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 »

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Project Wonderland v0.5: Web-based Server Administration

Table of Contents

Project Wonderland v0.5 has a unified, web-based administration tool. This administration tool lets you start and stop the Wonderland server components (darkstar server, voice bridge, shared application server), view server-related log files, monitor the performance of the server, and configure various aspects of Project Wonderland.

- [Launching the web-based administration tool](#)
- [Managing server components](#)
 - [Starting and stopping the server components](#)
 - [Editing the server component properties](#)
 - [Viewing the server log files](#)
 - [\(Advanced\) Running the server components on different machines](#)
- [Editing system-wide placemarks](#)
- [Managing X11 shared applications](#)
- [Managing content](#)
 - [Deleting existing directories or files](#)
 - [Creating new directories](#)
 - [Uploading files](#)
- [Managing security groups](#)
 - [Editing a security group](#)
 - [Delete a security group](#)
 - [Add a security group](#)
- [Managing modules](#)
 - [Installing new modules](#)
 - [Removing existing modules](#)
- [Managing the Initial World and World Snapshots](#)
 - [Selecting the initial world](#)
 - [Restoring the world state](#)
 - [Creating a world snapshot](#)
 - [Deleting a world snapshot](#)
 - [Editing a world snapshot's properties](#)
- [Monitoring the server](#)

Launching the web-based administration tool

After you have started Wonderland, you may launch the web-based administration tool by visiting the following URL in your web browser:

`http://<host name>:<port>/wonderland-web-front/admin`

where <host name> is the host and domain name of your server machine (e.g. localhost) and <port> is the port on which the server is registered, most often port 8080. When you visit this URL, you should see the Web Administration UI screen with the **Manage Server** category initially selected.

Managing server components

To view the server components currently running, click the **Manage Server** link on the left-hand side bar. It should display the Project Wonderland server components running and also a collection of update controls. The table gives the name of the server component (Darkstar, Voice Bridge, Shared Application Server), the machine on which it is running, its status (Running, Starting, Shutting Down, Not Running), and Actions to take upon the server component.

By default, this view will refresh every 15 seconds. Click the links on top of the server component table to control the refresh rate of this information.

(Click on the image to view a full-sized version)

projectwonderland

Server Admin

Server: localhost, Port: 8080
Version: 0.5-dev (rev. 4038)

Manage Server

Server Components (edit) refresh: never 15 sec. 60 sec.

Name	Location	Status	Actions
Web Administration Server	localhost	Running	log
Darkstar Server	localhost	Running	stop restart edit log
Voice Bridge	localhost	Running	stop restart edit log
Shared Application Server	localhost	Not Running	start edit log

Stop all, Start all, Restart all

Starting and stopping the server components

You may start, stop, and restart each server component individually or all at once via the links present on the **Manage Server** page.

Next to each server component, under the Actions column:

- Click **stop** to stop the server component (if running)
- Click **restart** to stop and then start the server component (if running)
- Click **start** to start the server component (if not running)

At the bottom of the table:

- Click **Stop All** to stop all currently running server components
- Click **Start All** to start all server components not currently running
- Click **Restart All** to stop and then start all currently running server components

Note: You may not stop, start, or restart the Web server via the web-based administration tool.

Editing the server component properties

Each server component has a collection of configuration properties that are editable via this web-based administration tool.

Next to each server component under the Actions column:

- Click **edit** to edit the server component properties
- Edit the existing properties directly in the table
- Click **Add Property** to add a new configuration property
- Click **Restore Defaults** to restore the previously saved property values
- Click **Save** to save the new properties or **Cancel** to revert to the existing property values

Note: You may not edit the Web server properties via the web-based administration tool.

For example, the properties for the Darkstar server component looks like this:

(Click on the image to view a full-sized version)

Viewing the server log files

To view the log files for each server component:

- Click **log** under the Actions column next to each server component

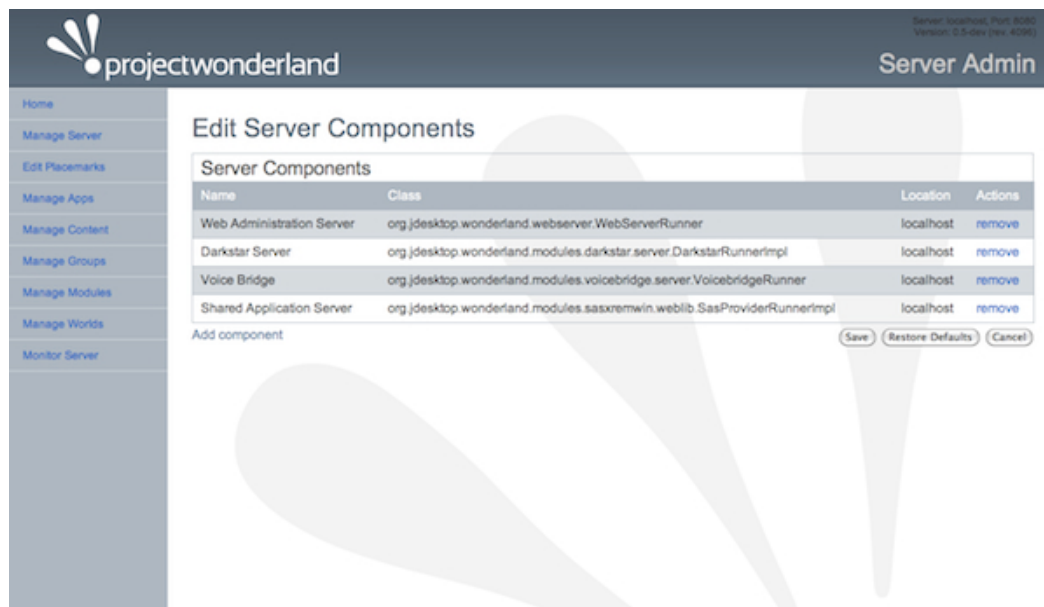
For example, the log file for the Darkstar server component looks like this:

(Click on the image to view a full-sized version)

(Advanced) Running the server components on different machines

In Project Wonderland v0.5, you can run each server component (e.g. Darkstar server, Voice Bridge, Shared Application server) on different machines to balance load. To manage where each server component runs, click the "(edit)" link next to the text "Server Components". This screen displays each of the server components configured for this installation; each of these server components runs locally on your machine by default.

(Click on the image to view a full-sized version)



In order to run a server component of a different machine, you will need to have the Project Wonderland software (either compiled from source or from the binary distribution) installed on the second machine. You will also need to run the server software differently on the second machine than you do on the primary machine.

