The last error message for the most recent task (associated with the job) executed by the Backburner Manager.

Tasks Tab

The following table describes the information found in the Tasks tab.

Column	Description
ID	The task number for this task.
Status	The state of the task (active, complete, waiting, error).
Server	The name of the server where the task is being executed.
Start Time	The time stamp at which the task was started (YYYY-MM-DD HH:MM:SS).
Elapsed Time	The time duration consumed by the task (HH:MM:SS).
Last Error	The last execution error message associated with this task.

Server Assignment Tab

The Server Assignment tab allows you to view the servers assigned to the selected job. It also allows you to assign new servers or server groups to jobs (see Shifting Nodes Between Jobs on page 57). A filtering mechanism allows you to limit the list of servers to those capable of handling the current job type only.

Field	Description
Assigned Server Group	Name of the server group to which the job was assigned. A server group is a collection of servers. Only servers in the specified group will work on the job. See Working with Server Groups on page 61.
Max Server Count	The maximum number of render nodes made available for the job, as specified when the job was submitted. Set to 0 (zero) to assign the job to all servers.
Assigned Servers	A comma-separated list of servers currently assigned to the job.
Filter on Job Type	Select this checkbox to list only the servers installed with the required adapter.
Name	Host name of the server.
Assigned to Job	A checkbox indicating whether or not the listed server is assigned to the job. To add a new server to the job, check a checkbox. Click the Save button to apply the changes.
Description	A description of the server.
Status	The current activity of the server: ■ absent: Server is no longer seen by the manager, possibly down. ■ active: Server is currently working on a job. ■ suspended: Server has been put on hold. ■ idle: Server is inactive. ■ error: Problem on the server.
Perf. Index	A value in the range [0–1] indicating the performance level of the server, relative to other servers on the same job. A score of 1 indicates this is the best-performing server.
Adapters	The adapters installed on the server, for example: ■ Burn: The Burn renderer. ■ Command Line Tool: The Backburner cmdjob command-line plug-in allows you to submit batch, executable, or script files to Backburner as “custom” jobs. For more information see the *Autodesk Backburner User Guide*. ■ mio: The MIO adapter engine is responsible for transcoding some streaming media formats (such as R3D and OpenEXR). ■ Wire: Installed with Stone and Wire. Can be used to import/export media, perform Wire transfers, etc. Used internally by Autodesk Visual Effects and Finishing applications.

Advanced Info Tab

Presents the job metadata sent by the client application to Backburner. Helpful when troubleshooting a job. In addition, some applications submit Backburner jobs with extended instructions for the processing engine. Use the Advanced Info tab to view these extended instructions.

Suspending and Reactivating Jobs

Suspending and reactivating jobs is commonly used to quickly improve job throughput and network efficiency. For example, you might suspend one job to temporarily assign its render nodes to another that is more urgent. Or, if you observe a particular job is taking too long, you can suspend it until off-peak hours, allowing shorter jobs to complete in the meantime. Sometimes, a low-priority job can 'grab' a processing node during the brief moment when it is between tasks—in such a case, suspending the low-priority job will return system resources to jobs with higher priorities.

Use the following procedures to suspend and reactivate jobs.

To suspend a rendering job:

1. Click the Jobs tab and select the job you want to suspend.
2. From the Action menu, choose Suspend.

   The selected job is suspended.

   NOTE If the selected job is completed, the Suspend command has no effect.

To reactivate a suspended rendering job:

1. Click the Jobs tab and locate a suspended job.
2. From the Action menu, choose Activate.

   The selected job is reactivated. If another job is already being processed, the selected job becomes pending.

Restarting Jobs

While the most common workflow is to suspend a job, change its settings, then re-activate the job, restarting a job is another possibility. Re-activating a suspended job picks up processing from where it left off. That is, tasks already completed are not re-done. In contrast, restarting a job halts all processing for the job, clears the server of all job-related temporary files (including completed tasks), and restarts the job from its first task. It is identical to resubmitting the job from the creative application, without the need for that application to be running.

Use the following procedure to restart jobs.

To restart a job:

1. Click the Jobs tab and select the job you want to restart.
2. From the Action menu, choose Restart.

   The selected job is restarted from the beginning. If another job is already being processed, the selected job becomes pending.

Archiving Jobs

Archiving conveniently removes completed jobs from the job queue. It is a practical means for keeping the job queue organized by reducing clutter. Its advantage over deleting completed jobs is in preserving all the information needed to re-submit the jobs at a later date. You can also restore an archived job simply to examine job details, such as the render nodes that processed it. This can assist in identifying problems—if unexpected or unsatisfactory results occurred, for example. Archiving can also be part of a facility backup

strategy, since the archive represents a job history, in compact form. Note, however, that the job archive contains metadata (job details) only—it does not contain source material or rendered frames.

Use the following procedures to archive a job, restore an archived job, or delete a job from the archive. Jobs can be archived automatically, when the manager has been configured to do so. You can also archive jobs directly from the monitor, as explained here. Note that archiving a job has no effect upon the associated media. The job archive contains job metadata only; that is, it contains the information needed to restart a job, but not the source media.

To archive a job:

1. On the Jobs tab, begin by selecting the job of interest and choosing Suspend from the Action menu.

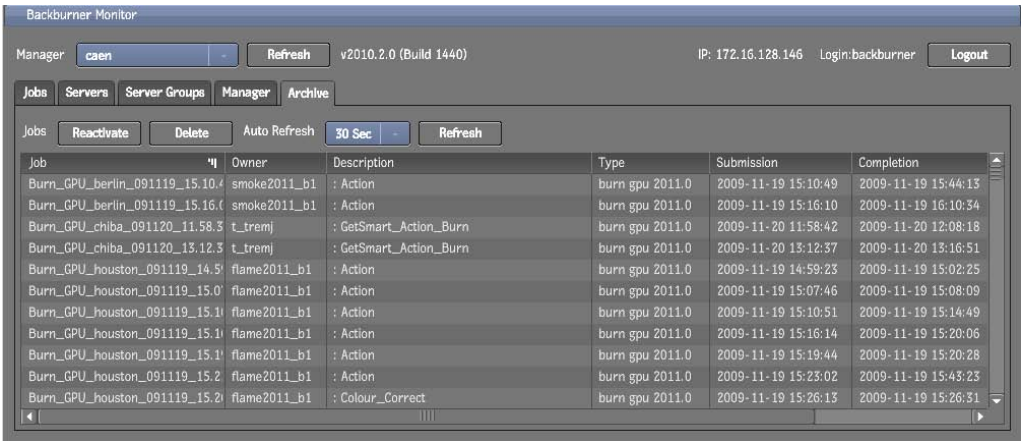
   Jobs are archived (and restored) with their original status intact. Suspending the job before archiving it minimizes the impact on the system if the job is restored later.

2. Once the job is suspended, choose Archive from the Action menu.

   The job is archived and removed from the Job list. By default, archived jobs are saved to the *Network\Archive* folder where the Backburner Manager is installed.

3. To view the list of archived jobs, click the Archives tab.

   The Job Archive page appears, presenting information for all archived jobs.



To restore or delete a job from the archive:

1. Click the Archive tab.

   The Job Archive appears, presenting information for all archived jobs.

2. Find the job of interest, then perform the desired action, as explained in the following table.

Action	Result
Delete	Removes the job from the archive. Since deletion cannot be undone, you are asked to confirm your action.
Activate	Restores a selected job to the job queue, removing it from the archive. You can then choose to modify its settings and restart the job. Jobs reappear in the job queue with the settings they had when archived. This includes job status. If a job was suspended or completed when it was archived, once restored you must re-activate or restart it to start the processing again.
Refresh	Updates the display with the most recently archived jobs.

3 Once finished, return to the Job List page by clicking the Jobs tab.

Deleting Jobs

Deleting completely removes a job from the job queue and Backburner system. It does not, however, destroy source material or rendered results.

Use the following procedure to delete jobs from the job queue.

NOTE Deleting cannot be undone. If you think you may need to run the job again in the future, or examine job details, consider archiving it instead. See Archiving Jobs on page 29.

To delete a job:

1 On the Jobs tab, select the job of interest and choose Delete from the Action menu.

2 When prompted, click OK.

The job is deleted from the system and removed from the Job list.

Setting Email Notifications for a Job

The Backburner Manager can send job success, failure and other notifications to an email address you specify. Use the following procedure to set the email notification options.

To set email notifications for a job:

1 On the Jobs tab, double-click the job of interest, or select a job and choose Settings from the Action menu.

The Job Details page appears.

2 Enter the needed information the Email Notification area.

Item	Description
From	Return address used by the Backburner Manager when sending notification email.
To	Destination address.
Server	Server where the smtp mailer daemon is running. Leave this field blank to use the Backburner Manager's default setting (see Modifying Manager Settings on page 64).
Notification	Turns on/off notifications for the job. ■ Failure: Enable to be notified on job failure. ■ Progress Every *N*th Task: Enable for email notification when each *n*th task is completed. ■ Completion: Enable for email notification on job completion.

3 Save your changes.

Managing Render Nodes – Web

6

Topics in this chapter:

- Overview on page 55
- Monitoring Render Nodes on page 55
- Shifting Nodes Between Jobs on page 57
- Deleting Offline Render Nodes on page 59
- Setting Render Node Availability on page 60
- Working with Server Groups on page 61
- Modifying Manager Settings on page 64

Overview

The procedures in this chapter relate to managing the render farm at the level of its render nodes, using the Backburner Web Monitor.

NOTE If the Backburner Web Monitor returns a message indicating queue control is needed, it indicates a Backburner *Windows* Monitor is already connected to the Backburner Manager. Wait a few moments, then try the operation again. The Web Monitor automatically obtains queue control when needed.

