HARMONY

Toon Boom Harmony 14.0
Harmony Server Installation Guide

Legal Notices

Toon Boom Animation Inc.
4200 Saint-Laurent, Suite 1020
Montreal, Quebec, Canada
H2W 2R2

Tel: +1 514 278 8666
Fax: +1 514 278 2666

toonboom.com

Disclaimer

The content of this guide is covered by a specific limited warranty and exclusions and limit of liability under the applicable License Agreement as supplemented by the special terms and conditions for Adobe®Flash® File Format (SWF). For details, refer to the License Agreement and to those special terms and conditions.

The content of this guide is the property of Toon Boom Animation Inc. and is copyrighted.

Any reproduction in whole or in part is strictly prohibited.

Trademarks

Harmony is a trademark of Toon Boom Animation Inc.

Publication Date

9/12/2019

Contents

Chapter 1: Harmony Server Installation

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 with your existing infrastructure, whether you're on Windows, Mac or Linux.

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

You can install Harmony Server on Windows, Mac OS X and Linux.

If you plan to also use a render farm or batch vectorize scanned drawings, you will also need to set up the batch processing tasks.

You can also install the Web Control Center to access your server locally or remotely. The Web Control Center lets you host the server on the Internet. This way, freelancers can log in from anywhere with an Internet connection. Then they can download a scene from the server, work on it, and upload it again.

You no longer need to spend time copying files to an FTP or require an administrator to export and import files from the server. You can do it all directly through the Web Control Center.

> **NOTE:** To use the Web Control Center outside your network, you must use the options related to SSL Server in order to secure your connection—see Web Control Center on Linux for your operating system.

> **IMPORTANT:** Make sure to shut down all the services on the Web Control Center server when you upgrade the version. If you don't, it will not replace the startup scripts because they will be busy and locked. Make sure to do this before installation.

If you also plan to use an industrial scanner and the Scan module to batch scan and vectorize drawings, refer to the Scan Guide to learn how to install and set up the scanner.

Chapter 2: Windows Installation

There are three stages required to install Toon Boom Harmony 14.0, on Windows:

After completing these stages, you can verify the integrity of the installation and resolve any configuration issues.

About Windows Pre-installation

Before installing Toon Boom Harmony, you must perform the following tasks:

- *Verifying the Minimum Requirements* on page 13
- *Prerequisites for Harmony Installation* on page 13
- *Obtaining the Product Code* on page 13

Verifying the Minimum Requirements

For the most current Toon Boom Harmony hardware requirements, visit:

- toonboom.com/products/harmony/system-requirements

You can also refer to the *Harmony and Your IT Department* white paper available from:

- Toon Boom Animation Sales Representative
- Toon Boom Animation Support at: store.toonboom.com/contact/support.

Prerequisites for Harmony Installation

For a fast database connection, it is necessary to set up extra network settings so clients can perform a fast Name Resolution of the server, as well as the server to the clients.

- *Obtaining the Product Code* on page 13
- *About Windows Pre-installation* on page 13
- *About Windows Pre-installation* on page 13

Obtaining the Product Code

You should obtain a product code from the Toon Boom licensor, so you can finish the installation process without having to wait for the activation code to arrive.

To obtain a Harmony 14 product code, send the following information to: licensor@toonboom.com.

- Your name and the name of your company
- Email address where to send the license file

Editing Host Files on Windows

> **NOTE:** You should edit the `hosts` file only if there are problems or slowness when a computer is resolving names. **DO NOT** edit the `hosts` file unless there are problems resolving names on the network.

How to edit the hosts file

1. Set up the server and client's IP with a static (fixed) IP address.

2. Go to C:\Windows\System32\drivers\etc folder and open the `hosts` file using a plain text editor.

3. Go to the end of the file. On a new line, add the static IP address and the machine name accordingly. If you are using a domain, you need to use the fully qualified domain name (`FQDN`).

   For example, if the server name is `server.toonboom.com` in the domain and the IP address of the server is `192.168.1.1`, the line should be:

   ```
   192.168.1.1 server.toonboom.com
   ```

4. Add the rest of the client's IP and hostname on a new line and save the file.

5. Copy and paste the `hosts` file to all the machines including the server under the `C:\Windows\System32\drivers\etc\` folder.

Turning Off Anti-virus Software on Windows

How to turn off the anti-virus software

1. Open the Control Panel.

2. Double-click on the **Security Center** icon.

   The Windows Security Center dialog box opens.

3. If your anti-virus software is not detected, open all anti-virus software applications on your computer and disable each one manually.

Turning Off Firewalls on Windows

How to turn off the Windows firewall

1. Open the Control Panel.

2. Open the Windows Firewall window.

3. On the left side of the window, click **Turn Windows Firewall On or Off**.

    Control Panel Home

    Allow a program or feature
    through Windows Firewall
    Change notification settings
    Turn Windows Firewall on or
    off
    Restore defaults
    Advanced settings
    Troubleshoot my network
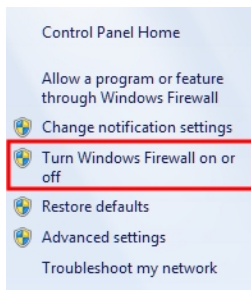
    The Customize Settings for Each Type of Network dialog box displays.

4. Select the **Turn off Windows Firewall** option for both private and public network locations.

    Customize settings for each type of network
    You can modify the firewall settings for each type of network location that you use.
    What are network locations?
    Home or work (private) network location settings
    ○ Turn on Windows Firewall
    ☐ Block all incoming connections, including those in the list of allowed programs
    ☑ Notify me when Windows Firewall blocks a new program
    ● Turn off Windows Firewall (not recommended)
    Public network location settings
    ○ Turn on Windows Firewall
    ☐ Block all incoming connections, including those in the list of allowed programs
    ☑ Notify me when Windows Firewall blocks a new program
    ● Turn off Windows Firewall (not recommended)
    OK   Cancel

5. Click **OK**.

Turning Off File Sharing on Windows

How to turn off simple file sharing

1. Open the Control panel.

2. Open the **Folder Options** dialog box. If you are on Windows 8, click on **Appearance and Personalization** first.

3. In the View tab, deselect the **Use Sharing Wizard (Recommended)** option.
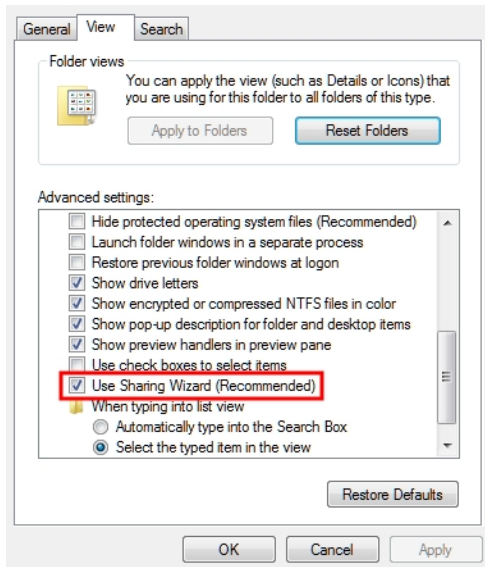
About Harmony Installation on Windows

Now that you have verified the minimum requirements and configured your hardware and software, you are ready to install Toon Boom Harmony.

Upgrading from a Previous Version on Windows

If you are not upgrading from a previous installation of Toon Boom Harmony, go to *Upgrading from a Previous Version on Windows* on page 19.

If you are performing an upgrade, pick a time when Toon Boom Harmony production is slow or stopped. During the upgrade, no users can run any of the Toon Boom Harmony modules and all rendering jobs must be stopped or completed.

Before you can update a previous installation of Toon Boom Harmony, you must stop all services, including:

- Database server
- Batch processing
- License server
- Harmony Web Control Center server

Stopping Services Affecting Harmony on Windows

How to stop all services affecting Toon Boom Harmony

1. Make sure that no one is running Toon Boom Harmony. All instances of Harmony must be closed on the server and on all the clients.

2. Make sure that all batch rendering or vectorizing is completed or that the queues are empty. In the Control Center module, use the Queue menu to open the Vectorize and Render Queue for all environments. The queues should be empty or the status of all jobs should be "Completed".

   Upgrading from versions 7.8 and later:

   From the Start menu, do one of the following:

   - Windows 10: **Start > All apps > Harmony [version] [edition] > Control Panel**.
   - Windows 8: **Start > Apps > Harmony [version] [edition] > Control Panel.**
   - Windows 7: **Start > All Programs > Toon Boom Harmony [version] [edition] > Tools > Control Panel**.

   The Harmony Control Panel dialog box opens.

   Upgrading from a previous version of 7.3:

   - From the Start menu, select **All Programs > Toon Boom Animation > Toon Boom Harmony > Tools > Harmony Control Panel**.

   The Harmony Properties window opens.

   Upgrading from version 7.2 or earlier:

   - From the Start menu, select **All Programs > Toon Boom Harmony (or Opus) > Configuration Tools > usa_cfg**.

   The USAnimation Properties window opens.

3. From the Process Starter menu, select **Stop**. Do this for every Toon Boom Harmony-related process running on the machine.

   You can also stop `tbdbserver` on the server and `tbprocess` on workstations that are set as a batch render.
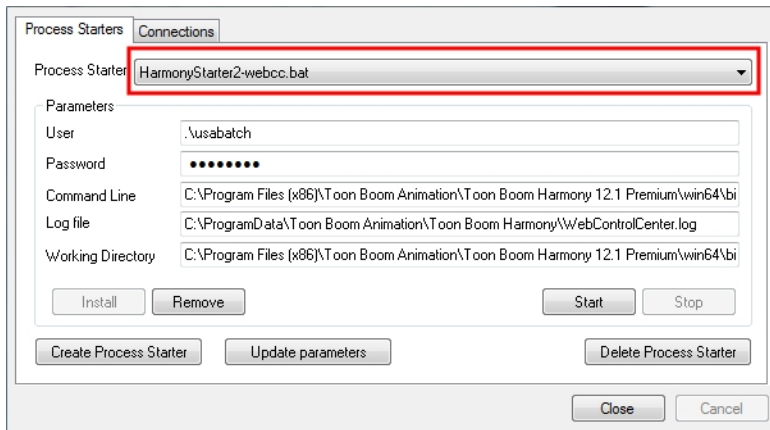
4. Turn off all the client machines and the render farm.

Stopping License Servers on Windows

1. On the License server computer, from the Start menu, do one of the following:

   Upgrading from version 12 and later:

   From the Start menu, do one of the following:

   - Windows 10: **Start > All apps > Harmony [version] [edition] > FlexLM Tools**.
   - Windows 8: **Start > Apps > Harmony [version] [edition] > FlexLM Tools**.
   - Windows 7: **All Programs > Harmony [version] [edition] > License Tools > Flexlm Tools**.

   Upgrading from version 7.8:

   From the Start menu, do one of the following:

   - Windows 8: **Start > Apps > Toon Boom Harmony [version] > FlexLM Tools**.
   - Windows 7: **All Programs > Toon Boom Harmony [version] > License Tools > Flexlm Tools**.

   Upgrading from version 7.3:

   - From the Start menu, select **All Programs > Toon Boom Harmony [version] > License Tools > Flexlm Tools**.

   The LMTOOLS window opens.
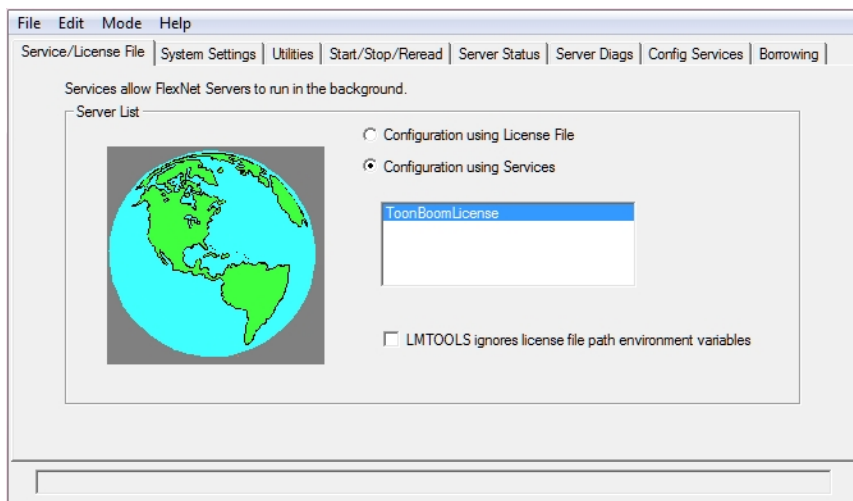
2. In the Start/Stop/Reread tab, select the license service from the **FLEXnet license services installed on this computer** list.
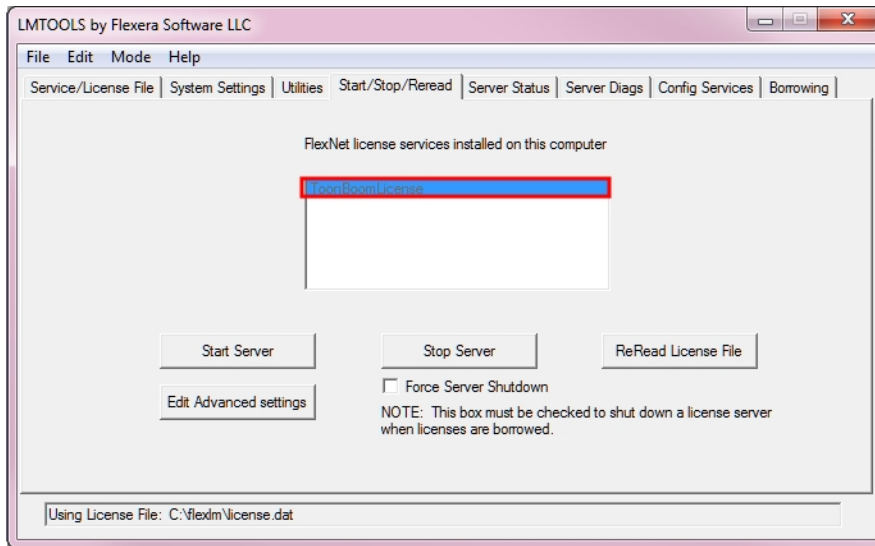
3. Click **Stop Server**.

4. In the Config Services tab, click **Remove Service** to remove the license service.
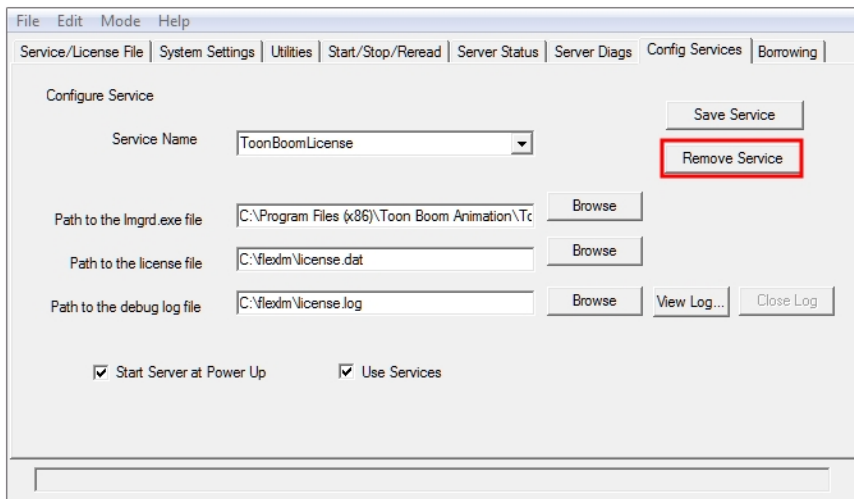
5. Close the LMTOOLS window.

Removing Environment Variables on Windows

To complete the installation, you must remove some environment variables set by the previous installation.

IMPORTANT: Please do this with caution.

1. Open the Windows Control Panel.

2. Double-click on System and select the **Advanced system settings** link in the left panel.

3. In the Advanced tab, click **Environment Variables**.

4. In the System Variables panel, select `LM_LICENSE_FILE` (if listed) and click **Delete** to delete `LM_LICENSE_FILE`.

5. Delete any of the following variables if they appear in the System or User variables lists:

   - `TOONBOOM_LICENSE_FILE`
   - `USADB`
   - `USADIR`
   - `USAROOT`

Backing Up Configuration Files on Windows

You also need to back up any necessary configuration files from the machine in case you want to reuse them. You can also back up the `license.dat` file as well.

How to back up configuration files

1. Do one of the following:

   - Version 12 and later: **\Program Files (x86)\Toon Boom Animation\Toon Boom Harmony [version] [edition]\etc**
   - Versions 11.2, 11.1, 11 or 10.3: **\Program Files (x86)\Toon Boom Animation\Toon Boom Harmony [version] \etc**
   - Version 7.8: **\Program Files (x86)\Toon Boom Animation\Harmony 7.8\etc.**
   - Version 7.3: **\Program Files (x86)\Toon Boom Animation\Harmony\etc.**
   - Versions 7.2 and earlier: **\usa\etc** folder.

2. Back up any of the following configuration files:

   - `Scan.conf` if this workstation is to be configured as a scanning station.
   - `VectOptions.conf` on any machine (including the server) that is doing batch vectorization.
   - Any other `.conf` file that is required to be used later.

> **NOTE:** You can back up the entire `harmony` or `usa` folder to ensure all configuration file are backed up.

3. Back up the `license.dat` file in following folder:

   - Version 12 and later: **C:\flexlm**
   - Versions 7.3 and 7.2: **C:\usa\etc\flexlm**

Uninstalling Previous Versions on Windows

Now you will uninstall the previous version of Harmony or Opus.

How to uninstall the previous version of Harmony or Opus.

1. Open the Windows Control Panel.

2. Double-click on **Program and Features** and select **Harmony** or **Opus**.

3. From the top menu, click **Uninstall**.

4. Reboot the machine.

5. Back up the database. For the server upgrading process, back up the database by exporting the entire database. This will prevent you from losing any data during the upgrading process. You can, however, back up the current **/USA_DB** and **/usadata** by renaming them (this procedure can only be used when installing on the same server). This requires extra caution. If you are at all unsure, contact your system administrator or Toon Boom Support.

Running the Installation Script on Windows

In a client-server network or in a standalone setup, you must install Harmony, as well as the following services on the server or the standalone computer:

tbdbserver	Controls access to the database.
License service	Controls the number of licenses and features available to Harmony users.
Batch processing	Controls batch vectorizing and rendering queues.
Web Control Center	Allows download and upload of scenes from the database.
Link server	If you are installing Harmony on a Mac OS X server that will support Windows clients, you must install the Link server.

To install Harmony programs and services, you must run the installation package. Before you start the installation, make sure you are currently logged in the system with administrator rights on your local computer.

How to run the installation script

1. Download the build of Harmony that you are going to install.

2. Double-click on the Harmony **InstallShield** executable.

3. Select the language for the installer and click **OK**. This will only affect the language of the installer, not the Harmony software.

4. In the InstallShield Welcome window, click **Next** to continue with the installation.

   The License Agreement dialog box opens.

5. Read the license agreement and decide if you accept its terms.

   - If you accept the terms in the license agreement, select **I accept the terms in the license agreement** and click **Next**.
   - If you do not accept the terms in the license agreement, click **I do not accept the terms in the license agreement** and then click **Next**.

   The installation will stop immediately and Toon Boom Harmony will not be installed on your computer.

   The Destination Folder dialog box appears. You can click **Cancel** to interrupt the installation and then click **Yes** to stop the installation completely.

> **NOTE:** You can install Toon Boom Harmony to any location. This document assumes that the installation will be done at the default location.

6. Select the drive on which you want to install Toon Boom Harmony and click **Next**.

   The Setup Type dialog box appears.

7. Select the type of installation you want to do. Select the **Complete** option to install all the Harmony Network components.
   When installing a server, it is possible to do a custom install and install only the server component. However, it is recommended to always do a full install as this will give you access to all the applications from the server if need be.

8. Click **Next.**

   The Ready to Install the Program dialog appears.

9. Click **Install** again to begin the installation.

10. When this process is complete, click **Finish**.

About Configuration on Windows

After installing Toon Boom Harmony, you need to configure the database parameters and restart your anti-virus settings.

You can use the Toon Boom Harmony Configuration Wizard at any time to:

- Modify the Toon Boom Harmony server or client configuration
- Configure batch processing
- Configure scanners
- Prepare a client to be the client of a Linux server
- Add Harmony's path to the **Path** environment variable

After installation, you must set up the database configuration for computers running Toon Boom Harmony.

Opening the Configuration Wizard on Windows

How to open the Toon Boom Harmony Configuration Wizard

1. From the Start menu, select one of the following:

   ▸ Windows 10: **Start > All apps > Harmony [version] [edition] > Configuration Wizard**.

   ▸ Windows 8: **Apps > Harmony [version] [edition] > Configuration Wizard.**

   ▸ Windows 7: **All Programs > Harmony [version] [edition] > Tools > Configuration Wizard.**

   The Toon Boom Harmony Configuration window opens.
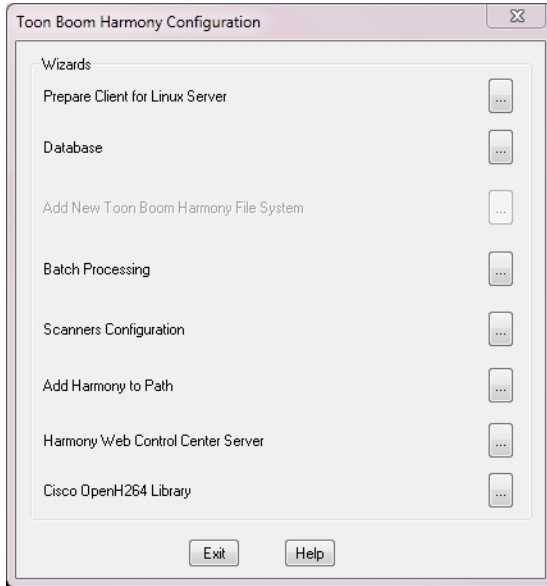
Setting Up the Database Server on Windows

The Database Server controls all interactions with the contents of the Toon Boom Harmony database. It processes all requests to open, read or update files, keeping track of files that are locked so others cannot edit them.

How to set up the Database Server

1. In the Harmony Configuration Wizard, click **Database.**
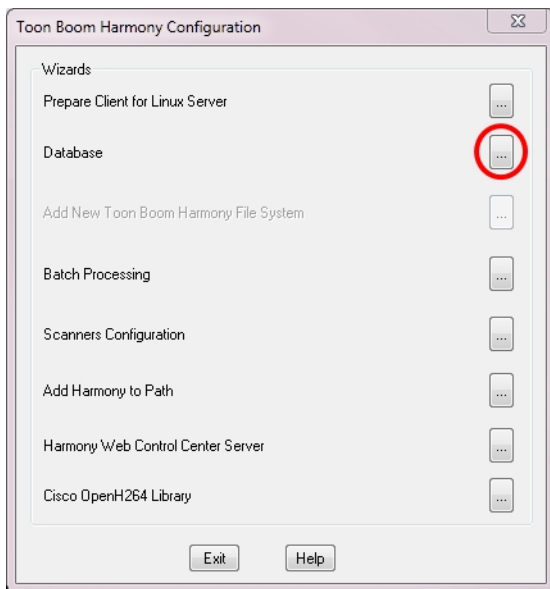
2. Select the **Server/Standalone** option and click **Next**.
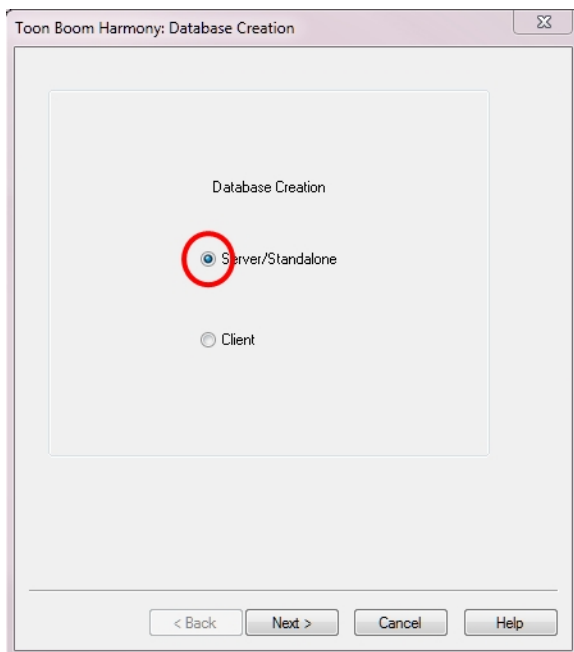
3. Enter the location of the database, and set a user name and password for the user who will be running the database services. The default account is `usabatch`. If the account specified does not exist, it will be created by the wizard.
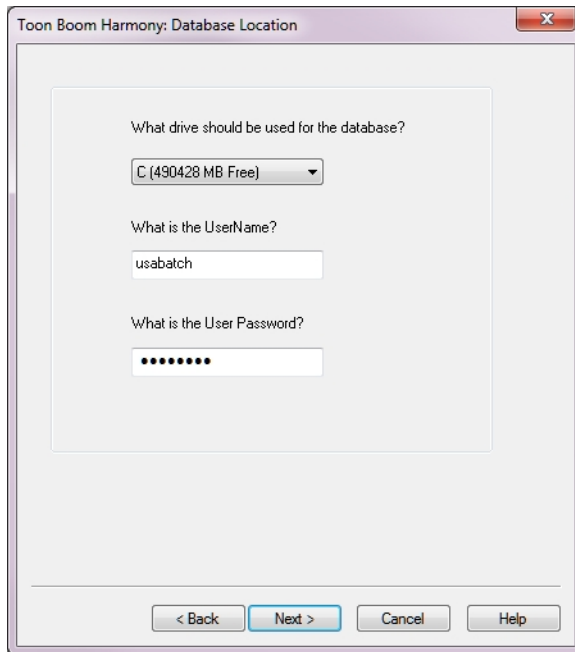
NOTE: Make sure to take note of the account name and password if an account other than the default one is used. This information will be required later on for client workstations to connect to the server.

---

4. Click **Next**.
   The `USA_DB` database is created. The database tracks the location of the scene data on the file system. You can have multiple file systems, but only one `USA_DB`.

NOTE: If you are upgrading from a previous version of Harmony or Opus and you have renamed `USA_DB` for backup, you need to create a new `USA_DB` at the same location where the previous `USA_DB` was located.

---

5. In the Scene Data Location window, create the storage locations for the database.
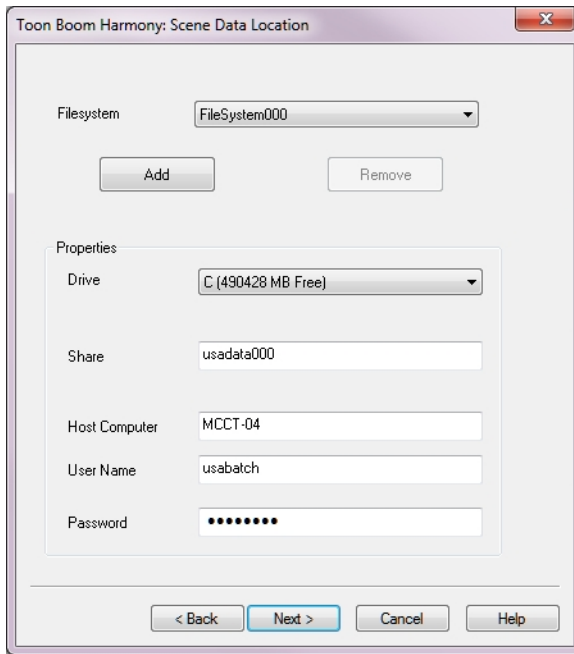
- **Filesystem**: Select the file system you want to add. The first File system is already created for you. If you want to create additional file systems to, for example, store scene data across multiple drives or computers, click **Add**.

- **Drive**: Select the drive on which you want to create the file system.

- **Share**: In this field is the name of the file system that will be created. You can change this value. However, it is recommended to leave the default name, which increments from `usadata000`.

- **Host Computer**: Enter the name of the computer on which this file system will be created. By default, the current computer's name appears here. You can create file systems on other computers if necessary.

- **User Name and Password**: Specify the user name and password that will be used to connect to the file system. It is recommended to use the same user name and password as the one used for the database.

6. Click **Next**.

   The Toon Boom Harmony: Review window opens.
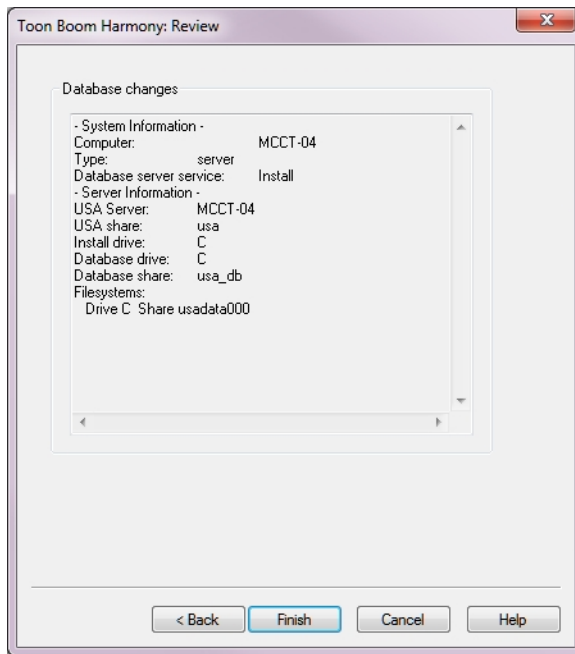
7. Review the information in the window. If it is correct, click **Finish**.

Setting Up the Database Client on Windows

After you have configured the server, configure all the client machines that will connect to the server. Use the Toon Boom Harmony Configuration Wizard to connect client computers to the database.

How to set up the Database client

1. In the Harmony Configuration Wizard, click **Database.**
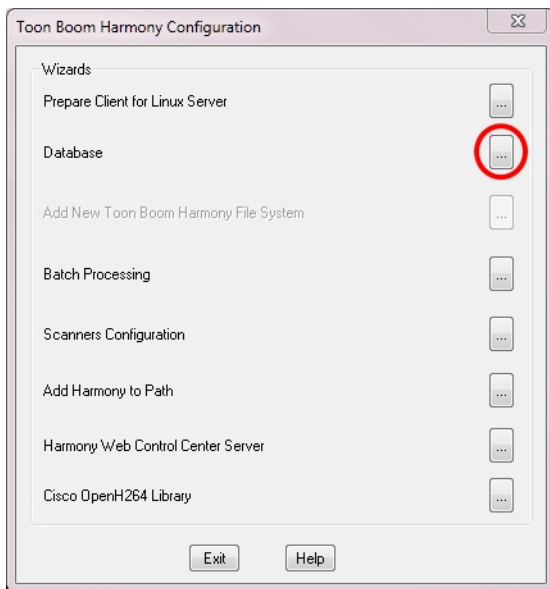
2. In the Database Creation window, select the **Client** option and click **Next**.

3. In the Server Name window, enter the name of the Toon Boom Harmony server and click **Next**.

4. In the Review window, verify the database changes and click **Finish**.

   A message appears when the client computer is successfully connected to the database server.

NOTE: It is possible to change the user account used to connect to USA_DB or the different file systems using the Harmony Control Panel, which you can find here:
Windows 10: **Start > All apps > Harmony [version] [edition] > Control Panel**.
Windows 8: **Start > Apps > Harmony 14 [edition] > Control Panel**.
Windows 7: **Start > All Programs > Harmony 14 [edition] > Tools > Control Panel**.

Sharing Directories on Windows

Sharing Toon Boom Harmony related directories does not need to be done in a typical installation. This is required only when the shares were not created correctly during server configuration. For example, this can happen when simple file sharing was not turned off before running the Configuration Wizard on the server. Or when you have backed up the `USA_DB` and `usadata` folders before installation, you may have to share them when putting them back into place.

NOTE: If you are upgrading from a previous version and changed the `USA_DB` and `usadata` name during upgrade, make sure to return to the normal names before continuing.