1. Copy the **Wonderland.jar** file (typically found beneath the **dist/** directory if compiling from the source code) onto the second server machine (into any directory there).
2. In the same directory that contains the **Wonderland.jar** file on the second machine, create a file named **remote.runner.properties**. This is simply the normal **my.run.properties** file with the following extra lines:
 1. `wonderland.webserver.launch.class=org.jdesktop.wonderland.webserver.RunRemoteRunner`
 2. `wonderland.web.server.url=http://<address of main server>:<port>`, where `<port>` is typically 8080.
3. Run the secondary server, with the command **java -jar Wonderland.jar remote.runner.properties**

Next, you must configure your primary Project Wonderland server to use a server component on the secondary machine. From the Edit Server Components page, make a note of the **Name** and **Class** of the server component you wish to run remotely. For your reference, the following server components are standard:

Name	Class
Darkstar Server	<code>org.jdesktop.wonderland.modules.darkstar.server.DarkstarRemoteRunnerImpl</code>
Voice Bridge	<code>org.jdesktop.wonderland.modules.voicebridge.server.VoicebridgeRemoteRunner</code>
Shared Application Server	<code>org.jdesktop.wonderland.modules.sasxremwin.weblib.SasProviderRemoteRunnerImpl</code>

To configure your primary Project Wonderland server to use a server component on the secondary machine:

1. Click **remove** next to the desired server component (whose Location should read **localhost**)
2. Click **Add Component**.
3. Using the values for Name and Class of the desired server component above, fill in the form. For Location, select the Remote radio button. Fill in the text field beneath the Remote radio button with `<remove server>:<port>`, where `<remove server>` is the name of the remote server, and `<port>` is typically 8080.

For example, you Add Component screen should look like this:

(Click on the image to view a full-sized version)

projectwonderland Server Admin

Server: localhost, Port: 8080
Version: 0.5-dev (rev. 4263)

Add Component

Component Name:

Component Class:

Location: ☒ Local ☒ Remote

Finally,

1. Click Ok on the Add Component page
2. Click Save on the Edit Components page

Your Edit Components page should look like the following:

(Click on the image to view a full-sized version)

projectwonderland Server Admin

Server: localhost, Port: 8080
Version: 0.5-dev (rev. 4263)

Edit Server Components

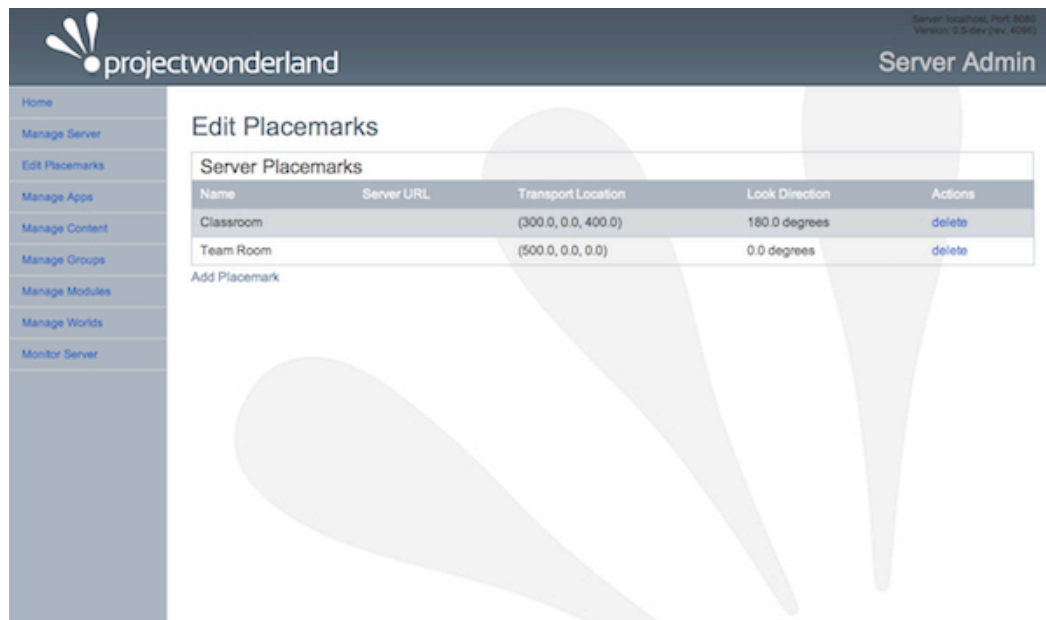
Name	Class	Location	Actions
Web Administration Server	org.jdesktop.wonderland.webserver.WebServerRunner	localhost	remove
Darkstar Server	org.jdesktop.wonderland.modules.darkstar.server.DarkstarRunnerImpl	localhost	remove
Voice Bridge	org.jdesktop.wonderland.modules.voicebridge.server.VoicebridgeRunner	localhost	remove
Shared Application Server	org.jdesktop.wonderland.modules.sasxremwin.weblib.SasProviderRemoteRunnerImpl	machine.mycompany.com:8080	remove

Add component

Editing system-wide placemarks

Placemarks are (x, y, z) positions in the virtual world to which avatars may teleport. As a system administrator, you may create placemarks that all users can see. To view the current list of system-wide placemarks, select the **Edit Placemarks** tab in the web administration UI:

(Click on the image to view a full-sized version)

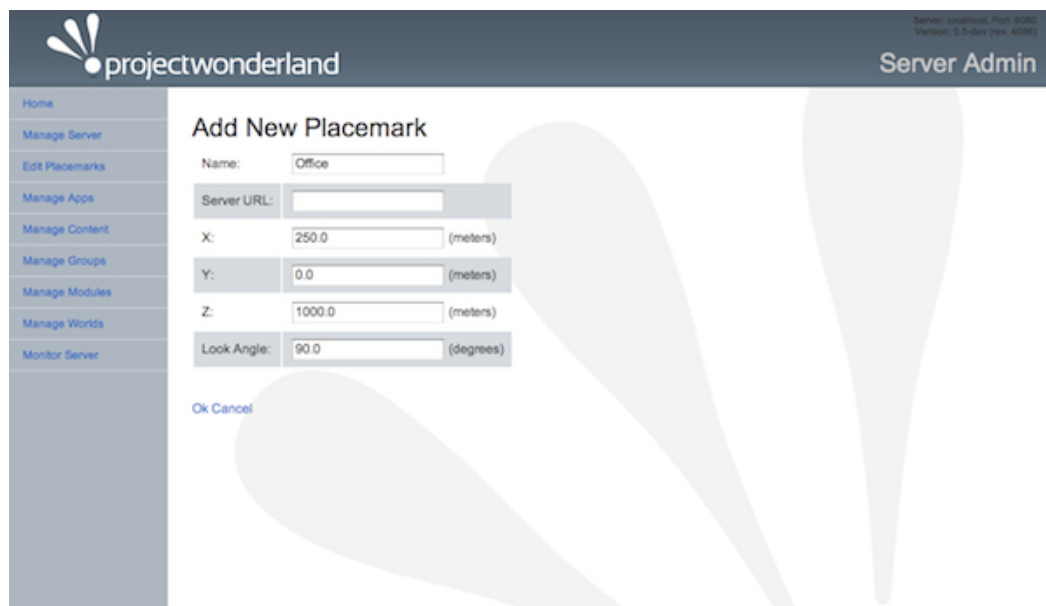


To add a new placemark:

1. Click the Add Placemark link beneath the table.
2. Enter a unique name for the new placemark.
3. Enter the URL (e.g. <http://<server name>:<port>/>) of the desired server to which to teleport; leave blank for the current server.
4. Enter the X, Y, and Z coordinations to which to teleport.
5. Enter the direction in which to look after teleportation. The Look Angle is the angle in degrees, where 0 degrees faces the +z axis.
6. Click Ok.

