Toon Boom Harmony 11.1
Control Center and Server Guide

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Contents

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Chapter 1: Introduction

What is Harmony?

Harmony is a revolutionary team-based infrastructure for animation production. Its array of cutting-edge features increases productivity and encourages creativity. Developed in conjunction with leading studios worldwide, Harmony is specifically designed for long-term episodic and feature length projects, providing a true animation pipeline. Several animators can work simultaneously on the same scene while the asset library provides users with easy access to up-to-date media assets.

Harmony is truly scalable; more than 100 staging clients can share animation just as easily as a few can. Whether you are a start-up studio or a large established animation facility, Harmony serves as the animation backbone ensuring sustainability and growth.

Harmony is a powerful solution that brings together multiple teams working on the same project, whether in-house or remotely. The Harmony solution offers a robust asset management system that enables users to quickly locate assets, share tasks on complex scenes and centralize all assets in a common repository. Tremendous gains in efficiency and quality are made by the teams, who enjoy a smooth flow between each task, and more time dedicated to their creative assignments.

What is Toon Boom Harmony Server?

At the heart of the Harmony solution is the server, which centralizes all the production assets in a repository. Loaded with production proven tools to manage administration tasks, the server is completely flexible and will fit in your existing infrastructure, whether you are on Windows, Linux or Mac.

In addition, the server is critical at the end of a production for rendering projects efficiently. The Render module, controlled directly by the server, not only renders production scenes but also executes the batch vectorization of the scanned drawings. You can connect an unlimited number of Render nodes and change priority depending on the deadline! You can also render final frames locally or batch process over a network in the background or at scheduled times.

What is Toon Boom Cloud?

When you're running a studio, you will most likely have a database setup. This enables all the artists working on your production to share the same scenes and assets.

What the Toon Boom Cloud enables you to do is to host this database on the Internet. Then, you can have freelancers log in from anywhere with an Internet connection. They can download a scene from the database, work on it, and upload it again. No more need to spend time copying files to an FTP. No need to have an admininstrator exporting and importing files from the database. You can do it all directly through the Cloud.

What's in this Guide?

The Toon Boom Harmony Control Center and Server Guide was created to help you set up and manage your Toon Boom Harmony Server and rendering queue.

This book is divided as follows:

- Control Center Module on page 11
- Harmony Cloud Module on page 61
- Batch Processing on page 109

Chapter 2: Control Center Module

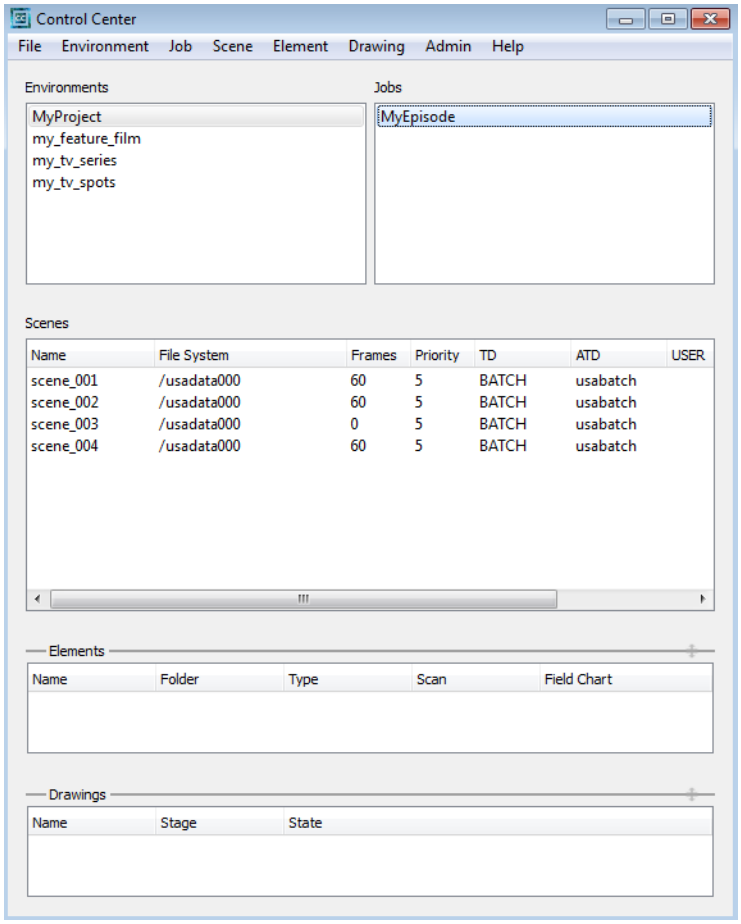
Using the Harmony solution and the Toon Boom Harmony Server has the advantage that it centralizes your entire production on your server and organizes it into structured database. The key piece of Toon Boom Harmony Server is the Control Center module. From the Control Center, you can manage your production database, users, visualize your rendering queue and more.

This chapter explains the general administrative tasks which must be performed to successfully run the Harmony solution.

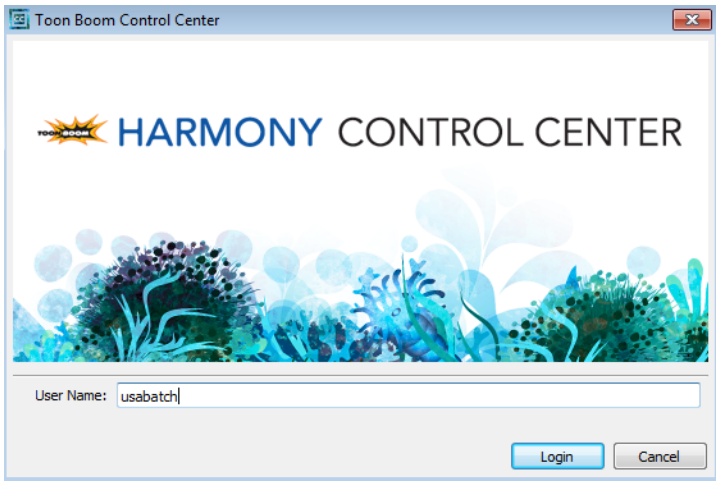
This chapter is divided as follows:

Starting the Control Center

To manage a production, you will need the Control Center module. Control Center is used to create new environments, jobs, scenes and users, as well as to import and export scene packages. Control Center directly manages your server database.



You can start the Control Center from the server or any client machine.



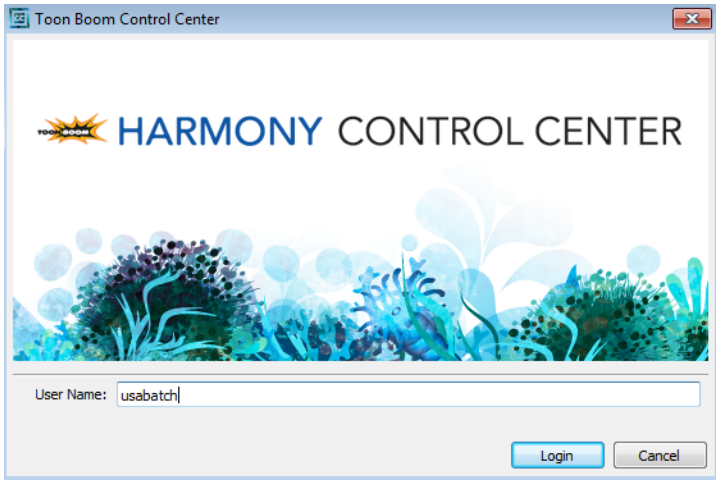
Before accessing the main Control Center interface, the Database Login dialog box opens, requesting a user name. By default, there is a user name created called **usabatch**. Type this user name to log in the first time. Once logged into Harmony, you can create your own set of users.

Do not delete the **usabatch** user name as it is used by Toon Boom Harmony Server for batch processing.

How to open the Control Center

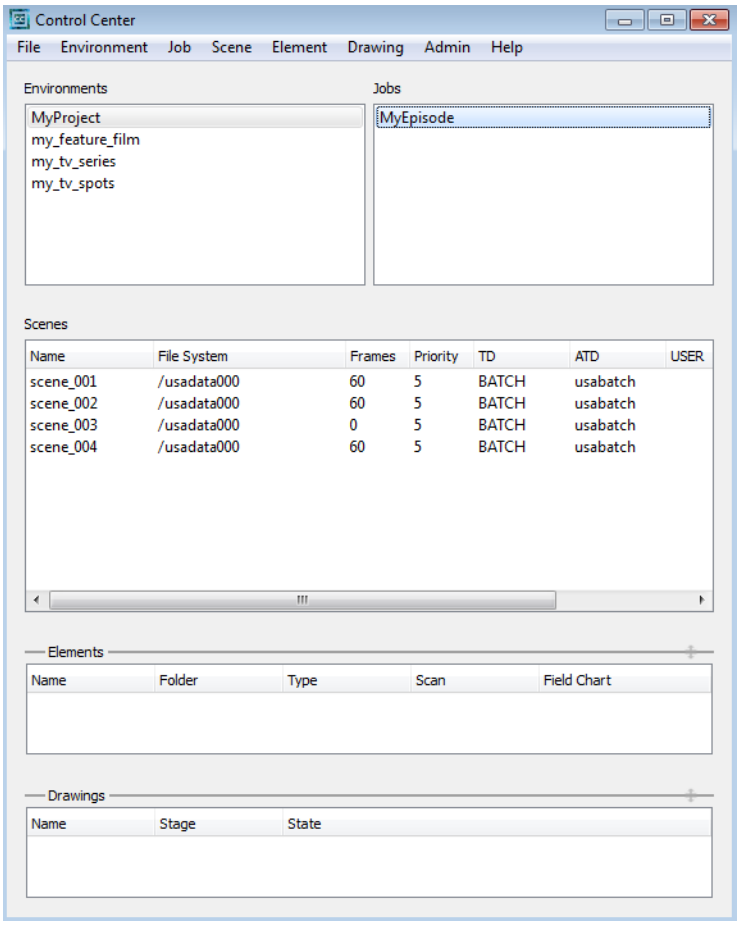
1. Do one of the following:
   - Windows: Select **Start > All Programs > Toon Boom Harmony 11.1 > Control Center**.
   - Mac OS X: Select **Finder > Applications > Toon BoomHarmony 11.1 > Control Center**.
   - Linux: **/usr/local/ToonBoomAnimation/harmony_11.1/ln86/bin/Controlcenter**
     You can also type **Controlcenter** in a command shell window.
     You can also select **Applications >Toon Boom-Harmony_11.1 > Control Center**.

   The Database Login dialog box opens.

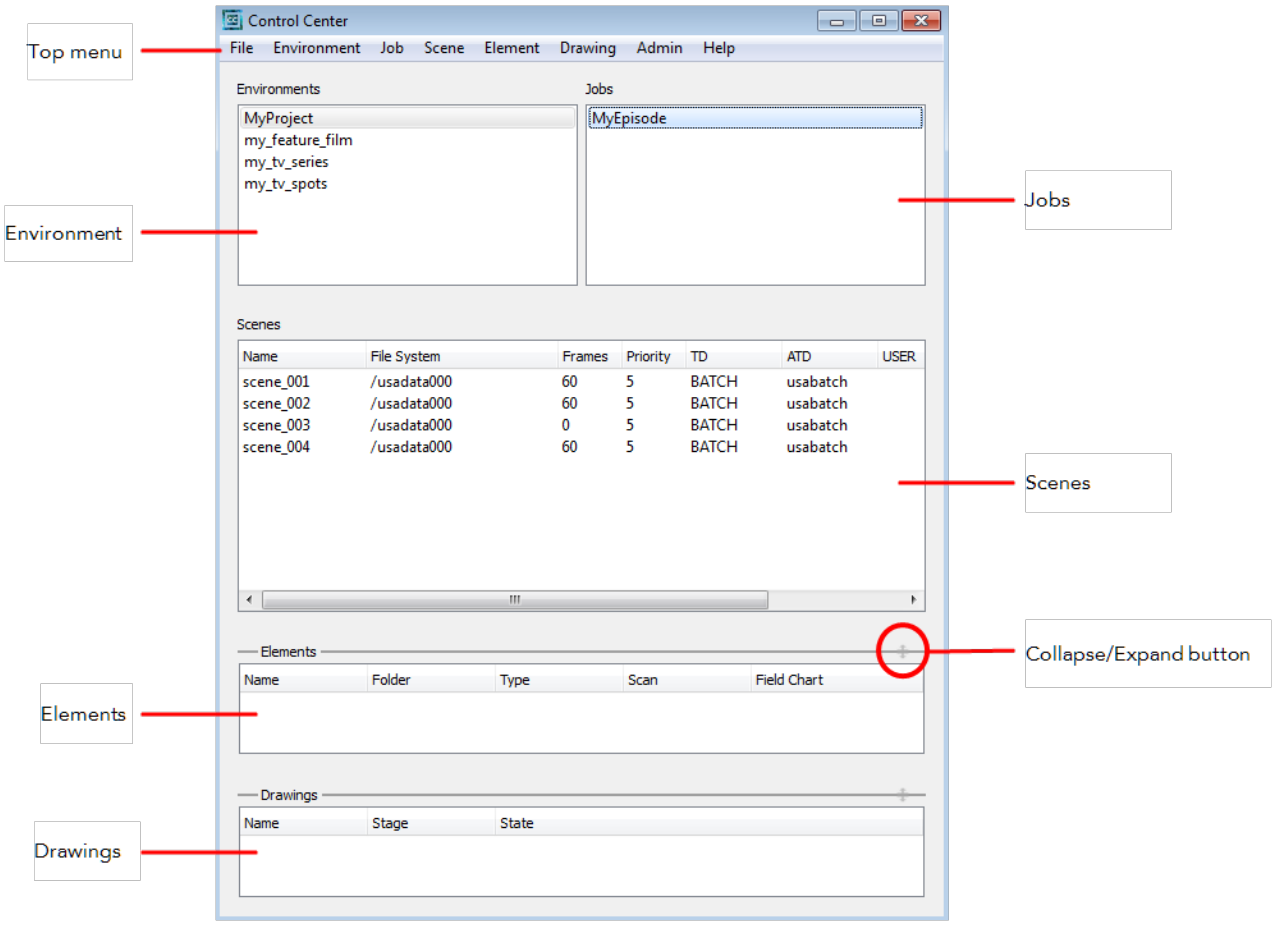


2. In the User Name field, type **usabatch**. This is the default Harmony user.

   The Control Center application opens.


Control Center
File Environment Job Scene Element Drawing Admin Help
Environments
MyProject
my_feature_film
my_tv_series
my_tv_spots
Jobs
MyEpisode
Scenes
Name File System Frames Priority TD ATD USER
scene_001 /usadata000 60 5 BATCH usabatch
scene_002 /usadata000 60 5 BATCH usabatch
scene_003 /usadata000 0 5 BATCH usabatch
scene_004 /usadata000 60 5 BATCH usabatch
Elements
Name Folder Type Scan Field Chart
Drawings
Name Stage State

Control Center User Interface

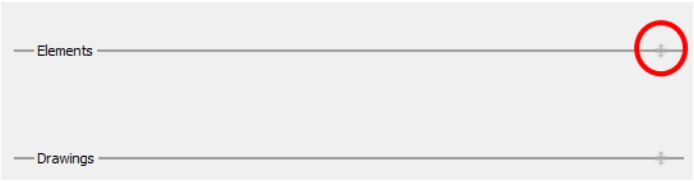


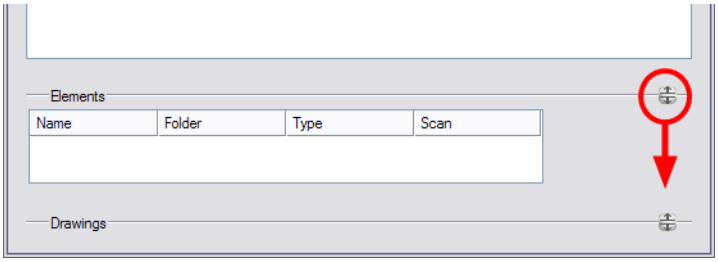
The Control Center interface is divided into six areas:

Parameter	Description
Top menu	Contains all the commands available in Control Center. You can also find the commands in the contextual menus available in each area by right-clicking.
Environments	The Environments area shows one of your projects, such as a feature film, a TV series or a group of TV spots.
Jobs	The Jobs area shows the sequences or episodes in your project (Environment). You can only see your jobs once you select a project from the Environments list.
Scenes	The Scenes area shows the scenes in your episode or sequence (Job). You can only see your scenes once you select a job from the Jobs list.
Elements	The Elements area shows the layers or columns in your scene. You can only see your elements once you select a scene from the Scenes list.
Drawings	The Drawings area shows the drawings in your layer or column (Element). You can only see your drawings once you select an

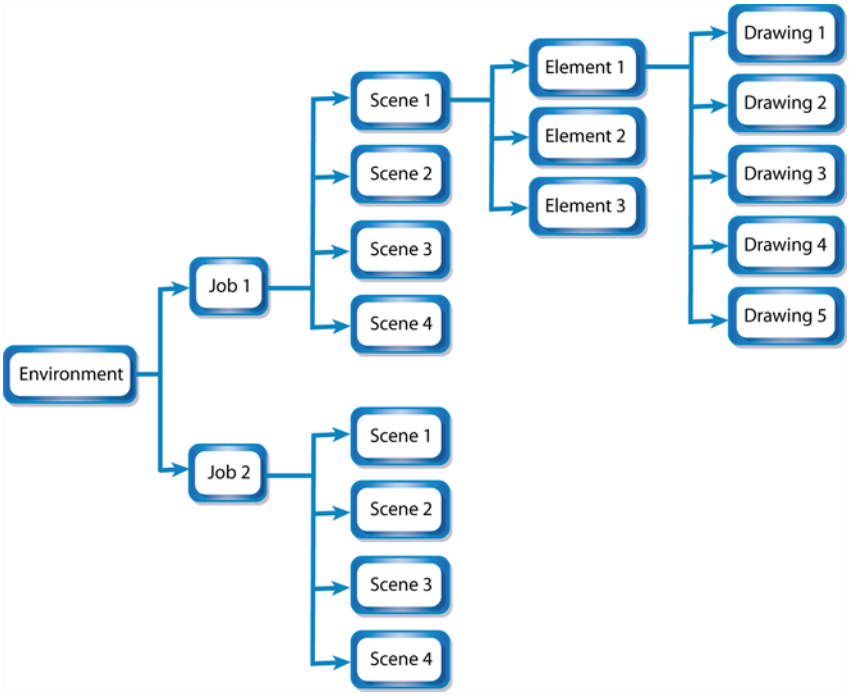
	element from the Elements list.

You can collapse and expand the Elements and Drawings sections of the user interface. As the elements and drawings are not created in Control Center, these sections are used less often. To simplify the interface, you can click on the Collapse/Expand button to show or hide the Elements and Drawings sections.





Here is a typical example of the database structure:



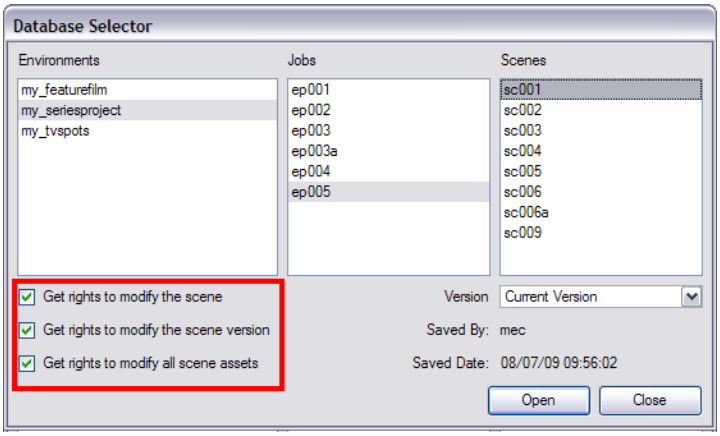
Centralized Data and Global Locking

When working with the Harmony solution and Toon Boom Harmony Server, all scenes and their data are stored directly on the server; no data is saved or stored on the client machine. The client machines access the database and load the scenes and drawings directly from the server. Each time the user saves a scene, the data is updated directly on the server. There are no upload or download operations done between the server and the clients.

Harmony has a lock system, referred to as *global lock*, for the different scenes and scene assets. As all the data on the server can be accessed directly and modified from any client machine, by default, the scenes are locked and the users need to get the rights to modify them in order to save their work onto the server. Only one user at a time can modify a scene. Once a scene is opened on a client machine, other users can only open the scene in read-only mode if they need to consult it, but they will not be able to save any modifications.

Global lock has three levels:

- **Get rights to modify the scene:** Allows the user to modify the selected version of the scene and have access to the version manager during the opened session.
- **Get rights to modify the scene version:** Allows the user to modify the currently selected scene version but locks access to the version manager during the opened session.
- **Get rights to modify the scene assets:** Automatically gets all the edit rights for the selected version of the scene. This option is only recommended if you are certain that the selected scene cannot be opened for editing by several users at the same time. Large studios should avoid this option.



There are several different ways to get the rights to modify the scenes. This can be done when:

- The user loads a scene.
- An environment is created.
- A job is created.
- A scene is created.
- User's preferences.

Managing Harmony Users

In an animation studio, there are usually several people using Harmony who will probably be assigned different tasks, such as ink and paint or compositing. Normally, you should create a different user for each one. This way, the person assigned to ink and paint will only have access to the Paint module and not to other functions that are not relevant to their work.

Anyone who uses Harmony must have a login name in order to run any of the modules. The Harmony login is independent from the computer session login.

By default, only the **usabatch** and **BATCH** users are created. However, you should not use them for your staff. These should be kept for the Toon Boom Harmony Server when performing background operations, such as batch processing.

The User List dialog box lists all the users and their details, including: user name, first and last names, and user type. The buttons at the bottom of the dialog box let you add, delete or modify the list of users.

These are the different modules and applications in which a user can log in:

- Control Center module
- Stage module
- Paint module
- Xsheet module
- Scan module
- Play module
- Draw module
- Sketch module

All Harmony users must have their name on the user list to log in to any application. The system uses the login to track activities; it is not a security lockout.

Each login also has a user "type" assigned to it which allows access to only some of the Harmony modules.

As your studio network grows and evolves, you may need to delete old or obsolete user profiles from your system. After you delete a user profile, the person who used that profile will no longer be able to access Harmony.

You cannot delete yourself from the user list. If you accidentally delete a name, you must follow the procedures for adding a user to get the name back into the system.

You can modify the user profiles at any time to update the user information.

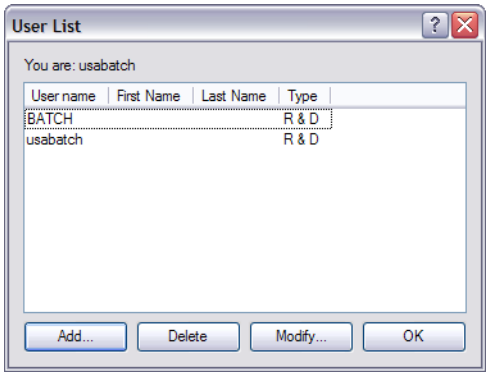
You can only change other user profiles. If you log in using your personalized login name, you will not be able to modify your own user profile.

To change your own user profile, login as **usabatch** (the default user).

How to view the user list

1. From the top menu, select **Admin > Users**.

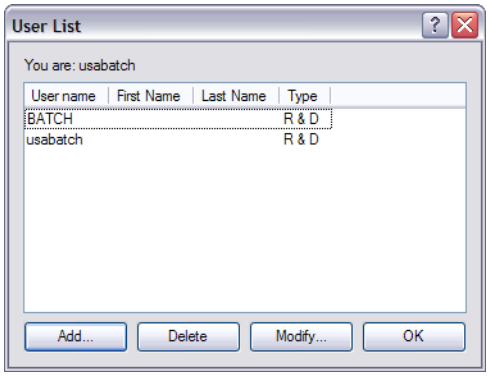
   The User List dialog box opens and displays your login name and a list of the other users in the system.



How to add a user to Harmony

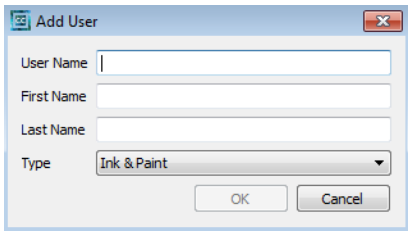
1. To view the list of Harmony users, select **Admin > Users**.

   The User List dialog box opens.



2. Click **Add**.

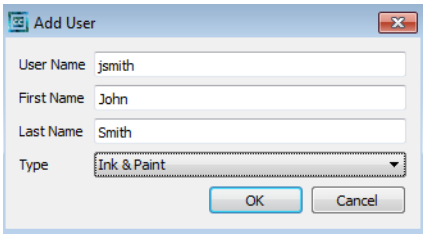
   The Add User dialog box opens.



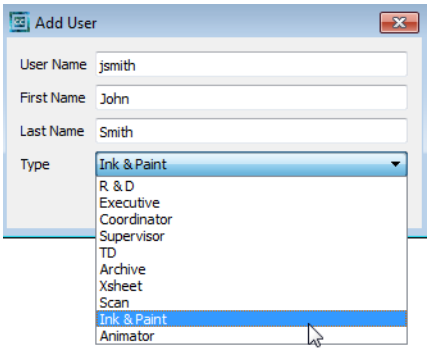
3. In the User Name field, type the person's user name.

Make sure the user name does not exceed the 12-character limit.

4. Type the person's first name and last name in the corresponding First Name and Last Name fields. You can enter a space if you want leave the field blank.

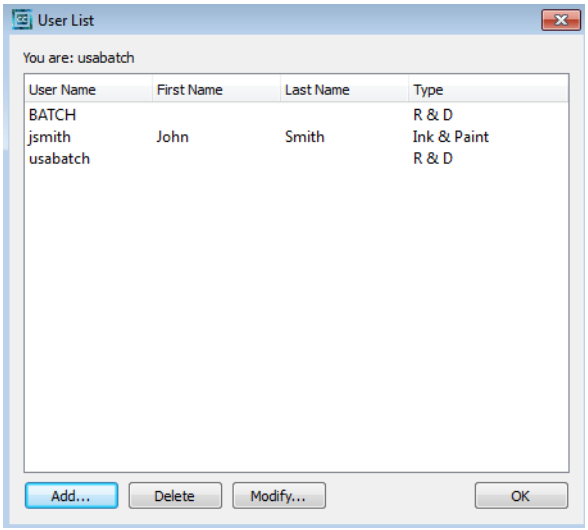


5. In the Type menu, select the user type. This defines the type of work the user typically performs. It will allow or block the person from accessing certain Harmony applications and perform operations in Control Center.



6. Click **OK.**

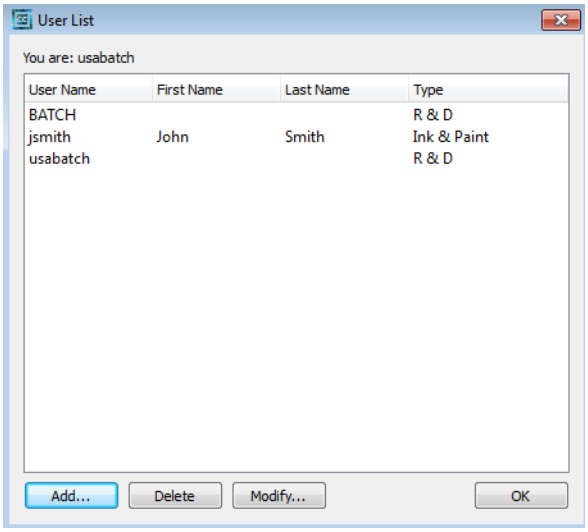
   The name appears in alphabetical order in the user list.



How to delete a user

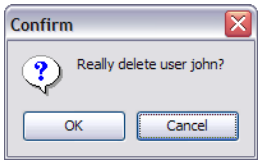
1. To view the list of users, select **Admin > Users**.

   The User List dialog box opens.



2. In the user list, select the name you want to delete.
3. Click **Delete**.

   The Confirm dialog box opens.

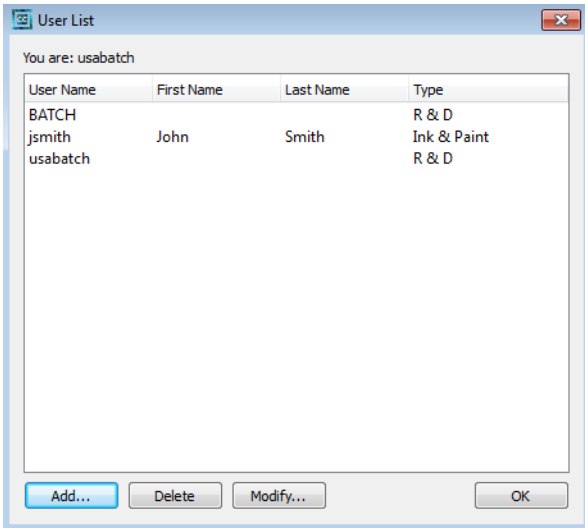


4. Confirm if you want to delete the user from Harmony.
   - Click **OK** to delete the selected user.
   - Click **Cancel** to abort the delete command.

How to modify user information

1. To view the list of users, select **Admin > Users**.

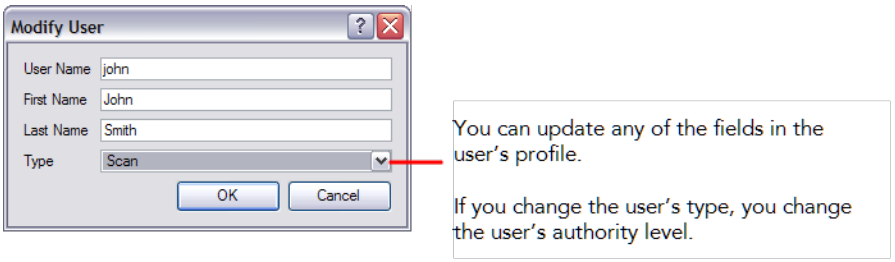
   The User List dialog box displays.



2. Select the profile to modify.

3. Click **Modify**.

   The Modify User dialog box appears.



4. Type or select the new information in any or all of the following:
   - **User Name**: The user's login name

> If you modify the user name, make sure that it does not exceed the 12-character limit.

   - **First Name**: The user's given name
   - **Last Name**: The user's family name
   - **Type**: The type of access the user has in the system
5. Click **OK**.

User Types and Restrictions

Here are the different user types available and their restrictions:

Feature	RND / Coordinator / Supervisor / TD / Executive	Animator	Xsheet / Archive	Scan	Ink & Paint
Create Environment	●				
Change Asset Lock on Environment	●				
Delete Environment	●				
View Vectorize Queue	●	●	●	●	●
View Render Queue	●	●	●	●	●
Create Job	●	●			
Change Job Priority	●	●	●	●	●
Change Job Stage	●				

Delete Job	●				
Create Scene	●	●		●	●
Delete Scene	●				
Unlock scenes locked by another user	●				
Unlock scene version locked by another user	●				
Unlock scenes locked by me	●	●	●		
Unlock scene version locked by me	●	●	●		
Move Scene	●				
Rename Scene	●				
Clear Scene	●				
Change Scene Priority	●	●	●	●	●
Change Scene Stage	●				
Reorder Scenes	●				
Copy Scenes	●	●			
Send to Vectorize	●	●	●	●	●
Send to Unvectorize	●	●	●	●	●
Send to Rendering	●	●	●	●	●
Add/Modify/Delete Users	●				
Change Approval Policy	●				
Change Vectorize Style	●	●	●	●	●
Change Lock When Opening Scene	●				
Database Lock Manager	●				
Export Scenes	●	●	●		
Import Scenes	●	●	●		

View Error Log	●	●	●	●	●
View Elements	●	●	●	●	●
View Drawings	●	●	●	●	●
Open in Stage	●	●	●		
Open in Paint	●	●	●	●	
Open in Scan	●	●	●	●	●

Creating a Default User for Batch Processing

If you intend to use the batch processing feature in Harmony or if you are installing the application on the server machine, you must create:

- An operating system user called **`usabatch`**
- A Harmony user name called **`usabatch`** through the **Control Center** module.

Harmony uses this user profile during batch rendering.

> It is important to verify that these users exist **before** starting a project and setting the batch processing.

- **Operating System Users**

  Windows: The **`usabatch`** operating system user profile was automatically created by the installation wizard.

  Mac OS X: The **`usabatch`** operating system user profile must be created manually or using the configuration assistant.

  Linux: You must manually create the **`usabatch`** operating system user.

  Regardless of the operating you are using, a **`usabatch`** user account must exist on your operating system. If you need to create this account, see your system administrator.

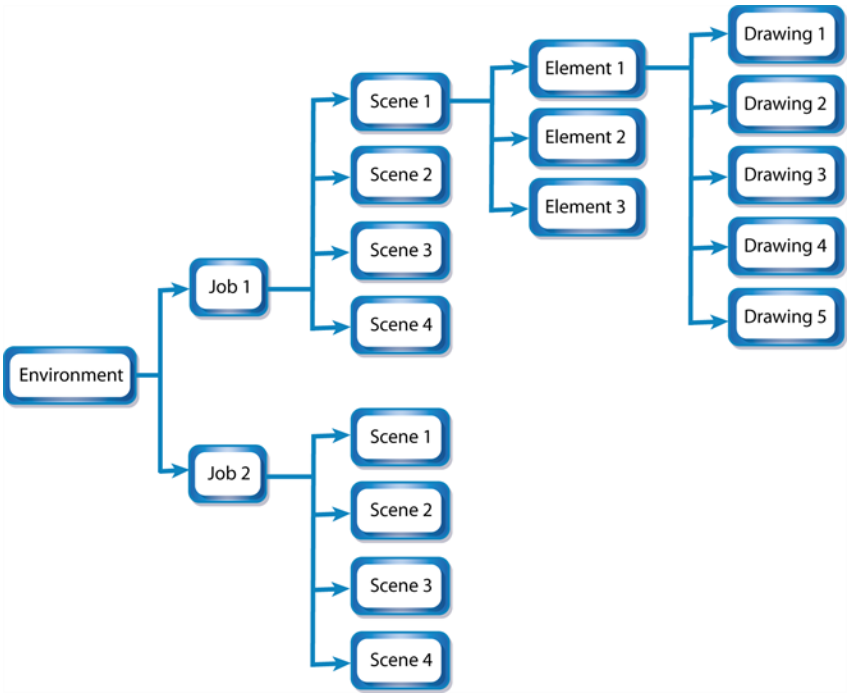
- **Harmony User Names**

  The **`usabatch`** Harmony user is created during the installation process on Windows, Mac OS X and Linux. There is no need to create it manually unless it was deleted. To manually create the **`usabatch`** Harmony user, refer to the Toon Boom Harmony Installation Guide.

Managing Environments, Jobs and Scenes

Every project you create with the Harmony solution starts with an environment; it is the highest level in the Control Center module. You can build a complete environment by adding jobs, scenes, elements and drawings.

The Control Center module divides your animation project into the following categories which organize the components of your animated projects:



- **Environment**: This is the name of your animation project.

  Example: **`adventure_movie`**

- **Jobs**: These are the major sections of an environment, such as sequences or episodes.

  Example: **`adv_seq_001, adv_seq_002`**

All jobs are stored in the same location in the Harmony database. Be sure to prefix all job names appropriately, so you can identify the project it belongs to. Each job must have a **different** name. You **cannot** give two jobs the same name.

- **Scene**: These are the different shots in a job.

  Scenes are contained in their respective job folder in the Harmony database. Prefix all scenes names appropriately, so you can identify which environment and job they belong to.

  Example: **`sc_001, sc_002`**

- **Elements**: These are the different layers and columns in your scenes.

  If you have not created an exposure sheet yet, the Frames column in the **Scenes** list displays 0 and no elements appear in the Elements or Drawings list.

  For example, scene **002** of **show_episode_6** could have the following elements:

  - A background called **bg**.
  - A character called **tony**.
  - A highlight effect called **hl**.

  You would then find these elements under job **002** and the **show_episode_6** scene. The Elements list would display the element names, types of elements in a scene, the type of scans, and the size of the field chart.

- **Drawings**: These are actual drawings of the elements (layers) in your scene.

  For example, the **tony** element in **002** of **show_episode_6** could consist of 35 drawings. To find these drawings, you would look under Drawings to see the keyframes, state, and stage of each drawing.

As your projects come and go, you will probably want to start cleaning up your database, as well as your server's hard disk, by removing old and obsolete environments and their associated animation data.

After you delete a scene, job, or environment, the associated data is **permanently removed** from your storage disks. Make sure you really want to erase these items before you delete them as there is no way to retrieve the data after it has been erased.

You might want to export old environments and archive them somewhere else before you delete them from your system.

If you are working in a mixed Windows/Mac OS X/Linux environment or share files with other studios that do, you should use lowercase letters to name the various items in your animation projects and not include any spaces in component name. For example, write **the_show** instead of **The Show**. This recommendation is due to the fact that Linux is case-sensitive while Windows is not.

Managing Environments

Harmony uses environments to manage and organize related projects. Using environments allows you to organize your production projects by their nature or type.

If your projects center around episodic and commercial types of work, you can create two environments. For example, there can be one called **commercials** and the other called **the_show**. Then you can insert the jobs that relate to each type of project. When you want to work on a commercial project, open the **commercials** environment and select the commercial job you need. Similarly, if you want to work on an episodic project, open the environment called **the_show**.

Environment	Job	
commercials	dentist	sc_001 sc_002
	soda	sc_001
	cereal	sc_001
the_show	sho_001	sc_001 sc_002
	sho_002	sc_001
	dentist	sc_001 sc_002

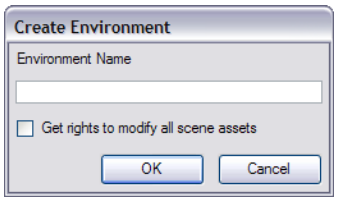
When you are ready to remove old environments, you can delete them from the database. However, in order to prevent accidental loss of data, you can only delete an empty environment (an environment that contains no jobs, images, or palette information).