How to activate file sharing for the Toon Boom Harmony folder

1. On your computer, locate the following folder:

   `C:\Program Files (x86)\Toon Boom Animation\Toon BoomHarmony 14`[edition]

2. Right-click on the Toon BoomHarmony 14 [edition] folder and select **Properties**.
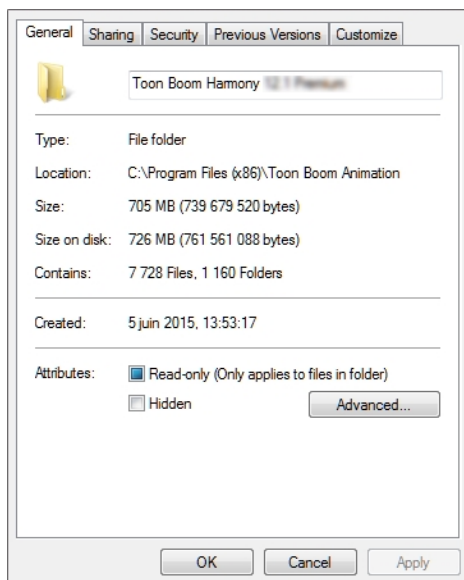
3. Select the **Sharing** tab.
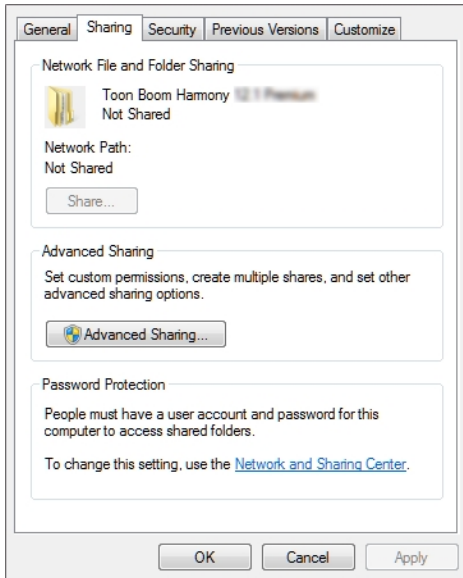
4. Click **Advanced Sharing.**

5. Select the **Share this folder** option.
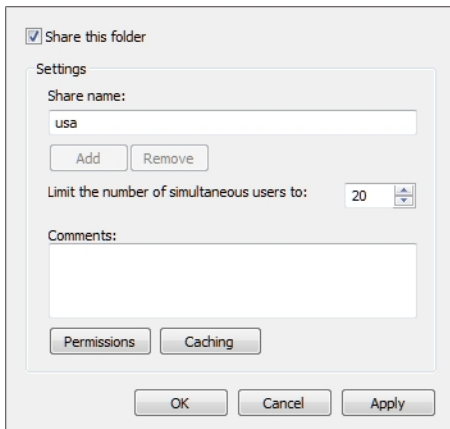
6. In the Share Name field, type **usa**.

NOTE: Changing the name of the share to `usa` must only be done when sharing the `Harmony` folder. The `USA_DB` and `usadata` folders should keep their original name.

7. Click **Permissions**.

    The Permissions dialog box displays.
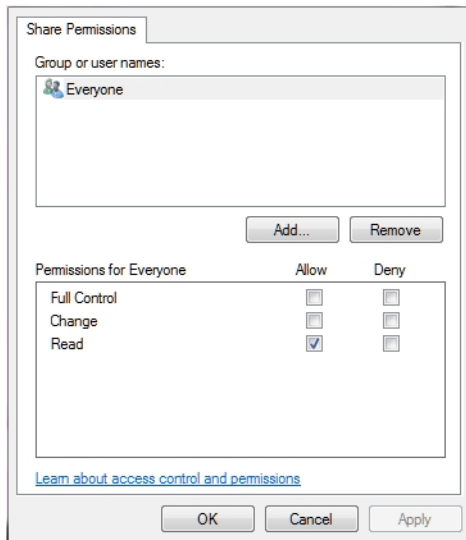
8. For the Everyone group, set all permissions to **Allow** and click **OK**.

9. Back in the File Properties window, select the **Security** tab.
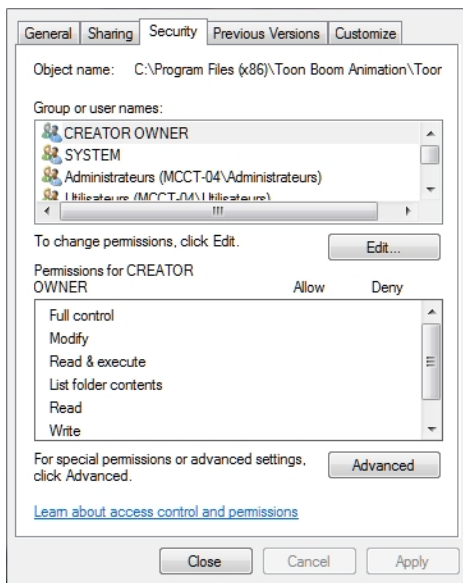
10. Click **Edit** to prompt the permissions window. Set all permissions in each group or user to all.

11. Click **OK**.

12. Repeat steps 3 to 10 with the `USA_DB` and `usadata` folders.

Configuring the License on Windows

How to configure the license server

1. From the Start menu, select one of the following:

   Windows 10: Start > All Apps > Harmony [version] [edition] > License Wizard

   Windows 8: Start > Apps > Harmony [version] [edition] > License Wizard

   Windows 7: Start > All Programs > Harmony [version] [edition] > License Tools > License Wizard

   The License Wizard appears.

2. Click **Activate License**.

3. Click **Internet Activation**.
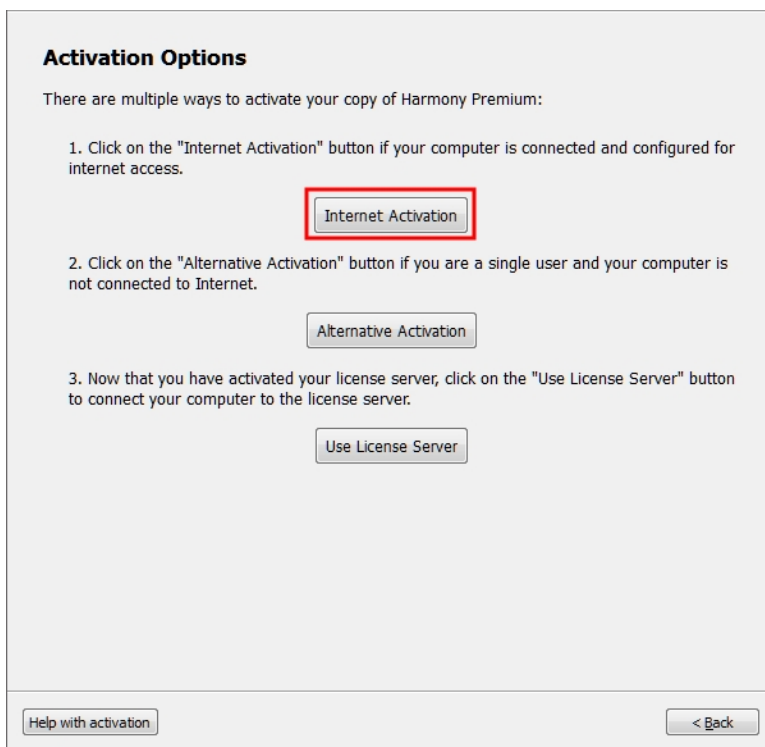
4. Click **Network License** to activate your Toon Boom product on the server.

NOTE: If you don't have an Internet connection on your server, click **Alternative Activation** and then see Server License Email in the Activation tutorials.

5. Enter the product code you received by email.

6. In the License Count field, enter the exact number of seats associated with your product code. The number of seats is available below the product code if you have a registration card.

7. Click **Activate** to start the validation process.

Congratulations! Your Toon Boom product is now activated on your server.

8. Click **Install License Server** to install the License Daemon on your server. By doing so, the License Server application will automatically start when you turn on your server.

NOTE: On certain operating systems, you might be asked to enter the administrator password to authorize the installation of the license daemon.

Install License Server

The specified license is a network (floating) license.

If this computer is to be used as the license server on your network, you should install the license daemon in the Startup Items. This will allow it to start automatically when you start the computer.

Install License Server
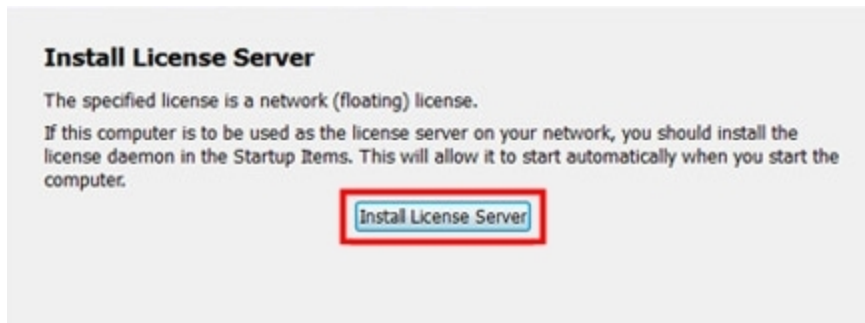
The `license.dat` file is created and placed in **C:\flexlm.** The `license.dat` file contains the following information:

SERVER this_host 0 ANY

VENDOR toonboom

USE_SERVER

It will also configure and start the License Server service.

The Activation Successful screen appears.

Activation Successful

Toon Boom Animation congratulates you on successfully activating your copy of Harmony.

To modify your license at any time, run the License Wizard application from the Tools folder, e.g. if you need to move your copy of Harmony to another computer.
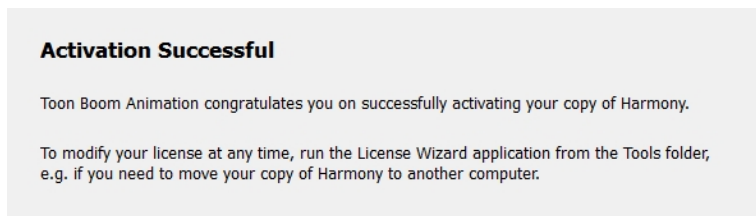
Your license is successfully set up. You can now quit the License Wizard and install your Toon Boom product on a client workstation machine.

9. Click **Finish** to close the License Wizard.

10. Look at the `lmgrd.log` to make sure it was started properly.

```
C:\flexlm\lmgrd.log
```

11. From the Start menu, select one of the following:

Windows 8: Start > Apps > Harmony [version] [edition] > FlexLM Tools.

Windows 7: Start > All Programs > Harmony [version] [edition] > License Tools > FlexLM Tools.

12. Verify that the license server has been configured properly and that it is running. Below are the default parameters for the license service.
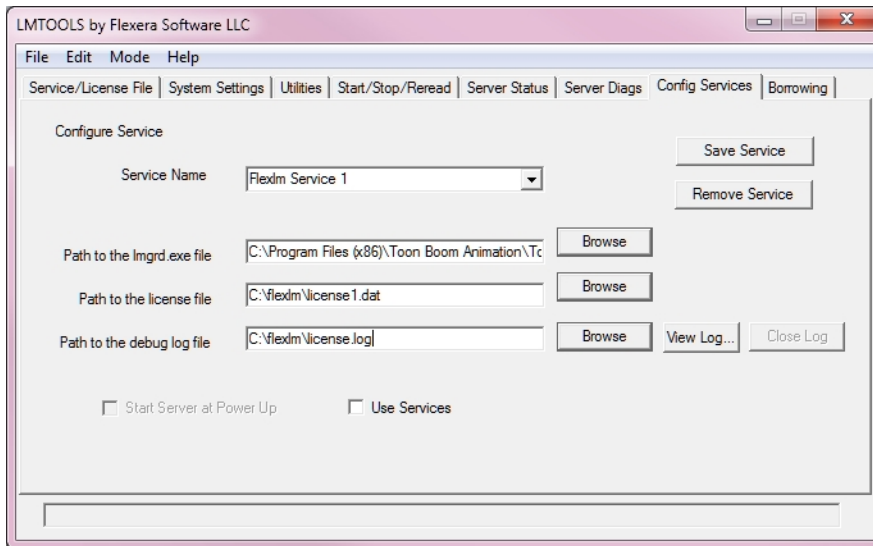
13. It is good practice to verify that the license service it properly running by going in the Server Status tab and clicking **Perform Status Enquiry**.

Restoring Back Ups on Windows

How to restore backed up data

1. Open the **Harmony Control Panel** and select `HarmonyStart0-tbdbserver` from the Process Starters tab and click **Stop**.

2. Press **Ctrl + Alt + Delete** to open the Task Manager. Select the **Processes** tab and verify that the tbdb-server is no longer there.

3. Open the File Explorer and rename the new empty `USA_DB` database folder to `USA_DB_NEW` .

4. Rename the `USA_DB` backup (the one that was backed up earlier) to `USA_DB` to restore the previous database.

5. Copy the **dicts** files from the new database (`USA_DB_NEW/dicts`) to the one you restored (`USA_DB/-dicts`).

> **NOTE:** Dicts files can also be copied from `C:\Program Files (x86)\Toon Boom Animation\Toon BoomHarmony 14 [edition]\etc\USADB_templates\dicts`

6. Share the `USA_DB` folder to give full control to everyone. Make sure that simple file sharing is turned off before doing this—see *About Windows Pre-installation* .

   If you cannot set permissions per use for the share, it means that simple file sharing is turned on.

7. Rename the new empty `usadata000` folder (and any other file system folder) to `usadata000_NEW`.

8. Share the `usadata000` folder (and any other folder you have restored) giving full control to everyone.

9. Start the `tbdbserver` by opening the **Toon Boom Harmony** Control Panel. Select `HarmonyStart0-tbdbserver` from the list and click **Start**. After starting the `tbdbserver`, look at the `tbdbserver.log` to make sure it was started properly.

   ```
   C:\ProgramData\Toon Boom Animation\Toon Boom Harmony
   ```

10. Verify that you can open Harmony and scenes from the server.

Setting Up Licenses on Work Stations on Windows

An Admin account is required to set this up. After activation, you can log in as client.

How to set up the license on a client workstation

1. On the client machine, open the License Wizard from the Start menu:

   Windows 10: Start > All Apps > Harmony [version] [edition] > License Wizard
   Windows 8: Start > Apps > Harmony [version] [edition] > License Wizard
   Windows 7: Start > All Programs > Harmony [version] [edition] > License Tools > License Wizard
   The License Wizard appears.

2. Click **Activate License**.

   The Activation Options screen appears.

3. Click **Use License Server**.

The Server Activation screen appears.

4. Click **Connect to Server**.

The Server Activation - Shared License screen appears.

5. Enter the license server address that you will access from your workstation. The License server must be accessible, running and properly configured.
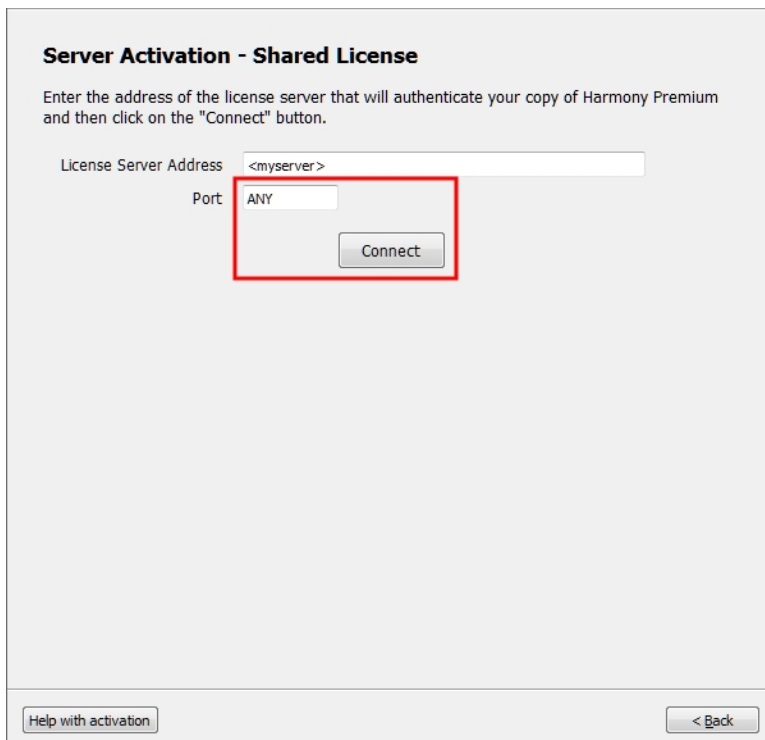
6. In the Port field, enter the port you're using on the server (if applicable) and click **Connect**.

The Server Activation - Shared License dialog appears.

7. In the License Server Address field, enter the **hostname** or the **IP Address**.

8. Click **Connect**.

    You are prompted for a password.

9. Enter the password and click **OK**.

10. Click **Finish** to close the License Wizard.

Turning On Anti-virus Software on Windows

Inform your System Administrator before turning your anti-virus software back on.

How to turn the anti-virus software back on

1. Reactivate virus protection. If your anti-virus software is not detected, open any anti-virus software applications on your computer and reactivate each one manually.

Turning On Firewalls in Windows

The process to do this is basically the reverse of the procedure used to deactivate the firewall.

Inform your System Administrator before proceeding with this task.

How to turn on the firewall

1. Open the Windows Control Panel.

2. Double-click on the **Windows Firewall**.

3. In the Windows Firewall window, click **Turn Windows Firewall On or Off** on the left side of the window.

   The Customize Settings for Each Type of Network dialog box displays.
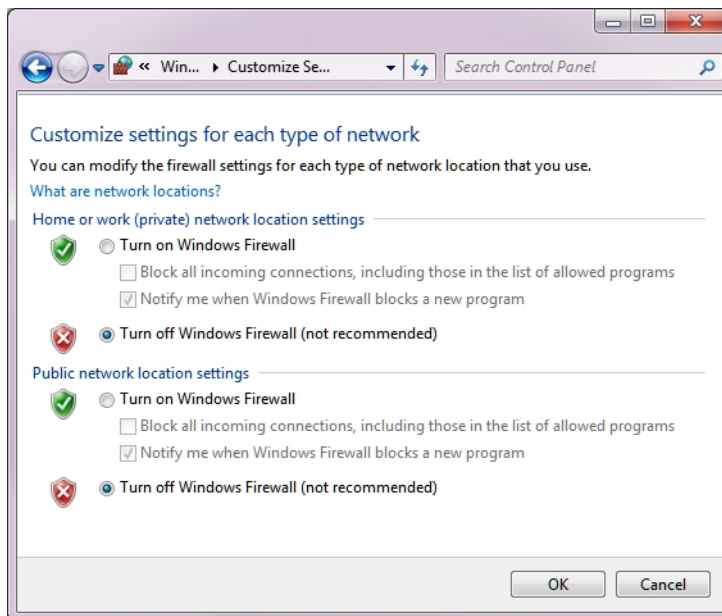
4. Select the **Turn on Windows Firewall** option.

5. Click **OK**.

Creating Inbound Rules on Windows

How to create inbound rules

1. Back in the Windows Firewall window, click the **Advanced Settings** link.
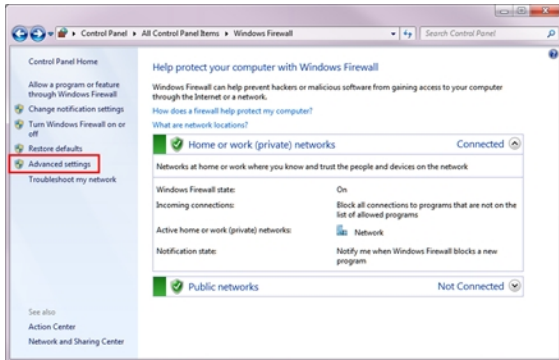
2. Click **Inbound Rules** to display the list of inbound rules.
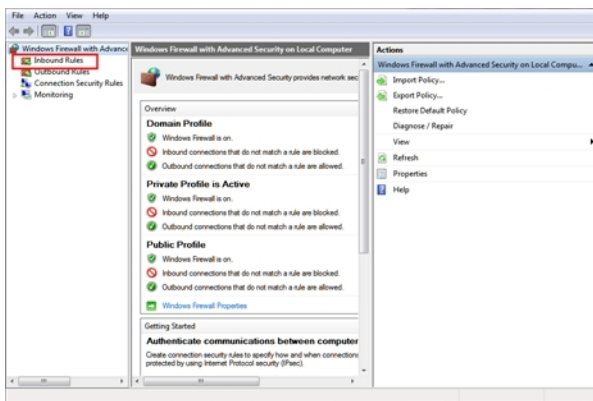
3. On the right side of the window, click **New Rule**.
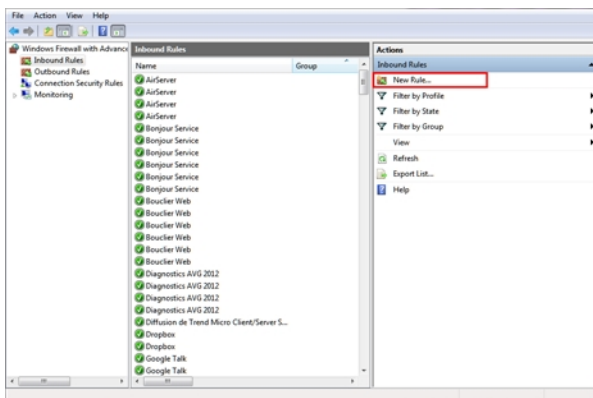
4. Select the **Program** option and click **Next**.

51
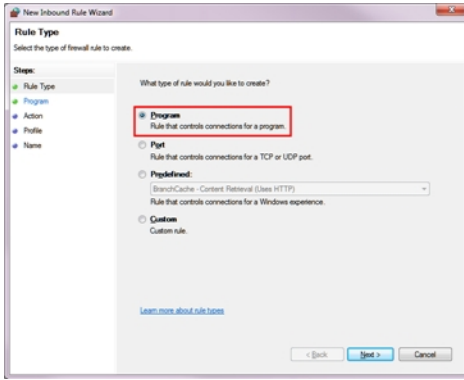
5. Select the **This Program Path** option and click **Browse**.
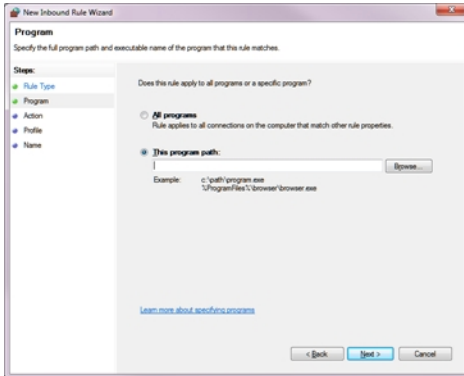
6. Navigate to the Harmony installation path and select **tbdbserver.exe**. Click **Open**.
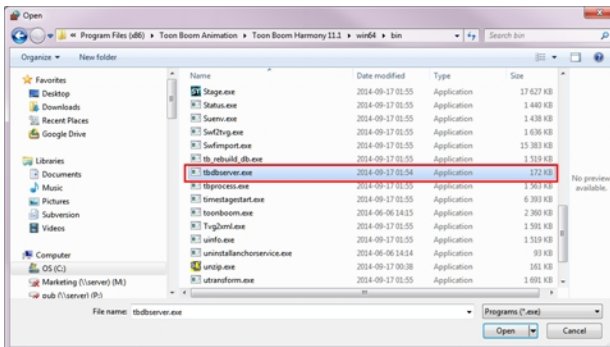
7. Click Next and select the **Allow the Connection** option
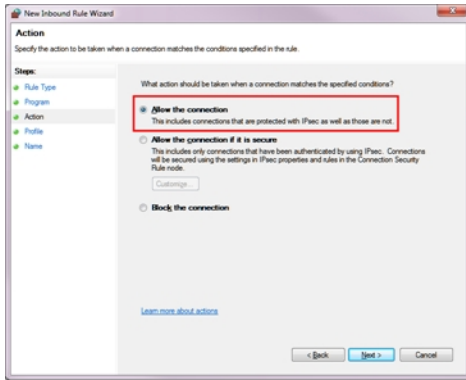
8. Select the profiles for which this rule will be applied according to your network configuration and click **Next**.
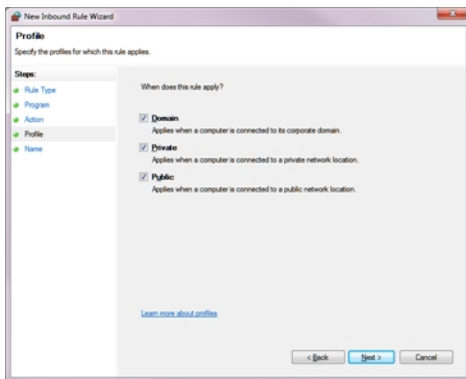
9. Finish the Rule creation process by clicking **Finish**.

10. Repeat steps 1 to 9 for **tbprocess.exe** and **toonboom.exe**.

11. If this computer will be used as a license server, repeat steps 1 to 9 for **lmgrd.exe**.

Advanced Tips and Guidelines for Windows

These are useful tips, guidelines and information for advanced users.

Unicode Guidelines

Here are some useful guidelines to keep in mind if you are considering using Unicode:

- Because the Unity game engine does not support Unicode characters, it is recommended to avoid using it in scenes intended for games.

- Unicode characters cannot be used for parent folders of USA_DB and USADATA.

- To zip a scene with Unicode in its name, use 7zip which is included in the package; the regular zip cannot handle some Unicode characters.

- You must use a third party program, Cygwin (set to UTF8), to work with Status, Setdef, Suenv etc, if you have Unicode environments, jobs, scenes or elements. If you try to use CMD, you will not see the Unicode characters.

Limitations

- If a scene name contains Unicode characters, the following commands in the File menu cannot be used: Update Database Scene and Download Database Changes.

Flexible Scene Data Placement

Since the /USADATA and /USA_DB directories no longer need to be placed at the root of your file system, you can place them wherever you like. This is useful when using third-party asset management and tracking systems.

If you choose to place the directories at a location other than the root, you can create a shortcut that points to the location of the file system without using the .lnk shortcuts on Windows or the symbolic links on Mac and Linux.

How to create a shortcut that points to the new location of the file system

1. Locate the shortcuts.conf file here:

   C:\Program Files (x86)\Toon Boom Animation\Toon Boom Harmony [version] [edition]\resources\samples

2. Copy the shortcuts.conf file and place it here:

   C:\Program Files (x86)\Toon Boom Animation\Toon Boom Harmony [version] [edition]\etc

3. Open the shortcuts.conf with a text editor.

4. Here are some examples of what to add at the end of the file:

   /USA_DB \\server-name\USA_DB

   /usadata \\server-name\usadata

   On a server, you can point to a subfolder like this:

   /USA_DB "C:\\parentfolder\\usa_db"

/usadata000 "C:\\parentfolder\\usadata"

5. Save the file.

About Troubleshooting on Windows

If you have any outstanding issues running Toon Boom 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.

License Error When Starting Modules on Windows

If you are getting license errors when you start a Toon Boom Harmony node, verify the setup and configuration of the license service.

How to verify the setup and configuration of the license service

1. Make sure that the `license.dat` file is in the following directory:
   `C:\flexlm`

2. Open the license.dat file; it should contain the following information:

   `SERVER this_host 0 ANY`

   `VENDOR toonboom`

   `USE_SERVER`

3. Make sure that the license service is running.

   If you continue having problems with the license server, locate the file `ToonBoomLicense.log` and send it to store.toonboom.com/contact/support. This file is usually in `C:\flexlm`.

Unable to Import Scenes on Windows

If you are unable to import a scene, there might be an error with the database server. Try to perform the following:

Check the `tbdbserver.log` file. It is usually stored in `C:\ProgramData\Toon Boom Animation\Toon Boom Harmony`.

If there is no log file, restart the tbdbserver.

How to restart the tbdbserver

1. Open the Harmony Control Panel.

2. Double-click the **Toon Boom Harmony Control Panel** icon.

   The Toon Boom Harmony Control Panel dialog box opens.
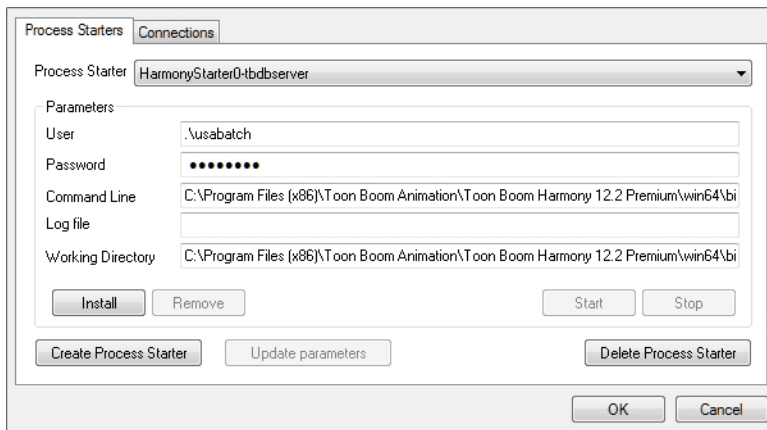
3. From the **Process Starter** menu, select `tbdbserver`.

4. Click **Start**.

   If you continue to have problems with the database server, locate the `tbdbserver.log` file and send it to store.toonboom.com/contact/support. This file is usually in `C:\ProgramData\Toon Boom Animation\Toon Boom Harmony`.

   > **NOTE:** You can also run the Dbserver from the command shell in debug mode to receive additional information about the process.

How to run the tbdserver in debug mode

1. Open the `/USA_DB/Dbserver.conf` file.

2. Add the following line to the file:

   `debug_port 5681`

3. Open the Harmony Control Panel.

4. In the Harmony Control Panel, select **tbdbserver** from the Process Starter menu and click **Stop**.

5. Open a command prompt by selecting one of the following:

    ‣ Windows 10: **Start > All Apps > Windows Systems > Command Prompt**

    ‣ Windows 8: **Start > Apps > Windows Systems > Command Prompt**

    ‣ Windows 7: **Start > All Programs > Accessories > Command Prompt**

6. Type the following:

    ```
    tbdbserver -debug
    ```

    > **NOTE:** While you are running the tbdbserver in debug mode, messages will be written to the shell for each operation the tbdbserver performs. This is in addition to the information written to the tbdb-server.log file.

7. To output this information to a new file, type the following:

    ```
    tbdbserver -debug > "C:\ProgramData\Toon Boom Animation\Toon Boom
    Harmony\tbdbserver_debug.log"
    ```

    > **NOTE:** If you still cannot determine the nature of the problem, send the file to store.toon-boom.com/contact/support with a detailed description of the problem.

Unable to Open Scenes on Windows

If clients cannot open the sample scene, it is possible that they are not connected to the database server. Follow the instructions for connecting to the server—see *Setting Up the Database Server on Windows* on page 31.

resolution.conf Error Message on Windows

When you open a scene, you might get an error message that says that the `resolution.conf` file cannot be found. This file is usually stored in the environment or job directory of your database. There is a `resolution.conf` file you can copy.

How to obtain a copy of the resolution.conf file

1. Open the following folder:

   `C:\Program Files (x86)\Toon Boom Animation\Toon Boom Harmony 14.0 [edition]\resources\samples`

2. Copy the `resolution.conf` file to one of the following folders:

   ‣ `\USA_DB\environments\[environment_name]`
   ‣ `\USA_DB\jobs\[job_name]`
   ‣ `\USA_DB\resolution\`

Chapter 3: Web Control Center on Windows

HarmonyWeb Control Center is included in your installation of Harmony 14.

You must use the Toon Boom Harmony Configuration Wizard to install Harmony Web Control Center server and the Cisco OpenH264 library which enables you to see view the movie and thumbnail previews in Web Control Center.

Opening Configuration Wizard for Web Control Center on Windows

How to open the Toon Boom Harmony Configuration Wizard

1. From the Start menu, select one of the following:

   ‣ Windows 10: **Start > All apps > Harmony [version] [edition] > Configuration Wizard**.

   ‣ Windows 8: **Apps > Harmony [version] [edition] > Configuration Wizard.**

   ‣ Windows 7: **All Programs > Harmony [version] [edition] > Tools > Configuration Wizard.**

   The Toon Boom Harmony Configuration window opens.
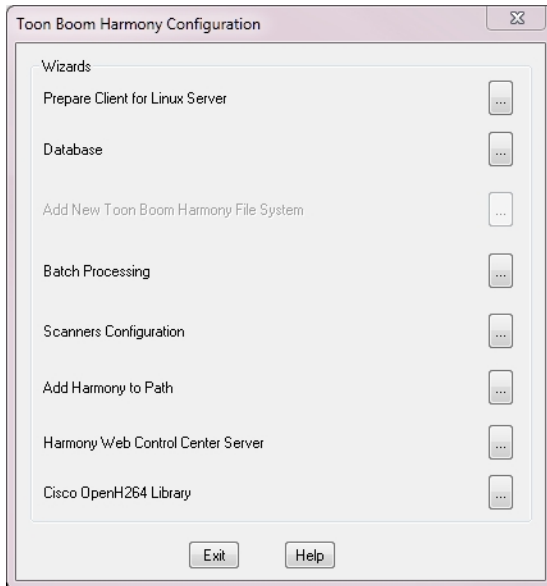
Installing Web Control Center on Windows

How to install Harmony Web Control Center

1. In the Toon Boom Harmony Configuration window, click **Harmony Web Control Center Server**.

    The Harmony Web Control Center Center Server window opens.
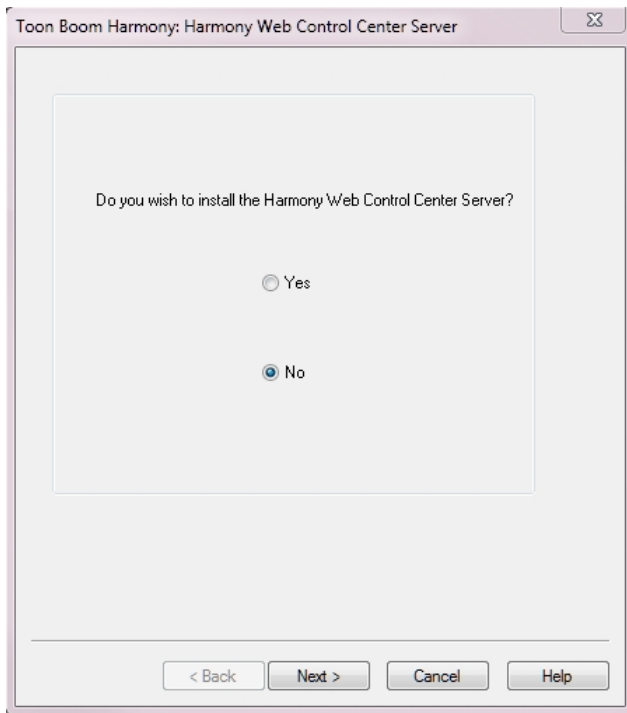
2. Select the **Yes** option and click **Next**.
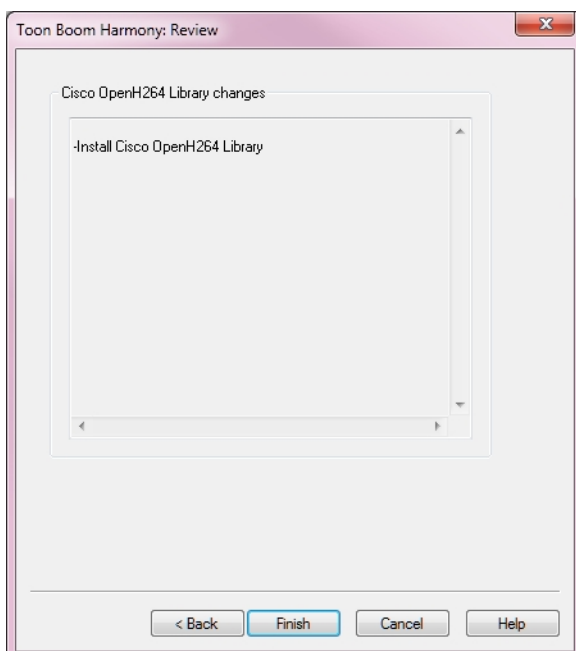
3. Review the information in the window. If it is correct, click **Finish**.