Your Add New Placemark page should look like the following:

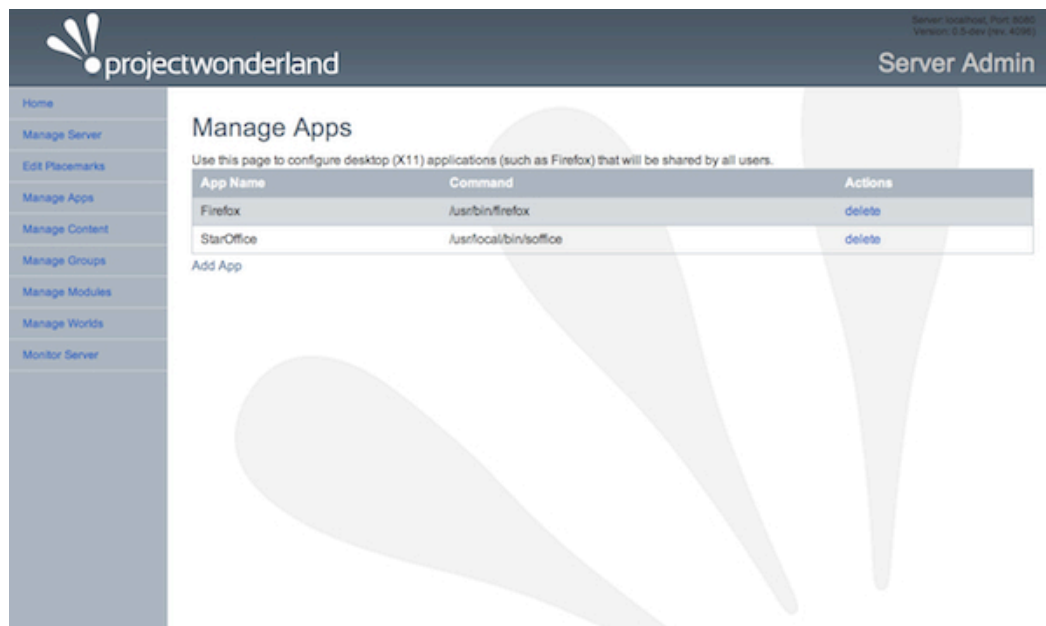
(Click on the image to view a full-sized version)



Managing X11 shared applications

Shared (X11) applications are native 2D applications that run either on Linux or Solaris (e.g. Firefox, Netbeans) that can be displayed and used collaboratively in-world. The Project Wonderland server bundles a specialized X11 server to run these applications. As a system administrator, you must manually list all of the shared applications that users can create in the world. To view the list of currently configured shared applications, click on the Manage Apps tab in the web administration UI.

(Click on the image to view a full-sized version)

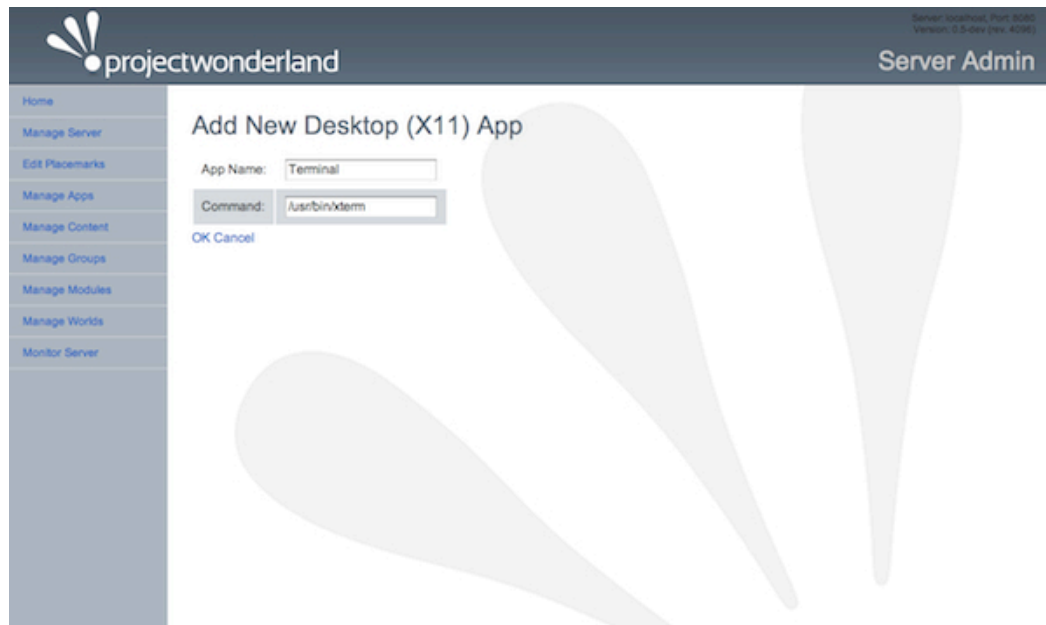


To add a new shared (X11) application:

1. Click the Add App link beneath the table.
2. In the App Name field, enter the name of the application that will appear in the Object Palette in the Project Wonderland client. If left blank, the last token (following the final forward-slash) in the Command is used.
3. In the Command field, enter the full path of the executable of the shared application.
4. Click Ok.