How to create an environment

1. Do one of the following:
   - From the top menu, select **Environment > Create.**
   - Right-click in the Environments section and select **Create**.

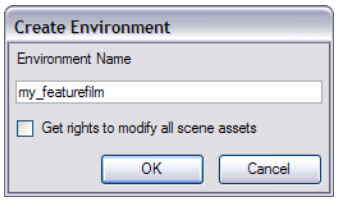
   In mixed platform Environments (Windows/Mac OS X and Windows/Linux) it is best to name everything in lowercase so data can be interpreted the same way on each operating system. The same is true if working between studios using Windows, Mac OS X, and Linux.

   The Create Environment dialog box appears.

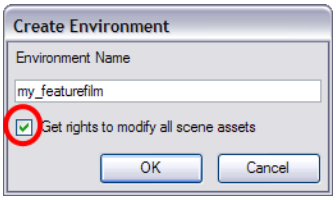


2. In the Environment Name field, type the new project's name.

The environment name is alphanumeric and can include underscores (_), but no spaces or other special characters. The environment name is case sensitive.



3. If you want the user to automatically get the rights to modify all the scene assets (drawing, scene setup, palette lists, etc.), select the **Get Rights to Modify All Scene Assets** option.



4. Click **OK**.

   The new environment appears in alphabetical order in the Environments list.

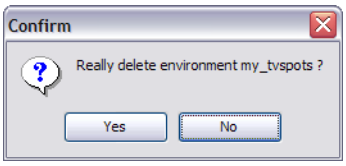
After you create an environment, you must add it to the Batch Processing queue so it can vectorize and render the drawings and scenes automatically. You only have to add the environment to the Batch Processing queue once.

How to delete an environment

1. In the environment section, select the environment to delete from the Environments list.
2. Do one of the following:
   - From the top menu, select **Environment > Delete.**
   - Right-click in the Environments section and select **Delete**.

> The Delete command is only available for an empty environment. You must delete the scenes and jobs before you can successfully delete the environment.

The Confirm dialog box appears.



3. Click **Yes** to delete the selected Environment.

   The environment no longer appears in the Environments list.

Setting the Resolution File

When you create a new environment or job, you can create a project resolution list that will appear in Harmony Stage. If you work with a particular resolution, you can insert it in your list so it`s available when doing the compositing in Harmony Stage.

You need to copy the **`resolution.conf`** file at the server, environment or job level. If you insert the file at the environment level, it is not necessary to add one at the job level. All jobs in the environment will use the resolution.conf file at the environment level. If you want all environments to use the same resolution.conf file, you can place the copy at the server level in the USA_DB folder.

Starting with Harmony Network 11.1, the resolution list is stored in an XML file. The resolution.conf file is still used and it is still the file that you will copy from the **samples** folder. If you modify the resolution list in the Scene Settings dialog box, Harmony will convert the file to an XML file.

The **resolution.conf** file can be found in:

- Windows: **Program Files > Toon Boom Animation > Harmony 11.1 > resources > samples**
- Mac OS X: **Applications > Toon Boom Harmony 11.1 > tba > resources > samples**
- Linux: **/usr/local/ToonBoomAnimation/harmony_11.1/resources/samples**

Insert the **Resolution.conf** file in the following directory:

Resolutions common to all jobs in the environment.	**/USA_DB/environments/environment_name/resolution.conf**
Resolutions common to all scenes in the job.	**/USA_DB/db_jobs/job_name/resolution.conf**
Resolutions common to all scenes and environments.	**/USA_DB/resolution/resolution.conf**

All scenes found under the environment or job have access to the resolutions stored in that file.

You can simply type new resolutions, modify or delete existing ones from the list. This file can also be sent to other studios with whom you may be working.

```
#
# resolution.conf
#
# This files defines the resolution available to the program.
#
# There is a copy of this file in /usa/etc for Harmony/Opus or in
# the <Application Folder>/etc for Solo/Storyboard
#
# You may copy this file in /USA_DB/jobs/your_jobs for job's specific resolutions
# or in /USA_DB/environments/your_environment for environment wide resolutions
# and modify it to add any resolution you need to use in many or all of your
# scenes.
#
#
# syntax:
#   resolution <name> <x> <y> [custom] [fps <fps>] [<fov>]
#
# The "custom" keyword means that this resolution was created by a user.
# The "fps" keyword can be followed by an integer to specify the number of
# frames per second.
# <fov> can be an angle in degrees, "V" to signify vertical fitting, or "H" to
# signify horizontal fitting.  If unspecified, horizonal fitting is used.
#


default NTSC
resolution HDTV      1920 1080 fps 24 H
resolution film-1.33 2048 1536 fps 24 H
resolution film-1.66 2048 1234 fps 24
resolution NTSC       720  540 fps 24 V
resolution PAL        768  576 fps 25 V
resolution low        360  270 fps 24 41.112
```

Below is the resolution.xml file created by Harmony.

```
<!DOCTYPE resolutions>
<!--This file defines the scene resolutions available to the program.-->
<!--The default version of this file can be found in "<Application Folder>/etc" -->
<!--You may copy this file to /USA_DB/jobs/your_job for job specific resolutions-->
<!--or /USA_DB/environments/your_environment for environment wide resolutions.-->
<!--You may add any resolution to this file that you frequently use in your scenes.-->
<!---->
<!--The syntax follows standard xml format, which each tag followed by its value.-->
<!--The "custom" keyword means that this resolution was created by a user.-->
<!--The "FPS" keyword specifies the number of frames per second.-->
<!--The "fovFit" specifies the field of view. It is either vertical, horizontal, or custom, with the latter expressed-->
<!--as an angle in degrees that specifies a custom field of view. If unspecified, horizontal fitting is used.-->
<!--The "projectionType" is either "perspective" or "orthographic". If unspecified, a perspective projection is used.-->
<resolutions>
 <default name="MyTest"/>
 <resolution FPS="24" fovFit="horizontal" projectionType="perspective" resX="1920" resY="1080" name="HDTV"/>
 <resolution FPS="24" fovFit="vertical" projectionType="perspective" resX="1920" resY="1080" name="HDTV_Vertical"/>
 <resolution FPS="24" fovFit="horizontal" projectionType="perspective" resX="2048" resY="1536" name="film-1.33"/>
 <resolution FPS="24" fovFit="horizontal" projectionType="perspective" resX="2048" resY="1234" name="film-1.66"/>
 <resolution FPS="24" fovFit="vertical" projectionType="perspective" resX="2048" resY="1234" name="film-1.66_Vertical"/>
 <resolution FPS="24" fovFit="vertical" projectionType="perspective" resX="720" resY="540" name="NTSC"/>
 <resolution FPS="25" fovFit="vertical" projectionType="perspective" resX="768" resY="576" name="PAL"/>
 <resolution FPS="24" fovFit="custom" customFov="41.112" projectionType="perspective" resX="360" resY="270" name="low"/>
 <resolution custom="true" FPS="24" fovFit="horizontal" projectionType="perspective" resX="1929" resY="1080" name="MyTest"/>
</resolutions>
```

Managing Jobs

Within each environment is a list of jobs. These jobs contain all the segments for your animated sequence. If you are creating a weekly television series called **`The Show`**, you could name your job **`show_ep_06`** (**`the_show`** would be the name of your environment).

If each episode was composed of 100 animated shots, each job would contain 100 scenes.

Each job must have a unique name. You cannot have two jobs with the same name, even if they appear in two different environments. On the server, all the jobs are contained in the same folder.

As you continue working on your animation project, you may want to update the status of the jobs in your environment. This status can display one of three things:

- The stage the job has reached
- When the job will be vectorized
- When the job will be rendered

As you complete your animation project, you can update a job's status to reflect where it is in the overall production process. You can classify jobs as being "In Production" or "Completed".

- **In Production**: The job is still a work in progress. The other modules can still access this job.
- **Completed**: The job is finished. The Harmony database still has all the job's components (scenes, elements, drawings), but the job neither appears nor is accessible from the Harmony applications.

  In most cases, you would mark a job as "Completed" after it has been finalized (inked, painted, rendered) and transferred to a medium such as tape or sent to post-production.

  You can change a job's status from "Completed" to "In Production" at any time to continue working on it.

If you want to remove a job and its data from the Harmony database and archive it, you can export the job from Control Center.

Before you send a job's scenes to be vectorized or rendered, you can change the job's priority level in the processing queue. Increasing a job's priority lets the system process it before other jobs in the processing queue.

Use the Choose New Priority dialog box to change a job's rendering and vectorization queue priority. The priority is set using a sliding scale where 0 is the highest priority and 10 is the lowest.

For example, if job B is before job A in the queue, you can change the priority, so job A is processed first.

Changing a job's priority does not affect vectorizing or rendering jobs that are already sent in the queue. It will only affect jobs that are sent after making the change. If you want to change a job's priority after it has been sent to the queue, use the Change Priority button in the Queue window.

You should only delete jobs that you no longer need or that have already been exported to an archive (using the Export command available in the Admin menu).

When you delete a job, the following components are permanently removed:

- Scenes
- Elements
- Drawings
- Database information associated with the selected job
- Palettes stored under the selected job

Before you delete a job:

- Make sure no one else is currently using the job. Failure to do this may result in file corruption and loss of your work.
- Wait until everyone is offline. This ensures no one can open the data files while you delete them.

You cannot archive a job by deleting the job. If you want to archive a job, you should export it to a new location where it can be stored permanently.

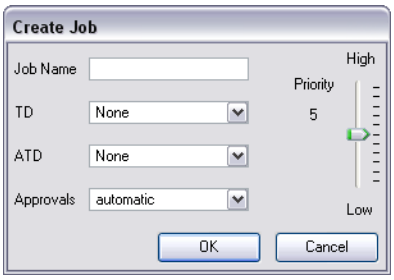
Changing the job's stage from In Production to Completed only hides the job in the Control Center window; all the associated files with the job are still on your system.

You cannot delete a job if it still contains scenes.

How to create a job

1. In the Environments section, select the project in which you want to create a job.
2. Do one of the following:
   - From the top menu, select **Job > Create**.
   - Right-click in the Jobs section and select **Create**.

   The Create Job dialog box appears.



3. In the Name field, type the name of the job you want to create.

> The job name is alphanumeric and can include underscores (_), but no spaces or other special characters. The job name is case-sensitive.

4. In the TD menu, select a technical director (TD). You must select a technical director to create the job.

   A TD is usually the person who oversees the animation project and makes sure the work is done properly. Select the person who most closely resembles this definition. If you do not have a particular user for the task, you can simply assign **`usabatch`**.

   When you create your Harmony users, you can label a user as a technical director (TD).

5. In the ATD menu, select an assistant technical director (ATD). You must select an assistant technical director to create the job. If you do not have an ATD, select the same person for the TD and ATD jobs.

   In some studios, the responsibilities of the technical director can be shared by more than one person. This second person is the ATD.

   The technical director and assistant technical director you select appear in the Scenes list for each scene of the job.

6. In the Approval menu, select how Harmony will mark the various stages the scenes will pass in your production schedule.

   - **Automatic**: When you work on your scenes, Harmony automatically approves their status at each stage
   - **Manual**: When you work on the scenes, the technical director or the assistant technical director must approve their status at each stage using the Change Stage command (available in the Scene menu).

7. Drag the Priority slider handle to increase or decrease the job's priority (0 means the job has the highest priority for processing through the Vectorize or Render queue and a job with a priority of 10 is the least important). Jobs with higher priorities will pass in front of other projects with lower priorities in the rendering and vectorizing queues even if there is already a queue processing.

   If you do not know what priority to assign to your project, you can leave it at 5. You can always change it later.

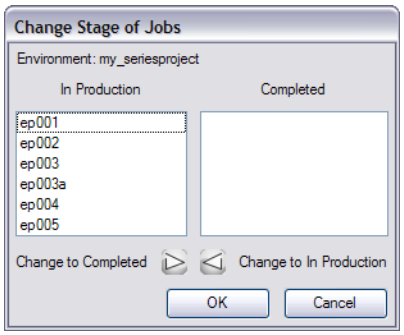
8. Click **OK**.

   The Control Center module adds your new job to the selected environment and it appears in alphabetical order in the Jobs list.

How to change the stage of a job and view the list of completed jobs

1. In the Environments section, select an environment.
2. Do one of the following:
   - From the top menu, select **Job > Change Stage**.
   - Right-click in the Jobs section and select **Change Stage**.

   The Change Stage of Jobs window appears.

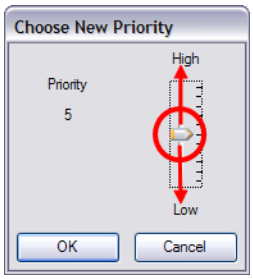


3. Select the jobs you want to change the stage.
   - If you want to change a job from **In Production** to **Completed**, select the jobs in the In Production list.
   - If you want to change a job from **Completed** to **In Production**, select the jobs in the Completed list.
4. Click one of the Change buttons to change the job's status.
   - Click the Change to Completed button to change a job that is in production.
   - Click the Change to In Production button to change a job that is completed.
5. Click **OK**.

How to change a job's priority

1. In the Environments section, select the environment containing the job you want to change the priority for.
2. In the Jobs section, select the job whose priority you want to change.
3. Do one of the following:
   - From the top menu, select **Job > Change Priority**.
   - Right-click in the Jobs section and select **Change Priority**.

   The Choose New Priority dialog box appears.



4. Drag the Priority slider handle to increase or decrease the job's priority (0 means the job has the highest priority for processing through the Vectorize or Render queue and a job with a priority of

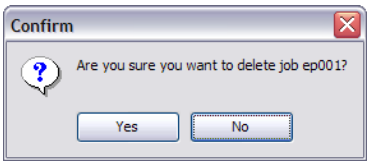
10 is the least important). Jobs with higher priorities will pass in front of other projects with lower priorities in the rendering and vectorizing queues even if there is already a queue processing.

5. Click **OK**. When you send this job to be vectorized or rendered, it will have this new priority in the processing queue.

How to delete a job

1. In the Environments section, select the environment containing the job you want to delete.
2. In the Jobs section, select the job you want to delete.
3. Do one of the following:
   - From the top menu, select **Job > Delete**.
   - Right-click in the Jobs section and select **Delete**.

   The Confirm dialog box appears.



4. Click **OK**.

Managing Scenes

After you create a scene, you can view the corresponding elements and drawings in the Control Center window. When you select the environment and the job, the corresponding scenes for the selected job appears in the Scenes list in the Control Center window.

For each scene in your job, you must create a unique exposure sheet to lay out the drawings, camera effects, audio tracks, and other special effects for that scene.

When creating your scene, you must select the path where you want to store the scene data and where you want the new scene to appear in the Scenes list. You can create a single scene or create multiple scenes all at once.

You do not have to enter the word "scene" when entering scene names. The system automatically adds **scene-** in front of the name. For example, when you type"3" in the Scene Name field, the scene name automatically displays as "scene-3" throughout the file system. The scene name will have "scene-" as a prefix, but that will only be visible when looking at the scene on the file system. The scene will appear without this prefix in all the Harmony applications.

When you delete a scene, you not only remove the scene from the Control Center window, but you also permanently remove all the information associated with the scene including:

- Exposure sheet (and all associated versions)
- Elements
- Drawings
- Database information
- Any palettes stored in that scene's palette library

Before you delete a scene:

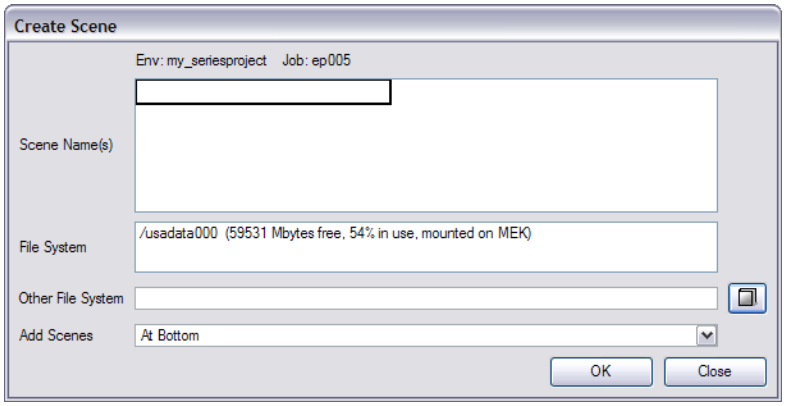
- Make sure that you really want to remove all this information from the system
- Are you going to use the scene in the future?
- Do you need to archive the scene for future use?
- Make sure no one else is currently using the scene.

  failure to do this may result in file corruption and loss of your work.
- Wait until everyone is offline. This ensures no one can open the scene while you delete it.

How to create a scene

1. In the Environments section, select the environment containing the job you want to add scenes in.
2. In the Jobs section, select the job you want to add scenes in.
3. Do one of the following:
   - In the Scene section, select **Scene> Create**.
   - Right-click in the Scenes section and select **Create**.

   The Create Scene dialog box appears.



4. Click in the Scene Name(s) field and enter the name for the first scene you want to create.
5. Press the Enter/Return keyboard shortcut to move onto the next scene.
6. Enter the name of the next scene you want to create.

When creating a new scene or renaming a scene, the scene's name cannot exceed 23 characters.

When creating scenes in the Control Center module, you should enter the scene names exactly as they appear on the actual animation. This ensures that the information in your environment is consistent with the actual animation.

The job and scene names are alphanumeric and can include underscores (_), but no spaces, or other special characters. The environment name is case-sensitive.

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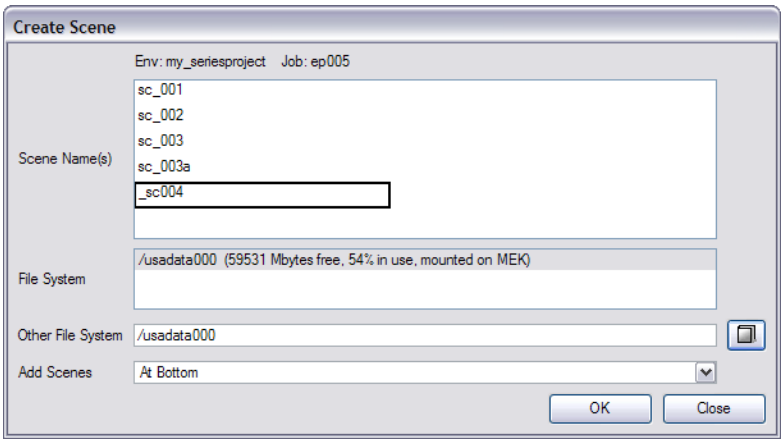
7. Repeat the previous steps until you have named all the scenes you want to create.



8. In the File System list, click the path where you want to store the files.

   If you do not see the desired path in the list, specify a different path in the Other File System field.

   If you are unsure which disk drive to select, consult your technical director or system administrator.

   The information in the File System list displays:

   - Available drives on which you can store new scenes
   - Space that is currently available (in megabytes)
   - The percentage of space the drives are currently using

Although you can add as many scenes as you wish, you can only select one path at a time. Therefore, the Control Center module stores all scenes you create in one session at the same place (same path).

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9. Select where you want to place the scene in the Scenes list from the Add Scenes menu. These are the options:

   - **At Bottom**: Places the new scenes at the bottom of the list
   - **At Top**: Places the new scenes at the top of the list
   - **Before Selected**: Places the new scenes before the selected scene
   - **After Selected**: Places the new scenes after the selected scene
   - **Name Sort**: Arranges the new scenes alphabetically.

To use the After Selected and Before Selected options, you must select another scene from the Scene list in the Control Center window.

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10. Click **OK**.

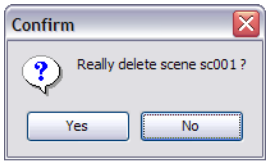
    The new scene is created and displayed in the Scenes list. If you do not want to create the scene, click **Cancel**.

How to delete a scene

1. In the Scenes list, select the scene name you want to delete.

2. Select **Scene > Delete** or right-click anywhere in the Scenes list and select **Delete**.

   The Confirm dialog box appears.



3. Click **Yes** to delete the scene and all its related information.

   The scene name and all its associated files are deleted.

Updating Scenes

Your scenes contain the animation sequences you are working with, which allows you to manipulate them and their associated files to achieve the desired effect.

You can:

- Move a scene
- Rename a scene
- Change a scene's priority
- Change a scene's stage
- Change the sequence of a scene
- Clear scenes from Control Center
- Copy an exposure sheet to another scene
- Send scenes to the render queue

When you create a scene, it and its associated files are stored on one drive. If you find you are running out of space, you can move a scene to another drive. However, you can consolidate all the scenes for a particular job in a single directory allowing you to find related information quickly. You may also want to file your scenes in specific directories, creating a customized directory system. The Move command lets you move scene data from one file system to another.

Before you move a scene's data:

- Make sure no one else is currently using the scene's data. Failure to do this may result in file corruption and loss of your work.
- Wait until everyone is offline. This ensures no one can open the data files while you move them.

As you work on your scenes, their nature and contents may change and the name you gave the scene when you began the project may no longer reflect its contents. In this case, you can rename the scene to more accurately reflect its contents.

Before you rename a scene:

- Make sure no one else is currently using the scene.

  Failure to do this may result in file corruption and loss of your work.

- Wait until everyone is offline. This ensures no one can open the scene while you rename it.

You can change the scene's priority level in the processing queue. Increasing a scene's priority lets the system process it before other scenes in the processing queue.

Use the Choose New Priority dialog box to change a scene's rendering and vectorization queue priority. The priority is set using a sliding scale where 0 is the highest priority and 10 is the lowest. If a scene has already been sent to the queue changing the priority at this point will not affect its priority in the queue. Changes will only be applied next time it is sent to the queue. To change a scene's priority after it's been sent to the queue, use the Change Priority button in the Queue window.

For example, If scene B comes before scene A in the queue, you can change the scene's priority so that scene A will be processed first.

The Change Stage command allows you to change the approval stage name of a selected scene that is in Manual approval mode. You can also create customized approval stages that reflect the approval process in your production environment.

A scene's stage is a method of tracking its progress in your production; the scene's current stage does not stop you from advancing the scene to other stages.

Changing a scene's stage and making manual approvals allows you to assign and change a scene's approval stages to keep track of its current status. For example, if you have a scene whose drawings are being scanned, you will mark it as the Scan stage. After you begin adding colour to these line drawings, you can change the scene's stage to Paint. If the selected scene has an automatic approval policy, the Change Stage command will be inactive in the Scene menu. To change a scene's stage, you must ensure that the approval policy is set to Manual.

You can change the sequence of scenes in your job, which affects the order in which the scenes appear in the job throughout the system. You can place a scene anywhere in the Scenes list or you can sort them alphanumerically.

If you must restart a scene from scratch, you can completely erase a scene's exposure sheet. When you clear a scene, you delete all exposure sheet database information and reset the scene as if it were completely new. You are only deleting the files from the database; the Control Center module does not actually delete any image files (drawings, scan, final frames). If you have questions concerning the contents of a scene, you should contact the technical director responsible for the scene in question.

If you must clear a scene from the Control Center module, make sure no one else is currently using the scene's data. If you clear a scene that someone else is working on at that moment, you run the risk of corrupting the files and losing work.

If you must clear a scene, you should wait until everyone is offline to ensure that no one can open the data files while you clear them from the Control Center module.

When you have two scenes with similar exposure sheet information, instead of entering the information twice, you can:

1. Enter the information for one exposure sheet.
2. Copy it to the other scene.
3. Modify the second exposure sheet as needed.

The Copy command lets you copy an existing exposure sheet from one scene into another scene. You can then modify the copied exposure sheet using Harmony Stage.

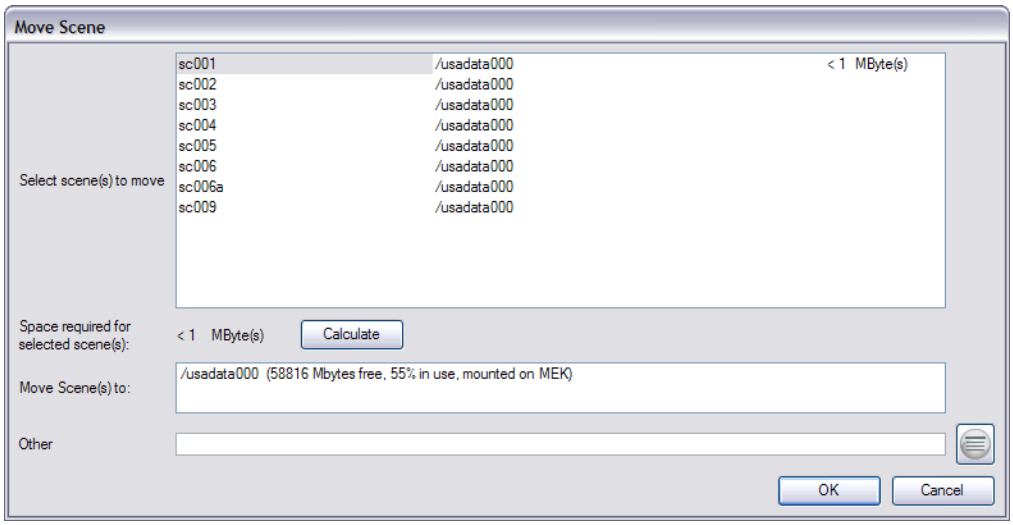
When you are ready to send a set of scenes for rendering, you can use the **Send to Rendering** command. This command allows you to send one or more scenes for rendering to the Batch Processing machine.

You can also use Harmony Stageto render scenes, but since you must open each scene individually in Harmony Stage, you can only send one scene to render at a time.

How to move a scene from one directory to another directory

1. In the Scenes section, select the scenes you want to move.
2. Do one of the following:
   - From the top menu, select **Scene > Move**.
   - Right-click anywhere in the Scenes list and select **Move**.

   The Move Scene dialog box appears.



3. In the Select Scene(s) to Move field, select the scenes you want to move from their current directory.
4. Click **Calculate** to know how much hard disk space your selection requires.
5. In the Move Scenes To list, select the directory where you want to move the scene. If it does not appear in the list, enter the directory path in the Other field.

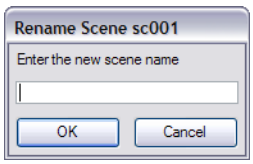
   The Control Center module automatically checks the amount of free space for each directory and compares it to the size of the scene you want to move.

   If there is not enough disk space on a particular drive/mount point to store the scene, the directory displays a not "enough space message". Choose another disk from the list.
6. Click **OK**.

How to rename a scene

1. In the Scenes section, select the scene to rename.
2. Do one of the following:
   - From the top menu, select **Scene > Rename.**
   - Right-click anywhere in the Scenes list and select **Rename**.

   The Rename Scene dialog box appears.



3. In the Enter New Scene Name field, type the new name for the scene and click **OK**. Try to keep scene names brief. It is recommended that you use no more than 23 characters.

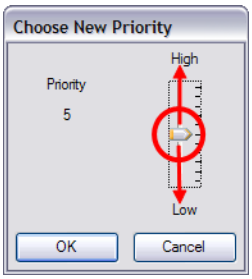
Use lower case letters if these scenes may be used with a Windows workstation.

When creating a new scene or renaming a scene, the scene's name cannot exceed 23 characters.

How to change a scene's priority

1. Select the environment, the job and the scene you want to prioritize.
2. Do one of the following:
   - From the top menu, select **Scene > Change Priority.**
   - Right-click anywhere in the Scenes list and select **Change Priority**.

   The Choose New Priority dialog box appears.



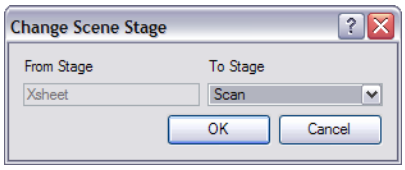
3. Drag the Priority slider handle to increase or decrease the job's priority (0 means the job has the highest priority for processing through the Vectorize or Render queue and a job with a priority of 10 is the least important). Jobs with higher priorities will pass in front of other projects with lower priorities in the rendering and vectorizing queues even if there is already a queue processing.
4. Click **OK**.

   The new scene priority appears in the Scenes list in the Priority column.

How to change a scene's stage status

1. In the Scenes section, select a scene.
2. Do one of the following:
   - From the top menu, select **Scene > Change Stage.**
   - Right-click anywhere in the Scenes list and select **Change Stage**.

   The Change Scene Stage dialog box appears.



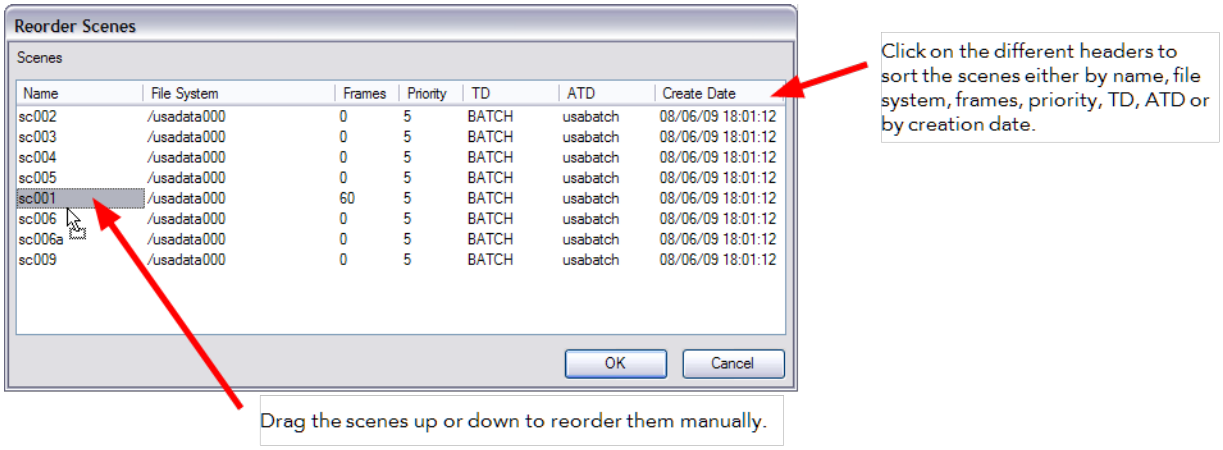
The current stage of the selected scene appears in the From Stage field.

3. Select the stage you want to apply to the current scene from the To Stage menu.
4. Click **OK**.

How to resequence a scene

1. Select the job whose scenes you want to re-sequence from the Jobs panel.
2. Do one of the following:
   - From the top menu, select **Scene > Reorder.**
   - Right-click anywhere in the Scenes list and select **Reorder**.

   The Reorder Scenes dialog box appears.

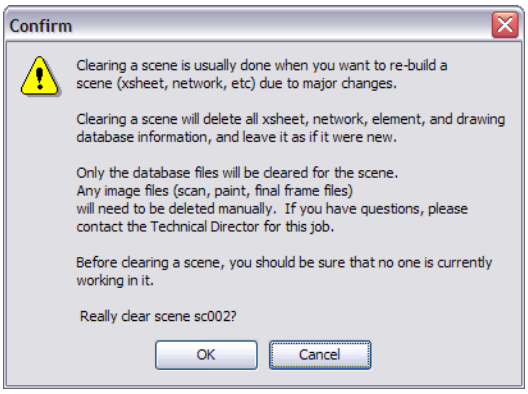


3. Select the reordering method by clicking on the column headers or dragging the scenes up or down.
4. Once the scenes are ordered, click **OK**.

How to clear a scene

1. Select the environment, job or scene you want to clear.
2. Do one of the following:
   - From the top menu, select **Scene > Clear.**
   - Right-click anywhere in the Scenes list and select **Clear**.

   The Confirm dialog box appears.



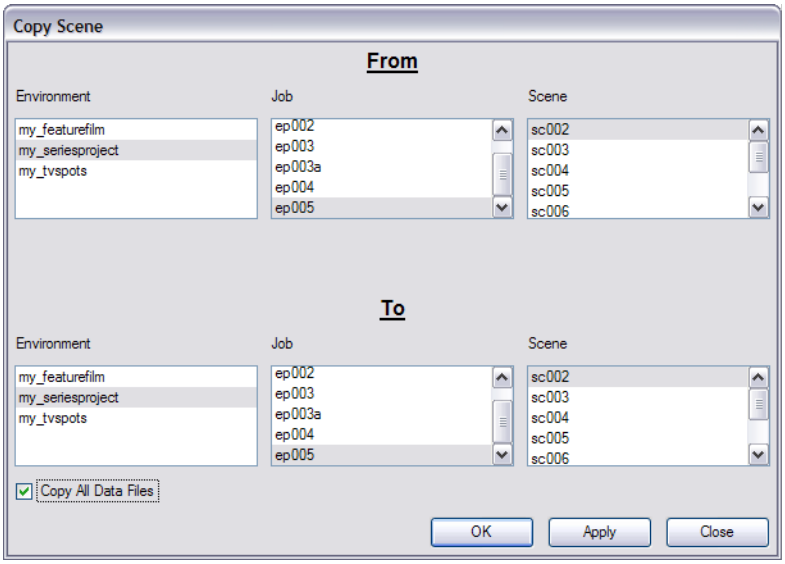
3. Click **OK**.

   The Scene list refreshes itself and displays blank elements and drawings lists, showing that the Control Center module has deleted the exposure sheet for the scene you cleared.

How to copy an exposure sheet to another scene

1. Select the environment and the job from the Control Center window.
2. Do one of the following:
   - From the top menu, select **Scene > Copy.**
   - Right-click anywhere in the Scenes list and select **Copy**.

   The Copy Scene dialog box appears.



The upper half displays the environments, jobs and scenes you can copy an exposure sheet from. The current scene is automatically highlighted, but you can select any environment, job or scene.

3. Select the environment, job, and scene to copy from the exposure sheet from the From panel.

   The lower half of the dialog box displays the environments, jobs, and scenes to which you can copy the exposure sheet.
4. Select the environment, job, and scene where you want to copy the selected exposure sheet to the To panel.
5. If you want to copy the associated animation data files with the scene's exposure sheet, select the **Copy All Data Files** option. Harmony will place a copy of the animation data in the target scene's storage directory.
6. Click **OK.**

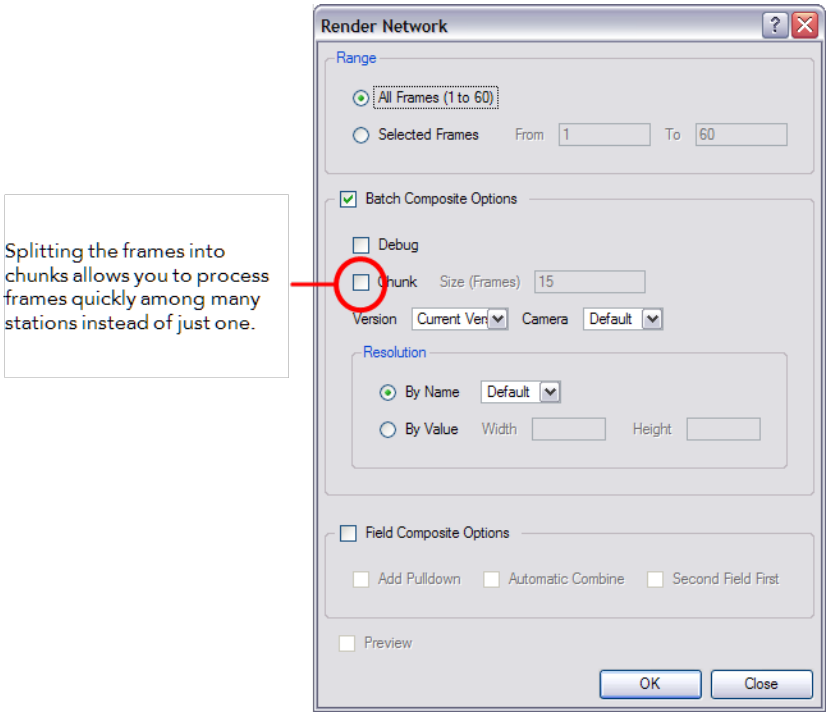
7. If the scene you are copying to already has an exposure sheet, a Confirm dialog box appears to make sure you want to replace the existing exposure sheet.
   - Click **Yes** if you want to copy over the existing exposure sheet.
   - Click **No** to cancel the copy or to select a different scene.

   The Copy Xsheet dialog box disappears. You can view and modify the copied exposure sheet using Harmony Stage.

How to send a group of scenes to the render queues

1. In the Control Center window, select the environment, job and scenes that you want to send to the Render queue for rendering.
2. Do one of the following:
   - From the top menu, select **Scene > Send to Rendering.**
   - Right-click anywhere in the Scenes list and select **Send to Rendering**.

   The Render Network dialog box appears.



3. Select the frames you want to render:
   - **All Frames**: Sends all the frames in the scene to be rendered.
   - **Selected Frames**: Sends a range of frames to be rendered. You can only send a range of frames if you selected one scene.
4. Select the **Chunk** option if you want to split the frames into sets of frames. Enter the number of frames you want in each chunk in the Size field.
5. Select the **Version** of the Scene you want to render.
6. Select the camera you want to use to render the scene's images from the Camera menu. These are the cameras you created in your exposure sheet in Harmony Stage.
7. If you want to create a Field Composite, select the checkbox to refine your selection.