    When the Configuration Wizard is finished, a dialog box opens which indicates the success of the process.

Manually Launching Web Control Center on Windows

How to start the HarmonyWeb Control Center manually

1. Navigate to the following directory:

   `C:\Program Files (x86)\Toon Boom Animation\Toon Boom Harmony 14.0 [edition]\win64\bin`

2. Double-click on `webcc.bat`.

NOTE: You can use the Toon Boom Harmony Installation Wizard at any time to install HarmonyWeb Control Center as a service.

Starting and Stopping Web Control Center on Windows

If at any point you want to start or stop Harmony Web Control Center, you can do so through the Harmony Control Panel or through Windows services.

How to start or stop Web Control Center using the Harmony Control Panel

1. Open the Harmony Control Panel.

2. On the Process Starters tab, select **HarmonyStarter[x]-webcc.bat** from the Process Starter menu.

3. Click **Start** or **Stop** to start or stop the service respectively.
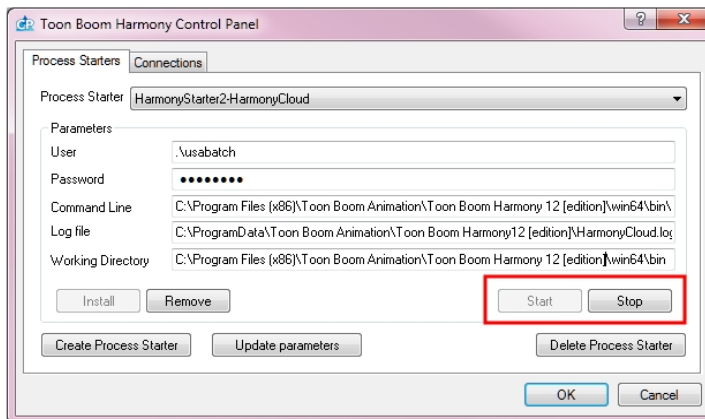
How to start or stop Web Control Center using Windows services

1. Open the Windows Control Panel.

2. Depending on your setup, select one of the following:

   ‣ **System and Security > Administrative Tools > Services**
   ‣ **Administrative Tools > Services**

3. Right-click on **HarmonyStarter[x]-webcc.bat** and select **Start** or **Stop** to start or stop the service.
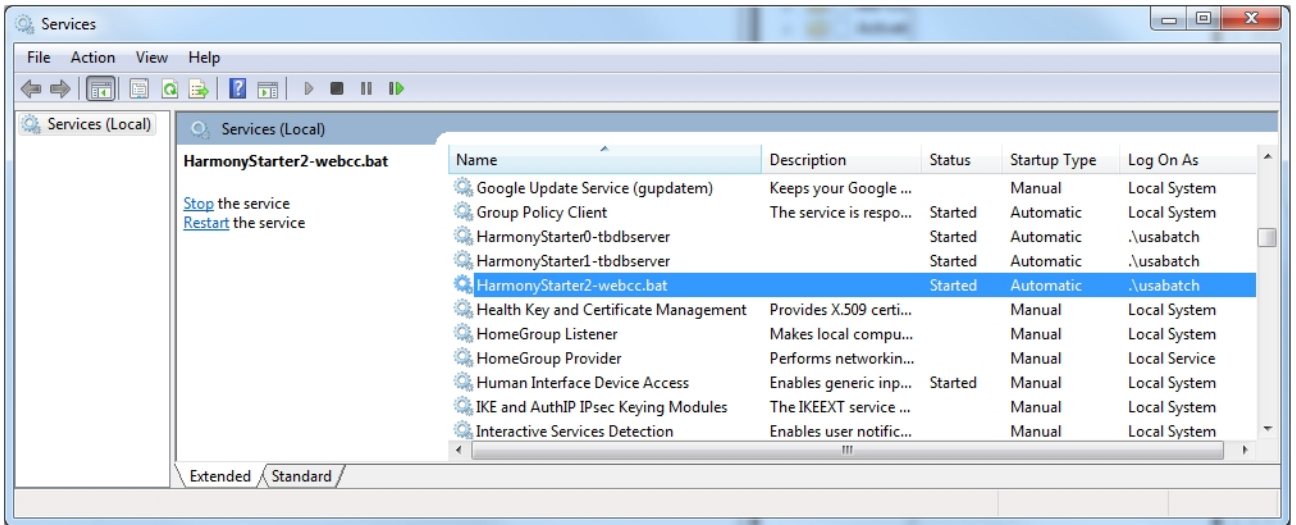
Customizing Web Control Center on Windows

You can customize some parameters, such as the default port, for the Harmony Web Control Center service.

How to customize the HarmonyWeb Control Center service

1. From the Start menu, select **All Programs > Harmony 14 [edition] > Tools > Control Panel**.

2. On the Process Starters tab, select **HarmonyStarter[x]-webcc.bat** from the Process Starter menu.
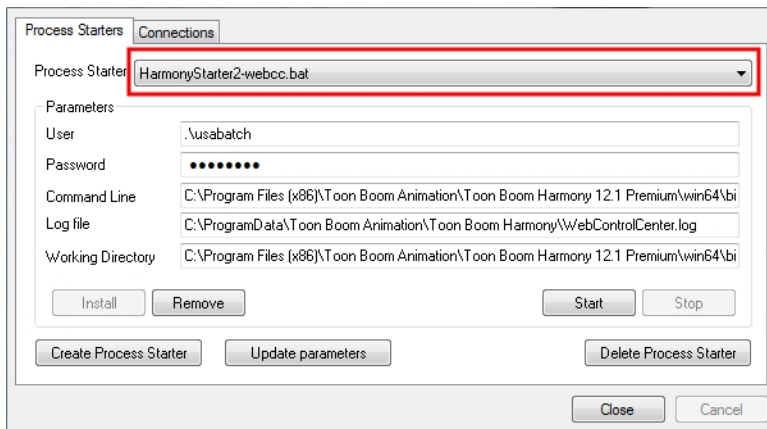
3. If the service is running, click **Stop**.

4. Edit the **webcc.bat** file located in C:\Program Files (x86)\Toon Boom Animation\Toon Boom Harmony [version] [edition]\win64\bin to include your parameters.

   For example, to change the default port to 8081:

   "%~dp0\bin_3rdParty\node.exe" ..\..\webcc\server\app.js -port 8081%

NOTE: It is possible that you won't have permission to save into the folder. Just copy/paste it on your desktop and recopy back to the folder as a workaround.

The customizable parameters are:

Parameter	Description
-numWorkers n	Number of processes to service client requests. Default is number of CPU cores. Set to 0 to disable worker child processes. If the number of CPUs is high, performance could be impacted on all processes running on the server. If server is mostly for Web Control Center, increase the number for better performance.
-noAuth	Disables basic login/authorization verifications with the user database. Default: authorization enabled.
- port port	The port to which HarmonyWeb Control Center is deployed. Default: 8080.
-http port	Enables http protocol on specified port (can be used along with https to enable both). Default: http enabled unless -https is also enabled.

-exchange loc	Location (on disk) of top-level file exchange folder. Default: /USA_DB/exchange
-cacheDuration s	Number of seconds to keep data in cache. Default 3600. 0-> disable cache, 1-999999-> number of seconds to keep data in cache.
-allowAllOrigin	Enables webcc web service from all sources (enable cross-origin resource sharing). Default: Disabled.
-disableAnalytics	Disables Google Analytics tracking for all clients. Default: Enabled.
Options Related to SSL Server	
-https [port]	Enables https protocol on port 8443, unless a port override is provided. Default: Disabled.
-key key	<filename> the private key for the SSL session (works with -cert). Default: None.
-cert cert	<filename> the certificate filename for the SSL session (works with -key). Default: None.
-pfx file	<filename> alternate filename that includes both the private key and certificate for the SSL session. Default: None.

IMPORTANT: If you want to use Web Control Center outside your facility, you must use the options related to SSL Server to secure your connection.

5. From the Control Panel, click **Start**.

Uninstalling Web Control Center on Windows

If you need to uninstall the Harmony Web Control Center service, you can do so using the Harmony Control Panel.

NOTE: A script was added to assist in uninstalling the Cisco OpenH264 library on Windows. It is located in the Configuration Wizard.

How to uninstall the HarmonyWeb Control Center

1. Open the Harmony Control Panel.

2. On the Process Starters tab, select **HarmonyStarter[x]-webcc.bat** from the Process Starter menu.

3. Click **Stop** and **Remove**, then click **Delete Process Starter**.
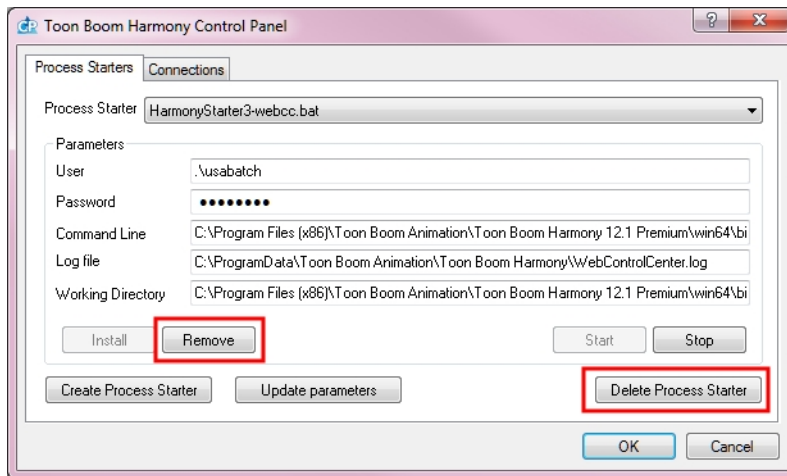
4. Click **OK**.

About Web Control Center Network Setup on Windows

If your server does not have an assigned IP address on your DNS server, you should set up a static IP.
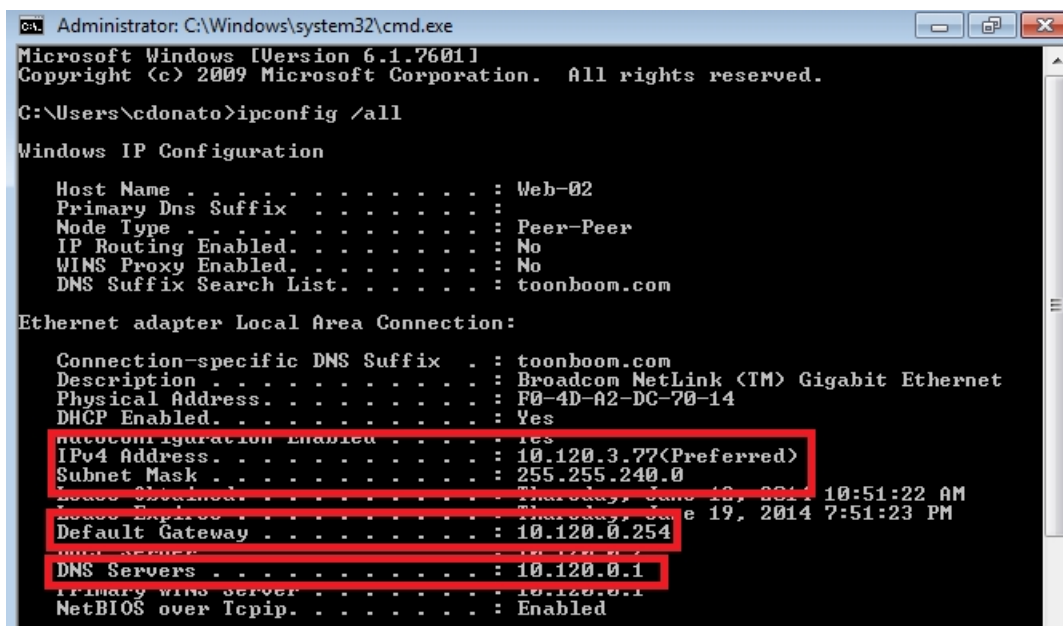
Setting Up Static IPs for Web Control Center on Windows

How to set up a static IP for accessing Web Control Center

1. From the Start menu, type `cmd` and press Enter.

2. In the command prompt that opens, type:

   `ipconfig /all`

3. You will need the following information: **IPv4 Address**, **Subnet Mask**, **Default Gateway** and **DNS Servers**.

4. Open the Windows Control Panel.

5. Click **View network status and tasks**.

6. On the top-left side of the screen, click **Change adapter settings**.
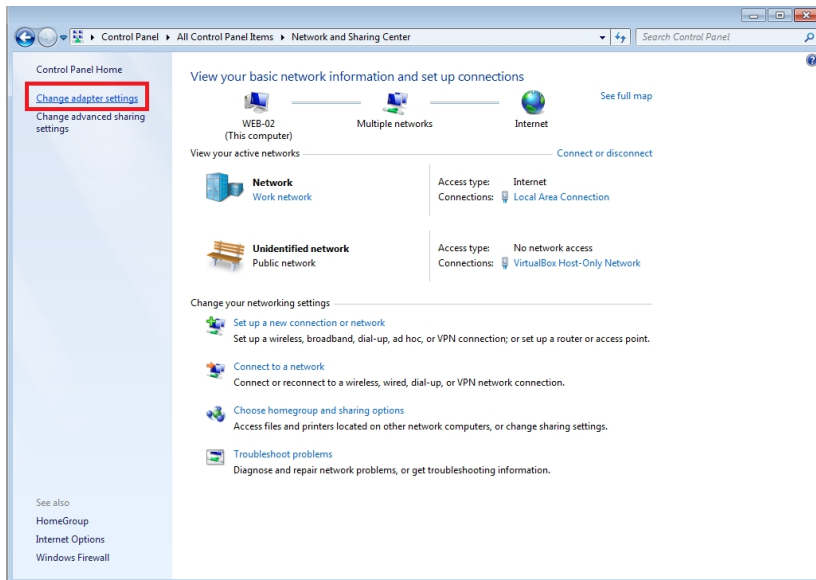
7. It is possible to have multiple connections listed. You need to determine which adapter is your connection to the Internet. Right-click on your network adapter and select **Properties**.

   The Local Area Connection Properties opens.

8. Select **Internet Protocol Version 4 (TCP/IPv4)** and click **Properties**.

   The Internet Protocol Version 4 (TCP/IPv4) Properties dialog box opens.

9. Select the **Use the following IP address** option. Enter the IP address, Subnet Mask, and Default Gateway information you obtained in step 3.
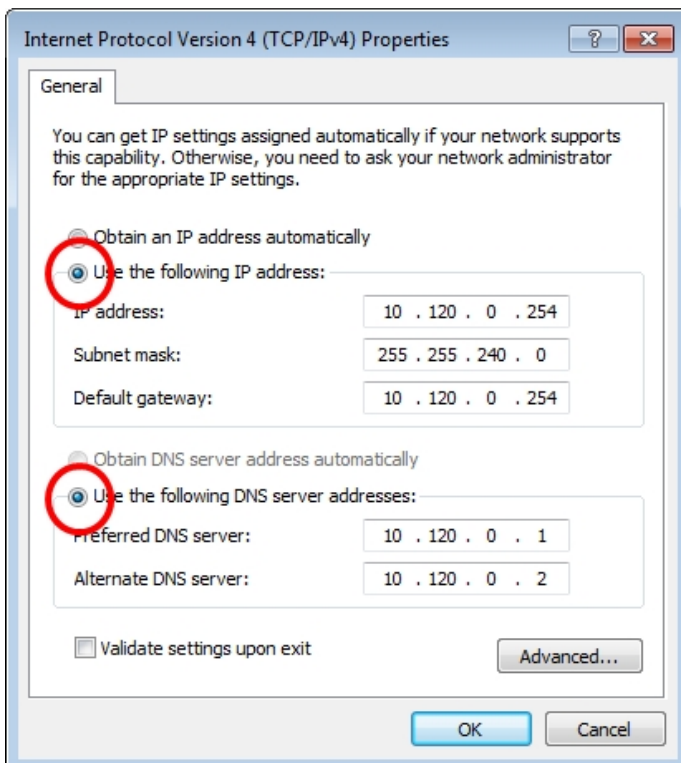
10. Select the **Use the following DNS server addresses** option.

11. Enter the DNS addresses you obtained in step 3.

12. Click **Advanced**.

13. Select the **DNS** tab.

14. Add the DNS suffix obtained in step 3.
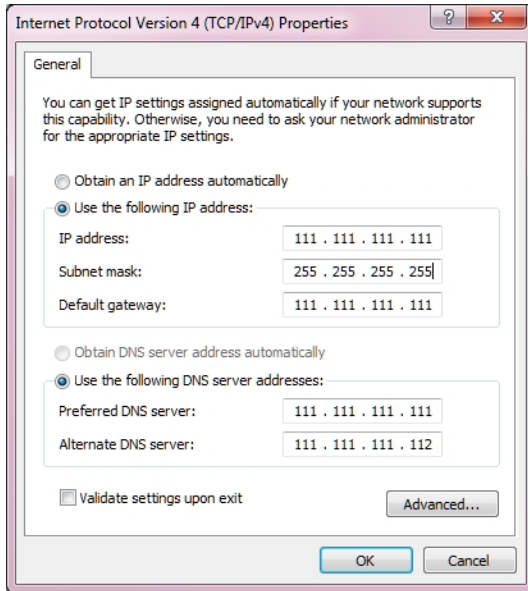
Opening Ports for External Connection for Web Control Center on Windows

It is necessary to open a port in your firewall to allow other computers to access the Harmony Web Control Center server. By default, Harmony Web Control Center uses port 8080.

How to open a port for external connection

1. Open the Windows Control Panel.

2. Depending on your setup, you might need to click **System and Security** before moving to the next step.

3. Click **Windows Firewall**.

4. On the left pane, click **Advanced settings**.

   The Windows Firewall with Advanced Security window appears.

6. On the left pane, click **Inbound Rules**.

7. On the right pane, click **New Rule**.
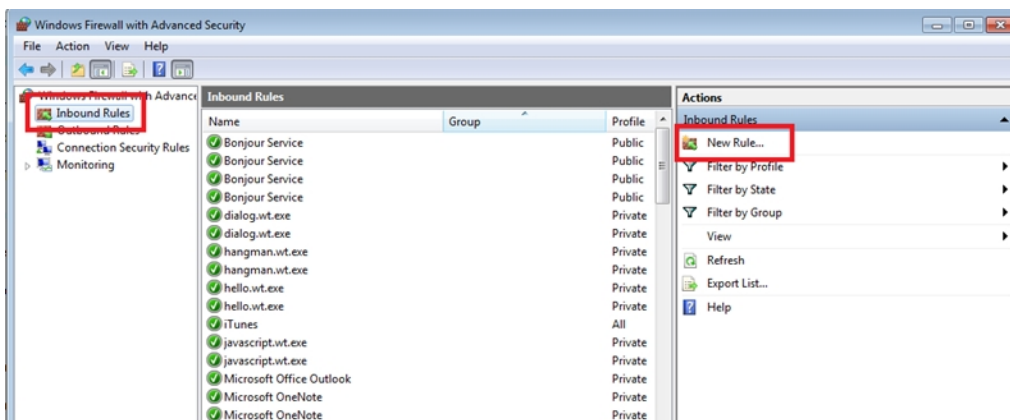
   The New Inbound Rule Wizard appears.

8. Select the **Port** option and click **Next**.
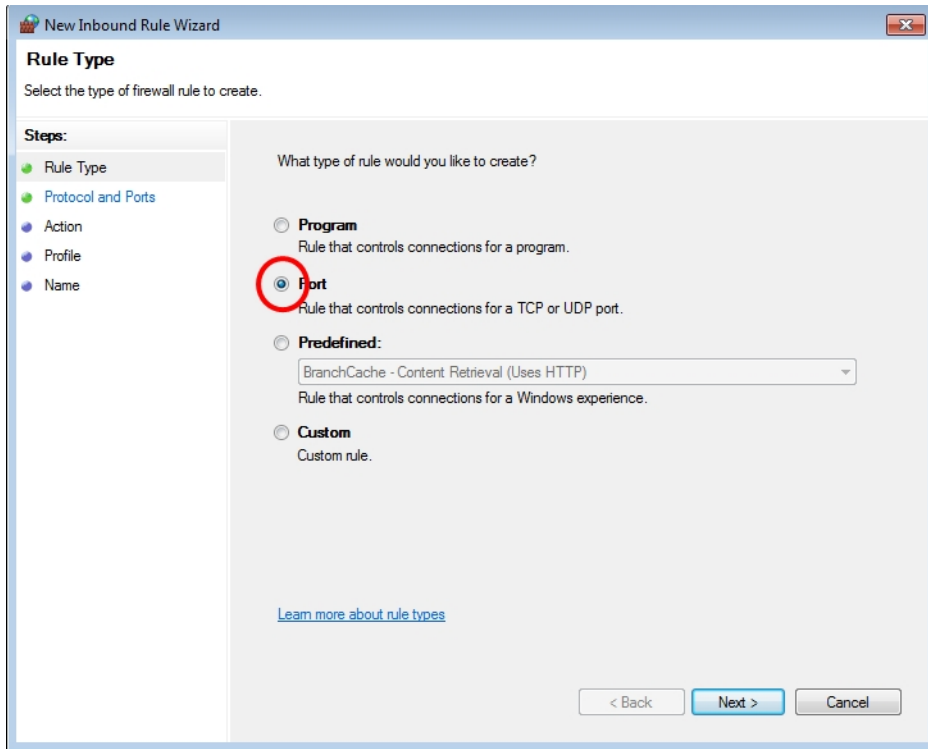
9. Select the **TCP** and **Specific local ports** options.

10. In the Specific local ports field, type in **8080** and click **Next**.

> **NOTE:**
> You can change the default port used by Harmony Web Control Center by modifying the `webcc.bat` file—see *Opening Ports for External Connection for Web Control Center on Windows* on page 77.
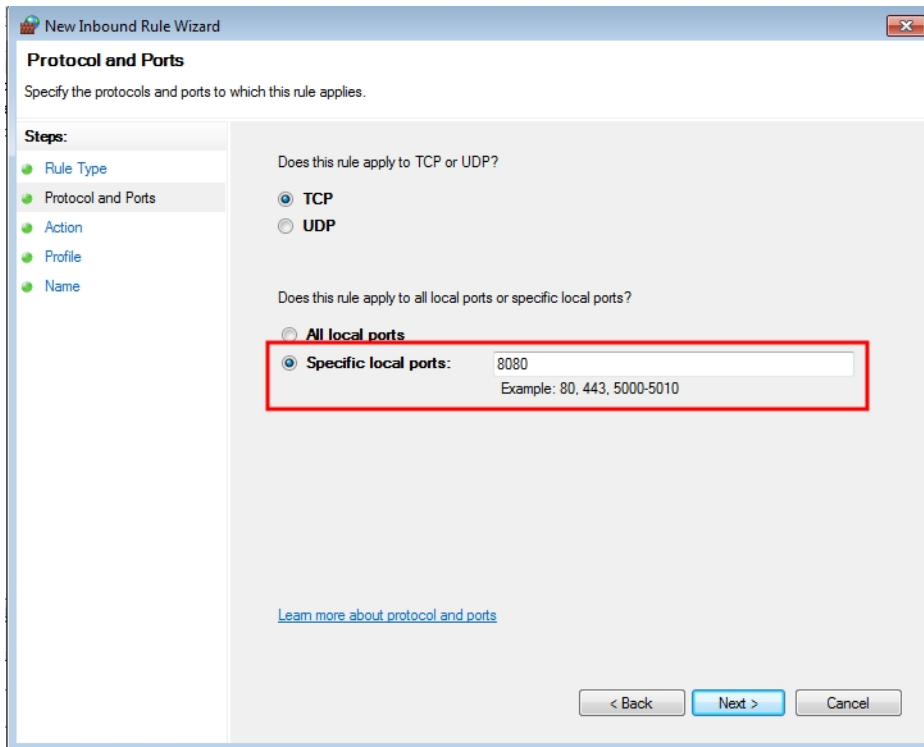
11. Select the **Allow the connection** option and click **Next**.
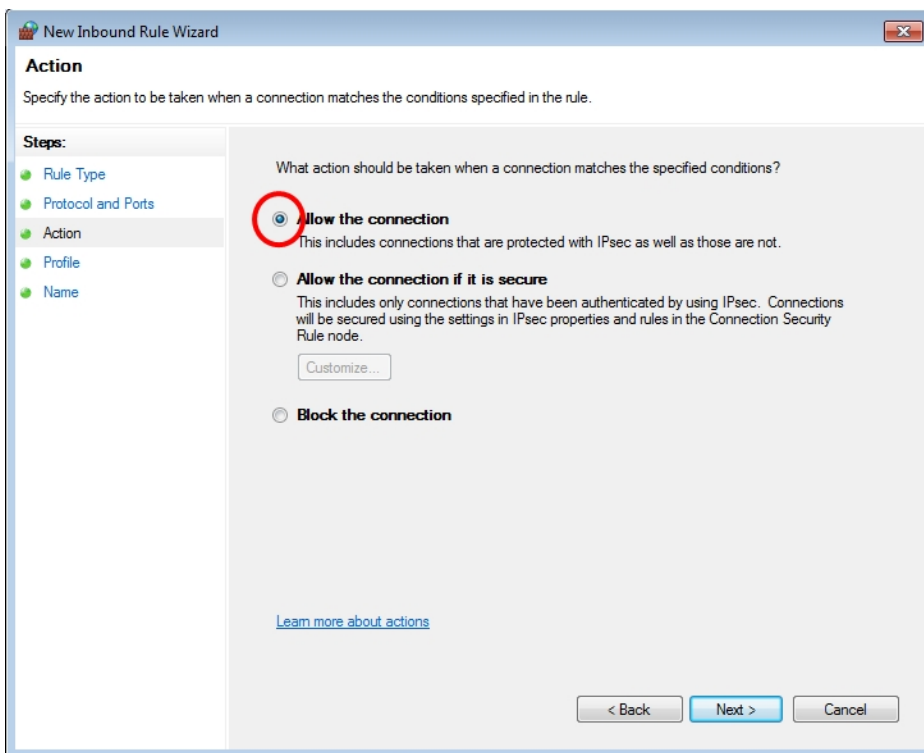
12. Select the **Domain**, **Private** and **Public** options and click **Next**.
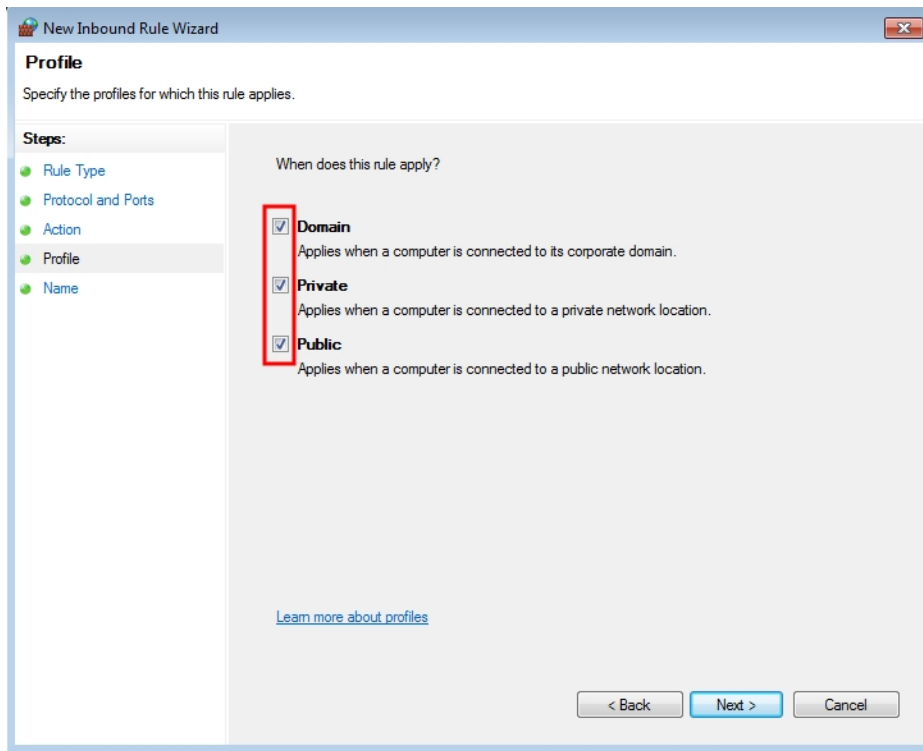
13. In the Name field, type in **Toon Boom Web Control Center** and click **Finish**.
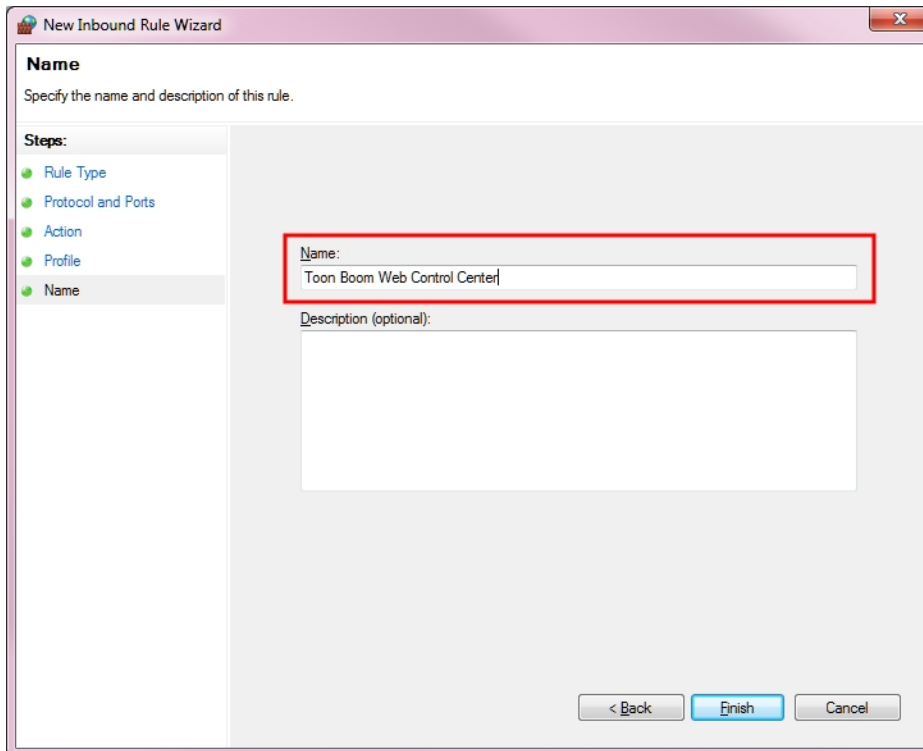
Toon Boom Web Control Center appears in the list of inbound rules.
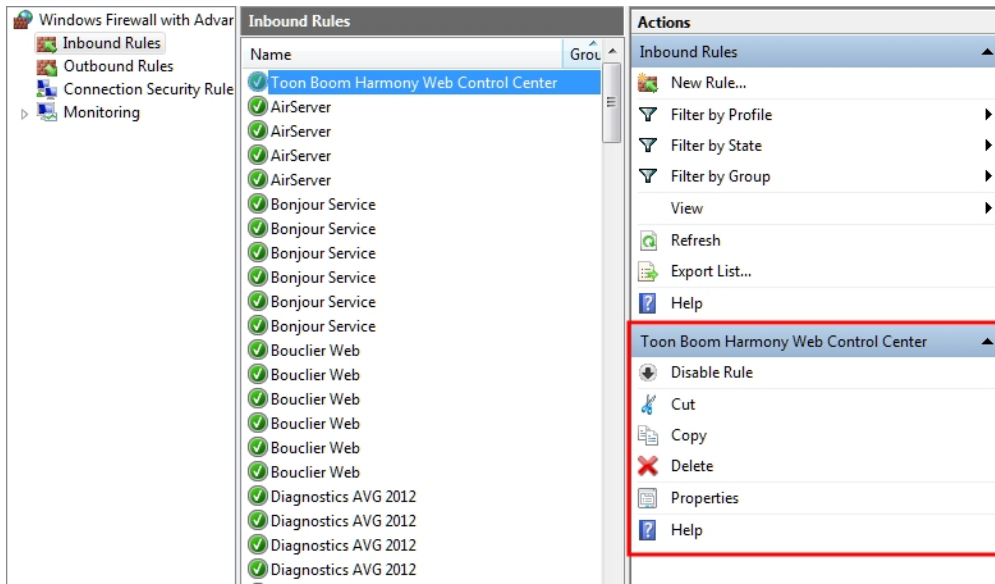
Web Browser Notes

Some browsers don't support Java and will have problems opening scenes. The first time you open a scene in a browser, it might take a long time because it has to set Java.
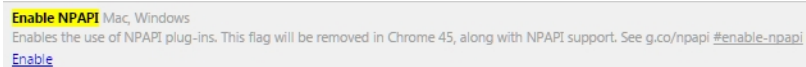
For clients of the server, note that as of version 42 of Google Chrome, the standard way in which browsers support plugins does not work. This means that the more recent Java plugins will not work. If this is the case, you must enable the use of NPAPI plugins.