Your Add New Desktop (X11) App page should look like the following:

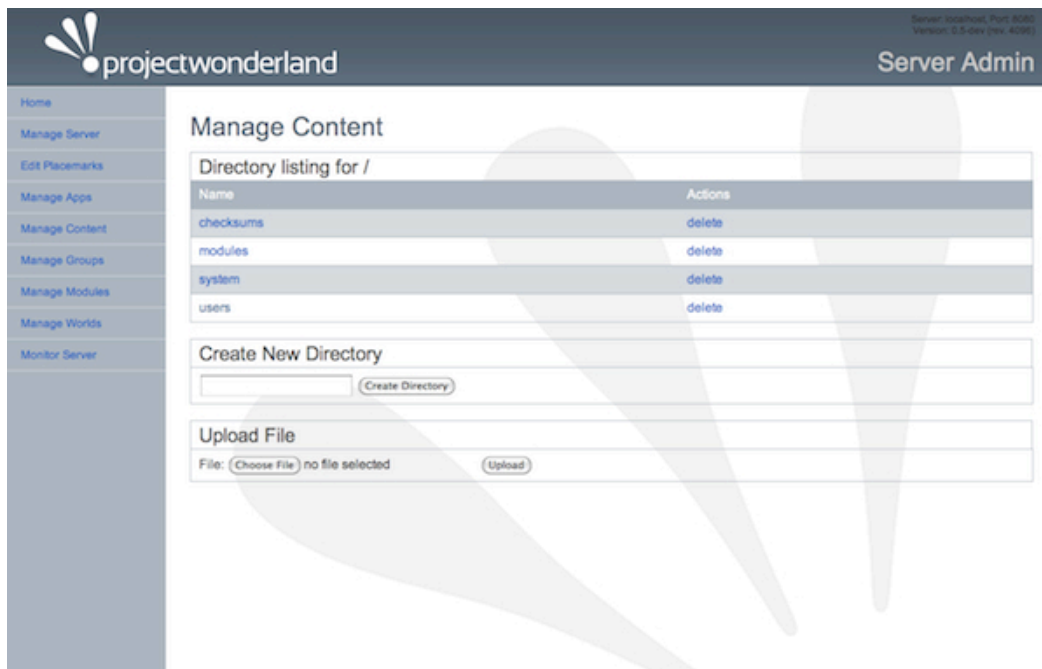
(Click on the image to view a full-sized version)



Managing content

The Project Wonderland v0.5 server embeds a WebDav repository that serves content (e.g. 3D models) to clients. When users drag-and-drop 3D models, or other content (e.g. PDFs) into the world, they are uploaded to the WebDav repository. This content can be viewed and managed via the web-based administration UI. To view the content in the WebDav repository, click the **Manage Content** tab in the web-based administration UI.

(Click on the image to view a full-sized version)



The **Manage Content** page has three main sections:

1. **Directory listing for <directory>**: Displays the entries in the current directory. The four top-level directories are: checksums, modules, system, and users
2. **Create New Directory**: Allows an administrator to create a new directory in the current directory.
3. **Upload File**: Allows an administrator to upload a file into the current directory.

To navigate the hierarchy of directories in WebDav:

1. Click on the name of the directory, under the Name column

Deleting existing directories or files

To delete a directory or file:

1. Click on the delete link next to the desired directory or file

NOTE: As an administrator, take great care when deleting directories and/or files, as you can affect the proper operation of the software. Specifically, never delete anything under the **checksums** and **modules** directories.

Creating new directories

To create a new directory in the current directory:

1. Under the Create New Directory section, enter the name of the new directory
2. Click Create Directory

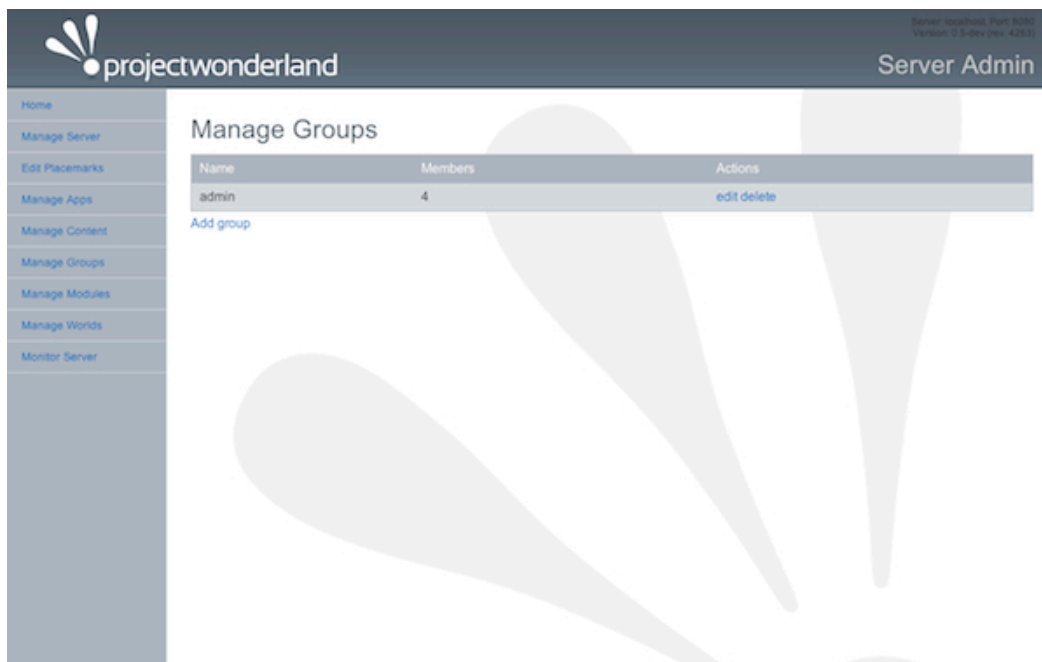
Uploading files

To upload a file into the current directory:

1. Under the Upload File section, click the Choose File button, and select the file you wish to upload
2. Click the Upload button

Managing security groups

To view the current list of security groups, click the **Manage Groups** link on the left-hand side bar. It should display a list the security groups. Your screen should look something like this (Click on the image to see a full-screen version):



Security groups are collections of users to which fine-grained security permissions may be assigned. Examples of fine-grained security permissions include the ability to view and edit Cells in a world. Assigning specific fine-grained security permissions to security groups is done via the Wonderland client.

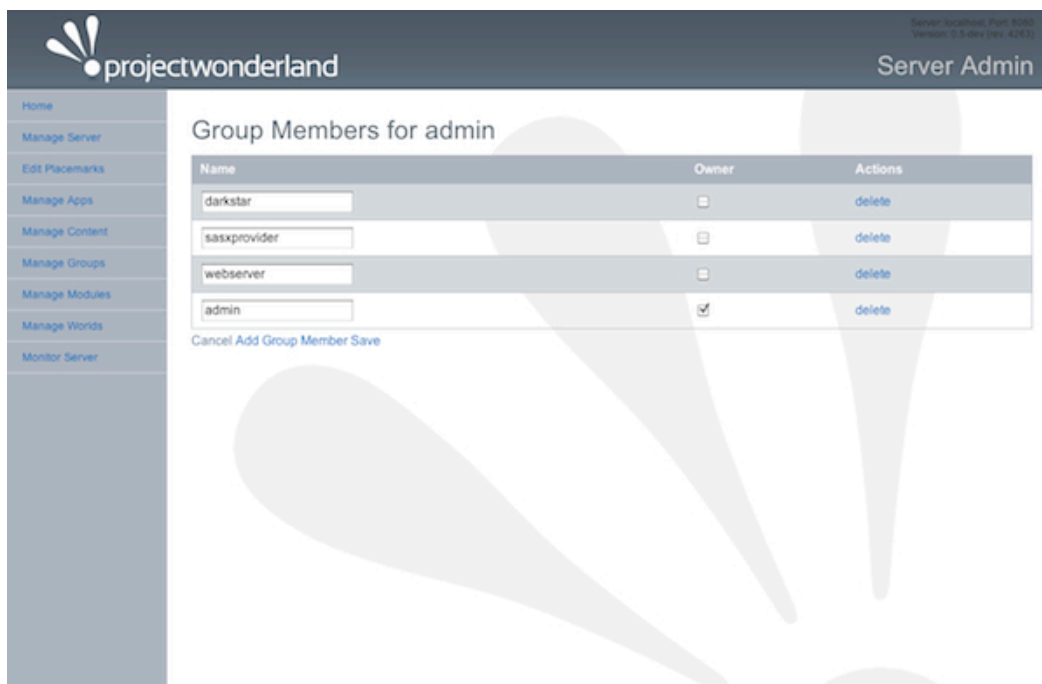
Each security group entry in the list has a unique name, a number of members, and actions to be taken upon the group definition.