Monitoring Render Nodes

Monitoring allows you to view the overall health of each render node on the Backburner network. Node status—*idle, busy*, etc.—is also displayed, as well as details on any job the node is currently processing. Render nodes that have previously connected with the Backburner Manager but are no longer seen by it are easily identified, and can be removed, if desired.

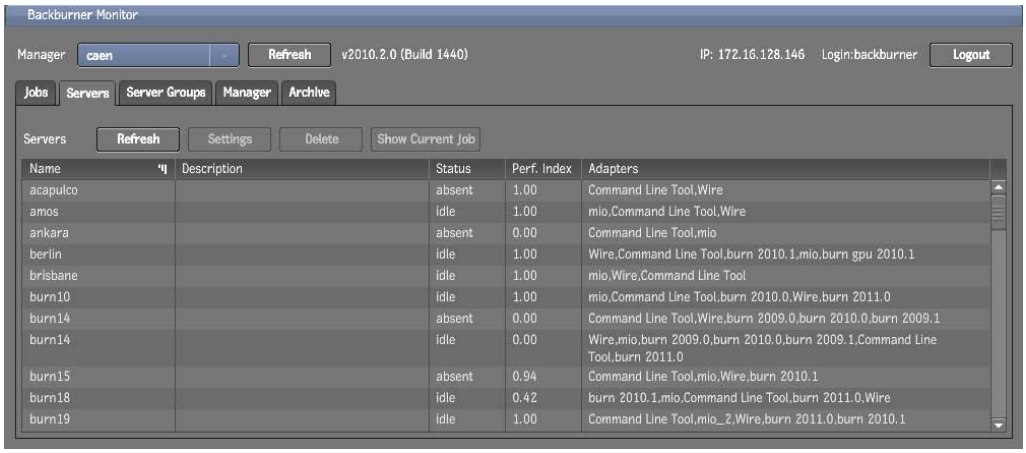
Use the following procedure to monitor the status of render nodes.

To view render node status:

1 Launch a web browser, log in to the Backburner Web Monitor and connect to a Backburner Manager. See Backburner Web Monitor on page 14.

2 Click the Servers tab.

The Server list appears, showing all render nodes on the system.



NOTE If a server that is already known to the Backburner Manager subsequently fails to re-connect to it, the manager marks it as *absent*. For more information, see Deleting Offline Render Nodes on page 59.

This following table describes the contents of the tab.

Column	Description
Name	Server name (host name).
Description	A short description of the server.
Status	Current server activity. ■ absent: Server is no longer seen by the manager, possibly down. ■ active: Currently working on a job. ■ suspended: On hold. ■ idle: Inactive. ■ error: Problem on the server.
Perf. Index	A value in the range [0–1] indicating the performance level of the render node, relative to the other servers on the same job. A score of 1 indicates this is the best-performing server.
Adapters	The adapters installed on the server, for example: ■ Burn: The Burn renderer. ■ Command Line Tool: The Backburner cmdjob command-line plug-in allows you to submit batch, executable, or script files to Backburner as “custom” jobs. For more information see the *Autodesk Backburner User Guide*. ■ mio: The MIO adapter engine is responsible for transcoding some streaming media formats (such as R3D and OpenEXR). ■ Wire: Installed with Stone and Wire. Can be used to import/export media, perform Wire transfers, etc. Used internally by Autodesk Visual Effects and Finishing applications.

3 Double-click on a render node of interest to view its details, as described in the following table. For information on the Weekly Schedule tab, see Setting Render Node Availability on page 60.

Item	Description
Host	The server's IP address. This is used by the Backburner Manager to communicate with the server.
State	See previous table.
Description	See previous table.
Performance Index	See previous table.
Current Job	The current job as assigned by the Backburner Manager.
Plugins	Detailed information on the adapters installed on the render node.

4 Click the Close button to return to the list of all render nodes.

Shifting Nodes Between Jobs

As noted, when a job is submitted by a creative application to Backburner for processing, the Backburner Manager automatically sends it as sub-jobs, called *tasks*, to render nodes for processing. Visual Effects and Finishing render tasks are sent to nodes on which Burn has been installed, 3ds Max tasks are sent to nodes equipped with 3ds Max, and so on. A task can consist of a single frame, a set of frames, or an entire clip, depending on the creative application and the nature of the work required.

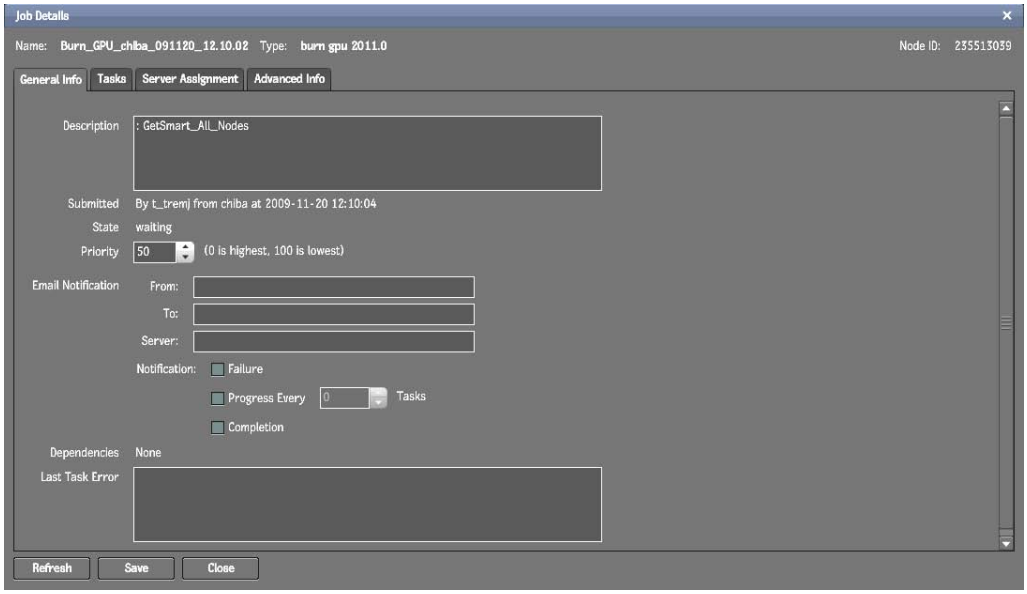
The initial choice of render nodes for each job is specified by the client application and applied automatically by Backburner, based on your Backburner settings. However, you can easily assign new nodes, or remove those currently assigned, as you see fit. For example, if a job has been sent to a particular server group, you can easily add nodes from outside the group to assist in the processing. When you add a node, Backburner sends the next task to the newly added node.

Use the following procedure to shift a render node from one job to another.

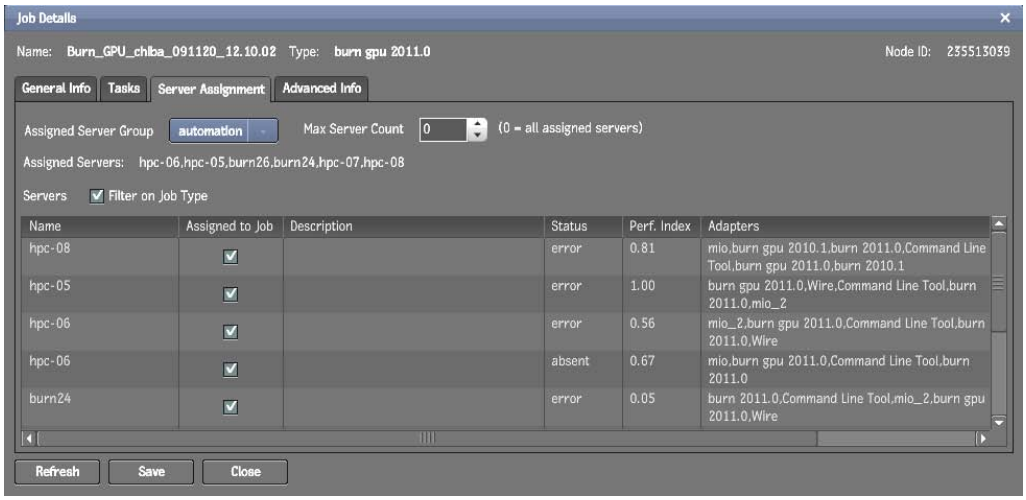
To shift a render node:

1 On the Jobs tab, select the job of interest, and choose Settings from the Action menu, or double-click the job.

The Job Details page appears.



2 In the Job Details page, click on the Server Assignment tab.



The following table explains the contents of the Server Assignment tab.

Field	Description
Assigned Server Group	Name of the server group, if any, to which the job was assigned. A server group is a named collection of servers. Only servers in the specified group will work on the job. See Working with Server Groups on page 61.
Max Server Count	The maximum number of render nodes made available for the job, as specified when the job was submitted. Set to 0 (zero) to assign the job to all servers.
Assigned Servers	A comma-separated list of servers currently assigned to the job. If you make changes, be sure to save them, then click the Refresh button to ensure the list is up to date.
Filter on Job Type	Select this checkbox to list only the servers on which the required adapter is installed.
Name	Name of the server.

Field	Description
Assigned to Job	A checkbox indicating whether or not the listed server is assigned to the job. To add a new server to the job, check a checkbox. Notice the Assigned Servers list is updated automatically. Nevertheless, click the Save button, then the Refresh button to ensure the list is up to date.
Description	A description of the server.
Status	The current activity of the server: ■ absent: Server is no longer seen by the manager, possibly down. ■ active: Server is currently working on a job. ■ suspended: Server has been put on hold. ■ idle: Server is inactive. ■ error: Problem on the server.
Perf. Index	A value in the range [0–1] indicating the performance level of the server, relative to other servers on the same job. A score of 1 indicates this is the best-performing server.
Adapters	The adapters installed on the server, for example: ■ Burn: The Burn renderer. ■ Command Line Tool: The Backburner cmdjob command-line plug-in allows you to submit batch, executable, or script files to Backburner as "custom" jobs. For more information see the *Autodesk Backburner User Guide*. ■ mio: The MIO adapter engine is responsible for transcoding some streaming media formats (such as R3D and OpenEXR). ■ Wire: Installed with Stone and Wire. Can be used to import/export media, perform Wire transfers, etc. Used internally by Autodesk Visual Effects and Finishing applications.