How to enable the use of NPAPI plugins

1. In a Google Chrome web browser, enter the following:
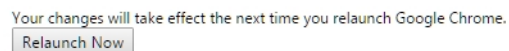
    `chrome://flags/#enable-npapi`

2. Locate the **Enable NPAPI** configuration option.

    Enable NPAPI Mac, Windows
    Enables the use of NPAPI plug-ins. This flag will be removed in Chrome 45, along with NPAPI support. See g.co/npapi #enable-npapi
    Enable

3. Click the **Enable** link.

4. At the bottom-left of the configuration page, click **Relaunch Now**.

    Your changes will take effect the next time you relaunch Google Chrome.
    Relaunch Now

Chapter 4: Mac OS X Installation

This document explains how to install Harmony 14 on Mac OS X, and assumes that you are familiar with Mac OS X networking and know how to work in a command shell.

Throughout this document, you will be creating files using your favourite text editor. Be sure to convert your files to plain text before saving them.

After completing these stages, you can verify the integrity of the installation and resolve any configuration issues.

Mac OS X Pre-installation

Before installing Toon Boom Harmony, you must perform the following tasks:

- *Verifying the Minimum Requirements* on page 84
- *Obtaining the Product Code* on page 84
- *Prerequisites for Harmony Installation* on page 84

Verifying the Minimum Requirements

For the most current Toon Boom Harmony hardware requirements, visit:

- toonboom.com/products/harmony/system-requirements

You can also refer to the *Harmony and Your IT Department* white paper available from:

- Toon Boom Animation Sales Representative
- Toon Boom Animation Support at: store.toonboom.com/contact/support.

Obtaining the Product Code

You should obtain a product code from the Toon Boom licensor, so you can finish the installation process without having to wait for the activation code to arrive.

To obtain a Harmony 14 product code, send the following information to: licensor@toonboom.com.

- Your name and the name of your company
- Email address where to send the license file

Prerequisites for Harmony Installation

A DNS server must be configured on the network in order to run Harmony. All the computers running Harmony must be registered with this server or Harmony cannot run properly. If a DNS server is not configured on the network or if Harmony workstations are having problems resolving the name of the server, the name of the server and each client along with their IP address should be added to the `/etc/hosts` file on each computer.

Setting User Mask

By default, files created on Mac OS X in directories that can be accessed and written by everyone are created with permissions that allow for the owner to write to the file, but for other users to only read the file. This can be a problem as files created by Harmony inside the database directories that are shared over your network need to be accessible and writable by all your project collaborators.

A quick way to remedy this is to configure your machine to have a permissive user file creation mask (or *umask*).

How to configure a permissive umask on Mac OS X 10.11 and later

1. In a terminal, type the following command:

   ```
   launchctl config user umask 000
   ```

2. Reboot the machine.

How to configure a permissive umask on Mac OS X 10.10 and earlier

1. In a terminal, type the following command to edit your launchd configuration file:

   ```
   vi /etc/launchd.conf
   ```

2. Add the following line at the end of the file:

   ```
   umask 0
   ```

3. Save the file.

4. Reboot the machine.

Editing Files on Mac OS X

- When editing files, you can use your favourite text editor. In this guide, all the Mac OS X procedures use the vi text editor.

- You must be logged in using the **root** account. If not, type **sudo** before launching the command. For example:

    sudo vi hosts

How to edit the hosts file

1. Make sure the server and all the client workstations are configured with a static (fixed) IP address.

2. Open the Terminal:

    /Application/Utilities/Terminal

3. From the Terminal, go to the **/etc** folder:

    cd /etc

4. Create a backup copy of the **hosts** file.

    cp hosts hosts.bak

5. Edit the **/etc/hosts** file using the **vi** text editor.

6. Go to the end of the file and add a new line. Type the static IP address and the machine name (hostname) of the server. Make sure there is a space between the IP address and the hostname.

    If there is a domain configured on the network, you should also type the Fully Qualified Domain Name (FQDN) after the hostname and separate them with a space.

    Example: **192.168.1.1 server server.toonboom.com**

    To complete this step, add the IP address and the hostname of each workstation that will be a client of the Harmony server. Each of them should be typed on a new line.

7. Save the exit the file.

    The file is written and the system returns you to **/etc** in the Terminal.

8. Verify the content of the **hosts** file:

    more hosts

9. Copy and paste the **hosts** file to all the client machines.

How to edit the launchd.conf file

1. Open the Terminal:

    /Application/Utilities/Terminal

2. From the Terminal, go to the **/etc** folder:

```
cd /etc
```

3. If the **/etc/launchd.conf** file already exists, create a backup copy:

    ```
    cp launchd.conf launchd.conf.bak
    ```

4. Edit the **/etc/launchd.conf** file using your favourite text editor—see *Editing Files on Mac OS X* on page 86.

5. At the beginning of the file, add a line with the following:

    ```
    umask 0
    ```

6. Save the file and exit.

    The file is written and the system returns you to **/etc** in the Terminal.

7. Verify the content of the **launchd.conf** file:

    ```
    more launchd.conf
    ```

About Harmony Installation on Mac OS X

Now that you have verified the minimum requirements and configured your hardware and software, you are ready to install Toon Boom Harmony.

Upgrading from Previous Versions on Mac OS X

If you are performing an upgrade, pick a time when Toon Boom Harmony production is slow or stopped. During the upgrade, no users can run any of the Toon Boom Harmony modules and all rendering jobs must be stopped or completed.

If you are upgrading from Harmony or Opus, you must also delete extra files that are located in each user's home.

How to update previous installations

1. Make sure that no one is running any versions of Harmony or Opus. All Harmony or Opus nodes must be closed on the server and on all the clients.

2. Verify that all batch rendering and vectorizing are completed or that the queues are empty. You can check the status of Vectorize and Render queues from the Control Center module.

   ‣ In the Control Center module, use the Queue menu, **Environment > Vectorize Queue** or **Render Queue** to open the Vectorize queue or Rendering queue for each environment. The queue should either be empty or the status of all jobs should be **Completed**.

   Be sure to stop the queues on all rendering machines. If the queues are running, those binaries will be locked and the installer cannot update them.

3. Stop all services running on the server and the clients.

   - If you are upgrading from version 12, type in the Terminal:

     ```
     sudo launchctl unload
     /Library/LaunchDaemons/com.toonboom.LicenseServer.plist

     sudo launchctl unload
     /Library/LaunchDaemons/com.toonboom.DatabaseServer.plist

     sudo launchctl unload
     /Library/LaunchDaemons/com.toonboom.LinkServer.plist

     sudo launchctl unload
     /Library/LaunchDaemons/com.toonboom.QueueServer.plist

     sudo launchctl unload
     /Library/LaunchDaemons/com.toonboom.WebCCServer.plist
     ```

   - If you are upgrading from version 7.3 to 11.1, type in the Terminal:

     ```
     sudo /sbin/SystemStarter stop ToonBoomQueueServer

     sudo /sbin/SystemStarter stop ToonBoomLinkServer

     sudo /sbin/SystemStarter stop ToonBoomDatabaseServer

     sudo /sbin/SystemStarter stop ToonBoomLicense
     ```

   - If you are upgrading from Harmony or Opus 7.2, type in the Terminal:

     ```
     sudo /sbin/SystemStarter stop USAnimation_queues
     ```

```
sudo /sbin/SystemStarter stop USAnimation_link_srv

sudo /sbin/SystemStarter stop USAnimation_dbserver

sudo /sbin/SystemStarter stop USAnimation_flexlm
```

4. Go to the applicable folder:

    - Version 12 and later: **/Applications/Toon Boom Harmony [version] [edition]/tba/etc**
    - Version 7.8 to 11.2: **/Applications/Toon Boom Harmony [version]/tba/etc**
    - Version 7.3: **/Applications/Toon Boom Harmony/usa.bundle/etc**
    - Version 7.2: **/usa/etc**

5. Back up any necessary configuration files:

    - **manager.conf**
    - **server.ini** if this server is configured to have Windows clients.
    - **Scan.conf** if this workstation is configured to be a scanning station.
    - **VectOptions.conf** from any machine (including the server) that is doing batch vectorization.
    - Any other configuration file that is required to be used later.
    - You can back up the entire application folder to ensure that no configuration file is missed.

6. From the Terminal, go to the **/usr/local/flexlm/licenses/** folder. If you are upgrading from version 7.2, go to the **/usa/etc/flexlm** folder. Back up the **license.dat** file.

7. Delete the **/Applications/Toon Boom Harmony[version][edition]** folder or rename it to keep as a backup.

8. If you are upgrading from a previous version of Harmony or Opus, you must delete Startup Items from the previous installation. For example:

    - Version 12 and later:
    - Version 7.3 to 11.2: From **/Library/StartupItems**, delete any folders that begin with **ToonBoom**, such as **ToonBoomDatabaseServer**.
    - Version 7.2 and earlier: From **/Library/StartupItems/**, delete any folders that begin with USAnimation, such as **USAnimation_dbserver**.

    > NOTE: Depending on the server and client configuration, you might not see any folders starting with **ToonBoom** or **USAnimation**.

How to delete files in each user's home

1. Open the Terminal:

> `/Application/Utilities/Terminal`

2. Go to a user's home that was configured to work with Harmony. Using the `usabatch` account as an example:

    `cd /Users/usabatch`

3. List all the files in usabatch's home:

    `ls -lsa`

4. Look for a folder named `.MacOSX` in the list of files and folders that appear.

5. If the folder is there, delete it:

    `sudo rm -rf .MacOSX`

6. Repeat these steps for each user that was configured to work with a previous version of Harmony.

Creating the usabatch User on Mac OS X

Before you install Harmony, you must create the `usabatch` user account on the server and on all the workstations that will performing batch processing (computers that will be part of the batch rendering or vectorizing farm). A number of services, including the tbdbserver, license server, batch processing and Web Control Center service are started using the `usabatch` account.

The `usabatch` account must have administrator rights on the computer.

NOTE: If you are upgrading from a previous version of Harmony or Opus, you may not need to create the `usabatch` account since you will use the same account that was created from the previous installation.

How to create the usabatch user account

1. Open **System Preferences**. By default, there is a shortcut for **System Preferences** in the **Dock**.

2. In the System panel of the System Preferences dialog box, click **Users & Groups**.

   The Password tab of the Accounts window opens.

3. To make changes to the accounts on a Mac OS X, click the lock icon at the bottom of the window. Enter your username and password for an account that has administrator privileges.

4. Click the plus (+) sign button to add a new user.

5. Give the new user the following name, account name and password:

   `usabatch`

   The `usabatch` account name and password must be in all lower-case letters.

6. Select **Administrator** from the menu next to **New Account**.

7. Click **Create User**.

8. Once the account is created, open the Terminal and log in as the `usabatch` user:

   `su -l usabatch`

9. Make sure you're in the home folder of `usabatch`, then edit or create the `.profile` for `usabatch`:

   `vi .profile`

10. Make sure the file contains the following lines:

    `#!/bin/bash`

    `umask 0`

11. Save and exit the file.

Installing Harmony on Mac OS X

In a client-server network or in a standalone setup, you must install Harmony, as well as the following services on the server or the standalone computer:

tbdbserver	Controls access to the database.
License service	Controls the number of licenses and features available to Harmony users.
Batch processing	Controls batch vectorizing and rendering queues.
Web Control Center	Allows download and upload of scenes from the database.
Link server	If you are installing Harmony on a Mac OS X server that will support Windows clients, you must install the Link server.

To install Harmony programs and services, you must run the installation package. Before you start the installation, make sure you are currently logged in the system with administrator rights on your local computer.

How to get administrator privileges

1. Open **System Preferences**. By default, there is a shortcut for **System Preferences** in the **Dock**.

2. In the System Preferences dialog box, click **Users & Groups.**

   The Password tab of the Accounts window opens.

3. Select your user login account and verify if the **Allow user to administer this computer** option is selected. To make changes to the accounts on a Mac OS X, click the lock icon at the bottom of the window. Enter your username and password for an account that has administrator privileges.

How to install Harmony

1. Double-click the Harmony .dmg file.

2. Drag the Toon Boom Harmony 14.0 folder from the .dmg file to the **Applications** folder.

3. In the window that opens, click **Accept**.

About Configuration on Mac OS X

After installing Harmony, configure the database parameters and the third party software based on the role this computer will have.

Once Harmony is installed, additional steps are required to configure the database on the server and to set up the startup items and register the application path for the Terminal.

Setting Up Database Servers on Mac OS X

The database server controls all interactions with the contents of the Toon Boom Harmony 14.0 database. It processes all requests to open, read or update files, keeping track of files that are locked so others cannot edit them.

If you already have a database set up from a previous installation of Toon Boom Harmony 14.0, you **DO NOT** need to set up the database server, startup items, or register console application in the path. However, if you are upgrading from a previous version, you need to install the startup items and register console applications in the path. For new installations of Harmony, you must install all of them.

How to configure the database server using the Configuration Assistant

1. From Finder, go to **Applications > Toon Boom Harmony [version] [edition] > Tools.**

2. Double-click on **Configuration Assistant**.

   If you are upgrading from a previous version and a database (**/USA_DB**) already exists on the server, deselect the **Create a new Toon Boom Harmony database** option.
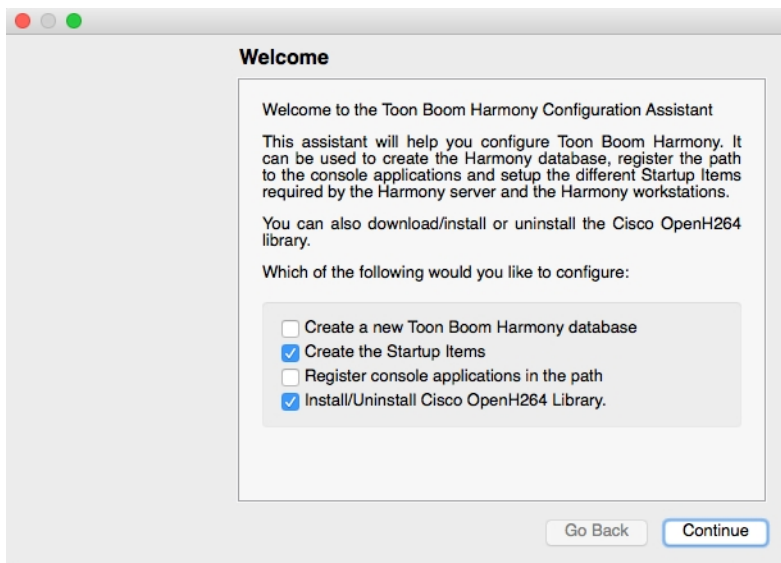
3. For the server, select all the options if this is the first time you are installing on this machine.

> **NOTE:** If you are upgrading from an earlier version of Toon Boom Harmony 14.0, update the **dict** files in the **/USA_DB**. Copy the **dict** files from here: **/Applications/Toon Boom Harmony 14.0 [version]/tba/etc/USADB_templates/dicts/** to **/USA_DB/dicts/**.
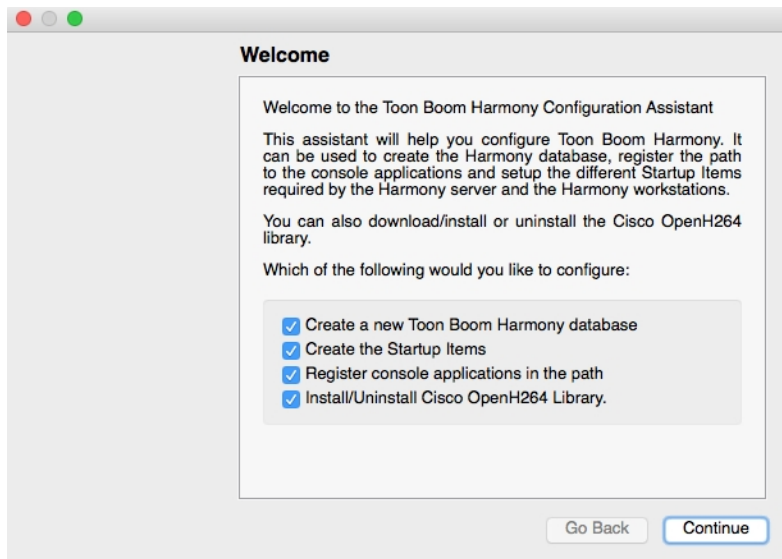
4. Click **Continue**.

   The Create Harmony Database screen opens. The default values shown should be correct.
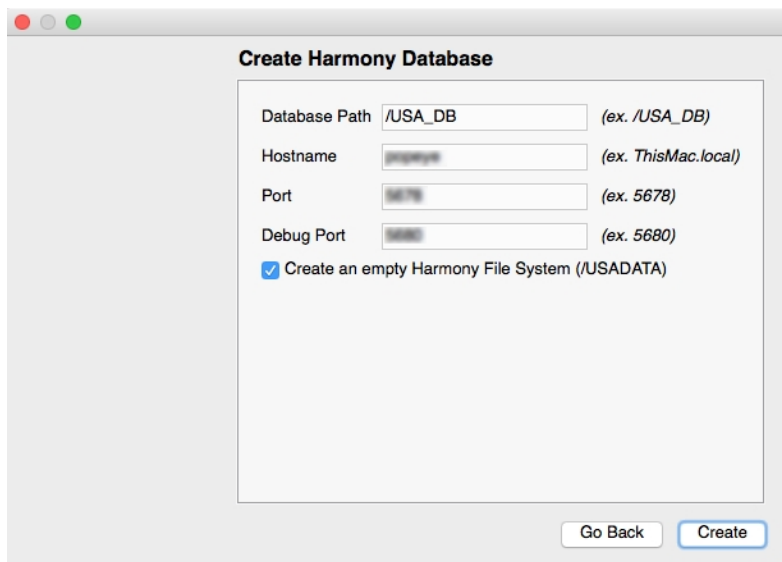
5. Click **Create**.

> **NOTE:**
> You can always create the Toon Boom Harmony 14.0 database manually later. To do so, open the Terminal
> and type the following:
>
> ```
>         cd /
>
>         mkdir usadata000
>
>         chmod -R 777 usadata000
> ```

> NOTE: You must be logged in using the **root** account. If not, type `sudo` before launching the command.

You can make as many data directories as needed. Name these directories using the following syntax, where XXX represents the number of the data directory:

usadataXXX

> NOTE: If you want to use a name other than `usadataXXX` for the Toon Boom Harmony 14.0 database, edit the `Manager.conf` file and add the name or search pattern for this new database. The `Manager.conf` file can be edited using the **Configuration Editor** in the Tools folder of your Toon Boom Harmony 14.0 installation. Open the **Configuration Editor** and select the **Manager.conf** tab.

6. In the Create Startup Item screen, select the startup items required and click **Create**.
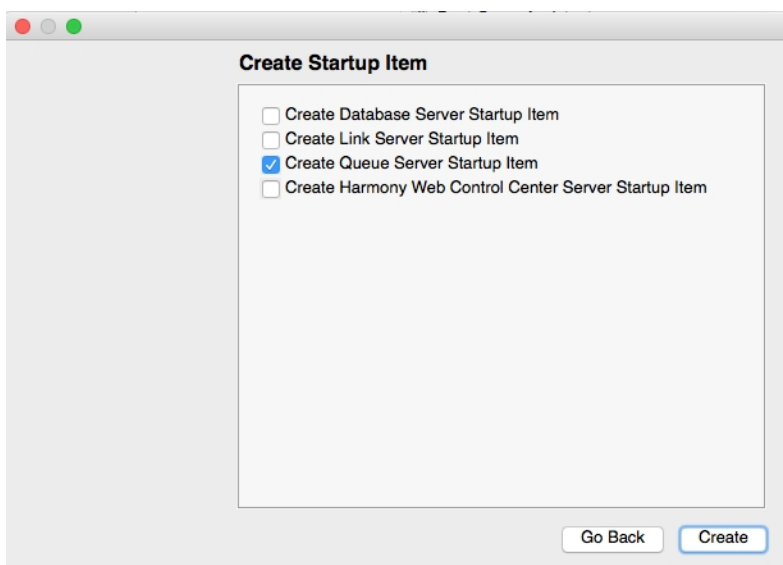
Parameter	Description
Create Database Server Startup Item	It is mandatory to install this on the server.
Create Link Server Startup Item	This is required when there will be Windows clients connecting to the Mac server. This service creates symbolic links when a scene is created from a Windows client workstation.
Create Queue Server Startup Item	This is for the batch processes like rendering and vectorization. Do not install this on the server, as it will slow it down. Install this on a separate machine used for batch vectorizing or rendering.
Create HarmonyWeb Control Center Server Startup Item	This is required when you want to set this machine as a Web Control Center server. Other machines will access this web server to work with their Web Control Center. You do not have to make the database server the same machine as the Web Control Center server.

Your startup items are created.

7. Click **OK**.

   The following screen opens.
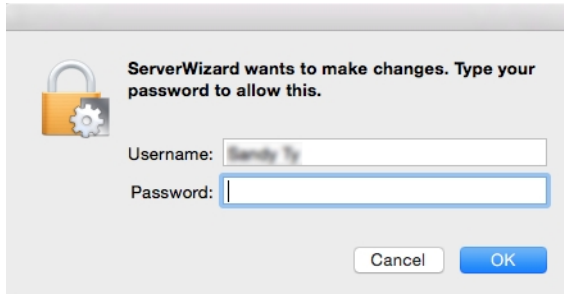
8. Enter your username and password, and click **OK**.

   The Register Path screen opens.

9. Register the path for the current user or for all users. This option appends the path of Harmony's applic-
   ations to the PATH environment variable in order to run the applications from the Terminal.

Parameter	Description
Registration Path for all users	Registers the path for all accounts on the computer. You only need to run this once.
Registration Path for my user only	Registers the path to the current account only. You need to run this for each user that will be using the Terminal and you need to run

	this each time you create a new user.

10. Click **Create**.

   The Cisco OpenH264 Library screen opens.
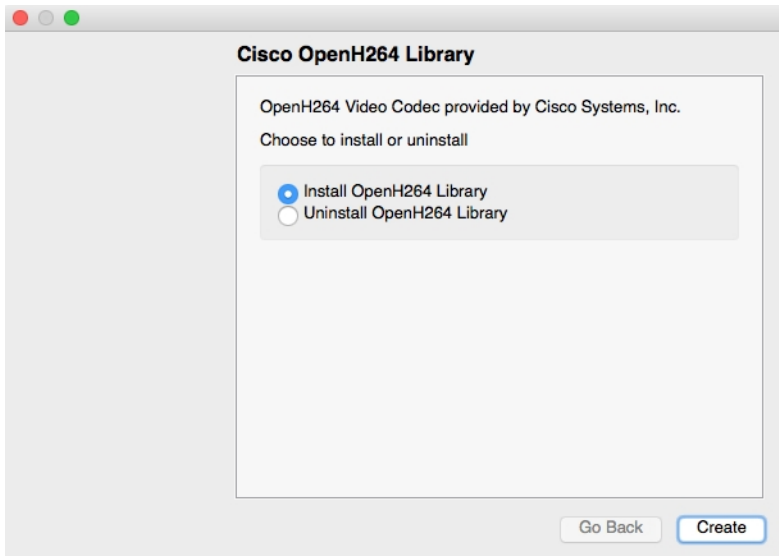
11. Select the **Install OpenH264 Library** option and click **Create**.

   The server is successfully configured.
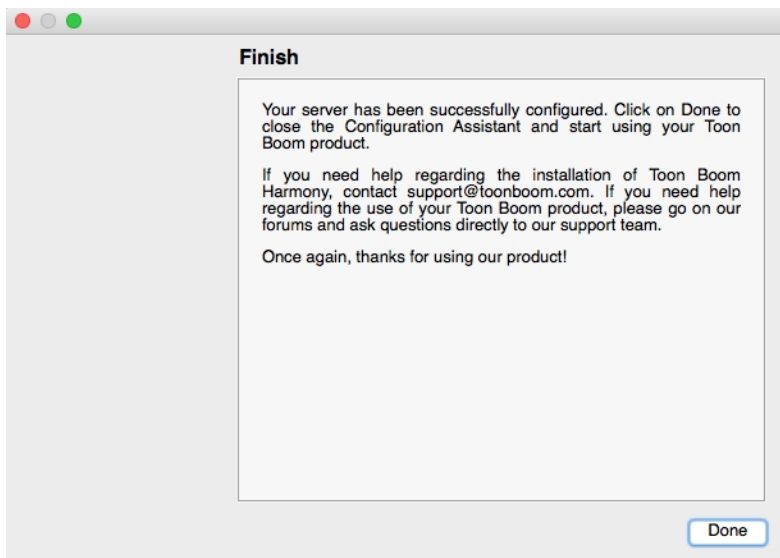
12. Click **Done** to close the Configuration Assistant.

About License Configuration on Mac OS X

The licensing must be configured before running Toon Boom Harmony 14.0.

Setting Up FlexLM License Servers on Mac OS X
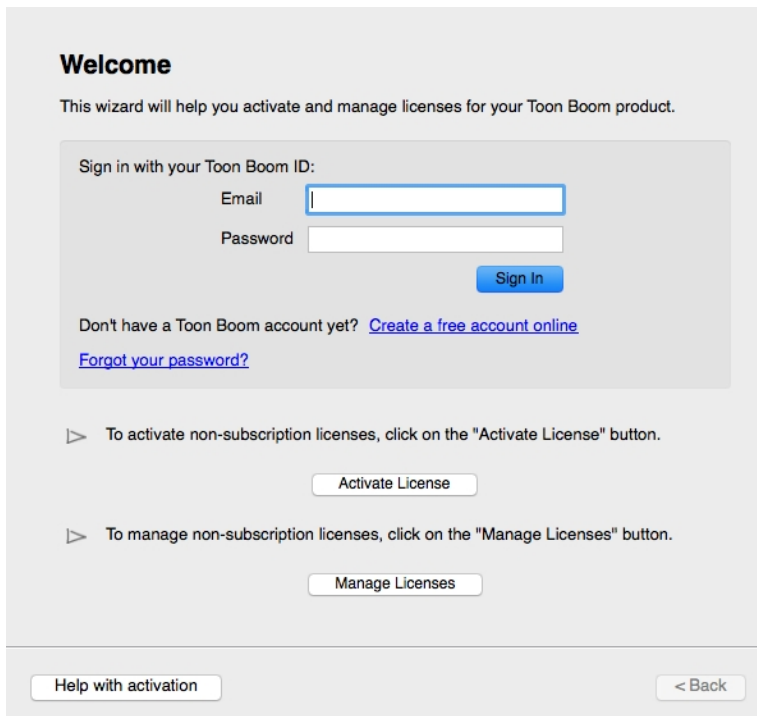
IMPORTANT: For existing installations, you must reinstall Harmony on your license server machine in order for FlexLM to work properly.

How to configure the license server

1. Start the License Wizard from **Applications > Toon Boom Harmony [version] [edition] > Tools > LicenseWizard**.

   The Welcome screen appears.

2. Click **Activate License**.

   The Activation Options screen appears.

3. Click **Internet Activation.**

The Internet Activation Options screen appears.

4. Click **Network License.**

The Internet Activation - Network License screen appears.

5. Do the following:

- In the Product Code field, enter your product code.
- In the License Count field, enter the number of licenses the product code grants you.

Internet Activation - Network License

If you purchased your copy of Harmony Premium from the Toon Boom Web Store, you should have received your Product Code by email. If you purchased it elsewhere, you will find the Product Code on the registration card in the software packaging.

Product Code 1111 - 2222 - 3333 - 4444 - 5555

Enter the number of licenses you would like to install, exactly as indicated on your registration card .

License Count 3

Enter your Product Code and click on the "Activate" button. This will connect you to the Toon Boom Activation Server which will verify the Product Code and activate your copy of Harmony Premium.

Activate

Help with activation   < Back

NOTE: Once activated and returned to the activation server, a server license cannot be activated again. Make sure you are activating the license on the correct computer with the proper license count.

6. Click **Activate**.

   The Install License Server screen appears.

7. Click **Install License Server**.

Install License Server

The specified license is a network (floating) license.

If this computer is to be used as the license server on your network, you should install the license daemon in the Startup Items. This will allow it to start automatically when you start the computer.

Install License Server

Help with activation   < Back   Next >
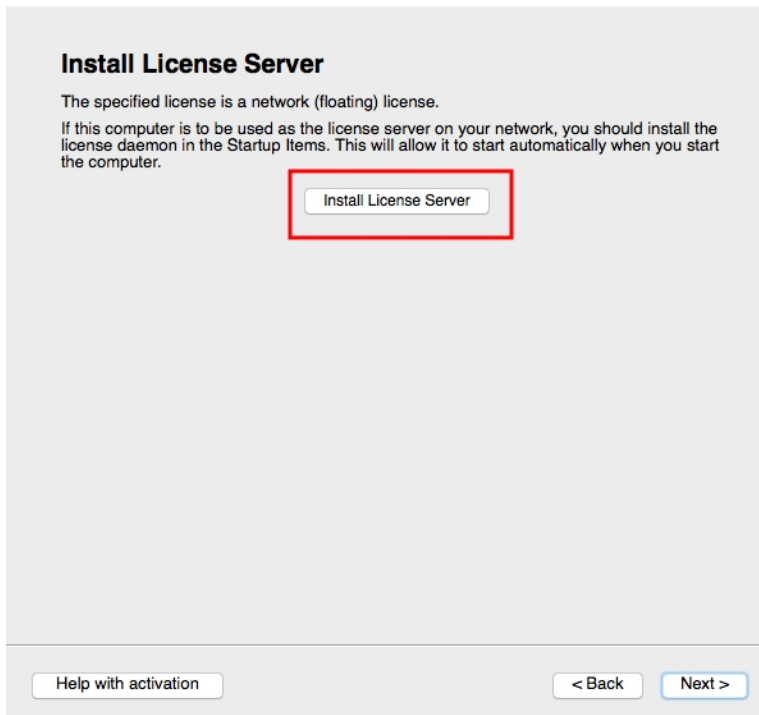
The `license.dat` file is created in **/usr/local/flexlm/licenses/license.dat.** The License Server is also configured and started.

The `license.dat` created contains the following:

```
SERVER this_host 0 ANY
VENDOR toonboom
USE_SERVER
```

The Activation Successful screen appears.

8. Click **Finish** to exit the wizard.
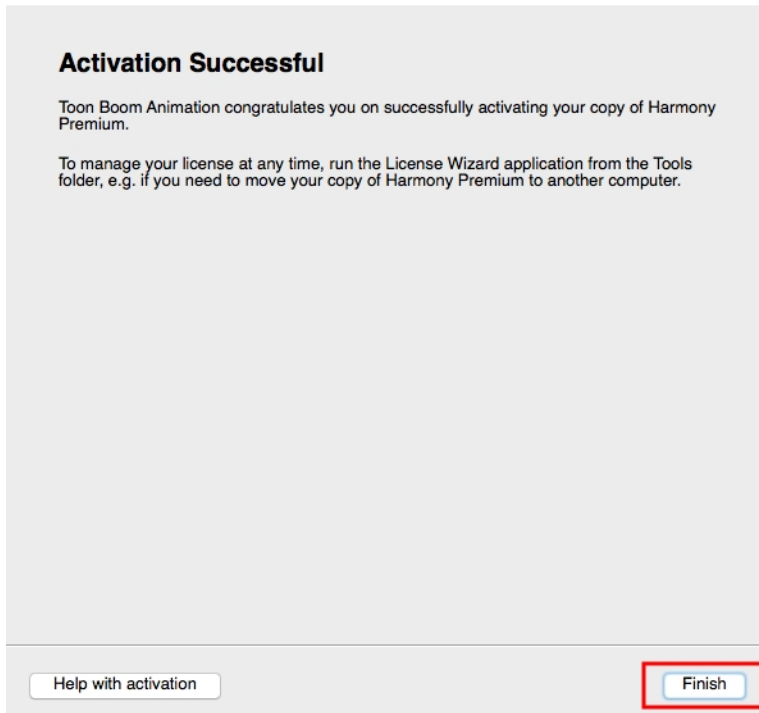
If you're having problems with the license, try the folllowing:

- ‣ Reread the license file:

      lmreread -a

- ‣ Verify that the FlexLM license is working properly:

      lmstat -a

   You can also look at the **ToonBoomLicense.log** file:

      /tmp/ToonBoomLicense.log

- ‣ If the FlexLM service needs to be restarted:

      sudo launchctl unload
      /Library/LaunchDaemons/com.toonboom.LicenseServer.plist

      sudo launchctl load
      /Library/LaunchDaemons/com.toonboom.LicenseServer.plist

Setting Up Licenses on Client Workstations on Mac OS X

NOTE: An Admin account is required for setting up the license on the client workstations. After activation you can login as client.