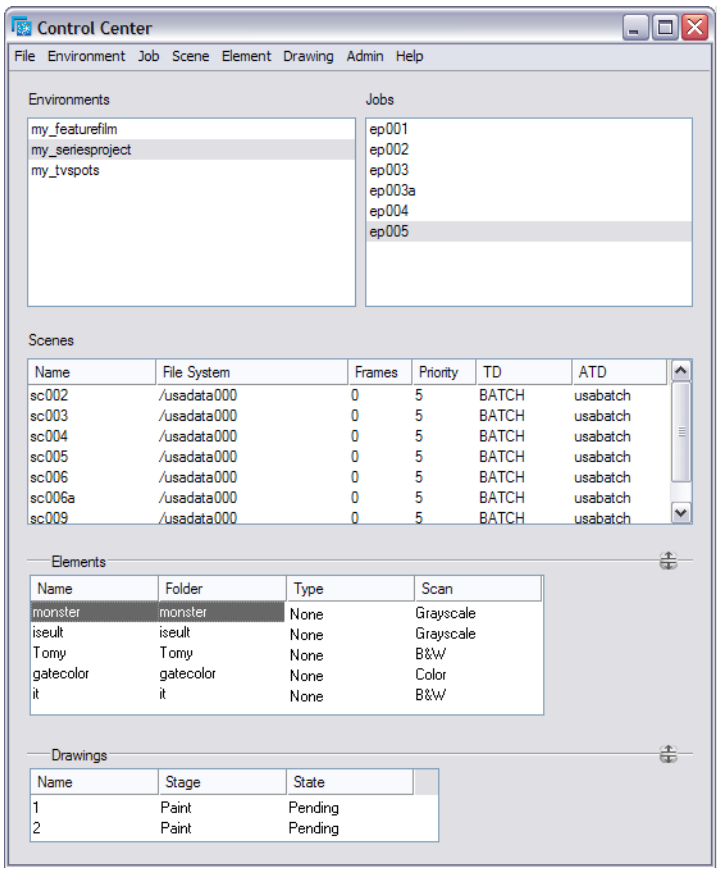
- **Add Pulldown**: Uses the 3:2 pulldown technique.
- **Automatic Combine**: Combines even and odd fields on a scene's image.
- **Second Field First**: Always start with the second field before combining with the first field.

8. If you did not select the Batch Composite Options option, select the **Preview** option to see the render once it is completed.
9. Click **OK**.

   To verify that the scenes have been sent for rendering, display the Render queue.

Viewing Elements and Drawings

You must use the Harmony Stage or Harmony Xsheet, instead of the Control Center, to add elements or drawings to your environment. After you add them in the exposure sheet and save the source, the Control Center module displays them in the Elements and Drawings panels.



You create the environment, job, and scene in the Control Center.

The Control Center reads the scene's Stage files as current version to retrieve the element and drawing information.

When you select a scene in the Scenes list, all of the elements associated with the scene (background, characters, etc.) appear in the Elements and Drawings lists. The Control Center module retrieves these components from information you previously entered in the exposure sheet.

You can click the Expand/Collapse buttons to show or hide the Elements and Drawings sections.

Exporting and Importing Data

With Harmony, you can import and export data.

You can use the Control Center module's export utility to migrate scenes from your system for archival purposes or third parties, and you can use the import utility to integrate scenes into a Harmony environment.

You can use the Control Center module's export utility to copy scene data. After Harmony copies the exported data to a temporary directory, you can move the archived data to your storage device (for example, a CD or tape drive).

Harmony creates two files during export:

- **`README.txt`**: Includes export statistics, such as creation date and user ID
- **`IEContents.dat`**: Includes export parameters

In Linux, exporting your scenes using the Export command makes Harmony copy scene information and link information to the temporary export directory you selected. Therefore, you must retrieve the animation data from your server and copy it, along with the database information, to your storage device.

You can compress the export package to make it transportable. However, it will resolve hard links and symbolic links, which might be contrary to your export options.

Copying the exported data to a storage device is a two-fold process. Copy the exported animation files to a file on the storage device. Then remove the temporary export data from your system.

If the imported files are compressed, you must decompress them to a temporary directory before you can import them into Harmony. If you don't know how to decompress these files, see your system administrator.

If you have any problems importing or exporting in Harmony, review the instructions to make sure you have followed them completely. If you continue to have problems, consult the following list to troubleshoot common import and export problems.

Problem: Import or Export Not Successful

If the transfer is not successful, an error dialog box appears to describe the problem. The most common reason for a failed transfer is due to your current network permissions. See your system administrator for help.

If the transfer fails in the middle of the process, the files that were imported or exported may be corrupt or incomplete.

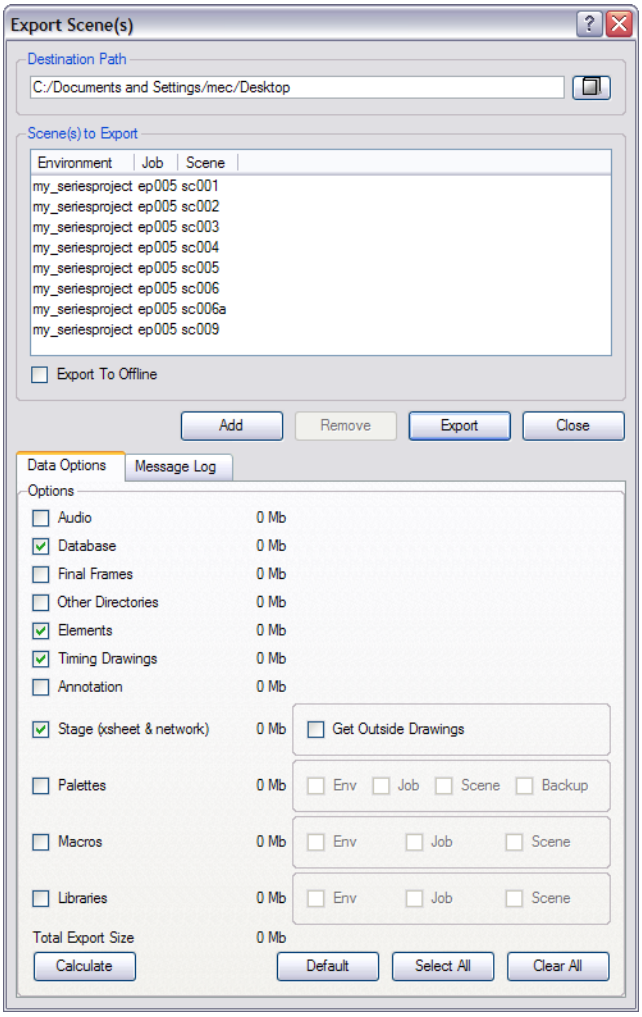
- For a failed import, use Control Center to delete the scene.
- For a failed export, manually delete the incomplete export folder.

If you click the Message Log tab, you can see more detailed descriptions, including error messages.

How to export data

1. Launch Control Center. To learn more about the different launch methods, see Starting the Control Center on page 12.
2. From the top menu, select **Admin > Export**.

   The Export Scene(s) dialog box appears.

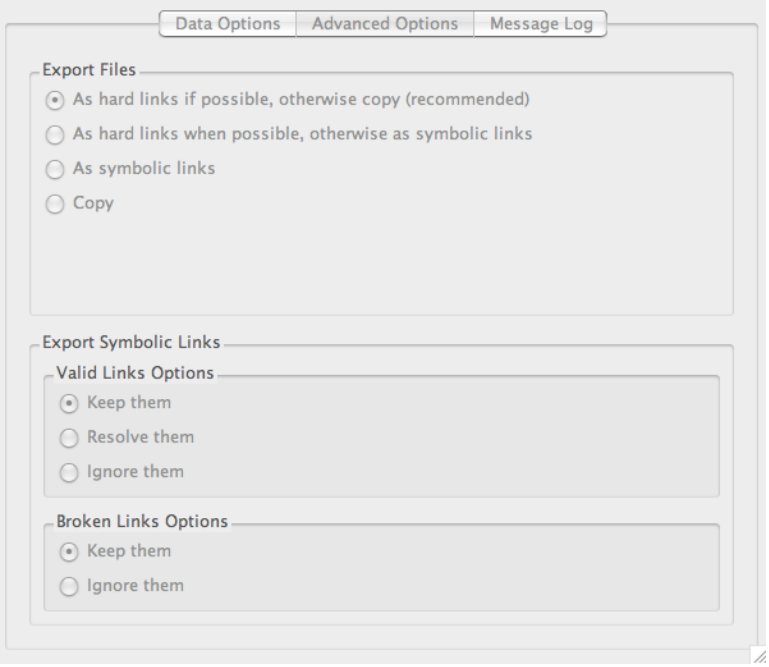


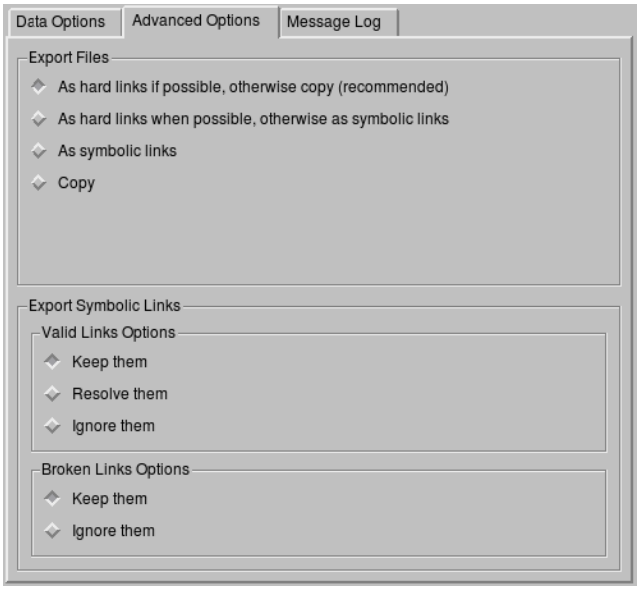
3. Enter the path where you want to export the files. You can also use the **Browse** button to select the path and create a folder. The destination must be an existing empty folder or a new folder that will be created during the export process.
4. Click **Add** to select the scenes that you want to export from the Harmony database. You can select a job to select all the scenes in the job. The scenes you select will appear in the list.
5. Select one or more scenes and click **Remove** to remove scenes from the export list.
6. In the Data Options tab, select what you want to export:

Parameter	Description
Audio	Exports the Audio directory.

Databases	Selected by default, this option exports the elements in the scene. If you select this option and deselect the Elements option, you can access the elements from the Element Manager in the Control Center, but their drawing and bitmap files will not be included. The list of available versions in the scene is also exported. It will not be possible to open a scene if this is not selected for export.
Final Frames	Exports the directory that contains final, rendered frames.
Other Directories	Exports all other directories and files in the scene's data structure.
Elements	Selected by default, this option exports the contents (drawing and bitmap files) of the Element directories.
Timing Drawing	Selected by default, this option exports the contents of the Timing directories.
Annotation	Allows you to export the different drawings created while drawing in the Annotation columns and imported images.
Stage (Xsheet and Network)	Selected by default, this option exports the Stage directory, which contains the Stage files for each scene you export. These files are necessary if you want to have the ability to reuse the exposure sheet (timing) and the effects network from the original scene. If this option is selected, you can select the **Get Outside Drawings** option to copy drawings into the scene folder that is referred to by the Timing columns and their Element (Drawing) modules.
Palettes	Exports the palette-library directories. When you select this option, you must decide if you want to export the palette-library from the environment, job or scene level. When you select a level, the palette-library in lower-level directories will also be exported.
Macros	Exports the macros (customized effect and module connections) that were created and stored in the environment, jobs or scenes to be exported.
Libraries	Exports templates created at the selected levels.

7. In the Advanced Options tab:
   - **Windows**: Due to constraints in the operating system, you do not have any choices on the Advanced Options tab. In Linux, you can make the following selections.
   - (**Mac OS X** and **Linux**): Select how you want to package the exported scene. The choices you make here are related to the size of the export package as well as the speed of the export process. In Linux, you can make the following selections.





- Select one of the following options in the Exporting Files section:

Parameter	Description
As hard links if possible, otherwise copy	Speeds up the export process by making hard links to the original files on the file system. Hard links keep disk space usage to a minimum and ensure a quick export process. If it is not possible to create hard links (because the links cross file systems, for example), the entire contents will be copied to the destination directory, which will be a slower process that will take up more space on your file system.

As hard links when possible, otherwise symbolic links	Ensures a quicker export process. However, if symbolic links are used and the original file is deleted, the symbolic link will be broken.
As symbolic links	Exports the scene using symbolic links to the original scene files (when importing, imports the scene using symbolic links to the export directory). While this process will reduce the size of the export directory, if the original file is deleted, the symbolic link will be broken.
Copy	Copies all scene data to the export location. This produces the largest export package and therefore takes the longest to complete. However, it is the simplest method.

8. In the Valid Links Options section, select one of the following options:

Parameter	Description
Keep them	Maintains symbolic links.
Resolve them	Removes symbolic links, replacing them with the actual files. When you use this option, the export package will contain real files, rather than symbolic links.
Ignore them	Does not include valid symbolic links in the export package.

9. In the Broken Links Options section, select of the following options:

Parameter	Description
Keep them	Keeps symbolic links to missing files. When the missing files are placed in the path searched by the symbolic link, broken links will be valid again.
Ignore them	Does not include broken symbolic links in the export package.

10. Click **Calculate** to get a preview of the size of your export package.
11. Click **Export**.

    The selected files and components are exported. Use the Message Log tab to view messages generated during the export process.

    Unlike Windows, where the database information and scene data have been copied to a different directory, Linux creates a set of links to the data. You must use additional Linux commands to retrieve the animation data pointed to by the links.

How to export your files to a storage device on Linux

1. Open a Linux shell and log in to the machine that connects to the storage device.
2. Copy the exported files using links from the source directory to the selected destination file. To export to a file on a storage device, type the following command in a shell:

   ```
   tb_backup_export_data -from [source_directory] -to [destination_
   file] -writetarfile
   ```

   - Where [source_directory] is the folder where the scene was exported to.

- Where [destination_file] is the file that will be created by the tb_ backup_export_data script.

3. After a successful copy of the exported data, remove the temporary export directory using the following command:

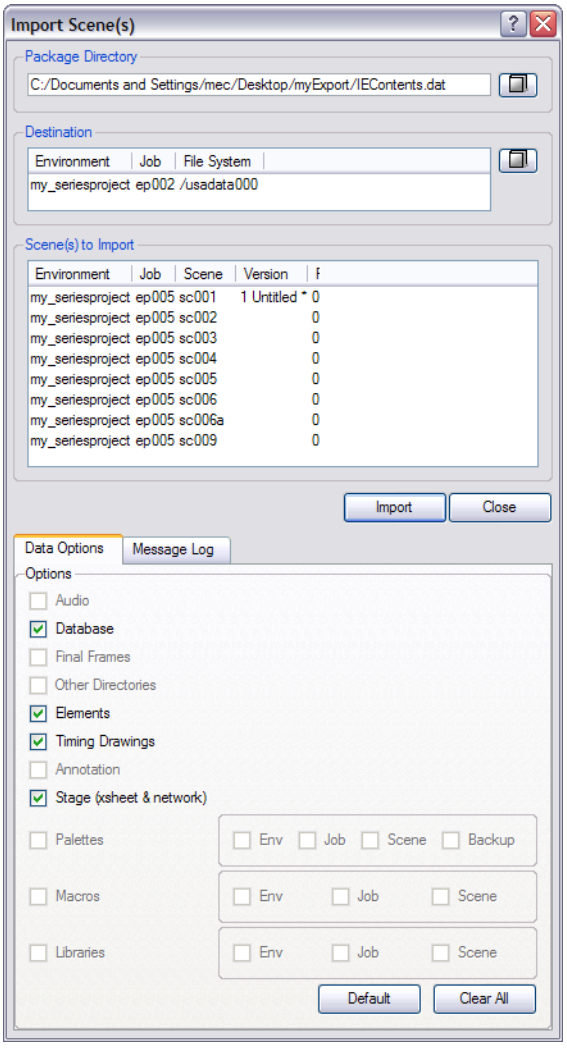
```
tb_remove_export_data [export_directory]
```

- Where [export_directory] is the folder where the scene was temporarily exported to before it was copied to the file or storage device.

How to import files into the Control Center module

1. Select **Admin > Import**.

   The Import Scene(s) dialog box appears.



2. Any supported Stage file can be imported, including **`IEContents.dat`** files. The **`IEContents.dat`** file includes database and scene file information. Specify the path of **`IEContents.dat`** for the scene(s) you want to import.

3. Click **Browse** to select the environment, job and file system where you want to place the imported scene.

4. If you want to import only some of the scenes in the Scenes to Import list box, select the scenes. If no scenes are selected, all scenes will be imported.
5. In the Data Options tab, select what you want to import.

Parameter	Description
Audio	Exports the Audio directory.
Databases	Selected by default, this option exports the elements in the scene. If you select this option and deselect the Elements option, you can access the elements from the Element Manager in the Control Center, but their drawing and bitmap files will not be included. The list of available versions in the scene is also exported. It will not be possible to open a scene if this is not selected for export.
Final Frames	Exports the directory that contains final, rendered frames.
Other Directories	Exports all other directories and files in the scene's data structure.
Elements	Selected by default, this option exports the contents (drawing and bitmap files) of the Element directories.
Timing Drawing	Selected by default, this option exports the contents of the Timing directories.
Annotation	Allows you to export the different drawings created while drawing in the Annotation columns and imported images.
Stage (Xsheet and Network)	Selected by default, this option exports the Stage directory, which contains the Stage files for each scene you export. These files are necessary if you want to have the ability to reuse the exposure sheet (timing) and the effects network from the original scene. If this option is selected, you can select the **Get Outside Drawings** option to copy drawings into the scene folder that is referred to by the Timing columns and their Element (Drawing) modules.
Palettes	Exports the palette-library directories. When you select this option, you must decide if you want to export the palette-library from the environment, job or scene level. When you select a level, the palette-library in lower-level directories will also be exported.
Macros	Exports the macros (customized effect and module connections) that were created and stored in the environment, jobs or scenes to be exported.
Libraries	Exports templates created at the selected levels.

6. In the Advanced Options tab, select how you want to import the scene. Select one option in the Valid Links Options and the Broken Links Options section.
7. Click **Import**.

   If the scene already exists, the Scene Exists dialog appears.
8. Click **Import Scene** for each scene or **Import All Scenes** to confirm your selection.
9. Use the **Message Log** tab to view messages generated during the import process.

   If the name of the scene you are importing in Control Center is too long, you will be prompted with an error message stating that it will be truncated. A scene's name cannot exceed 23 characters.

   If you are importing scenes that were exported from the Harmony Network, or worked on in Harmony Stand Alone, the system will try to retrieve the version name.

Control Center Commands

This section describes all the commands in the Control Center window.

Control Center Commands

The Control Center menu commands let you access the information about the application and quitting on Mac OS X.

Command	Action	Access Methods
About Toon Boom Harmony	Mac OS X: Displays product, version, licensing and copyright information.	
Quit	Mac OS X: Closes the Control Center window and ends the current session.	⌘ + Q.

File Commands

The File menu commands let you access the Log file and exit the application on Windows/Linux.

Command	Action	Access Methods
Exit	Windows/Linux: Closes the Control Center window and ends the current session.	Ctrl + Q
View Log	Lets you view errors and warning messages related to your actions during the current Control Center session.	

Environment Commands

The Environment menu commands let you manage the environments and queues.

Command	Action	Access Methods
Change Asset Lock	Enables or disables the automatic Global Lock on the scenes under the selected Environment.	Right-click on the selected environment in the Environments list and select **Change Asset Lock**.
Create	Opens a Create Environment dialog box, where you can enter a name for a new environment.	Right-click on the Environments list and select **Create**.
Delete	Lets you delete an environment from the database. You cannot delete an environment unless it is empty; delete all of the environment's scenes and jobs before activating this command.	Right-click on the Environments list and select **Delete**.

Render Queue	Opens the Render Queue dialog box where you can monitor and prioritize the progress of the drawings that the system is rendering.	Right-click on the Environments list and select **Render Queue**.
Vectorize Queue	Opens the Vectorize Queue dialog box where you can display the progress and prioritize the drawings that the system is converting to the TVG vector file format.	Right-click on the Environments list and select **Vectorize Queue**.

Job Commands

The Job menu commands let you manage the jobs and their state.

Command	Action	Access Methods
Change Priority	Opens the Choose New Priority dialog box where you can set the priority of the rendering and vectorizing tasks for one or more jobs. The priority is set using a sliding scale where 0 is the highest priority and 10 is the lowest.	Right-click on the Jobs list and select **Change Priority**.
Change Stage	Opens the Change Stage of Jobs dialog box where you can record the current stage of the environment's jobs in the production process. You can change the job from **In Production** to **Completed**, or from **Completed** back to **In Production** if you need to perform further work.	Right-click on the **Jobs list** and select **Change Stage**.
Create	Opens the Create Job dialog box where you can add a new job to the selected environment. Your job must have a name that is unique to the animation database (for example, you cannot have two jobs with the same name even if they exist in different environments; they are all in the same database).	Right-click on the Environments list and select **Create**.
Delete	Removes a job from the selected environment. When a job is deleted, its scenes, elements, drawings, palette library, and database information are permanently removed. If you want to archive a job, you should only delete the job after you have used the command to create the archive. Before you activate this command,	Right-click on the Jobs list and select **Delete**.

	verify that the selected jobs are not currently in use.	

Scene Commands

The Scene menu commands let you manage the scenes.

Command	Action	Access Methods
Change Priority	Opens the Choose New Priority dialog box where you can set the priority of the rendering and vectorizing tasks for one or more scenes. The priority is set using a sliding scale where 0 is the highest priority and 10 is the lowest. Activating this command affects all subsequent scenes you create. You can change the priority of a scene already sent to the batch processing queue by using the **Change Priority** button in the queue.	Right-click on the Scenes list and select **Change Priority**.
Change Stage	Opens the Change Scene Stage dialog box where you can record the current stage of progress in a scene in an environment or a production. This command is inactive if the scene's approval policy has been set to Manual in the Change Approval Policy dialog box.	Right-click on the Scenes list and select **Change Stage**.
Clear	Deletes a scene's exposure sheet. Only exposure sheet files are deleted from the database, not image files. A delete confirmation message appears, detailing the consequences of using this option and requests that you contact your Technical Director if you are unclear about this procedure. Before you activate this command, make sure that all users are logged out of Toon Boom Harmony and that no files are currently in use.	Right-click on the Scenes list and select **Clear**.
Copy Scene	Opens the Copy Scene dialog box where you can copy a scene's exposure sheet into another scene. You can select a source and destination scene in which to copy the Xsheet data.	Right-click on the Scenes list and select **Copy**.

Create	Opens the Create Scene dialog box where you can add one or more scenes to the selected job. You can also choose to: • Add a scene from another file system and add it to your job. • Choose the position the scene will take within the job.	Right-click on the Scenes list and select **Create**.
Delete	Removes a scene from the database. Before you activate this command, make sure all users are logged out of Toon Boom Harmony and that no files are currently in use. When a scene is deleted, its exposure sheet, elements, drawings, palette library and database information are permanently removed. If you want to archive a scene, you should only delete the scene **after** you have used the command to create the archive. Before you activate this command, verify that the selected scenes are not currently in use.	Right-click on the Scenes list and select **Delete**.
Force Unlock	Unlocks a scene was locked in Harmony Stage. Generally, a scene unlocks when it is closed by a user. However, if a computer crashes while a scene is locked and in use, a scene may remained locked even if it is not open. An unlock confirmation message appears detailing the consequences of using this option. If you activated this command for more than one scene, you will be prompted for confirmation to unlock each scene separately.	Right-click on the Scenes list and select **Force Unlock**.
Force Unlock Version	Unlocks a version of a scene that has been locked by Harmony Stage. Generally, a scene unlocks when it is closed by a user, however if a computer crashes while a scene is locked and in use, a scene may remained locked even if it is not open. An unlock confirmation message appears detailing the consequences of	Right-click on the Scenes list and select **Force Unlock Version**.

	using this option. If you activated this command for more than one scene, you will be prompted for confirmation to unlock each scene separately.	
Move	Opens the Move Scene dialog box where you can move one or more scenes and their associated files to a file location of your choice. The Move Scene command allows you to select one or more scenes and calculate the amount of space you will need at the new location to accommodate the moved scene. Before you activate this command, make sure all users are logged out of Toon Boom Harmony and that no files are currently in use.	Right-click on the Scenes list and select **Move**.
Rename	Opens the Rename Scene dialog box where you can enter a new name for the selected scene. Before you activate this command, verify that no users are using the scene, all users are logged out of Toon Boom Harmony and that no files are currently in use.	Right-click on the Scenes list and select **Rename**.
Reorder	Opens the Reorder Scenes dialog box where you can change the sequence of the scenes in a job.	Right-click on the Scenes list and select **Reorder**.
Send to Rendering	Opens the Composite dialog box where you can add one or more scenes to the rendering queue.	Right-click on the Scenes list and select Send **to Rendering**.
Send to Unvectorize	Opens the Send Scenes to Unvectorize dialog box where you can convert a scene's vector drawings into bitmap drawings.	Right-click on the Scenes list and select **Send to Unvectorize**.
Send to Vectorize	Converts the Send to Vectorize command to convert the selected drawings to the TVG vector file format.	Right-click on the Scenes list and select **Send to Vectorize**.

Element Commands

The Element menu commands let you vectorize and unvectorize the elements.

Command	Action	Access Methods
Send to	Opens the Send Elements to	Right-click on the Elements list

Unvectorize	Unvectorize dialog box and converts an element's vector drawings into bitmap drawings.	and select **Send to Unvectorize**.
Send to Vectorize	Converts the drawings for the selected elements to the TVG vector file format.	Right-click on the Elements list and select **Send to Vectorize**.

Drawing Commands

The Drawing menu commands let you vectorize and unvectorize the drawings.

Command	Action	Access Methods
Send to Unvectorize	Opens the Send Drawings to Unvectorize dialog box and converts selected vector drawings into bitmap drawings.	Right-click on the Drawings list and select **Send to Unvectorize**.
Send to Vectorize	Vectorizes the selected drawings.	Right-click on the Drawings list and select **Send to Vectorize**.

Admin Commands

The Admin menu commands let you import and export scenes, and manage the users and approval policy.

Command	Action	Access Methods
Change Approval Policy	Opens the Change Approval Policy dialog box where you can select a manual or automatic approval of the production status at each stage of each scene.	
Export	Opens the Export Scenes dialog box where you can transfer copied data from the database to a different directory. You can also export scenes to Stage (offline version) by selecting Export Offline.	
Import	Opens the Import Scenes dialog box where you can transfer copied data from another directory into the database.	
Users	Opens the User List dialog box where you can display all valid Toon Boom Harmony users in	

Command	Action	Access Methods
	the network. You can add, delete, or modify users in this list.	
Vectorize Style	Opens the Vectorization Styles dialog where you can select the vectorization style you want to apply to drawings before sending them to the vectorization queue.	

Help Commands

The Help menu commands let you access the Help files and Control Center About information when using Windows/Linux.

Command	Action	Access Methods
Help	Lets you view the Control Center integrated help system.	F1
About	Windows/Linux: Displays product, version, licensing and copyright information.	

Chapter 3: Harmony Cloud Module

Harmony Network's Control Center, from which you can manage your production database and users, visualize your rendering queue and more, is now available in a cloud-based format, so freelancers and staff can download scene files, work on them, and upload them back again without onsite assistance.

This chapter is divided as follows:

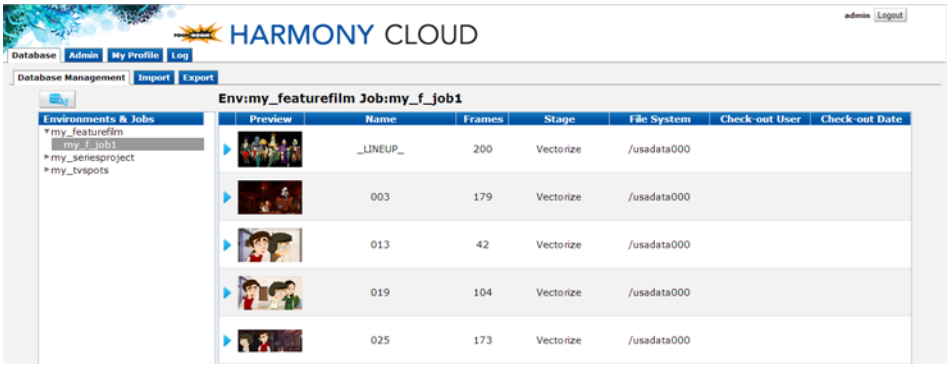
Starting Harmony Cloud

Managing a production involving freelancers working for home or other studios requires the Harmony Cloud module. The cloud is used to create new environments, jobs, scenes and users, as well as to import and export scene packages. The cloud directly manages your server database. The cloud also facilitates working from home and allows for an easy way to review rendered scene clips from anywhere.

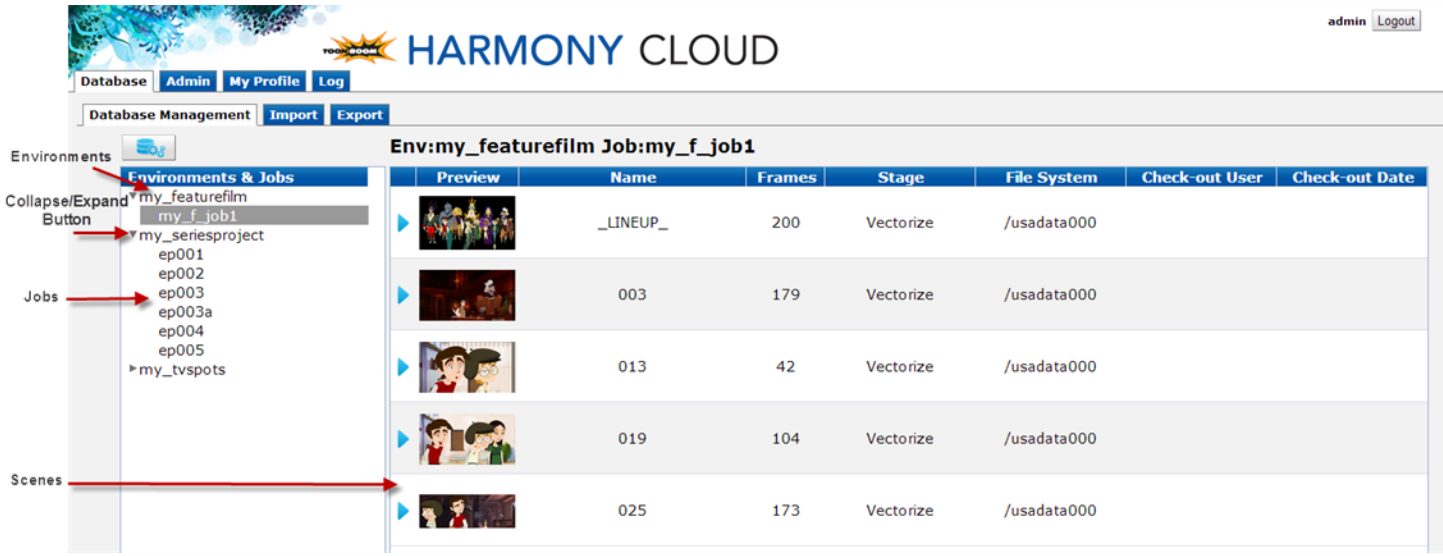
How to log into Harmony Cloud

1. Using your favourite browser, navigate to the URL you have allocated for Harmony Cloud during installation.
   - Example: **`www.toonboomcloud.com:8080`** or **`localhost:8080`**
2. Enter your credentials and click **Login**. By default, there is a user name and admin (with the password: admin). Be sure to change the admin password on your first login.

Harmony Cloud loads in the browser.

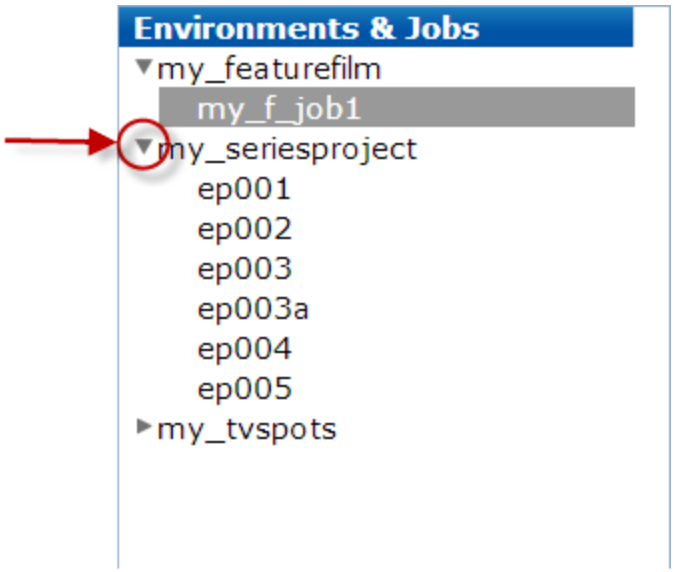


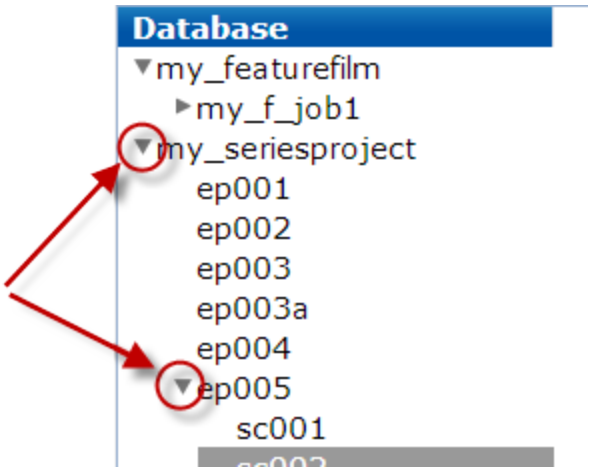
Harmony Cloud Interface



The Harmony Cloud interface is divided into various tabs. Depending on your user type, you will see a different number of tabs—see Managing Harmony Users on page 18 details on user permissions.

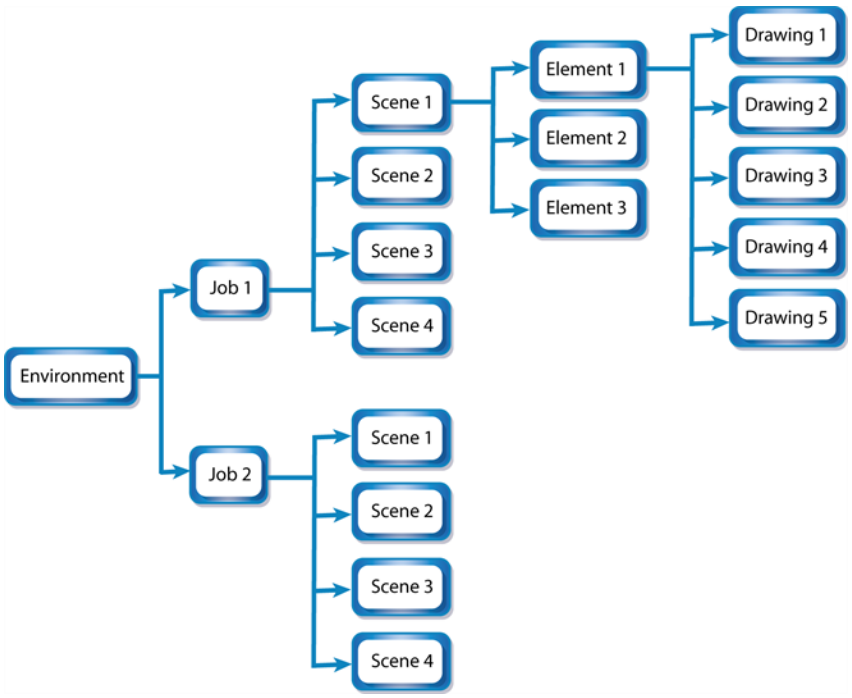
You can collapse or expand the environments and/or jobs in the main Database Management tab of Harmony Cloud. By clicking the ▶ button, you can show all jobs within an environment or all scenes within a job.





- R&D, Executive, Coordinator, Supervisor and TD users will see seven tabs as they are considered to have administrative privileges.
- Animator, Archive, Xsheet, Scan and Ink&Paint users will see six tabs as they do not have administrative rights.

Here is a typical example of the database structure:



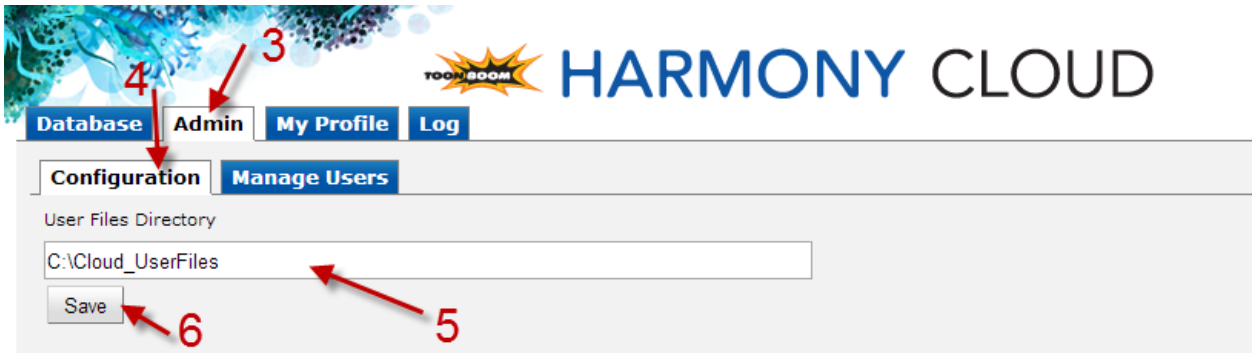
Setting Up the User File Location

Administrators will need to configure Harmony Cloud to allow users to import and export files. It is necessary for the administrator to choose a directory where all user files will be stored. This directory must then be configured in Harmony Cloud.

Harmony Cloud allows you to navigate to a scene and open a scene in Stage on your local computer. Because Harmony Cloud is a web application, it is necessary for you to install the Java plugin to have this functionality. You will also need to configure your Harmony Cloud user profile to specify which local version of Harmony Stage you want to use.

