Pentaho BI Suite Graphical Installer Guide

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Installation Overview

Pentaho provides several installation paths to meet a variety of customer needs. This procedure is the simplest, but provides the least customization. This guide explains how to use the graphical installer to perform a default installation of the latest release of the BI Suite Enterprise Edition.

Note: There are 32-bit and 64-bit editions of this installation utility. Check the file name to ensure that you are using the intended version before you proceed.

The BI Suite Installation Utility Will Provide	You Must Supply On Your Own
Application server: Tomcat 6.0 **Solution database:** MySQL 5.0 **BI Server:** • Pentaho User Console • Analyzer • Dashboard Designer • Interactive Reporting • Pentaho Enterprise Console **Data preparation tools:** • Schema Workbench • Pentaho Data Integration • Metadata Editor **Design tools:** • Report Designer • Design Studio • Aggregation Designer **Data Integration (DI) Server** **Hadoop support for PDI** **Hive support for Pentaho Metadata** **A Sun JRE 1.6.0** on the server, and on each workstation that you will install data preparation or design tools to	**An operating system:** • Linux (Red Hat Enterprise Linux 5, SUSE Linux Enterprise Linux 10) • Windows (XP, Vista, Server 2008, 7) • OS X 10.5 or newer **One or more data sources:** • Any JDBC-compliant database • A spreadsheet • A flat file containing comma-separated values

If you just want to install a single design tool such as Report Designer or Data Integration, it's quicker and easier to use individual client tool archives as explained in the *Pentaho BI Suite Archive-Based Installation Guide*.

This may not be the best installation path for your production environment. This procedure expects you to use the included MySQL database to store your BI Suite solutions, content, and schedules; the self-contained Data Integration Server, and the included Tomcat application server to host the BI Server Web application.

If you cannot use the graphical installer but would prefer not to build your own BI Server WAR file and install an application server, consult the *Pentaho BI Suite Archive-Based Installation Guide*.

If you would prefer to build the application from source, if you want to use a different solution database or application server, if you plan to implement single sign-on through Central Authentication Service, or if you prefer to use your own Tomcat and MySQL instances, refer instead to the *Pentaho BI Server Manual Deployment Guide*.

Note: The graphical installation procedure is most popular for pre-sales evaluation; the manual deployment process is most popular for development and production installations.

The Pentaho Directory Structure: Graphical Installer

Overview

The BI Suite installer lays down a specific directory structure for Pentaho software. Below is a diagram showing the entire structure, though your specific installation will be different if you only install parts of the suite.

Note: This structure differs slightly from an archive-based installation or manual deployment. The graphical installer includes a Java Runtime Environment and some service control scripts.

Directory hierarchy

Below is an abridged Pentaho directory structure. The purpose of this diagram is to help you easily find some of Pentaho's important files and locations, which are explained below this diagram.

```
/pentaho
../server
../../biserver-ee
../../../data
../../../licenses
../../../pentaho-solutions
../../../tomcat
../../data-integration-server
../../../data
../../../licenses
../../../pentaho-solutions
../../../tomcat
../../enterprise-console
../design-tools
../../aggregation-designer
../../data-integration
../../design-studio
../../metadata-editor
../../report-designer
../../schema-workbench
../common
../documentation
../java
../licenses
../mysql
../scripts
```

Top-level files

These files are found in the top-level Pentaho directory:

- **ctlscript:** (**.sh** or **.bat**) Starts, stops, restarts, and shows the status of Pentaho services.
- **installation-summary.txt:** Contains the information from the summary screen at the end of the installation process.
- **pentaho.log:** The Tomcat log file for the Pentaho Web application.
- **uninstall:** A script that removes the BI Suite.

Locations of specific programs

- **BI Server:** `/pentaho/server/biserver-ee/`

- **DI Server:** `/pentaho/server/data-integration-server/`
- **Pentaho Enterprise Console:** `/pentaho/server/enterprise-console/`
- **Report Designer:** `/pentaho/design-tools/report-designer/`
- **Schema Workbench:** `/pentaho/design-tools/schema-workbench/`
- **Data Integration (PDI):** `/pentaho/design-tools/data-integration/`
- **Design Studio:** `/pentaho/design-tools/design-studio/`
- **Metadata Editor:** `/pentaho/design-tools/metadata-editor/`
- **Aggregation Designer:** `/pentaho/design-tools/aggregation-designer/`
- **Dashboard Designer:** `/pentaho/server/biserver-ee/pentaho-solutions/system/dashboards/`
- **Analyzer:** `/pentaho/server/biserver-ee/pentaho-solutions/system/analyzer/`
- **Interactive Reporting:** `/pentaho/server/biserver-ee/pentaho-solutions/system/pentaho-interactive-reporting/`
- **License installer:** `/pentaho/server/enterprise-console/license-installer/`

Note: The license installer can also be found in the report-designer, data-integration, and metadata-editor directories. All of these license installers perform the same functions, but are available in separate places to account for instances where only specific parts of the BI Suite are installed to a particular machine. It does not matter which one you use. You can also install licenses through the Pentaho Enterprise Console.

Installation Checklist

The Installation Checklist is a concise list of instructions intended to show a high-level overview of the installation and configuration process. It also serves as a quick reference for administrators and developers who have performed several installations in the past and only need a brief rehash of the necessary steps. If you need more details than are provided in this checklist, consult the appropriate section in the verbose instruction set that comprises the rest of this guide.

Step	Procedure	Done
Step 1	Download the BI Suite 4.0 .exe, .bin, or .app installer from the Pentaho Enterprise Edition FTP site or Knowledge Base.	
Step 2	If you are installing the BI Server and DI Server on Linux, create a local user account called **pentaho**, then switch to that user and run the BI Suite installation utility from it. If you are installing one or both of the servers on Windows Server 2008 or 7, run the installer as the **Administrator** user.	
Step 3	Follow the on-screen instructions to install the BI Server, DI Server, and the Pentaho Enterprise Console on the machine that will act as your server.	
Step 4	Log into the Pentaho Enterprise Console, which by default is located at `http://localhost:8088`	
Step 5	Install Enterprise Edition keys, and establish users, roles, data sources, and any other configuration information. Use the *Pentaho BI Suite Administrator's Guide* for assistance.	
Step 6	Run the BI Suite installer on each workstation, and install any client tools that you have support entitlements for.	
Step 7	Test the installation by accessing the BI Server from a workstation and verifying that you can log in as a normal user, and create reports and analysis views. Also access the DI Server from a Pentaho Data Integration workstation and ensure that you can create or connect to an enterprise repository.	

