

# Primavera® P6™ Web Services

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## Administrator's Guide

Version 6.2.1

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# Preface

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## *In this preface:*

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[Where to Get Support](#)

P6 Web Services enables organizations to integrate Primavera functionality into other web-based applications using the following web services standards: XML (Extensible Markup Language), SOAP (Simple Object Access Protocol), and WSDL (Web Services Description Language).

## Using this Administrator's Guide

This guide describes the steps required to install P6 Web Services and how to configure it to use Native or LDAP authentication. It is organized as follows:

**Installing and Configuring P6 Web Services** Describes how to install P6 Web Services and explains how to use the Primavera Administrator to review, modify, add, and delete P6 Web Services server configurations.

**Configuring Authentication Modes** Describes the authentication modes available in this release and explains how to configure P6 Web Services to operate using Native or LDAP authentication.

### Additional P6 Web Services documentation

The following P6 Web Services user documentation is available:

- The *Primavera P6 Web Services Programmer's Guide* is available in your P6 Web Services installation folder at \docs\ProgrammersGuide\index.html, or from the Windows Start menu, if you choose to install the documentation when installing P6 Web Services. If you do not install the documentation, this document is available in the same folder on the P6 Web Services physical media or download.
- The *Primavera P6 Web Services Reference Manual* is available in your P6 Web Services installation folder at \docs\ReferenceManual\index.html, or from the Windows Start menu, if you choose to install the documentation when installing P6 Web Services. If you do not install the documentation, this document is available in the same folder on the P6 Web Services physical media or download.

## Where to Get Support

If you have a question about using Primavera products that you or your network administrator cannot resolve with information in the documentation or Help, contact Primavera Customer Support at the times and locations listed below.

Please provide your Primavera product serial number when contacting Primavera. Each interaction is logged to help Primavera resolve your questions quickly.

Office	Time Zone	Hours	Telephone	FAX	E-mail Address*
Bala Cynwyd, Pennsylvania, USA	ET	8:00–8:00 (Mon–Fri) 9:00–2:00 (Sat)	+1-610-668-3030	+1-610-667-0652	support@primavera.com
London, England, UK	GMT	8:30–6:30 (Mon–Thur) 8:30–5:30 (Fri)	+44-20-8563-5555	+44-20-8563-5543	support@primavera.com
Hong Kong	GMT +8	8:00–5:00 (Mon–Fri)	+852-2111-8299	+852-2111-9477	support@primavera.com

\*Primavera's Web site at <http://www.primavera.com/customer/index.asp> provides support and product information, such as knowledge bases, file downloads, user group and newsgroup information, and a product enhancement request form.



*In the United States, Primavera periodically and randomly monitors technical support calls to ensure that you receive the highest quality support.*

All Primavera products are backed by comprehensive support and training.





# Installing and Configuring P6 Web Services

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## *In this chapter:*

[What is P6 Web Services?](#)

[System Requirements](#)

[Installing P6 Web Services](#)

[Deploying P6 Web Services](#)

[Changing Database Configuration Settings](#)

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[Using the Primavera Administrator Application](#)

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[Reviewing and Modifying P6 Web Services Configurations](#)

[P6 Web Services Configuration Settings](#)

This chapter describes how to install P6 Web Services. In addition, this chapter explains how to use the Primavera Administrator to review, modify, add, and delete P6 Web Services server configurations.

# What is P6 Web Services?

P6 Web Services uses web services open standards (XML, SOAP, and WSDL) to enable developers to seamlessly integrate Primavera's project management functionality into other web-based applications.

Using P6 Web Services, organizations can share Primavera project management data between applications independent of operating system or programming language.

# System Requirements

P6 Web Services has the following system requirements for installation:

## Apache CXF Requirements

- You must install the services framework Apache CXF version 2.1.2 before installing P6 Web Services. You can download Apache CXF from the following Web site: <http://archive.apache.org/dist/cxf/2.1.2/>. After launching the site, you must select the download files that correspond to your operating system.

For machines running Windows, click **apache-cxf-2.1.2.zip**.

For machines running Linux or Solaris, click **apache-cxf-2.1.2.tar.gz**.

Extract the file to a folder on your local machine.

- You must create a CXF\_HOME environment variable before beginning the P6 Web Services installation. To set the environment variable on Windows, from the **Start** menu or Windows Explorer, right-click on **My Computer**, then click **Properties**. Select the **Advanced** tab, then click **Environment Variables**. In the **Variable name** field, type CXF\_HOME. In the **Variable value** field, type the location of Apache CXF on your local machine; for example, C:\apache-cxf-2.1.2.

## Java Runtime Environment Requirements

- If you write Java code against the client-side interface, you need to install the Java Development Kit (JDK), version 1.5.x, also known as J2SE 5.0. While P6 Web Services is compatible with any 1.5 version, we recommend using Update 13 or later. The Integrated Development Environment (IDE) you use to create code must work with this version.
- If you do not plan on writing Java code against the client-side interface and will only be running the sample Java applications, you will need to install only the Java Runtime Environment (JRE), version 1.5.x, also known as J2SE 5.0. While P6 Web Services is compatible with any 1.5 version, we recommend using Update 13 or later.