How to configure the directory

1. Navigate to your Cloud URL.
2. Log in as a user with Administrative privileges—see User Types and Restrictions on page 72.



3. Select the **Admin** tab.
4. Select the **Configuration** tab.
5. In the User Files Directory, enter the full path to the desired user files directory.
6. Click **Save**.

How to install the Java plugin

1. In your favourite web browser, visit the Java site to download the most recent version of the Java Plugin for your browser.
   - www.java.com/en/
2. Start the downloaded installer and follow the instructions on the screen to install the plugin.

Not all browsers on your computer require the same Java plugin. If, at some point, you experience issues when switching to a different browser revisit the link and verify that you have a compatible version installed on your computer.

Managing Users

Each Harmony Cloud user will need to configure their profile to specify which version of Harmony Stage they want to start when using the "Open in Stage" functionality in Harmony Cloud.

In a production environment, different Harmony users will tend to have different roles. In order to limit functionality, users should be created in Control Center and/or in Harmony Cloud that reflect their respective roles. For example, a user who is assigned to ink and paint should only have access to the Paint module, and therefore should be created as a user with the type: ink and paint.

Everyone who uses Harmony must have a login name in order to run any of the modules. Harmony Cloud also requires users to have a secure password.

By default, only the admin user is created in Harmony Cloud.

The Manage Users tab lists all the users and their details, including; user name, first and last names, and user type. The buttons at the top of the dialog box and the options on right-click let you add, delete or modify the list of users.

Because Harmony Cloud requires a password, existing users (seen through the Control Center interface) will need to be re-added through the Cloud interface. Doing so will simply update the user information to make the user accessible to Cloud. When adding a brand new user through the Cloud interface, that user will automatically have access to the modules such as Control Center, Stage, Paint, Xsheet, Scan and Play if their user type allows it.

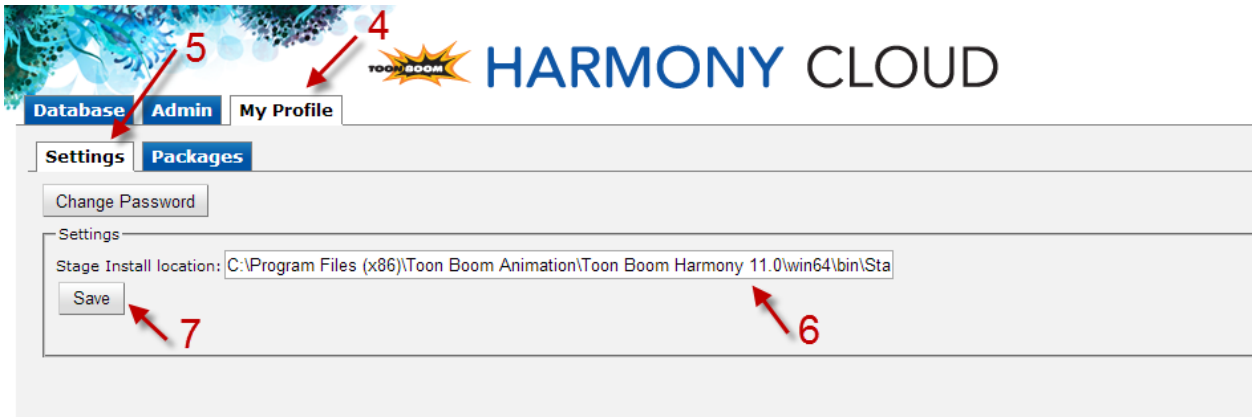
As your studio network grows and evolves, you may need to delete old or obsolete user profiles from your system. After you delete a user profile, the person who used that profile will no longer be able to access any Harmony modules including Harmony Cloud and Control Center.

You cannot delete yourself from the user list. If you accidentally delete a name, you must follow the procedures for adding a user to get the name back into the system.

You can modify the user profiles at any time to update the user information. You will not be allowed to modify or delete the admin user.

How to configure a user's profile

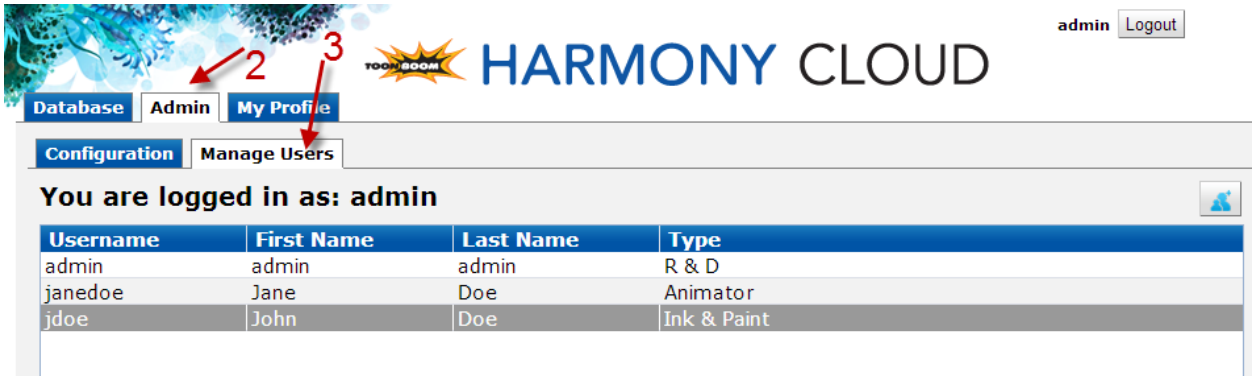
1. Locate the Stage executable on your local computer.
   - Windows: C:\Program Files (x86)\Toon Boom Animation\Toon Boom Harmony 11.1\win64\bin\Stage.exe
   - Mac OS X: /Applications/Toon Boom Harmony 11.1/Stage.app/Contents/MacOS/Stage
   - Linux: /usr/local/ToonBoomAnimation/harmony_11.1/lnx86_64/bin/Stage
2. Navigate to your Cloud URL.
3. Log in as the user you want to configure.
4. Click My Profile.



5. Select the **Settings** tab.
6. Paste the stage installation location from step 1 into the **Stage install location** field.
7. Click **Save**.

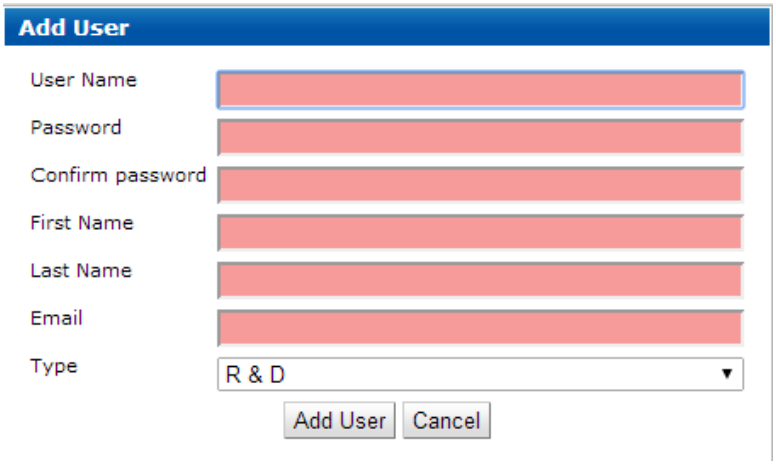
How to add a user

1. Make sure you are logged into Cloud as a user with Admin privileges—see See "Setting Up the User File Location" on page 65.

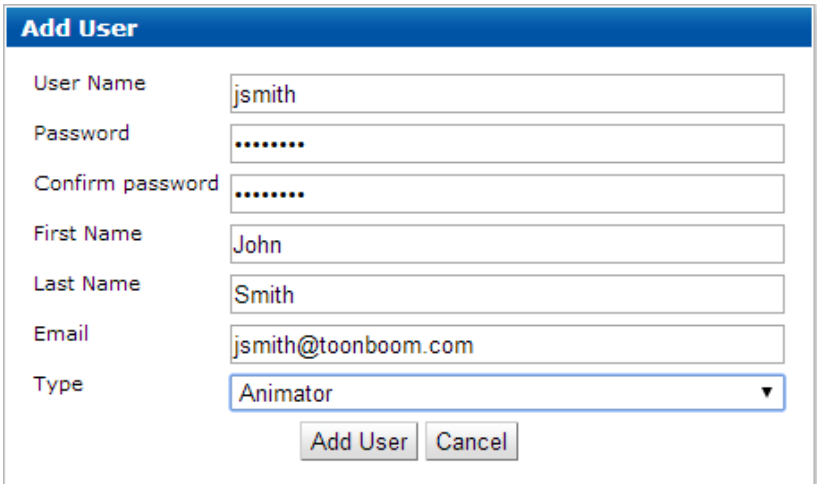


2. Select the **Admin** tab.
3. Select the **Manage Users** tab.
4. Do one of the following:
   - Click the  button.
   - Right-click anywhere in the user list and click **Add**.

   The Add User dialog appears.



5. Fill out all required fields.



6. Click **Add User** to complete the update or click **Cancel** to abort.

The username cannot exceed the 12-character limit.

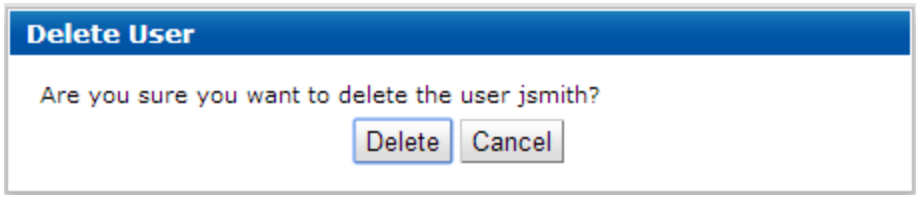
The default minimum length required for a password is eight characters. You are required to use three of the following class characters in your password. Capitalization of the first letter of a word, or appending a number at the end, does not count.

- Lower case letters
- Upper case letters
- Numbers
- Other ASCII characters
- Unknowns (i.e. multibyte UTF-8 sequences)

How to delete a user

1. Make sure you are logged into Cloud as a user with Admin privileges—see See "Setting Up the User File Location" on page 65.
2. Select the **Admin** tab.
3. Select the **Manage Users** tab.
4. In the user list, select the name you want to delete.
5. Right-click and select **Delete**.

The confirm dialog appears.

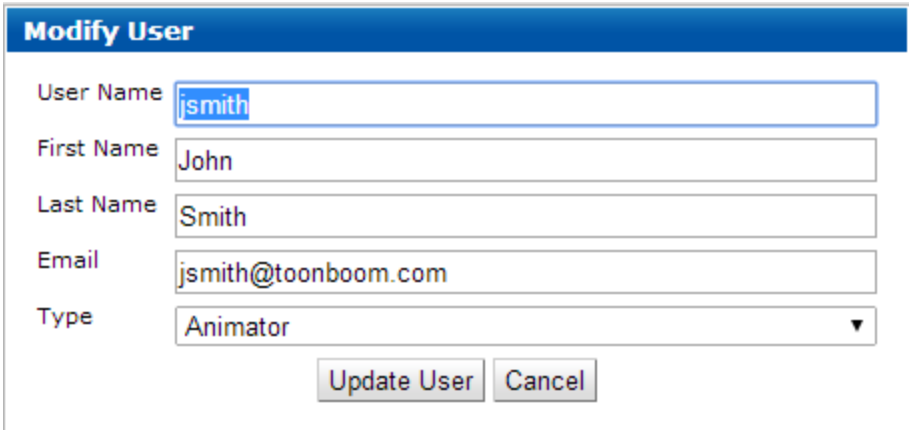


6. Click **Delete**.

How to modify user information

1. Make sure you are logged into Cloud as a user with Admin privileges—see See "Setting Up the User File Location" on page 65.
2. Select the **Admin** tab.
3. Select the **Manage Users** tab.
4. In the user list, select the name you want to modify.
5. Right-click and select **Modify**.

The Modify User Dialog will appear



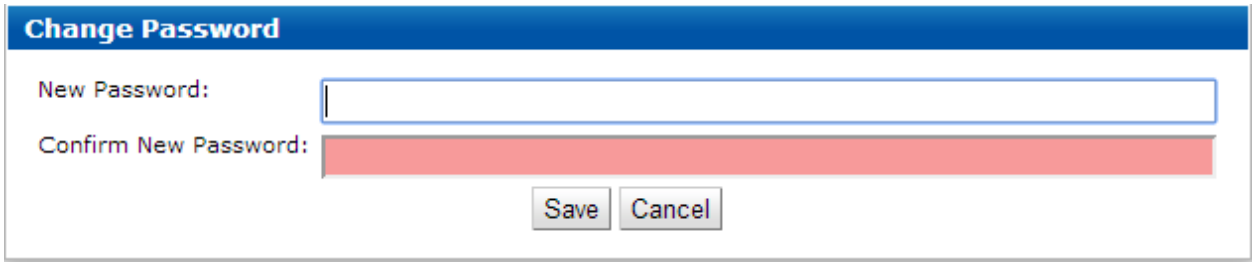
6. Make your desired modifications.
7. Click on the Update User button to complete the update or click Cancel to abort.

If you modify the username, make sure that it does not exceed the 12-character limit.

How to update the user password

1. Make sure you are logged into Cloud as a user with Admin privileges—see See "Setting Up the User File Location" on page 65.
2. Select the **Admin** tab.
3. Select the **Manage Users** tab.
4. In the user list, select the name you want to change the password for.

Type in your new password.



5. Click **Save** to complete the update.

The default minimum length required for a password is eight characters. You are required to use three of the following class characters in your password. Capitalization of the first letter of a word, or appending a number at the end, does not count.

- Lower case letters
- Upper case letters
- Numbers
- Other ASCII characters
- Unknowns (i.e. multibyte UTF-8 sequences)

User Types and Restrictions

Here are the different user types available and their restrictions:

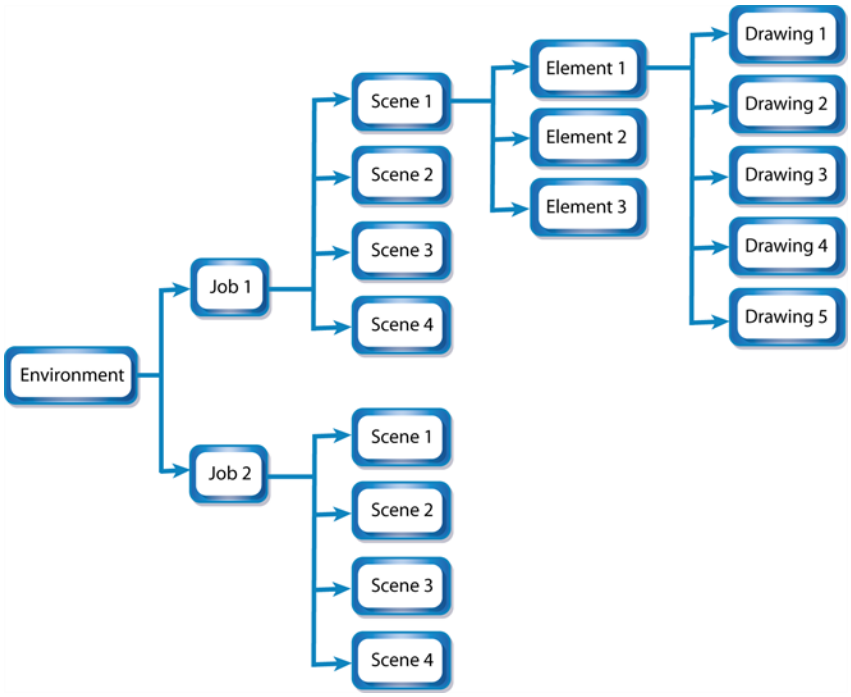
Feature	RND / Coordinator / Supervisor / TD / Executive	Animator	Xsheet / Archive	Scan	Ink & Paint
Create Environment	●				
Change Asset Lock on Environment	●				
Delete Environment	●				
View Vectorize Queue	●	●	●	●	●
View Render Queue	●	●	●	●	●
Create Job	●	●			
Change Job Priority	●	●	●	●	●
Change Job Stage	●				
Delete Job	●				
Create Scene	●	●		●	●
Delete Scene	●				
Unlock scenes locked by another user	●				
Unlock scene version locked by another user	●				
Unlock scenes locked by me	●	●	●		

Unlock scene version locked by me	●	●	●		
Move Scene	●				
Rename Scene	●				
Clear Scene	●				
Change Scene Priority	●	●	●	●	●
Change Scene Stage	●				
Reorder Scenes	●				
Copy Scenes	●	●			
Send to Vectorize	●	●	●	●	●
Send to Unvectorize	●	●	●	●	●
Send to Rendering	●	●	●	●	●
Add/Modify/Delete Users	●				
Change Approval Policy	●				
Change Vectorize Style	●	●	●	●	●
Change Lock When Opening Scene	●				
Database Lock Manager	●				
Export Scenes	●	●	●		
Import Scenes	●	●	●		
View Error Log	●	●	●	●	●
View Elements	●	●	●	●	●
View Drawings	●	●	●	●	●
Open in Stage	●	●	●		
Open in Paint	●	●	●	●	
Open in Scan	●	●	●	●	●

Managing Environments, Jobs and Scenes

Every project you create with the Harmony solution starts with an environment; it is your highest level in the Harmony Cloud module. You can build a complete environment by adding jobs, scenes, elements and drawings.

The Harmony Cloud module divides your animation project into the following categories which organize the components of your animated projects:



- **Environment**: This is the name of your animation project.

  Example: **`adventure_movie`**

- **Jobs**: These are the major sections of an environment, such as sequences or episodes.

  Example: **`adv_seq_001, adv_seq_002`**

All jobs are stored in the same location in the Harmony database. Be sure to prefix all job names appropriately, so you can identify the project it belongs to. Each job must have a **different** name. You **cannot** give two jobs the same name.

- **Scene**: These are the different shots in a job.

  Scenes are contained in their respective job folder in the Harmony database. Prefix all scenes names appropriately, so you can identify which environment and job they belong to.

  Example: **`sc_001, sc_002`**

- **Elements**: These are the different layers and columns in your scenes.

  If you have not created an exposure sheet yet, the Frames column in the **Scenes** list displays 0 and no elements appear in the Elements or Drawings list.

  For example, scene **002** of **show_episode_6** could have the following elements:

  - A background called **bg**.
  - A character called **tony**.
  - A highlight effect called **hl**.

  You would then find these elements under job **002** and the **show_episode_6** scene. The Elements list would display the element names, types of elements in a scene, the type of scans, and the size of the field chart.

- **Drawings**: These are actual drawings of the elements (layers) in your scene.

  For example, the **tony** element in **002** of **show_episode_6** could consist of 35 drawings. To find these drawings, you would look under Drawings to see the keyframes, state, and stage of each drawing.

As your projects come and go, you will probably want to start cleaning up your database, as well as your server's hard disk, by removing old and obsolete environments and their associated animation data.

After you delete a scene, job, or environment, the associated data is **permanently removed** from your storage disks. Make sure you really want to erase these items before you delete them as there is no way to retrieve the data after it has been erased.

You might want to export old environments and archive them somewhere else before you delete them from your system.

If you are working in a mixed Windows/Mac OS X/Linux environment or share files with other studios that do, you should use lowercase letters to name the various items in your animation projects and not include any spaces in component name. For example, write **the_show** instead of **The Show**. This recommendation is due to the fact that Linux is case-sensitive while Windows is not.

Managing Environments

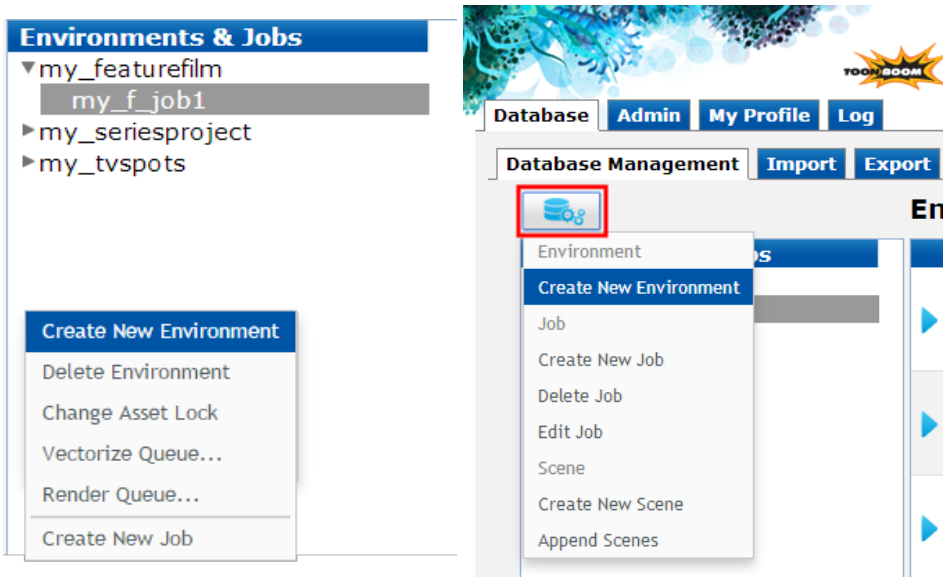
Harmony uses environments to manage and organize related projects. Using environments allows you to organize your production projects by their nature or type.

If your projects center around episodic and commercial types of work, you can create two environments. For example, there can be one called **commercials** and the other called **the_show**. Then you can insert the jobs that relate to each type of project. When you want to work on a commercial project, open the **commercials** environment and select the commercial job you need. Similarly, if you want to work on an episodic project, open the environment called **the_show**.

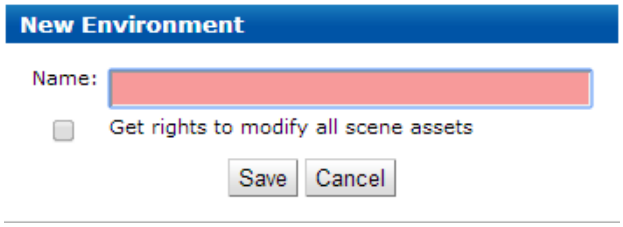
Environment	Job	
commercials	dentist	sc_001 sc_002
	soda	sc_001
	cereal	sc_001
the_show	sho_001	sc_001 sc_002
	sho_002	sc_001
	dentist	sc_001 sc_002

How to create an environment

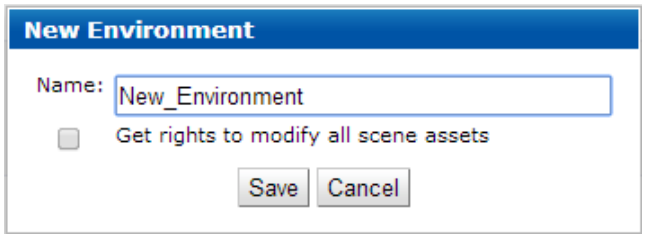
1. Select the **Database** tab.
2. Select the **Database Management** tab.
3. Do one of the following:
   - Right-click anywhere in the Environments and Jobs section and click **Create New Environment.**
   - Click the Settings  button and select **Create New Environment**.



The New Environment dialog appears.

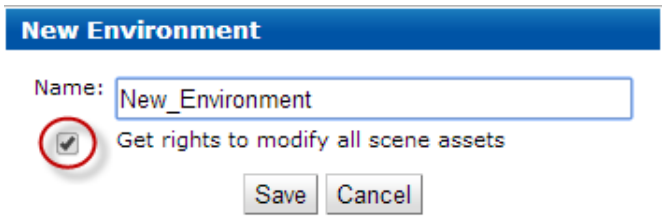


4. In the Name field, type the new project's name.



The environment name is alphanumeric and can include underscores (_), but no spaces or other special characters. The environment name is case sensitive.

5. If you want the user to automatically get the rights to modify all the scene assets (drawing, scene setup, palette lists, etc.), select the **Get Rights to Modify All Scene Assets** option.



6. Click **OK**.

The new environment appears in alphabetical order in the Environments & Jobs list.

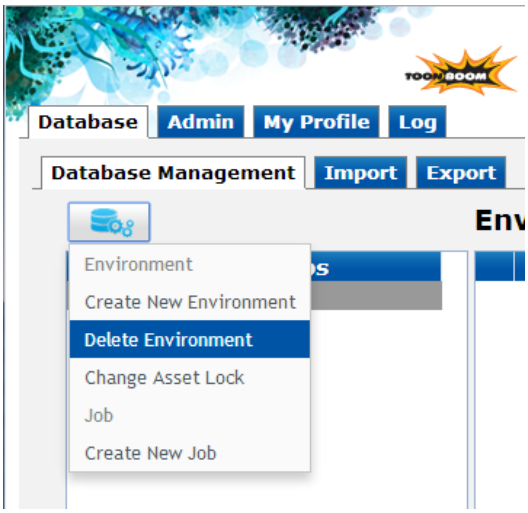
After you create an environment, you must add it to the Batch Processing queue so that it can vectorize and render the drawings and scenes automatically. You only have to add the environment to the Batch Processing queue once.

Only certain user types can create an Environment—see Managing Users on page 66.

How to delete an environment

1. In the Environments & Jobs list, select the environment you want to delete.
2. Do one of the following:

- Right-click and select **Delete Environment**.
- Click the Settings button and select **Delete Environment**.



The Delete Environment dialog box appears.

3. Click **Delete**.

   The environment no longer appears in the Environments & Jobs list.

Only certain user types can create an Environment—see Managing Users on page 66.

Managing Jobs

Within each environment is a list of jobs. These jobs contain all the segments for your animated sequence. If you are creating a weekly television series called **`The Show`**, you could name your job **`show_ep_06`** (**`the_show`** would be the name of your environment).

If each episode was composed of 100 animated shots, each job would contain 100 scenes.

Each job must have a unique name. You cannot have two jobs with the same name, even if they appear in two different environments. On the server, all the jobs are contained in the same folder.

As you continue working on your animation project, you may want to update the status of the jobs in your environment. This status can display one of three things:

- The stage the job has reached
- When the job will be vectorized
- When the job will be rendered

As you complete your animation project, you can update a job's status to reflect where it is in the overall production process. You can classify jobs as being "In Production" or "Completed".

- **In Production**: The job is still a work in progress. The other modules can still access this job.
- **Completed**: The job is finished. The Harmony database still has all the job's components (scenes, elements, drawings), but the job neither appears nor is accessible from the Harmony applications.

  In most cases, you would mark a job as "Completed" after it has been finalized (inked, painted, rendered) and transferred to a medium such as tape or sent to post-production.

  You can change a job's status from "Completed" to "In Production" at any time to continue working on it.

If you want to remove a job and its data from the Harmony database and archive it, you can export the job from Control Center.

Before you send a job's scenes to be vectorized or rendered, you can change the job's priority level in the processing queue. Increasing a job's priority lets the system process it before other jobs in the processing queue.

Use the Choose New Priority dialog box to change a job's rendering and vectorization queue priority. The priority is set using a sliding scale where 0 is the highest priority and 10 is the lowest.

For example, if job B is before job A in the queue, you can change the priority, so job A is processed first.

Changing a job's priority does not affect vectorizing or rendering jobs that are already sent in the queue. It will only affect jobs that are sent after making the change. If you want to change a job's priority after it has been sent to the queue, use the Change Priority button in the Queue window.

You should only delete jobs that you no longer need or that have already been exported to an archive (using the Export command available in the Admin menu).

When you delete a job, the following components are permanently removed:

- Scenes
- Elements
- Drawings
- Database information associated with the selected job
- Palettes stored under the selected job

Before you delete a job:

- Make sure no one else is currently using the job. Failure to do this may result in file corruption and loss of your work.
- Wait until everyone is offline. This ensures no one can open the data files while you delete them.

You cannot archive a job by deleting the job. If you want to archive a job, you should export it to a new location where it can be stored permanently.

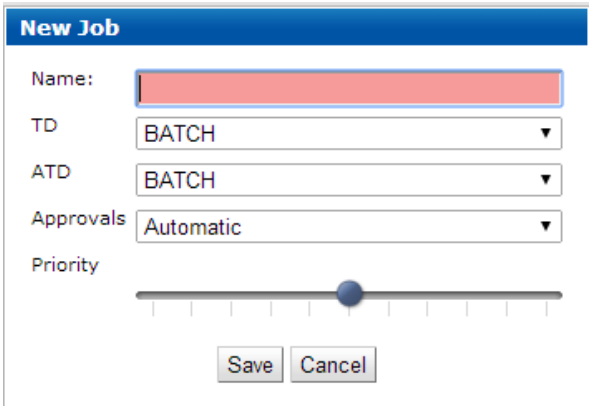
Changing the job's stage from In Production to Completed only hides the job in the Control Center window; all the associated files with the job are still on your system.

You cannot delete a job if it still contains scenes.

How to create a job

1. In the Environments & Jobs section, select the project in which you want to create a job.
2. Do one of the following:
   - Click the Settings button and select **Create New Job**.
   - Right click and select **Create Job**.

   The New Job dialog box appears.



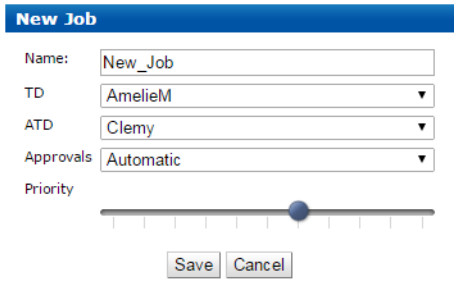
3. In the Name field, type the name of the job you want to create.

The job name is alphanumeric and can include underscores (_), but no spaces or other special characters. The job name is case-sensitive.

4. In the TD menu, select a technical director (TD). You must select a technical director to create the job.

   A TD is usually the person who oversees the animation project and makes sure the work is done properly. Select the person who most closely resembles this definition. If you do not have a particular user for the task, you can simply assign **`usabatch`**.

   When you create your Harmony users, you can label a user as a technical director (TD).



5. In the ATD menu, select an assistant technical director (ATD). You must select an assistant technical director to create the job. If you do not have an ATD, select the same person for the TD and ATD jobs.

   In some studios, the responsibilities of the technical director can be shared by more than one person. This second person is the ATD.

   The technical director and assistant technical director you select appear in the Scenes list for each scene of the job.

6. In the Approvals menu, select how Harmony will mark the various stages the scenes will pass in your production schedule.

   - **Automatic**: When you work on your scenes, Harmony automatically approves their status at each stage
   - **Manual**: When you work on the scenes, the technical director or the assistant technical director must approve their status at each stage using the Change Stage command (available in the Scene menu).

7. Drag the Priority slider handle to increase or decrease the job's priority (0 means the job has the highest priority for processing through the Vectorize or Render queue and a job with a priority of 10 is the least important). Jobs with higher priorities will pass in front of other projects with lower priorities in the rendering and vectorizing queues even if there is already a queue processing.

   If you do not know what priority to assign to your project, you can leave it at 5. You can always change it later.

8. Click **Save** to complete the operation.

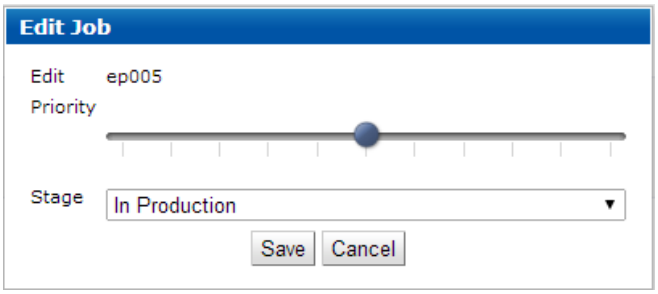
   The Control Center module adds your new job to the selected environment and it appears in alphabetical order in the Environments & Jobs list.

Only certain user types can create jobs—see Managing Users on page 66.

How to change the stage of a job and view the list of completed jobs

1. In the Environments & Jobs section, select the job you want to modify.
2. Do one of the following:
   - Click the  button and select **Edit Job**.
   - Right-click and select **Edit Job.**

   The Edit Job dialog box appears.

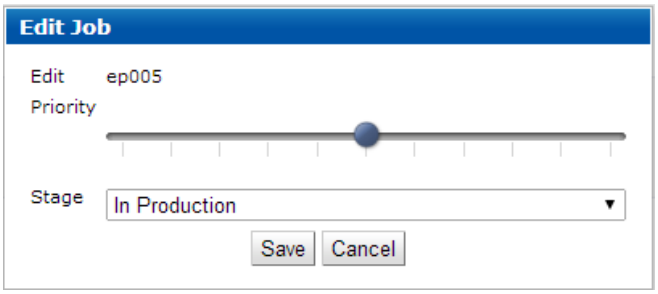


3. Make the desired modifications and click
4. Save to apply your changes.
   - Cancel to abort your changes.

How to change a job's priority

1. In the Environments & Jobs section select the job you wish to modify.
2. Do one of the following:
   - Click the  button and select **Edit Job.**
   - Right-click and select **Edit Job**.

   The Edit Job dialog box appears.

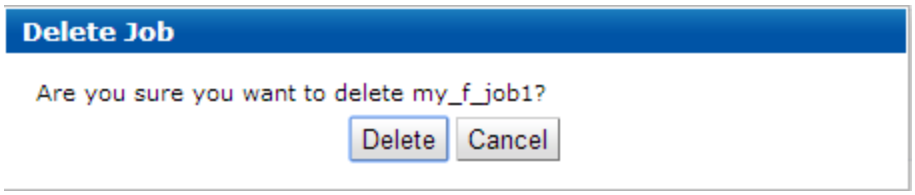


3. Make the desired modifications and click **Save**.

How to delete a job

1. In the Environments & Jobs section select the job you want to delete.
2. Do one of the following:
   - Click the  button and select **Delete Job.**
   - Right-click and select **Delete Job**.

   The Delete Job dialog box appears.



3. Click **Delete** to delete the Job.

Only certain user types can create jobs—see Managing Users on page 66.

Managing Scenes

When creating a scene, you must select the path where you want to store the scene data and where you want the new scene to appear in the Scenes list. You can create a single scene or create multiple scenes at the same time.

When creating a new scene or when renaming a scene, the scene's name cannot exceed 23 characters.

When creating scenes in the Harmony Cloud module, you should enter the scene names exactly as they appear on the actual animation. This ensures that the information in your environment is consistent with the actual animation.

The job and scene names are alphanumeric and can include underscores (_), but no spaces, or other special characters. The environment name is case sensitive.

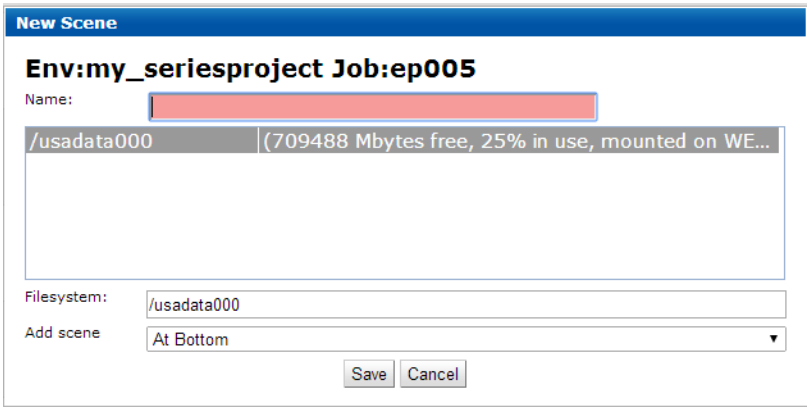
You do not have to enter the word "scene" when entering scene names. The system automatically adds **scene-** in front of the name. For example, when you type"3" in the Scene Name field, the scene name automatically displays as "scene-3" throughout the file system. The scene name will have "scene-" as a prefix, but that will only be visible when looking at the scene on the file system. The scene will appear without this prefix in all the Harmony applications.

It is possible to configure your Harmony Clouduser account to allow for opening a scene in Stage directly from the Cloud interface—see Setting Up the User File Location on page 65

How to create a scene

1. In the Environments & Jobs section select the job in which you want to add a scene.
2. Do one of the following:
   - Click the Settings  button and select **Create New Scene**.
   - Right click and select **Create New Scene**.

   The New Scene dialog box appears.



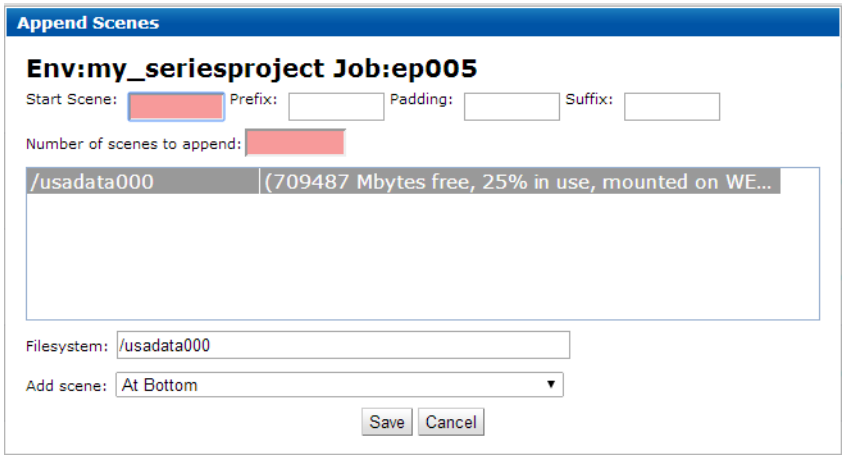
3. In the Name field, enter the scene name.
4. In the File System list, click the path where you want to store the files.
   - If you do not see the desired path in the list, specify a different path in the **Filesystem** field.
   - If you are unsure which disk drive to select, consult your technical director or system administrator.