Prerequisites

In order to install the Pentaho BI Suite, you should be familiar with system administration operations pertaining to network services, including modifying your firewall to open specific ports, and adding services to the system startup and shutdown scripts. In most installation scenarios, this will require you to be comfortable using your operating system's command line interface and/or graphical system administration tools. You must have the ability to install software, open firewall ports, and start and stop system services on the machine you are installing on. If you don't have the requisite access or permissions, having the cooperation of someone who does (the sysadmin or DBA) is probably good enough.

Installing the BI Suite client tools onto end-user workstations is a much simpler process which requires little more than being able to run the graphical installation utility.

Software Requirements

Note: The system requirements listed below apply to the BI Suite. The BI Suite graphical installation utility, however, will only work on Windows or Linux.

In terms of operating systems, Windows (XP SP2, 2008, 7) modern Linux distributions (SUSE Linux Enterprise Desktop and Server 10 and Red Hat Enterprise Linux 5 are officially supported, but most others should work), Solaris 10, and Mac OS X 10.5 (and newer) are all officially supported.

The BI Suite installer will provide you with a Sun Java Runtime Environment (JRE) version 1.6 (sometimes referenced as version 6.0) installed. If you have other versions installed, they will be ignored.

Workstations will need to have reasonably modern Web browsers to access Pentaho's Web interface. Internet Explorer 8 or higher; Firefox 4.0 or higher; and Safari 5 or higher will all work.

Note: The Pentaho User Console may have rendering issues in Firefox 3.5 and Safari 4.x.

Your environment can be either 32-bit or 64-bit as long as it meets the above requirements.

The aforementioned configurations are officially supported by Pentaho. Other operating systems such as FreeBSD and OpenBSD; other Java virtual machines like Blackdown; other application servers such as Liferay and Websphere; and other Web browsers like Opera may work without any problems. However, the Pentaho support team will probably not be able to help you if you have trouble installing or using the BI Suite under these conditions.

Note: Some Pentaho client tools, such as Metadata Editor, Aggregation Designer, Pentaho Data Integration, and Design Studio, require that the Eclipse SWT JAR be in your Java classpath. This can be an issue in scenarios where standalone client tools are installed onto a machine that does not also have the BI Server installed, particularly on platforms other than Windows and Linux.

Note: The Pentaho Reporting engine requires a graphical environment in order to create charts. If you are installing the BI Server onto a headless Linux, BSD, or Solaris server and do not have X11R6 on it, you should install the **Xvfb** package on your server to satisfy the charting dependency.

Important Note on Local User Accounts For Linux/Unix

The section below advises you to create a local user account called **pentaho**. In this new user's home directory you will put the pentaho-solutions directory and store license information recorded by the Pentaho Enterprise Console. You will have to adjust your init scripts to start your Web application server (which will run the BI Server) and the Pentaho Enterprise Console as this user. If you are unable to do this, you must modify the instructions in the rest of this guide to support your own custom user and directory configuration.

Caution: If you do not run the Pentaho Enterprise Console and the application server that runs the BI Server as the same system user, the BI Server will not be able to find the appropriate license information and will not operate with full functionality. If you need to launch the Pentaho Enterprise Console and the BI Server as separate users or services, you will have to set a **-D** parameter in your Web application server's service configuration or startup scripts to specify a static location for your Pentaho license file. The Java parameter is **-Dpentaho.installed.licenses.file=/pentaho/.installedLicenses.xml**, though you will need to change this example to match your configuration.

Caution: If you choose to put the pentaho-solutions directory in a parent directory that the pentaho user (or whatever user account you are running your Pentaho services as) does not have write access to, you will not be able to save any reports, analysis views, or dashboards, and you will not be able to set user permissions on any existing content.

Creating a Pentaho System User (Linux/Solaris)

This is for Linux, Solaris, and other Unix-like operating systems only. Windows users do not need to follow this procedure. Theoretically, you can use a different local user account than the one suggested here. However, you will have to modify all of the instructions from here onward to match that configuration.

Pentaho licenses are installed to an XML file in the home directory of the user that starts the Pentaho Enterprise Console. While you can use any system user to install licenses, it is easier to create a new user to start and stop the Pentaho Enterprise Console, and to install and update licenses with.

1. Open a local terminal on, or an OpenSSH session to the server you are hosting the BI Server on.
   ```
   ssh pgibbons@192.168.1.133
   ```
2. With root permissions, create a new user account called **pentaho**.
   Bash is not a requirement, but it is typically the shell that Linux users want to standardize on. On many Linux distributions, the default new user shell is /bin/sh or some equivalent (such as Dash) that may not use the ~/.bashrc configuration file that you will work with later. If you don't have or want to use Bash, adjust the instructions throughout this guide accordingly.
   ```
   sudo useradd -s /bin/bash -m pentaho
   ```
3. Set a password for the pentaho user (note that when using the **sudo** command, you must first supply the root password).
   ```
   sudo passwd pentaho
   ```
4. Verify that you can log in using the credentials you specified.
   ```
   su pentaho -
   ```

You now have a user account created specifically for running the BI Server and controlling Pentaho Enterprise Console start and stop scripts. You should stay logged into this new account to create the pentaho directory in the next section, and all other installation tasks that do not explicitly require root access.

You must use this new user account for starting and stopping the Pentaho Enterprise Console, and for installing and updating licenses if you use the command line tool to manage them instead of the graphical interface in Pentaho Enterprise Console. If you create any RC or init scripts to start Pentaho Enterprise Console automatically at boot time, then you will have to fashion those scripts such that they start the service with the **pentaho** user credentials.

Notes For Windows Vista, Windows 7, and Windows Server 2008

Windows Vista, 7, and Server 2008 have expanded user access and permissions restrictions that change the way the BI Suite is installed and accessed by system users. The graphical installation utility or license installation script must be executed in with elevated permissions (**Run Elevated** status) in order for the BI Server and DI Server to be accessible to all users. This is not an issue on Windows XP or Server 2003.

Preparing a Headless Linux or Solaris Server

There are two headless server scenarios that require special procedures on Linux and Solaris systems. One is for a system that has no video card; the other is for a system that has a video card, but does not

have an X server installed. In some situations -- particularly if your server doesn't have a video card -- you will have to perform both procedures in order to properly generate reports with the BI Server.

Systems without video cards

The **java.awt.headless** option enables systems without video output and/or human input hardware to execute operations that require them. To set this application server option when the BI Server starts, open the `/pentaho/server/biserver-ee/start-pentaho.sh` script with a text editor, then add the following item to the list of CATALINA_OPTS parameters: **-Djava.awt.headless=true**.