How to set up the license on a client workstation

1. Open the **License Wizard** on the client workstation.

   The Toon Boom Activation Wizard appears.
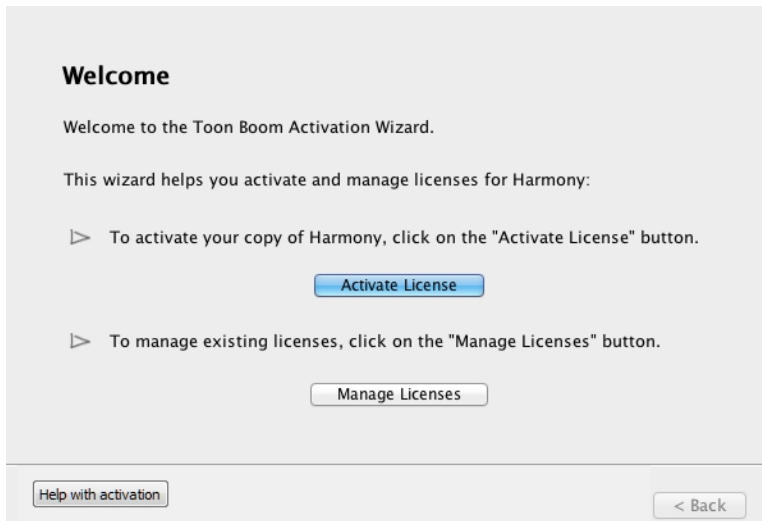
2. Click **Activate License**.
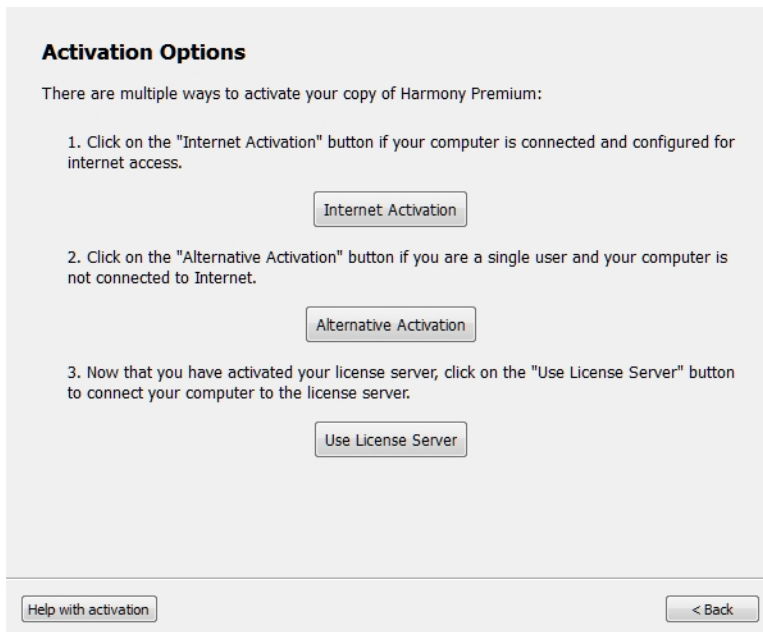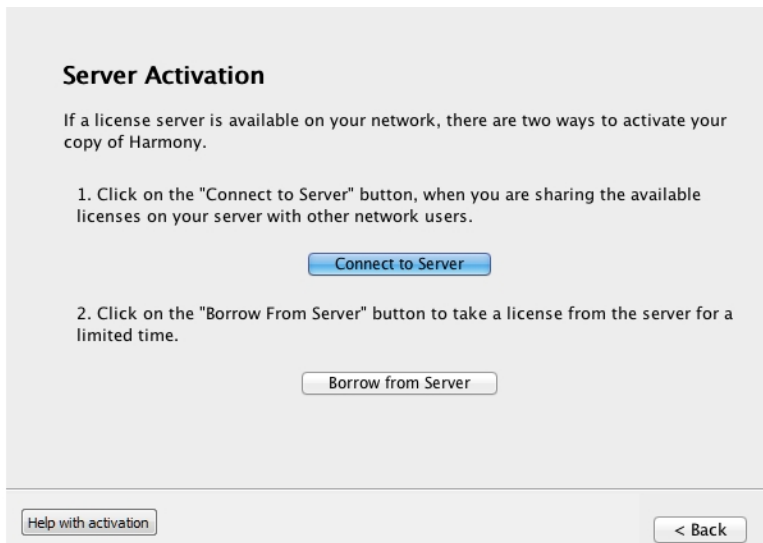
The Activation Options screen appears.

3. Click **Use License Server**.

The Server Activation screen appears.

4. Click **Connect to Server**.

The Server Activation - Shared License screen appears.

5. In the License Server Address field, enter the hostname or IP Address.

6. Click **Connect**.

    You are prompted for a password.

7. Enter the password and click **OK**.

    The Activation Successful screen appears.

8. Click **Finish** to close the License Wizard.

About Scene Data Sharing on Mac OS X

Before you can share scene data between a Mac OS X database and Mac OS X, Linux, and Windows clients, you must configure the Mac OS X database server appropriately.

Toon Boom Harmony 14.0 uses NFS (Network File System) to share files between Mac OS X and Linux computers. You must use NFS to export directories from the server so clients can mount them and share the contents.

If your Mac OS X server will have Mac OS X or Linux clients, you must export the **USA_DB** and **USADATA** folders using NFS. The clients will then need to be configured to mount those exported folders from the server.

At this point, reboot the server so all of the services which you have just configured will start up.

Setting Up NFS Exports on Mac OS X

The following procedure shows you how to export the **/USADATA** and **/USA_DB** directories on a Mac OS X workstation, as NFS shared points.

How to set up NFS exports on Mac OS X

1. From the Finder, go to **Applications > Utilities** and double-click on **Terminal**.

2. Create and edit the **exports** file in the **/etc** directory:

   sudo vi /etc/exports

3. Add the following:

   /USA_DB -maproot=nobody

   /USADATA -maproot=nobody

4. Save and exit the file.

5. Verify that the file is correct by running:

   sudo nfsd checkexports

   If there is no return response, then it is correct.

6. Start **nfsd**:

   sudo nfsd enable

7. If **nfsd** was already started, notify the **nfsd daemon** that the **/etc/exports** file has changed:

   sudo kill -1 `cat /var/run/mountd.pid`

NOTE: The back quote (`) character is located at the top-left of the Mac OS X keyboard on the same key as the tilde (~) character. Or simply reboot the computer.

8. Verify that the folders exported correctly:

   /usr/bin/showmount -e

   The following should appear:

   /USA_DB Everyone

   /USADATA Everyone

   Once the export file is created, client systems can mount **/USA_DB** and **/USADATA** located on the Mac OS X server system.

About Windows Clients on Mac OS X

If Windows clients are going to access the Toon Boom Harmony 14.0 database on a Mac OS X server, you must set up the Link Server, Samba and the server.ini file. These allow the server and clients to communicate and share data.

Configuring Link Servers on Mac OS X

If you are running Toon Boom Harmony 14.0 in a mixed environment where the server is on Mac OS X and some of the clients are running Windows, you must start the Link Server, which makes it possible for Windows machines to communicate with the database.

How to configure the Link Server on the server in a mixed network environment

1. If you did not already install the Link Server during the server installation, you must do it now. From the Finder, go to **Applications > Toon Boom Harmony [version] [edition] > Tools**.

2. Double-click on the **Configuration Assistant**.

3. Select **Create the Startup Items** and deselect the other options.

4. Click **Continue**.

5. In **Create Startup Item**, select **Create Link Server Startup Item**.

6. Click **Create**.

7. Enter a user name and password of a user with administrator rights and click **OK**.

   The installation will start Link server automatically.

8. A log file is generated in `/tmp/com.toonboom.LinkServer.log`. Check this file to make sure there are no errors.

NOTE: To help troubleshoot, you might need to stop or start Link server.

Start Link Server: `sudo launchctl load /Library/LaunchDae-mons/com.toonboom.LinkServer.plist`

Stop Link Server: `sudo launchctl unload /Library/LaunchDae-mons/com.toonboom.LinkServer.plist`

Configuring Samba on Mac OS X

Mac no longer uses the open source Samba software to share folders for Windows workstations. It has been replaced by Apple's own Windows file sharing software, which does not include some of the options required to support WindowsHarmony clients.

By default, Samba is not set up to run automatically on Mac OS X.

How to start the Samba service

1. Open **System Preferences**.

2. In the Internet & Wireless section, click **Sharing**.

3. In the Services section, select the **File Sharing** option.
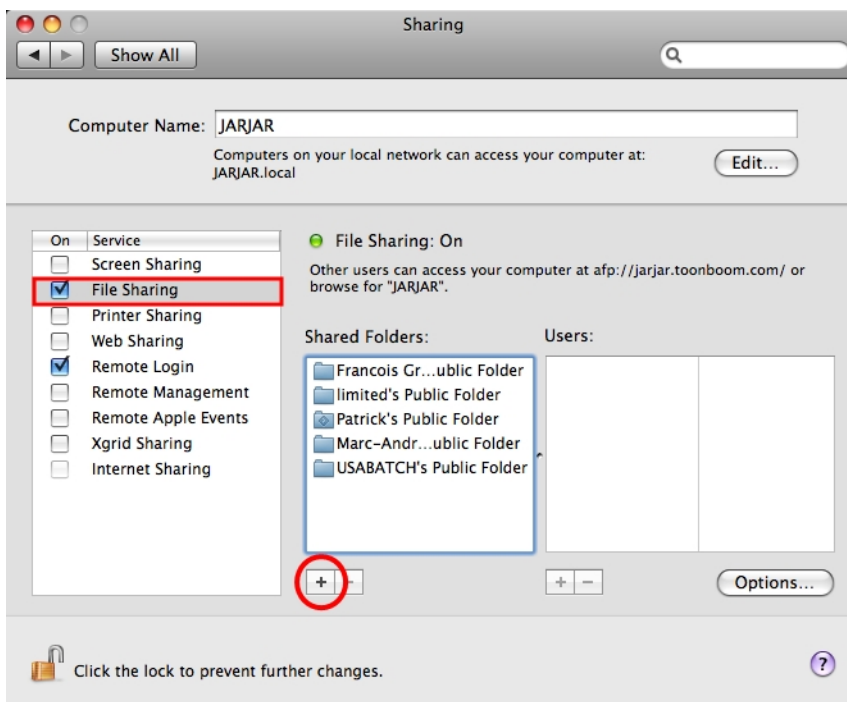
4. In the Shared Folders section, click the plus (+) sign.

5. Browse and select the `/USA_DB` folder.
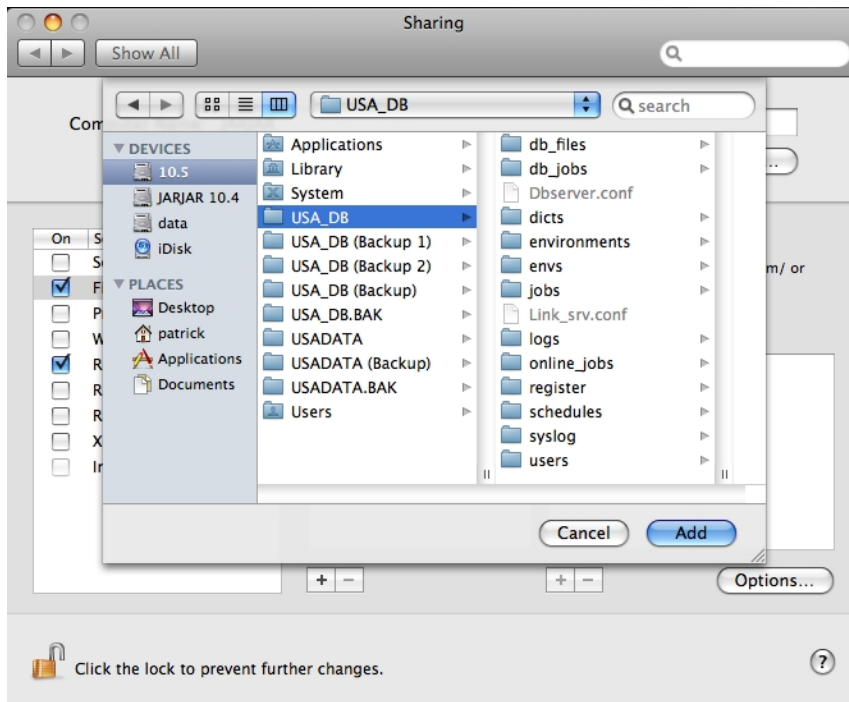
6. Repeat steps 4 and 5 for these folders:

    - **/USADATA**

    - **/Applications/Toon Boom Harmony [version] [edition]/tba**

7. Make sure to give the **usabatch** account Read and Write permissions to the **USA_DB**, **USADATA** and /Applications/Toon Boom Harmony [version] [edition]/tba folders.

8. Click **Options**.

9. Select the **Share files and folders using SMB** option.
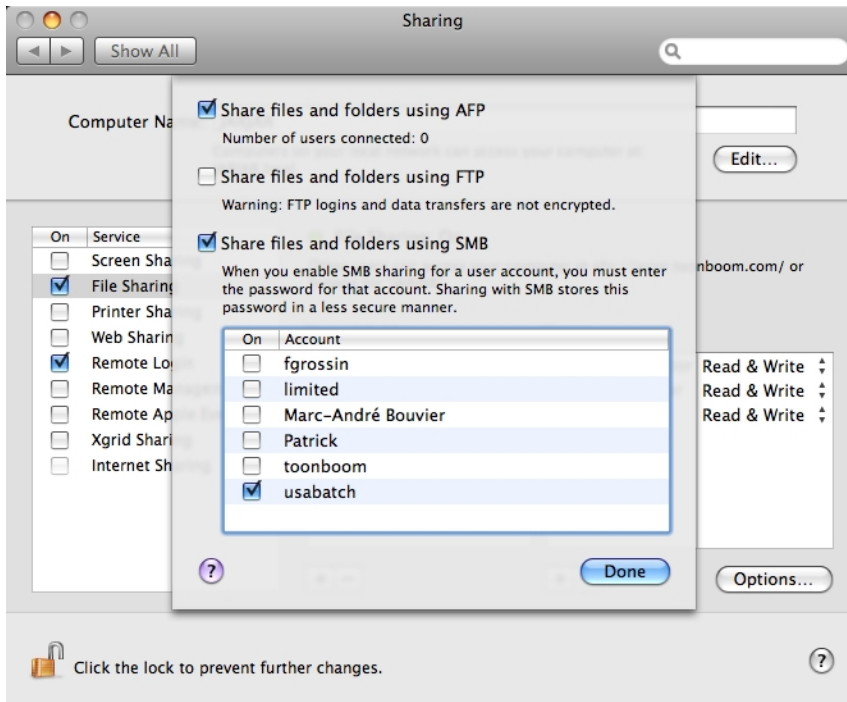
10. Select the **usabatch** option and click **Done**.

11. Close **System Preferences**.

How to configuring the Samba shared files

1. Open the Terminal.

2. To rename the **tba** share folder to **usa**:

```
sudo sharing -l

sudo sharing -e tba -S usa
```

3. Verify that the **tba** name is now **usa**.

```
sudo sharing -l |grep -A 2 "smb"

smb: {

name: usa

shared: 1

--

smb: {

name: toonboom's Public Folder

shared: 1

--

smb: {
```

```
name: USA_DB

shared: 1

--

smb: {

name: usabatch's Public Folder

shared: 1

--

smb: {

name: USADATA

shared: 1
```

How to configuring the smb.conf file

Configuring the server.ini File on Mac OS X

In order to configure you Windows clients, you must create the database server's `server.ini` configuration file. When a Windows client will attempt to connect to the database server using the Toon Boom Harmony Configuration Wizard, the latterwill fetch this configuration file and use its information to automatically set up their connection to the database server and its scene data directories.

How to configuring the server.ini file on Linux

1. In Finder, go to **Applications > Toon Boom Harmony [version] [edition] > Tools > Configuration Editor**.

2. Select the **server.ini** tab.

3. In the text editor, type in the information for the database server as well as the directory name and hostname of every scene data server in your network, like in the following example:

```
[WizardConfig]
ServerName=harmonyserver
InstallationDrive=C
UsaShare=usa
UsadbDrive=C
UsadbShare=USA_DB
FileSystem0=C usadata000 harmonyserver
```

As you can see, at the end of the file, you must type in a line containing the drive letter, share name and host name of every scene date directory used by your Harmony database.

In this case, the drive letter—C, in this example—is used to indicate to the clients on which drive the share should be mounted. Therefore, it's strictly to streamline the client configuration and has nothing to do with the file server itself.

> **IMPORTANT:** The variable name and directory names in `server.ini` are case sensitive.

4. In the top menu, select **File > Save**.
5. At this point, you should restart the database server to ensure its configuration is applied.

Configuring Harmony Clients on Mac OS X

The following procedure demonstrates how to make a Mac OS X client automatically connect to a database server via NFS on boot. The instructions are based on a server named `harmonyserver` with the shares `USA_DB` and `USADATA`. You should adjust your client's configuration according to your server's name and, if applicable, the name of the additional scene data servers as well as the name of their respective share points.

How to configure OS X to automatically connect to the database on boot using NFS

1. Open the Terminal.

2. Edit `fstab` file:

   ```
   sudo vi /etc/fstab
   ```

3. Add the following lines to automatically mount your database server's shares on boot. Make sure to replace `harmonyserver` with the hostname of your database server.

   ```
   harmonyserver:/USA_DB /mnt/USA_DB nfs rw,soft,intr,resvport 0 0

   harmonyserver:/USADATA /mnt/USADATA nfs rw,soft,intr,resvport 0 0
   ```

4. Create the mount points:

   ```
   sudo mkdir -p /mnt/USA_DB /mnt/USADATA
   ```

5. Attempt to mount them:

   ```
   sudo mount -a
   ```

6. Open a new Terminal window.

7. Verify that the `/USA_DB` and `/USADATA` shared points have been mounted properly:

   ```
   ls /mnt/USA_DB/

   ls /mnt/USADATA/
   ```

8. Create symbolic links to the `USA_DB` and `USADATA` directories at the root level `/`

   ```
   sudo ln -s /mnt/USA_DB /USA_DB

   sudo ln -s /mnt/USADATA /USADATA
   ```

9. Verify that the symbolic links are pointing to the right directories:

   ```
   ls -l /USA_DB /USADATA
   ```

   The symbolic links for the **/USA_DB** and **/USADATA** should look like the following:

   ```
   USA_DB -> /mnt/USA_DB

   USADATA -> /mnt/USADATA
   ```

Advanced Tips and Guidelines for Mac OS X

These are useful tips, guidelines and information for advanced users.

Unicode Guidelines

Here are some useful guidelines to keep in mind if you are considering using Unicode:

- Because the Unity game engine does not support Unicode characters, it is recommended to avoid using it in scenes intended for games.

- Unicode characters cannot be used for parent folders of USA_DB and USADATA.

- To zip a scene with Unicode in its name, use 7zip which is included in the package; the regular zip cannot handle some Unicode characters.

- SMB sharing is needed for Unicode characters as NFS shares do not support Unicode.

Limitations

- Offline scenes with Unicode characters cannot be imported on Mac OS X 10.10.5 and 10.11.
- A scene name with Unicode characters cannot be opened through the Harmony Web Control Center.
- If a scene name contains Unicode characters, the following commands in the File menu cannot be used: Update Database Scene and Download Database Changes.
- Mac samba client for Linux server: Unicode does not support NFS.
- Users of usabatch: There are limitations when using samba with Unicode.

> **NOTE:** On Mac OS X 10.10.5 and 10.11, there is an auto-mount issue. You must unmount and remount using the setup_samba_share_for_osx.sh script located in this folder: /Applications/Toon\ Boom\ Harmony\version\edition\ Network/tba/resources/samples/.

Configuring the Mount as Samba

NFS on Mac OS X does not correctly support Unicode characters. The user will have problems with incompatible or unreadable files when using NFS on an external Linux storage. This is especially important on hybrid systems where more than one operating system is involved.

Samba correctly 'normalizes' the Unicode character encoding (see Unicode character normalization). However, Samba must be mounted as a drive by the user. Basically, the user mounts the share when logging in, so they have access to the share. If the samba mount command is put in the `/etc/fstab` file, the share is mounted by root and is only accessible by root. In this case, the only way to mount a samba share is to use the auto_master and auto_ smb files.

Flexible Scene Data Placement

Since the /USADATA and /USA_DB directories no longer need to be placed at the root of your file system, you can place them wherever you like. This is useful when using third-party asset management and tracking systems.

If you choose to place the directories at a location other than the root, you can create a shortcut that points to the location of the file system without using the .lnk shortcuts on Windows or the symbolic links on Mac and Linux.

How to configure the mounts as Samba

1. Edit the auto_master file to enable the samba share to be automatically mounted:

    ```
    sudo vi /etc/auto_master
    ```

2. Add the following line:

    ```
    /- auto_smb -nosuid
    ```

3. Create/edit the auto_smb file to mount the samba share from the server. The parameters will depend on your exact configuration.

    ```
    sudo vi /etc/auto_smb
    ```

    Type the following: (In the example below, rnd-11 is exporting two samba shares.)

    ```
    /mnt/USA_DB -fstype=smbfs,soft ://usabatch:usabatch@rnd-11/USA_DB

    /mnt/usadata -fstype=smbfs,soft ://usabatch:usabatch@rnd-11/usadata
    ```

4. Configure the mount points.

    ```
    sudo mkdir /mnt

    sudo mkdir /mnt/USA_DB

    sudo mkdir /mnt/usadata

    sudo chmod -R 777 /mnt/.
    ```

5. Create the symbolic links to the root. Or use the shortcuts.conf configuration file if you want to avoid having symlinks at the root.

    ```
    sudo ln -s /mnt/USA_DB /USA_DB

    sudo ln -s /mnt/usadata /usadata
    ```

6. Mount now.

    For some configurations/users, you must explicitly unmount before remounting the file systems.

    ```
    sudo umount /mnt/*

    sudo automount -vc
    ```

How to create a shortcut that points to the new location of the file system

1. Locate the shortcuts.conf file here:

    /Applications/Toon Boom Harmony [version] [edition]/tba/resources/samples

2. Copy the shortcuts.conf file and place it here:

    /Applications/Toon Boom Harmony [version] [edition]/tba/etc

3. Open the shortcuts.conf with a text editor.

4. Here are some examples of what to add at the end of the file:

/USA_DB /mount_point/usadata

/usadata /mount_point/usadata

On a server, you can point to a subfolder like this:

/USA_DB /parentfolder/usa_db

/usadata000 /parentfolder/usa_db

5. Save the file.

About Troubleshooting on Mac OS X

If you have any outstanding issues running Toon Boom 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.

License Error When Starting Modules on Mac OS X

If you are getting license errors when you start a Toon Boom Harmony 14.0 node, verify the setup and configuration of the license service.

How to verify the setup and configuration of the license service

1. If you are using a license server, verify that the `license.dat` file is in the following directory:
   `/usr/local/flexlm/licenses`

2. Open the `license.dat` file. It should contain the following:

   ```
   SERVER this_host 0 ANY
   VENDOR toonboom
   USE_SERVER
   ```

> **NOTE:** On a client workstation, the license server hostname should be on the first line instead of `this_host`.

3. On the Mac license server, open the **Activity** monitor and make sure that the lmgrd and Toon Boom processes are running. If both of them are missing, start the license service by typing the following in the Terminal:

   ```
   sudo launchctl load
   /Library/LaunchDaemons/com.toonboom.LicenseServer.plist
   ```

4. If you get an error message when you try to start the license service, it is possible that you did not install the license Startup Item. Use the **LicenseWizard** to install the license server Startup Item.

5. If you continue having problems with the license server, locate the file `ToonBoomLicense.log` and send it to store.toonboom.com/contact/support. The file is located in: `/tmp`.

Unable to Import Scenes on Mac OS X

If you are unable to import a scene, there might be an error with the database server. Try to perform the following:

- Verify the `com.toonboom.DatabaseServer.log` file located in `/tmp`. If there is no log file, start the Dbserver. Type the following in the Terminal:

  ```
  sudo launchctl load
  /Library/LaunchDaemons/com.toonboom.DatabaseServer.plist
  ```

If there is a log file, the last few lines will give you some indication as to the problem with the Dbserver.

- If you get an error in the log about the machine name, verify the `/USA_DB/Dbserver.conf` file and make sure the hostname matches the machine name of the Toon Boom Harmony 14.0 server.
- If you get errors about the port number, another service might be using port `5680`. You can change the port number in `Dbserver.conf` to any unused number above 5000.
- Restart the Dbserver. Type the following in the Terminal:

  ```
  sudo launchctl unload
  /Library/LaunchDaemons/com.toonboom.DatabaseServer.plist
  ```

  ```
  sudo launchctl load
  /Library/LaunchDaemons/com.toonboom.DatabaseServer.plist
  ```

- Verify the `com.toonboom.DatabaseServer.log` file located in `/tmp`. If there is no log file, start the Dbserver. Type the following in the Terminal:

  ```
  sudo launchctl load
  /Library/LaunchDaemons/com.toonboom.DatabaseServer.plist
  ```

If there is a log file, the last few lines will give you some indication as to the problem with the Dbserver.

- If you get an error in the log about the machine name, verify the `/USA_DB/Dbserver.conf` file and make sure the hostname matches the machine name of the Toon Boom Harmony 14.0 server.
- If you get errors about the port number, another service might be using port `5680`. You can change the port number in `Dbserver.conf` to any unused number above 5000.
- Restart the Dbserver. Type the following in the Terminal:

  ```
  sudo launchctl unload
  /Library/LaunchDaemons/com.toonboom.DatabaseServer.plist
  ```

  ```
  sudo launchctl load
  /Library/LaunchDaemons/com.toonboom.DatabaseServer.plist
  ```

Unable to Open Scenes on Mac OS X

On the Toon Boom Harmony 14.0 server, if you are unable to open a scene on a client machine, verify the following:

- The database and data directories were exported using NFS.
- Link Server, Samba and server.ini configurations for Windows clients.
- On Mac OS XToon Boom Harmony 14.0 clients, verify that the database and data directories were mounted using NFS.

resolution.conf Error Message on Mac OS X

When you open a scene, you might get an error message that says that the **resolution.conf** file cannot be found. This file is usually stored in the environment or job directory of your database. There is a **resolution.conf** file you can copy.

How to obtain a copy of the resolution.conf file

1. Open the following folder:

/Applications/Toon Boom Harmony [version][edition]/tba/resources/samples

2. Copy the **resolution.conf** file to one of the following folder:

- **/USA_DB/resolution**
- **/USA_DB/environments/[environment_name]**
- **/USA_DB/jobs/[jobs_name]**

Chapter 5: Web Control Center on Mac OS X

HarmonyWeb Control Center is included in your installation of Harmony 14.

Web Browser Notes

Some browsers don't support Java and will have problems opening scenes. The first time you open a scene in a browser, it might take a long time because it has to set Java.

For clients of the server, you can start Harmony from Safari by changing its preferences to run Java in unsafe mode for localhost. Safari added per-site controls for each applet.

How to run Java in unsafe mode in Safari

1. Go to the **Safari > Preferences > Security** page.

2. Click **Manage Website Settings for Internet** plugins, then select **Java**.

3. For the desired site entry (eg. localhost if running Web Control Center server locally) select the **Run in Unsafe** mode.

Installing Web Control Center on Mac OS X

How to install Harmony Web Control Center

1. From Finder, go to **Applications > Harmony 14.0 > Tools**.

2. Double-click on **Configuration Assistant**.

   The Welcome screen opens.
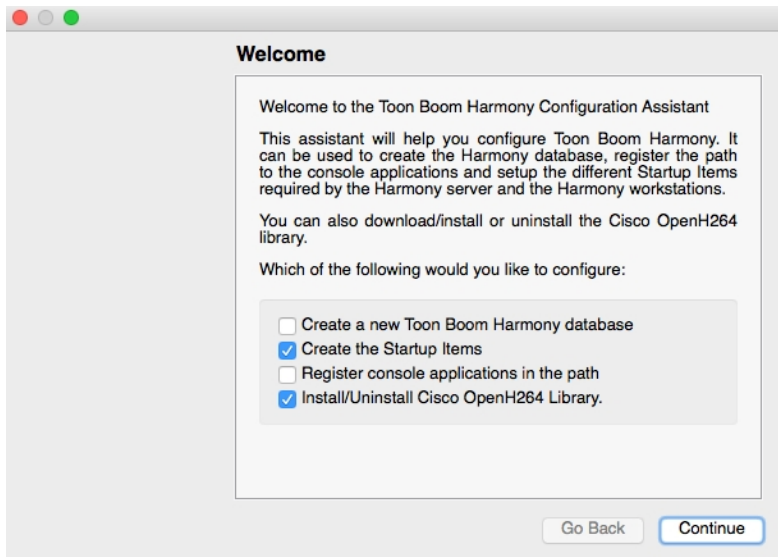
3. Select the **Create the Startup Items** and **Install/Uninstall Cisco OpenH264 Library** options and click **Continue**.

   The Create Startup Item screen opens.
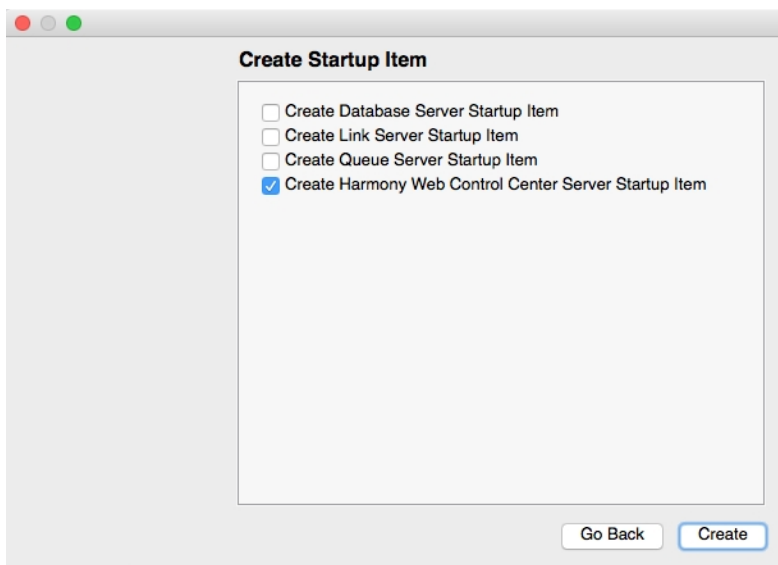
4. Select the **Create Harmony Web Control Center Server Startup Item** option and click **Create**.

   A message box opens.
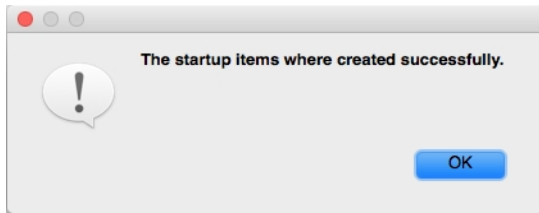
5. Click **OK**.

   The Cisco OpenH264 Library screen opens.
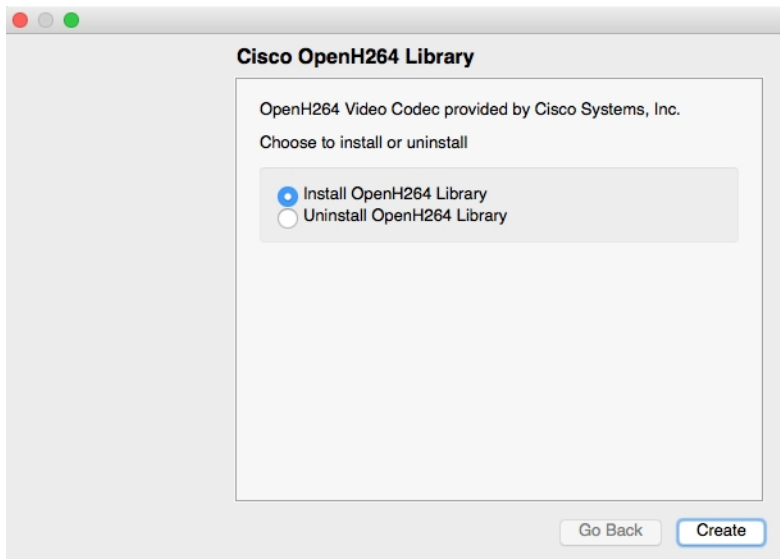
6. Select the **Install OpenH264 Library** option and click **Create**.