Editing a security group

You can edit both the name of the security group and its members via the Web Administration UI.

1. Click on the "edit" link under the Actions column next to the desired Security Group to edit
2. Edit the name of a member of the group, whether that member "Owns" the Security Group (and hence can make changes the group), whether to delete the member from the Security Group, or whether to add a new member to the security group.
3. Click "Update group" to save your changes or "Cancel" to revert to the previous settings.

The edit window should look something like this (Click on the image to see a full-screen version):



Delete a security group

To delete a security group:

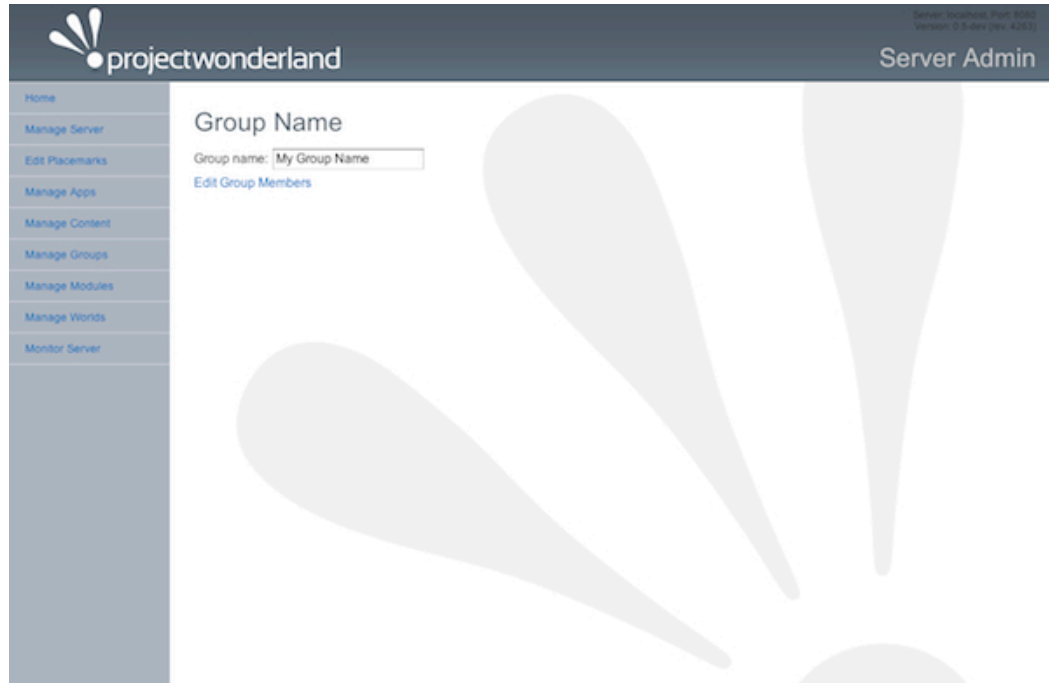
1. Click on "delete" under the Actions column on the row of the desired Security Group to delete. Note: there is no confirmation step after you click on the "delete" link.

Add a security group

To add a new security group:

1. Click on the "Add group" link
2. Enter the desired name of the new Security Group
3. Click "Edit group members" to continue to add members to the new Security Group, etc.

The add window should look something like this (Click on the image to see a full-screen version):




Managing modules

To view the list of modules currently installed in Wonderland, click on the Manage Modules link on the left-hand side bar. It should display four sections:

1. **Install a New module:** Provides the ability to select a module JAR file to upload and install
2. **Installed Modules:** A table of modules currently installed, their version, descriptions, and a checkbox to mark the module for deletion
3. **Pending Modules:** A table of modules that are waiting to be installed for some reason, typically during the next server restart or when a module it depends upon is installed
4. **Removed Modules:** A table of modules that are waiting to be uninstalled for some reason, typically during the next server restart or when a module that requires it is uninstalled

This screen should look something like this (Click on the image to see a full-screen version):


projectwonderland

Server localhost:8080
Version: 0.5-dev (rev. 4263)

Server Admin

[Home](#)
[Manage Server](#)
[Edit Placemarks](#)
[Manage Apps](#)
[Manage Content](#)
[Manage Groups](#)
[Manage Modules](#)
[Manage Worlds](#)
[Monitor Server](#)

Manage Modules

Install a New Module
Select a new module JAR to install and click Install: no file selected
[Install](#)

Installed Modules


Module Name	Module Version	Description
<input type="checkbox"/> affordances	v1.0	Visual affordances to move, rotate, and scale cells
<input type="checkbox"/> animationbase	v1.0	Animation framework API
<input type="checkbox"/> appbase	v1.0	2D application API and library
<input type="checkbox"/> artimport	v1.0	3D model import library
<input type="checkbox"/> asset-meter	v1.0	Asset download progress meter
<input type="checkbox"/> audiomanager	v1.1	Audio foundation API and library
<input type="checkbox"/> audiorecorder	v0.51	An audio recorder for Wonderland
<input type="checkbox"/> avatarbase	v1.0	Avatar API and library
<input type="checkbox"/> avatarbaseart	v1.0	Avatar artwork
<input type="checkbox"/> celleditor	v1.0	Cell editor dialog
<input type="checkbox"/> cellselection	v1.0	Cell creation library
<input type="checkbox"/> clickable-link	v0.5	[None]
<input type="checkbox"/> colladaloader	v1.0	Collada loader library
<input type="checkbox"/> coneofsilence	v1.1	Cone of silence Cell
<input type="checkbox"/> container-cell	v1.1	Container Cell Component
<input type="checkbox"/> content-repository	v1.0	Content repository API and library

Installing new modules

In Project Wonderland v0.5, modules are encapsulated in JAR archive files. To install a new module into Wonderland:

