Wonderland Troubleshooting Guide

Open Wonderland Foundation

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1.1. TEST IF YOUR SYSTEM IS ABLE TO RUN WONDERLAND:

To know if your system is capable to run the Wonderland, there is a test application that should give you a good idea if your system is able to run Wonderland, if not what problems need to be addressed to get it working.

On the Open Wonderland community server launch page "http://owf1.virtualnorthstar.org:8080", you will find a green "Test Client" button towards the bottom of the page. This test application should give you a good idea if your computer will be able to run Wonderland. If there are problems, it will indicate what issues you need to address.

If the Test Client itself won't run, that indicates that you need to install or update your version of Java. Do this by clicking on the "Get Java..." link under the orange Launch button.

1.2. TROUBLESHOOTING WHEN HAVING TROUBLE GETTING WONDERLAND WORK

➢ Login Problems :

If you are having trouble logging in and you have successfully logged in before, it may mean that there is a problem with the Wonderland data stored on your computer. One solution to try is removing the hidden **.wonderland** folder in your home folder and trying to connect to Wonderland again.

➢ Check Network Bandwidth:

Open Wonderland requires a reasonably good Internet connection to run. In particular, audio will sound choppy if you do not have adequate bandwidth. There are a number of free web sites that allow you to test the speed of your Internet connection. Here's one that is easy to use: Go to "SpeedTest.net" and simply click on the "Begin Test" button (and not on any other button - most are ads). If you're not at least in the middle of the blue range, you may not have a fast enough connection to have a good Wonderland experience.

➢ Update Your Graphics Card Driver:

If you can log in to Wonderland, but the world crashes immediately or the graphics don't look correct, the first thing to try is updating your graphics card driver. How you do this is specific to each

computer. Most computer manufacturers provide free graphics card driver updates on their support web site along with instructions on how to do the update.

➢ Clear Your Caches :

Wonderland makes extensive use of "caches" - data stored on your computer so that it does not have to be downloaded from the server each time. Sometimes data in one of these caches can be bad or corrupt, perhaps because of a network glitch that caused only a partial file to get stored. The types of problems you'll see if this happens are Wonderland starting up and only loading half a screen. Sometimes you might see "missing texture" messages overlaid on objects in the world.

There are two caches that you can try clearing to solve these type of problems. First is the **Open Wonderland cache**. To clear this cache:

✓ Click the Launch button to start Wonderland.

✓ When you get to the Open Wonderland login dialog, click on the "Advanced..." button.

✓ Then click on the "Cache" tab.

✓ Click "Clear Cache."

✓ Click on the "Ok" button.

✓ The operation may take some time, so be patient - the dialog will go away once the cache is cleared.

✓ Log in as usual.

Note that it will take longer to log in because Open Wonderland will have to re-download all the 3D assets.

The other cache that might need clearing is the **Java Web Start cache**. To clear this cache on Windows:

✓ Open your Control Panel.

✓ Open the Java Control Panel.

✓ In the General Tab, Click on the "View..." button to view Temporary Internet Files. The Java Cache Viewer window will open.

✓ Click on each "Open Wonderland..." entry and click the red "X" to remove the file.

✓ Close the Java Cache Viewer Window.

✓ Click "OK" to close the Java Control Panel.

✓ Log in to Wonderland as usual.

To clear the Java Web Start Cache on a Mac:

- ✓ Open your Applications folder.

- ✓ Open the Utilities subfolder.

- ✓ Double click on the Java Preferences app to open it.

- ✓ Click on the Network tab.

- ✓ Click on the "View Cache Files..." button (this may take a while)

- ✓ When the Java Cache Viewer opens, select all of the "Open Wonderland..." entries and click on the red "X" button to delete all these files.

- ✓ Close the Cache Viewer window and the Java Preferences window.

- ✓ Log in to Wonderland as usual.

As with clearing the Open Wonderland cache, it will take considerably longer to launch the application because Java Web Start will have to re-download all the Open Wonderland code and modules.