3 Assign and/or remove servers as desired using the checkboxes.

For information on using the Assigned Server Group pull-down menu, see Working with Server Groups on page 61.

4 Apply your changes.

The selected render nodes are assigned to the job. If a render node is already occupied, it completes its current task first.

5 Verify your changes by clicking the Refresh button. This queries the Backburner Manager for the most up to date information.

The Assigned Servers list is updated to reflect your changes.

6 Click Close to return to the list of all servers.

Deleting Offline Render Nodes

When a Backburner Server connects to the Backburner Manager for the first time, the manager records the server's presence on the Backburner network in its database. If the server subsequently fails to reconnect to the manager during a new session, or goes offline for any reason, the manager marks it as *absent*. Servers can go offline temporarily for any number of reasons: during a render node shutdown or reboot, network glitches, hardware updates, and so on. The next time the server comes online, it will simply re-connect to the manager and appear as available once again.

However, if you know a render node will be offline permanently, or for a considerable time, you can delete it from the network. For example, if you uninstall the Backburner Server, it will remain listed in the manager's database. The old registration will cause a “ghost” node to appear in the list of servers, marked *absent*. The “ghost” can safely be deleted.

Deleting the node removes its entry from the database—it does not remove any software from the node itself. Some caution is nevertheless merited. Deleting a node can make it more difficult to troubleshoot jobs with problems, since it will be more difficult to determine which node carried out the flawed work. Before deleting a node, consider archiving jobs that made use of it, to preserve job details, including the nodes to which tasks were sent.

Use the following procedure to delete offline render nodes from the system. Deleting a render node removes its entry from the database maintained by the Backburner Manager. It does not delete any software from the node itself.

To delete a render node:

1. On the Servers tab, select the node of interest, and click the Delete button.

   Only nodes marked by the system as *absent* can be deleted.

2. Confirm the deletion in the dialog box that appears.

   The node is deleted and removed from the list.

Setting Render Node Availability

By default, nodes are always available for processing. However, you can easily limit render node availability, to manage network resources. For some creative applications, such as 3ds Max and Maya, creative seats themselves can be set up as render nodes. In such cases it can be helpful to limit rendering activity on those workstations to after hours.

For others, such as the Visual Effects and Finishing applications (including Smoke for Mac OS X), render nodes are always separate workstations. Nevertheless, scheduling can be useful. Burn nodes, for example, require access to the full resolution versions of the frames needing processing. This can result in a great deal of data moving across the network. Scheduling some Burn nodes for only off-peak availability can assist in balancing network traffic levels until a more permanent network solution is put in place.

Use the following procedure to schedule the availability of a render node.

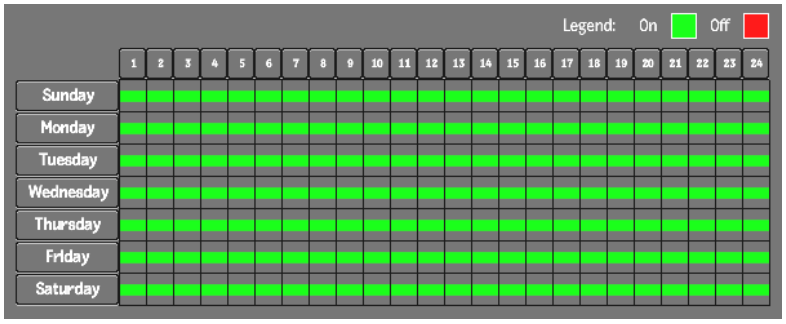
To schedule the availability of a render node:

1. On the Servers tab, select a node of interest and click the Settings button. Alternately, double-click the node of interest.

   The Server Details page appears.

2. In the Server Details page, click the Weekly Schedule tab.

   The schedule for the render node appears.

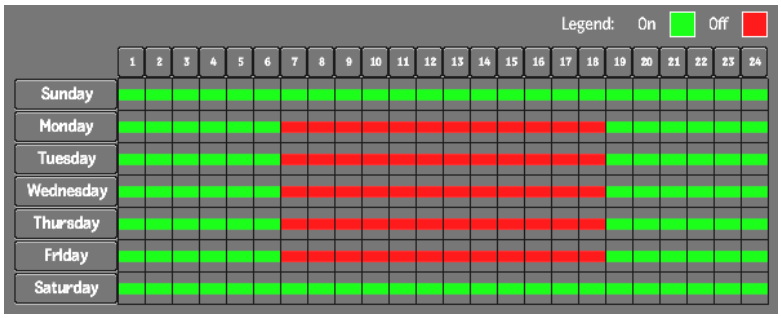


Periods of time that are green indicate the node is available to process jobs. By default, nodes are always available.

3 Toggle render node availability as desired:

- Toggle a single hour by clicking the hour of interest.
- Toggle the same hour for each day with one click using the hour buttons.
- Click and drag to toggle a number of hours at once.
- Toggle a whole day using the days-of-the-week buttons.

The following schedule shows a render node that is available weekdays at night and 24 hours a day on weekends. This might be the case for a creative workstation used as a render node after-hours, for example.



4 Apply your changes.

Working with Server Groups

A server group is a named collection of render nodes that is treated, for the most part, as if it were a single node. Recall that by default, jobs are submitted by creative applications to the Backburner network as a whole. It is the Backburner Manager that determines the specific render nodes to which they are sent, based on job type and node availability. However, certain Autodesk applications can be configured to submit jobs to a specific server group.

Server groups can be used to implement a job-processing strategy. For example, consider a facility with two Visual Effects and Finishing applications, and a render farm consisting of 8 Burn nodes, 4 or which are GPU-enabled. In such a situation, you might create two server groups, one each for the non-GPU and GPU-enabled Burn nodes. By assigning each Visual Effects and Finishing workstation to a different server group, you can reserve the GPU-enabled Burn nodes for the workstation with higher priority or more demanding jobs.

It should be understood that server groups do not restrict your ability to assign render nodes to particular jobs as you see fit. When a creative application is configured to submit its jobs to a server group, additional nodes can be assigned to it, automatically, or manually, once the job is on the network. Conversely, you can always remove individual nodes from a job, regardless of their relationship to a server group.

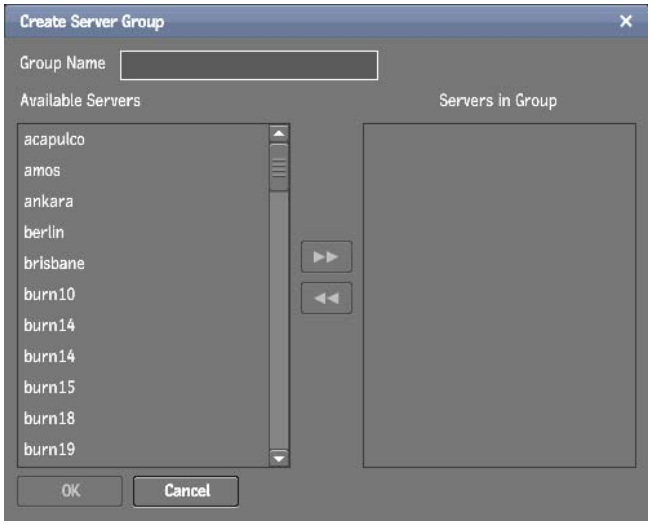
Use the following procedures to create or delete a named collection of render nodes, called a *server group*, and to assign a server group to a job.

NOTE For information on configuring a creative application to submit jobs to a server group, see the User Guide for application of choice. To configure a Visual Effects and Finishing application to submit its jobs to a server group, set the optional *BackburnerManagerGroup* keyword in the application's *init.cfg* file. For more information see the *Burn Installation and User Guide*. For Smoke for Mac OS X this can be done is the Smoke Setup UI.

To create a server group:

1 On the Server Groups tab, click the Create button.

The Create Server Group dialog appears.



2 Enter a name for the new server group in the Group Name field.

3 Add render nodes to the group by selecting them in the *Available Servers* list and moving them to the *Servers in Group* list.

4 Once you are satisfied with your choices, click OK to commit the changes.

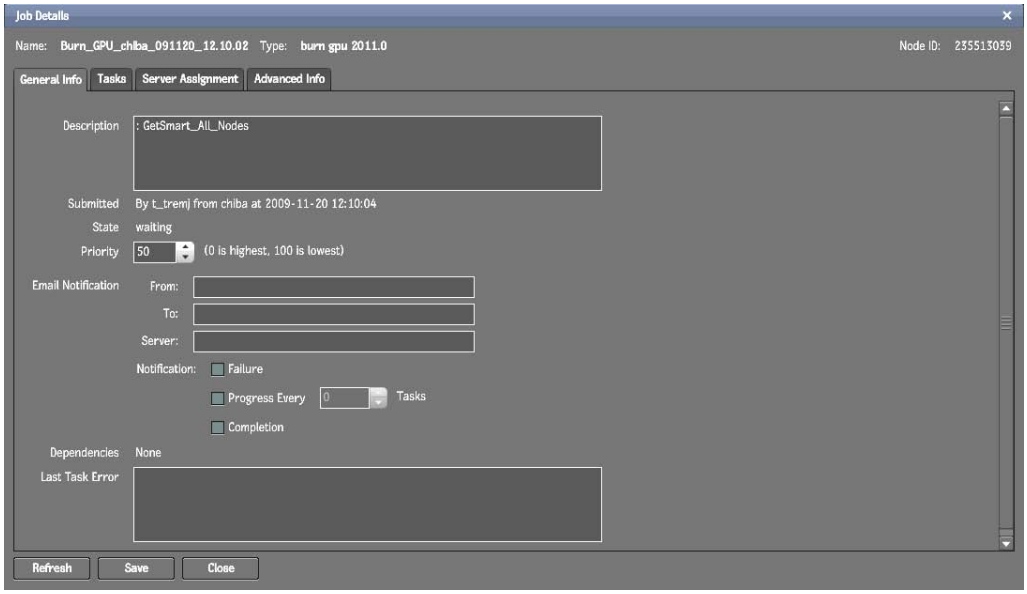
The new server group is added to the list.