The entire line should look something like this:

```
export CATALINA_OPTS="-Djava.awt.headless=true -Xms256m -Xmx768m
 -XX:MaxPermSize=256m -Dsun.rmi.dgc.client.gcInterval=3600000 -
Dsun.rmi.dgc.server.gcInterval=3600000"
```

Note: If you do not have an X server installed, you must also follow the below instructions.

Systems without X11

In order to generate charts, the Pentaho Reporting engine requires functionality found in X11. If you are unwilling or unable to install an X server, you can install the **xvfb** package instead. xvfb provides X11 framebuffer emulation, which performs all graphical operations in memory instead of sending them to the screen.

Use your operating system's package manager to properly install xvfb.

Hardware Requirements

The Pentaho BI Suite does not have strict limits on computer or network hardware. As long as you meet the minimum software requirements (note that your operating system will have its own minimum hardware requirements), Pentaho is hardware agnostic. There is, however, a recommended set of minimum system specifications:

Server:

RAM	At least 2GB
Hard drive space	At least 2GB for the software, and more for solution and content files
Processor	Dual-core AMD64 or Intel EM64T

Workstation:

RAM	At least 1GB
Hard drive space	At least 1GB for the software, and more for solution and content files
Processor	Dual-core AMD64 or Intel EM64T

It's possible to use less capable machines, but in most realistic scenarios, the too-limited system resources will result in an undesirable level of performance.

Your environment does not have to be 64-bit, even if your processor architecture supports it; while all modern desktop, workstation, and server machines have 64-bit processors, they often ship by default with 32-bit operating systems. If you want to run the Pentaho BI Suite in a pure 64-bit environment, you will have to install a 64-bit operating system, ensure that your solution database and Java Runtime

Environment are 64-bit, and install the BI Suite via the 64-bit graphical installer, or through the archive-based or manual deployment methods.

Note: A 32-bit JRE has a hard memory limit of 2GB (1.5GB on Windows), so if you have 2GB or more of RAM, you must use a 64-bit JRE on a 64-bit operating system to take full advantage of it. This means that, through architectural limitations, a 32-bit environment will likely be under-powered for a production BI Server deployment.

Obtaining the Pentaho BI Suite Installation Utility

Consult the Welcome Kit email that was sent to you after completing the sales process. This email contains user credentials for the Enterprise Edition FTP site, and download instructions that tell you where to find the installer in the directory hierarchy. There are self-contained installation utilities available for the Windows, Linux, and OS X platforms. You will use the same installation utility to install the BI Server, DI Server, and Pentaho Enterprise Console on your server, and the Pentaho client tools on your end-user workstations.

You can also find direct FTP links in the Pentaho Knowledge base in the **Enterprise Software** section. These links are particularly helpful in situations where you do not have access to an FTP client to navigate a directory structure; a direct link to a file on an FTP server can easily be downloaded with a Web browser, or by using a command line program such as wget.

Server Installation Procedure

To manually install and configure the Pentaho BI Server, DI Server, and Pentaho Enterprise Console from the BI Suite installer, follow these procedures in the order they are presented. This process should take less than 20 minutes.

Note: The installation utility is unable to process the following characters in passwords: ' " & < > \ `

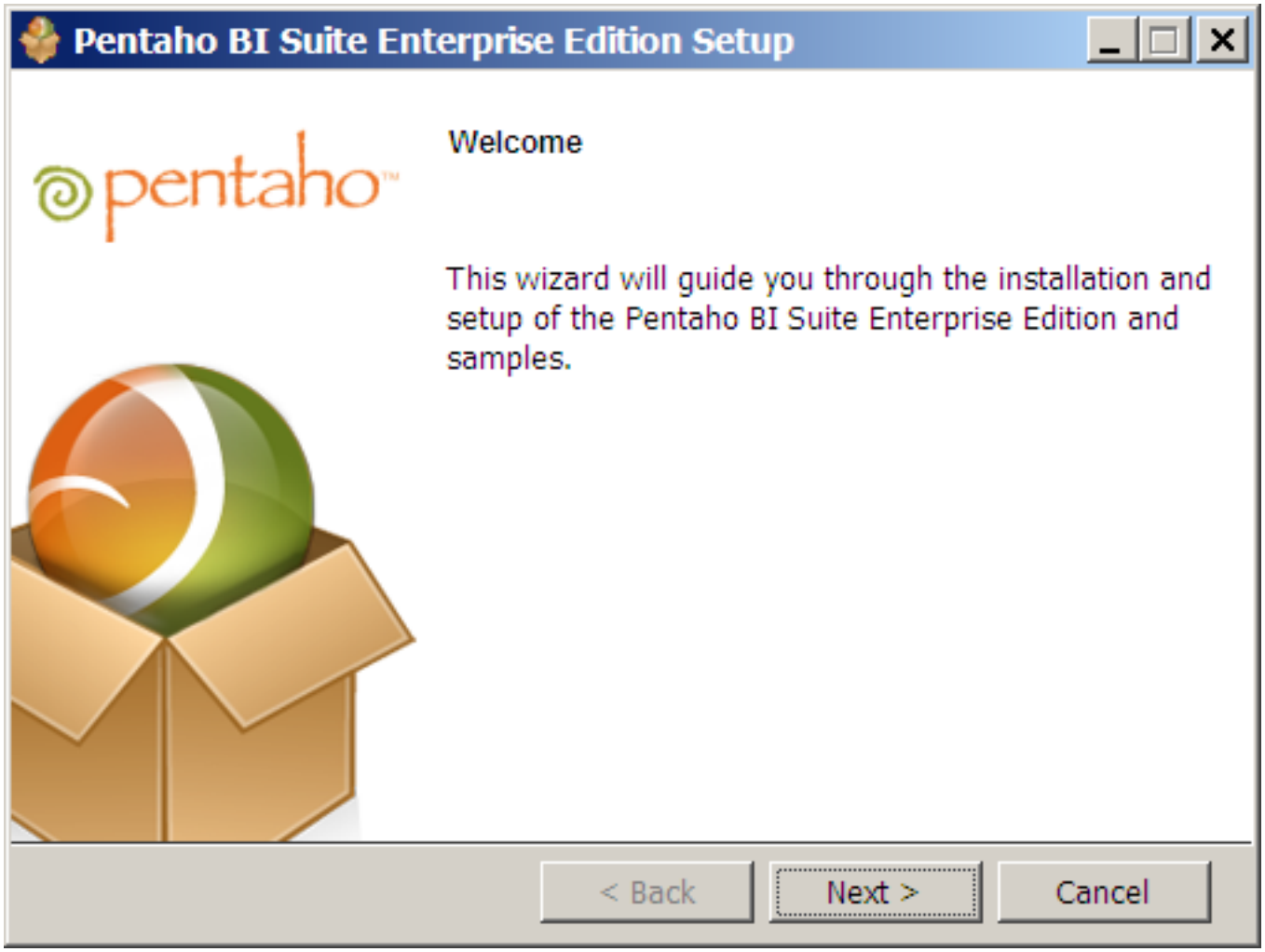
Using the Windows Installation Utility

These instructions are for Windows users only. Linux users should refer to the Linux installation instructions instead.