   The Finish screen opens.
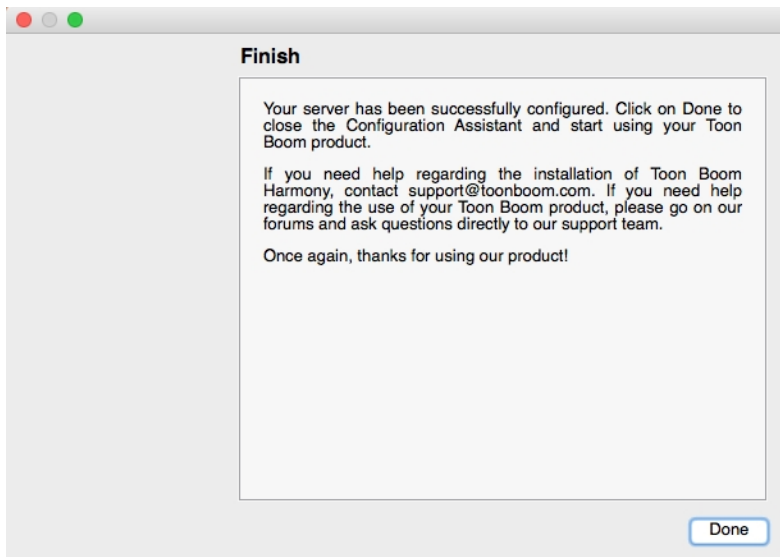
7. Click **Done**.

8. Open the Terminal and start the service:

```
sudo launchctl load
/Library/LaunchDaemons/com.toonboom.WebCCServer.plist
```

NOTE: You can use the Configuration Assistant to uninstall the OpenH264 library on Mac.

Manually Launching Web Control Center on Mac OS X

If you do not want to run Harmony Web Control Center as a service, you have the option to manually start the Harmony Web Control Center server.

How to manually run HarmonyWeb Control Center

1. Open the Terminal and go to **/Applications/Harmony 14 [edition]/tba/macosx/bin**.

2. Run **./webcc.sh**.

> **NOTE:** You can change the default port used by Harmony Web Control Center by modifying the `webcc.sh`. Open the file using a text editor and add the value of the parameter and the desired value. See *How to customize Harmony Web Control Center service* above.
>
> Other parameters can be customized—see Manually Launching Web Control Center on Mac OS X.

Starting and Stopping Web Control Center on Mac OS X

If at any point you need to start or stop the HarmonyWeb Control Center server, you can do so through launchctl in Mac OS X.

Start the service	`sudo launchctl load` `/Library/LaunchDaemons/com.toonboom.WebCCServer.plist`
Stop the service	`sudo launchctl unload` `/Library/LaunchDaemons/com.toonboom.WebCCServer.plist`

Alternatively, you can start or stop all Harmony services with the following commands:

Start all services	`/Applications/Toon BoomHarmony 14.0` `[edition]/tba/macosx/bin/Startus`
Stop all services	`/Applications/Toon BoomHarmony 14.0` `[edition]/tba/macosx/bin/Stopus`

Customizing Web Control Center on Mac OS X

You can customize some parameters, such as the default port, for the Harmony Web Control Center service.

How to customize the HarmonyWeb Control Center service

1. Stop the service if it is active—see .

2. Edit the `webcc.sh` file located the following location:

   `/Applications/Toon BoomHarmony 14.0 [edition]/tba/macosx/bin`

1. For example, after the last character, change the default port to 8081:

   ```
   #!/bin/sh -f

   # Script to start Harmony Web Control Center server

   DIRNAME=$(dirname "$0")

   cd "$DIRNAME"

   ./bin_3rdParty/node ../../cloud/server/app.js "$@" -port 8081
   ```

   The customizable parameters are:

Parameter	Description
-numWorkers n	Number of processes to service client requests. Default is number of CPU cores. Set to 0 to disable worker child processes. If the number of CPUs is high, performance could be impacted on all processes running on the server. If server is mostly for Web Control Center, increase the number for better performance.
-noAuth	Disables basic login/authorization verifications with the user database. Default: authorization enabled.
- port port	The port to which HarmonyWeb Control Center is deployed. Default: 8080.
-http port	Enables http protocol on specified port (can be used along with https to enable both). Default: http enabled unless -https is also enabled.
-exchange loc	Location (on disk) of top-level file exchange folder. Default: /USA_DB/exchange
-cacheDuration s	Number of seconds to keep data in cache. Default 3600. 0-> disable cache, 1-999999-> number of seconds to keep data in cache.
-allowAllOrigin	Enables webcc web service from all sources (enable cross-origin resource sharing). Default: Disabled.
-disableAnalytics	Disables Google Analytics tracking for all clients. Default: Enabled.
Options Related to SSL Server	
-https [port]	Enables https protocol on port 8443, unless a port override is provided. Default: Disabled.
-key key	<filename> the private key for the SSL session (works with -cert). Default: None.

-cert cert	\<filename\> the certificate filename for the SSL session (works with -key). Default: None.
-pfx file	\<filename\> alternate filename that includes both the private key and certificate for the SSL session. Default: None.

IMPORTANT: If you want to use Web Control Center outside your facility, you must use the options related to SSL Server to secure your connection.

2. Save and close the file.

3. Start the service—see *Customizing Web Control Center on Mac OS X* on page 134.

About Web Control Center Network Setup on Mac OS X

In order for Web Control Center to work and users to be able to access it over the network, you need to set up a static IP and open a port in your firewall.

Setting Up Static IPs for Web Control Center on Mac OS X

You will need to set up a static IP for accessing the Harmony Web Control Center application.

How to set up a static IP

1. Open the **System Preferences** window.

2. Click **Network**.

3. From the Location menu, select **Edit Locations.**
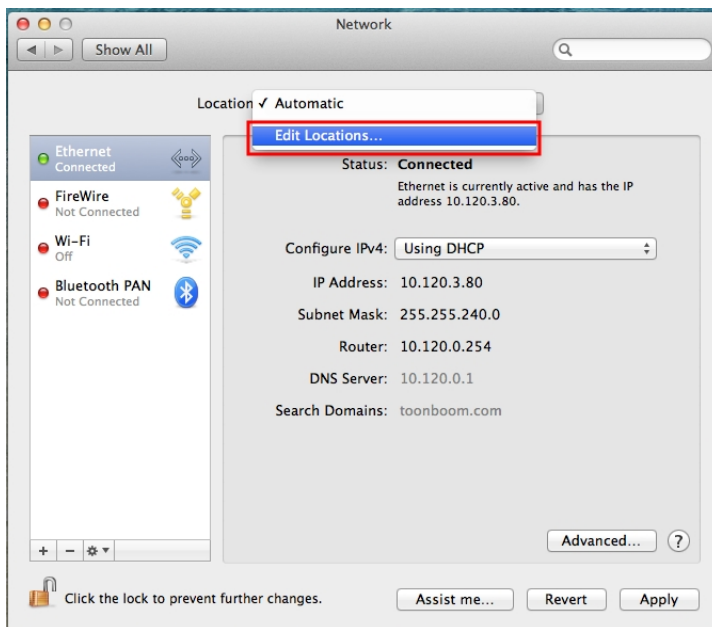
4. Click the plus sign (+) and enter an appropriate name. Click **Done**.
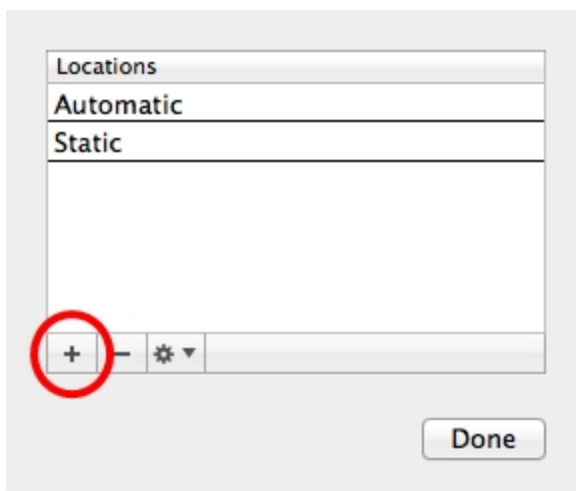
5. Configure your static IP with information pertaining to your connection and click **Apply**.
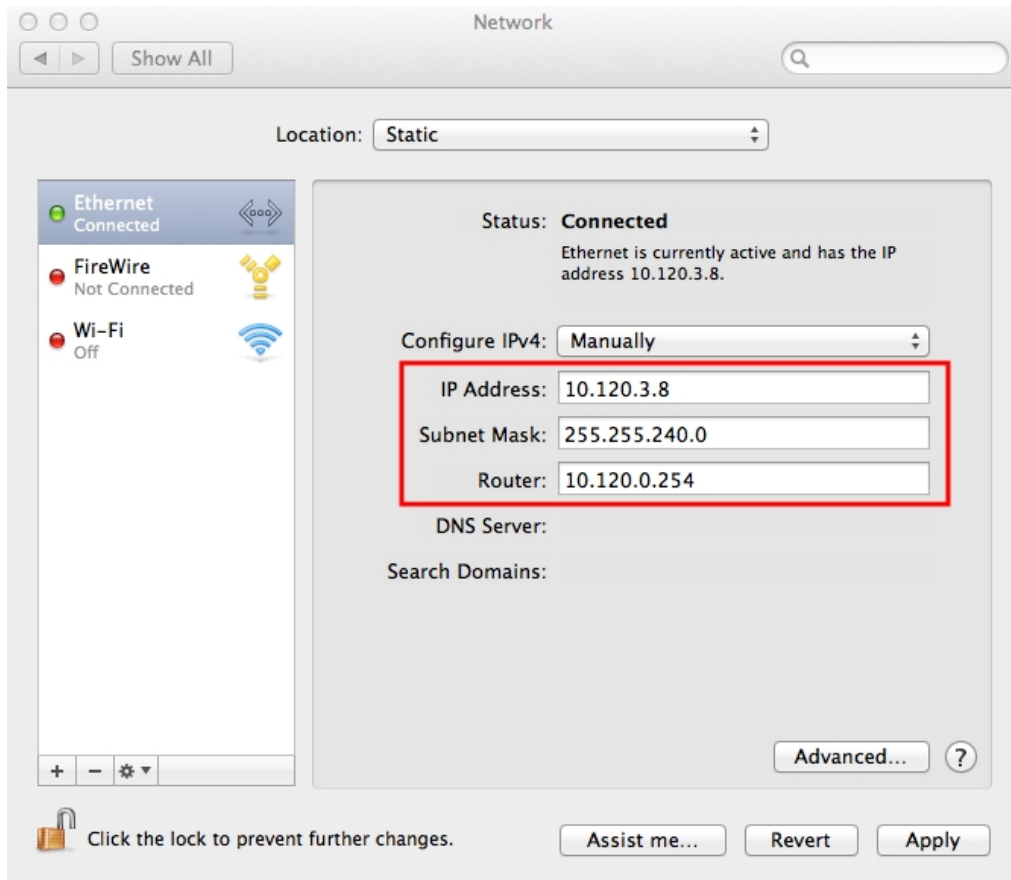
Opening Ports for External Connection for Web Control Center on Mac OS X

To allow other computers to access your HarmonyWeb Control Center server, it is necessary to open a port in your firewall. HarmonyWeb Control Center uses port 8080 by default.

How to open a port for external connection

1. Open the **System Preferences** window.

2. Click **Sharing**.

3. Click the lock icon at the bottom of the window to enable editing.

4. Enter your password when prompted.

5. Click **Security**.

6. Click the lock icon at the bottom of the screen to enable editing.

7. Enter your password when prompted.

8. Click **Turn Off Firewall**.
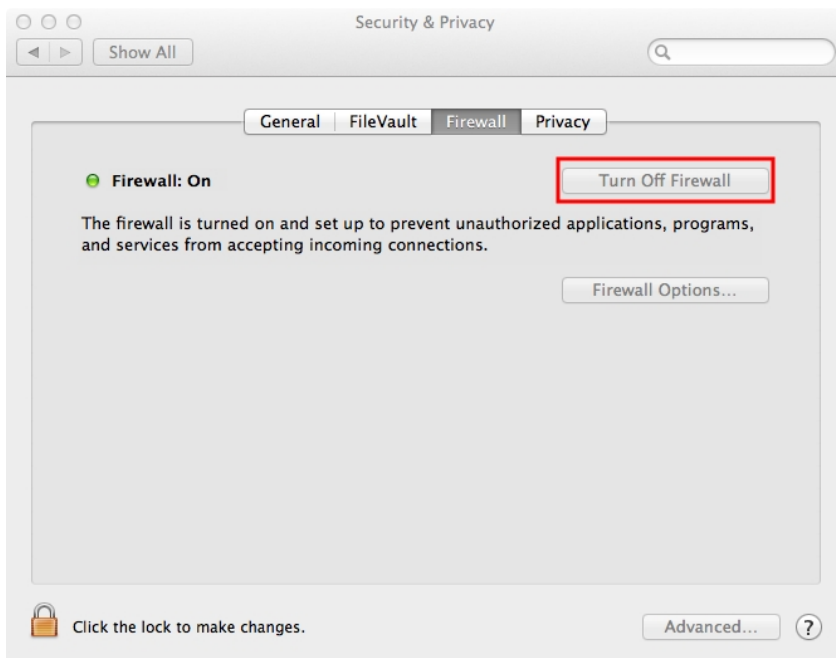
9. Close the System Preferences window.

Chapter 6: Linux Installation

This chapter explains how to install Harmony 14 on Linux CentOS, and assumes that you are familiar with Linux and working in a command shell.

Throughout this document, you will be creating files using a text editor. The **vi** text editor is commonly used and is part of the CentOS package. Another text editor you can use is **nano**. To start them, just type their name on the command line.

After completing these steps, verify the integrity of the installation and resolve any configuration issues.

Linux Pre-installation

Before installing Toon Boom Harmony, you must perform the following tasks:

- *Verifying the Minimum Requirements* on page 143
- *Obtaining the Product Code* on page 143

Verifying the Minimum Requirements

For the most current Toon Boom Harmony hardware requirements, visit:

- toonboom.com/products/harmony/system-requirements

You can also refer to the *Harmony and Your IT Department* white paper available from:

- Toon Boom Animation Sales Representative

- Toon Boom Animation Support at: store.toonboom.com/contact/support.

Obtaining the Product Code

You should obtain a product code from the Toon Boom licensor, so you can finish the installation process without having to wait for the activation code to arrive.

To obtain a Harmony 14 product code, send the following information to: licensor@toonboom.com.

- Your name and the name of your company
- Email address where to send the license file

Checking Your Pre-Installation Configuration on Linux

Explaining how to install CentOS Linux is beyond the scope of this documentation. For information on how to installe CentOS, refer to the CentOS documentation:

http://wiki.centos.org/documentation

Following are some considerations for CentOS Linux installation.

- Before installing Linux, make sure the distribution you will be installing is 64-bit. Harmony 14 will not work if the OS is not 64-bit.

- Harmony has been tested and certified for use on the GNOME windows manager.

- Harmony works best with a minimum screen resolution of 1280 pixels x1024 pixels x 24-bit. If CentOS cannot detect your monitor, configure the monitor as a generic CRT or an LCD with this resolution and a 60 Hz refresh rate. Alternatively, consult your monitor manufacturer's documentation.

- If you are new to Linux, it is recommended that you create a boot disk to facilitate recovery.

> **IMPORTANT:** To ensure that Harmony servers and clients can communicate without issue, the following document instructs how to disable the Linux firewall as well as SELinux. If you choose to do that, it is important to ensure that your domain has effective site-wide security measures to prevent unauthorized access to your network. Otherwise, you will have to manually configure your Linux firewall and SELinux to allow Harmony to function without issue without compromising your network security.

How to Install CentOS with the firewall and SELinux disabled

1. When installing CentOS Linux, perform a **Custom** installation and select to install **Everything** to ensure that you get all the packages necessary to run Harmony.

2. When prompted, select **Firewall as disabled**. Your file server should be behind a firewall, but not be configured as one.

3. When prompted, select **SELinux as disabled**.

How to disable the firewall on CentOS 6, RedHat Entreprise Linux 6 or other systems using the iptables service

1. In a terminal, enter the following commands:

```
sudo chkconfig iptables off

sudo service iptables stop
```

How to disable the firewall on CentOS 7, RedHat Entreprise Linux 7 or other systems using the firewalld service

1. In a terminal, enter the following commands:

```
sudo systemctl disable firewalld
```

```
sudo systemctl stop firewalld
```

How to disable SELinux

1. Verify if SELinux is enabled by reviewing the contents of the SELinux config file:

   ```
   more /etc/selinux/config
   ```

2. Locate the line that starts with `SELINUX=` and verify that the value is set to disabled:

   ```
   # This file controls the state of SELinux on the system.

   # SELINUX= can take one of these three values:

   #   enforcing - SELinux security policy is enforced.

   #   permissive - SELinux prints warnings instead of enforcing.

   #   disabled - No SELinux policy is loaded.

   SELINUX=disabled

   # SELINUXTYPE= can take one of these two values:

   #    targeted - Targeted processes are protected.

   #    mls - Multi Level Security protection.

   SELINUXTYPE=targeted
   ```

3. If the value is set to something other than `disabled`, open the file using a text editor and change the value to `disabled`.

4. Once the file is modified and saved, reboot the computer.

Updating NVIDIA Drivers on Linux

You must install the recommended drivers for your NVIDIA video card, otherwise Harmony will not function.

In general, you should use the latest drivers. New drivers tend to resolve past driver issues. If you already have NVIDIA drivers installed, find the version number by typing:

```
cat /var/log/Xorg.0.log | grep "X Driver"
```

How to install the NVIDIA driver

1. Download the Linux driver from the NVIDIA website:

    www.nvidia.com/object/unix.html

2. As a root user, switch to text mode when installing video card drivers.

    ```
    /sbin/init 3
    ```

3. Install the NVIDIA kernel driver.

    ```
    sh /[path_to_driver_file]/NVIDIA-Linux-x86_64-[driver_name].run
    ```

4. Once the NVIDIA driver installation is successful, revert to graphical mode by starting X.

    ```
    /sbin/init 5
    ```

    OR

    ```
    startx
    ```

IMPORTANT: Some recent Linux distributions include an open source driver for NVIDIA graphic cards called "Nouveau". This driver must be disabled in order to install the NVIDIA drivers—refer to the NVIDIA documentation.

Resolving Keyboard Conflicts on Linux

Some default keyboard shortcuts conflict with the shortcuts in Harmony and can prevent normal user operation.

How to change the keyboard shortcuts

1. In the menu, go to **System > Preferences > Windows.**

   The Window Preferences dialog box opens.

2. In the Movement Key section, select the **Super(or "Windows logo")** option.

About Upgrades on Linux

At this point, it is assumed that the USAnimation, Opus or Toon Boom Harmony binaries (program files) are installed on the Toon Boom Harmony server and are mounted by all the Linux clients. When you update the installation on the server, all clients will load the new binaries from the central mount point.

When performing an upgrade, pick a time when Toon Boom Harmony production is slow or stopped. During the upgrade, no users can run any of the Toon Boom Harmony modules and all rendering jobs must be stopped or completed.

Updating Previous Versions on Linux

How to update previous versions

1. Verify that no one is running any versions of USAnimation, Opus or Toon Boom Harmony. All of their nodes must be closed on the server and all the clients.

2. Verify that all batch rendering and vectorizing are completed or that the queues are empty. You can check the status of Vectorize and Render queues from the Control Center module.

   ▸ In the Control Center module, use the Queue menu, **Environment > Vectorize Queue** or **Render Queue** to open the Vectorize queue or Rendering queue for each environment. The queue should either be empty or the status of all jobs should be **Completed**.

3. Stop all services running on the server and the clients. Depending on the services you have running, type the following commands in the order presented:

   ```
   /etc/init.d/USAnimation_queues stop
   /etc/init.d/USAnimation_link_srv stop
   /etc/init.d/USAnimation_dbserver stop
   /etc/init.d/USAnimation_webcc stop
   /etc/init.d/USAnimation_flexlm stop
   ```

> **NOTE:** Some recent Linux distributions include an open source driver for NVIDIA graphic cards called "Nouveau". This driver must be disabled in order to install the NVIDIA drivers—refer to the NVIDIA documentation. It's not necessary to delete the startup scripts from `/etc/init.d/` as the Harmony install script will update them automatically.
> It's important to stop the queues on all rendering machines. If the queues are running, those binaries will be locked and the installer cannot update them.

4. Back up Harmony's configuration files by copying them to a location where you can recover them later. Go to the folder where the previous version of Harmony is installed and back up the configuration files in the `etc` folder:

   - Version 12 and later: **/usr/local/ToonBoomAnimation/harmony[edition]_[version]/etc**
   - **Version 7.8 to 11.2:** `/usr/local/ToonBoomAnimation/harmony_[version]/etc`
   - **Version 7.5 and earlier:** `/usa/etc`

   Back up the following configuration files:
   `Manager.conf`

   `Scan.conf` (If a scanner was configured to run with the Harmony Scan node on this computer)

   `server.ini` (If the server is configured to receive connections from Windows clients)

   `VectOptions.conf` (If a vectorization preset had been added to it)

   If plug-ins were added to the Harmony installation, back up these files as well.

- **Version 12 and later:**`/usr/local/ToonBoomAnimation/harmony[edition]_`
  `[version]/lnx86_64/plugins`

- **Version 10.0 to 11.2:** `/usr/local/ToonBoomAnimation/harmony_[ver-`
  `sion]/lnx86_64/plugins`

- **Version 7.8 and 9.2:** `/usr/local/ToonBoomAnimation/harmony_[ver-`
  `sion]/lnx86/plugins`

- **Version 7.5 and earlier**: `/usa/lnx86/plugins`

You can back up the entire Harmony folder by renaming it to make sure all config files are kept.

5. Clean the menu. The shortcut to start the previous application should be removed from the menu. There are two ways to do this:

   - Delete them from the command line by doing the following:

   Change to:

   `cd /usr/share/applnk`

   - Delete the old shortcuts:

   Version 7.8 and later: **`rm ToonBoom-Harmony_*`**

   Version 7.5 and earlier: **`rm USAnimation-*`**

   The shortcuts will be removed from the menu the next time you log in.

6. Uncompress the distribution file:

   `tar xvfz [path_to_distribution_file]/[filename].tar.gz`

7. Switch to the directory that was extracted from the **`tar.gz`** file.

8. Run the install script specifying the options required for your server.
   `./install -b -d -l -p -u -kde`

Option	Default Value	Details
`-binaries` **`-b`**	Inactive	Installs binaries and configuration files required to run Harmony applications. Include this option when performing a fresh install or when you upgrade Harmony. Use option when installing Harmony on the server.
`-dbserver` **`-d`**	Inactive	Installs the **`tbdbserver`** as a daemon. This is the Harmony database server daemon. It processes data requests from clients on the network.

Option	Default Value	Details
		This option also creates a fresh database when there is no **/USA_DB** directory. Use this option when installing Harmony on the server and on the standalone machine.
-help **-h**	Inactive	Displays script usage information.
-kde	Inactive	Adds Harmony entries to the KDE application menu.
-linkserver **-l**	Inactive	Installs the **link_server** daemon. This daemon is required for Linux or IRIX servers to create symbolic links for Windows clients. If you have Windows clients, you must install this daemon on the server.
-process **-p**	Inactive	Installs the **process** daemon to manage batch processing (vectorizing and rendering) for Harmony. Usually several computers participate in the batch processing pipeline. This parameter is required if this computer is going to batch process files for Harmony.
-quiet **-q**	Inactive	Does not output any information during installation.
-schemeregister **-s**	Inactive	Registers Harmony URLs to open in harmony[edition]_14 with the compatible desktop specified in the DE environment variable (using xdg-open).
-target <DIRECTORY> **-t <DIRECTORY>**	**/usr/local/ ToonBoomAnimation/harmony [edition]_14**	Directory where the installer will install the **harmony [edition]_14** tree.
-updatedict	Inactive	Updates the **dict** files in the database. Needs to be

Option	Default Value	Details
`-u`		specified when upgrading from a previous version.

`-webccserver`
 	
`-w`
	Inactive	Installs the Web Control Center as a daemon.

NOTE: Options MUST be specified separately for example "-d -l". If you are running this script from a platform other than Linux be advised that no daemons or Kde menu can be installed. At least one option within the following MUST be specified.
- 'daemons' (i.e. -d -l -p)
- menu (-kde)
- binaries (-b)
Typically a Harmony_Edition lnx86_64 server will be installed with options "-b -d -l -kde -p -u" and a client with options "-p -kde".

Restoring Backup Files on Linux

- Copy the `server.ini`, `Manager.conf` and any other files you backed up to the new installation:

  `/usr/local/ToonBoomAnimation/harmony[edition]_14/etc/`

Editing usabatch .cshrc on Linux

Before you can start the Harmony services, you must make modifications to the **.cshrc** in **usabatch**'s home.

How to edit the usabatch .cshrc

1. If you are not logged in as **usabatch**, type the following:

   su - usabatch

2. Open the **.cshrc** file in usabatch's home:

   vi .cshrc

3. Edit **.cshrc.**

   if (-f /usr/local/ToonBoomAnimation/harmony[edition]_14/etc/usa_cshrc) then

   source /usr/local/ToonBoomAnimation/harmony[edition]_14/etc/usa_cshrc

   endif

   umask 0

4. Save and quit.

Editing Other Users .cshrc on Linux

The `.cshrc` of all other users of Harmony should be edited to remove the lines that are used to source the `usa_cshrc` file. It is not required to source this file any longer as the path to the application was added to the PATH variable via the files in `/etc/profile.d`.

How to edit other users .cshrc

- Remove the following line if it exists:

    Versions 7.8 and 9.2:

    ```
    source /usr/local/ToonBoomAnimation/harmony_[version]/etc/usa_cshrc
    ```

    Version 7.3:

    ```
    source /usa/etc/usa_cshrc
    ```

Editing the /etc/skel/.cshrc on Linux

- Open the file `/etc/skel/.cshrc` (if it exists) and remove the lines that source the `usa_cshrc` file.

Restarting Harmony Services on Linux

How to restart the Harmony services

1. Once the license is properly configured and started, start the Harmony services that are required on your server in the following order:

   `/etc/init.d/USAnimation_dbserver restart`

   `/etc/init.d/USAnimation_link_srv restart`

   `/etc/init.d/USAnimation_queues restart`

2. Check the logs to verify that the services started properly.

   `/tmp/lmgrd.log`

   `/tmp/tbdbserver.log`

   `/tmp/tbprocess.log`

   `/tmp/Link_srv.log`

3. Start Harmony and open a scene to see if the server works properly.

Updating the nfs Export on Linux

If the Linux server has Linux or Mac OS X clients, the nfs exports need to be updated with the path of the new Harmony binaries.

How to update the nfs export

1. Open the file **/etc/exports**. If it exists, change the path of :
   /usa to **/usr/local/ToonBoomAnimation/harmony[edition]_14**

   /USA_DB *(rw,sync)

   /usadata000 *(rw,sync)

   /usr/local/ToonBoomAnimation/harmony[edition]_14 *(rw,sync)

2. Run the following command to apply the change:

   /usr/sbin/exportfs -r

3. Test the exports:

   /usr/sbin/showmount -e

   Export list for [hostname].toonboom.com:

   /USA_DB *

   /usadata000 *

   /usr/local/ToonBoomAnimation/harmony[edition]_14 *

Updating the smb.conf on Linux

When upgrading a Linux server, a small modification must be made to the `usa` share path to point to the new install. "`/etc/samba/smb.conf`" and change the path under the [usa] share to the path of the new Harmony install.

It is always a good idea to verify the configuration of the `smb.conf` file.

How to update the smb.conf file

1. Edit `/etc/samba/smb.conf` and and change the path under the `[usa]` share to the path of the new Harmony install.

   ```
   [usa]

   comment = Harmony binaries & stuff

   browseable = yes

   read only = no

   guest ok = no

   create mask = 0777

   directory mask = 0777

   path = /usr/local/ToonBoomAnimation/harmony[edition]_14
   ```

2. Once the file is saved, verify that you have not made any basic syntax errors:

   ```
   testparm
   ```

   The shell output should look like this:

   ```
   Load smb config files from /etc/samba/smb.conf

   Processing section "[homes]"

   Processing section "[printers]"

   Processing section "[USA_DB]"

   Processing section "[usa]"

   Processing section "[usadata000]"

   Processing section "[tmp]"

   Loaded services file OK.

   Server role: ROLE_STANDALONE
   ```

3. Press **Enter** to see a dump of your service definitions.

NOTE:
If the `smb.conf` was configured according to the 7.3 documentation, the `testparm` command

---

may return the following error:

```
Level II oplocks can only be set if oplocks are also set.
```

To get rid of this error, add the `level2 oplocks = No` parameter in the global section of the `smb.conf`—see *[/etc/init.d/smb restart](#)* on page 160 for all the parameters required in the `smb.conf`.

4. Restart `smb`:

```
/etc/init.d/smb restart
```

How to verify the parameters required in the smb.conf file

1. Verify the configuration of the `smb.conf`.

```
/etc/samba/smb.conf
```

Parameters needed in the [global] section:

```
encrypt passwords = yes


blocking locks = no

oplocks = no

level2 oplocks = no


follow symlinks = yes

unix extensions = no

wide links = yes
```

Default parameters for the shares:

```
[USA_DB]

comment = Toon Boom Harmony Database

browseable = yes

read only = no

guest ok = no

create mask = 0777

directory mask = 0777

path = /USA_DB


[usa]
```

```
comment = Toon Boom Harmony binaries & stuff

browseable = yes

read only = no

guest ok = no

create mask = 0777

directory mask = 0777

path = /usr/local/ToonBoomAnimation/harmony[edition]_14


[usadata000]

comment = Toon Boom Harmony data 000

browseable = yes

read only = no

guest ok = no

create mask = 0777

directory mask = 0777

path = /usadata000
```

2. Always perform a **testparm** after making changes to the **smb.conf**.

   ```
   testparm
   ```

3. Restart the **smb** service.

   ```
   /sbin/service smb restart
   ```

4. Reboot the server, if possible, to verify that all the services are properly started.

5. Once the server is booted, check all the logs to see if the services are running properly.

   ```
   /tmp/lmgrd.log
   /tmp/tbdbserver.log
   /tmp/tbprocess.log
   /tmp/Link_srv.log
   ```

About Harmony Installation on Linux

After you have installed CentOS Linux, you must create the `usabatch` user account in which many Toon Boom Harmony services run.

Then you can install Harmony. There are a number of options you can choose from when installing Harmony.

Creating usabatch Users on Linux

With CentOS Linux installed, you will create the **usabatch** user account. You must also set the **usabatch** user to use the **tcsh** shell and create a **.cshrc** file to start the Toon Boom Harmony environment whenever the user logs on.

You must create user accounts for all Toon Boom Harmony users. All user accounts you create on CentOS Linux that will also run Harmony must be set up in the same way as the **usabatch** account, except for the user name and password.

How to create user accounts

1. In a shell, log in as the root user.

2. Using a text editor, create the file **/etc/skel/.cshrc**. This file should contain the following line:

   ```
   umask 0
   ```

NOTE: The above character is a zero.

3. Create the user **usabatch**.

   ```
   useradd -m -s /bin/tcsh -r usabatch
   ```

NOTE: Make sure **tcsh** is installed in **/bin/tcsh**. If it is not, install it using **yum install tcsh**.

4. Enter the password for user **usabatch**.

   ```
   passwd usabatch
   ```

   Then, type **usabatch** as a password.

To create additional users, repeat steps 3 and 4, replacing **usabatch** with the user name and password of the new user.

NOTE: Setting umask to zero (0) ensures that Toon Boom Harmony users can read and write all files in the database, which is essential for sharing their work.

5. If you are not logged in as **usabatch**:

   ```
   su - usabatch
   ```

6. Open the **.cshrc** file in **usabatch**'s home. The **.cshrc** file should contain the following:

   ```
   if ( -f /usr/local/ToonBoomAnimation/harmony[edition]_14/etc/usa_cshrc )
   then
   ```

```
source /usr/local/ToonBoomAnimation/harmony[edition]_14/etc/usa_cshrc

endif


umask 0
```

7. Save and quit.

8. Log out of **usabatch** to return to the root user.

Running the Installation Script on Linux

In a client-server network or in a standalone setup, you must install Harmony, as well as the following services on the server or the standalone computer:

tbdbserver	Controls access to the database.
License service	Controls the number of licenses and features available to Harmony users.
Batch processing	Controls batch vectorizing and rendering queues.
Web Control Center	Allows download and upload of scenes from the database.
Link server	If you are installing Harmony on a Mac OS X server that will support Windows clients, you must install the Link server.

To install Harmony programs and services, you must run the installation package. Before you start the installation, make sure you are currently logged in the system with administrator rights on your local computer.

See below the installation options.