NOTE Server groups you create in the Backburner Web Monitor appear as *global* groups in Backburner Windows Monitor.

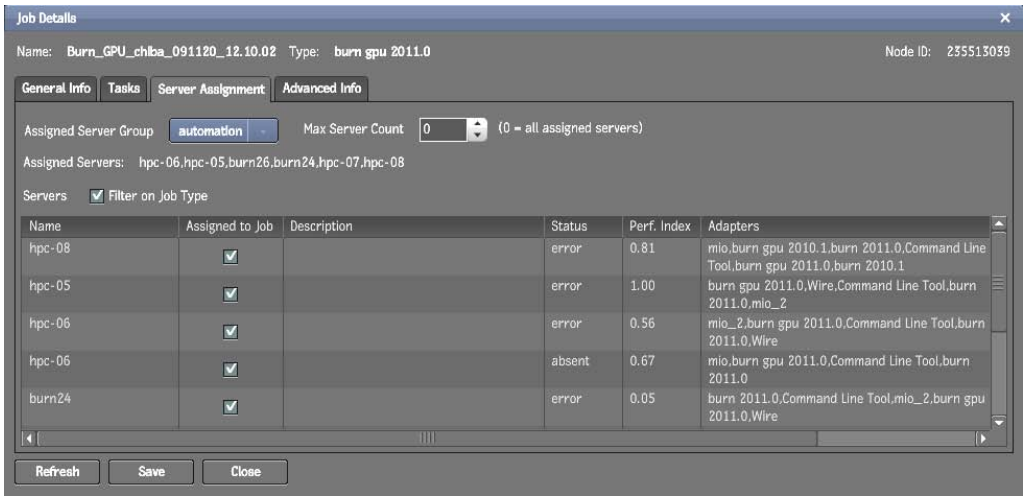
To assign a server group to a job:

1 On the Jobs tab, select the job of interest and choose Settings from the Action menu, or double-click the job.

The Job Details page appears.



2 In the Job Details page, click on the Server Assignment tab.



3 Choose a server group from the Assigned Server Group menu.

4 Apply your changes, then click Refresh to update the display.

Compatible servers belonging to the group appear in the Assigned Servers list.

NOTE If an expected server belonging to the chosen group does not appear in the list, it can indicate the server is *absent*, or does not have the correct adapter installed. The manager will only assign servers that are able to carry out the job.

NOTE Changed settings apply to new tasks only. Completed tasks are not reprocessed. To reprocess completed tasks, restart the job from the beginning. See Restarting Jobs on page 51.

To delete a server group:

1 On the Server Groups tab, select the server group of interest and click the Delete button.

2 When prompted to confirm your action, click OK.

The selected server group is deleted.

Modifying Manager Settings

The Manager tab contains a number of items for setting Backburner Manager behaviour relating to job processing. This includes setting what information is logged, the maximum number of jobs permitted on the network, how many times the manager will resend a job to the same server, and what happens to jobs once they are completed.

The following table summarizes the contents of the interface:

Area	Field	Description
Logging and Notification	Logging Level	■ Error: Fatal errors that halt the processing of a job. ■ Warning: Operations that complete with non-fatal errors. ■ Info: Successful operations, possibly with minor faults or caveats. ■ Debug and Debug Extended: Detailed state information, including TCP/IP packet information, helpful in tracking down bugs. ■ Debug Extended: A more verbose listing than Debug.
	Default Mail Server	The smpt mail server through which all email notifications for this manager are sent. Note that this can be overridden for individual jobs. See Viewing Job Details and Job Tasks on page 47.
Server Assignment	Max Concurrent Jobs	The maximum number of jobs Backburner will send out for processing on the render farm at the same time.
Task Failures	Retry Count	Number of times the Backburner Manager attempts to restart a job on a server that has failed to complete its processing. A failed job may be returned by Backburner to the job processing queue. Set to zero (0) to have job processing halted on the server after its first failure. Default is 3.
	Time Between Retries	The time before the Backburner Manager attempts to restart a job on a server that has failed. Works in conjunction with Retry Count. Default is 30 seconds.
Job Handling	On Job Completion	Specifies what happens to a job once it has successfully completed: ■ Leave: Job is left in the job list. ■ Archive After: Remove from the job list and place in the archive after the number of days specified. ■ Delete After: Permanently remove from the job list after the number of days specified.

Additional Windows Interfaces

A

Topics in this chapter:

- Overview on page 65
- Backburner Manager – Windows on page 65
- Backburner Server – Windows on page 66

Overview

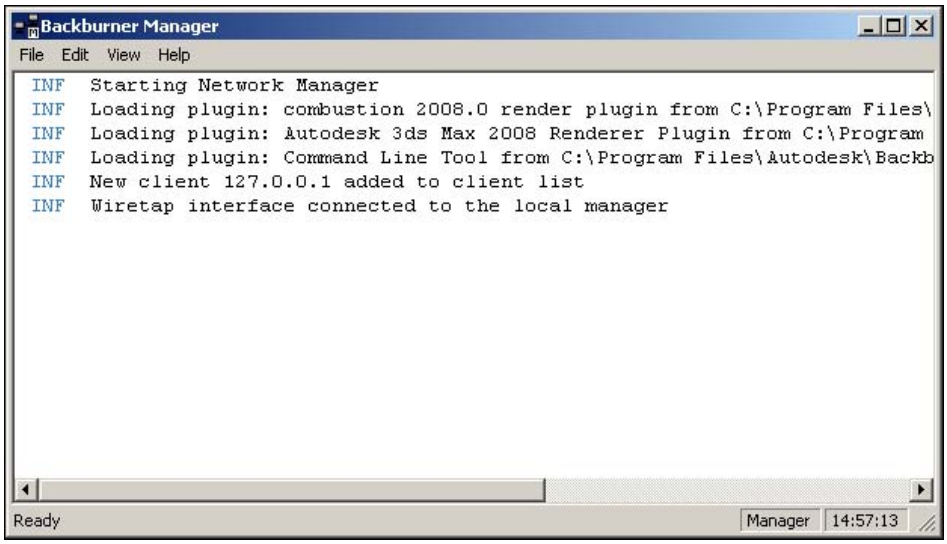
The Backburner Monitor described throughout this guide is often the only “visible” component of Backburner—that is, the only component with a GUI. In a Windows installation, the Backburner Manager and Backburner Server can also have GUIs. If these have been configured to run as Windows services, they run unobtrusively in the background. No GUIs are displayed. However, if these run as regular applications, they will be visible. This chapter provides an overview of each GUI.

Both the manager and server interfaces are simple text windows in which startup, information, and error messages are displayed. By default the messages are also written to log files. There are two dialogs available from menus for configuring behaviour, and log levels, respectively. In both cases, settings you make using the dialogs are saved in the Backburner configuration file, *backburner.xml*, on the machine where the component is running. You can also edit this file directly.

For details, see the *Backburner Installation Guide*.

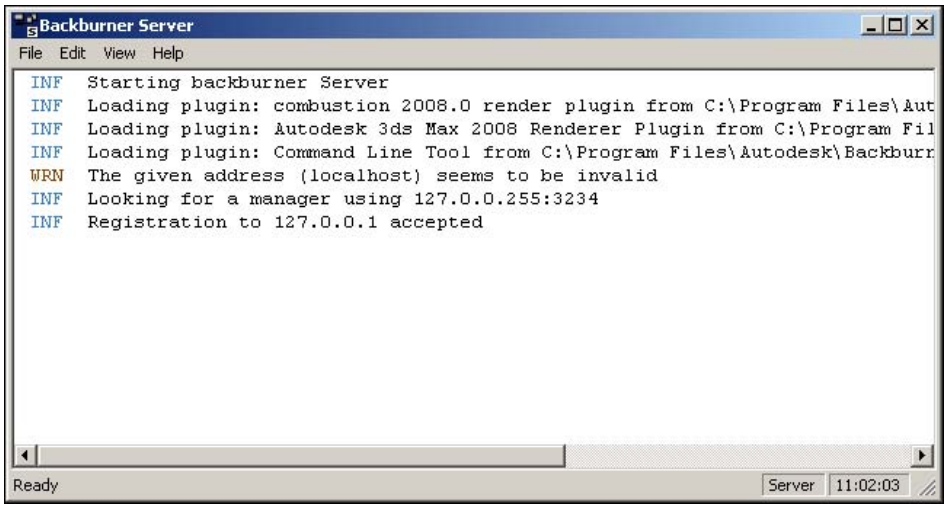
Backburner Manager – Windows

The following illustration identifies the Backburner Manager GUI.



Backburner Server – Windows

The following illustration identifies the Backburner Server GUI.