If you have a problem other than mentioned above , please check below the section called "Tips to deal with a few common problems" and see if you've a similar issue to one of those common problems. If not, please refer to "**What to Try When the Problem Is Not Resolved**" section below.

1.3. AUDIO & VIDEO TROUBLESHOOTING

Audio problems are among the most difficult to troubleshoot because there are so many variables involved including your operating system, your audio card, your headset, and so forth.

The best rule of thumb is to try to get audio working on your computer before starting Wonderland, so you at least eliminate one variable. Here are some suggestions of things to try.

How to know if Audio is Working?

If you are experimenting with Wonderland by yourself, the first step is to figure out if your audio is, in fact, not working. Sometimes it's difficult to tell if there's no one around to talk with. Here are a few options for determining if audio is working once you're connected to a Wonderland world:

- Open "Windows --> Audio Volume" to view your audio levels and adjust them

- Speak into your microphone; the name over your avatar's head should light up

- Open "Insert --> Object", select Audio Recorder and click "Insert." You can now use the recorder to record your voice and play it back (red button records, yellow stops recording, and green plays back the recording)

Check Your Audio Device

The most common problem is that your computer is set to use the incorrect audio device. Use your computer's control panel or system preferences dialog to check which audio input and output devices are selected. Most audio control panels show you some feedback when you speak into the microphone, try different selections until you find one that lights up when you speak. If you determine that the incorrect audio input or output device was selected, change the setting and save it.

If you make an audio device change, it will often not be detected by Wonderland. Return to your Wonderland window and try the techniques listed above to check if audio is now working. If it is, great. You're all done.

If it's not, select:

"Tools --> Audio --> Reconnect Softphone"

This will force Wonderland to re-check the system settings. Now check again to see if audio is working. If it's still not working, continue on to the next section.

Check your Audio Hardware

Here are some other things to try or check:

- Check that your headset is firmly plugged in

- If your headset has a physical mute button, check that mute is not accidentally pressed

- If you are using a USB headset, try plugging it into a different USB port

- If you are using a non-USB headset, double-check that your computer supports "mic in" - a number of Macintosh laptop computers have an input plug that looks like it should be a microphone port, but it actually is not. If this is the case, you will need to buy a USB adapter for your headset.

Apart from the above testing, to troubleshoot such audio related problems, user can follow the below mentioned steps:

1. As mentioned above, user can use the Client Test feature from the http://owf1.virtualnorthstar.org/ to check if the audio setup of his/her machine will work or not.

2. Make sure ports mentioned above in System Requirements section are open.

3. Video functionality also depends on audio support. If audio is not supported, video never plays.

1.4. TIPS TO DEAL WITH A FEW COMMON PROBLEMS

Here are the few common problems observed while running the wonderland.

Problem -1: Wonderland doesn't launch from Orange launch button on Mac and Safari

Tips to follow: Follow the below steps to run the wonderland:

1. In Safari, after clicking on the Launch button, you have to click on the download arrow in the upper right corner of the browser window. When the menu opens, select the Wonderland.jnlp file.

2. Right click on the downloaded JNLP file and choose open with JNLP option. It would show a warning message related to Security.

3. If that doesn't work, you would have to change the Security and Privacy settings in your System Preferences to allow application from all developers and not just the iOS or MacOS developers. The recent changes in Mac OS consider app trusted only if it is downloaded from App store or with the digitally signed Mac Developer Id. So to change the default settings and allow Wonderland to run, follow the below instructions.

1. Open the **System Preferences**. This can be done by either clicking on the **System Preferences** icon in the **Dock** or by going to **Apple Menu > System Preferences**.

2. Open the Security & Privacy pane by clicking **Security & Privacy**.

3. Make sure that the **General** tab is selected. Click the icon labeled **Click the lock to make changes**.

4. Enter your username and password into the prompt that appears and click **Unlock**.

5. Under the section labeled **Allow applications downloaded from:**, select **Anywhere**. On the prompt that appears, click **Allow from Anywhere**.