   The information in the File System list displays:
   - Available drives on which you can store new scenes.
   - Space that is currently available (in megabytes).
   - The percentage of space the drives are currently using.
5. Select where you want to place the scene in the Scenes list
6. From the Add Scenes list, select where you want to place the scene in the Scenes list. These are the options:
   - **At Bottom**: Places the new scenes at the bottom of the list
   - **At Top**: Places the new scenes at the top of the list
   - **Before Selected**: Places the new scenes before the selected scene
   - **After Selected**: Places the new scenes after the selected scene
   - **Name Sort**: Arranges the new scenes alphabetically.
7. Click **Save.**

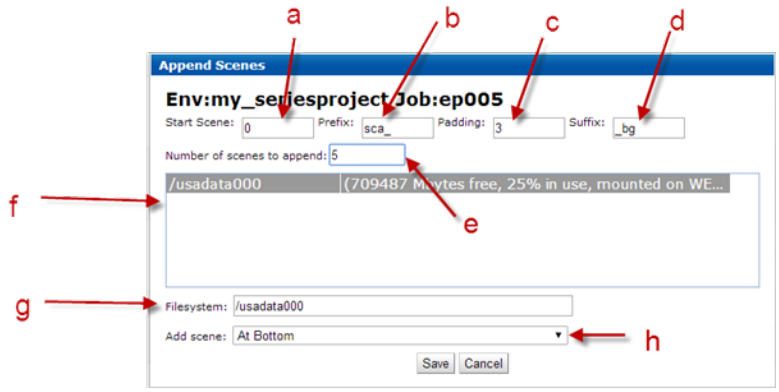
How to append multiple sequential scenes

1. In the Environments & Jobs section, select the job in which you want to add a scene.
2. Do one of the following:
   - Click the Settings  button and select **Append Scenes**.
   - Right click and select **Append Scenes**.

   The Append Scenes dialog appears. Fields in red are mandatory.



3. Fill out the fields where the following is expected:

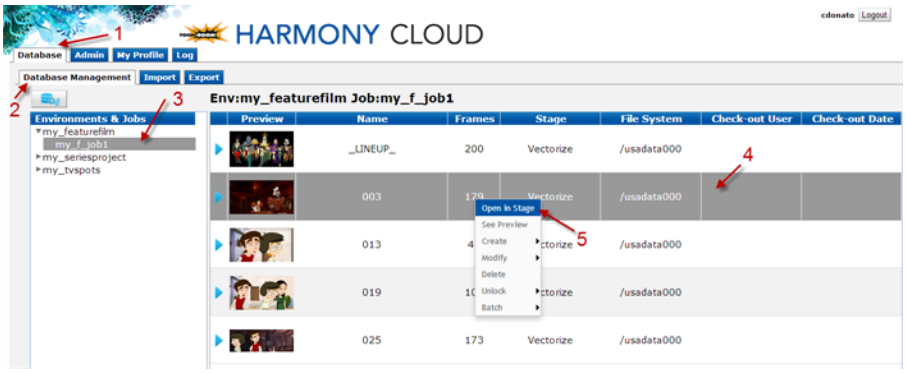


a. The number the first scene being appended should contain.
b. The prefix for each scene we are appending.
c. The number of zeroes to pad the scene number.
   Example: The number 3 with padding of 4 would be 0003.
d. The suffix for each scene you append.
e. The number of scenes you want to append.
f. The file system list.
g. Add a file system that is not in the list.
h. Indicate where you want to place the scene in the Scenes list from the Add Scenes. You have the following options :

   - **At Bottom**: Places the new scenes at the bottom of the list.
   - **At Top**: Places the new scenes at the top of the list.
   - **Name Sort**: Arranges the new scenes alphabetically.

How to open a scene in Stage

1. Select the **Database** tab.
2. Select the **Database Management** tab.
3. Select an environment and then a Job.



4. Select a scene from the Scenes list.
5. Right-click on the scene and select **Open in Stage**.

Updating Scenes

Your scenes contain the animation sequences you are working with, which allows you to manipulate them and their associated files to achieve the desired effect.

You can:

- Move a scene
- Rename a scene
- Change a scene's priority
- Change a scene's stage
- Change the sequence of a scene
- Clear scenes from Control Center
- Copy an exposure sheet to another scene
- Send scenes to the render queue

When you create a scene, it and its associated files are stored on one drive. If you find you are running out of space, you can move a scene to another drive. However, you can consolidate all the scenes for a particular job in a single directory allowing you to find related information quickly. You may also want to file your scenes in specific directories, creating a customized directory system. The Move command lets you move scene data from one file system to another.

Before you move a scene's data:

- Make sure no one else is currently using the scene's data. Failure to do this may result in file corruption and loss of your work.
- Wait until everyone is offline. This ensures no one can open the data files while you move them.

As you work on your scenes, their nature and contents may change and the name you gave the scene when you began the project may no longer reflect its contents. In this case, you can rename the scene to more accurately reflect its contents.

Before you rename a scene:

- Make sure no one else is currently using the scene.

  Failure to do this may result in file corruption and loss of your work.

- Wait until everyone is offline. This ensures no one can open the scene while you rename it.

You can change the scene's priority level in the processing queue. Increasing a scene's priority lets the system process it before other scenes in the processing queue.

Use the Choose New Priority dialog box to change a scene's rendering and vectorization queue priority. The priority is set using a sliding scale where 0 is the highest priority and 10 is the lowest. If a scene has already been sent to the queue changing the priority at this point will not affect its priority in the queue. Changes will only be applied next time it is sent to the queue. To change a scene's priority after it's been sent to the queue, use the Change Priority button in the Queue window.

For example, If scene B comes before scene A in the queue, you can change the scene's priority so that scene A will be processed first.

The Change Stage command allows you to change the approval stage name of a selected scene that is in Manual approval mode. You can also create customized approval stages that reflect the approval process in your production environment.

A scene's stage is a method of tracking its progress in your production; the scene's current stage does not stop you from advancing the scene to other stages.

Changing a scene's stage and making manual approvals allows you to assign and change a scene's approval stages to keep track of its current status. For example, if you have a scene whose drawings are being scanned, you will mark it as the Scan stage. After you begin adding colour to these line drawings, you can change the scene's stage to Paint. If the selected scene has an automatic approval policy, the Change Stage command will be inactive in the Scene menu. To change a scene's stage, you must ensure that the approval policy is set to Manual.

You can change the sequence of scenes in your job, which affects the order in which the scenes appear in the job throughout the system. You can place a scene anywhere in the Scenes list or you can sort them alphanumerically.

If you must restart a scene from scratch, you can completely erase a scene's exposure sheet. When you clear a scene, you delete all exposure sheet database information and reset the scene as if it were completely new. You are only deleting the files from the database; the Control Center module does not actually delete any image files (drawings, scan, final frames). If you have questions concerning the contents of a scene, you should contact the technical director responsible for the scene in question.

If you must clear a scene from the Control Center module, make sure no one else is currently using the scene's data. If you clear a scene that someone else is working on at that moment, you run the risk of corrupting the files and losing work.

If you must clear a scene, you should wait until everyone is offline to ensure that no one can open the data files while you clear them from the Control Center module.

When you have two scenes with similar exposure sheet information, instead of entering the information twice, you can:

1. Enter the information for one exposure sheet.
2. Copy it to the other scene.
3. Modify the second exposure sheet as needed.

The Copy command lets you copy an existing exposure sheet from one scene into another scene. You can then modify the copied exposure sheet using Harmony Stage.

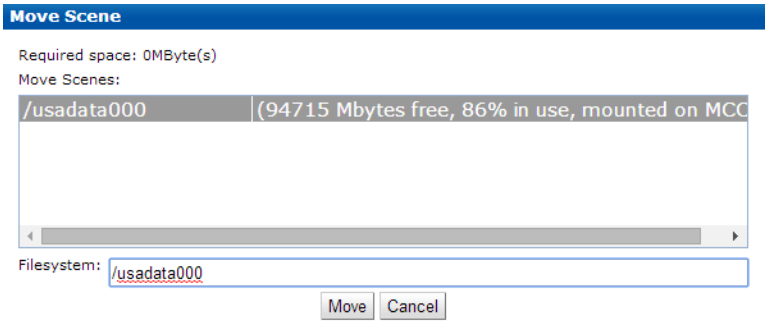
When you are ready to send a set of scenes for rendering, you can use the **Send to Rendering** command. This command allows you to send one or more scenes for rendering to the Batch Processing machine.

You can also use Harmony Stageto render scenes, but since you must open each scene individually in Harmony Stage, you can only send one scene to render at a time.

How to move a scene from one directory to another directory

1. In the Scenes section, select the scenes you want to move.
2. From the Settings menu, select **Modify > Move**.

   The Move Scene dialog box appears.



3. In the Move Scenes list, select the filesystem where you want to move the scene. If the directory to where you want to move the scenes does not appear in the list, enter the new directory path in the Filesystem field.

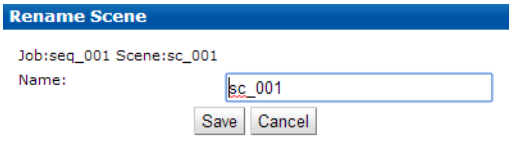
   The Cloud module automatically checks the amount of free space for each directory and compares it to the size of the scene you want to move.

   If there is not enough disk space on a particular drive/mount point to store the scene, the directory displays a "not enough space" message. If there is not enough space on a particular disk, you should choose another disk from the list.
4. Click **OK**.

How to rename a scene

1. In the Scenes section, select the scene to rename.
2. In the Settings menu, select **Modify > Rename.**

   The Rename Scene dialog box appears.

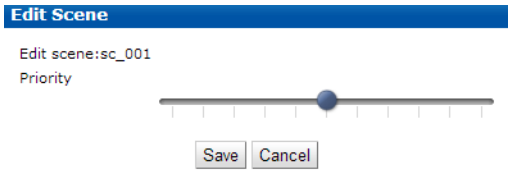


3. In the Name field, type the new name for the scene and click **Save**. Try to keep scene names brief. It is recommended that you use no more than 23 characters. Use lowercase letters if these scenes may be used with a Windows workstation.

How to change a scene's priority

1. Select the environment, job and scene you want to prioritize.
2. In the Settings menu, select **Modify > Change Priority.**

   The Edit Scene dialog box appears.

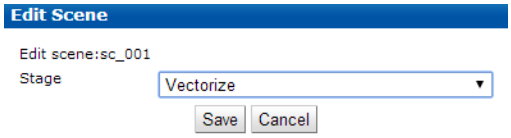


3. Drag the slider to the desired priority (0 means the job has the highest priority for processing through the Vectorize or Render queue and a Job with a priority of 10 is the least important).
4. Click **OK**.

How to change a scene's stage status

1. In the Scenes section, select a scene.
2. From the Settings menu, select **Modify > Change Stage.**

   The Change Scene Stage dialog box appears.

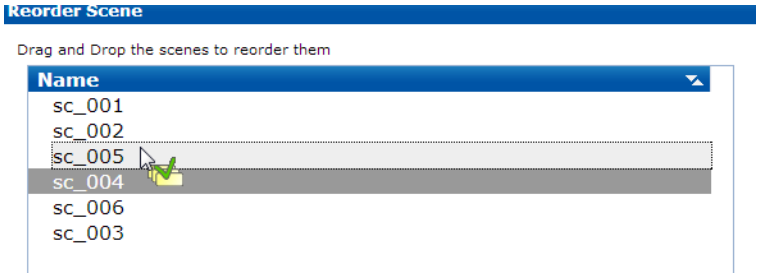


   The current stage of the selected scene appears in the From Stage field.
3. Select the stage you want to apply to the current scene from the To Stage menu.
4. Click **OK**.

How to resequence a scene

1. In the Scenes section, select a scene.
2. From the Settings menu, select **Modify > Reorder.**

   The Reorder Scenes dialog box appears.

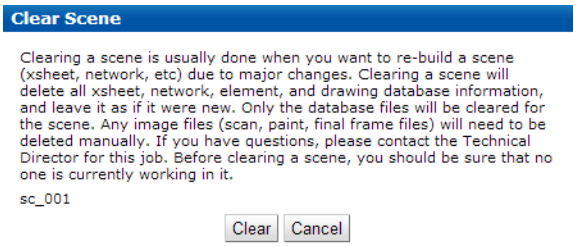


3. Select the reordering method by clicking on the column headers or dragging the scenes up or down.
4. Once the scenes are ordered, click the **OK**.

How to clear a scene

1. In the Scenes section, select a scene.
2. From the Settings menu, select **Modify > Clear.**

   The Clear Scene dialog box appears.

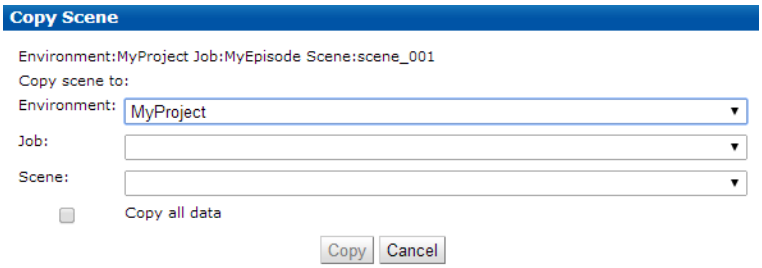


3. Click **OK** to clear the data from the scene.

How to copy an exposure sheet to another scene

1. Select the scene you want to copy.
2. From the Settings menu, select **Create > Copy**

   The Copy Scene dialog box appears.

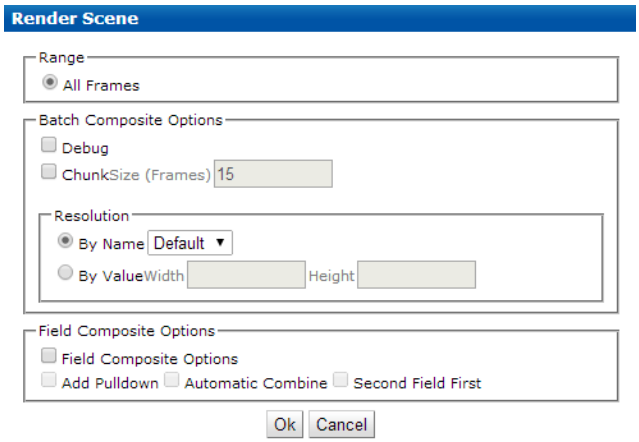


3. Select the environment, job, and scene you want to copy to the selected exposure sheet.
4. If you want to copy the associated animation data files with the scene's exposure sheet, select the **Copy All Data** option. Harmony will place a copy of the animation data in the target scene's storage directory.
5. Click **Copy**.
6. If the scene you are copying already has an exposure sheet, a Confirm dialog box appears to make sure you want to replace the existing exposure sheet.
   - Click **Yes** if you want to copy over the existing exposure sheet.
   - Click **No** to cancel the copy or to select a different scene.

How to send a group of scenes to the render queues

1. Select the environment, job and scenes you want to send to the Render queue.
2. From the Settings menu, select **Batch > Send to Rendering.**

   The Render Scene dialog box appears.



3. In the Range section, select the frames to render.
   - **All Frames**: Sends all the frames in the scene to be rendered.
4. To split the frames into sets of frames, select the **Chunk** option. In the Size (Frames) field, enter the number of frames you want in each chunk.
5. In the Resolution section, set the resolution of the scene you want to render, either by name or size (value).
6. In the Field Composite section, select the **Field Composite Option** option to refine your selection.
   - **Add Pulldown**: Uses the 3:2 pulldown technique.
   - **Automatic Combine**: Combines even and odd fields on a scene's image.
   - **Second Field First:** Always starts with the second field before combining with the first field.
7. Click **OK**.
8. To verify that the scenes have been sent for rendering, you can display the Render queue.

How to send a scene to the vectorization queue

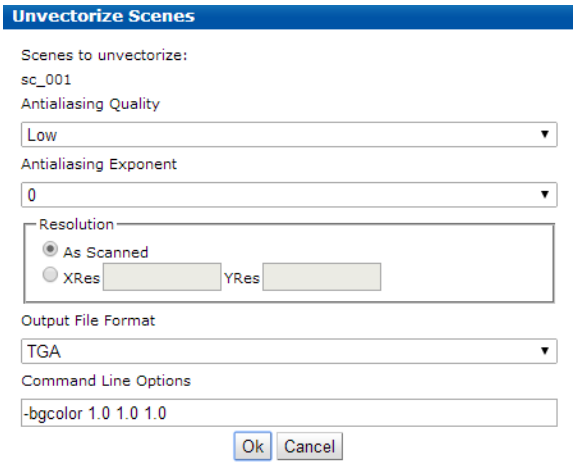
1. Select the environment, job and scenes to send to the Vectorize queue.
2. From the Settings menu, select **Batch > Send to Vectorize.**

   The Send to Vectorize dialog box appears.
3. Click Vectorize.

How to send a scene to be unvectorized

1. Select the environment, job and scenes to unvectorize.
2. From the Settings menu, select **Batch > Send to Unvectorize.**

   The Unvectorize Scenes dialog box appears.



3. **Antialiasing Quality**: Select the Antialiasing Quality and Antialiasing Exponent.
4. **Resolution**: Set the resolution to be as it was originally scanned (selected DPI value during the scan process) or a specific width and height in pixels.
5. **Output File Format**: Select the output file format for your final bitmap images.
6. **Command Line Options**: Enter additional parameters.
7. Click **OK**.

Vectorization and Render Queues

Before you can paint a scanned drawing in Harmony, you must convert it to a vectorized image format. The vectorizing process converts the drawings from a bitmap format to a vector line-based format.

Normally, when you scan drawings, Harmony automatically vectorizes them (sends them to the Vectorize queue). However, you can also use the Send to Vectorize command to reprocess all drawings for a particular element. Vectorizing prepares images for painting by creating vector files. You would only have to manually send scenes to be vectorized in special cases such as:

- Processing images that were not scanned with the Scan module
- Reprocessing a scene due to unrecoverable paint errors

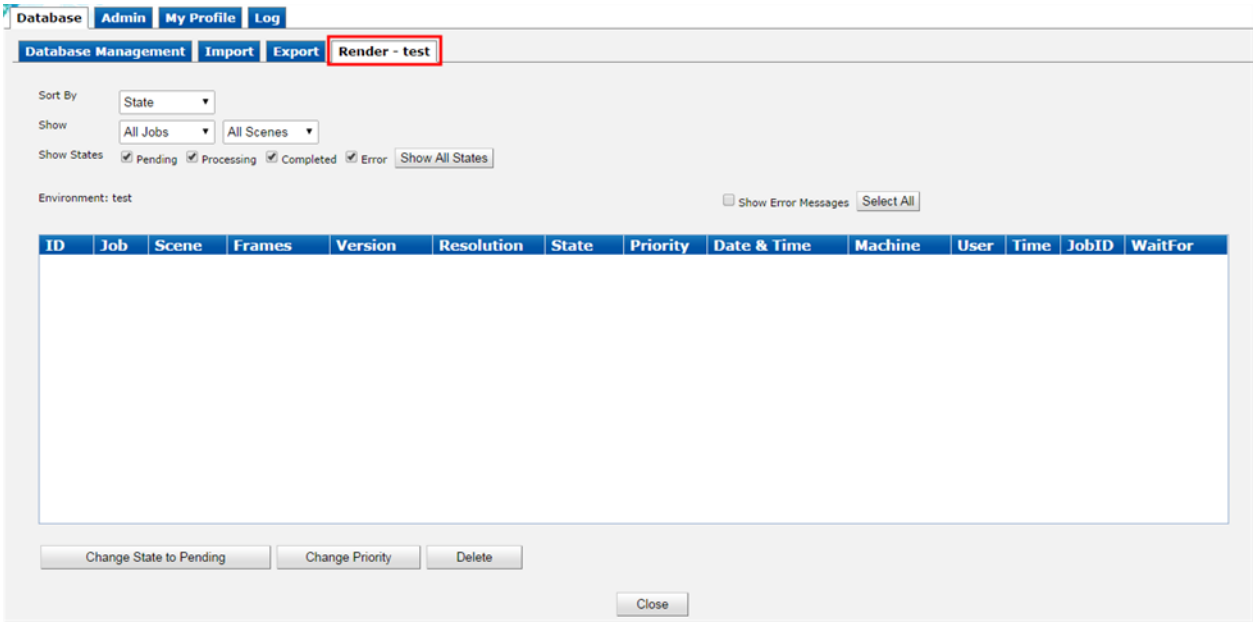
The Vectorize queue displays all the drawings the system is converting to a vector-based format. After the vectorization of a drawing is finished, the completed drawing disappears from the Vectorize queue.

The Render queue displays all the scenes from the selected environment that the system is rendering. After the system renders a scene, the State of the rendered scene changes to Complete or Completed with Errors, and the scene remains in the queue. If you want to remove the rendered scenes, you must select them and use the Delete button.

How to open the Render queue

1. Select the **Database** tab.
2. In the Database Management tab, go to the Environments & Jobs section.
3. Select the environment whose Rendering queue you want to see.
4. Do one of the following:
   - Click the menu button and select **Render Queue**.
   - Right-click and select **Render Queue**.

   The Render Queue tab for the selected environment opens.
5. Select the new **Render <environment name>** tab.



6. Select how to sort the entries in the queue from the Sort By.
   - **State**: Sorts the entries based on the item's status (Pending, Pending-E, Processing, Completed with Errors, or Completed).
   - **Entry Time**: Sorts the entries based on the time you sent them for rendering.
   - **Job, Scene, etc.**: Sorts the entries based on their parent jobs and scenes.
   - **JobID**: Sorts the entries based on their unique job id.
7. Select the components you want to display in the queue from the Show.
   - **Jobs**: Select the specific job you want to see.
   - **Scenes**: Select the specific scene you want to see.
8. Select the states you want to display in the queue from the Show States options.
   - **Pending**: Displays the items waiting in the queue.
   - **Processing**: Displays the items that currently processing.
   - **Completed**: Displays completed items.
   - **Error**: Displays the items that contains errors that stopped processing (displays Pending-E as the item's state).
   - **Show All States**: Displays all items, regardless of their state.
9. In the Refresh section, select how often you want the queue to check for the latest entries.
   - **Hold**: Displays no new entries to the queue once the button is activated.
   - **Monitor**: Automatically displays new entries at the interval you enter in the Every ## secs field.
10. Select the **Show Error Messages** option to see any related errors for each entry in the queue.

If the Control Center module detects any errors while processing the scenes, it displays

Many of these errors can occur if the system is improperly configured. If you get a

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Pending-E error, see your system administrator as the system may need to be reconfigured.

When you have a list of entries in your queue, you can modify them in one of the following ways:

- Click the **Change State to Pending** button to change the status of the selected entries in the queue from Processing to Pending. After a job becomes Pending, the next available machine will process the entry.

  If you want to remove the entry from the queue, select the Pending entry and click **Delete**. If the entry is processing, you can delete the entry from the queue but the processing will not stop until it is completed.

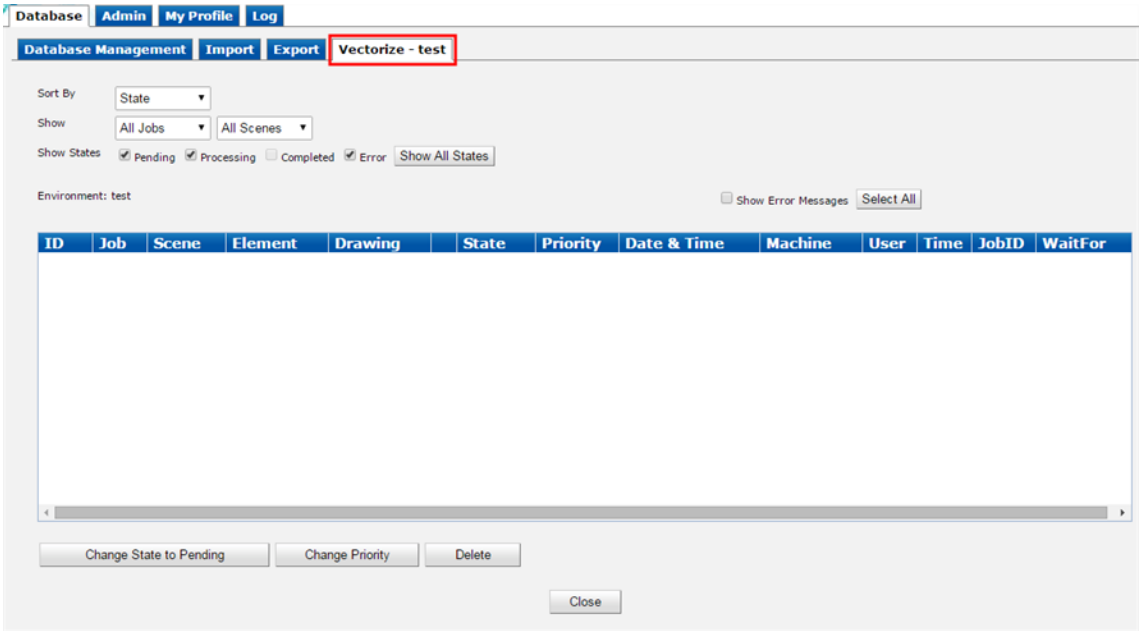
  You can only modify an entry in the queue while it is pending (check the State column in the queue list). You cannot modify a job that is being processed.

- Click the **Change Priority** button to change the selected drawings' processing priority in the queue. When the New Priority dialog box appears, increase or decrease the drawing's priority.
- Click the **Delete** button to delete the selected drawings from the queue. When you remove a drawing from the queue, the request is cancelled only.

How to open the Vectorization queue

1. Select the **Database** tab.
2. In the Database Management tab, go to the Environments & Jobs section.
3. Select the environment whose Rendering queue you want to see.
4. Do one of the following:
   - Click the menu button and select **Vectorize Queue**.
   - Right-click and select **Vectorize Queue**.

   The Vectorize Queue tab for the selected environment opens.
5. Select the new **Vectorize <environment name>** tab.



6. Select how to sort the entries in the queue from the Sort By.
   - **State**: Sorts the entries based on the item's status (Pending, Pending-E, Processing, Completed with Errors, or Completed).
   - **Entry Time**: Sorts the entries based on the time you sent them for rendering.
   - **Job, Scene, etc.**: Sorts the entries based on their parent jobs and scenes.
   - **JobID**: Sorts the entries based on their unique job id.
7. Select the components you want to display in the queue from the Show.
   - **Jobs**: Select the specific job you want to see.
   - **Scenes**: Select the specific scene you want to see.
8. Select the states you want to display in the queue from the Show States options.
   - **Pending**: Displays the items waiting in the queue.
   - **Processing**: Displays the items that currently processing.
   - **Completed**: Displays completed items.
   - **Error**: Displays the items that contains errors that stopped processing (displays Pending-E as the item's state).
   - **Show All States**: Displays all items, regardless of their state.
9. In the Refresh section, select how often you want the queue to check for the latest entries.
   - **Hold**: Displays no new entries to the queue once the button is activated.
   - **Monitor**: Automatically displays new entries at the interval you enter in the Every ## secs field.
10. Select the **Show Error Messages** option to see any related errors for each entry in the queue.

If the Control Center module detects any errors while processing the scenes, it displays "Pending-E" in the State column. Errors can occur if there are files missing, computers are unavailable, or data cannot be found.

Many of these errors can occur if the system is improperly configured. If you get a Pending-E error, see your system administrator as the system may need to be reconfigured.

When you have a list of entries in your queue, you can modify them in one of the following ways:

- Click the **Change State to Pending** button to change the status of the selected entries in the queue from Processing to Pending. After a job becomes Pending, the next available machine will process the entry.

  If you want to remove the entry from the queue, select the Pending entry and click **Delete**. If the entry is processing, you can delete the entry from the queue but the processing will not stop until it is completed.

  You can only modify an entry in the queue while it is pending (check the State column in the queue list). You cannot modify a job that is being processed.

- Click the **Change Priority** button to change the selected drawings' processing priority in the queue. When the New Priority dialog box appears, increase or decrease the drawing's priority.
- Click the **Delete** button to delete the selected drawings from the queue. When you remove a drawing from the queue, the request is cancelled only.

Scene Preview Clip

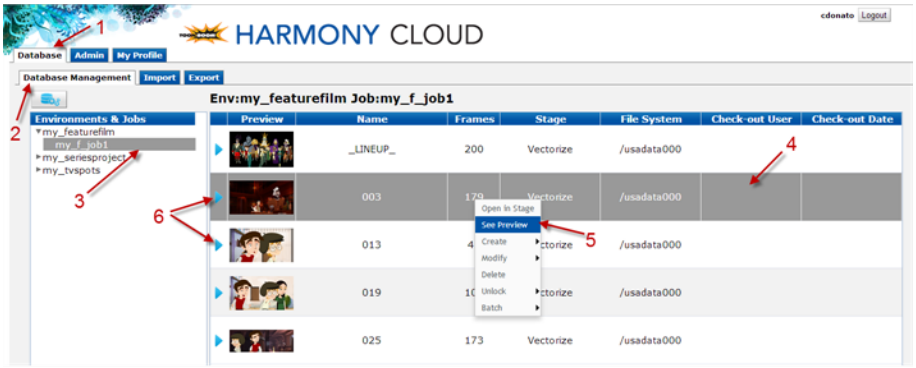
It is possible to view the preview clip for a scene from Harmony Cloud. It is also possible to configure Harmony Stage to automatically render a video and image to be set as the Cloud preview clips.

Here are the image and clip formats supported by Harmony Cloud:

- bmp
- gif
- jpg
- mov
- png
- tif

How to view a preview clip

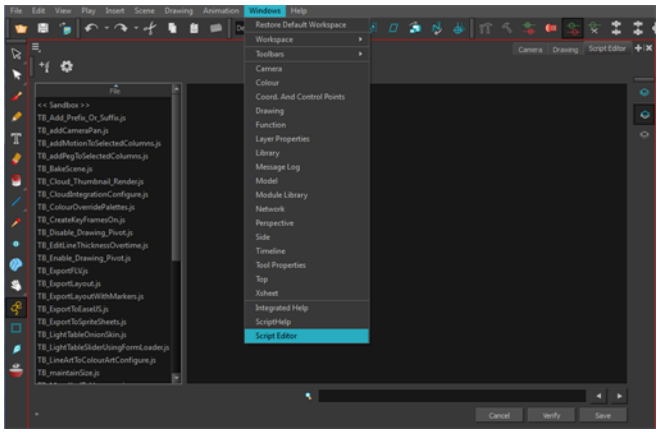
1. Select the **Database** tab.



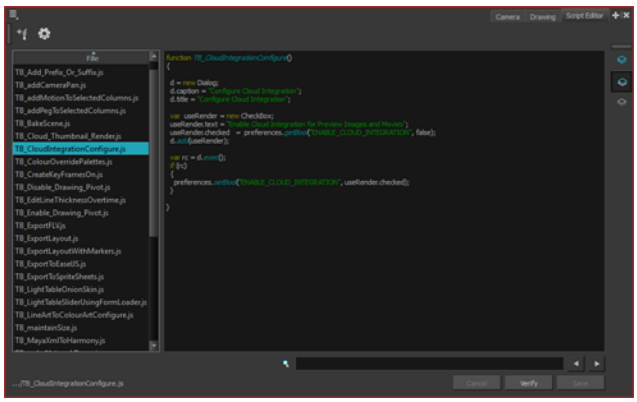
2. Select the **Database Management** tab.
3. Select an environment and then a job.
4. Select a scene from the Scenes list.
5. Right-click and select **See Preview** or click the button.

How to set up automatic creation of the Cloud Write node

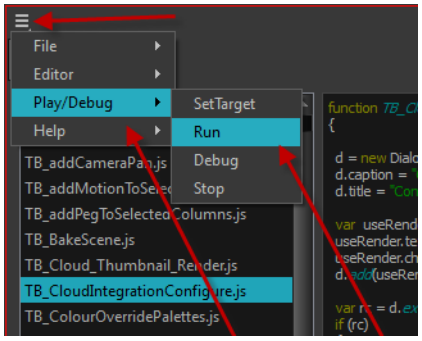
1. Run Harmony Stage in database mode.
2. Select **Windows > Script Editor** to enable the Script Editor view.



3. From the list of scripts, select **TB_CloudIntegrationConfigure.js**.

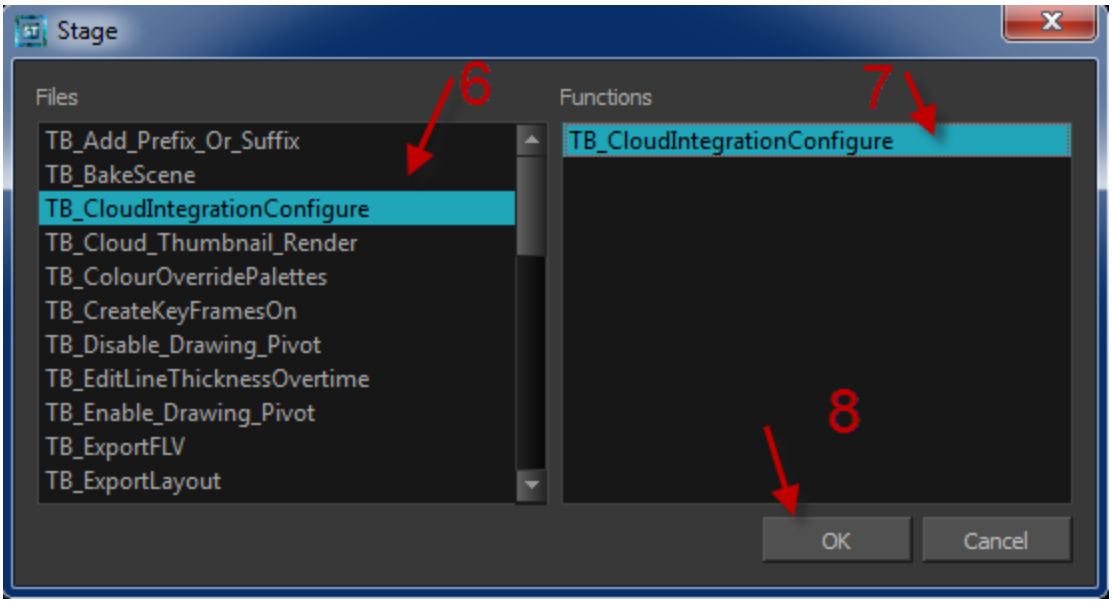


4. From the view menu, select **Play/Debug > Run**.

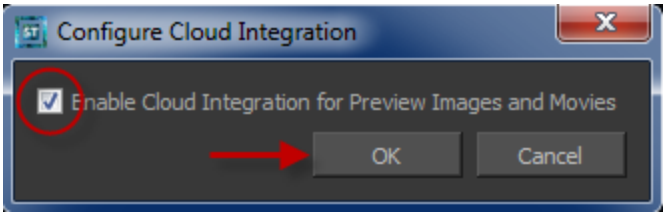


The Run dialog box opens.

5. From the Files list, select **TB_CloudIntegrationConfigure**.



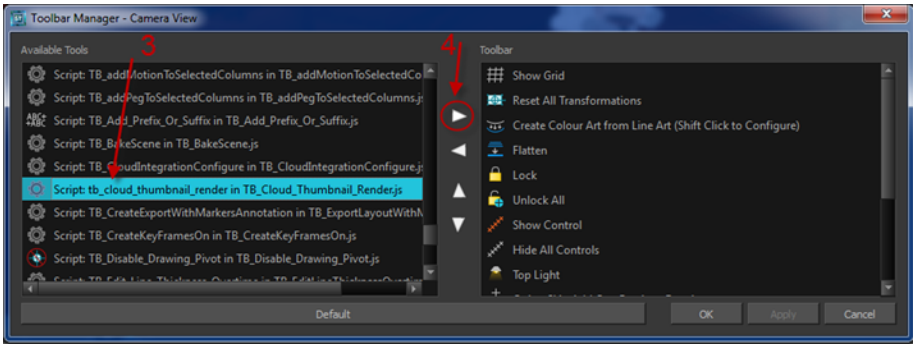
6. From the Functions list, select **TB_CloudIntegrationConfigure**.
7. Click **OK**.
8. Select the **Enable Cloud Integration for Preview Images and Movies option.**



9. Click **OK**.

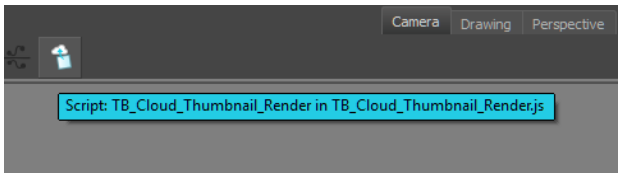
How to create a preview image of the current frame

1. Run Stage in database mode.
2. Right-click on the toolbar of your choice and select **Customize**.
3. In the Available Tools panel, locate the **`tb_cloud_thumbnail_render in TB_Cloud_Thumbnail_Render.js`** script.
4. Click the Move Right  button.



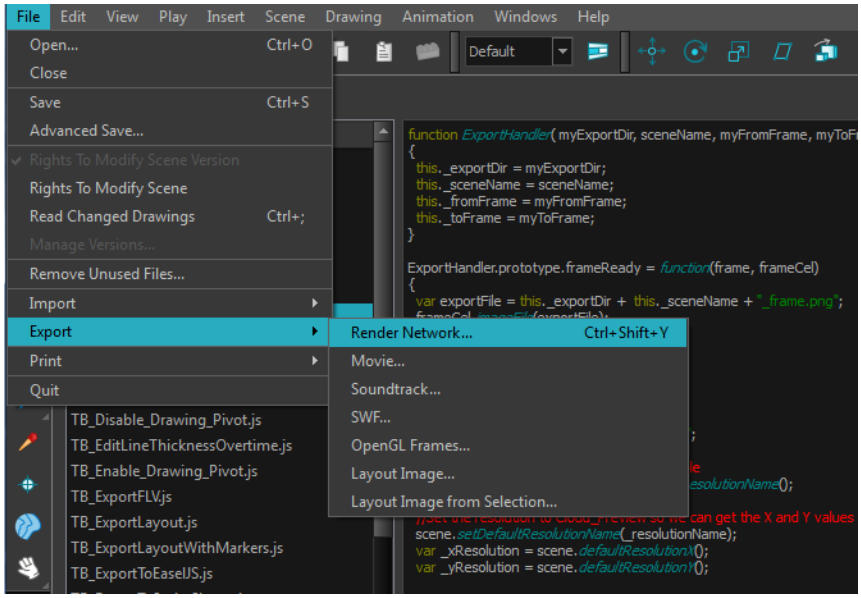
5. Click **Apply**.
6. Click **OK**.