Advanced Operations

B

Topics in this chapter:

- Submitting Jobs from a Command Line or Script on page 67

Submitting Jobs from a Command Line or Script

Use the Backburner command-job utility, *cmdjob*, to submit batch, executable, or script files to Backburner as "custom" jobs for execution on remote servers. This tool provides flexibility in running custom jobs from scripts. For example, you could create a script that submits all jobs contained in a network folder to be rendered automatically at night.

WARNING Special security consideration should be given to the *cmdjob* utility, as it can execute commands remotely on all the render nodes on the network. A trained systems administrator should ensure that the execution permissions are properly set and managed.

The command-job utility makes use one of two adapters, depending on the job options you specify when submitting the job to Backburner, as indicated in the following table.

Adapter	Description
CmdJobAdapter	Executes submitted jobs as *root* user account. Used by default. Available on all supported platforms.
UserCmdJobAdapter	Executes submitted job as the account that submitted the job. To invoke this adapter, specify the *-userRights* job option when submitting the job. Available on Linux and Mac OS only. Not available on Windows. See Options for the cmdjob Utility on page 68.

The command-job adapters are installed in the following directories:

- /usr/discreet/backburner/Adapters (Linux/Mac)

- Program Files\Autodesk\Backburner\Adapters (Windows)

Using the cmdjob Utility

Use the following procedure to submit jobs to Backburner using the *cmdjob* utility.

To use the *cmdjob* utility:

1 Open a DOS shell or Linux/Mac terminal and navigate to the *Backburner* folder.

Operating System	Location of the Backburner Folder
Windows	C:\Program Files\Autodesk\Backburner
Linux	/usr/discreet/backburner

2 Submit a job or jobs to the *cmdjob* utility using the following syntax:

```
cmdjob <options> <executable_to_run> <parameters>
```

Refer to the following sections for help with the options and parameters you can specify, as well as for information on tokens:

- Options for the cmdjob Utility on page 68
- Parameters for the cmdjob Utility on page 70
- Tokens for the cmdjob Utility on page 70

You can use options, parameters, and tokens at the command line of a DOS shell or Linux terminal as well as in a batch file or script. Note the following:

- Options, parameters, and tokens are not case-sensitive.
- If multiple occurrences of the same option or parameter are used, only the last occurrence is processed by the *cmdjob* utility.

Options for the cmdjob Utility

This section describes the options you can use with the *cmdjob* command.

Options

Option	Description
-?	Displays the help for the *cmdjob* utility.
-cmdFile:<file>;<file>... or @<file>;<file>...	Specifies one or more text files that contain options to the *cmdjob* utility.

Job Options

Option	Description
-jobName:<name>	Sets the job name. The default is “cmdJob”.
-description:<string>	Defines a description of the job.

Option	Description
-priority:<number>	Sets the job priority. The default value is 50. The other values are either 0 (Critical) or 100 (Suspended).
-workPath [folder]	Working folder or directory for the *cmdjob* utility. The default value is "…\backburner\Network\ServerJob" folder. This path is set before the *cmdjob* utility interprets processing options for a job. This path is also set as the working path for servers. If the working folder is not set, the full path to the executable and target files must be specified when submitting the job.
-logPath:<folder>	Specifies the location of the folder or directory in which the task" logs are created. This location must specify an existing folder since the command line utility cannot create this folder if it does not exist. This option is disabled by default.
-showOutput<file>;<file>;...	Makes the specified output files accessible from the Backburner Monitor or Web Monitor.

Job Submission Options

Option	Description
-dependencies:<jobname>;<jobname>;<jobname>;...	Defines a list of job dependencies.
-timeout:<minutes>	Number of minutes before a task time-out should occur. Default value is 60 minutes.
-attach	Attaches the batch file to the job as a *.zip* file. The batch file is then extracted on each machine before the job is processed.
-progress	Shows the progress of the job in the shell as it is being processed.
-suspended	Sets the status of the job to suspended.
-userRights	Runs *cmdjob* jobs with the account name (hence user permissions) of the account submitting the job. If this option is not specified, jobs are run as *root*. Requires that the *UserCmdjobAdapter* adapter is installed on the render nodes.

Network Options

Option	Description
-manager:<name>	Sets the name of the manager. The default is an automatic search.
-port:<number>	Sets the port number.
-servers:<server>;<server>;...	Defines the set of servers to which the job is submitted. Ignored if a server group is specified using -group.
-serverCount:<number>	Sets the maximum number of servers that can simultaneously work on the job.
-group:<string>	Defines the server group to which the job is submitted.

Notification Options

Option	Description
-emailFrom:<address>	Sets the source email address for notification emails.

Option	Description
-emailTo:<address>	Sets the destination email address for notification emails.
-emailServer:<server>	Sets the name of the SMTP email server Backburner uses to send notification emails.
-emailCompletion	Sends a notification email when the job is completed.
-emailFailure	Sends a notification email if the job fails.
-emailProgress:<number>	Sends a notification email when the number of tasks that you set are completed.

Parameters for the cmdjob Utility

This section describes the options you can use with the *cmdjob* command.

Option	Description
-taskList:<file>	Sets the task list file. The file contains a tab-separated table. Use fill-in tokens to reference the table.
-taskName:<number>	Sets the task name column in the task list file. A value of 0 means this column is unnamed while a value greater than 0 specifies the column in the file for the task names. This is used for feedback in the monitor when looking at the task list.
-numTasks:<number>	Sets the number of tasks for the job. This option is ignored if -taskList is used.
-tp_start:<number>	Sets the starting offset of the default task parameter in numeric format. Ignored if -taskList specified.
-tp_jump:<number>	Sets the increment of the default task parameter in numeric format. Ignored if -taskList used.
-jobParamFile:<file>	Sets the job parameter file. See example below.

Tokens for the cmdjob Utility

A token is a reference to a value that can vary. It is evaluated on the server assigned to the job at the time the *cmdjob* utility executes. You cannot nest tokens within tokens.

Option	Description
%dsc	Job description.
%srv	Name of the server executing the task.
%tpX	Task parameter X from the task list where X is the column index in the task list file.
%*tpX	Same as %tpX where * indicates the number of 0 padded digits to use.
%tn	Task number of the assigned task.
%*tn	Same as %tn where * indicates the number of 0 padded digits to use.
%jpX	Parameter X from the job parameter file where X is the row index in the job parameter file.
%*jpX	Same as %jpX where * indicates the number of 0 padded digits to use.

Troubleshooting Backburner

C

Topics in this chapter:

- Basic Troubleshooting Techniques on page 71
- Common Problems on page 72
- Verifying Communication Between Two Hosts on page 75
- Verifying the Packet Size on page 75
- Configuring Backburner Log Files on page 75
- Editing the Backburner.xml File on page 78
- Resolving a Host Access Error on page 79
- Resolving Invalid DNS Addresses on page 80
- Resolving a Problem Connecting to the Backburner Manager on page 80
- Adding the Backburner Path to the Windows Path Environment Variable on page 81
- Resolving Network Card Priority on page 82
- Resolving an Unavailable Render Node Problem on page 82
- Restarting Suspended Render Nodes on page 84
- Resolving a Render Node Failure on page 84
- Adjusting the Maximum Number of Render Nodes Per Job on page 84

Basic Troubleshooting Techniques

Troubleshooting problems on a Backburner network can be difficult because of the different hardware and software platforms that a Backburner network may cover. If you experience problems, start by checking the following issues first:

- All hosts on the Backburner network can communicate with each other. See Verifying Communication Between Two Hosts on page 75.

- If you are sending jumbo frames, verify that each host can handle that packet size. See Verifying the Packet Size on page 75.
- Any shared resources are both visible and accessible to all hosts on the Backburner network.
  Make sure the folders containing images and models used for your jobs are shared by all hosts on the Backburner network. If Backburner is also rendering jobs from Autodesk applications that run on a Linux platform, make sure that directories are visible from all hosts on the Backburner network, and that they have the appropriate permissions set.
- Any plug-ins, fonts, and codecs necessary for rendering jobs are installed on each render node.
- Licensing (where required) is properly configured for each host.
  If Backburner is also rendering jobs from Autodesk applications that run on a Linux platform, make sure the License Server for the network is functioning and that the licenses can be checked out.

Log files are also a useful source of information for troubleshooting a problem. Both Backburner Manager and Backburner Server maintain log files, and you can define the types of events you want these files to record. See Configuring Backburner Log Files on page 75 for an explanation of these files and the information they contain.

Common Problems

This section describes common problems in a Backburner network that uses Linux or Windows render nodes, and provides suggestions on how to solve these problems. For additional help with problems on a Backburner network using Burn render nodes, see the *Autodesk Burn Installation and User Guide*.

Problems on Startup

These problems can occur when you start Backburner Manager or Backburner Server on Linux or Windows systems.

Problem	Common Cause
An `Application Terminated` error appears in the Backburner Monitor or the Backburner Web Monitor.	An incorrect IP address for the Backburner Manager, incorrect port numbers for the Manager and/or Server, incorrectly configured TCP/IP information. See Resolving a Host Access Error on page 79.
A `Host Not Found` error appears when starting Backburner Server on a Windows system.	An incorrect IP address for the Backburner Manager, incorrect port numbers for the Manager and/or Server, incorrectly configured TCP/IP information. See Resolving a Host Access Error on page 79.
An `Overlapped I/O Operation is in Progress` error appears when starting Backburner Server as a Windows service.	The Backburner Server service is already running. This is not a problem. You can continue with network rendering.
A `Service is Installed. Cannot run Server Application.` error appears when starting Backburner Server on a Windows system.	The Backburner Server service is installed and running. You can continue with network rendering without launching the Backburner Server application.