Note: You must disable any anti-spyware software before installing the BI Suite. Some types of software firewalls and anti-virus scanners may also block the BI Server or prevent it from operating normally.

Step-by-step instructions for using the installer are below. You may need to adjust the instructions for your specific situation.

1. Run the installation utility as you would any other program - double-click it.
2. When the installation utility starts, you'll see a Pentaho splash screen. Click Next.



3. Accept the license agreement to continue.
4. When prompted for which setup type you'd like to perform, select **Default** if you want to install the entire BI Suite on one machine, or **Custom** if you only want to install selected components. If you selected Custom, you'll be asked which Pentaho applications you want to install. For a server installation, uncheck all options except **BI Server** and **Data Integration Server**. If you have a Pentaho Dashboards Enterprise Edition or Pentaho Analysis Enterprise Edition license key, select the checkboxes for the **Dashboard Designer** and **Pentaho Analyzer** options, respectively.

   If you do not have the requisite support entitlements, the Dashboard Designer and Pentaho Analyzer plugins will not work, and they will change your Pentaho User Console interface permanently. There is no direct harm in installing these plugins if you do not have support entitlements for them; however, you will have to ensure that your users are properly trained to avoid the disabled functions in the Pentaho User Console. If necessary, it is possible to install Dashboard Designer and Pentaho Analyzer later by using archive packages.

   Note: If you install Pentaho Analyzer, you must also install Dashboard Designer due to a software dependency.
5. If you selected Custom, then you'll be asked if you would like to install the Pentaho sample data. Select **No** if this is a production installation.

   The sample data is useful for testing and evaluating the BI Suite, but tends to get in the way in a production environment.
6. Next, you'll be asked to choose a directory to install to. Feel free to select a new path, but for documentation continuity and support purposes, you should leave the actual directory name alone. The default directory is `C:\Program Files\pentaho\`

   You cannot install into a directory that already exists.
7. In the next screen, type in a master password for the MySQL database, Enterprise Console admin user, and the BI Server publish function.

   The BI Suite installer provides a MySQL database to store your reports and analysis views. The root password is for the internal database root user, not the global system root (administrator) user. This is the account that has total control over all MySQL databases. The admin password is for the Pentaho Enterprise Console (username **admin**). The publish password is used whenever you publish content from a workstation (via Pentaho design tools) to the BI Server.
8. If any of the default Pentaho BI and DI Server ports (**8088**, **8080**, **8012**, **9092**, **9080**, **8443**, **8143**, and **3306**) are not available on your system, the default numbers will increment by one until an available port is found.
9. If you chose a custom installation, a summary screen will show you an overview of which BI Suite components you've chosen to install, and the ports that all of the necessary services will run on. Click **Next** to leave this screen, then **Next** again to commence installation. If you chose the default installation, you only have to click **Next** once here.

Once the installation wizard is complete, the BI Server and DI Server should be up and running with default parameters. You have the option of viewing an installation summary and starting the Pentaho User Console during the last step of the installation process. If you choose the Pentaho User Console option, your default Web browser will open to the Pentaho User Console login screen. A PDF copy of the *Getting Started With Pentaho* evaluation document will also appear once you click the **Finish** button on the last screen of the installer.

Note: Terminal windows may remain open after installation. Closing them will terminate the BI Server and DI Server processes for this session.

Note: The BI Server and DI Server are now installed as system services in Windows, meaning they will start and stop when Windows starts up and shuts down. The Pentaho Enterprise Console must be manually run from the Start menu, however.

Installing on Linux

Because of Linux' more modular and secure design, the installation instructions are different than for Windows.

The licensing technology in the BI Server requires that you take all of the steps below to ensure that all system users have access to content and tools through the Pentaho User Console. If you used the graphical installation utility to evaluate the Pentaho BI Suite on Linux before you purchased a subscription, you did not have to establish a new user account or worry much about licensing. However, the procedure is more involved on a production server, where more than one user will be accessing the Pentaho User Console or managing BI Server licenses.

Note: Pentaho strongly discourages administrators from installing to the `/opt/` directory due to its complicated permissions requirements and general isolation from the rest of the system.

Using the Linux Installation Utility

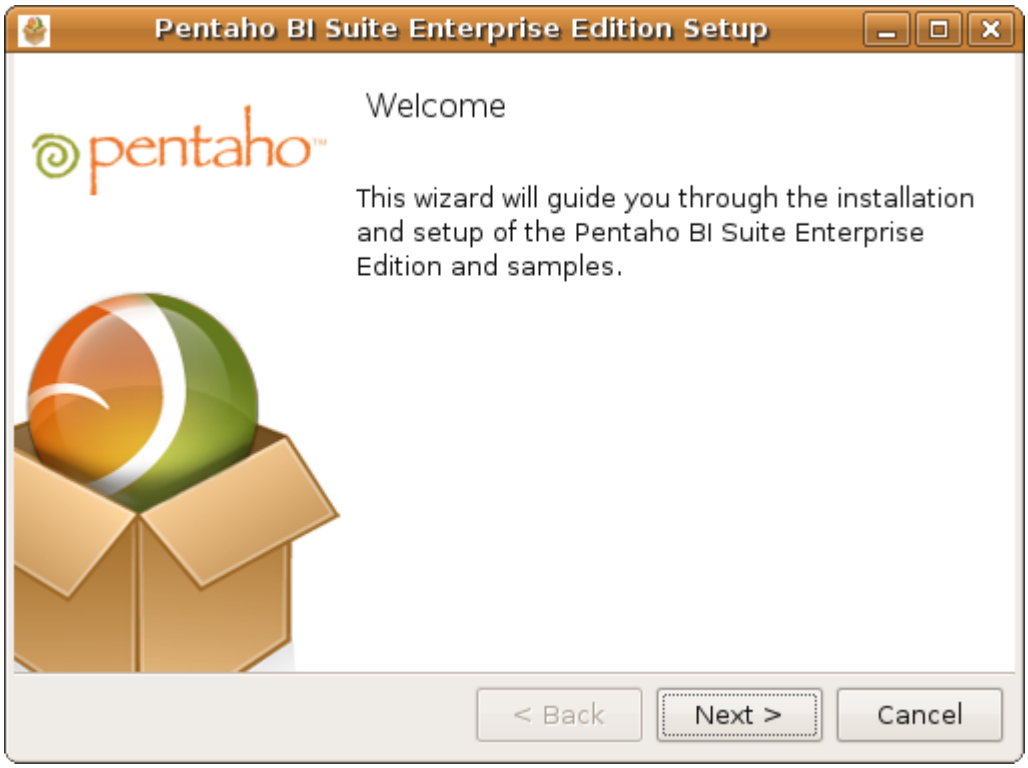
These instructions are for Linux users only. Windows users should refer to the Windows installation instructions instead.