1. Select **Choose File** under the **Install a New Module** heading and locate the module JAR archive file to install
2. Click the **INSTALL** button
3. A page will display a success or error message
4. Click the **Manage Modules** tab once again to refresh your view of the modules

If the module does not depend upon any other missing module, or if the module does not require any of the server components to be restarted, it should be appear under the **Installed Modules** heading. Otherwise, it will appear under the **Pending Modules** heading, as follows:


projectwonderland

Server localhost:8080
Version: 0.5-dev (rev. 4263)

Server Admin

[Home](#)
[Manage Server](#)
[Edit Placemarks](#)
[Manage Apps](#)
[Manage Content](#)
[Manage Groups](#)
[Manage Modules](#)
[Manage Worlds](#)
[Monitor Server](#)

<input type="checkbox"/> sasxremwin	v1.0	X11 shared application library
<input type="checkbox"/> security	v1.1	Security infrastructure API and library
<input type="checkbox"/> security-groups	v1.1	Security group library
<input type="checkbox"/> security-session-noauth	v1.1	Security no authorization session store library
<input type="checkbox"/> servermanager	v1.1	Server manager library
<input type="checkbox"/> sharedstate	v1.0	Shared state API and library
<input type="checkbox"/> snapshot-manager	v1.0	Snapshot manager library
<input type="checkbox"/> stickynote	v1.0	[None]
<input type="checkbox"/> telepointer	v1.0	Tele Pointer
<input type="checkbox"/> textchat	v1.0	Text chat API and library
<input type="checkbox"/> viewproperties	v1.0	View properties configuration library
<input type="checkbox"/> voicebridge	v1.0	jVoicebridge server
<input type="checkbox"/> webdav	v1.0	Webdav library
<input type="checkbox"/> whiteboard	v1.0	Wonderland Whiteboard Module
<input type="checkbox"/> xapps-config	v1.0	Shared apps configuration library
<input type="checkbox"/> xremwin	v1.0	X11 shared application library

[Removed selected modules](#)

Pending Modules (will be installed during next restart)

Module Name	Module Version	Description
shape-tutorial-module	v0.1	null

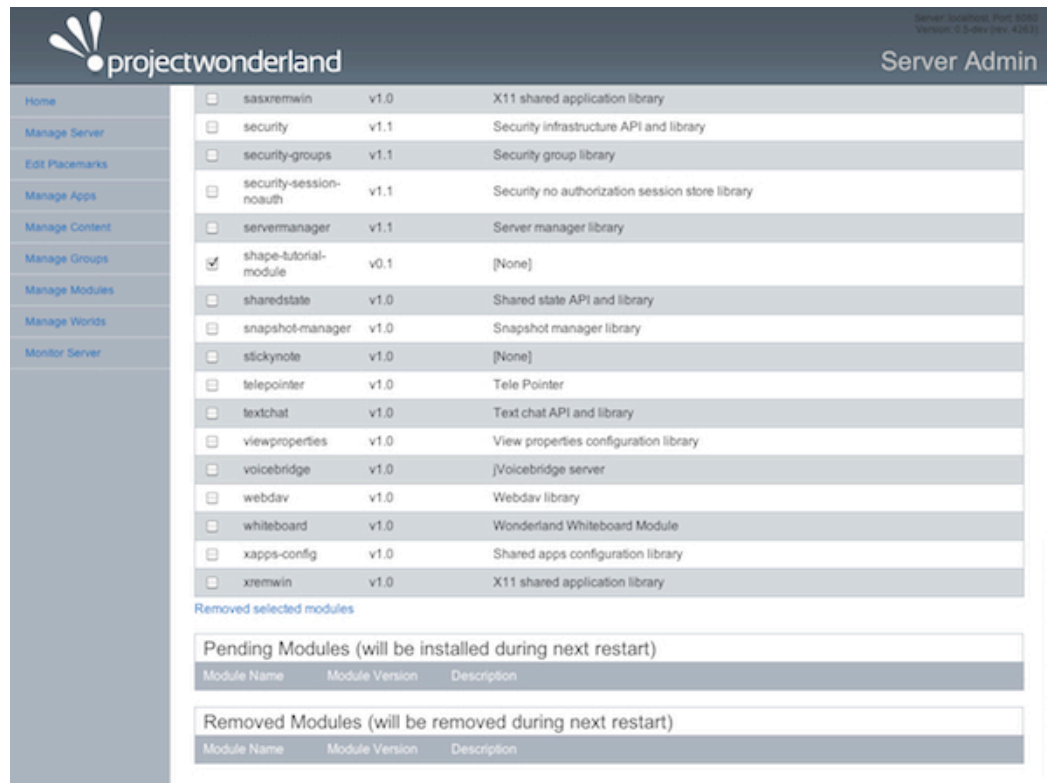
Removed Modules (will be removed during next restart)

Module Name	Module Version	Description
-------------	----------------	-------------

To have this module installed, revisit the **Manager Server** tab and select **Restart All** to restart all of the server components. Once they have restarted, the module should appear under the **Installed Modules** section.

Removing existing modules

To remove an existing installed module, first select the checkbox next to its entry under the **Installed Selection**. For example, the "shape" module has been selected to be removed.



projectwonderland Server Admin

Home Manage Server Edit Placemarks Manage Apps Manage Content Manage Groups Manage Modules Manage Worlds Monitor Server

<input type="checkbox"/>	Module Name	Module Version	Description
<input type="checkbox"/>	sasxremwin	v1.0	X11 shared application library
<input type="checkbox"/>	security	v1.1	Security infrastructure API and library
<input type="checkbox"/>	security-groups	v1.1	Security group library
<input type="checkbox"/>	security-session-noauth	v1.1	Security no authorization session store library
<input type="checkbox"/>	servermanager	v1.1	Server manager library
<input checked="" type="checkbox"/>	shape-tutorial-module	v0.1	[None]
<input type="checkbox"/>	sharedstate	v1.0	Shared state API and library
<input type="checkbox"/>	snapshot-manager	v1.0	Snapshot manager library
<input type="checkbox"/>	stickynote	v1.0	[None]
<input type="checkbox"/>	telepointer	v1.0	Tele Pointer
<input type="checkbox"/>	textchat	v1.0	Text chat API and library
<input type="checkbox"/>	viewproperties	v1.0	View properties configuration library
<input type="checkbox"/>	voicebridge	v1.0	jVoicebridge server
<input type="checkbox"/>	webdav	v1.0	Webdav library
<input type="checkbox"/>	whiteboard	v1.0	Wonderland Whiteboard Module
<input type="checkbox"/>	xapps-config	v1.0	Shared apps configuration library
<input type="checkbox"/>	xremwin	v1.0	X11 shared application library