Problem	Common Cause
An `Error registering to <server_name>` error appears when starting Backburner Manager or Server on a Windows system.	Invalid IP addresses in the DNS Search Order, or the Primary or Secondary WINS Server in the Microsoft TCP/IP dialog. See Resolving Network Card Priority on page 82.
A `Cannot handle registration from <server_name>. Will try later.` error appears when starting Backburner Manager or Server on a Windows system.	The number of concurrent TCP sessions currently exceeds the limit the Manager can handle. Servers automatically retry, usually within a minute, so the problem should resolve itself.
A `Cannot access job share <server_name>. Requesting archive directly.` error appears when starting Backburner Server on a Windows system.	This warning may appear only on Backburner networks and can be disregarded. The warning appears when a required folder and/or drive is not shared using Windows file sharing. If this occurs, Backburner switches to TCP/IP to access the required folder and/or drive across the network. You can prevent this warning from appearing by ensuring all network components share the same folders and drives.
An `Invalid name or TCP/IP subsystem not installed` error appears when starting Backburner Manager or Backburner Server on a Windows system.	The TCP/IP protocol is not running or not working properly. This error may occur on workstations where a pre-installed version of Windows includes a misconfigured TCP/IP protocol. Remove and then reinstall the TCP/IP protocol and reboot the workstation. Once the workstation has rebooted, see Verifying Communication Between Two Hosts on page 75 to ensure that it can communicate with other network components.

Problems Submitting Jobs

These problems can occur when you attempt to submit a job to the Backburner network on Linux or Windows systems.

Problem	Common Cause
The Backburner Manager is unavailable when submitting jobs.	An incorrect IP address or an IP address that connects to the wrong Backburner Manager, a Backburner Manager that is not running or is hung, or communication problems between the Backburner Manager and the render nodes. See Resolving a Problem Connecting to the Backburner Manager on page 80.
An `Unknown error loading application` error appears in the Backburner Manager or Monitor when submitting jobs to Backburner on a Windows system.	The path to Backburner is not defined in the *Path* environment variable. See Adding the Backburner Path to the Windows Path Environment Variable on page 81.

Problems with Render Nodes

These problems can occur with a render node or the jobs sent to it on Linux or Windows systems.

Problem	Common Cause
A render node appears unavailable in the Backburner Monitor or Web Monitor.	The workstation is offline, the Backburner Server is not running or is hung, the Server is not using the correct IP address for the Manager, or the Manager cannot communicate with the Server. See Resolving an Unavailable Render Node Problem on page 82.
A render node is idle and cannot connect to the Backburner Manager.	Check the render node to make sure that the IP address for the Manager is correct. Other networking devices such as a second network card, or wireless device connected through a USB port may cause problems. See Resolving Network Card Priority on page 82.
A `Cannot network render. Backburner not found or not installed.` error appears in the application when a job is sent for rendering on a Windows system.	Either Backburner is not installed or its path is not defined in the *Path* environment variable. Verify that Backburner is installed and/or see Adding the Backburner Path to the Windows Path Environment Variable on page 81.
A render node remains suspended even while jobs are being processed by Backburner.	The render node is unavailable. See Restarting Suspended Render Nodes on page 84.
A render node fails when a job is assigned to Backburner.	Render nodes can fail during a network render job for a variety of reasons, some of the most common ones being incorrect paths, missing plug-ins, fonts, or codecs, or insufficient disk space. See Resolving a Render Node Failure on page 84.
An `Unknown TCP gibberish from <Backburner_Manager_IP address_or_hostname>` error appears in Backburner Server.	There is not enough free disk space on the render node, the connection between Backburner Manager and Backburner Server is bad, or network drivers are not working properly. Check the amount of free disk space on the render node and resubmit the job, if this is sufficient. If the problem reoccurs, check the drivers used for the network card and TCP/IP protocol as well as the physical network connection to the render node.
A `Task Error: The filename, directory name, or volume label syntax is incorrect (0x7b)` error appears in the log file of Backburner Server.	This error occurs when the output folder or directory name is misspelled or contains invalid characters. Check the output details for the job in the Backburner Monitor and correct the output folder name or path to fix this problem.
Only a single render node can be assigned to a job.	The output of the job is not an image sequence (for example, it is an AVI or MOV file). A job that does not produce an image sequence can only be assigned to a single server. Note that if such a job is stopped for any reason (to deactivate it or because the server goes down), re-rendering the file restarts at the first frame. Frames cannot be appended later to these file types. You can change which server a single-server job uses by removing the current server from the job, and then adding a different one.

Problem	Common Cause
No additional render nodes can be assigned to a job, even if render nodes are available.	The maximum number of render nodes per job is reached. You can change this maximum number to avoid this problem. See Adjusting the Maximum Number of Render Nodes Per Job on page 84. However, changing these settings is not recommended. Increase these values only if you are sure that there is sufficient slack in your Backburner network.

Verifying Communication Between Two Hosts

Use the **ping** command to test communication between hosts, for example between a render node and a Backburner Manager on Linux or Windows systems.

Use:	To:
ping <ip_address>	Verify that the host on which you issue the command can communicate with the host whose address you specify in <ip_address>. Example: **ping 132.22.34.15** If this command does not return a response from the host whose IP address you specified, ensure there is a valid network connection, and that both machines are on the same network.
ping <hostname>	Verify that the host on which you issue the command can communicate with the host whose name you specify in <hostname>. Example: **ping managerhost**

NOTE If you can successfully "ping" the IP address, but not the hostname, the Domain Name Server may be unable to map the hostname to an IP address. Or, if you are running the command on a Linux workstation, the hostname/IP address pair may be missing from the */etc/hosts* file or from the NIS (Network Information Services) server. If necessary, consult your network administrator for help correcting the missing hostname.

Verifying the Packet Size

You can use the **ping** command to determine the packet size a host can accept on Linux or Windows systems.

Use:	To:
ping -s <packet_size> <hostname>	Verify that the host can handle the packet size it is being sent. Example: **ping -s 50000 managerhost**

If the host can handle regular packet size, but not oversize packets, your jumbo frame may be incorrectly configured, the switch may not support jumbo frames, or one of the ports (either the switch or the adapter) may not be set for jumbo frames. If you are not sure whether your system is using jumbo frames, consult your network administrator.

Configuring Backburner Log Files

Both Backburner Manager and Backburner Server maintain log files. The information in these log files can be useful when you are troubleshooting problems with the Backburner network. For example, you can consult the files to determine when the Backburner Manager or Server was started, when Backburner Servers on a network were shut down, and whether any errors occurred that halted the rendering of a job.

The log files are stored in */usr/discreet/backburner/Network* on Linux. On Windows, they are stored in a */backburner* subdirectory of the per-user application data directory. For example, *C:\Documents and Settings\<user>\Local SettingsApplication Data\backburner*, in Windows XP.

NOTE Running the Backburner Manager or Backburner Server as a Windows 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

You can adjust system parameters and define the events and information that Backburner Manager or Backburner Server records in its log file by editing the *backburner.xml* file. Additionally, on Windows systems you can adjust the log file settings through an application dialog.

To configure Backburner log file settings on Windows systems:

1 Start the Backburner Manager or Server. Refer to the *Autodesk Backburner Installation Guide* for help starting these applications.

NOTE You cannot configure log file settings for Backburner Manager or Backburner Server while these applications are running as Windows services.

2 From the Edit menu, choose Log Settings.

The Logging Properties dialog appears.

Use this dialog to set the events shown in the application's window or logged to its log file.

- The Log To Screen options set events that are displayed in the Backburner Manager or Server application window.
- The Log To File options set events that are saved to the Backburner Manager or Server log files. These are usually the same messages that appear on the screen.

3 Enable options in the dialog to determine the messages that are saved to log files. See Specifying Backburner Log File Contents on page 77.

By default, the following events are always logged to the screen and to the log files:

- Error

- Warning
- Info

Enabled events are saved to the *backburner.log* file for Backburner Manager and to the *backburnerServer.log* file for Backburner Server.

4 In the Buffer Limit field, specify the maximum size of the buffer holding the messages.

5 Click Clear Log to clear the buffer holding messages in the application window.

6 Click Clear Log File to clear the contents of the *backburner.log* or *backburnerServer.log* file.

NOTE Log files are cleared only when you click the Clear Log File button. Otherwise, the size of these files continues to grow with each job rendered.

To configure Backburner log file settings by editing the backburner.xml file:

1 Stop Backburner Manager and/or Backburner Server.

2 Locate the *backburner.xml* file:
- Linux: */usr/discreet/backburner/Network*
- Windows: In the *\backburner* subdirectory of the per-user application data directory. For example, *C:\Documents and Settings\<user>\Local SettingsApplication Data\backburner*, in Windows XP.

3 Edit the *backburner.xml* file using an XML or text editing application.

4 Under the <LogCfg> heading, enable or disable the options to determine the messages that are saved to log files. See Specifying Backburner Log File Contents on page 77. The settings are enabled with a "1" and disabled with a "0".

5 Save and exit the *backburner.xml* file.

6 Restart Backburner Manager or Backburner Server. Refer to the *Autodesk Backburner Installation Guide* for help starting these applications.

NOTE Any changes made to the *backburner.xml* file take effect only when the Backburner Manager or Backburner Server is restarted.

The new log file settings take effect.

Specifying Backburner Log File Contents

The information and type of events that can appear in the Backburner Manager or Server, or be written to their log files, are defined as follows.