Important: If you do not have an X server installed, you can run the installation utility in text mode by invoking the **--mode text** switch. If you like, you can also perform the installation on a Linux workstation, then transfer over the `/pentaho/` and `~/.pentaho/` directories to your server after installation.

Note: The installation utility's graphical mode defaults to the GTK graphics toolkit. If you do not have the requisite GTK libraries on your system, you can run the installer with the **--mode xwindow** switch to use OpenMotif instead.

Step-by-step instructions for using the installer are below. You may need to adjust the instructions for your specific situation.

1. Open a terminal window.
2. If it is not already there, copy the installation utility to the **pentaho** home directory.
   ```
   cp  /home/rwilco/Desktop/pentaho-bi-suite-4.0.0-GA-i386.bin /home/pentaho/
   ```
3. Switch to the **pentaho** user account.
   ```
   su pentaho -
   ```
4. Set execute permissions on the installation utility.
   ```
   chmod +x ./pentaho-bi-suite-4.0.0-GA-i386.bin
   ```
5. Run the installation utility.
   ```
   /home/rwilco/Desktop/pentaho-bi-suite-4.0.0-GA-i386.bin
   ```
6. When the installation utility starts, you'll see a Pentaho splash screen. Click Next.



7. Accept the license agreement to continue.
8. When prompted for which setup type you'd like to perform, select **Default** if you want to install the entire BI Suite on one machine, or **Custom** if you only want to install selected components. If you selected Custom, you'll be asked which Pentaho applications you want to install. For a server installation, uncheck all options except **BI Server** and **Data Integration Server**. If you have a Pentaho Dashboards Enterprise Edition or Pentaho Analysis Enterprise Edition license key, select the checkboxes for the **Dashboard Designer** and **Pentaho Analyzer** options, respectively.

   If you do not have the requisite support entitlements, the Dashboard Designer and Pentaho Analyzer plugins will not work, and they will change your Pentaho User Console interface permanently. There is no direct harm in installing these plugins if you do not have support entitlements for them; however, you will have to ensure that your users are properly trained to avoid the disabled functions in the Pentaho User Console. If necessary, it is possible to install Dashboard Designer and Pentaho Analyzer later by using archive packages.

   Note: If you install Pentaho Analyzer, you must also install Dashboard Designer due to a software dependency.
9. If you selected Custom, then you'll be asked if you would like to install the Pentaho sample data. Select **No** if this is a production installation.

   The sample data is useful for testing and evaluating the BI Suite, but tends to get in the way in a production environment.
10. Next, you'll be asked to choose a directory to install to. Feel free to select a new path, but for documentation continuity and support purposes, you should leave the actual directory name alone. The default directory is `~/pentaho/`

    You cannot install into a directory that already exists.
11. In the next screen, type in a master password for the MySQL database, Enterprise Console admin user, and the BI Server publish function.

    The BI Suite installer provides a MySQL database to store your reports and analysis views. The root password is for the internal database root user, not the global system root (administrator) user. This is the account that has total control over all MySQL databases. The admin password is for the Pentaho Enterprise Console (username **admin**). The publish password is used whenever you publish content from a workstation (via Pentaho design tools) to the BI Server.

12. If any of the default Pentaho BI and DI Server ports (**8088**, **8080**, **8012**, **9092**, **9080**, **8443**, **8143**, and **3306**) are not available on your system, the default numbers will increment by one until an available port is found.
13. If you chose a custom installation, a summary screen will show you an overview of which BI Suite components you've chosen to install, and the ports that all of the necessary services will run on. Click **Next** to leave this screen, then **Next** again to commence installation. If you chose the default installation, you only have to click **Next** once here.

Once the installation wizard is complete, the BI Server and DI Server should be up and running with default parameters. You have the option of viewing an installation summary and starting the Pentaho User Console during the last step of the installation process. If you choose to go to the Pentaho User Console, your default Web browser will open and display the BI Server login screen.

Starting the Servers At Boot Time On Linux

This procedure assumes that you will be running your BI Server, DI Server, and Pentaho Enterprise Console server under the **pentaho** local user account, as recommended by Pentaho and explained earlier in this guide. If you are using a different account to start these services, use it in place of the pentaho user account in the script below.

You can start and stop the BI and DI Servers at any time by running the **start-pentaho.sh** and **stop-pentaho.sh** scripts in the `/pentaho/server/biserver-ee/` and `/pentaho/server/data-integration-server/` directories, respectively, or you can start and stop the entire stack -- MySQL, Tomcat, DI Server, and the Pentaho Enterprise Console -- with the provided ctlscript.sh script in the **/pentaho/** directory. To start the Tomcat server automatically at boot time, and stop automatically during shutdown, follow the below procedure.

1. With root permissions, create a file in `/etc/init.d/` called **pentaho**.
2. Using a text editor, copy the following content into the new pentaho script, changing **mysql** to the name of the init script for your database if it is running on the remote machine, or remove **mysql** entirely if you are using a remote database. Secondly, you must adjust the paths to the BI Server, DI Server, and Pentaho Enterprise Console scripts to match your situation.

```
#!/bin/sh -e
### BEGIN INIT INFO
# Provides: pentaho
# Required-Start: networking
# Required-Stop:
# Default-Start: 2 3 4 5
# Default-Stop: 0 1 6
# Description: Pentaho BI Server
### END INIT INFO

case "$1" in
"start")
su - pentaho -c "/home/pentaho/pentaho/mysql/scripts/ctl.sh start"
su - pentaho -c "/home/pentaho/pentaho/server/biserver-ee/start-pentaho.sh"
su - pentaho -c "/home/pentaho/pentaho/server/data-integration-server/start-
pentaho.sh"
su - pentaho -c "cd /home/pentaho/pentaho/server/enterprise-console && ./
start-pec.sh"
;;
"stop")
su - pentaho -c "/home/pentaho/pentaho/mysql/scripts/ctl.sh stop"
su - pentaho -c "/home/pentaho/pentaho/server/biserver-ee/stop-pentaho.sh"
su - pentaho -c "/home/pentaho/pentaho/server/data-integration-server/stop-
pentaho.sh"
su - pentaho -c "cd /home/pentaho/pentaho/server/enterprise-console && ./
stop-pec.sh"
;;
*)
echo "Usage: $0 { start | stop }"
```

```
;;
esac
exit 0
```

3. Save the file and close the text editor.
4. Make the init script executable.

```
chmod +x /etc/init.d/pentaho
```

5. Add the pentaho init script to the standard runlevels so that it will run when the system starts, and stop when the system is shut down or rebooted, by using the update-rc.d command.
   This command may not exist on your computer if it is not Debian-based. If that is the case, consult your distribution documentation or contact your distribution's support department to determine how to add init scripts to the default runlevels.

```
update-rc.d pentaho defaults
```

The Pentaho BI Server will now start at boot time, and shut down when the system stops or restarts.