Removed selected modules

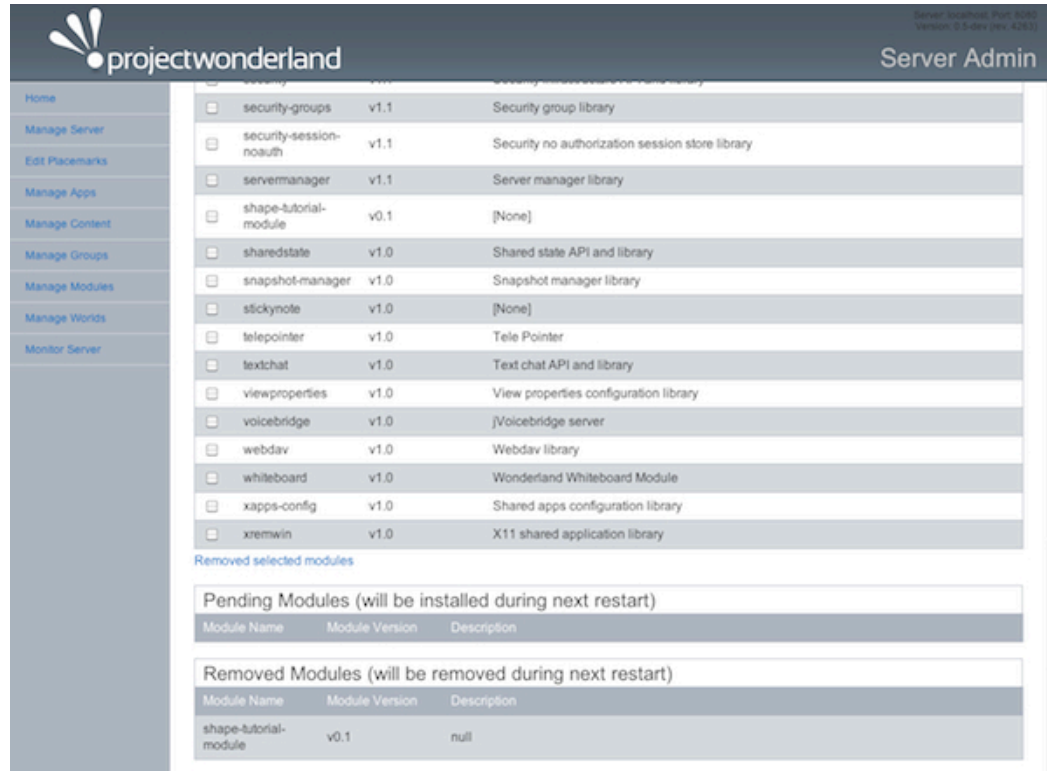
Pending Modules (will be installed during next restart)

Module Name	Module Version	Description
-------------	----------------	-------------

Removed Modules (will be removed during next restart)

Module Name	Module Version	Description
-------------	----------------	-------------

Next, click the **Remove Selected Modules** button underneath the table of installed modules. If some other installed module does not depend upon the selected module, or if the module does not require any of the server components to be restarted, it should be removed from the **Installed Modules** heading. Otherwise, it will appear under the **Removed Modules** heading, as follows:



projectwonderland Server Admin

Home Manage Server Edit Placemarks Manage Apps Manage Content Manage Groups Manage Modules Manage Worlds Monitor Server

<input type="checkbox"/>	Module Name	Module Version	Description
<input type="checkbox"/>	security	v1.1	Security infrastructure API and library
<input type="checkbox"/>	security-groups	v1.1	Security group library
<input type="checkbox"/>	security-session-noauth	v1.1	Security no authorization session store library
<input type="checkbox"/>	servermanager	v1.1	Server manager library
<input type="checkbox"/>	shape-tutorial-module	v0.1	[None]
<input type="checkbox"/>	sharedstate	v1.0	Shared state API and library
<input type="checkbox"/>	snapshot-manager	v1.0	Snapshot manager library
<input type="checkbox"/>	stickynote	v1.0	[None]
<input type="checkbox"/>	telepointer	v1.0	Tele Pointer
<input type="checkbox"/>	textchat	v1.0	Text chat API and library
<input type="checkbox"/>	viewproperties	v1.0	View properties configuration library
<input type="checkbox"/>	voicebridge	v1.0	jVoicebridge server
<input type="checkbox"/>	webdav	v1.0	Webdav library
<input type="checkbox"/>	whiteboard	v1.0	Wonderland Whiteboard Module
<input type="checkbox"/>	xapps-config	v1.0	Shared apps configuration library
<input type="checkbox"/>	xremwin	v1.0	X11 shared application library

Removed selected modules

Pending Modules (will be installed during next restart)

Module Name	Module Version	Description
-------------	----------------	-------------

Removed Modules (will be removed during next restart)

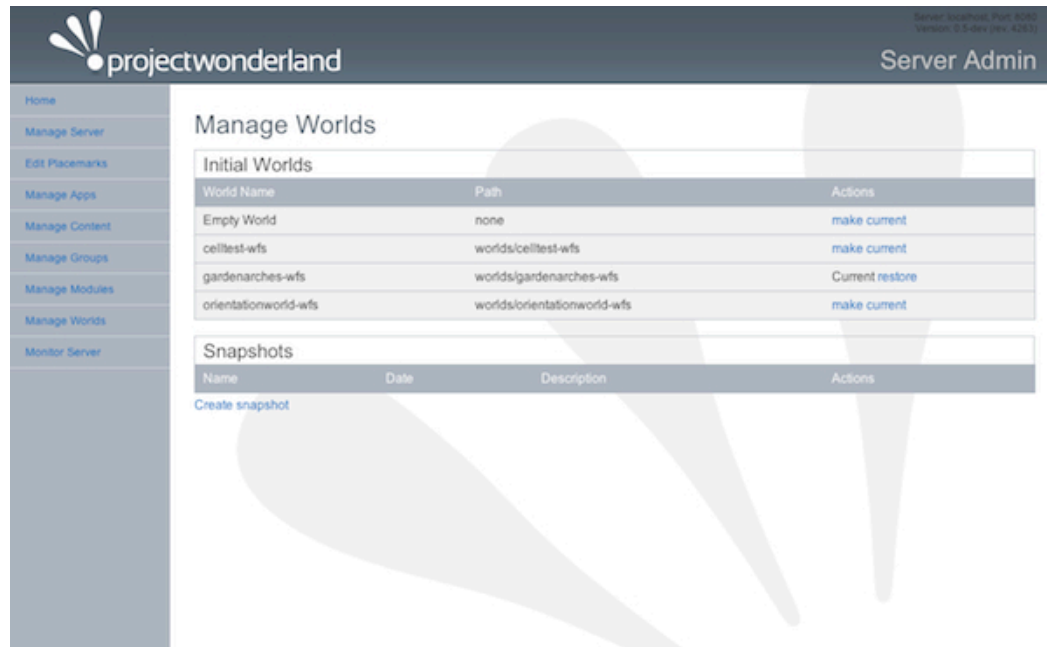
Module Name	Module Version	Description
shape-tutorial-module	v0.1	null

To have this module uninstalled, revisit the **Manager Server** tab and select **Restart All** to restart all of the server components. Once they have restarted, the module should no longer appear under the **Installed Modules** section.