Problem -2 : Getting error like the below ,while launching the Wonderland :
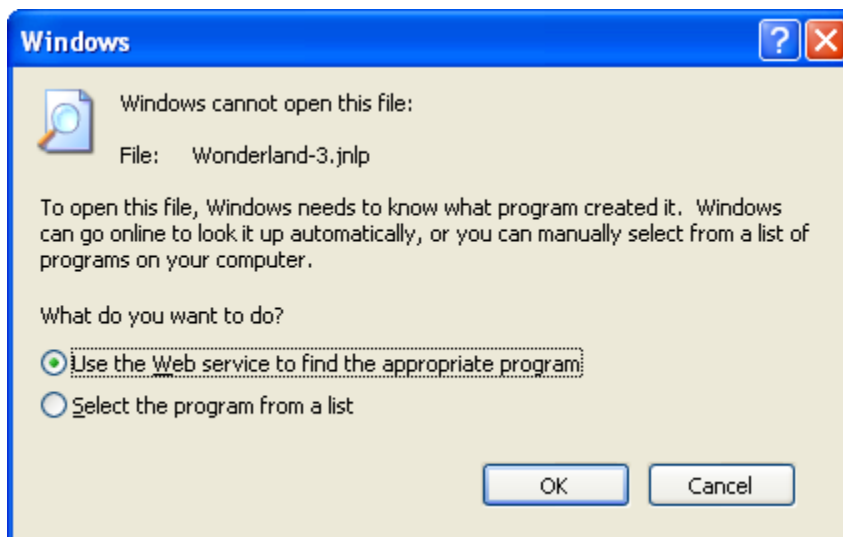
Tips to follow: The issue is likely related to the Java plugin that is not installed in the browser. To enable it, follow the below steps :

1. Go to the control panel and you will find the Java icon.

2. Double click on it and it will open a Java Control Panel.

3. Go to the "Advanced" tab and find "Default Java for Browsers" option. Please check-mark the Mozilla family option (if not checked already)

4. If using most recent version of Java (java 7) , make sure "Enable Java Content in browser" is checked under security tab.

5. Restart the Mozilla browser

**Problem -3: Getting error like the below stacktrace while trying to login to Wonderland:**

Tips to follow: It is likely related to a local network issue. Ideally try to login to the Wonderland from a computer connected to some different network (Home or Work Place PC)

Error :

     java.lang.IllegalArgumentException: Shared Drawable is null

at jogamp.opengl.windows.wgl.WindowsWGLGraphicsConfigurationFactory.preselectGraphicsConfiguration(WindowsWGLGraphicsConfigurationFactory.java:250)

at jogamp.opengl.windows.wgl.WindowsWGLGraphicsConfiguration.preselectGraphicsConfiguration(WindowsWGLGraphicsConfiguration.java:158)

at jogamp.opengl.windows.wgl.awt.WindowsAWTWGLGraphicsConfigurationFactory.chooseGraphicsConfigurationImpl(WindowsAWTWGLGraphicsConfigurationFactory.java:128)

at javax.media.nativewindow.GraphicsConfigurationFactory.chooseGraphicsConfiguration(GraphicsConfigurationFactory.java:420)

at javax.media.opengl.awt.GLCanvas.chooseGraphicsConfiguration(GLCanvas.java:1180)
at javax.media.opengl.awt.GLCanvas.addNotify(GLCanvas.java:572)
at java.awt.Container.addImpl(Unknown Source)
at java.awt.Container.add(Unknown Source)