Using the Mac Installation Utility

These instructions are for OS X users only. Windows and Linux users have separate instructions.

Step-by-step instructions for using the installer are below. You may need to adjust the instructions for your specific situation.

1. Double-click the **pentaho-bi-suite-4.0.0-GA-x64.app** file.
2. When the installation utility starts, you'll see a Pentaho splash screen. Click **Next**.
3. Accept the license agreement to continue.
4. When prompted for which setup type you'd like to perform, select **Default** if you want to install the entire BI Suite on one machine, or **Custom** if you only want to install selected components. If you selected Custom, you'll be asked which Pentaho applications you want to install. For a server installation, uncheck all options except **BI Server** and **Data Integration Server**. If you have a Pentaho Dashboards Enterprise Edition or Pentaho Analysis Enterprise Edition license key, select the checkboxes for the **Dashboard Designer** and **Pentaho Analyzer** options, respectively.
   If you do not have the requisite support entitlements, the Dashboard Designer and Pentaho Analyzer plugins will not work, and they will change your Pentaho User Console interface permanently. There is no direct harm in installing these plugins if you do not have support entitlements for them; however, you will have to ensure that your users are properly trained to avoid the disabled functions in the Pentaho User Console. If necessary, it is possible to install Dashboard Designer and Pentaho Analyzer later by using archive packages.
5. If you selected Custom, then you'll be asked if you would like to install the Pentaho sample data. Select **No** if this is a production installation.
   The sample data is useful for testing and evaluating the BI Suite, but tends to get in the way in a production environment.
6. Next, you'll be asked to choose a directory to install to. Feel free to select a new path, but for documentation continuity and support purposes, you should leave the actual directory name alone. The default directory is `/Applications/pentaho/`
   You cannot install into a directory that already exists.
7. In the next screen, type in a master password for the MySQL database, Enterprise Console admin user, and the BI Server publish function.
   The BI Suite installer provides a MySQL database to store your reports and analysis views. The root password is for the internal database root user, not the global system root (administrator) user. This is the account that has total control over all MySQL databases. The admin password is for the Pentaho Enterprise Console (username **admin**). The publish password is used whenever you publish content from a workstation (via Pentaho design tools) to the BI Server.
8. If any of the default Pentaho BI and DI Server ports (**8088**, **8080**, **8012**, **9092**, **9080**, **8443**, **8143**, and **3306**) are not available on your system, the default numbers will increment by one until an available port is found.

9. If you chose a custom installation, a summary screen will show you an overview of which BI Suite components you've chosen to install, and the ports that all of the necessary services will run on. Click **Next** to leave this screen, then **Next** again to commence installation. If you chose the default installation, you only have to click **Next** once here.

Once the installation wizard is complete, the BI Server and DI Server should be up and running with default parameters. You have the option of viewing an installation summary and starting the Pentaho User Console during the last step of the installation process. If you choose to go to the Pentaho User Console, your default Web browser will open and display the BI Server login screen.

Post-Install Configuration

After you've successfully installed the BI Server on your server, you must set up your configuration information and other details. All of this is done through the Pentaho Enterprise Console.

1. Open a Web browser and navigate to **http://localhost:8088** (change **localhost** to the IP address, hostname, or domain name of your BI Platform).
2. Log in as **admin** with the password you set during installation.
3. Click the **+** (plus) button in the upper right corner of the Subscriptions section.

   An **Install License** dialogue will appear.

   Note: If you previously installed the Pentaho BI Suite with an evaluation license, that license may still be active. If so, the Pentaho Enterprise Console may skip the configuration screen and go straight to the overview page. If that happens, click the wrench icon in the upper right corner of the screen to get back to the configuration options.
4. Click **Browse**, then navigate to the location you saved your LIC files to, click on one of the LIC files, then click **Open**.

   LIC files for each of your supported Pentaho products were emailed to you along with your Pentaho Welcome Kit. If you did not receive this email, or if you have lost these files, contact your Pentaho support representative. If you do not yet have a support representative, contact the Pentaho salesperson you were working with.
5. Click **OK**.

   The Setup screen will change according to the LIC file you installed. **Repeat the LIC file installation process for each support entitlement you have purchased.**
6. In the **Solution Directory** field, enter `/pentaho/server/biserver-ee/pentaho-solutions/`, or whatever the path to your pentaho-solutions directory is.
7. In the **Backup Directory** field, type in the location that you'd like to save Pentaho Enterprise Console backup data to.

   This can be any local directory that your application server has permissions to write to. You cannot, however, use relative paths in this or any other configuration field in this screen -- **all paths must be absolute**.
8. In the **Pentaho Web-App Path** field, enter `/tomcat/webapps/pentaho/`, or whatever the path to the unpacked pentaho.war directory is for your application server.
9. In the **Platform Administrator User Name** field, type in **admin**, or if you already have Pentaho User Console accounts established, type in the account name that you will use to manage reports and schedules.

   This user account does not have to exist yet, and you can change this value later.
10. Click **OK**.

    The rest of the settings in this screen do not need to change right now.
11. Click **Configuration** in the menu on the left side of Pentaho Enterprise Console.
12. Click the **Web Settings** tab at the top of the screen.
13. Change the **Fully Qualified Server URL** setting to match your server's hostname, domain name, or IP address. Do not change the directory or port number.

If you need to change the port number, consult the *Pentaho BI Suite Administrator's Guide*.

Your Pentaho BI Server now has a minimal configuration. If you need to return to this screen, click on the wrench/screwdriver icon in the upper right corner of the screen.

Your administration work is only beginning; you should now consult the *Pentaho BI Suite Administrator's Guide* to learn your way around the Pentaho Enterprise Console.

Changing the Default Port Numbers

The Pentaho-provided Tomcat instance is preconfigured to run on port **8080**, and the Pentaho Enterprise Console is configured for port **8088**. If you want to change these port numbers, follow the below procedure.