   The new button appears in your toolbar.

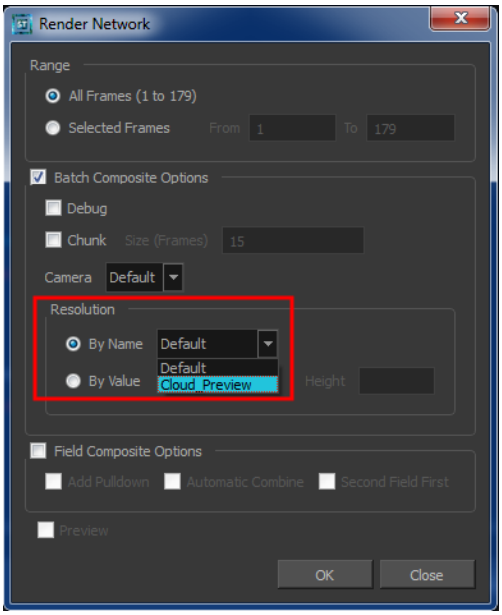


How to render a movie clip for Cloud

1. From the top menu, select **File > Export > Render Network**.



2. In the Batch Composite Options (Resolution) section, select the **By Name** option and then select **Cloud_Preview**.



How to render a preview image for Cloud

1. In Harmony Stage, go to the Camera view .
2. Select the frame you want to render in your timeline.
3. Click the script button you added to your toolbar—see How to create a preview image of the current frame on page 100.

Exporting and Importing Data

Exporting and importing from the Harmony Cloud is also an easy way to work from home in offline mode and then import your changes back into the Harmony database.

Using the Harmony Cloud module's export utility, you can migrate scenes from your system for archival purposes or third parties, and use the import utility to integrate scenes into a Harmony environment.

You can also copy scene data. This exported data can be downloaded through the Harmony Cloud interface to your local PC or you can store the exported scene in your Harmony Cloud user files for download access later.

Harmony Cloud creates two files during the database export process:

- **`README.txt`** file (includes export statistics, such as creation date and user ID)
- **`IEContents.dat`** file (includes export parameters)

Harmony Cloud creates one file during the offline export process:

- **`IEContentsOffline.txt`** file (includes export parameters used to re-import data)

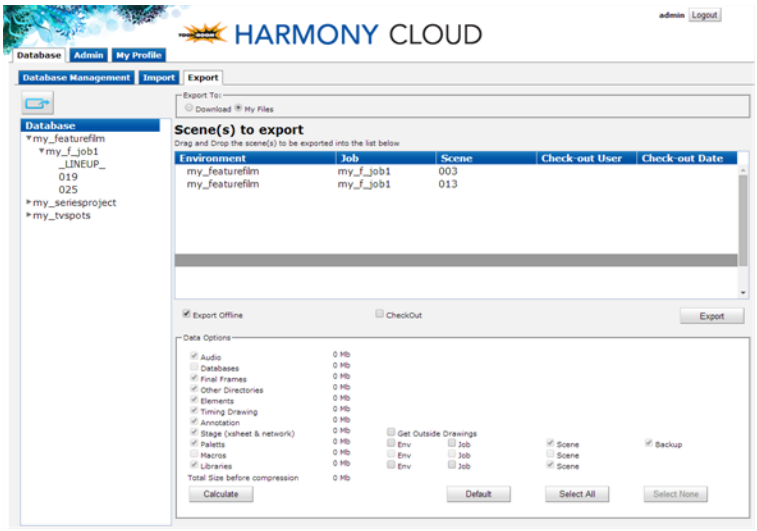
The exported package will be a compressed file in the zip format. You will need to unzip it prior to opening it in Harmony Stage.

When importing, Harmony Cloud expects a compressed file in zip format of either an individual offline scene or a package exported in database mode.

You must compress the package directory in zip format on your local machine before you can import it into the Cloud.

How to export data

1. Select the **Database** tab.
2. Select the **Export** tab.
3. Expand the environment and job that holds the scenes you want to export.
4. Select the scene(s) you want to export from the Database view on the left.
5. Do one of the following:
   - Drag and drop the scene into the Scene(s) to Export pane.
   - Click the Export  button.



6. In the Export To section, select the destination for the export.
   - **Download**: Downloads the exported package to your local file system immediately.
   - **My Files**: Stores the exported package in your Harmony Cloud user files on the Harmony Cloud server—see Exporting and Importing Data on page 45.
7. Select one or more scenes and click **Remove** to remove scenes from the export list.
   - If you chose the **Export Offline** option, you also have the choice of performing a checkout on the scene. This locks the scene which persists as you work offline. When you import the scene back into the Harmony database and check in, the lock will be released.
8. In the Data Options tab, select what you want to export:

Parameter	Description
Audio	Exports the Audio directory.
Databases	Selected by default, this option exports the elements in the scene. If you select this option and deselect the Elements option, you can access the elements from the Element Manager in the Control Center, but their drawing and bitmap files will not be included. The list of available versions in the scene is also exported. It will not be possible to open a scene if this is not selected for export.
Final Frames	Exports the directory that contains final, rendered frames.
Other Directories	Exports all other directories and files in the scene's data structure.
Elements	Selected by default, this option exports the contents (drawing and bitmap files) of the Element directories.
Timing Drawing	Selected by default, this option exports the contents of the Timing directories.

Annotation	Allows you to export the different drawings created while drawing in the Annotation columns and imported images.
Stage (Xsheet and Network)	Selected by default, this option exports the Stage directory, which contains the Stage files for each scene you export. These files are necessary if you want to have the ability to reuse the exposure sheet (timing) and the effects network from the original scene. If this option is selected, you can select the **Get Outside Drawings** option to copy drawings into the scene folder that is referred to by the Timing columns and their Element (Drawing) modules.
Palettes	Exports the palette-library directories. When you select this option, you must decide if you want to export the palette-library from the environment, job or scene level. When you select a level, the palette-library in lower-level directories will also be exported.
Macros	Exports the macros (customized effect and module connections) that were created and stored in the environment, jobs or scenes to be exported.
Libraries	Exports templates created at the selected levels.

9. Click **Calculate** to get a preview of the size of your export package.
10. Click **Export**.

    The selected files and components are exported.

How to import files into Harmony Cloud

1. Select the **Database** tab.
2. Select the **Import** tab. Only zip files of an individual scene exported offline or a database package export can be imported.
3. Do one of the following:
   - Click the Choose File button and select the zip package you want to import from your local machine.
   - Click the Import  button and choose from your uploaded Harmony Cloud files.
4. Click the Browse button to select the environment, job and file system where you want to place the imported scene.
5. In the Data Options tab, select what you want to import:

Parameter	**Description**
Audio	Exports the Audio directory.
Databases	Selected by default, this option exports the elements in the scene. If you select this option and deselect

	the Elements option, you can access the elements from the Element Manager in the Control Center, but their drawing and bitmap files will not be included. The list of available versions in the scene is also exported. It will not be possible to open a scene if this is not selected for export.
Final Frames	Exports the directory that contains final, rendered frames.
Other Directories	Exports all other directories and files in the scene's data structure.
Elements	Selected by default, this option exports the contents (drawing and bitmap files) of the Element directories.
Timing Drawing	Selected by default, this option exports the contents of the Timing directories.
Annotation	Allows you to export the different drawings created while drawing in the Annotation columns and imported images.
Stage (Xsheet and Network)	Selected by default, this option exports the Stage directory, which contains the Stage files for each scene you export. These files are necessary if you want to have the ability to reuse the exposure sheet (timing) and the effects network from the original scene. If this option is selected, you can select the **Get Outside Drawings** option to copy drawings into the scene folder that is referred to by the Timing columns and their Element (Drawing) modules.
Palettes	Exports the palette-library directories. When you select this option, you must decide if you want to export the palette-library from the environment, job or scene level. When you select a level, the palette-library in lower-level directories will also be exported.
Macros	Exports the macros (customized effect and module connections) that were created and stored in the environment, jobs or scenes to be exported.
Libraries	Exports templates created at the selected levels.

6. If you are importing a standalone scene which was checked out, you will also have the option to check-in the scene.
7. Click **Import**.

   If the scene already exists, the Scene Exists dialog appears.
8. Click either **Import Scene for each scene** or **Import All Scenes** to confirm your selection.

If the name of the scene you are importing in Harmony Cloud is too long, you will be prompted with an error message stating that it will be truncated. A scene's name cannot exceed 23 characters.

If you are importing scenes that were exported from Harmony Network or worked on in Harmony Stand Alone, the system will try to retrieve the version name.

Troubleshooting Import or Export Problems

If you have any problems exporting or importing in Cloud, review the instructions to make sure you have followed them completely. If you continue to have problems, consult the following list to troubleshoot common import and export problems.

- **Import or Export Not Successful**: If the transfer is not successful, an error dialog box appears to describe the problem. The most common reason for a failed transfer is due to your current network permissions. See your system administrator for help. If the transfer fails in the middle of the process, the files that were imported or exported may be corrupt or incomplete.
- **For a failed import**: Use Control Center or Harmony Cloud delete the scene.
- **For a failed export**: Manually delete the incomplete export folder.

Chapter 4: Batch Processing

The Toon Boom Harmony system uses batch processing to convert scanned drawings to a vector-based format or to render the final animation. The system performs these tasks in the background; you will not even realize the system is performing the tasks.

There are two types of batch processes in Harmony; both can run on almost any computer on the network: vectorize and render.

Vectorize

The vectorizing process prepares the images scanned on the black and white scanner for painting by converting them to vector based files (`*.tvg` files). The vectorizing process converts the drawings from a bitmap format to a digital line-based format.

Vectorizing prepares images for painting by creating paint files. You would only have to manually send scenes to be vectorized in special cases such as:

- Processing images that were not scanned in the Scan module
- Reprocessing a scene due to unrecoverable paint errors
- Completing the vectorization after you run the scene through a pencil test

You can open the Vectorize Queue in the Control Center module for the list of vectorizing work waiting to be processed.

Render

Also known as *compositing*, this process composites scenes to create the final frames.

When you have finished working on a scene or all of your animated sequences, you can render it out locally or send it to the **Render Queue**. After you render your animation, you can transfer the scenes to video or film.

You can open the **Render Queue** in the Control Center module for the list of compositing work waiting to be processed by a rendering machine.

Setting Up the Batch Processing

When you create a new environment for a project, you must set up the batch processing. You can create a particular batch processing schedule and assign certain machines on your Harmony network to vectorize and render the scenes in that environment.

You must set up batch processing on selected Harmony machines to convert scanned drawings to vector files and to composite final frames.

> We do not recommend rendering/vectorizing on the workstation while you are working in the software. These tasks are resource intensive and will slow your computer down if you are trying to work in the software at the same time. If urgently needed on a continual basis, set up a separate render station to do this. Otherwise, batch processing should be done while the workstation is inactive.

With Harmony batch processing, you can spread the workload across multiple computers on the network, creating a render farm. To do this, you must identify all the computers that will be processing Harmony files and you have to start the batch processing queues. Then, you have to set up all the environments you add to the database for batch processing.

Once you have set up batch processing, you can send your drawings to be vectorized and scenes to be rendered. This chapter also explains how to view the Vectorize and Render queue to check on how the batch processing is progressing.

This chapter is divided as follows:

Installing Batch Processing and Configuring the machine-list File

The **`machine-list`** file identifies all the machines on your network that can be allowed to batch process Harmony files. The machines on this list represent the render farm.

You must have sufficient batch processing licenses to run batch processing on all the machines in the **`machine-list`** file.

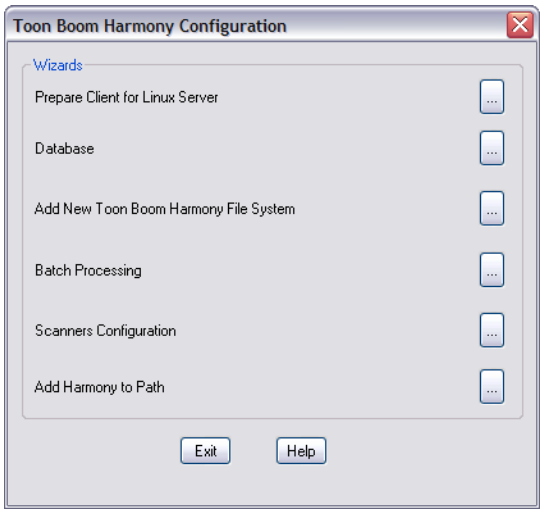
Windows

In Windows, use the Harmony Configuration Wizard to add computers to the machine-list file and to install the batch processing service. You must run the Configuration Wizard on all machines that will perform batch processing.

How to start the Harmony Configuration Wizard

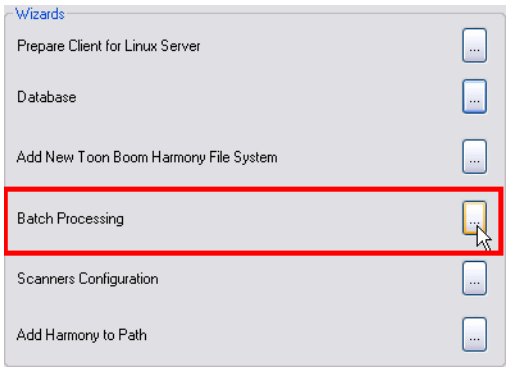
1. Click the Start menu and select **All Programs > Toon Boom Harmony 11.1 > Tools > Configuration Wizard**.

   The Toon Boom HarmonyConfiguration window opens.



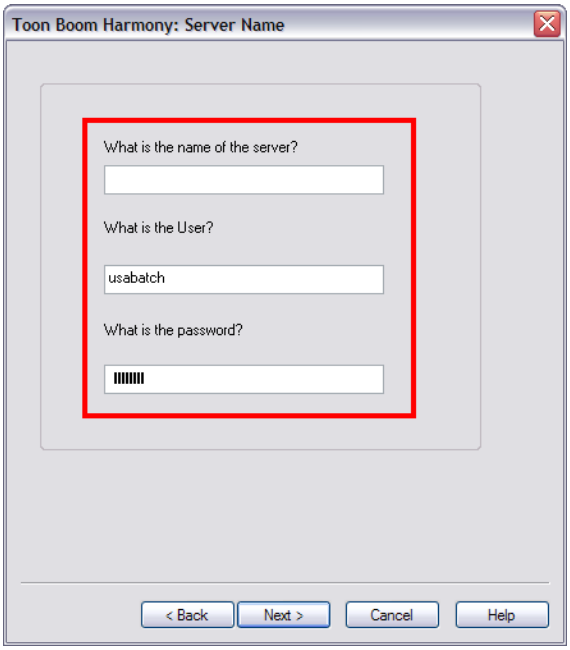
How to configure batch processing

1. In the Wizards section, click **Batch Processing.**



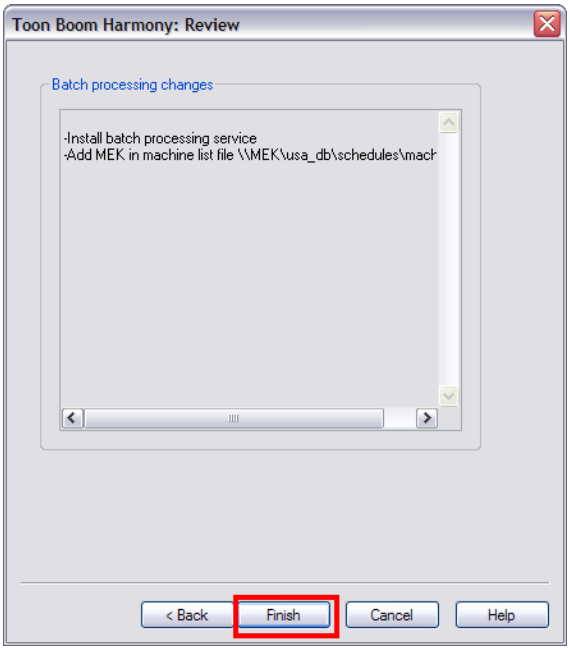
2. In the next window, you are asked if this machine will do batch processing. Select **Yes** and click **Next**.

3. In the What is the Name of the Server field, enter the name of the Harmony server.



4. In the What is the User field, type the server's user name (OS account) created while setting up the Harmony database. The machine you are setting up will use this user name and password to log on the server machine and retrieve the data to render or vectorize.
5. In the What is the Password field, type the password corresponding to the selected user name.
6. Click **Next**.

   The Harmony Configuration wizard presents a review of all the changes that will be made.



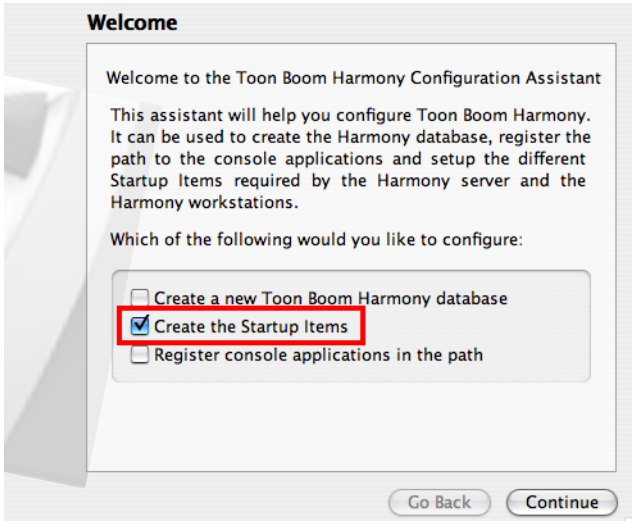
7. Click **Finish**.

Mac OS X

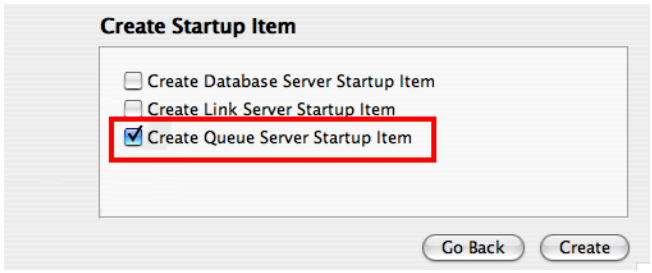
On Mac OS X, use the Configuration Assistant to install the batch processing queue Startup Item that will start the batch processing service. You must run the Configuration Assistant on all machines that will perform batch processing.

How to install the batch processing queue Startup Item

1. In the Finder, go to **Applications > Toon Boom Harmony 11.1 > Tools > Configuration Assistant**.
2. Select the **Create the Startup Items** option and click **Continue**.



3. Select the **Create Queue Server Startup Item** option and click **Create**.



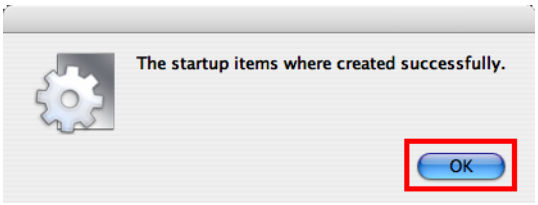
The Authenticate dialog box appears asking for a user name and a password.

4. Type a user name who is allowed to administer the computer and click **OK**.

   The necessary files to automatically start the batch processing queue on the counter are copied.
5. Repeat these steps on all the computers that will be performing batch processing.

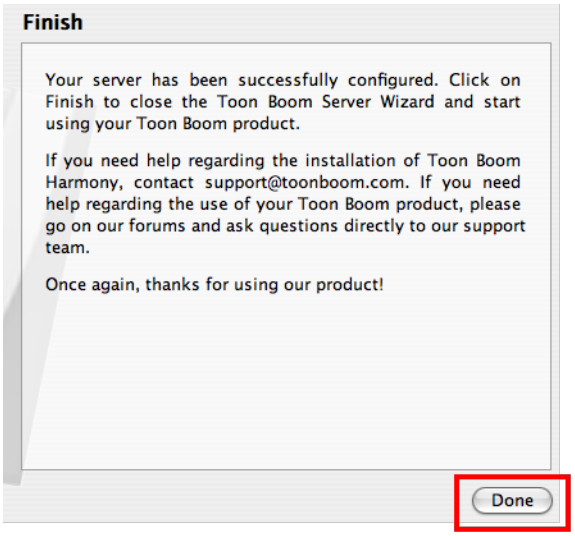
The files required to start the batch processing queue are copied by the Configuration Assistant in: **`/Library/StartupItems/ToonBoomQueueServer/`** folder.

A dialog box appears to indicate if the Startup Item was successfully created.



6. Click **OK**.

   The Finish window appears.



7. Click **Done** to close the Configuration Assistant.

Machine-list File

The machine-list file identifies all the machines on your network that are allowed to batch process Harmony files. The machines in this list represent the render farm. You must have sufficient batch processing licenses to run batch processing on all of the machines in the machine-list file.

How to create the machine-list file

1. In a text editor, create a new text file.
2. In the new text file, enter all the machine names in your render farm.

   The order that you list machine names determines their order in the batch processing scheduling commands.

There must be no blank lines in the machine-list file.

For example, your machine-list might look like this:

```
anim-1
anim-2
anim-3
bart-1
bart-2
paint-1
paint-2
paint-3
```

- Your machine name is created when you install Mac OS X. You can list the machine name of a computer by typing the following command in the Terminal or command prompt:

  ```
  hostname
  ```

3. Save the file with the name machine-list in the **/USA_DB/schedules/** directory.

Creating the machine-list File (Linux)

The **machine-list** file identifies all of the machines on your network that can be allowed to batch process Harmony files. The machines on this list represent the render farm.

You must have sufficient batch processing licenses to run batch processing on all of the machines in the **machine-list** file.

How to create the machine-list file on Linux

1. Using a text editor, create a new text file. Enter all of the machine names in your render farm in this file. The order that you list machine names in this list determines their order in the batch processing scheduling commands.

There must be no blank lines in the machine-list file.

For example, your machine-list might look like this:

```
anim-1
anim-2
anim-3
bart-1
bart-2
paint-1
paint-2
paint-3
```

Your machine name is created when you install Linux. You can list the machine name of a computer by typing the following command in a terminal or command prompt:

```
uname -n
```

2. Save the file with the name **machine-list** in the **/USA_DB/schedules/** directory.

The tbprocess Program

The tbprocess program monitors the database queues for batch processing work to be done. When it finds a batch processing job to complete, it launches the appropriate Vectorize or Render programs to process the job (you can monitor these jobs using the queues in the Control Center module. In order for a machine to perform the batch processing, you must launch the tbprocess program on it.

You can use a set of schedules to better manage the batch processing on your Harmony system. While scheduling dictates the type and time a machine will perform batch processing, the tbprocess program does the actual batch processing work (for both vectorize and render batch processing).

There are several ways in which you can start the tbprocess program on a machine and then verify that it is indeed running. You can run only one session of tbprocess per machine. If you try to run more than one tbprocess session, nothing happens (the first session keeps running). You can monitor the jobs taking place in the tbprocess session by opening the log file.

Remember that just because tbprocess is running on a machine, it does not mean that the machine is actually doing any batch process work at that moment. The schedules determine the location and time when the machines perform batch processing work.

This section is divided as follows:

- Starting the Batch Processing Queue on Windows below
- Starting the Batch Processing Queue on Linux on page 119
- Starting the Batch Processing Queue on Mac OS X on the next page
- Verifying that a tbprocess Session is Active on page 121
- Monitoring a tbprocess Session on page 122

Starting the Batch Processing Queue on Windows

When you launch a Harmony module, there are functions that applications perform in the background that you generally do not see. Two of these functions are as follows:

- **tbprocess**: Manages requests for batch processing of vectorized drawings or rendered scenes.

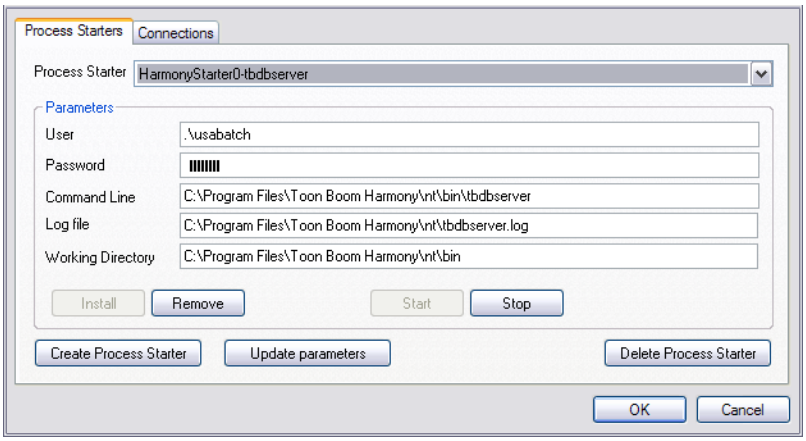
  When you ran the Harmony Configuration Wizard, you had the option of having batch processing on your system. If you selected the Yes option and you have a valid license, the tbprocess starter is ready to run; otherwise, you cannot perform batch processing on Harmony.

- **tbdbserver**: When you have a Server/Standalone configuration, the tbdbserver controls the entries that you make to the Harmony database (like adding new scenes to a job).

When you run the Toon Boom Harmony Configuration Wizard, it automatically configures your system to launch the tbdbserver, so you do not need to configure anything else.

How to modify the Process Starter launch properties

1. From the Start menu, select **Control Panel** from the Settings sub-menu.
   The Control Panel window appears.
2. Double-click on the Toon Boom Harmony Control Panel icon in the Control Panel window.
   The Toon Boom Harmony Control Panel dialog box appears.
3. Select the **Process Starters** tab. You can use this tab to select a specific process starter and view its parameters.



   The Process Starters tab displays the following information:

   - **User**: Displays the profile that the process starter uses by default.
   - **Password**: Displays the password for the user specified in the User field.
   - **Command Line**: Displays the path of the application you want the process starter to launch.
   - **Log File**: Displays the name of the log file that records all the messages from the application specified in the Command Line field.
   - **Working Directory**: Displays the path that contains all the applications you need and where these applications can store data while they run.
4. Make any modifications you need to the existing services and click **Update parameters button**.
5. Click **OK**.

Starting the Batch Processing Queue on Mac OS X

After the machine-list file has been created and the Startup Item has been installed, you are ready to start the batch processing queue. The Startup Item will start the batch processing queue automatically every time the computer is started, but you can start it without restarting the computer.

Note that the user must have administrator privileges on the computer.

How to start batch processing queues

1. Open the Mac OS X Terminal application.

2. Go to **Applications > Utilities >** and double click on the **Terminal**.
3. Type the following in the Terminal:

   ```
   sudo /sbin/SystemStarter start ToonBoomQueueServer
   ```

   The Terminal prompts you to type your password.

How to stop batch processing queues

- Type the following in the Terminal:

  ```
  sudo /sbin/SystemStarter stop ToonBoomQueueServer
  ```

  The Terminal prompts you to type your password.

Starting the Batch Processing Queue on Linux

After the machine-list file is created, you are ready to start the batch processing queues. You must start the batch processing queues on all machines that will perform batch processing.

How to start batch processing queues

- Type the following in the Terminal or command prompt:

  ```
  /sbin/service USAnimation_queues start
  ```

  A message appear in the shell indicating that the script was successful.

The tbprocess program is installed with the Toon Boom Harmony system. It monitors the Vectorize and Render batch processing queues for work to be done and runs the appropriate programs to vectorize or render the images.

If you reboot your machine after you install the Toon Boom Harmony, the tbprocess program starts automatically on each Toon Boom Harmony client and server.

During a normal installation, Harmony places a file called **`S98USAnimation_queues`** in the **`/etc/rc2.d/`** folder. This file controls the launching of the tbprocess program when you reboot.

This file name **`S98USAnimation_queues`** may change and the first two numbers at the beginning of the file name could be: **`S97USAnimation_queues`**,**`S96USAnimation_queues`**, **`S95USAnimation_queues`** and so on.

If you do not see this file in the **`/etc/rc2.d/`** folder, you need to reinstall the links for Harmony. However, if you do not reboot after you install the Toon Boom Harmony system, or someone stops the tbprocess program on a specific machine, you must start the tbprocess program on each machine assigned to the batch processing schedule before you can batch process the items in the Vectorize or Render queues.

How to launch the tbprocess program on a batch processing machine

1. Open a command prompt and log in as the root user on the machine on which you want to start the Process program.
2. Type the following:

   `/etc/init.d/USAnimation_queues stop`

3. Press Return to make sure there are no tbprocess programs already running.

   `Type /etc/init.d/USAnimation_queues start`

4. Press Return.

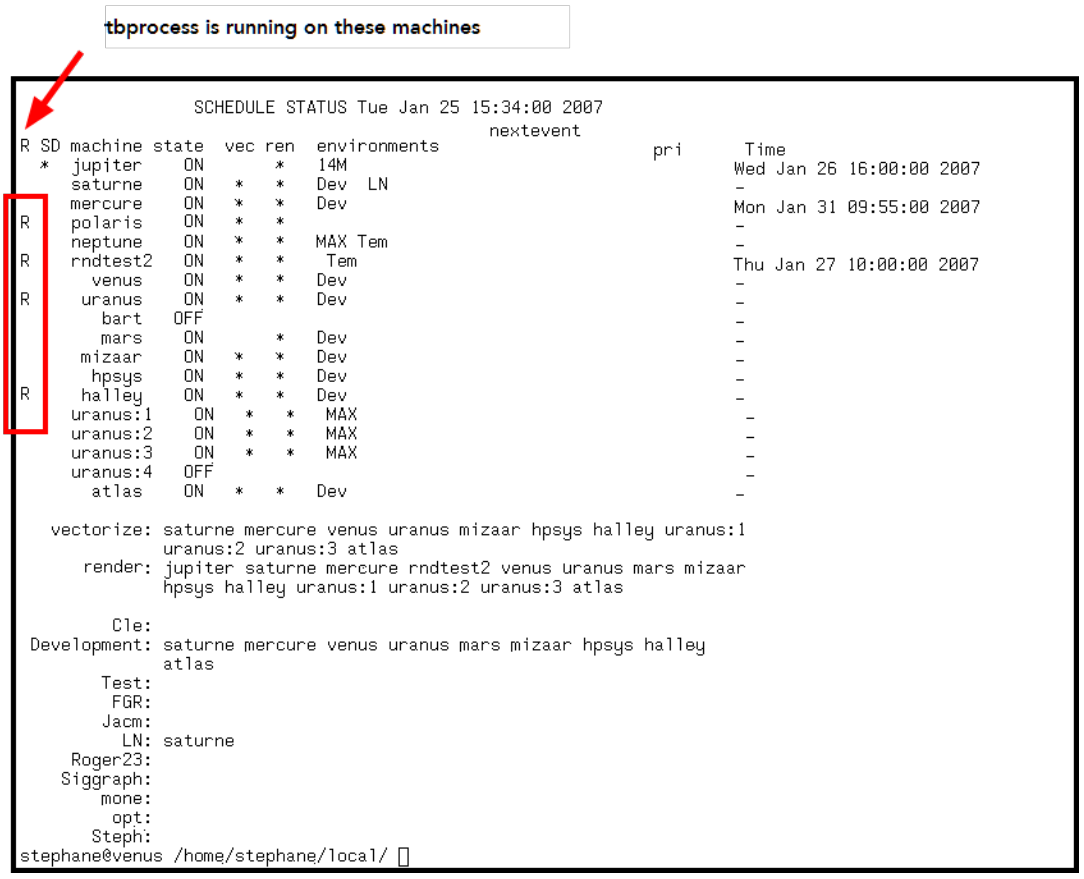
   A PID (Process ID) number appears when the tbpprocess starts.

   `[1] 19003`

   To stop the Process program on a machine, type **`/etc/init.d/USAnimation_queues stop`** and press Return.

5. To view the batch processing schedule status for all machines, type **`Status`** and press Return.

   The batch processing schedule appears.



The column on the left displays an **`R`** for each machine on which you launched the tbprocess program.

Verifying that a tbprocess Session is Active

There are two commands you can use to verify that tbprocess is running on a machine. To use any of these commands, type the one you want to use in a Command Shell or Terminal and press Enter/Return.

- **`Status`** command

  This command allows you to view the Schedule Status—see Displaying the Schedule Status on page 140. If tbprocess is running on a machine, an R appears in the R column for that machine.

Windows

In Windows, the process can be verified from:

- **Toon Boom Harmony Control Panel**: Control Panel > Toon Boom Harmony Control Panel
- **Services panel**: Control Panel > Administrative Tools > Services panel

Mac OS X

- **`ps -axc | grep roc command`**

  This command verifies if you have a tbprocess session running on a machine.

  - **`-a`** displays information about other users' processes as well as your own.
  - **`-x`** displays information about processes without controlling terminals.
  - **`-c`** changes the "command" column output to contain just the executable name, rather than the full command line.

  A list of all the processes running appears:

```
7748  ??  S      0:00.05 Process_starter
7749  ??  SN     0:00.14 tbprocess
```

The **`ps`** command is a Linux statement used to report active processes. There are a variety of options and arguments that you can run with this command to limit or alter the information that appears. The arguments used with the **`ps`** command in this document are only suggestions. Refer to your Linux manuals for more information on the different options and arguments available with the **`ps`** command.

Linux

- **`ps -f -u usabatch | grep roc`** command

  This command verifies if you have a tbprocess session running on a machine.

  - **`-f produces`** a fully-detailed list of information.
  - **`-u usabatch`** lists only information by the user usabatch.

  Since more than one user can start the tbprocess program, you can view a more complete list by removing the **`-u usabatch`** parameter from the command. You can also replace this parameter by **`-efa`** to view all the processes on the machine, regardless of the user (except the processes that are not linked to an Command shell).

- **-grep roc** searches for commands that contain the letters "roc". This allows you to search for Process sessions only.

A list of all the processes running for usabatch appears:

```
     UID   PID  PPID  C    STIME TTY TIME COMMAND
usabatch 16514     1  0  Mar 12  ?   10:45 tbprocess -schedule
usabatch 16522 16521  19 Mar 12  ?      10:45 Process_starter
```

Monitoring a tbprocess Session

As the tbprocess program batch processes jobs, you can see which one are being processed and which ones are waiting in the queue. This is handy in case you want to remove old jobs from the queue because you made changes to them, or if you want to change the processing priority in the jobs.

There are two ways to monitor the tbprocess session:

- Using the Queue windows in the Control Center module.

  The easiest way to monitor a tbprocess session on a particular machine is to open the Vectorize or Render queues using the Control Center module.

- Typing the **ssh** and **tail** commands in a Linux shell.

When checking a machine's Vectorize or Camera queues, remember that if the machine is scheduled to perform processing work for multiple environments, you may need to search both queues in several of the environments to get a complete picture of what is happening.

Viewing Specific Events in the tbprocess Session

Windows: If you want to check the log on the Windows machines in your network, you must access the machines themselves and view the **tbprocess.log** file in a text editor. Some text editors require that you stop the tbprocess session before you open the log file because it locks the file while recording.

Mac OS X: As the Process session vectorizes jobs, it stores them in a log file. You can find the log files in **/Library/Logs/ToonBoomQueueServer.log** file.

Linux: As the Process session vectorizes jobs, it stores them in a log file. You can find the log files in **/tmp/tbprocess.log** file.

Viewing tbprocess Events on One Machine (Linux and Mac OS X)

If you want to view the tbprocess jobs for a specific machine, you can remotely log in to that machine view the entries in the **tbprocess.log** file as they get added.

You need to use the two following commands to view these entries:

- **ssh**: Allows you to connect remotely to another machine and launch a specified command. The remote connection stays open for the duration of the command and then closes, ending the connection.
- **tail**: Displays the latest 10 lines of the specified file as they appear.

To view the entries in the **tbprocess.log** file as they occur, open a shell or Terminal and type:

Linux:

```
ssh machine tail -n -10 -f /tmp/tbprocess.log
```

Mac OS X:

```
ssh machine tail -n -10 -f /Library/Logs/ToonBoomQueueServer.log
```

- **machine** is the name of the machine running the tbprocess you want to monitor.
- **-n 10** instructs the **tail** command to display the latest line of the file (you can change this value if you want).
- **-f** instructs the **tail** command to update the display as the file changes.

When using the **tail** command with the **-f** option, you must use [Ctrl] + [C] to quit the command.

Setting Up Default Schedules

When you first set up your Harmony system, it is a good idea to set up a default batch processing schedule. You can modify this schedule later based on the operating needs of your studio.

If you have not created any environments, there will not be any environments for you to start up.

You must start up a default schedule for every environment you create in the Harmony database.

Maintaining a limited number of environments will make it easier to set up and manage batch processing queues. For example, you can create four environments, like **test**, **commercials**, and one environment per features or series.

How to define the default batch processing schedule

1. Open a command prompt or Terminal and type:

   Setdef

   Follow the onscreen instructions to set up the environment for batch processing by selected machines on the Harmony network.
2. Enter the machine name on which you want to set up batch processing:

   INPUT A SINGLE MACHINE NAME, THE PREFIX OF A MACHINE NAME, OR all

   - Type **all** to create a default schedule for all machines in the machine-list or press Enter/Return to create a schedule only for the machine you are currently using.
3. If you enter only one machine name, decide if you want to add more machines to process this environment.

   DO YOU WANT TO INPUT MORE MACHINES

   - Type **y** and press Enter/Return if you want to enter more machines or press Enter/Return if you do not want to enter any more machines.
4. Identify the type of work this machine will be doing: vectorizing, rendering or both.

   INPUT TYPE OF WORK ALLOWED is vectorize work allowed

   - Type **y** if this machine will vectorize drawings.

     is camera work allowed

   - Type **y** if this machine will render scenes.
   - Identify the environments this machine will process.