Prob -4 : Getting error like shown in the below screenshot ,while trying to login to Wonderland :
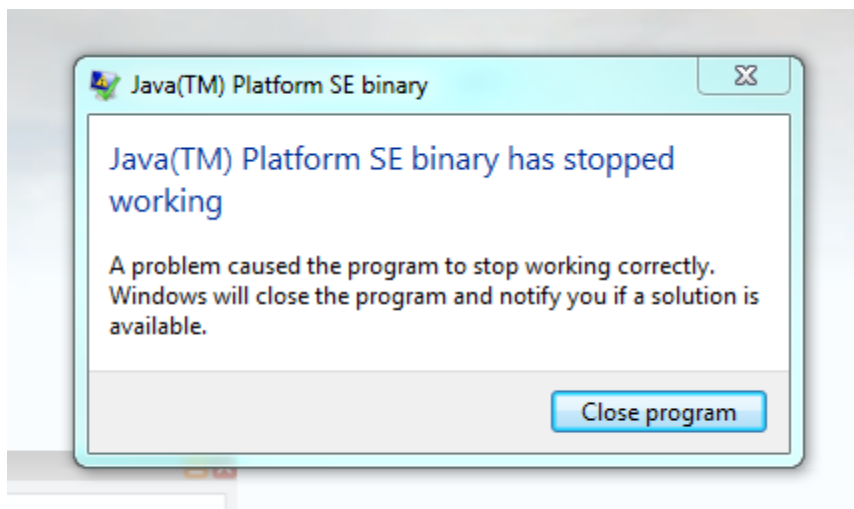
Tips to follow: The issue is related to the Java version mismatch. Make sure you have the right Java version based on your Operation System, i.e. if you have 64 bit (X64) operating system, you should have installed 64 bit version (X64) of Java on your system and 64 bit versions of browser you are using to access the Wonderland.

Problem -5 : Getting error like the below ,while trying to login to Wonderland :

Java.lang.ClassCastException: org.jdesktop.wonderland.modules.webdav.common.FileContentResource cannot be cast to org.jdesktop.wonderland.modules.contentrepo.common.ContentCollection

Tips to follow: This is likely related to the Wonderland cache. Delete the .wonderland directory from user's home directory and try to login again.

1.5. WHAT TO TRY WHEN THE PROBLEM IS NOT RESOLVED

When you run into a problem with Open Wonderland, the most effective way to get help is to provide the support or development team with data. The best technique to use depends on your level of technical expertise and also on the type of problem.

For example, if your Wonderland client hangs such that you can no longer use the menus, then it will not be possible to generate an error report using the in-world tool. Instead, you will need to capture information from the Java Console or from a Trace file.

If you need help figuring out how to collect data for your given problem, you can post questions to the forum. The instructions below explain how to post a message to the Open Wonderland forum.

Posting Questions to the Open Wonderland Forum:

Open Wonderland is a welcoming open source community that invites all users to actively participate on the discussion forum:

http://groups.google.com/group/openwonderland ↗

If you need any help figuring out how to troubleshoot a problem, what data to collect, or how to try to reproduce a problem, please do not hesitate to post a question.

To be able to post questions using the web or by sending email (openwonderland@googlegroups.com), you will first need to create a Google account, if you don't already have one, and then join the group by clicking on the "Join this group" link in the right-hand column of the forum web page.

When you post a question, please include the following details:

- Operating system (Windows Vista, Windows 7, Mac OS, Ubuntu Linux, etc.
- Make and model of your graphics card
- Type of network (home cable, home DSL, corporate network with firewall, etc.)
- Your level of technical expertise (end user, system administrator, Java developer)

In explaining the problem, try not to use generalities (eg, "Wonderland didn't work for me"). Instead, be as detailed as possible (eg, "I clicked the Login button and a window opened, but the window never showed the virtual world. It stayed black").

The best way to get help is to follow the Data Collection instructions below. The more data you can provide with your question, the better able we will be to help you quickly resolve the problem.

1.6. HOW TO COLLECT DATA FOR TROUBLESHOOTING

Open Wonderland generates extensive error logs that are critical to identifying problems. If you need to troubleshoot a problem or if you are testing the system, the instructions below explain how to collect meaningful data, with the easiest techniques listed first.