1. Navigate to the `/pentaho/server/biserver-ee/tomcat/conf/` directory
2. Edit the **server.xml** file found there, and search for **Define a non-SSL HTTP/1.1 Connector**. Change the port number in the **Connector port** element below that from **8080** to your preferred port number.

```
<!-- Define a non-SSL HTTP/1.1 Connector on port 8080 -->
    <Connector port="8080" maxHttpHeaderSize="8192"
               maxThreads="150" minSpareThreads="25" maxSpareThreads="75"
               enableLookups="false" redirectPort="8443" acceptCount="100"
               connectionTimeout="20000" disableUploadTimeout="true" />
```

3. Save and close the file, then navigate to the `/pentaho/server/biserver-ee/tomcat/webapps/pentaho/WEB-INF/` directory and edit the **web.xml** file found there.
4. Change the **fully-qualified-server-url** entry to match the new port number you specified in server.xml.

```
<context-param>
    <param-name>fully-qualified-server-url</param-name>
    <param-value>http://localhost:8080/pentaho/</param-value>
</context-param>
```

5. Save and close the file, then navigate to the `/pentaho/server/enterprise-console/resource/config/` and edit the **console.properties** file found there.
6. Change the **console.start.port.number** and **console.stop.port.number** values to match the port numbers you want to run Enterprise Console on.

```
console.start.port.number=8088
console.stop.port.number=8033
```

Workstation Installation Procedure

You must disable any anti-spyware software before installing the BI Suite. Some types of software firewalls and anti-virus scanners may also block the BI Server or prevent it from operating normally.

The BI Suite client tools are:

- Report Designer
- Metadata Editor
- Schema Workbench
- Design Studio
- Data Integration
- Aggregation Designer

These programs are easily installed on Windows-, OS X- and Linux-based workstations by running the BI Suite graphical installer.

1. Run the installation utility as you would any other program - double-click it.

   On Linux systems, you may have to set execute permissions on the installer before trying to run it.
2. When the installation utility starts, you'll see a Pentaho splash screen. Click Forward.
3. Accept the license agreement to continue.
4. When prompted for which installation scenario you want, select **Custom** and click **Next**.
5. Un-check the options for **BI Server**, **Analyzer**, **Dashboard Designer**, **Pentaho Enterprise Console**, and **Data Integration Server**, and ensure that all of the Pentaho design tools you want to install are checked.
6. A summary screen will show you an overview of which BI Suite components you've chosen to install. Click **Forward** to leave this screen, then **Forward** again to commence installation.

The selected client tools should now be installed and ready to use. On Windows, they'll be available through the Start menu; on Linux systems, they'll be available through the command line, or you can create your own shortcuts on your desktop or in the GNOME or KDE panels. The default installation directory is `C:\Program Files\pentaho\design-tools\` on Windows, `/Applications/pentaho/design-tools/` on OS X, and `~/pentaho/design-tools/` on Linux.

Internet Explorer 8 Workaround For Ad Hoc Reporting Content

This procedure only applies to Pentaho User Console users who have Internet Explorer version 8.

Internet Explorer 8 has extra security features that prevent users from downloading content files generated by the ad hoc reporting interface. In order to work around this, you must force IE8 to recognize the BI Server host as an intranet zone.

1. Start Internet Explorer.
2. Go to the **Tools** menu, then select **Internet Options**.

   The Internet Options window will appear.
3. Click the **Security** tab, then the **Local Intranet** icon, then the **Sites** button.

   An intranet-specific options screen will appear with four checkboxes.
4. Un-check the **Automatically detect intranet network** option, then click **OK** to close this window.
5. Click **OK** to close the Internet Options window.

The Pentaho User Console should now be correctly detected as an intranet, and you should now be able to download content generated with the ad hoc reporting tool.

Testing and Using Your Server

To verify that the BI Server is installed and running, open a Web browser on a workstation and navigate to **http://example.com:8080/pentaho/** (substituting **example.com** for your BI Server's hostname, IP address, or domain name). You should see a Web page similar to the below picture:

When your system is properly configured, log in with your administrator account, then verify that you can do the following, assuming your data has been prepared for reporting and analysis:

- Create a new analysis view.
- Create a new ad hoc report.
- If you are a Dashboards Enterprise Edition customer, create a new dashboard with the Dashboard Designer plugin.
- If you are a Pentaho Analysis Enterprise Edition customer, create a new analysis report with the Pentaho Analyzer plugin.
- In Pentaho Data Integration, create or connect to an enterprise repository and a data source.
- Schedule a report to run at a regular interval.
- Using Pentaho Report Designer, publish a report to the BI Server.

Preparing for Production

The default condition of the BI Server is designed to support quick and easy evaluation by new customers. Once you move from evaluation to production, you may want to remove some of the evaluation-specific features in the BI Server. The instructions in this section explain how to remove them.

Removing Pentaho Sample Data and Solutions

By default, Pentaho provides a sample data source and a solution directory filled with example content. These samples are provided for evaluation and testing. Once you are ready to move from an evaluation or testing scenario to development or production, you should remove the samples so that they do not get in the way of your BI content. Follow the instructions below to completely remove the Pentaho sample data and solutions.

1. Stop the BI Server.
2. If they exist, delete the `/pentaho/server/biserver-ee/pentaho-solutions/steel-wheels/` and `/pentaho/server/biserver-ee/pentaho-solutions/bi-developers/` directories.
   These directories contain sample content for CDF and BI Server plugins. They are not present in typical manual deployment scenarios.
3. Edit the `/pentaho/WEB-INF/web.xml` file inside of the deployed pentaho.war.
   As laid down by the Pentaho graphical installer and archive packages, this path should be `/pentaho/server/biserver-ee/tomcat/webapps/pentaho/WEB-INF/web.xml`. If you performed a manual WAR build and deployment, then you must adjust the path to fit your configuration.
4. Remove the sample servlets by commenting them out or removing them from the file:

```
<!-- [BEGIN SAMPLE SERVLETS] -->
 <servlet>
  <servlet-name>UpdateSampleEmails</servlet-name>
  <jsp-file>/jsp/UpdateSampleEmails.jsp</jsp-file>
 </servlet>

 <servlet>
  <servlet-name>Widgets</servlet-name>
  <jsp-file>/jsp/Widgets.jsp</jsp-file>
 </servlet>

 <servlet>
  <servlet-name>SampleDashboard</servlet-name>
  <jsp-file>/jsp/SampleDashboard.jsp</jsp-file>
 </servlet>

 <servlet>
  <servlet-name>ChartSamplesDashboard</servlet-name>
  <jsp-file>/jsp/ChartSamplesDashboard.jsp</jsp-file>
 </servlet>

 <servlet>
  <servlet-name>SampleDrill</servlet-name>
  <jsp-file>/jsp/SampleDrill.jsp</jsp-file>
 </servlet>

 <servlet>
  <servlet-name>SWDashboard</servlet-name>
  <jsp-file>/jsp/SWDashboard.jsp</jsp-file>
 </servlet>

 <servlet>
  <servlet-name>Map</servlet-name>
```

```
  <jsp-file>/jsp/Map.jsp</jsp-file>
 </servlet>

 <servlet>
  <servlet-name>SampleFlashDashboard</servlet-name>
  <jsp-file>/jsp/SampleFlashDashboard.jsp</jsp-file>
 </servlet>
<!-- [END SAMPLE SERVLETS] -->
```