Option	Default Value	Details

`-binaries`
 	
`-b`
	Inactive	Installs binaries and configuration files required to run Harmony applications.
		
		Include this option when performing a fresh install or when you upgrade Harmony.
		
		Use option when installing Harmony on the server.

`-dbserver`
 	
`-d`
	Inactive	Installs the `tbdbserver` as a daemon. This is the Harmony database server daemon. It processes data requests from clients on the network.
		
		This option also creates a fresh database when there is no `/USA_DB` directory.
		
		Use this option when installing Harmony on the server and on the standalone machine.

`-help`
 	
`-h`
	Inactive	Displays script usage information.

`-kde`	Inactive	Adds Harmony entries to the KDE application menu.

`-linkserver`
 	
`-l`
	Inactive	Installs the `link_server` daemon.
		
		This daemon is required for Linux or IRIX servers to create symbolic links for Windows

Option	Default Value	Details
		clients.
		If you have Windows clients, you must install this daemon on the server.
-process **-p**	Inactive	Installs the **process** daemon to manage batch processing (vectorizing and rendering) for Harmony. Usually several computers participate in the batch processing pipeline. This parameter is required if this computer is going to batch process files for Harmony.
-quiet **-q**	Inactive	Does not output any information during installation.
-schemeregister **-s**	Inactive	Registers Harmony URLs to open in harmony[edition]_14 with the compatible desktop specified in the DE environment variable (using xdg-open).
-target **<DIRECTORY>** **-t <DIRECTORY>**	**/usr/local/** **ToonBoomAnimation/harmony** **[edition]_14**	Directory where the installer will install the **harmony [edition]_14** tree.
-updatedict **-u**	Inactive	Updates the **dict** files in the database. Needs to be specified when upgrading from a previous version.
-webccserver **-w**	Inactive	Installs the Web Control Center as a daemon.

NOTE: Options MUST be specified separately for example "-d -l". If you are running this script from a platform other than Linux be advised that no daemons or Kde menu can be installed. At least one option within the following MUST be specified.
- 'daemons' (i.e. -d -l -p)
- menu (-kde)
- binaries (-b)
Typically a Harmony_Edition lnx86_64 server will be installed with options "-b -d -l -kde -p -u" and a client with options "-p -kde".

How to run the installation script

1. Uncompress the distribution file.

   ```
   tar xvfz [path_to_distribution_file]/[filename].tar.gz
   ```

2. Change to the directory that was extracted from the **tar.gz** file.

3. Run the install script as the root user, specifying the options required for your server. There are a number of options that control the installation process. For a typical Harmony server or a standalone machine, run the installation script with the following parameters:

   ```
   ./install -b -d -kde
   ```

   With these options, the binaries are installed, and the database server is installed and set up to start automatically. These options also add Harmony entries to the application menu.

   If your Linux server will be serving Windows clients, add the **-l** option.

   If you are setting up the clients for batch rendering, add the **-p** parameter. It is not recommended to configure batch processing on the server as it will slow it down.

About Configuration on Linux

After installing Harmony, configure the database parameters depending on your machine's setup and configure third-party software.

Configuring License Servers on Linux

Now that you have installed Harmony, you must set up the licensing so it can run on the server and client machines.

How to configure the license server on Linux

1. Do one of the following:
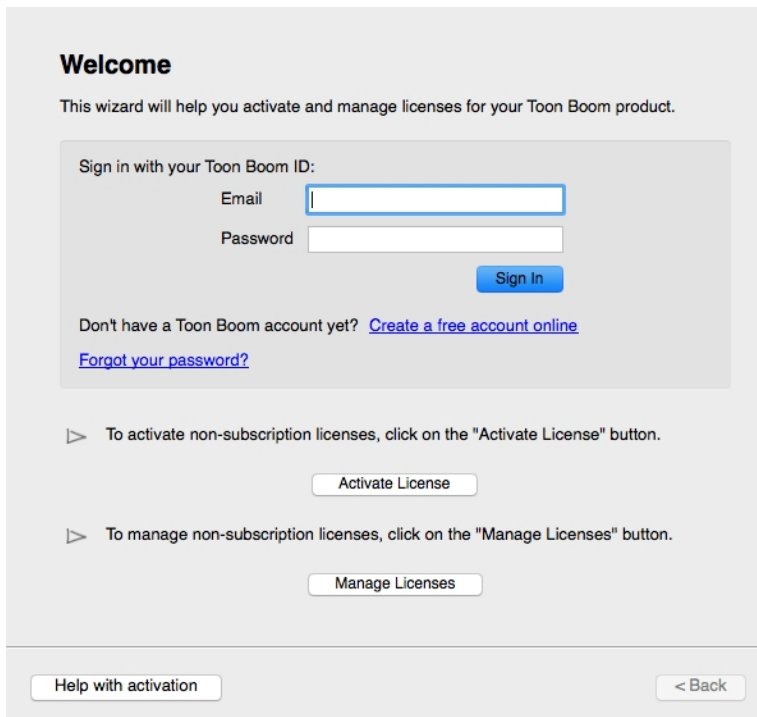
   - Start the License Wizard:

   `/usr/local/ToonBoomAnimation/harmony[edition]/lnx86_64/bin/LicenseWizard`

   - Start Harmony.

   The Welcome screen appears.

2. Click **Activate License**.

   The Activation Options screen appears.

3. Click **Internet Activation.**

The Internet Activation Options screen appears.

4. Click **Network License.**

The Internet Activation - Network License screen appears.

5. Do the following:

- In the Product Code field, enter your product code.
- In the License Count field, enter the number of licenses the product code grants you.

NOTE: Once activated and returned to the activation server, a server license cannot be activated again. Make sure you are activating the license on the correct computer with the proper license count.

6. Click **Activate**.

   The Install License Server screen appears.

7. Click **Install License Server**.

The **license.dat** file is created in **/usr/local/flexlm/licenses/license.dat.** The License Server is also configured and started.

The **license.dat** created contains the following:

```
SERVER this_host 0 ANY
VENDOR toonboom
USE_SERVER
```

NOTE:
Both steps can be done manually if needed.

- To configure the License Server to start automatically at boot:

    ```
    /sbin/chkconfig/USAnimation_flexlm on
    ```

- To start the License Server manually:

    ```
    /etc/init.d/USAnimation_flexlm start
    ```

The Activation Successful screen appears.

8. Click **Finish** to exit the wizard.

9. Verify that the FlexLM license is working properly:

    ```
    lmutil lmstat -a
    ```

You can can also look at the log:

```
less /tmp/lmgrd.log
```

If the FlexLM service needs to be restarted:

```
/etc/init.d/USAnimation_flexlm restart
```

Setting Up the Database Server on Linux

After installation, set up the database configuration for computers running Harmony.

The Dbserver controls all interactions with the contents of the Toon Boom Harmony database. It processes all requests to open, read or update files, keeping track of locked files so they cannot be edited by anyone.

When installing Harmony on the server for the first time, the Harmony database folder is created automatically. Verify that the folder was created correctly. Look for the **USA_DB** folder in the root folder **/USA_DB**. If you do not see the folder, then create it using the **create_usa_db** script:

```
/usr/local/ToonBoomAnimation/harmony[edition]_14/lnx86_64/bin/create_
usa_db /USA_DB
```

Next, create and edit the **Dbserver.conf** file to set up the Dbserver. Then run a script to start it.

How to set up the Dbserver

1. Using a text editor, create the **Dbserver.conf** file in **/USA_DB/**.

2. Type the following in the **Dbserver.conf** file:

   Assuming the machine name of the Dbserver is **harmonyserver** , the lines in **Dbserver.conf** would look like this:

   ```
   hostname harmonyserver

   port 5678

   debug_port 5680
   ```

> NOTE: You can find the example of **Dbserver.conf** in **/usr/local/ToonBoomAnimation/harmony [edition]_14/resources/samples**. You can copy and paste it from there and change it accordingly.

3. Save and close the **Dbserver.conf** file.

4. Change the permissions on the **Dbserver.conf** file to 644.

   ```
   chmod 644 Dbserver.conf
   ```

5. Start the Dbserver service.

   ```
   /sbin/service USAnimation_dbserver start
   ```

   A message appears in the shell indicating that the script was successful. A log file is generated in **/tmp/tbdbserver.log**.

6. Verify the log file to ensure there are no errors written to the log.

Creating Harmony File Systems on Linux

After you set up and start the license and Dbserver, you are ready to create the file system for the Toon Boom Harmony database.

How to create the Toon Boom Harmony file system

1. Change directories to the root:

   cd /

2. Create the following directory:

   mkdir usadata000

3. Change the permission of the following folders to 777:

   /usr/local/ToonBoomAnimation/harmony[edition]_14

   /USA_DB

   /usadata000

   chmod -R 777 /usr/local/ToonBoomAnimation/harmony[edition]_14 /USA_DB /usadata000

   You are now ready to test your installation on the server/standalone machine.

About Scene Data Sharing on Linux

This section shows you how to share the Harmony scene data for different network configurations.

Configuring NFS Sharing on Linux

Before you can install Harmony on Linux and Mac OS X, you must share the database folders over your network using the NFS protocol so that they can be accessed by clients.

How to configure the NFS daemon to share your database folders over the network

1. First, enable and start the NFS and NFS lock daemons on your machine to enable file sharing through NFS:

   chkconfig nfs on

   service nfs start

   chkconfig nfslock on

   service nfslock start

2. Then, open the configuration file **/etc/exports** in **vi** to add your database's share directories:

   vi /etc/exports

3. Add the following lines to **/etc/exports**:

```
/usr/local/ToonBoomAnimation/harmonyPremium_14 *(rw,sync)
/USA_DB *(rw,sync)
/usadata000 *(rw,sync)
```

4. Run the export command to update the NFS daemon with the new configuration:

   exportfs -r

5. Type this command to verify that the new configuration is in effect:

   showmount --exports

   The utility will list all the directories currently shared through NFS.

About Enabling Windows Clients for a Linux Server

Because of the differences in architecture, allowing Windows clients to connect to a Linux-based database server requires extra set-up, that is:

- Windows uses the **Samba** protocol to share files. This protocol must be installed and configured to share your database's directories on the network.

- Toon Boom Harmony's **Link Server** daemon must be configured to allow Windows clients to create symbolic links on the Linux server.

- The **server.ini** configuration file must be set up to allow the Toon Boom Harmony Configuration Wizard to detect and set-up the database's shared folders on client workstations.

Configuring Link Servers on Linux

If you are running Harmony in a mixed environment where the server is on CentOS Linux and some of the clients are running Windows, you must start the Link Server. This server makes it possible for Windows machines to communicate with the database.

How to configure the Link Server on the server in a mixed network environment

1. Use a text editor to create the **Link_srv.conf** file in the **/USA_DB** directory. This file must contain the following:

   hostname harmonyserver

   port 5679

   Replace **harmonyserver** with the name of the database server. You can find the name of a computer by using the **uname -n** command.

NOTE: You can find the example of **Link_srv.conf** under **/usr/local/ToonBoomAnimation/harmony[edition]_14/resources/samples/**. Copy and paste it from there and change it accordingly.

---

2. Change the permissions on the **Dbserver.conf** file to **644**.

   chmod 644 Link_srv.conf

3. Start the Link Server.

   service USAnimation_link_srv start

   A message appears in the shell indicating that the script was successful. A log file is generated in **/tmp/Link_srv.log**.

4. Verify this log to ensure there are no errors written to it.

Configuring Samba on Linux

In order to allow Windows clients to access the database's directories remotely, they must be shared by the server using the Samba protocol.

Samba may not be installed by default on your machine. You can install it using your distribution's package manager, then enable it as a daemon and configure it to share your database files.

Installing and configuring Samba to share your database folders over the network

1. In a terminal, type the following command to install Samba:

   ```
   yum install samba
   ```

   If samba is not installed, you will be prompted to confirm the installation. Confirm and wait for the installation to finish. If it is already installed, yum will advise you of this and quit.

2. Open the Samba configuration file to configure Samba and add your database directories as Samba shares:

   ```
   vi /etc/samba/smb.conf
   ```

3. Under the **[global]** section of smb.conf, add the following options:

   ```
   [global]
   encrypt passwords = yes
   blocking locks = no
   oplocks = no
   level2 oplocks = no
   follow symlinks = yes
   unix extensions = no
   wide links = yes
   ```

4. At the bottom of the Samba configuration file, add the following:

   ```
   [USA_DB]
   comment = Harmony Database
   browseable = yes
   read only = no
   guest ok = no
   create mask = 0777
   directory mask = 0777
   path = /USA_DB
   [usa]
   comment = Harmony Binaries and Configuration
   browseable = yes
   read only = no
   guest ok = no
   create mask = 0777
   directory mask = 0777
   ```

```
path = /usr/local/ToonBoomAnimation/harmony[edition]_14
[usadata000]
comment = Harmony Scene Data 000
browseable = yes
read only = no
guest ok = no
create mask = 0777
directory mask = 0777
path = /usadata000
```

5. Verify that Samba understands the parameters in its configuration file with the following command:

    testparm

6. Next, you must create a Samba user. Its username and password will be used as credentials to connect to the share from client workstations:

    smbpasswd -a usabatch

    This will create the user **usabatch** and prompt you to type in their password.

7. Enable and start the Samba daemon:

    chkconfig smb on

    service smb start

Configuring server.ini on Linux

In order to configure you Windows clients, you must create the database server's `server.ini` configuration file. When a Windows client will attempt to connect to the database server using the Toon Boom Harmony Configuration Wizard, the latterwill fetch this configuration file and use its information to automatically set up their connection to the database server and its scene data directories.
(missing or bad snippet)

How to configuring the server.ini file on Linux

1. In a terminal, type in the following command:

   `vi /usr/local/ToonBoomAnimation/harmony[edition]_14/etc/server.ini`

1. In `server.ini`, type in the information for the database server as well as the directory name and hostname of every scene data server in your network, like in the following example:

   ```
   [WizardConfig]
   ServerName=harmonyserver
   InstallationDrive=C
   UsaShare=usa
   UsadbDrive=C
   UsadbShare=USA_DB
   FileSystem0=C usadata000 harmonyserver
   ```

   As you can see, at the end of the file, you must type in a line containing the drive letter, share name and host name of every scene date directory used by your Harmony database.

   In this case, the drive letter—`C`, in this example—is used to indicate to the clients on which drive the share should be mounted. Therefore, it's strictly to streamline the client configuration and has nothing to do with the file server itself.

   > **IMPORTANT:** The variable name and directory names in `server.ini` are case sensitive.

2. Restart the database server to ensure its configuration is applied.

Setting Up Harmony Clients on Linux

To run Toon Boom Harmony on Linux clients, you must mount the binaries and data directories stored on the server. To access the directories exported from the server, the network file server (NFS) and NFS locking services must be running.

How to start NFS services and mount Toon Boom Harmony directories on clients

1. On the client machine, enable and start the NFS and NFS lock daemons:

   ```
   chkconfig nfs on

   service nfs start

   chkconfig nfslock on

   service nfs start
   ```

2. Create the directories in which the shared database folders will be mounted:

   ```
   mkdir /USA_DB

   mkdir /usadata000
   ```

3. Edit your machine's file system table to automatically mount the Harmony database's shared folder to the directories you should created:

   ```
   vi /etc/fstab
   ```

4. In the file system table, add one entry for the database server's `USA_DB` share, as well as for each `usadata` share your server requires, in the following format:

   ```
   server-name:/share-name /local-mount-point nfs rw,soft,intr,bg 0 0
   ```

   For example, if your database and the scene data are all stored on the same machine, you could add the following entries, where `servername` is replaced with the hostname of the database server:

   ```
   server-name:/USA_DB        /USA_DB       nfs  rw,soft,intr,bg  0   0
   server-name:/usadata000  /usadata000  nfs  rw,soft,intr,bg  0   0
   ```

   > **NOTE:** If you encounter any problem when mounting the shares, try adding `,vers=2` at the end of the `rw,soft,intr,bg` block so as to use the second version of NFS.

5. At a command line, attempt to mount all the shares specified in the file system table with the following command. This will attempt to mount your database's shared directories on your local file system:

   ```
   mount -av
   ```

6. Use this command to see what is mounted on your file system and verify that the previous command was successful:

   ```
   mount
   ```

7. To test that the shared directories are effectively accessible from your workstation, navigate to the mount point and verify that its content is the same as the content on the database server:

```
cd [[[Undefined variable Variables.DefaultDatabaseRoot]]]

ls
```

If the mount was successful, you fill find the following content in **/USA_DB**:

```
db_files db_jobs dicts environments envs exchange jobs logs
online_jobs register schedules scripts syslog users Dbserver.conf
```

Advanced Tips and Guidelines for Linux

These useful tips, guidelines and information for advanced users.

Unicode Guidelines

Here are some useful guidelines to keep in mind if you are considering using Unicode:

- Because the Unity game engine does not support Unicode characters, it is recommended to avoid using it in scenes intended for games.

- Unicode characters cannot be used for parent folders of USA_DB and USADATA.

- To zip a scene with Unicode in its name, use 7zip which is included in the package; the regular zip cannot handle some Unicode characters.

Limitations

- A scene name with Unicode characters cannot be opened through the Harmony Web Control Center.

- If a scene name contains Unicode characters, the following commands in the File menu cannot be used: Update Database Scene and Download Database Changes.

Flexible Scene Data Placement

Since the /USADATA and /USA_DB directories no longer need to be placed at the root of your file system, you can place them wherever you like. This is useful when using third-party asset management and tracking systems.

If you choose to place the directories at a location other than the root, you can create a shortcut that points to the location of the file system without using the .lnk shortcuts on Windows or the symbolic links on Mac and Linux.

How to create a shortcut that points to the new location of the file system

1. Locate the shortcuts.conf file here:

   /usr/local/ToonBoomAnimation/harmony[edition]/resources/samples

2. Copy the shortcuts.conf file and place it here:

   /usr/local/ToonBoomAnimation/harmony[edition]_[version]/etc

3. Open the shortcuts.conf with a text editor.

4. Here are some examples of what to add at the end of the file:

   /USA_DB /mount_point/usadata

   /usadata /mount_point/usadata

   On a server, you can point to a subfolder like this:

   /USA_DB /parentfolder/usa_db

   /usadata000 /parentfolder/usa_db

5. Save the file.

About Troubleshooting on

If you have any outstanding issues running Toon Boom 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.

License Error When Starting a Module on Linux

If you are getting license errors when you start a Toon Boom Harmony node, verify the setup and configuration of the license service.

How to verify the setup and configuration of the license service

1. If you are using a license server, verify that the `license.dat` file is in the following directory:
   `/usr/local/flexlm/licenses`

2. Open the `license.dat` file. It should contain the following:

   `SERVER this_host 0 ANY`

   `VENDOR toonboom`

   `USE_SERVER`

   NOTE: On a client workstation, the license server hostname should be on the first line instead of `this_host`.

3. Verify that the license service is running on the license server.

   `/sbin/service USAnimation_flexlm status`

4. If it is not running, start the service.

   `/sbin/service USAnimation_flexlm start`

5. Restart the Dbserver if the license server was not properly installed or activated.

   `/sbin/service USAnimation_dbserver restart`

6. If you continue having problems with the license server, locate the file `lmgrd.log` and send it to: store.toonboom.com/contact/support. This file is usually in `/tmp`.

Unable to Import Scenes on Linux

If you are unable to import a scene, there might be an error with the database server. Try to perform the following:

- Verify the `Dbserver.log` file. It is usually stored in `/tmp`.

    If there is no log file, restart the Dbserver.

    `/sbin/service USAnimation_dbserver restart`

If there is a log file, the last few lines in the file will give you an indication as to the problem with the Dbserver.

- If you get an error in the log about the machine name, verify the `/USA_DB/Dbserver.conf` file and make sure the hostname matches the machine name of the Harmony server.
- If you get errors about the port number, verify that the port name in the `Dbserver.conf` file is not used by another service. Type `netstat -a` to see a list of port numbers used by the machine. If another service is using port `5678`, change the port number in `Dbserver.conf` to any unused number above 5000.
- Restart the Dbserver.

    `/sbin/service USAnimation_dbserver restart`

Unable to Open Scenes on Linux Clients

- On the Harmony server, verify that all the Harmony directories were exported. The /**USA_DB**, **/us-r/local/ToonBoomAnimation/harmony[edition]_14,** and /**usadata** directories must appear in the **/etc/exports** file. Verify that the entries in this file match the name of the directories you created on the server.

  Verify that the directories have been exported.

      /usr/sbin/exportfs -r

- On the Linux client, verify that you created the data directories and mounted the server directories into those directories. Verify the **/etc/fstab** file to see that the data directories are listed and spelled the same way as the directories on the client and the server.

  List the contents of the mounted directories to see that there are some contents.

      cd /usr/local/ToonBoomAnimation/harmony[edition]_14

      ls

  A list appears of the directories in **harmony[edition]_14**. They are:

      etc help lang lnx_86 lnx86_64 Plugins resources

- If you do not see anything in the exported directories, verify that the server directories are mounted.

      mount -a

  If you are able to list the contents of the exported directories and open the sample scene after manually mounting all shares, verify the start up sequence of **ypbind** and NFS to verify that NFS is started first—see

Export Directories Not Mounting on Clients on Linux

On most Fedora Linux distributions, the **ypbind** service is started after **nfs** by default. This causes directory mounting to fail when your system boots up. This will prevent Linux clients from mounting Toon Boom Harmony directories from the server.

You must verify that the **ypbind** service is started before **nfs**.

How to configure the start sequence of ypbind and nfs

1. Turn the service off and remove it from the startup configuration.

   ```
   /sbin/service ypbind stop

   /sbin/chkconfig ypbind off
   ```

2. Edit the **ypbind** startup script located in **/etc/init.d/ypbind**. Find the following line:

   ```
   chkconfig: 27 73
   ```

   Change it to:

   ```
   chkconfig: 24 73
   ```

3. Restart the service.

   ```
   /sbin/service ypbind start

   /sbin/chkconfig ypbind on
   ```

Harmony Fails to Open or Crashes on Startup on Linux

Periodically, Harmony does not open and displays an NVIDIA error message in the shell. This may not happen all the time. Users may report this error after running the application several times successfully.

The NVIDIA error message directs users to instructions in the Readme file:

> `/usr/share/doc/NVIDIA_GLX-1.0/README.txt`

Problems with the security node of the PAM system can cause these periodic problems. Follow the instructions in the NVIDIA Readme to resolve this error.

If you continue to experience problems, verify that the `xorg.conf` file (in `/etc/X11/)` contains the correct driver information (the driver should be `nvidia`, not `nv`).

If this does not resolve the problem, reinstall your NVIDIA driver.

Harmony Fails to Display Images on Linux

Your monitor's screen settings must be set to 24-bits per pixel.

Verify your current settings.

- If you are using Fedora, verify the file **/etc/X11/xorg.conf**.

Fixing the Alt Key Keyboard Shortcut Conflict Between Harmony and Linux

On GNOME 2 and KDE, by default, clicking anywhere on a window while pressing the Alt key will move the window. Because the Alt key is used as a modifier for many drawing and animation tools in Harmony, it is highly recommended to configure your desktop environment to use the Super key (ie: The Windows Logo key, on many keyboards) for this purpose instead.

How to change the window moving keyboard shortcut in GNOME 2

1. In the GNOME top menu, select **System > Preferences > Windows**.

   The Window Preferences dialog appears.

2. In the **Movement Key** section, select **Super (or "Windows Logo")**

3. Click on **Close**.

How to change the window moving keyboard shortcut in KDE

1. In the KDE menu, select **Computer > System Settings**.

2. In the System Settings window, select the **Windows Behavior** icon.

3. Select the **Window Actions** tab.

4. In the **Modifier Key** dropdown, select **Meta**.

5. Click on **Apply**.

resolution.conf Error Message on Linux

When you open a scene, you might get an error message that says that the `resolution.conf` file cannot be found. This file is usually stored in the environment or job directory of your database. There is a `resolution.conf` file you can copy.

How to obtain a copy of the resolution.conf file

1. Open the following folder:

   /usr/local/ToonBoomAnimation/harmony[edition]_[version]**/resources/samples**

2. Copy the `resolution.conf` file to one of the following folder:

   - **/USA_DB/resolution**
   - **/USA_DB/environments/[environment_name]**
   - **/USA_DB/jobs/[jobs_name]**

Chapter 7: Web Control Center on Linux

is included in your installation of Harmony 14.

Installing Web Control Center on Linux

When installing HarmonyWeb Control Center, you must add options to the Harmony install script command line and install the Cisco OpenH264 library to see the movie previews and thumbnails.

How to install Harmony Web Control Center

1. Add the following options to the Harmony install script command line.

   If you are upgrading HarmonyWeb Control Center server, you must first stop the service—see *Installing Web Control Center on Linux* on page 196.

Option	Default Value	Details

`-webccserver`
 	
`-w`
	Inactive	Installs Harmony Web Control Center as a service. This parameter is required if this machine is the Harmony Web Control Center server.

2. Reboot after installing HarmonyWeb Control Center as a service. The service should run at every reboot.

How to install the Cisco OpenH264 library

1. In a shell, type the following:

   `cd /usr/local/ToonBoomAnimation/harmony[edition]_14/lnx86_64/bin/openh264_control.sh`

   The following appears:

   Running script for installing/uninstalling the Cisco OpenH264 library

   OpenH264 Video Codec provided by Cisco Systems, Inc.

   Do you wish to install (i) or uninstall (u) the library?

2. Type the following to install the library: `i`

3. Now you have a choice of the two following libraries. Try the first. If there are problems, try the second.

   - openh264-linux64-v1.3.zip (0)
   - libopenh264-1.3.0-linux64.so.bz2 (1)

   The OpenH264 library installation is successful.

   NOTE: A script was added to assist in uninstalling the OpenH264 library on Linux. It is located at `/usr/local/ToonBoomAnimation/harmony[edition]_14/lnx86_64/bin/openh264_control.sh`.

Setting Up in a Non-GUI Environment on Linux

How to install HarmonyWeb Control Center on a Linux server with no GUI

1. Contact Toon Boom Support to request a copy of the Flexnet Publisher anchor script (install_fnp.sh) and the FlexNet Publisher Licensing Service (FNPLicensingService).

2. Place both files in the `bin` directory of your Harmony install. It is typically located here:

   `/usr/local/ToonBoomAnimation/harmony[edition]_14/lnx86_64/bin`

3. Change the permissions on the anchor script to be executable:

   `chmod 755 install_fnp.sh`

4. Execute the following script

   `./install_fnp.sh`

5. Execute the following command to install the license:

   `ServerActivation -batch -served -comm soap -commServer`
   `https://licensing.toonboom.com:443/flexnet/services/ActivationService -`
   `entitlementID XXXX-XXXX-XXXX-XXXX-XXXX`

6. Type the activation key next to `-entitlementID` to replace the Xs.

Manually Launching Web Control Center on Linux

If you do not want to run HarmonyWeb Control Center as a service, you can manually start the HarmonyWeb Control Center server.

How to manually run Harmony Web Control Center

1. Using the Terminal, navigate to:

   `/usr/local/ToonBoomAnimation/harmony[edition]_14/lnx86_64/bin`

2. Run the following:

   `./webcc.sh`

> **NOTE:** You can change the default port used by Harmony Web Control Center by modifying the `webcc.sh`. Open the file using a text editor and add the value of the parameter and the desired value. See *How to customize Harmony Web Control Center service* above.
>
> Other parameters can be customized—see Manually Launching Web Control Center on Linux.

Starting and Stopping Web Control Center on Linux

If at any point, you need to start/stop or restart the HarmonyWeb Control Center server. You can do so through the **/sbin/service**.

To start the service	**/sbin/service USAnimation_harmony_webcc start**
To stop the service	**/sbin/service USAnimation_harmony_webcc stop**
To restart the service	**/sbin/service USAnimation_harmony_webcc restart**

Alternatively, you can start or stop all Harmony Services with the following commands:

To start all services	**/usr/local/ToonBoomAnimation/**harmony[edition]_14**/lnx86_64/bin/Startus**
To stop all services	**/usr/local/ToonBoomAnimation/**harmony[edition]_14**/lnx86_64/bin/Stopus**

Customizing Web Control Center on Linux

You can customize some parameters, such as the default port, for the Harmony Web Control Center service.

How to customize the HarmonyWeb Control Center Service

1. Stop the service if it is active—see .

2. As the root user, open the following file:

   `/usr/local/ToonBoomAnimation/harmony[edition]_14/lnx86_64/bin/webcc.sh`

1. For example, after the last character, change the default port to 8081:

   ```
   #!/bin/sh -f

   # Script to start Harmony Web Control Center server

   DIRNAME=$(dirname "$0")

   cd "$DIRNAME"

   ./bin_3rdParty/node ../../cloud/server/app.js "$@" -port 8081
   ```

   The customizable parameters are:

Parameter	Description
-numWorkers n	Number of processes to service client requests. Default is number of CPU cores. Set to 0 to disable worker child processes. If the number of CPUs is high, performance could be impacted on all processes running on the server. If server is mostly for Web Control Center, increase the number for better performance.
-noAuth	Disables basic login/authorization verifications with the user database. Default: authorization enabled.
- port port	The port to which HarmonyWeb Control Center is deployed. Default: 8080.
-http port	Enables http protocol on specified port (can be used along with https to enable both). Default: http enabled unless -https is also enabled.
-exchange loc	Location (on disk) of top-level file exchange folder. Default: /USA_DB/exchange
-cacheDuration s	Number of seconds to keep data in cache. Default 3600. 0-> disable cache, 1-999999-> number of seconds to keep data in cache.
-allowAllOrigin	Enables webcc web service from all sources (enable cross-origin resource sharing). Default: Disabled.
-disableAnalytics	Disables Google Analytics tracking for all clients. Default: Enabled.
Options Related to SSL Server	
-https [port]	Enables https protocol on port 8443, unless a port override is provided. Default: Disabled.
-key key	<filename> the private key for the SSL session (works with -cert). Default: None.

-cert cert	\<filename\> the certificate filename for the SSL session (works with -key). Default: None.
-pfx file	\<filename\> alternate filename that includes both the private key and certificate for the SSL session. Default: None.

IMPORTANT: If you want to use Web Control Center outside your facility, you must use the options related to SSL Server to secure your connection.

2. Save and close the file.

3. Start the service—see *Customizing Web Control Center on Linux* on page 200.

About Web Control Center Network Setup on Linux

In order for Web Control Center to work and users to be able to access it over the network, you need to set up a static IP and open a port in your firewall.

Setting Up Static IPs for Web Control Center on Linux

How to set up a static IP for Red Hat, Fedora or CentOS

1. Edit the network file /etc/sysconfig/network:

   `/etc/sysconfig/network`

2. Configure the file as follows; replacing the bolded text with your values:

   ```
   NETWORKING=yes

   HOSTNAME=webcc.toonboom.com
   ```

3. Depending on your network card, open the configuration file. For example, if you are using **eth0**, then you would edit the file **ifcfg-eth0.**

   `/etc/sysconfig/network-scripts/ifcfg-eth0`

4. Configure the file as follows, replacing the bolded text with your values:

   DEVICE=eth0
   BOOTPROTO=static
   IPADDR=**174.142.76.72**
   NETMASK=**255.255.240.0**
   GATEWAY=**10.120.0.254**
   ONBOOT=yes

5. Edit the following file:

   `/etc/resolv.conf`

6. Configure the file as follows, replacing the bolded text with your values:

   search **toonboom.com**
   nameserver **10.120.0.1**

7. Restart the network service:

   `/etc/init.d/network restart`

Opening Ports for External Connection for Web Control Center on Linux

It is necessary to open a port in your firewall to allow other computers to access your HarmonyWeb Control Center server. HarmonyWeb Control Center is using port 8080 by default.

How to open a port for Red Hat, Fedora or CentOS

1. Edit the following file:

   `/etc/sysconfig/iptables`

2. Append the following rule to the file to open port 8080:

   `-A RH-Firewall-1-INPUT –m state –state NEW –m tcp –p tcp –dport 8080 –j ACCEPT`

3. Save and close the file.

4. Restart the **`iptables`** service:

   `service iptables restart`

Troubleshooting for Web Control Center on Linux

Web Browser Note

Some browsers don't support Java and will have problems opening scenes. The first time you open a scene in a browser, it might take a long time because it has to set Java.

Unable to Start Web Control Center Nodes

The following error is generated each time a Web Control Center is started:

Error: ENOENT, no such file or directory

at Object.exports.init (/usr/local/ToonBoomAnimation/harmonyPremium_ 12.2/cloud/server/webcc.js:85:13)

at Object.<anonymous> (/usr/local/ToonBoomAnimation/harmonyPremium_ 12.2/cloud/server/webcc.js:214:9)

at Module._compile (module.js:456:26)

at Object.Module._extensions..js (module.js:474:10)

at Module.load (module.js:356:32)

at Function.Module._load (module.js:312:12)

at Module.require (module.js:364:17)

at require (module.js:380:17)

at Object.<anonymous> (/usr/local/ToonBoomAnimation/harmonyPremium_ 12.2/cloud/server/worker.js:14:13)

at Module._compile (module.js:456:26)

How to fix the error generation

1. Copy the libstdc++.so.6.0.20 packaged with the application to /usr/lib64:

```
cp /usr/local/ToonBoomAnimation/harmony[edition]_[version]/lnx86_
64/lib/libstdc++.so.6.0.20 /usr/lib64
```

2. Unlink the previous one:

```
unlink /usr/lib64/libstdc++.so.6
```

3. Create the symbolic link using the one provided by the application:

```
ln -s /usr/lib64/libstdc++.so.6.0.20 /usr/lib64/libstdc++.so.6
```

Chapter 8: Batch Processing

Harmony Server 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.