     INPUT A SET OF DATABASE Environments

   - Type the number (not the name) for each environment you want to set up on this machine and press Enter/Return. A space (or a comma) must separate each environment number.

     should processing of the dbenv's be prioritized
5. You can prioritize the environments based on the order you entered them in the previous step. Typically, you will not want to prioritize environments like this.

- Type **n** and press Enter/Return if you do not want to prioritize environments.

6. Turn the input on for the machine

```
input ON or OFF
```

- Press Enter/Return to turn the input on.

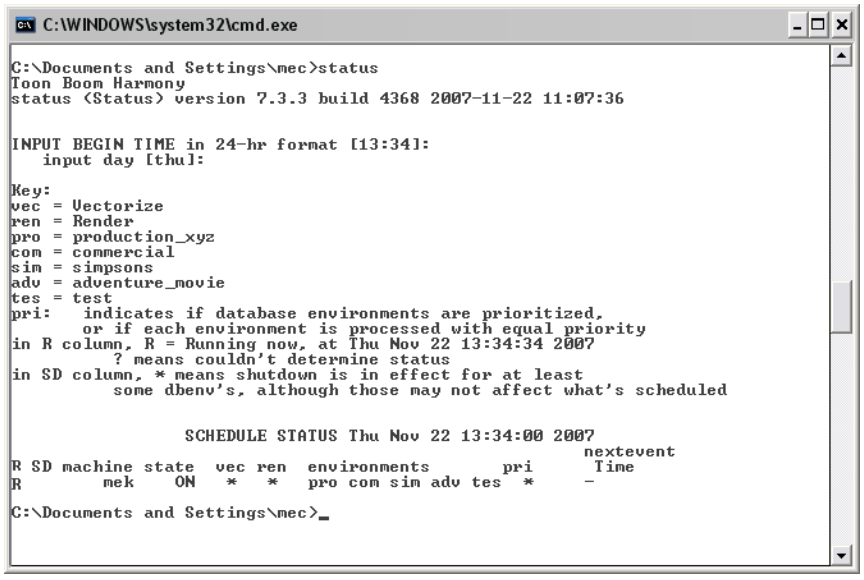
When you are done, a status message appears indicating that the machine is set up for batch processing using the default schedule.

7. To view the batch processing schedule status for all machines, type the following:

```
Status
```

8. Press Enter/Return twice to get the report.

The machines that are set up to batch process should appear in the report. There must be an **R** next to the machine name and the status must be **On** to be able to batch process.



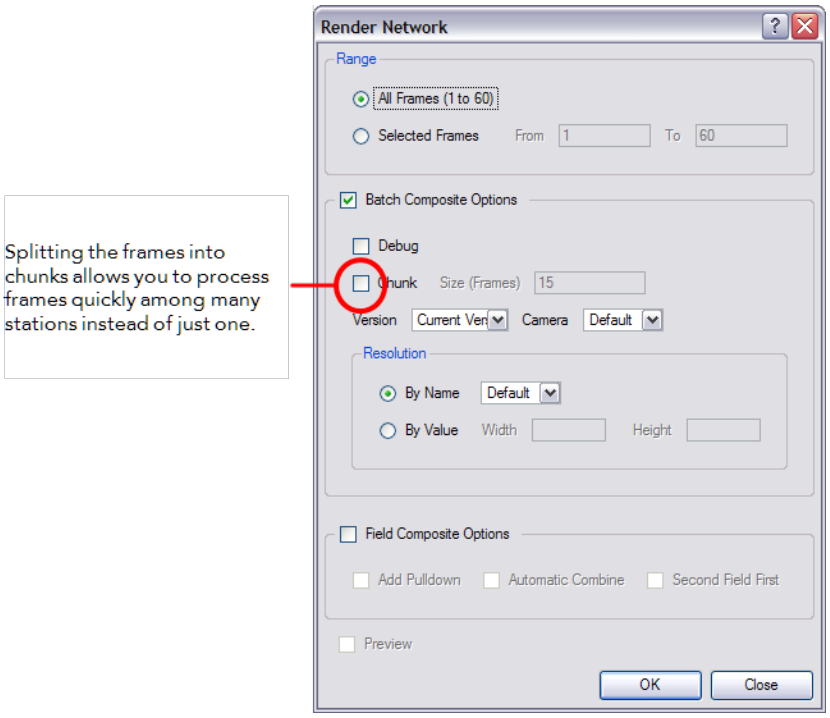
Testing Batch Processing

To verify that batch processing is working, send a few frames from a scene to be rendered by the Harmony Stage module.

How to test batch processing

1. Open the Control Center and select the environment and job that contains the scene to render.
2. Select the scene, right-click on the sample scene in the Scene panel and select **Send to Rendering**.

   The Render Network dialog box opens.



3. In the Range section, select the **Selected Frames** option and type 1 to 5 in the From and To fields. Leave the rest of the default options and click **OK**.

   An alert appears indicating that the scene was sent to the queue.
4. Click **OK** to close the alert.
5. Open the Render Queue to see if your scene is being processed.
6. In the Environments section, select the environment containing the scene that is rendering.
7. From the top menu, select **Environment > Render Queue**.

   The Render Queue window opens. You should see the sample scene listed. Its state will change from "Pending" to "Processing" and then to "Completed" after it has been rendered.

Vectorizing Scenes or Elements

Before you can paint a scanned drawing in Harmony, you must convert it to a vectorized image format. The vectorizing process converts the drawings from a bitmap format to a vector line-based format.

Normally, when you scan drawings, Harmony automatically vectorizes them (sends them to the Vectorize queue). However, you can also use the Send to Vectorize command to reprocess all drawings for a particular element. Vectorizing prepares images for painting by creating vector files. You would only have to manually send scenes to be vectorized in special cases such as:

- Processing images that were not scanned with the Scan module
- Reprocessing a scene due to unrecoverable paint errors

The Vectorize queue displays all the drawings that the system is converting to a vector-based format. After the vectorization of a drawing is finished, the completed drawing disappears from the Vectorize queue.

How to manually vectorize all the drawings for a scene or an element

1. Select the scene from the Scenes list or select an element from the Elements list.

   If you selected a scene, Harmony vectorizes all drawings for all elements of that scene.

   If you selected an element, Harmony vectorizes all the drawings for that selected element.
2. Depending on the component you selected, do one of the following:
   - From the Scene menu, select the **Send to Vectorize** command or right-click anywhere in the Scenes list and select **Send to Vectorize**.
   - From the Element menu, select the **Send to Vectorize** command or right-click anywhere in the Elements list and select **Send to Vectorize**.

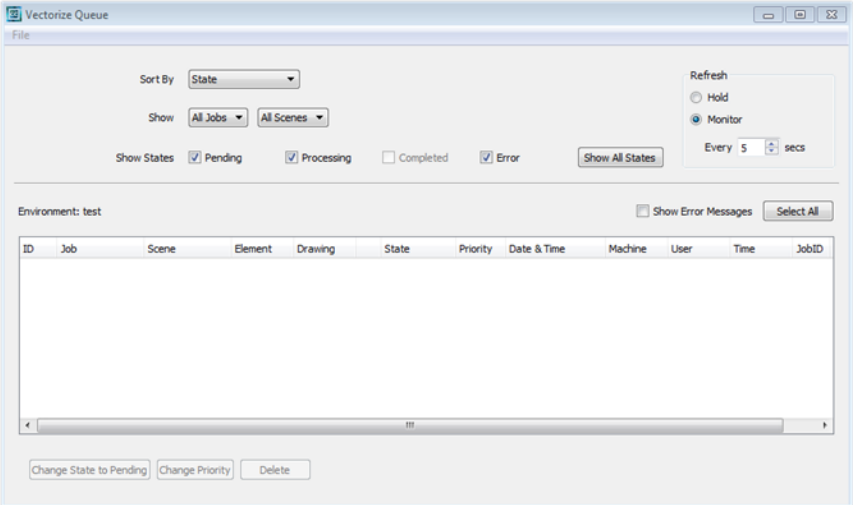
   The Confirm dialog box appears.
3. Click **Yes** to vectorize all the selected drawings.

   The Control Center module sends all drawings in the scene or element to the Vectorize queue. To verify how the processing is progressing, you can display the vectorize queue.

How to view the list of drawings being vectorized

1. Select an environment name from the list, then select **Environment > Vectorize Queue**.

   The Vectorize Queue window appears.



2. From the Sort By menu, select how to sort entries in the queue:
   - **State**: Sorts the entries based on the item's status (Pending, Pending-E, Processing, or Completed)
   - **Entry time**: Sorts the entries based on the time you send them for vectorization.
   - **Job, Scene, etc.**: Sorts the entries based on their parent jobs and scenes.
   - **JobID**: Sorts the entries based on their unique job ID.
3. If the Vectorize queue has too many entries, you can select a specific job, scene, element, or drawing that is in the queue. Select the items you want to display in the queue from the Show menu, which displays all items in the Control Center module's database, not just the ones that have drawings being vectorized.
   - **Jobs**: Selects the specific job in the queue or one that has scenes currently being vectorized. To see all the jobs, select **All Jobs**.
   - **Scenes**: Selects the specific scene that is in the queue or currently being vectorized. To see all the scenes in a job, select **All Scenes**.
4. Select the states you want to display in the queue from the Show States options:
   - **Pending**: Displays the items waiting to be vectorized.
   - **Error**: Displays the items where the system found an error and has stopped vectorizing them (displays Pending-E as the item's state).
   - **Processing**: Displays the items that the Harmony is currently processing.
   - **Completed**: Displays the items that were vectorized. However, the Control Center module usually removes completed items from the Vectorize queue, so this option is inactive.
   - **Show All States**: Displays all the items, regardless of their state.
5. In the Refresh section, select how often you want the queue to check for the latest entries.
   - **Hold**: Displays no new entries to the queue once the button is activated.
   - **Monitor**: Automatically displays new entries at the interval you enter in the Every ## secs field.
6. To see any related errors for each entry in the queue, select the **Show Error Messages** option.

   If the Control Center module detected any errors while it prepares the drawings, it displays Pending-E in the State column. These errors can occur if there are files missing, computers are unavailable, or data cannot be found.

Most of these errors would occur if the system is improperly configured. Therefore, your system administrator needs to reconfigure the system to correct the error. If you get a Pending-E error, see your system administrator.

Modifying Entries in the Vectorize Queue

When you have a list of entries in your queue, you can modify them in one of the following ways:

- Click the **Change State to Pending** button to change the status of the selected entries in the queue from Processing to Pending. After a job becomes Pending, the next available machine will process the entry.

  If you want to remove the entry from the queue, select the Pending entry and click **Delete**. If the entry is processing, you can delete the entry from the queue but the processing will not stop until it is completed.

  You can only modify an entry in the queue while it is pending (check the State column in the queue list). You cannot modify a job that is being processed.

- Click the **Change Priority** button to change the selected drawings' processing priority in the queue. When the New Priority dialog box appears, increase or decrease the drawing's priority.
- Click the **Delete** button to delete the selected drawings from the queue. When you remove a drawing from the queue, the request is cancelled only.

Rendering Scenes

When you have finished working on a scene or all of your animated sequence, you can send them to the Render queue via Control Center or Harmony Stage. After you render your animation, you can transfer the scenes to video or film.

After rendering a scene, you can mark it as completed using the Change Stage command in the Scene menu. After you render all the scenes for a particular Job, you can mark the Job as completed using the Change Stage command in the Job menu.

Changing the job's stage from In Production to Completed only hides the job in the Control Center window.

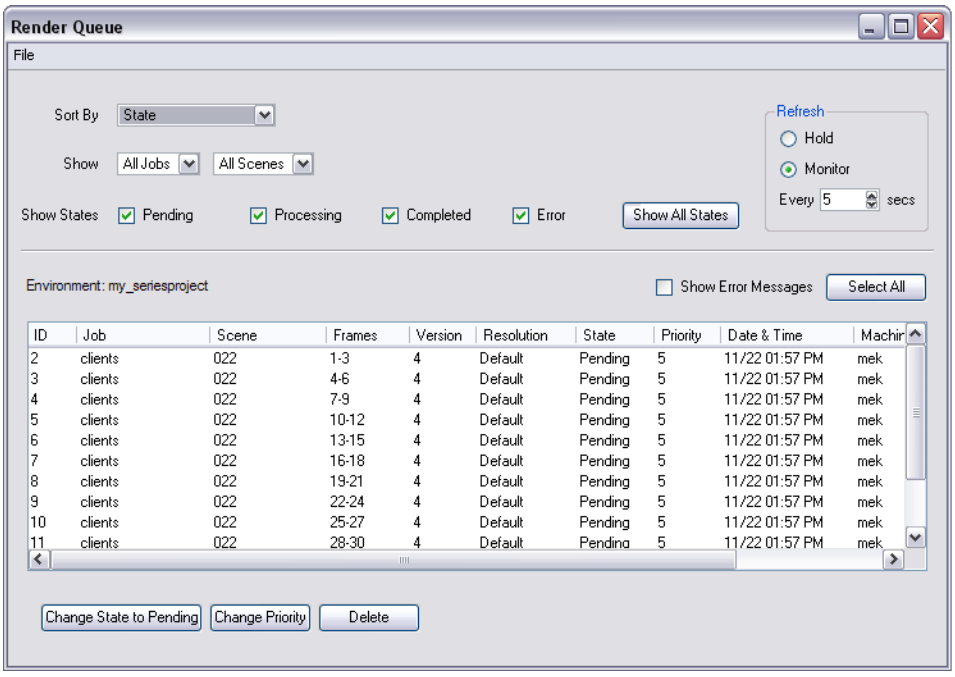
Viewing the Render Queue

The Render queue displays all the scenes from the selected environment that the system is rendering. After the system renders a scene, the State of the rendered scene changes to Complete or Completed with Errors and the scene remains in the queue. If you want to remove the rendered scenes, you must select them and use the Delete button.

How to view the scenes being rendered

1. Select an environment name from the list, then select **Environment > Render Queue**.

   The Render Queue window appears.



2. Select how to sort the entries in the queue from the Sort By.

   - **State**: Sorts the entries based on the item's status (Pending, Pending-E, Processing, Completed with Errors, or Completed).

- **Entry Time**: Sorts the entries based on the time you sent them for rendering.
- **Job, Scene, etc.**: Sorts the entries based on their parent jobs and scenes.
- **JobID**: Sorts the entries based on their unique job id.

3. Select the components you want to display in the queue from the Show.
   - **Jobs**: Select the specific job you want to see.
   - **Scenes**: Select the specific scene you want to see.
4. Select the states you want to display in the queue from the Show States options.
   - **Pending**: Displays the items waiting in the queue.
   - **Processing**: Displays the items that currently processing.
   - **Completed**: Displays completed items.
   - **Error**: Displays the items that contains errors that stopped processing (displays Pending-E as the item's state).
   - **Show All States**: Displays all items, regardless of their state.
5. In the Refresh section, select how often you want the queue to check for the latest entries.
   - **Hold**: Displays no new entries to the queue once the button is activated.
   - **Monitor**: Automatically displays new entries at the interval you enter in the Every ## secs field.
6. Select the **Show Error Messages** option to see any related errors for each entry in the queue.

If the Control Center module detects any errors while processing the scenes, it displays "Pending-E" in the State column. Errors can occur if there are files missing, computers are unavailable, or data cannot be found.

Many of these errors can occur if the system is improperly configured. If you get a Pending-E error, see your system administrator as the system may need to be reconfigured.

Modifying the Entries in the Render Queue

After you have a list of entries in your queue, you can modify them in one of the following ways:

1. Change their state in the queue. This allows you to update the status of a scene, or set of scenes, in the queue from Processing (which means it is being rendered) to Pending (which means the scenes are waiting to be rendered). After you set a job to Pending, the job remains in the queue until a machine becomes available and takes the job or you delete it from the queue.
   - Click the **Change State to Pending** button to change the status of the selected entries in the queue from Processing (or Completed) to Pending.
2. Change the scene's processing priority. This allows you to change the order in which the system renders the scenes.
   - Click **Change Priority** to change the selected scene's processing priority in the queue.
   - When the New Priority dialog box appears, use the scroll bar to increase or decrease the scene's render priority.
3. Remove scenes from the Render queue. This allows you to cancel the render command on selected scenes.

- Click the **Delete** button to delete the selected entries from the queue.

You can only modify an entry in the render queue while it is pending (check the State column in the queue list); you cannot modify a job that is being rendered.

If you must change something about the scene's drawings, you must wait until the rendering is complete. Then make your changes and send it to the Render queue.

If you absolutely must stop the rendering process, you can kill the render process in Windows, Linux or Mac OS X.

Stopping a Process

DO NOT STOP THE PROCESS UNLESS ABSOLUTELY NECESSARY.
An example of an extreme case is if you sent 10,000 drawings for vectorization and only one machine is available to handle the job (which means it will take hours to complete).

DO NOT ATTEMPT TO STOP THESE PROCESSES YOURSELF. If you must stop a process, see your system administrator.

After you send a scene's drawing for vectorization or rendering, you can remove it from the queue easily. If the process is pending in Vectorize or Render queue (check the State column in the queue list), you can simply remove it by selecting the job and clicking the **Delete** button in the Vectorize/Render Queue window.

But once the vectorizing or rendering process actually begins, it gets a bit more complicated to stop the process. If you really must stop a vectoring or rendering job, you must remove it from the Vectorize or Render queues and then find the actual process in your Windows Task Manager, Mac OS X Activity Monitor or Linux Shell and kill each task manually.

Stopping a Windows Process

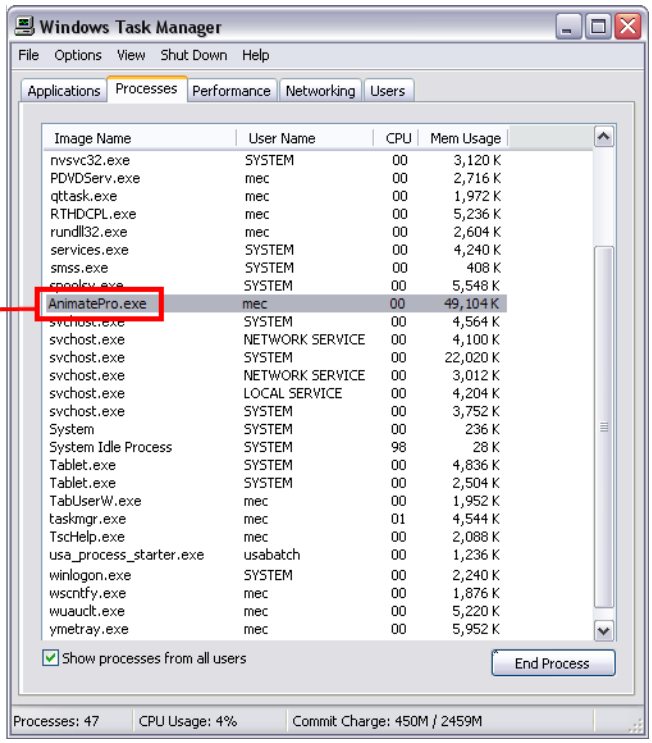
DO NOT ATTEMPT TO STOP THESE PROCESSES YOURSELF. If you must stop a process, see your system administrator.

How to stop a vectorize or render process on a computer running Windows

1. In the Vectorize/Render Queue window, select the job you want to stop and click **Delete**.
2. Right-click on the Windows task bar and select **Task Manager**.

   The Task Manager dialog box appears.
3. Select the **Processes** tab.

The Processes tab displays all the processes that are currently running. In this example, the AnimatePro.exe item is rendering one or more scenes that were sent to the Render queue.



4. Vectorizing or rendering starts a process named **`AnimatePro.exe`**. Locate it and select it.
5. Click **End Process**.

   TheTask Manager stops the process and removes it from the Processes tab.

If you stop a process, but do not delete the job from the Vectorize or Render queue, the queue marks the entry as in error (Pending-E) and the entry stays in the queue. This is why it is important to remove the entry from the queue before you stop the process.

Stopping a Linux Process

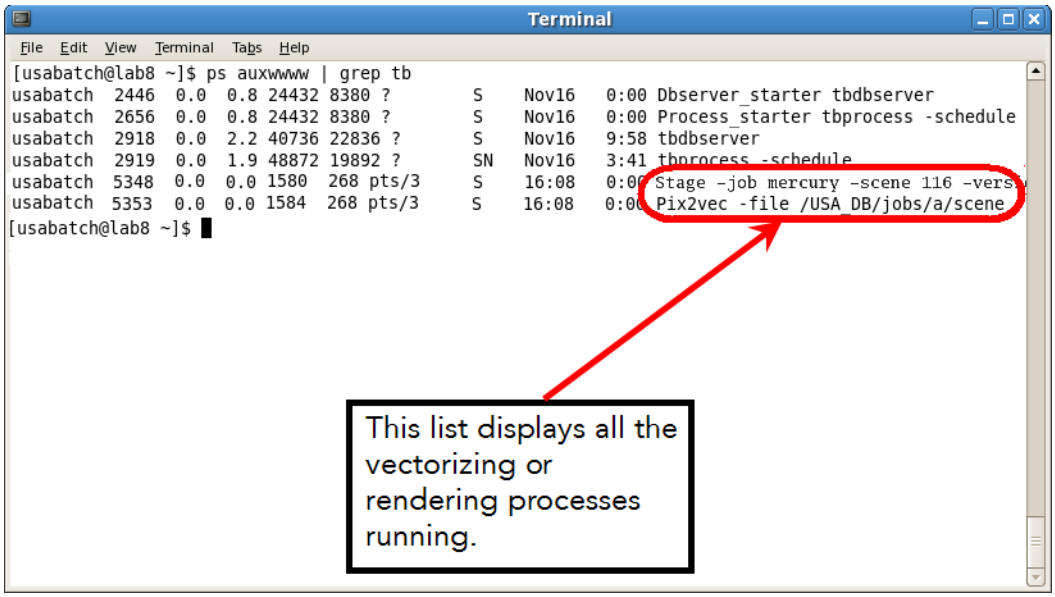
DO NOT ATTEMPT TO STOP THESE PROCESSES YOURSELF. If you must stop a process, see your system administrator.

How to stop a vectorize or render process in Linux

1. Select the job to stop from the Vectorize/Render Queue window and click **Delete**.
2. As the root user, open a Linux shell and type:

   ```
   ps -fe.
   ```

   The shell window displays all the processes that are active at the moment.



3. Find the listing for the vectorizing or rendering process that you started. There are two ID flags to look for:
   - If you started a vectorizing process, look for the process that lists the word **`Pix2vec -file fileLocation`**.
   - If you started a rendering process, look for the process that lists the word **`Stage -job jobName -scene sceneName -version versionNumber`**.
4. Take note of the system number that identifies the process. In the example above, the system numbers appear in the box on the left.
5. Type the following command and replace <id number> with the system number you noted in the previous step:

   `kill -9 <id number>`

   For example, if your process number is 5348 or 5353 (as in the example above), you would type the following command to stop the process:
   - **`kill -9 5353`**: Stops the vectorize process.
   - **`kill -9 5348`**: Stops the rendering process.
6. Press Enter/Return.

If you stop a process, but do not delete the job from the Vectorize or Render queue, the queue marks the entry as in error (Pending-E) and the entry stays in the queue. This is why it is important to remove the entry from the queue before you stop the process.

Troubleshooting

If you have any problems running Harmony after installation, review the installation and configuration instructions to make sure you have followed them completely. If you continue to have problems, consult the following list to troubleshoot common installation and configuration problems.

Problem: No Batch Vectorization or Rendering (Windows)

If drawings are not being vectorized or rendered you should check the status of batch processing machines.

How to check the status of the batch processing machines

1. From the Start menu, select **All Programs > Accessories > Command Prompt**.
2. In the command prompt window, type **`Status`** and press Enter twice.

   The machines that are set up to batch process appear in the report. There should be an "R" next to the machine name and the status must be "On" to be able to batch process.

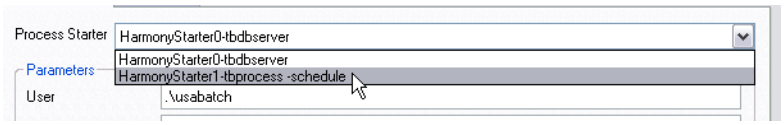
   - If machines are missing from the report, run the **Harmony Configuration Wizard** to set up batch processing on each machine that will vectorize drawings or render scenes—see Installing Batch Processing and Configuring the machine-list File on page 111
   - If a machine is in the report, but is set to "Off", you must define a default schedule for the machine—see Setting Up Default Schedules on page 124
   - If a machine is in the report, but is missing the "R", restart the batch processing queues.

How to restart the batch processing queues

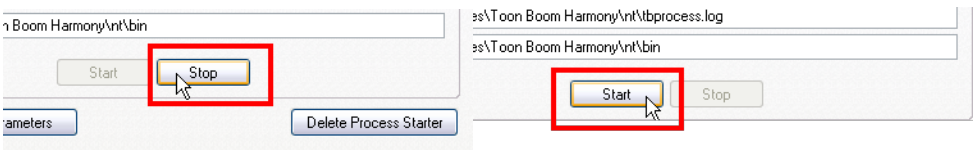
1. From the Start menu, select **Control Panel** from the **Settings** sub-menu.

   The Control Panel window appears.
2. Double-click on the Toon Boom Harmony Control Panel  icon in the Control Panel window.

   The Toon Boom Harmony Control Panel dialog box appears.
3. From the Process Starter menu, select **tbprocess-schedule**.



4. Click **Start** restart the service. If the Start button is disabled, click **Stop** first, wait a couple of seconds, and then click **Start**.



If you continue to have problems with batch processing, locate the **tbprocess.log** file and send it to support@toonboom.com. This file is usually in: **`\Program Files\Toon Boom Animation\Harmony\nt`**

Problem: No Batch Vectorization or Rendering (Mac OS X)

If drawings are not being vectorized or rendered you should check the setup and configuration of batch processing.

How to check the status of the batch processing machines

1. In the Terminal, type **`Status`** and press Enter/Return twice.

   The machines that are set up to batch process appear in the report. There should be an "R" next to the machine name and the status must be "On" to be able to batch process.

   - If no machines appear in the list, make sure the **`/USA_DB/schedules/machine-list`** file lists all of the computers that will do batch vectorization or rendering. Try resending elements to the Render queue.
   - If your machine appears in the list, but that there is no "R" next to it, the tbprocess service may not be running. Verify that the tbprocess is active—see Verifying that a tbprocess Session is Active on page 121.
   - If there is no tbprocess session active, perhaps the processes were not installed when you installed configured your installation. Verify that the **`ToonBoomQueueServer`** folder exists in the **`/Library/StartupItems`** folder. If it does not, see The tbprocess Program on page 117.
   - If the folder exists, start the tbprocess session by typing
     `sudo /sbin/SystemStarter start ToonBoomQueueServer`
     The Terminal prompts you to type your password. Your user needs to be allowed to administer this computerin order for this command to work.

Problem: No Batch Vectorization or Rendering (Linux)

If drawings are not being vectorized or rendered you should check the setup and configuration of batch processing.

How to check the status of the batch processing machines

1. In a shell, type **`Status`** and press Enter/Return twice.

   The machines that are set up to batch process appear in the report. There should be an "R" next to the machine name and the status must be "On" to be able to batch process.

   - If no machines appear in the list, make sure the **`/USA_DB/schedules/machine-list`** file lists all the computers that will perform batch vectorization or rendering. Try resending elements to the Render queue.
   - If you still have problems vectorizing and rendering, perhaps the processes were not installed when you installed Harmony. Reinstall Harmony running the **`-p`** option. In a shell, change to the directory where the installation script is stored and type:

     `./install -p`

   - Make sure that the queues are started. Type the following:

     `/sbin/service USAnimation_queues start`

To learn more about the Linux installation process, refer to the Toon Boom HarmonyLinux Installation Guide.

Advanced Batch Processing

Once the basic vectorization and rendering batch processing is started, there are more advanced options possible such as advanced scheduling.

This section is divided as follows:

About Batch Processing Schedules

By creating a schedule to monitor the batch processing, you can determine which machines perform the batch processing and when they do it. Each batch processing machine on your network has its own set of schedules and you can view and modify them from any machine on the network.

There are three types of schedules available for a machine:

- **Supervisory Schedule**: Assigns a one-time batch processing job to a machine. For example, you can define a Supervisory schedule for a machine to perform batch processing work for the next four hours.

  Of the three types of schedules, Supervisory schedules have the highest priority. If you define a Supervisory schedule for a specific period of time on a machine, it will perform the batch processing work according to that schedule, regardless of what the Periodic and Default schedules define for that period of time.

- **Periodic Schedule**: Assigns recurring batch processing jobs. For example, you can define a Periodic schedule for a machine to perform batch processing only on Saturdays and Sundays.

  Periodic schedules use the days of the week, so you can have batch processing occurring each week on specific days.

  In terms of priority, a Periodic schedule supersedes a Default schedule, but not a Supervisory Schedule. If there is a Periodic schedule active on a machine, then it performs this type of batch processing according to its Periodic schedule before it uses the Default schedule.

- **Default Schedule**: Defines which jobs the machine can process if there are no other schedules defined. Default schedules have the lowest priority, and are used only when Supervisory and Periodic schedules are not present or do not define the work to be done for a particular period of time.

When creating or modifying a schedule, you must supply the following information:

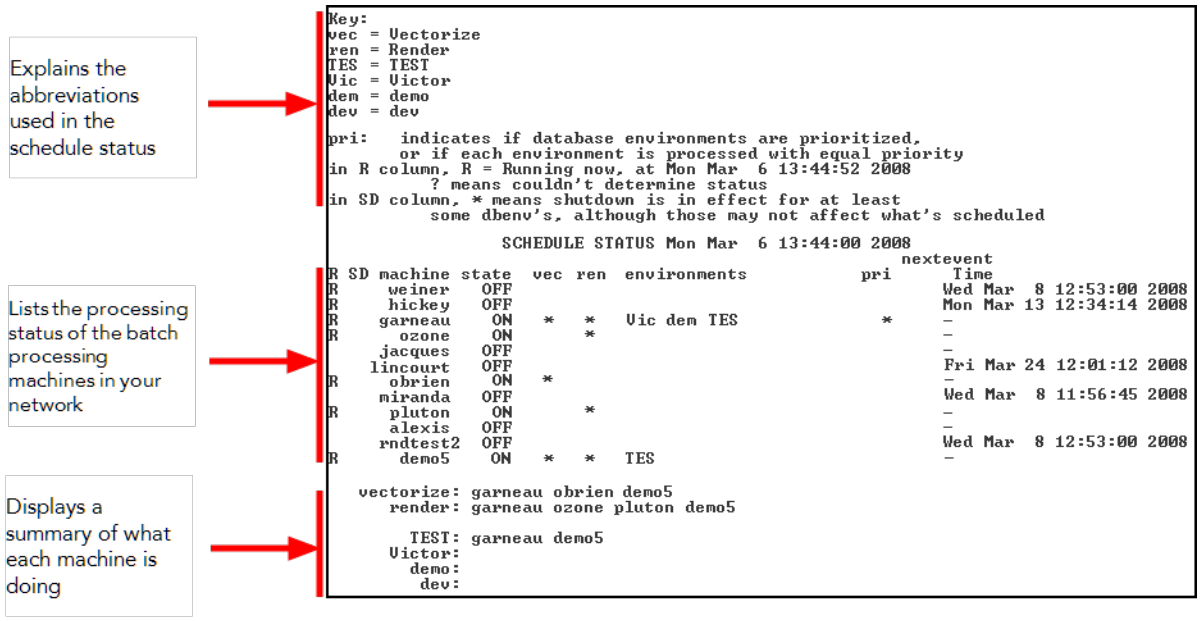
- Dates and times for which the schedule applies
- Machine(s) for which the schedule applies
- Whether batch processing is ON or OFF (whether that machine does or does not perform batch processing work)
- The type of batch processing to be done: Vectorize and/or Rendering
- The environments for which batch processing processes the artwork
- The priority of the environments to be batch processed (optional)

For any given machine, you can define, clear and view the Supervisory and Periodic schedules. You can only modify or view the Default schedule for a machine.

You can also shut down and start up environments to stop and start batch processing of a particular environment on a machine(s). When you shut down an environment, you are overriding whatever you already scheduled for it (according to each type of schedule). Therefore, you will stop any batch processing jobs on the environment until you start that environment again. You can also view a schedule's status to see an overview of all schedules set for a specified time.

Displaying the Schedule Status

You can monitor which machines are vectorizing or rendering animation data. The schedule status displays an overview of what each render or vectorize machine is processing at a specific time. The overview also displays a machine's status based on the highest priority schedule set for the time you select.



You can display this status list by typing the **`Status`** command in a Command Shell or Terminal on any machine in the network. When you run the **`Status`** command, you must specify the day and time for which you want to view the schedule status.

How to display the schedule status list

1. Open a Command Shell or Terminal and type:

```
Status
```

You can view the status for one or more machines by listing them after the **Status** command (instead of all the machines, which is the default). You can also type a prefix to search for machines with names that start with the same prefix.

Example:

- **Status hp**: Shows the status for all machines that begin with "hp".
- **Status cm hp6**: Shows the status for all machines that begin with "cm" and for hp6.
- **Status**: Shows the status for all machines.

When you press Enter/Return, you are prompted to specify the time for which you want to view the schedule status.

```
INPUT BEGIN TIME in 24-hr. format [15:17]:
```

2. Type the time you want to view the status for in 24-hour format. If you press Enter/Return without specifying a time, the system uses the time displayed in brackets (the current time).

   When you press Enter/Return, the system prompts you for the day for which you want to view the status.

```
input day [wed]:
```

3. Type the day of the week for which you want to view the status (you can not enter dates). If you press Enter/Return without entering a day, the system uses the day displayed in brackets (the current day).

   The schedule status for the time and day you specified appears.

Reading the Schedule Status List

When you display the Schedule Status list, the information appears in three separate sections:

- **Key**: Lists the abbreviations the status schedule uses for the environments, the two types of batch processes you can schedule on a machine, and the abbreviations the other columns use in the list.
- **Schedule Status**: Displays the processing status of each vectorizing or rendering machine in the network.
- **Summary**: Displays a summary of which machines are performing a specific type of batch processing (vectorize or render). The summary appears directly below the Schedule Status section.

The following table describes the contents of the Schedule Status list:

Column title	Description
R	Displays an R for each machine that has the tbprocess program running on it. tbprocess must be running on a machine in order for that machine to perform batch processing work. For information on starting tbprocess: **Windows**: See Starting the Batch Processing Queue on Windows on page 117 **Linux**: See Starting the Batch Processing Queue on Linux on page 119 If an R does not appear for a machine, the Schedule Status list displays what would be scheduled if the tbprocess program was

	running on it.
SD	Indicates if an environment is shut down for batch processing on that machine. You can specify that certain machines do not process environments by selecting the machines that should be shut down (or turned off). An asterisk (*) appears in the **SD** column to indicate that one or more environments have been shut down for that machine—see Shutting Down and Starting Up Environments on page 158.
Machine	Displays the name of the networked machine that is configured to accept batch processing jobs.
State	Indicates whether the machine is available for batch processing. **On**: The machine is scheduled to batch process. **Off**: The machine is not scheduled (for the time you specified) to batch process.
vec status	Lists the type of batch processing the machine is scheduled to perform (vectorize and/or batch processing). If an asterisk (*) appears in these columns for a machine, then this type of batch processing is scheduled for this machine. If a machine is scheduled to do both types of batch processing, the machine performs both types alternatively; it processes an entry from the Vectorize queue, vectorizes the data, and then take an entry from the Render queue.
Environments	Displays the environments scheduled to be batch processed on a machine. The machine batch processes only the data from the environments listed in this column.
pri	Displays the priority level for batch processing on a machine. You can prioritize environments so that one machine can perform the batch processing before another. If an asterisk (*) appears in the pri column, the environments are prioritized for that machine. The priority order for the environments appears in the Environments column (reads from left to right, highest to lowest priority).
nexteventTime	Displays the date and time of the next status change for that machine, according to the defined batch processing schedules. For example, even though the hickey machine is off at the moment, the Time column indicates that the next time its status will change is at 12:53 on Wednesday, March 8. This indicates that a Periodic or Supervisory schedule is set for this machine.

Using Default Schedules

A Default schedule sets batch processing for a machine when no other schedules are in effect. For example, if there are no Supervisory or Periodic schedules that affect a particular machine on Monday at 9:00 a.m., the Default schedule determines the type of batch processing that this machine performs at that time.

Every Harmony system machine uses a Default schedule to determine when it should perform batch processing. You can display or modify the Default schedules for any machine in the Harmony system.

This section is divided as follows:

- Displaying Default Schedules below
- Modifying Default Schedules on page 145

Displaying Default Schedules

When you display a Default schedule, you can see all the batch processing machines on the network and when they are scheduled to perform batch processing work. The Default schedule also displays the type of batch processing work (vectorize or render) and which environments are scheduled for the processing work.

After you display the Default schedule, you can modify it to change the time, type of batch processing, or environments to process—see Modifying Default Schedules on page 145.

How to display the Default schedule

1. In a Linux shell, type:

   `Showdef`

   You are prompted for the machine(s) whose Default schedule you want to see.

   `INPUT A SINGLE MACHINE NAME, THE PREFIX OF A MACHINE NAME, OR all [all]:`

2. Select the machines you want to view by typing the name of a single machine, a prefix (to select a range of machines that start with the same prefix), or **`all`** to view all the Default schedules for all the machines.

   If you press Enter/Return without specifying a machine, the command uses the machine name that appears in brackets.

If you type a prefix, a list of machines that contain that prefix appears. Type the numbers that correspond to the machines you want to view.