5. Remove the sample servlet mappings in the same fashion:

```
<!-- [BEGIN SAMPLE SERVLET MAPPINGS] -->
 <servlet-mapping>
  <servlet-name>UpdateSampleEmails</servlet-name>
  <url-pattern>/UpdateSampleEmails</url-pattern>
 </servlet-mapping>

 <servlet-mapping>
  <servlet-name>Widgets</servlet-name>
  <url-pattern>/Widgets</url-pattern>
 </servlet-mapping>

 <servlet-mapping>
  <servlet-name>SampleDashboard</servlet-name>
  <url-pattern>/SampleDashboard</url-pattern>
 </servlet-mapping>

 <servlet-mapping>
  <servlet-name>ChartSamplesDashboard</servlet-name>
  <url-pattern>/ChartSamplesDashboard</url-pattern>
 </servlet-mapping>

 <servlet-mapping>
  <servlet-name>SampleDrill</servlet-name>
  <url-pattern>/SampleDrill</url-pattern>
 </servlet-mapping>

 <servlet-mapping>
  <servlet-name>SWDashboard</servlet-name>
  <url-pattern>/SWDashboard</url-pattern>
 </servlet-mapping>

 <servlet-mapping>
  <servlet-name>Map</servlet-name>
  <url-pattern>/Map</url-pattern>
 </servlet-mapping>

 <servlet-mapping>
  <servlet-name>SampleFlashDashboard</servlet-name>
  <url-pattern>/SampleFlashDashboard</url-pattern>
 </servlet-mapping>
<!-- [END SAMPLE SERVLET MAPPINGS] -->
```

6. Remove the **SampleDataStartupListener**:

```
<listener>
    <listener-
class>org.pentaho.platform.web.http.context.HsqldbStartupListener</listener-
class>
</listener>
```

7. Remove the **hsqldb-databases** section:

```
<!-- [BEGIN HSQLDB DATABASES] -->
    <context-param>
        <param-name>hsqldb-databases</param-name>
        <param-value>sampledata@../../data/hsqldb/sampledata</param-value>
    </context-param>
```

```
<!-- [END HSQLDB DATABASES] -->
```

8. Remove the **SystemStatusFilter** filter:

   Note: This is not part of the Pentaho samples; it provides error status messages that are only useful for development and testing purposes, and should be removed from a production system.

```
<filter>
    <filter-name>SystemStatusFilter</filter-name>
    <filter-class>com.pentaho.ui.servlet.SystemStatusFilter</filter-class>
    <init-param>
        <param-name>initFailurePage</param-name>
        <param-value>InitFailure</param-value>
        <description>This page is displayed if the PentahoSystem fails to
 properly initialize.</description>
    </init-param>
</filter>
```

9. Remove the filter mapping for the **SystemStatusFilter**:

```
<filter-mapping>
    <filter-name>SystemStatusFilter</filter-name>
    <url-pattern>/*</url-pattern>
</filter-mapping>
```

10. Save and close the web.xml file.
11. Delete the `/pentaho/server/biserver-ee/data/` directory.

    This directory contains a sample database, control scripts for that database and the environment settings it needs to run, and SQL scripts to initialize a new Pentaho solution repository.

Your BI Server instance is now cleaned of samples and development/testing pieces, and is streamlined for production.

Switching to a Production Login Screen

The default Pentaho User Console login screen contains information and instructions for evaluators. Pentaho allows this extra information to be hidden via configuration; follow the directions below to hide the extra information.

1. Shut down the BI Server and Enterprise Console if they are currently running.
2. Open a terminal or file browser window and navigate to the `/pentaho-solutions/system/` directory.

   If you installed via the archive package or the graphical installer, the full path is `/pentaho/server/biserver-ee/pentaho-solutions/system/`.
3. Edit the **pentaho.xml** file.
4. Find the **login-show-sample-users-hint** node and change its value to **false**.
5. Start the BI Server and Pentaho Enterprise Console.

You now have a login screen that has been scrubbed of evaluation content.

Uninstalling the Pentaho BI Suite

Uninstalling the BI Server and the client tools is easy -- simply shut down all Pentaho services and programs, then run the **uninstall** utility in the `/pentaho/` directory. For Windows users, this script can also be accessed through the Pentaho folder in the Windows Start menu.

Master Service Control Scripts From the Graphical Installer

If you installed the BI Suite on a single machine through Pentaho's graphical installation utility, then there is a global service control script in the top-level directory that you installed to: **ctlscript** (.sh on Linux, .bat on Windows). This will start the BI Server, DI Server, Enterprise Console, MySQL solution database, and hsqldb sample database. ctlscript takes the following arguments:

- start
- stop
- restart
- status
- help

If you installed the Data Integration (DI) Server through the PDI graphical installation utility, you will have a ctlscript that will control the DI Server, Enterprise Console, and hsqldb sample database.

Appendix: Default BI Suite Port Numbers

The table below lists all of the important BI Suite port numbers and the services they correspond to. If you manually changed any port numbers, or if the default numbers were not available when you used the graphical installer, then these numbers will be different. The graphical installer increments port numbers by 1 until it finds free ports; typically it does not have to go beyond one increment if it detects an occupied port.

Note: The numbers below represent a complete BI Suite installation. If you only install the BI Server or the DI Server, some port numbers may not apply.

Port number	Service
3306	MySQL server
8080	BI Server (Tomcat)
8012	BI Server shutdown
8088	Enterprise Console
9080	DI Server
9092	Embedded H2 database

Troubleshooting

This section contains known problems and solutions relating to the procedures covered in this guide.

Evaluation Licenses are Not Granted

If you see a message in the graphical installation utility's error log that says, **Evaluation licenses were not granted for the following products**, this means that you've installed this version of the BI Suite (or some piece of it) in the past, and one or more evaluation licenses have already been generated and installed. An evaluation license expires 30 days after it is generated; once expired, it cannot be reactivated. The only way to use the BI Suite's full functionality is to install a new, active license that overwrites the old one.

In some cases, you may have delayed or extended your Pentaho evaluation beyond the automatic license's term. If you need more time, contact your Pentaho sales representative or pre-sales support engineer.