Managing the Initial World and World Snapshots

To view the current list of initial worlds and world snapshots, click the **Manage Words** link on the left-hand side bar. It should

display two lists: a list of initial worlds and a list of snapshots of worlds. Your screen should look something like this (Click on the image to see a full-screen version):



Each Initial World has a name, a path, and a set of actions. Under the Actions header, initial worlds either have the "Current" label and the "restore" link, indicating that it is the basis for the initial world state, or the "make current" link.

Each Snapshot, has a name, date, description, and a set of actions. Under the Actions header, snapshots of worlds either have the "Current" label and the "restore" link, indicating that it is the basis for the initial world state, or the "make current" link. They also have "edit" and "remove" links.

Selecting the initial world

You may initialize the state of the world to one of the worlds listed under either the "Initial Worlds" heading or the "Snapshots" heading. The current initial world has the label "Current" under the Actions column. To set the initial state of the world:

1. Click the "make current" under the Action header of the desired initial world or world snapshot
2. Click OK on the Confirm page

This will reset the state of the world to that stored in the selected world and restart the server. When clients reconnect to the server, they see a new world state.

Restoring the world state

You may restore the state of the world to the currently-selected world. You may do this for either an Initial World or a Snapshot. You can only restore to the state of the world if it has a "Current" label under the Actions column. To restore the state of the world.

1. Click the "restore" under the Action header of the desired initial world or world snapshot
2. Click OK on the Confirm page


This will restore the state of the world to that which is stored and restart the server. When clients reconnect to the server, they see a new world state.

Creating a world snapshot

A Snapshot represents the current state of the running world stored on disk. You may take a Snapshot at any point (and restore to that snapshot using the steps above), although the process will restart the server and clients will have to reconnect. To create a Snapshot:

1. Click the "Create snapshot" link under the Snapshots section
2. Click OK on the Confirm page

After the snapshot has been created your screen should look something like this (Click on the image to see a full-screen version):


Server localhost, Port 8080
Version: 0.5-dev (rev. 4282)
Server Admin

[Home](#)
[Manage Server](#)
[Edit Placemarks](#)
[Manage Apps](#)
[Manage Content](#)
[Manage Groups](#)
[Manage Modules](#)
[Manage Worlds](#)
[Monitor Server](#)

Manage Worlds

Initial Worlds		
World Name	Path	Actions
Empty World	none	make current
cellest-wfs	worlds/cellest-wfs	make current
gardenarches-wfs	worlds/gardenarches-wfs	Current restore
orientationworld-wfs	worlds/orientationworld-wfs	make current

Snapshots			
Name	Date	Description	Actions
2010-01-11-14-33-10.436	Jan 11, 2010 2:33:22 PM		make current edit remove

[Create snapshot](#)

The initial name of the snapshot is the time and date the snapshot was performed. To reset the state of the world to the state stored in the snapshot, please follow the instructions above.

Deleting a world snapshot

You may also delete a stored snapshot at any point:


1. Click on the "remove" link under the Actions column next to the desired Snapshot to remove. Note: there is no confirmation step after you click on the "remove" link

Editing a world snapshot's properties

You can edit both the Snapshot name and its description that appears on the Web Administration UI.

1. Click on the "edit" link under the Actions column next to the desired Snapshot to edit
2. Edit either/both the name and description
3. Click OK to save your changes

The edit window should look something like this (Click on the image to see a full-screen version):


Server localhost, Port 8080
Version: 0.5-dev (rev. 4282)
Server Admin

[Home](#)
[Manage Server](#)
[Edit Placemarks](#)
[Manage Apps](#)
[Manage Content](#)
[Manage Groups](#)
[Manage Modules](#)
[Manage Worlds](#)
[Monitor Server](#)

Edit Snapshot

Name

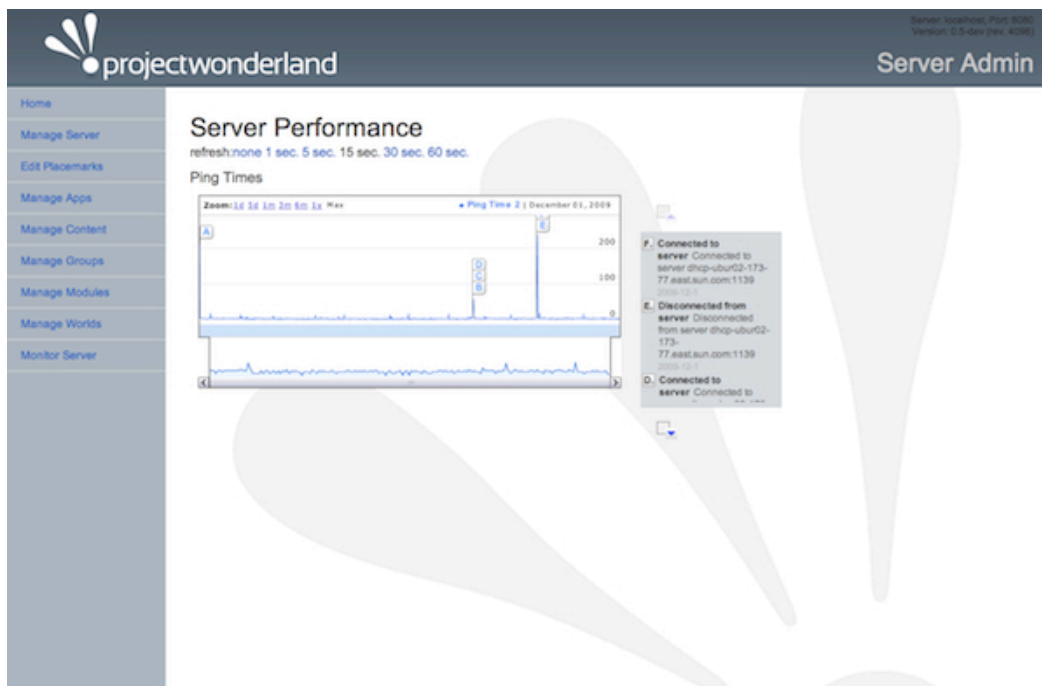
Description

Monitoring the server

To view statistics on the current performance of the server, click the **Monitor Server** link on the left-hand side bar. It should display a graph of network "ping" times, indicating the health of the Darkstar server component. (Typically values below 250 ms indicate a healthy server).

You may control the rate at which this information is refreshed via the links on top of the graph. The list to the right of the graph, labelled with the letters of the alphabet, indicate when the Darkstar server component has been stopped and started.

(Click on the image to view a full-sized version)



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