Error Fatal errors that halt the rendering of a job. These messages are preceded by a red "ERR", label and include the following events:

- Failed Renderings and Frame Errors
- Backburner Server runs out of memory
- Backburner Manager not found
- Error registering server(s)
- Error writing output file

- Loading time-outs

Warning Non-fatal warning information. These are events that do not cause the application to stop rendering a job. These messages are preceded by a brown "WRN" label, and include the following events:

- Backburner Manager or Backburner Servers shutting down
- Server(s) flagged as failed
- Loading time-out set too low
- Rendering time-out set too low

Info General information about the current status of Backburner Manager and the Backburner Servers on the Backburner network. These messages are preceded by an aqua "INF" label, and include the following events:

- Booting Backburner Manager
- Connection to Backburner Server(s)
- Registration to Backburner Manager
- Job submitted
- Job received
- Frame complete

Debug and Debug Extended Detailed information about TCP/IP packets and the current state of Backburner Manager and the Backburner Servers. Debug Extended provides a more verbose listing than Debug. These messages are preceded by a blue "DBG" label, and include the following information:

- TCP/IP packets sent and received
- TCP/IP packet collection
- Frames assigned
- Log files creation and sending
- Assignment threads

Editing the Backburner.xml File

When you run the Backburner Manager or Server, the application creates or updates the *backburner.xml* file in the Network directory under the Backburner installation directory. View or edit this file only if you have isolated a particular workstation as the cause of problems experienced on the Backburner network.

You may change parameters in the *backburner.xml* file by editing it in an XML editor or a text editing application.

On Windows systems, most of the settings in the *backburner.xml* file can be set using the Manager Properties dialog and Server Properties dialog.

Before viewing or editing the *backburner.xml* file, make sure the Backburner Manager and/or Backburner Server applications are shut down (or their services stopped and uninstalled). Any changes made to the *backburner.xml* file take effect only when the Backburner Manager or Server is restarted.

NOTE Changing parameters manually in the *backburner.xml* file is done at your own risk.

Autodesk recommends changing only the following parameters in this file.

MaxBlockSize Located under the <GeneralCfg> heading, this value is the maximum size of a data packet sent when transferring large blocks, such as projects. For slow connections like modems, use a smaller packet size, for example, 1024.

NetworkMask Located under the <GeneralCfg> heading, this value shows the subnet mask used to locate other Backburner network components, such as Backburner Server or Manager. The subnet mask defined in the *backburner.xml* file must be the same as the one defined for general TCP/IP communications on the workstation.

ServerName Located under the <SystemConfiguration><AppDetails><ServerSettings> heading, this value specifies either the host name or IP address the Backburner Server uses to identify itself to the Backburner Manager. This is useful when a render node has more than one network interface and hence more than one IP address

Acknowledgment Timeout Located under the <TimerCfg> heading as AckTimeout, this value is the amount of time (in seconds) that the system waits for an acknowledgment of commands (like Ping) sent back and forth between the Manager and Server. The default acknowledgment timeout is 20 seconds.

Acknowledgment Retries Located under the <TimerCfg> heading as AckRetries, this value determines how many times the sender retries if no acknowledgment is received. The default is six tries. After that, the machine is considered down and is put off-line.

Resolving a Host Access Error

The common causes of a host access error in Linux or Windows installations are an incorrect IP address for the Backburner Manager, incorrect port numbers for the Manager and/or Server, or incorrectly configured TCP/IP information. You can troubleshoot the error by examining each of these in turn.

To resolve a host access error:

1. Ensure that the name and IP address of the Backburner Manager are correctly specified in the Backburner Server, as follows.

   Connect the application directly to the Backburner Manager workstation by trying the following:

   - If you use the Auto-Connect functionality, disable the Use First Available option and/or remove the subnet mask for the Backburner network. You are prompted to enter the name or IP address of the Backburner Manager workstation when you try to submit a job to Backburner.
   - Disable any settings or preferences that automatically connect to the Backburner Manager.

   If the application cannot connect to the Backburner Manager, continue to the next step.

2. Verify that the Manager and Server port numbers are correctly specified in the Manager General Properties and Server General Properties.

   If this does not solve the problem, continue to the next step.

3. Verify that TCP/IP is correctly configured on all workstations running the software. If necessary, verify that the subnet mask is correct.

   NOTE Consult your network administrator before changing the subnet mask.

4. If a firewall is running on Backburner components, review the firewall settings for each network component to ensure the following:
   - The Backburner application(s) are allowed to access the network.
   - The ports used by the Backburner Manager and the Backburner Monitor to communicate are not blocked by the firewall. By default, these ports are 3233 and 3234.

Resolving Invalid DNS Addresses

An invalid Domain Name Server (DNS) address in the DNS Search Order, or in the Primary or Secondary WINS Server in the Microsoft Windows TCP/IP dialog, causes an `Error registering <server name>` error when you start Backburner Manager or Server. The following procedure describes how to resolve invalid IP addresses for the Domain Name Server.

To resolve invalid DNS addresses:

1. Display the Microsoft TCP/IP dialog.

   In Windows XP, from the Start menu, choose Settings, then Network Connections. Next, right-click Local Area Connection, and then click Properties. In the list, select Internet Protocol (TCP/IP) and click Properties. In the dialog that appears, click Use the following DNS server addresses, click Advanced and then check the DNS and WINS tabs.

2. Check the IP addresses listed for DNS and WINS servers for invalid IP addresses. If there are invalid IP Addresses listed in either the DNS or WINS Address panel, correct them and then reboot the workstation.

Resolving a Problem Connecting to the Backburner Manager

The Backburner Manager, on Linux or Windows systems, is the link between the Render Clients who submit jobs and the render nodes that process these jobs. If the Backburner Manager is not available, jobs cannot be submitted to or processed by Backburner. Not being able to connect to the Backburner Manager causes problems for both Render Clients and nodes, but Render Clients usually discover the problem. For example, if you submit a job while the Manager is down, an error appears in your application.

The most common reasons for not being able to connect to the Backburner Manager are:

- An incorrect IP address or an IP address that connects to the wrong Backburner Manager
- A Backburner Manager that is not running or is hung
- Communication problems between the Backburner Manager and the render nodes

To resolve a problem connecting to the Backburner Manager:

1. Ensure you are connecting to the correct Backburner Manager, using its correct IP address, as follows.

   Connect the application directly to the Backburner Manager workstation by trying the following:

   - If you use the Auto-Connect functionality, disable the Use First Available option and/or remove the subnet mask for the Backburner network. You are prompted to enter the name or IP address of the Backburner Manager workstation when you try to submit a job to the Backburner.
   - Disable any settings or preferences that automatically connect to the Backburner Manager.

   If the application cannot connect to the Backburner Manager, continue to the next step.

2. Verify that the Backburner Manager is running.

   If it is not running or appears to be inactive on the workstation, restart the Manager for the network. Refer to the *Autodesk Backburner Installation Guide* for help starting Backburner Manager.

   NOTE If you are running Backburner Manager as a Windows Service, display the Services control panel, and verify that the Manager service is running. If the service is not running, highlight it and click Start.

   If restarting the Manager does not fix the problem, continue to the next step.

3 If a render node has more than one network interface, these problem may be that the Backburner Server running on that node is identifying itself to the Backburner Manager using the wrong IP address. Do one of the following on the node to specify the IP address the Backburner Server uses to identify itself to the Backburner Manager:

- (Windows render node) Stop the Backburner Server on the node, and the Backburner Manager. On the render node, from the Start menu, choose Programs, Autodesk, Backburner, then server to open the Backburner Server General Properties dialog and in the Server Name or IP Address field, enter the name or IP address you want to associate with the Backburner Server. Restart the Backburner Manager and the Backburner Server.

- (Windows or Linux render node) Stop the Backburner Server on the node, and the Backburner Manager. Load the */usr/discreet/backburner/Network/backburner.xml* file in an XML editor or text editor and edit the `<SystemConfiguration>/<AppDetails>/<ServerSettings>/<ServerName>` values to reflect the host name or IP address you want to associate with the Backburner Server. Save and close the file, then restart the Backburner Manager and the Backburner Server.

4 Ensure the render nodes can *ping* the Backburner Manager. For help with the *ping* command, see Verifying Communication Between Two Hosts on page 75.

If the render nodes can successfully *ping* the Backburner Manager, continue to the next step.

5 If a firewall is running on Backburner components, review the firewall settings for each network component to ensure the following:

- The Backburner application(s) are allowed to access the network.

- The ports used by the Backburner Manager and the Backburner Monitor to communicate are not blocked by the firewall. By default, these ports are 3233 and 3234.

6 Configure the log files to report detailed information about TCP/IP packets, as follows.

Enable the Log Debug and Log Debug Extended options in the preferences for the Manager and all render nodes running Backburner Server, and then restart the Backburner Manager and Backburner Server workstations.

Examine the TCP/IP information in the log files to determine why the Backburner Manager workstation and render nodes are not communicating.

7 Examine the *backburner.xml* file to ensure that the subnet mask defined for the Backburner Manager is correct and matches the subnet mask defined for the render node's TCP/IP settings. See Editing the Backburner.xml File on page 78.

Adding the Backburner Path to the Windows Path Environment Variable

Environment variables are file paths that help Microsoft Windows find and launch applications such as Backburner Server. If the path to Backburner is missing or incorrectly defined, Windows is not able to launch Backburner Server or the application associated with the job. When this happens, the following errors may appear in the following applications:

- `Unknown error loading application` in the Backburner Manager and the Backburner Monitor.

- `Cannot Network Render. Backburner not found or not installed.` in the application that submitted the job to the Backburner network.

Do the following procedure to add Backburner to the *Path* environment variable in Windows.

To add the Backburner path to the Windows path environment variable:

1. In Windows XP, from the Start menu, choose Settings, Control Panel, then System.

   The System Properties dialog appears.

2. Show the Advanced tab, and then click Environment Variables to display the environment variables.

   The Environment Variables dialog appears, showing user and system environment variables defined for the Windows workstation.

3. From the System Variables list, choose Path and then click Edit.

   The contents of the *Path* environment variable appear.

4. Check the *Path* environment variable for the file path to Backburner: *C:\Program Files\Autodesk\Backburner* (default). If this path is missing or is incorrectly specified, re-enter it.