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 a black and white scanner for painting by converting them to vector based files (`*.tvg` files). This 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 to view the list of vectorizing work waiting to be processed.

Render

Also known as *compositing*, the rendering 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 locally or send it to the Render Queue. After you render the animation, you can transfer the scenes to video or film.

You can open the Render Queue in the Control Center module to view the list of compositing work waiting to be processed.

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.

> NOTE: It is not recommended to render or vectorize on the workstation while you are working in the software. These tasks are resource intensive and will slow your computer down if you are work in the software at the same time. If urgently needed on a continual basis, set up a separate render station. 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 start the batch processing queues. Then, you set up all the environments to add to the database for batch processing.

Once this is done, you can send drawings to be vectorized and scenes to be rendered.

NOTE: To view thumbnails and move previews in Web Control Center, you must install the Cisco OpenH264 library for your operating system–see *Web Control Center on Windows* on page 63, *Web Control Center on Mac OS X* on page 127 and *Web Control Center on Linux* on page 195.

About Batch Processing Installation

The main steps involved in installing batch processing creating the `machine-list` file and to install the batch processing service.

IMPORTANT: Make sure the Cisco OpenH264 codec is installed on all the machines that will do the batch render of movie previews—see *Web Control Center on Windows* on page 63, *Web Control Center on Mac OS X* on page 127 and *Web Control Center on Linux* on page 195.

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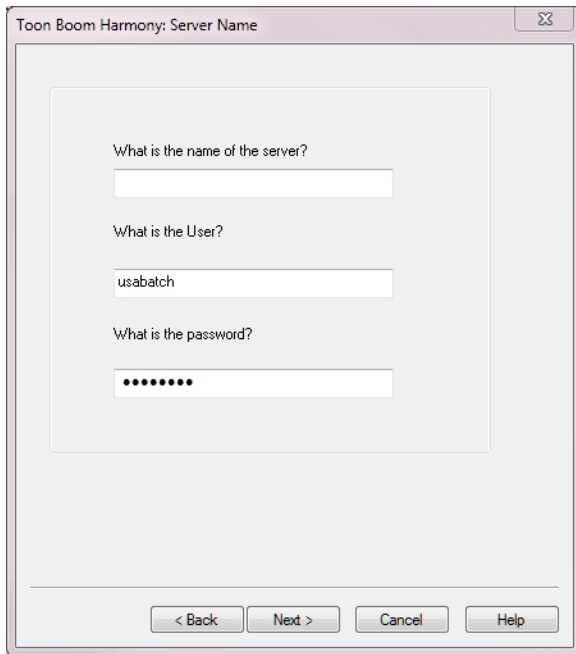
In Windows, use the Harmony Configuration Wizard to add computers to the `machine-list` file and to install the batch processing service. You must run the Configuration Wizard on all machines that will perform batch processing.

How to configure batch processing

1. In the Harmony Configuration Wizard, click **Batch Processing.**
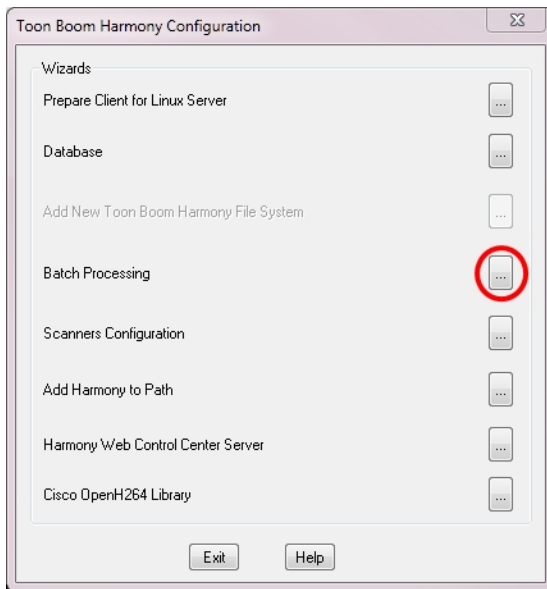
2. In the Batch Processing screen, select the **Yes** option to have your computer perform batch processing. Click **Next**.

3. In the What is the Name of the Server field, enter the name of the Harmony server.
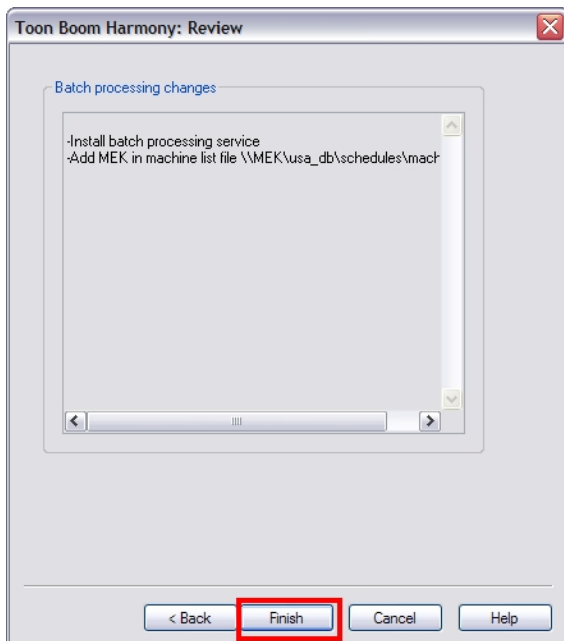
4. In the What is the User field, enter the server's user name (OS account) created while setting up the Harmony database. The machine you are setting up will use this user name and password to log on the server machine and retrieve the data to render or vectorize.

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**.

Installing Batch Processing on 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 14.0 [edition] > Tools > Configuration Assistant**.

2. Select the **Create the Startup Items** option and click **Continue**.
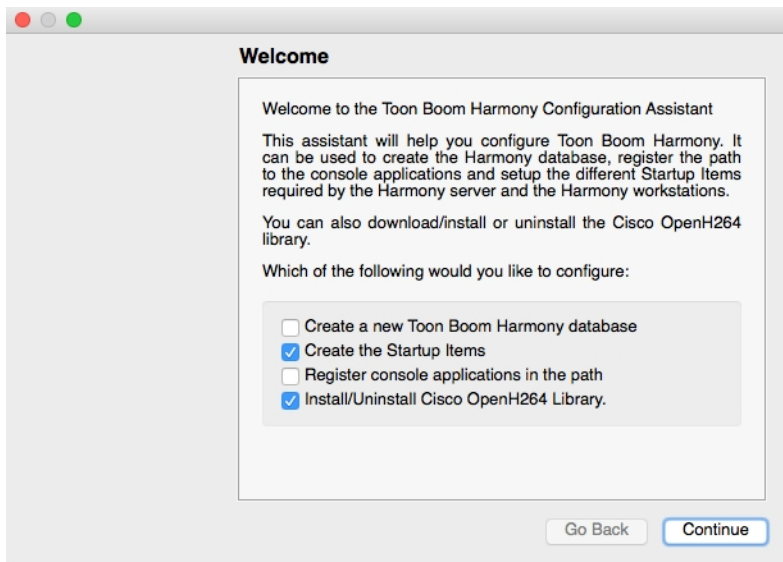
3. Select the **Create Queue Server Startup Item** option and click **Create**.
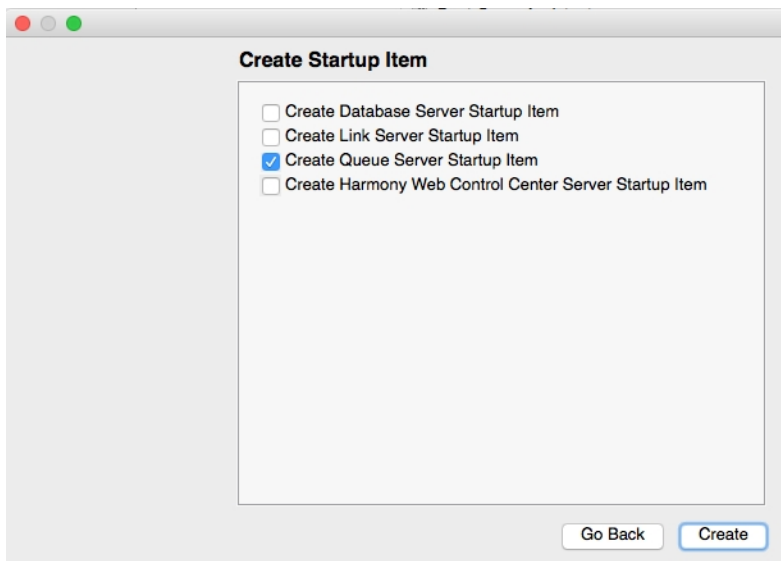
The Authenticate dialog box appears asking for a user name and a password.

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/LaunchDaemons/` folder.

   A dialog box appears to indicate if the Startup Item was successfully created.
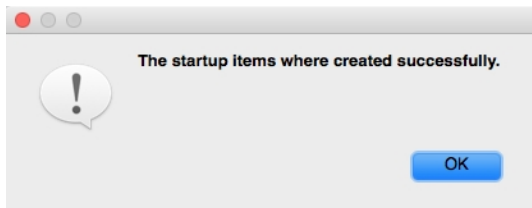
6. Click **OK**.

   The Finish window appears.
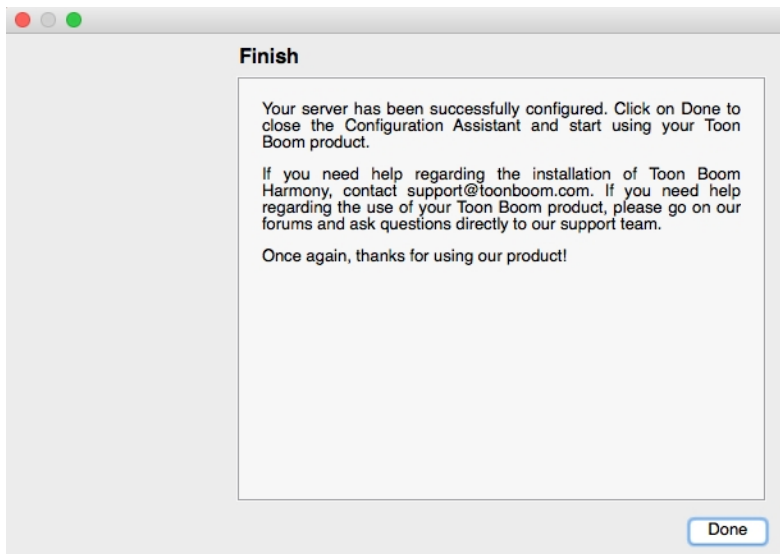
7. Click **Done** to close the Configuration Assistant.

Creating machine-list Files

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.

> **NOTE:** You must have sufficient batch processing licenses to run batch processing on all 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.

   > **IMPORTANT:** 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 your operating system. You can list the machine name of a computer by typing the following command in the Terminal or command prompt:

   ```
   hostname (Mac OS X)

   uname -n (Linux)
   ```

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

Adding Web Render Scripts to Harmony

In the Script Editor, you should have a TB_WebCC_render.js script, which is installed when you create the web server. For previous versions of the Harmony database, it must be added manually.

How to add the TB_WebCC_render.js script

1. From the Script Editor view menu, select **File > Import Script**.

2. Select the **TB_WebCC_render.js** script from one of these locations:

- **Windows**: Program Files (x86)> Toon Boom Animation > Harmony 14 [edition] > resources > scripts

- **Mac OS X**: Applications > Harmony 14 [edition] > tba > resources > scripts

- **Linux**: /usr/local/ToonBoomAnimation/harmony_14/resources/scripts

- **Linux**: /usr/local/ToonBoomAnimation/harmonyAdvanced_12.1/resources/scripts

2. Click **Open**.

   The Save Script window opens.
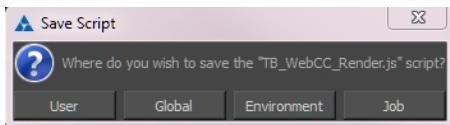
3. Choose a location in which to save the script. We suggest Global so the script is available for any user, environment or job.

4. In the Script Manager dialog, in the File column, select the **TB_WebCC_render.js** script.

Copying comp.dict Files

If you keep the database that was created with an older version of Harmony, note the comp.dict file is not updated automatically when you install the latest version. You must manually replace the file with the latest version by taking the file from your local installation.

How to copy the comp.dict

1. Copy the `comp.dict` file from your local installation of Harmony:

    - **Windows**: Program Files (x86)\Toon Boom Animation\Toon BoomHarmony 14 [edition]\etc\USADB_templates\dicts
    - **Mac OS X**: Applications/Toon BoomHarmony 14 [edition]/tba /etc/USADB_templates/dicts
    - **Linux**: /usr/local/ToonBoomAnimation/harmony_14/etc/USADB_templates/dicts

2. Paste the file in **usa_db >dicts** folder, replacing the old comp.dict file.

About 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 to start the tbprocess program on a machine and then verify that it is 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). By opening the log file, you can monitor the jobs taking place in the tbprocess session.

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

Starting Batch Processing Queues on Windows

When you launch a Harmony module, some functions are performed 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 had 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, this function controls the entries you make to the Harmony database (like adding new scenes to a job).

NOTE: 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 **All Programs > Toon Boom Harmony [version] > Tools > Control Panel**.

   The Toon Boom Harmony Control Panel dialog box opens.

2. Select the **Process Starters** tab and select a specific process starter to view its parameters.
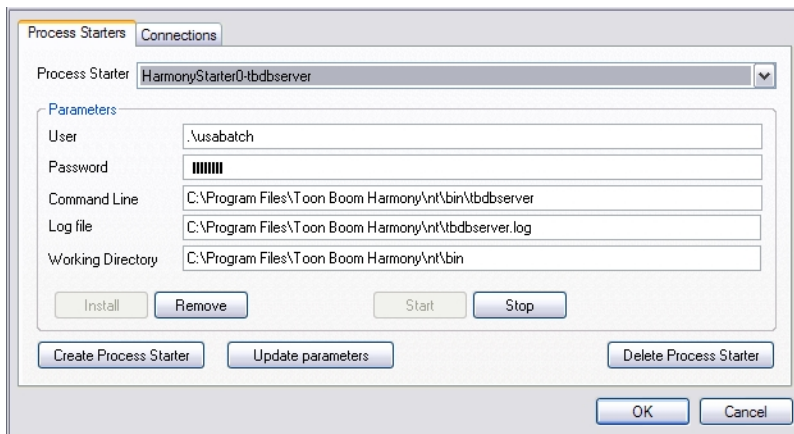
   The Process Starters tab displays the following information:

   - **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.

3. Make any modifications you need to the existing services and click **Update parameters**.

4. Click **OK**.

Starting Batch Processing Queues 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: 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 for your password.

How to stop batch processing queues

-   Type the following in the Terminal:

    sudo /sbin/SystemStarter stop ToonBoomQueueServer

    The Terminal prompts you for your password.

Starting Batch Processing Queues on Linux

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

How to start the batch processing queues

- Type the following in the Terminal or command prompt:

  `/sbin/service USAnimation_queues start`

  A message appears 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 the machine after installing the Toon Boom Harmony, the tbprocess program starts automatically on each Toon Boom Harmony client and server.

NOTE:
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.

tbprocess is running on these machines

```
                  SCHEDULE STATUS Tue Jan 25 15:34:00 2007
                                        nextevent
R SD machine state   vec ren   environments                  pri      Time
   *  jupiter    ON        *    14M                                  Wed Jan 26 16:00:00 2007
      saturne    ON    *   *    Dev  LN                              -
      mercure    ON    *   *    Dev                                  Mon Jan 31 09:55:00 2007
R     polaris    ON    *   *                                         -
      neptune    ON    *   *    MAX Tem                              -
R     rndtest2   ON    *   *        Tem                              Thu Jan 27 10:00:00 2007
      venus      ON    *   *    Dev                                  -
R     uranus     ON    *   *    Dev                                  -
      bart       OFF                                                 -
      mars       ON        *    Dev                                  -
      mizaar     ON    *   *    Dev                                  -
      hpsys      ON    *   *    Dev                                  -
R     halley     ON    *   *    Dev                                  -
      uranus:1    ON   *   *      MAX                                _
      uranus:2    ON   *   *      MAX                                _
      uranus:3    ON   *   *      MAX                                _
      uranus:4   OFF                                                 _
       atlas     ON    *   *    Dev                                  _

    vectorize: saturne mercure venus uranus mizaar hpsys halley uranus:1
               uranus:2 uranus:3 atlas
       render: jupiter saturne mercure rndtest2 venus uranus mars mizaar
               hpsys halley uranus:1 uranus:2 uranus:3 atlas

          Cle:
  Development: saturne mercure venus uranus mars mizaar hpsys halley
               atlas
         Test:
          FGR:
         Jacm:
           LN: saturne
      Roger23:
     Siggraph:
         mone:
          opt:
        Steph:
stephane@venus /home/stephane/local/ []
```

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

Verifying tbprocess Sessions are Active

There are two commands you can use to verify that tbprocess is running on a machine. To use a command, type it 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 251. If tbprocess is running on a machine, an R appears in the R column for that machine.

Windows

On 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 filter the output.

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 tbprocess Sessions

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.

NOTE: 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`

227

- 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.

```
C:\WINDOWS\system32\cmd.exe                                    _ □ ×

C:\Documents and Settings\mec>status
Toon Boom Harmony
status (Status) version 7.3.3 build 4368 2007-11-22 11:07:36


INPUT BEGIN TIME in 24-hr format [13:34]:
    input day [thu]:

Key:
vec = Vectorize
ren = Render
pro = production_xyz
com = commercial
sim = simpsons
adv = adventure_movie
tes = test
pri:   indicates if database environments are prioritized,
       or if each environment is processed with equal priority
in R column, R = Running now, at Thu Nov 22 13:34:34 2007
         ? means couldn't determine status
in SD column, * means shutdown is in effect for at least
         some dbenv's, although those may not affect what's scheduled


              SCHEDULE STATUS Thu Nov 22 13:34:00 2007
                                         nextevent
R SD machine state  vec ren  environments       pri      Time
R         mek    ON   *   *   pro com sim adv tes  *       —

C:\Documents and Settings\mec>_
```

228

Testing Batch Processing

To verify that batch processing is working, send a few frames from a scene to be rendered by the Harmony 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 Scenes section panel and select **Send to Rendering**.

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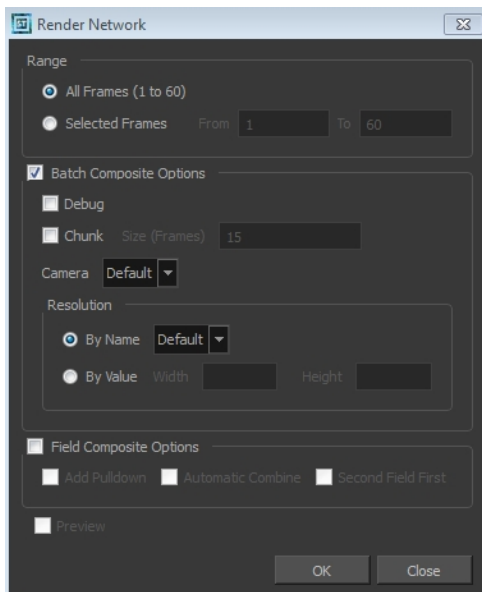
3. In the Range section, select the **Selected Frames** option and type 1 to 5 in the From and To fields. Leave the rest of the default options and click **OK**.

   An message appears indicating that the scene was sent to the queue.

4. Click **OK** to close the message .

5. Open the Render Queue to see if your scene is being processed.

6. In the Environments section, select the environment with the scene that is rendering.

7. 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.

About Vectorization

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.

Manually Vectorizing Scenes or Elements

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

How to manually vectorize all the drawings for scenes or elements

1. Select a scene from the Scenes list or 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 its drawings.

2. Depending on the component you selected, do one of the following:

   - Select **Scene > Send to Vectorize** or right-click and select **Send to Vectorize**.
   - Select **Element > Send to Vectorize** or right-click 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, display the vectorize queue.

Viewing Drawing Vectorization Lists

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 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.
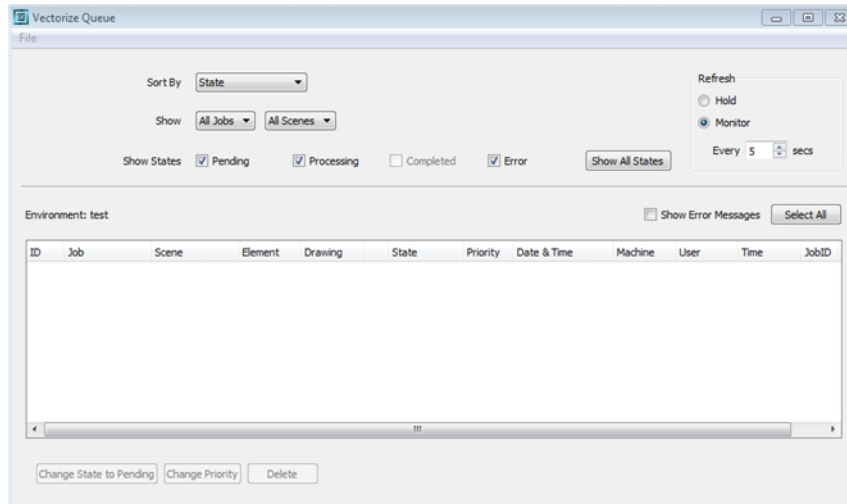
2. From the Sort By menu, select how to sort entries in the queue:

   ‣ **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 node'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 node 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 node 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.

NOTE: 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 Vectorize Queue Entries

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.

About Rendering Scenes

When you have finished working on some scenes, you can send them to the Render queue via Control Center or Harmony, by way of 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 to render scenes, but since you must open each scene individually in Harmony, you can only send one scene to render at a time.

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.

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

Viewing Render Queues

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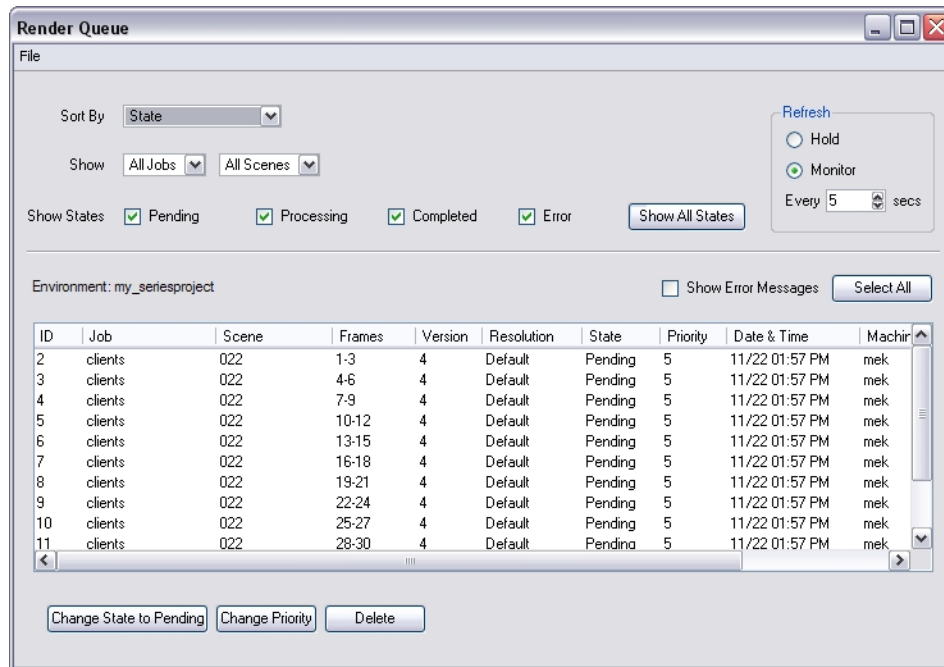
2. Select how to sort the entries in the queue from the Sort By.

   ▸ **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.

NOTE:
If the Control Center node 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 Render Queue Entries

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.

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

About Stopping a Process

IMPORTANT:
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

IMPORTANT: 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.
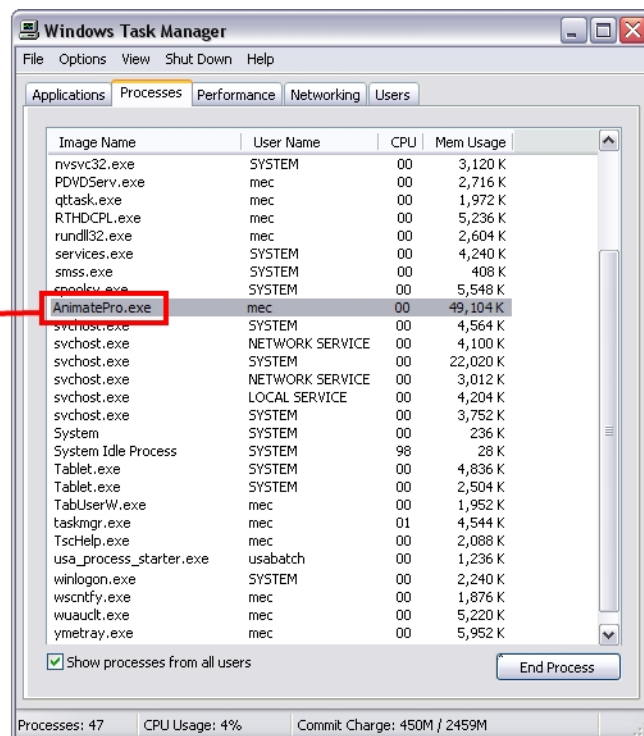
4. Vectorizing or rendering starts a process named `AnimatePro.exe`. Locate it and select it.

5. Click **End Process**.

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

NOTE: 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

> **IMPORTANT: 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>

242

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.

NOTE: 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.

About 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 list to troubleshoot common installation and configuration problems

No Batch Vectorizing 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 *About Batch Processing Installation* on page 209

    ‣ 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 227

    ‣ If a machine is in the report, but is missing the "R", restart the batch processing queues.

No Batch Vectorizing 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 tbprocess Sessions are Active* on page 223.

   - 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 *About the tbprocess Program* on page 217.

   - 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.

No Batch Vectorizing 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`

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

Restarting Batch Processing Queues

You must use the Control Panel to 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**.
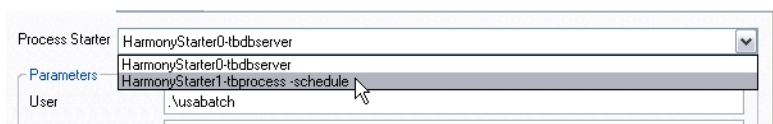
4. Click **Start** restart the service. If the Start button is disabled, click **Stop** first, wait a couple of seconds, and then click **Start**.
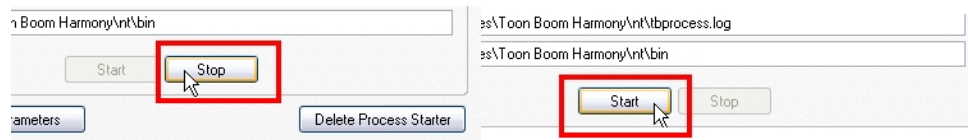
   If you continue to have problems with batch processing, locate the **tbprocess.log** file and send it to store.toonboom.com/contact/support. This file is usually in: `\Program Files\Toon Boom Animation\Harmony\nt`

About Batch Processing Schedules

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

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.

Explains the abbreviations used in the schedule status →

Lists the processing status of the batch processing machines in your network →

Displays a summary of what each machine is doing →

```
Key:
vec = Vectorize
ren = Render
TES = TEST
Vic = Victor
dem = demo
dev = dev

pri:    indicates if database environments are prioritized,
        or if each environment is processed with equal priority
in R column, R = Running now, at Mon Mar  6 13:44:52 2008
        ? means couldn't determine status
in SD column, * means shutdown is in effect for at least
        some dbenv's, although those may not affect what's scheduled

                SCHEDULE STATUS Mon Mar  6 13:44:00 2008
                                                    nextevent
R SD machine state  vec ren  environments         pri    Time
R    weiner   OFF                                      Wed Mar  8 12:53:00 2008
R    hickey   OFF                                      Mon Mar 13 12:34:14 2008
R    garneau  ON    *   *    Vic dem TES          *    -
R    ozone    ON        *                              -
     jacques  OFF                                      -
R    lincourt OFF                                      Fri Mar 24 12:01:12 2008
R    obrien   ON    *                                  -
     miranda  OFF                                      Wed Mar  8 11:56:45 2008
R    pluton   ON        *                              -
     alexis   OFF                                      -
     rndtest2 OFF                                      Wed Mar  8 12:53:00 2008
R    demo5    ON    *   *    TES                       -

     vectorize: garneau obrien demo5
       render: garneau ozone pluton demo5

          TEST: garneau demo5
        Victor:
          demo:
           dev:
```

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]:

4. 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).

251

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

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

5. 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 Batch Processing Queues on Windows **Linux**: See Starting Batch Processing Queues on Linux 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 About Environment Shut Down.
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.

About 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.

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.

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.

NOTE:

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.

The Key lists the abbreviations used in the Default schedule.

```
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
Note: no time in last column indicates no schedule, and output
        in these cases, if any, shows the default-default settings


                DEFAULT SETTINGS Tue Dec 11 10:34:54 2007

    Machine  Status vec ren   environments          pri Time of Last Update
        mek    ON    *   *    tes com the the tra     *      Tue Dec 11 09:57:02 2007
     weiner   OFF                                            Wed Dec  8 12:53:00 2007
     hickey   OFF                                            Mon Dec 13 12:34:14 2007
    garneau    ON    *   *    com the                 *      -
      ozone    ON        *    tra                             -
    jacques   OFF             tes                             -
   lincourt   OFF                                            Fri Dec 24 12:01:12 2007
     obrien    ON    *                                        -
    miranda   OFF                                            Wed Dec  8 11:56:45 2007
     pluton    ON        *                                    -
     alexis   OFF                                             -
   rndtest2   OFF                                            Wed Dec  8 12:53:00 2007
      demo5    ON    *   *    the                             -
```

The Default schedule appears for each machine in your network.

Reading Default Schedule Status Lists

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 change 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 modifying the Default schedule, use the `Showdef` command to view your changes—see Displaying Default Schedules.

How to change 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.

> **NOTE:**
> 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 change 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.

About 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.

NOTE:
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 schedule does not define the work to be done for a particular period of time, the machine uses the Periodic schedule.

However, if you have an active Supervisory schedule , the machine follows this schedule before it follows either the Periodic or Default schedules.

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 Periodic Schedules.

> **NOTE:** 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.

> **NOTE:**
> 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.

The Key lists the abbreviations used in the Periodic schedule.

The schedule lists when each task starts and stops, including the type of batch processing and the affected environments.

```
              PERIODIC SCHEDULE   Tue Dec 11 10:50:03 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
_____
begin.ON     *   *    tes the tra gro         *      tue 10:48
  end.ON                                              thu 21:53
_____
  ----last updated   Tue Dec 11 10:50:03 2007
```

The bottom of the schedule lists the date and time the schedule was last updated for the current machine.

Setting Periodic Schedules

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 Periodic Schedules* on page 269.

How to define a Periodic schedule on a machine

NOTE:
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:

   Setper

   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.

NOTE:
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 Periodic Schedules

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 3 in

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
   ```

About 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.

NOTE: 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.

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 Supervisory Schedules.

> **NOTE:** 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.

> **NOTE:**
> 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.

The Key lists the abbreviations used in the Supervisory schedule.

The schedule lists when each task starts and stops, including the type of batch processing and the affected environments.

```
                   SUPERVISORY SCHEDULE  Tue Dec 11 11:15:22 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
_____
 begin.ON    *   *   tes the gro                *      Tue Dec 11 21:00:00 2007
   end.ON                                              Wed Dec 12 07:00:00 2007
 begin.ON    *   *   tes com the tra             *     Wed Dec 12 15:00:00 2007
   end.ON                                              Fri Dec 14 16:30:00 2007
_____
  ----last updated  Tue Dec 11 11:15:22 2007
```

The bottom of the schedule lists the date and time the schedule was last updated for the current machine.

272

Setting Supervisory Schedules

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 Supervisory Schedules* on page 277).

How to define a Supervisory schedule on a machine

NOTE:
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.

NOTE:
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.

275

- 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 Supervisory Schedules

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 3 Setting Supervisory Schedules in *Setting Supervisory Schedules* on page 273.

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.

```
        SUPERVISORY SCHEDULE  Tue Dec 11 11:22:10 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 11:22:10 2007
```

About Environment Shut Down

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.

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). 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.

NOTE:
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're ready to restart the batch process on an Environment that was shut down, use the `Suenv` command. When you restart an Environment, you are prompted for the Environments you want to start up and the machines you want them to start running on.

NOTE: If you accidentally restart an environment that is already active, nothing happens.

How to start 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.

NOTE:
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.`

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).
`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.