For example, if you have three machines that start with "hi", you can type **`hi`** as a prefix. The system would then display a list of all the machines that start with"hi":

`input a set of machines, or hit return to indicate all these machines:`

`1 = hickey, 2 = highlander, 3=high-definition`

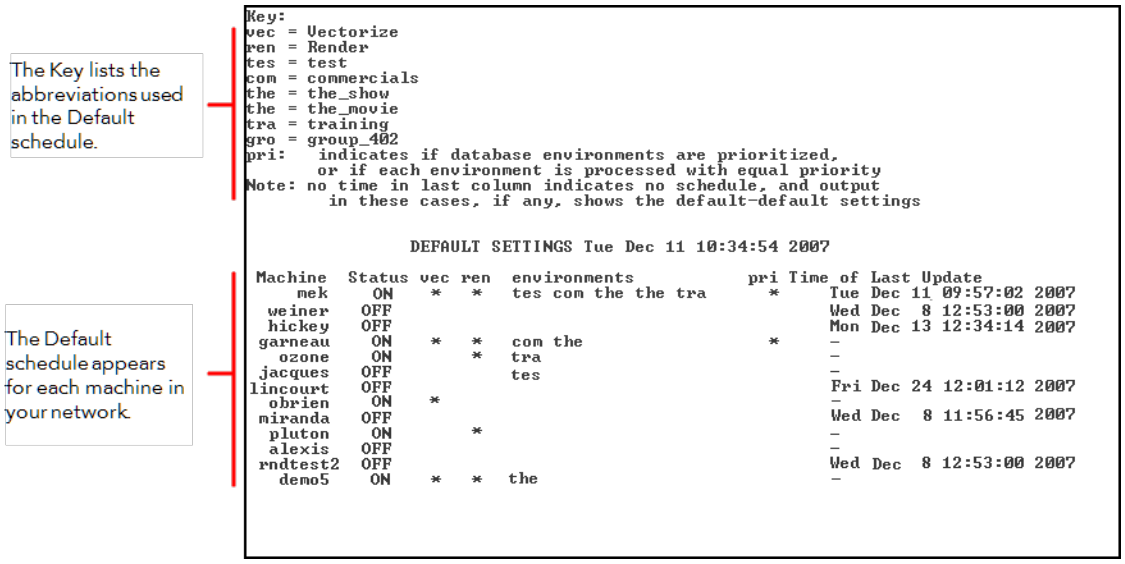
You can press Enter/Return to select all the machines in the list or select specific machines by typing their corresponding numbers.

You are asked if you want to view more machines.

```
DO YOU WANT TO INPUT MORE MACHINES (y/n) [n]:
```

3. Decide if you want to view more environments and machines.
   - Type **y** to select more machines.
   - Type **n** to not select any more machines.

   The Default schedule for the selected machines appears.



Reading the Default Schedule Status List

When you display the Default schedule status list, the system displays the information in two sections:

- **Key**: Lists the abbreviations the status schedule uses for the environments, the two types of batch processes you can schedule on a machine, and the abbreviations the other columns use in the list.
- **Schedule Status**: Displays the processing status of each vectorizing or rendering machine in the network

The following table describes the contents of the Schedule Status list:

Column Title	Description
Machine	Displays the name of the networked machine that is configured to accept batch processing jobs.
Status	Indicates whether the machine is available for batch processing. **On**: The machine is scheduled to batch process. **Off**: The machine is not scheduled (for the time you specified) to batch process.
vec ren	Lists the type of batch processing the machine is scheduled to perform (vectorize and/or batch processing). If an asterisk (*) appears in these columns for a machine, then this type of batch processing is scheduled for this machine. If a machine is scheduled to do both types of batch processing,

	the machine performs both types alternatively; it processes an entry from the Vectorize queue, vectorizes the data, and then take an entry from the Render queue.
Environments	Displays the environments scheduled to be batch processed on a machine. The machine batch processes only the data from the environments listed in this column.
pri	Displays the priority level for batch processing on a machine. You can prioritize environments so that one machine can perform the batch processing before another. If an asterisk (*) appears in the pri column, the environments are prioritized for that machine. The priority order for the environments appears in the Environments column (reads from left to right, highest to lowest priority).
Time of Last Update	The Default schedule also indicates the last time the schedule was modified for each machine. This final column displays the date and time that the Default schedule was last modified for each machine.

Modifying Default Schedules

When you are ready to modify the Default schedule, you must specify the following information:

- The machine(s) you want to update
- The type of batch processing work you want to assign
- The environments to process

After you modify the Default schedule, you can use the **Showdef** command to view your changes—see Displaying Default Schedules on page 143.

How to modify a Default schedule

1. In a Terminal, Command Prompt or Linux shell, type:

   ```
   Setdef
   ```

2. Press Enter/Return.

   You are prompted for the machine(s) whose Default schedule you want to modify.

   ```
   INPUT A SINGLE MACHINE NAME, THE PREFIX OF A MACHINE NAME, OR all [all]:
   ```

3. Select the machines you want to view by typing the name of a single machine, a prefix (to select a range of machines that start with the same prefix), or **all** to view all the Default schedules for all the machines.

   If you press Enter/Return without specifying a machine, the command uses the machine name that appears in brackets.

If you type a prefix, a list of machines that contain that prefix appears. Type the numbers that correspond to the machines you want to view.

For example, if you have three machines that start with "hi", you can type **hi** as a prefix. The system would then display a list of all the machines that start with"hi":

```
input a set of machines, or hit return to indicate all these
machines:

1 = hickey, 2 = highlander, 3=high-definition
```

You can either press Enter/Return to select all the machines in the list or you can select certain machines by typing their corresponding numbers.

You are asked if you want to modify the Default schedule for more machines.

```
DO YOU WANT TO INPUT MORE MACHINES (y/n) [n]:
```

4. Decide if you want to modify the Default schedule on other machines.
   - Type **y** to select more machines and press Enter/Return.
     You are prompted to select other machines (see step 1 of this procedure).
   - Type **n** to not select any more machines and press Enter/Return.
     You are prompted to decide if you want vectorizing work performed on the machine.

     ```
     INPUT TYPE OF WORK ALLOWED is vectorize work allowed (y/n) [yes]
     ```

5. Decide if you want the machines to perform vectorizing work on the selected machines.
   - Type **y** to schedule vector batch processing and press Enter/Return.
   - Type **n** to not schedule vector batch processing and press Enter/Return.
   - If you press Enter/Return without entering **y** or **n**, the prompt uses the answer shown in brackets.

   The system then prompts you to select if you want rendering work performed on the machine.

   ```
   is render work allowed (y/n) [yes]
   ```

6. Select if you want the machines to perform rendering work on the selected machines.
   - Type **y** to schedule Render batch processing and press Enter/Return.
   - Type **n** to not schedule Render batch processing and press Enter/Return.
   - If you press [Enter] without entering **y** or **n**, the prompt uses the answer shown in brackets.

   You are prompted to select the environments to be scheduled for batch processing.

   ```
   INPUT A SET OF DATABASE ENVIRONMENTS

    1 = Production, 2 = Tutorials, 3 = Commercials default - [Production
   Commercials]
   ```

   All the environments in your system appear in this list, each one assigned to a number.
7. Type the number that corresponds to the environment(s) you want to schedule and press Enter/Return. If you press Enter/Return without typing anything, the environments listed in brackets are used.

If you select more than one environment, the system asks if you want to establish a priority.

```
should processing of the DBenv's be prioritized? (y/n) [yes]
```

You can prioritize your environments so that batch processing works on the highest priority environment first. If you do not define a priority, the batch processing does an equal amount of work for each environment.

The order in which you type the environment numbers can determine their batch processing priority in the schedule (the first environment you type has the highest priority). However, the order in which you type the environments is not important if you do not want to prioritize the environments (by answering **no** to the system prompt).

In this example, if you want to schedule only the **Production** and **Tutorials** environments for batch processing, you would type: **1 2**, indicating that **Production** has a higher priority than **Tutorials** for batch processing.

8. Decide if you want to assign a priority to the environments you selected. If you press Enter/Return without entering anything, the system uses the answer shown in brackets.
   - Type **y** to prioritize batch processing.
   - Type **n** to not prioritize batch processing.

     The system prompts you to schedule the status of the machine(s).

     ```
     input ON or OFF [on]:
     ```

9. Decide if you want to apply the Default schedule right away, making the machines available immediately.
   - Type **on** to make the machines available for batch processing according to their defined Default schedules and press Enter/Return.
   - Type **off** to make the machines unavailable for batch processing, regardless of their defined Default schedules, and press Enter/Return.
   - If you press Enter/Return without entering **on** or **off**, the prompt uses the answer shown in brackets.

     The Default schedule for the specified machines is set. The new schedule appears.

Using Periodic Schedules

The Periodic schedule is an optional schedule that defines a recurring period of time when a machine will perform batch processing. You can create a Periodic schedule by specifying a day of the week (Monday, Tuesday, etc.) and the machine will perform batch processing on the specified days for every week.

A Periodic schedule lists batch processing jobs for which you must define a start and end date, and time. Each job has its own set of batch processing parameters that are independent of the other jobs in the schedule.

For example, you can create a Periodic schedule for a machine so that it performs batch processing every night from 20:00 that evening to 08:00 the following morning. Therefore, the machine would not perform batch processing work during the day when the users would be present.

In terms of priority, the Periodic schedule is between the Default and Supervisory schedules. If there are no Supervisory schedules for a machine, or the Supervisory

---

However, if you have an active Supervisory schedule , the machine follows this schedule before it follows either the Periodic or Default schedules.

However, if you have an active Supervisory schedule , the machine follows this schedule before it follows either the Periodic or Default schedules.

This section is divided as follows:

- Displaying Periodic Schedules below
- Setting a Periodic Schedule on the facing page
- Clearing a Periodic Schedule on page 152
- Using Default Schedules on page 143.
- Using Supervisory Schedules on page 153.

Displaying Periodic Schedules

When you display a Periodic schedule, you can see all the batch processing machines that use this schedule and when they are scheduled to perform the batch processing. The Periodic schedule also displays the type of batch processing work (vectorize or render) and the environments that are scheduled for the processing work.

After you display the Periodic schedule, you can modify it to change the time, type of batch processing, or environments to process—see Setting a Periodic Schedule on the facing page.

You can display the Periodic schedule for only one machine at a time.

How to display a Periodic schedule

1. In a Linux shell, type:

   `Showper`

   You are prompted for the machine whose Periodic schedule you want to view.

   ```
   INPUT MACHINE [hickey]:
   ```

2. Type the name of the machine for which you want to define a Periodic schedule.

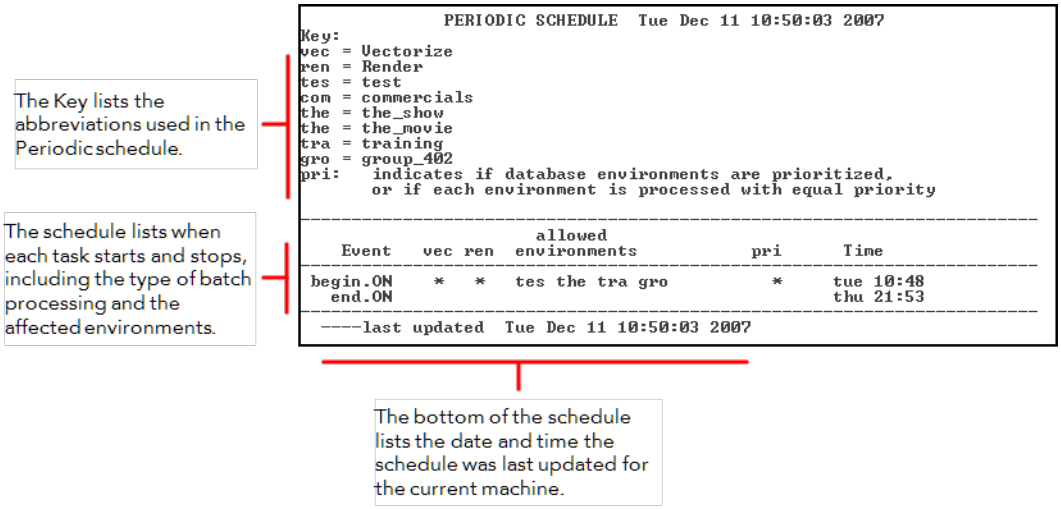
   If you press Enter/Return without specifying a machine, the command uses the machine name that appears in brackets.

You can combine these two steps by adding the name of the machine you want to view at the end of the **`Showper`** command.

For example, if the machine you want to view is called **hickey**, then you would type the following command in a Linux shell to view its Periodic schedule.

```
Showper hickey
```

The Periodic schedule for that machine appears.



Setting a Periodic Schedule

When you are ready to modify your Periodic schedule, you need to specify the following information:

- The machine(s) for which you want to create or update the periodic schedule(s)
- The type of batch processing work you want to assign
- The environments to process
- When to start and stop the batch process

You can add jobs to the schedule if a Periodic schedule already exists for a particular machine, or you can clear out any pre-existing jobs before setting new jobs in the schedule. You can clear a Periodic schedule without setting any new jobs—see Clearing a Periodic Schedule on page 152.

How to define a Periodic schedule on a machine

If you press Enter/Return without entering anything, the command uses the information that appears in brackets of commands.

1. In a Linux shell, type:

   ```
   Showper
   ```

   You are prompted for the machine(s) whose Periodic schedule you want to modify.

```
INPUT A SINGLE MACHINE NAME, THE PREFIX OF A MACHINE NAME, OR all [all]:
```

2. Select the machines you want to modify by typing the name of a single machine, a prefix (to select a range of machines that start with the same prefix), or **all** to modify all the Periodic schedules for all the machines.

If you type a prefix, a list of machines that contain that prefix appears. Type the numbers that correspond to the machines you want to view.

For example, if you have three machines that start with "hi", you can type **hi** as a prefix. The system would then display a list of all the machines that start with"hi":

```
input a set of machines, or hit return to indicate all these
machines:

1 = hickey, 2 = highlander, 3=high-definition
```

Press Enter/Return to select all the machines in the list or select specific machines by typing their corresponding numbers.

You are asked if you want to modify the Periodic schedule on more machines.

```
DO YOU WANT TO INPUT MORE MACHINES (y/n) [n]:
```

3. Do one of the following:
   - Type **y** to select more machines.
   - Type **n** to not select any more machines.

   You are prompted to clear the existing schedule before defining new entries.

```
WOULD YOU LIKE TO CLEAR THE SCHEDULE OF PRE-EXISTING ENTRIES? (y/n) [n]:
```

4. Do one of the following:
   - Type **y** to remove any existing schedules on the machine(s).
   - Type **n** to preserve any existing schedules on the machine(s). The system will add your new entries to the existing set of entries.

   You are prompted to schedule any new entries in your Periodic schedule.

```
WOULD YOU LIKE TO SCHEDULE ANY ENTRIES? (y/n) [y]
```

5. Do one of the following:
   - Type **y** to schedule new entries. Proceed to the next step to define the schedule.
   - Type **n** to not schedule any new entries. This cancels the **Setper** command without scheduling any new entries.
6. If you typed **y** to the previous prompt, you are prompted to activate or deactivate the selected machines.

```
input ON or OFF [on]:
```

   - Type **on** to activate the Periodic schedule for the selected machines.
   - Type **off** to deactivate the Periodic schedule for the selected machines. The machine(s) will not perform any Periodic batch processing, regardless of what the other Periodic entries have been scheduled.

You are prompted to decide if you want vectorizing work performed on the machine.

```
INPUT TYPE OF WORK ALLOWED is vectorize work allowed (y/n) [no]
```

7. Do one of the following:
   - Type **y** to schedule Vector batch processing.
   - Type **n** to not schedule Vector batch processing.

   The system prompts you to decide if you want rendering work performed on the machine.

   ```
    is render work allowed (y/n) [yes]
   ```

8. Do one of the following:
   - Type **y** to schedule Render batch processing.
   - Type **n** to not schedule Render batch processing.

   You are prompted to select the environments to be scheduled for batch processing. All the environments in your system appear in this list, each one assigned to a number.

   ```
   INPUT A SET OF DATABASE ENVIRONMENTS

    1 = Production, 2 = Tutorials, 3 = Commercials default - [Production
   Commercials]
   ```

9. Type the number that corresponds to the environment(s) you want to schedule and press [Enter/Return]. If you select more than one environment, the system asks if you want to establish a priority.

   ```
   should processing of the DBenv's be prioritized? (y/n) [yes]
   ```

   You can prioritize your environments so that batch processing works on the highest priority environment first. If you do not define a priority, the batch processing does an equal amount of work for each environment.

   The order in which you type the environment numbers can determine their batch processing priority in the schedule (the first environment you type has the highest priority). However, the order in which you type the environments is not important if you don't want to prioritize the environments (by answering **no** to the system prompt).

   In this example, if you want to schedule only the **Production** and **Tutorials** environments for batch processing, you would type: **1 2**, indicating that **Production** has a higher priority than **Tutorials** for batch processing.

10. Select if you want to assign a priority to the environments you selected.
    - Type **y** to prioritize batch processing.
    - Type **n** to not prioritize batch processing.

    The scheduler prompts you to define the time and day when to start the Periodic batch processing.

    ```
    INPUT BEGIN TIME in 24-hr. format [15:17] input day [wed]:
    ```

11. Type the time (in 24-hour format) and day (in day of the week format) when to begin batch processing and press [Enter/Return].

    The scheduler prompts you for the end time.

    ```
    INPUT END TIME in 24-hr. format: input day [thu]:
    ```

12. Type the time (in 24-hour format) and the day (in day of the week format) when to stop the batch processing and press Enter/Return.

A summary of the job you just scheduled appears. The scheduler then prompts you to confirm that you want to enter this job in the schedule.

```
HERE IS THE EVENT YOU JUST INPUT:
    Event   vec ren  environments           pri      Time
 begin.ON    *   *   tes the tra gro          *     tue 10:48
   end.ON                                           thu 21:53
```

13. Do one of the following:
    - Type **y** to add this job into your Periodic schedule.
    - Type **n** if you do not want to add this job into your Periodic schedule.

    The scheduler gives you the opportunity to add another job to your Periodic schedule.

    ```
    DO YOU WANT TO SCHEDULE ANOTHER EVENT (y/n) [y]
    ```

14. Do one of the following:
    - Type **y** to add another job and press Enter/Return. Repeat steps 7 to 13.
    - Type **n** if you do not want to enter another job and press Enter/Return.

    When you finish adding jobs to the Periodic schedule, a summary of the entire Periodic schedule appears.

Clearing a Periodic Schedule

If you decide that you do not need to have any recurring batch jobs, you can clear the scheduled jobs from the Periodic schedule. Once the Periodic schedule is empty, the batch jobs in the Default schedule come into effect.

You can clear existing jobs from a Periodic schedule without creating any new jobs. However, when you clear a Periodic schedule, you clear all the jobs that exist for that schedule.

How to clear a Periodic schedule

1. Follow steps 1 to 3See "Setting a Supervisory Schedule" on page 154in Setting a Periodic Schedule on page 149
2. Type **y** when you reach the following prompt:

   ```
   WOULD YOU LIKE TO CLEAR THE SCHEDULE OF PRE-EXISTING ENTRIES? (y/n) [n]
   ```

3. Type **n** when you reach the following prompt:

   ```
   WOULD YOU LIKE TO SCHEDULE ANY ENTRIES? (y/n) [y]
   ```

   This clears the Periodic schedule and displays an empty schedule, confirming that the system cleared the jobs.

```
              PERIODIC SCHEDULE  Tue Dec 11 11:09:48 2007
Key:
vec = Vectorize
ren = Render
tes = test
com = commercials
the = the_show
the = the_movie
tra = training
gro = group_402
pri:   indicates if database environments are prioritized,
       or if each environment is processed with equal priority

------------------------------------------------------------------------
                        allowed
    Event   vec ren  environments           pri      Time
------------------------------------------------------------------------
------------------------------------------------------------------------
  ----last updated  Tue Dec 11 11:09:48 2007
```

Using Supervisory Schedules

A Supervisory schedule forces a machine to perform batch processing for a non-recurring period of time. This type of schedule, like the Periodic schedule, is optional. If you have a Supervisory schedule active for a period of time, the machine performs batch processing according to that schedule before it references the Periodic or Default schedules.

For example, you could force a machine to perform only Vectorize batch processing for the next four hours, ignoring any other scheduled type of batch processing during that time.

A Supervisory schedule consists of a list of batch processing jobs for which you must define a start and end date and time. Each job has its own set of batch processing parameters that are independent of the other jobs in the schedule.

The Supervisory schedule holds the highest priority level, superseding the Periodic schedule and Default schedule. Therefore, if you have an active Supervisory schedule, the machine follows this schedule before it follows the Periodic or Default schedules.

This section is divided as follows:

- Displaying Supervisory Schedules below
- Setting a Supervisory Schedule on the next page
- Clearing a Supervisory Schedule on page 157
- Using Default Schedules on page 143.
- Using Periodic Schedules on page 147.

Displaying Supervisory Schedules

When you display a Supervisory schedule, you can see all the batch processing machines that use this schedule and when they are scheduled to perform the batch processing. The Supervisory schedule also displays the type of batch processing work (vectorize or render) and the environments that are scheduled for the processing work.

After you display the Supervisory schedule, you can modify it to change the time, type of batch processing, or environments to process—see Setting a Supervisory Schedule on the next page.

You can display the Supervisory schedule for only one machine at a time.

How to display a Supervisory schedule

1. In a Linux shell, type:

   ```
   Showsup
   ```

   You are prompted for the machine whose Supervisory schedule you want to view.

   ```
   INPUT MACHINE [hickey]:
   ```

2. Type the name of the machine for which you want to define a Supervisory schedule.

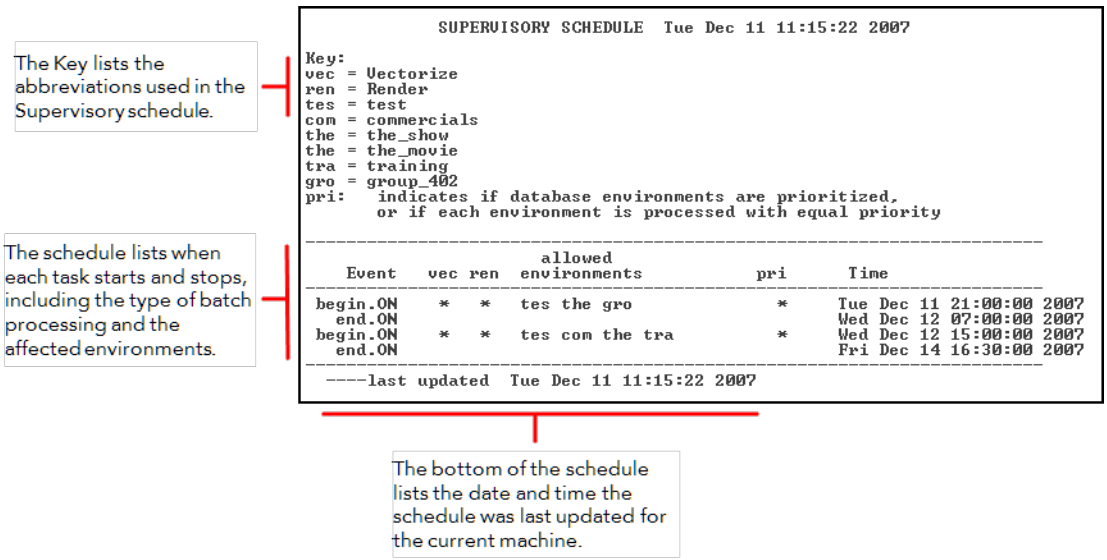
   If you press Enter/Return without specifying a machine, the command uses the machine name that appears in brackets.

You can combine these two steps by adding the name of the machine you want to view at the end of the **Showsup** command.

For example, if the machine you want to view is called **hickey**, then you would type the following command in a Linux shell to view its Supervisory schedule.

```
Showsup hickey
```

The Supervisory schedule for the machine appears.



Setting a Supervisory Schedule

When you are ready to modify your Supervisory Schedule, you need to specify the following:

- The machine(s) for which you want to create or update the supervisory schedule(s)
- The type of batch processing work you want to assign
- The environments to process
- When to start and stop the batch process

You can add jobs to the schedule if a Supervisory Schedule already exists for a particular machine, or you can clear out any pre-existing jobs before setting new jobs in the schedule. You can clear a Supervisory Schedule without setting any new jobs (see Clearing a Supervisory Schedule on page 157).

How to define a Supervisory schedule on a machine

If you press Enter/Return without entering anything, the command uses the information

that appears in brackets of commands.

1. In a Linux shell, type:

   Showsup

   You are prompted for the machine(s) whose Supervisory schedule you want to modify.

   INPUT A SINGLE MACHINE NAME, THE PREFIX OF A MACHINE NAME, OR all [all]:

2. Select the machines you want to modify by typing the name of a single machine, a prefix (to select a range of machines that start with the same prefix), or **all** to modify all the Supervisory schedules for all the machines.

   If you type a prefix, a list of machines that contain that prefix appears. Type the numbers that correspond to the machines you want to view.

   For example, if you have three machines that start with "hi", you can type **hi** as a prefix. The system would then display a list of all the machines that start with"hi":

   input a set of machines, or hit return to indicate all these machines:

   1 = hickey, 2 = highlander, 3=high-definition

   Press Enter/Return to select all the machines in the list or select specific machines by typing their corresponding numbers.

   You are asked if you want to modify the Supervisory schedule on more machines.

   DO YOU WANT TO INPUT MORE MACHINES (y/n) [n]:

3. Do one of the following:

   - Type **y** to select more machines.
   - Type **n** to not select any more machines.

   You are prompted to clear the existing schedule before defining new entries.

   WOULD YOU LIKE TO CLEAR THE SCHEDULE OF PRE-EXISTING ENTRIES? (y/n) [n]:

4. Do one of the following:

   - Type **y** to remove any existing schedules on the machine(s).
   - Type **n** to preserve any existing schedules on the machine(s). The system will add your new entries to the existing set of entries.

   You are prompted to schedule any new entries in your Supervisory schedule.

   WOULD YOU LIKE TO SCHEDULE ANY ENTRIES? (y/n) [y]

5. Do one of the following:

   - Type **y** to schedule new entries. Proceed to the next step to define the schedule.

- Type **n** to not schedule any new entries. This cancels the **Setper** command without scheduling any new entries.

6. If you typed **y** to the previous prompt, you are prompted to activate or deactivate the selected machines.

```
input ON or OFF [on]:
```

   - Type **on** to activate the Supervisory schedule for the selected machines.
   - Type **off** to deactivate the Supervisory schedule for the selected machines. The machine(s) will not perform any Supervisory batch processing, regardless of what the other Supervisory entries have been scheduled.

   You are prompted to decide if you want vectorizing work performed on the machine.

```
INPUT TYPE OF WORK ALLOWED is vectorize work allowed (y/n) [no]
```

7. Do one of the following:

   - Type **y** to schedule Vector batch processing.
   - Type **n** to not schedule Vector batch processing.

   The system prompts you to decide if you want rendering work performed on the machine.

```
 is render work allowed (y/n) [yes]
```

8. Do one of the following:

   - Type **y** to schedule Render batch processing.
   - Type **n** to not schedule Render batch processing.

   You are prompted to select the environments to be scheduled for batch processing. All the environments in your system appear in this list, each one assigned to a number.

```
INPUT A SET OF DATABASE ENVIRONMENTS

 1 = Production, 2 = Tutorials, 3 = Commercials default - [Production
Commercials]
```

9. Type the number that corresponds to the environment(s) you want to schedule and press [Enter/Return]. If you select more than one environment, the system asks if you want to establish a priority.

```
should processing of the DBenv's be prioritized? (y/n) [yes]
```

   You can prioritize your environments so that batch processing works on the highest priority environment first. If you do not define a priority, the batch processing does an equal amount of work for each environment.

   The order in which you type the environment numbers can determine their batch processing priority in the schedule (the first environment you type has the highest priority). However, the order in which you type the environments is not important if you don't want to prioritize the environments (by answering **no** to the system prompt).

   In this example, if you want to schedule only the **Production** and **Tutorials** environments for batch processing, you would type: **1 2**, indicating that **Production** has a higher priority than **Tutorials** for batch processing.

10. Select if you want to assign a priority to the environments you selected.

    - Type **y** to prioritize batch processing.
    - Type **n** to not prioritize batch processing.

The scheduler prompts you to define the time and day when to start the Supervisory batch processing.

```
INPUT BEGIN TIME in 24-hr. format [15:17] input day [wed]:
```

11. Type the time (in 24-hour format) and day (in day of the week format) when to begin batch processing and press Enter/Return.

    The scheduler prompts you for the end time.

    ```
    INPUT END TIME in 24-hr. format: input day [thu]:
    ```

12. Type the time (in 24-hour format) and the day (in day of the week format) when to stop the batch processing and press Enter/Return.

    A summary of the job you just scheduled appears. The scheduler then prompts you to confirm that you want to enter this job in the schedule.

    ```
    HERE IS THE EVENT YOU JUST INPUT:
        Event    vec ren  environments          pri      Time
     begin.ON     *   *   tes the gro             *     Tue Dec 11 21:00:00 2007
       end.ON                                           Wed Dec 12 07:00:00 2007
    ```

13. Do one of the following:

    - Type **y** to add this job into your Supervisory schedule.
    - Type **n** if you do not want to add this job into your Supervisory schedule.

    The scheduler gives you the opportunity to add another job to your Supervisory schedule.

    ```
    DO YOU WANT TO SCHEDULE ANOTHER EVENT (y/n) [y]
    ```

14. Do one of the following:

    - Type **y** to add another job and press Enter/Return. Repeat steps 7 to 13.
    - Type **n** if you do not want to enter another job and press Enter/Return.

    When you finish adding jobs to the Supervisory schedule, a summary of the entire Supervisory schedule appears.

Clearing a Supervisory Schedule

If you decide you don't need to set a Supervisory schedule for your batch processing jobs, you can clear the scheduled jobs from the Supervisory schedule. Once the Supervisory schedule is empty, the batch processing jobs in the Periodic and Default schedules come into effect.

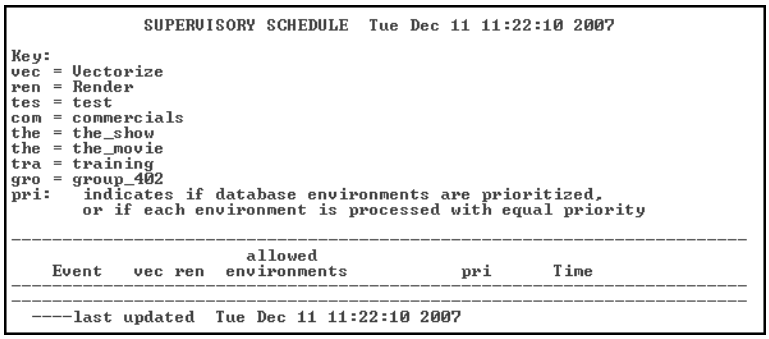
You can clear existing jobs from a Supervisory schedule without creating any new jobs. However, when you clear a Supervisory schedule, you clear all of the jobs that exist for that schedule.

How to clear a Supervisory schedule

1. Follow steps 1 to 3See "Setting a Supervisory Schedule" on page 154in Setting a Supervisory Schedule on page 154.
2. Type **y** when you reach the following prompt:

   ```
   WOULD YOU LIKE TO CLEAR THE SCHEDULE OF PRE-EXISTING ENTRIES? (y/n) [n]
   ```

   The Supervisory schedule is cleared. An empty schedule displayed, confirming that the system cleared the jobs.



Shutting Down and Starting Up Environments

In some cases, you must shut down a machine so it does not process any batch jobs from an environment or for a specific amount of time. You may want to, for example, shut down batch processing for all environments on a single machine so you can reboot the machine. Or you can shut down one environment on all machines so you can move scenes in that environment to other machines.

To determine if an environment is shut down on a particular machine, type **Status** in a Command Shell or Terminal. If you see an asterisk (*) in the **SD** column for a particular machine, this means at least one environment is shut down on that machine.

You can view the Supervisory and Periodic schedules for the shut down machines to isolate which environments are shut down.

This section is divided as follows:

- Using Supervisory Schedules on page 153.
- Using Supervisory Schedules on page 153.

Shutting Down Environments

When you shut down an environment, this overrides whatever was scheduled for that environment (for all three types of schedules). The environment remains shut down until you reinstate it by typing **Suenv** command in a Command Shell or Terminal (see Starting Up Environments on the facing page). You can shut down multiple environments on multiple machines, from any machine in the network.

When shutting down an environment, the command prompts you for the environments you want to close and the machines on which you want them to be shut down.

How to shut down an environment on a machine

1. In a Command Shell or Terminal, type:

   ```
   Sdenv
   ```

   You are prompted for the environments to shut down:

   ```
   INPUT DATABASES TO BE STOPPED

   INPUT A SET OF DATABASE Environments

    1 = Production, 2 = Tutorials, 3 = Commercials, default =
   [Production Tutorials Commercials]
   ```

   All the Environments appear in this list and each one has its own number.

2. Type the number that corresponds to each environment you want to shut down (separate each number by a space) and press Enter/Return.

   You are prompted you for the machine(s) on which you want the environments to be shut down:

   ```
   INPUT MACHINE ON WHICH THESE DBENV'S ARE TO BE SHUTDOWN

   INPUT A SINGLE MACHINE NAME, THE PREFIX OF A MACHINE NAME, OR all
   [hickey]:
   ```

3. Select the machines that should not process the shut down environment by typing the name of a single machine, a prefix (to select a range of machines that start with the same prefix), or **all** to shut down all the environments on all the machines.

   If you press Enter/Return without specifying a machine, the command uses the machine name that appears in brackets.

   If you type a prefix, a list of machines that contain that prefix appears. Type the numbers that correspond to the machines you want to view.

   For example, if you have three machines that start with "hi", you can type **hi** as a prefix. The system would then display a list of all the machines that start with"hi":

   ```
   input a set of machines, or hit return to indicate all these
   machines:

   1 = hickey, 2 = highlander, 3=high-definition
   ```

   Press Enter/Return to select all the machines in the list or select specific machines by typing their corresponding numbers.

   You are prompted to decide if you want to shut down more machines.

   ```
   DO YOU WANT TO INPUT MORE MACHINES (y/n) [n]:
   ```

   You are asked if you want to shut down more environments and machines.

4. Do one of the following:

   - Type **y** to select more machines.
   - Type **n** to not select any more machines.

     A summary of the shutdown appears:

     ```
     here are the 3 machines you input: hickey weiner garneau

     ALL MACHINES HAVE REPORTED. SHUT DOWN COMPLETE.
     ```

   The **Sdenv** command waits for a response from all the selected machines. The **Sdenv** command does not terminate a batch process that is currently running on a machine. If a machine is currently performing a batch process, it will not shut down until it completes the queue entry.

Starting Up Environments

When you are ready to re-start the batch process on an Environment that was shut down, you can use the **Suenv** command. When you restart an Environment, the command prompts you for the Environments you want to start up and the machines you want them to start running on.

If you accidentally restart an environment that is already active, nothing happens.

How to start up an environment

1. In a Command Shell or Terminal, type:

   ```
   Suenv
   ```

   You are prompted for the environments to restart:

   ```
   INPUT DATABASES TO BE STARTEDINPUT A SET OF DATABASE Environments
    1 = Production, 2 = Tutorials, 3 = Commercials, default = []
   ```

   All the environments in your system appear in this list and each one has a number.
2. Type the numbers that correspond to each environment you want to restart (separate each number by a space) and press Enter/Return.

   You are prompted for the machine(s) you want to process the environments:

   ```
   INPUT MACHINE ON WHICH THESE DBENV'S ARE TO BE STARTED

   INPUT A SINGLE MACHINE NAME, THE PREFIX OF A MACHINE NAME, OR all
   [hickey]:
   ```
3. Select the machines for processing the environment by typing the name of a single machine, a prefix (to select a range of machines that start with the same prefix), or **all** to restart all the environments on all the machines.

   If you press Enter/Return without specifying a machine, the command uses the machine name that appears in brackets.

   If you type a prefix, a list of machines that contain that prefix appears. Type the numbers that correspond to the machines you want to view.

   For example, if you have three machines that start with "hi", you can type **hi** as a prefix. The system would then display a list of all the machines that start with"hi":

   ```
   input a set of machines, or hit return to indicate all these
   machines:

   1 = hickey, 2 = highlander, 3=high-definition
   ```

   Press Enter/Return to select all the machines in the list or select specific machines by typing their corresponding numbers.

   You are prompted to decide if you want to restart enviroments on more machines.

   ```
   DO YOU WANT TO INPUT MORE MACHINES (y/n) [n]:
   ```
4. Do one of the following:
   - Type **y** to select more machines.

- Type **n** to not select any more machines.

A summary of the started machines appears:

```
here are the 3 machines you input: hickey weiner garneau

ALL MACHINES HAVE REPORTED. STARTUP COMPLETE.
```

A Summary of Scheduling Commands

The following table lists the batch processing scheduling commands and parameters that are useful for managing the batch processing schedule.

Command	Effect
Status	Displays the Schedule Status (default for all machines).
	Options: **[machine]**: Limits the display to specified machines (separate machine names with spaces). **[prefix]**: Limits the display to machines with specified prefix.
Showdef	Displays Default schedules.
Setdef	Modifies Default schedules.
Showper	Displays Periodic schedule (for a single machine only).
	Options: **[machine]**: Specifies the machine whose Periodic schedule you want to display.
Setper	Sets and/or clears Periodic schedule.
Showsup	Displays Supervisory schedule (for a single machine only).
	Options: **[machine]**: Specifies the machine whose Supervisory schedule you want to display.
Setsup	Sets and/or clears Supervisory schedules.
Sdenv	Shuts down environments.
Suenv	Starts up environments.
start_process_starter	Starts process running on a machine (you must be logged into the machine, and should be SuperUser when running this command).

Command	Effect
`tail -options file`	Displays last 10 lines of specified file (Linux).
	Options: **`-n`**: Specifies the number of lines from the file to display. **`-f`**: Updates the display as the file changes (must use Ctrl + C or Breal key to quit).
`ps`	**Options**: **`-f`**: Displays full listing. **`-u`** [username]: Limits display to specified Linux user name.

Index