5. Click OK to return to the Environment Variables dialog, then close all dialogs and restart the Windows workstation.

Resolving Network Card Priority

If you have multiple network cards in your Linux or Windows render node, by default, Backburner Server uses the IP address of the first network card that it finds to identify itself to the Backburner Manager. This may lead to problems if this is the wrong card. You can force Backburner Server to use a specific network card. The following procedure describes how.

To resolve network card priority:

➤ Do one of the following:

- (Windows render node) Stop the Backburner Server on the node, and the Backburner Manager. Then on the render node, from the Start menu, choose Programs, Autodesk, Backburner, then server to open the Backburner Server General Properties dialog and in the Server Name or IP Address field, enter the name or IP address you want to associate with the Backburner Server. Restart the Backburner Manager and the Backburner Server.

- (Windows or Linux render node) Stop the Backburner Server on the node, and the Backburner Manager. Load the */usr/discreet/backburner/Network/backburner.xml* file in an XML editor or text editor and edit the `<SystemConfiguration>/<AppDetails>/<ServerSettings>/<ServerName>` to reflect the host name or IP address you want to associate with the Backburner Server. Save and exit the file, then restart the Backburner Manager and the Backburner Server.

Resolving an Unavailable Render Node Problem

The most common reasons, in a Linux or Windows system, that a render node appears unavailable are that the workstation is offline, the Backburner Server is not running or is hung, the Server is not using the correct IP address for the Manager, or the Manager cannot communicate with the Server.

To resolve an unavailable render node problem:

1. Verify that the render node workstation is online.

   If you are not at the render node, use the *ping* command to see this workstation is online. For help with the *ping* command, see Verifying Communication Between Two Hosts on page 75.

   If the workstation is not online, restart the render node, and then see if it appears in the Backburner network.

If this does not resolve the problem, continue to the next step.

2 Check if the render node is scheduled to be offline using the Windows-based Backburner Monitor. See Setting Render Node Availability on page 38.

If the render node is scheduled to be offline and it should be online at this time, change the schedule for the render node.

If this does not resolve the problem, continue to the next step.

3 Verify the Backburner Server is running.

If it is not running or is hung, start the Server. Refer to the *Autodesk Backburner Installation Guide* for help starting Backburner Server.

NOTE If you are running Backburner Server as a Windows Service, display the Services control panel, and verify that the Server service is running. If the service is not running, highlight it and click Start.

If this does not fix the problem, continue to the next step.

4 For Windows systems only, verify that the render node can communicate with the correct Manager.

Connect the render node directly to the Backburner Manager workstation by doing the following:

- Disable any Backburner Server settings or preferences that automatically connect to the Backburner Manager. In the Backburner Server General Properties dialog, disable Automatic Search and manually enter the name or IP address of the Backburner Manager.
- If the render node has more than one network card, in the Backburner Server General Properties dialog, manually enter the name or IP address you want to assign to the Backburner Server in the Server Name or IP Address field.
- Verify that the *HOSTS* file located in the *winnt\system32\drivers\etc* directory includes the IP address and corresponding machine name for each render node and the Backburner Manager workstation on the network. This file maps machine names to IP addresses.

If restarting the Server after this step does not fix the problem, continue to the next step.

5 If a firewall is running on Backburner network components, review the firewall settings for each network component to ensure the following:

- The Backburner application(s) are allowed to access the network.
- The ports used by the Backburner Manager and the Backburner Monitor to communicate are not blocked by the firewall. By default, these ports are 3233 and 3234.

6 Verify that the Manager can *ping* the render node. See Verifying Communication Between Two Hosts on page 75.

If the Manager can successfully *ping* the render node, continue to the next step.

7 Configure the log files to report detailed information about TCP/IP packets, as follows.

Enable the Log Debug and Log Debug Extended options in the preferences for the Backburner Manager and the Backburner Server workstations, and then restart the Backburner Manager and Backburner Server applications.

Examine the TCP/IP information in the log files to determine why the render node and Backburner Manager are not communicating.

Restarting Suspended Render Nodes

If the Backburner Monitor or the Backburner Web Monitor indicates that a render node assigned to a job is suspended even if its job is being processed, do the following to determine why the render node is suspended and, if necessary, to restart it.

To determine the cause of, and restart, a suspended render node:

1. Before restarting the render node, make sure that the workstation is available to render jobs. Select the render node in the Server List to view its details. Check in the Schedule section to see if the node is disabled for the current time period.

   Render nodes that are not set to be available for rendering may appear suspended even if their job is being processed.

2. If the render node is supposed to be available for rendering jobs, stop and restart the Backburner Server application on the render node.

Resolving a Render Node Failure

The following list shows possible causes to verify in the case of a render node failure. Most of these are logged in the *backburnerServer.log* file, if you have configured the log file to include fatal errors. Consulting this log file may help you determine the reason for the render node failure.

- Verify the paths to the footage and to the output folder are valid from the render node. A render node may fail if it cannot access the footage for a job, or cannot save its output in the output folder. Where possible, use UNC (*machine**folder*) paths for footage, such as bitmaps used for textures in 3D models. You can also ensure that paths to footage and projects are identical by maintaining the same directory structure on all Render Clients and render nodes in the Backburner network.
- Verify that any plug-ins, fonts, and codecs necessary for rendering jobs are installed on the render node.
- Ensure there is sufficient disk space to accommodate output (on the drive to which the render node saves its output), as well to hold input data associated with jobs (on the local drive of the render node).

Adjusting the Maximum Number of Render Nodes Per Job

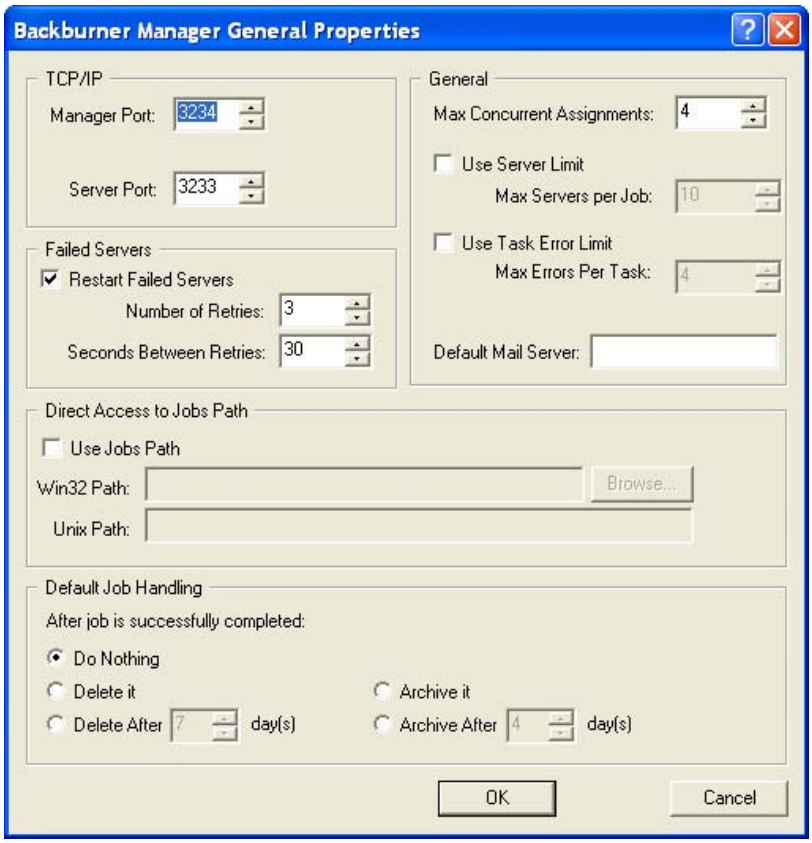
When the maximum number of render nodes per job is reached, no additional render nodes can be assigned to a job, even if render nodes are available. You can remedy this problem by adjusting the settings for the Maximum Concurrent Assignments and Maximum Servers per Job in Backburner Manager. You can do this by editing the *backburner.xml* file. Additionally, on Windows systems you can use the Backburner Manager General Properties dialog.

NOTE Changing these settings is not recommended. Increase these values only if you are sure that there is sufficient slack in your Backburner network.

To adjust the number of render nodes per job on Windows systems:

1. In Backburner Manager, from the Edit menu, choose General Settings.

   The Backburner Manager General Properties dialog appears.



NOTE Changing these settings is not recommended. Increase these values only if you are sure that there is sufficient slack in your Backburner network.

2 In the General group, adjust the value for Max Concurrent Assignments.

3 Optionally, in the General group, select Use Server Limit and adjust the value for Max Servers per Job.

NOTE The settings from the Backburner Manager General Properties dialog are also written to the *backburner.xml* file in the *Network* folder where you installed Backburner.

To adjust the number of render nodes by editing the *backburner.xml* file:

1 Stop Backburner Manager.

2 Locate the *backburner.xml* file:

- Linux: */usr/discreet/backburner/Network*
- In the *\backburner* subdirectory of the per-user application data directory. For example, *C:\Documents and Settings\<user>\Local SettingsApplication Data\backburner*, in Windows XP.

3 Edit the *backburner.xml* file using an XML or text editing application.

4 Under <ManagerSettings>, adjust the value for <MaxConcurrentAssignments>.

5 Optionally, set <UseServerLimit> to “Yes”, and adjust the value for <ServerLimit>.

NOTE Changing these settings is not recommended. Increase these values only if you are sure that there is sufficient slack in your Backburner network.

6 Save and exit the *backburner.xml* file.

7 Restart Backburner Manager. Refer to the *Autodesk Backburner Installation Guide* for help starting Backburner Manager.

NOTE Any changes made to the *backburner.xml* file take effect only when the Backburner Manager is restarted.

The new render node settings take effect.

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