1. **Generate an Error Report In-World (All Users)**

To make it easy to collect troubleshooting or testing data, Open Wonderland provides an in-world error reporting tool. To use the tool:

- Select "Error Log" from the Help menu

- In the Log Viewer window that opens, click on "Error Report"

- In the Error Log window, click on "Select All" and then "Copy"

- On your desktop, open a new email message and paste in the Error Report (or save the Error Report as a file)

- At the top of the email message, type in an explanation of the problem

- Email this report to the Open Wonderland Forum (openwonderland@googlegroups.com)

Note: You must have set up an account on the Open Wonderland Forum to be able to email error reports.

2. **Java Console (All Users)**

Sometimes it is more convenient to have Java open up a console window automatically every time you run Wonderland.

Showing Java Console on Windows

- Make sure Wonderland is not running

- From the Start menu, select Control Panel

- In the Control Panel, click on Java

- In the Java Control Panel, click on the Advanced tab

- Click on the + before Debugging and select "Enable logging" and "Enable tracing"

- Click on the + before Java console and click on Show console

- Click OK

Showing Java Console on Mac OS

- Make sure Wonderland is not running

- Navigate to Applications --> Utilities --> Java

- Open Java Preferences

- Click the Advanced tab

- Under the Debugging heading, check "Enable logging" and "Enable tracing"

- Under the Java console heading, click Show console

- Click Save and close the Java Preference dialog

Showing Java Console on Linux

- Make sure Wonderland is not running

- Navigate to Applications --> Settings --> Sun Java 6 Plugin Control Panel

- Click the Advanced tab

- Click the toggle before "Debugging" and select "Enable logging" and "Enable tracing"

- Click the toggle before "Java console" and select "Show console"

- Click OK

Note: These Linux instructions assume you have installed the Sun Java 6.0 Runtime (sun-java6-bin) or the Sun Java 6.0 JDK (sun-java6-jdk) packages on Ubuntu. If you didn't use a package manager, the Java

Console configuration can be accessed from the Java Web Start application, which you can start from a terminal window:

- javaws -viewer

  If javaws is not in your default path, try:

- /usr/jre/bin/javaws -viewer

  or:

- /usr/jdk/jre/bin/javaws –viewer

Using the Java Console

You'll only need to configure the Java Console to be visible once. After you do, every time you run a Java program, you will see a Java Console window open that prints logging messages.

Resize the Console window to make it relatively large so that you can see a good number of messages in the window. When you run into a problem, simply copy the entire log up to the point of the error and include it with your forum post or bug report.

It's important to copy the log immediately after the problem occurs so that the error does not get lost in the middle of a very long file. After you copy it, you can continue working, but always copy the entire file for each individual problem found.

Often, errors in the log file can be identified by the word "Exception." Here's an example of a Console log that contains an exception:

```
WARNING: Running from Java Web Start. Performing setup.
JNLPClassLoader: Finding library jogl.dll
JNLPClassLoader: Finding library jawt.dll
JNLPClassLoader: Finding library jogl_awt.dll
Oct   24,   2012   12:31:25   PM   org.jdesktop.wonderland.client.assetmgr.AssetManager$AssetLoader
doAssetDownload
WARNING: Failed to download asset from this stream wlj://placemarks/client/placemarks-client.jar
java.util.zip.ZipException:                          duplicate                          entry:
org/jdesktop/wonderland/modules/placemarks/client/resources/Bundle.properties
          at java.util.zip.ZipOutputStream.putNextEntry(Unknown Source)
          at java.util.jar.JarOutputStream.putNextEntry(Unknown Source)
          at com.sun.deploy.net.HttpDownloadHelper.decompressWrite(Unknown Source)
```

Exceptions are sometimes harmless, but typically they are an indication that a problem has occurred.

If your Wonderland client hangs to the point that you are unable to copy the text in the Java Console, which sometimes happens, try taking a screen shot of the Console window instead.

The relevant messages are likely to be displayed in the window if you have it sized large enough. If a screen shot is not possible, you can find the same messages in the Java "trace" file stored on your hard disk.

Follow the instructions below for how to find the trace file on your system.

3. Trace Files (All Users)

Java trace files contain the same information that is printed in the Java Console and in the Error Reports, so typically you will not need these. If, however, something goes wrong that causes you not to be able to open the Error Log or copy the text in the Java Console, you will need to submit the trace file instead. This can happen if Wonderland freezes up or if it crashes completely, taking the Console window down with the rest of the system.

Trace files are only created if you have followed the instructions above and clicked on "Enable tracing" in the Java Preferences dialog. If you have not done that, follow the instructions above for showing the Java Console before proceeding any further. If you did not have tracing enabled, you will, of course, have to reproduce the bug again in order to produce a trace file.

Trace files on Windows

On Windows, you can find the trace files by navigating to the Java Preferences "General" tab.

- From the Start menu, select Control Panel

- In the Control Panel, click on Java

- In the Java Control Panel, make sure the General tab is visible

- In the section "Temporary Internet Files," click on the "Settings..." button

- You will see a location section with a path to the cache directory

- Navigate to that "cache" directory, go up one level, and then navigate down to the "log" directory

In the log directory, trace files will be in the form:

- javawsXXXXX.trace

where XXXXX is a long number. For example: javaws23173890315369271.trace. Be sure to sort the contents of the log directory by date to ensure that you are finding the most recent file.

Trace files on Mac OS

On Mac OS, the java trace files are in your home directory in the following sub-directory:

- MacintoshHD/Users/<username>/Library/Caches/Java/log/javawsXXXXX.trace

where XXXXX is a long number. For example: javaws23173890315369271.trace.Be sure to sort the contents of the log directory by date to ensure that you are finding the most recent file.

Trace files on Linux

On Linux, the trace file is stored in your home directory:

- $HOME/.java/deployment/log/javawsXXXXX.trace

where XXXXX is a long number. For example: javaws23173890315369271.trace. Be sure to sort the contents of the log directory by date to ensure that you are finding the most recent file.

4. Generate an Error Report Using the Server Admin Console (System Admin)

Sometimes if a client is hung, it is not possible to capture an error report in-world as described above. Also, sometimes it is simply easier for a system administrator to capture the error report rather than talk a user through the steps. You can easily capture an error report for any logged in user from the Wonderland Server Admin console:

- On the Wonderland launch page, click the "Server Admin" button

- Log in as the "admin" user using your admin password

- Click on "Connected Users" in the left navigation panel

- Each logged in user should be listed on this page.

- Click on "error report" in the Actions column associated with the person having an issue

- In the Comments dialog that opens, type in an explanation of the problem and then click "Submit"

- The Error Reports page will open with the most recent report at the top of the list

- Use the links in the Action column to look at or download the error report

- You can then email this report to your technical team or to the the Open Wonderland Forum (openwonderland@googlegroups.com)

5. Audio Log (System Admins, Developers, or Advanced Users)

If you are experiencing an audio problem, the problem can sometimes be determined by examining the audio log file, also known as the SIP Communicator log. The easiest way to get a log file for debugging audio problems is to run Wonderland and then select Tools --> Audio --> Log Audio Problem immediately after the audio problem occurs. This command should give you a dialog telling you that a log file has been created on your desktop. Look on your desktop for a file name like this one:

sipCommunicator.jp_61070.log

6. Server Logs (System Admins, Developers, or Advanced Users)

From the web page with the Wonderland "Launch" button, you can access the Server Administration

Console by clicking on the gray "Server Admin" button. From the default Manager Server page, you can access four log files (there might be more, depending on how your server is configured):

- Web Administration Server

- Darkstar Server

- Shared Application Server

- Voice Bridge

    In all cases, you can access the log files by clicking on the "log" link in the Actions column.

If, for some reason, you cannot access the log files from the web site, these log files are also available from the Wonderland server log directory. The server log directory is in the user home directory, a subdirectory called ".wonderland-server/<wonderland-version>". For example, for 0.5 development, the server log directory is in '~/.wonderland-server/0.5-dev'.

7. jStack (System Admins, Developers, or Advanced Users)

Sometimes it helps developers to find a problem if you can capture a "thread dump." Jstack is the Java thread stack trace dump tool. This is part of the Java Development Kit (JDK) which must be installed before you can follow the instructions below. Having the Java Runtime Environment (JRE) alone is not sufficient.

Assuming the JDK is installed, run Wonderland on your system, open a terminal, and type

```
jps
```

Your output will look something like this:

```
9955 Main

10092 Jps

9958 001bcb4c4209cff5b7272a4742e82ad596eaaaae

9961 softphone.jar
```

Copy the number before "Main." This is the Java process ID (pid) of your Wonderland client. Now type the

jstack command using the pid obtained from the jps command:

```
jstack [pid]
```

You will get a lot of output that looks something like this:

```
nicolesmac:~ nicoley$ jstack 9955

2011-04-26 15:39:41


Full thread dump Java HotSpot(TM) 64-Bit Server VM (19.1-b02-334 mixed mode):

"Attach Listener" daemon prio=9 tid=130eb0800 nid=0x15660f000 waiting on condition [00000000]

   java.lang.Thread.State: RUNNABLE

"pool-84-thread-1" prio=5 tid=101dd7800 nid=0x14b7fc000 waiting on condition [14b7fb000]

   java.lang.Thread.State: WAITING (parking)
```

```
      at sun.misc.Unsafe.park(Native Method)

-        parking        to        wait        for                    <7e316fce8>        (a
java.util.concurrent.locks.AbstractQueuedSynchronizer$ConditionObject)

      at java.util.concurrent.locks.LockSupport.park(LockSupport.java:158)

      at
java.util.concurrent.locks.AbstractQueuedSynchronizer$ConditionObject.await(AbstractQueuedSy
nchronizer.java:1987)

      at java.util.concurrent.LinkedBlockingQueue.take(LinkedBlockingQueue.java:399)

      at java.util.concurrent.ThreadPoolExecutor.getTask(ThreadPoolExecutor.java:947)

      at java.util.concurrent.ThreadPoolExecutor$Worker.run(ThreadPoolExecutor.java:907)

at java.lang.Thread.run(Thread.java:680)
```

Copy and paste all the output into an email message, forum post, or bug report.

8. FINE logging (Systems, Developers, or Advanced Users)

Often in the course of debugging, a developer will request a more detailed log to track down a problem.
Most objects in Wonderland use the standard Java logging utilities described in the Java Logging Overview
. By configuring the logging properties for the various Wonderland applications, it is possible to get more
detailed logs for a particular object, subsystem, or even the whole application.

Usually, the developer will tell you what objects or packages to turn up logging for. Different Wonderland
components use different configuration files to control logging, but all these configuration files use the
same syntax (described in the link above). Below are the files relative to the root of the Wonderland
workspace for various components:

✓ **Wonderland client**

In   core/src/classes/org/jdesktop/wonderland/client/jme/resources/logging.properties   set   (for
example):

org.jdesktop.wonderland.client.assetmgr.AssetManager.level=FINE

After changing this value, re-run the Wonderland client to see the new logging messages in the
Wonderland client output. Note that if you launch the client via Java Web Start, you will need to
restart the Wonderland web server using "ant run-server" to redeploy the webstart logging

configuration. You will also need to enable the Java Web Start console to see the output, as described above.

✓ **Wonderland web server**

In web/server/web-logging.properties, set (for example):

org.jdesktop.wonderland.web.server.level=FINEST

After changing this value, re-run "ant run-server" to restart the web server with new logging values. Output will be in the Wonderland server log directory (~/.wonderland-server/0.5-dev/log) in a file named "web_server.log.0". The web server log is also available from the web administration UI.

✓ **Darkstar server**

In core/src/darkstar_config/sgs-logging.properties, set (for example):

ORG.JDESKTOP.WONDERLAND.SERVER.CELL.CELLMO.LEVEL=FINE

After changing this value, re-run "ant run-server" to restart the Wonderland server with new logging values. Output will be in the Wonderland server log directory in a file named "darkstar_server.log".

The Darkstar server log is also available from the web administration UI.