You can download the JRE or Java JDK from the Sun Microsystems Web site (<http://www.sun.com/>). If you are using the Java JDK, ensure that it is installed before running the P6 Web Services setup.

**For the full list of supported operating systems and database versions, refer to the testedcfg.pdf file, which is provided in the \Documentation\<language>\Technical Documentation folder on the P6 physical media or download.**

- The WAR file should be deployed in a supported application server running the Java Runtime Environment (JRE), version 1.5.x (also known as J2SE 5.0).

### .NET Requirements

- To use the .NET client code, you must have Microsoft .NET Framework version 2.0 or later.

### Supported Operating Systems

- P6 Web Services is fully supported on Windows, Solaris, and Linux operating systems.



*Even though the JRE and JDK are available on other operating systems, they have not been tested by Primavera Systems.*

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### Project Management Database

- You must install a Primavera P6 (version 6.2) project management database (Oracle, SQLServer, and SQL Server Express are supported).

### Application Servers

P6 Web Services requires one of the following supported application servers:

- JBoss 4.0.5
- BEA WebLogic Server 10
- IBM WebSphere Application Server 6.1

# Installing P6 Web Services

For information on installing the project management database and the client application, see the *Primavera P6 Administrator's Guide* (adminguide.pdf), which is provided in the \Documentation\<language>\<industry> folder on the P6 physical media or download.

Before installing P6 Web Services, you need to install the project management database and the P6 Project Management client module (version 6.2).



*If you have previously installed an earlier version of P6 Web Services, you must uninstall the previous version before installing the current version.*



*The Primavera Project Management client module does not have to be installed on the same server as P6 Web Services.*

The P6 Web Services Installer provides a wizard to guide you through the installation process, which includes installing the P6 Web Services client-side and server-side libraries and setting up and configuring the Web Services database.



*Before you start the installation, make sure you set the JAVA\_HOME and CXF\_HOME environment variables. For information on setting the CXF\_HOME environment variable, refer to ["Apache CXF Requirements"](#) on page 3.*

## To install P6 Web Services

- 1 Go to the root folder of the P6 Web Services physical media or download:

For the Windows platform, double-click `setup.exe`.

For the Solaris platform, run `setupSolaris.bin`

For the Linux platform, run `setupLinux.bin`



*Click Next on each wizard dialog box to advance to the next step.*

- 2 On the **Welcome** screen, click **Next**.
- 3 On the **Please select the installation type** screen, choose a **Typical** or **Custom** installation.

A **Typical** installation installs all required files for both client-side and server-side operation, as well as demo applications and documentation. Primavera recommends that you choose this option.

A **Custom** installation enables you to select the components you want to install. If you choose this option, select the components you want to install on the following screen, then click **Next**.

- 4 In the **Specify the location of Primavera P6 Web Services** field, accept the default installation folder for P6 Web Services, type a different path, or click **Browse** to specify a different folder.

In the **Specify the location of Apache CXF 2.1.2** field, the setup automatically detects the location of your Apache CXF installation, if you specified the CXF\_HOME environment variable. If you did not specify this environment variable, type the location of Apache CXF on your local machine, or click **Browse** to select it.

In the **Specify the location of the JDK** field, the setup wizard automatically detects the JDK/JRE on your local machine. To specify a different location, enter the path, or click **Browse** to select it.

- 5 Review the contents of the installation, then click **Next** to begin the installation.
- 6 On the **Setup and Configuration of the Primavera Database** dialog box, specify the database type.

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*You can later change the database type through the P6 Web Services Database Configuration Setup.*

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- 7 On the **Database Configuration** dialog box, specify the database connection parameters.

P6 Web Services requires **pubuser** access (in the User Name field) to the database. The database name, host address, and host port are specific to your Oracle or MS SQL Server installation. **Database Host Port** displays the default port for the database type you selected. You can edit this port.



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*P6 Web Services supports SSL communication between the application server and the database server. For information on configuring SSL, refer to the appropriate database server documentation and the Primavera Knowledgebase.*

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To use the SSL protocol to securely communicate between the application server and the database server, select the **SSL** check box. If you select the **SSL** check box, you must specify an SSL-enabled port number in the **Database Host Port** field.



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*Using the SSL protocol will impact database performance.*

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The **Public Group ID** must be 1 for a standard configuration.

- 8 If an instance of a Primavera Configuration already exists, you are prompted to use an existing configuration or create a new configuration.

Primavera recommends that you use an existing configuration if possible. Make a selection as applicable.

- 9 Click **OK** to complete the installation.
- 10 Review the P6 Web Services readme, then click **Finish**.

The following shortcuts are added to the Primavera P6 Web Services entry in your Start menu:

- Demo (includes .NET and Java demos)
- Documentation (includes P6 Web Services Administrator's Guide, Reference Manual, Programmer's Guide, Read Me, and the P6 license.
- Database Configuration
- Primavera Administrator
- Uninstall



*The DotNet Demo and Java JAX-WS Demo are installed along with demo source code in the \demo folder of the P6 Web Services installation directory.*

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## Deploying P6 Web Services

You can deploy P6 Web Services on one of the following application servers that support JDK/JRE 1.5.x.

- JBoss 4.05 on Windows
- BEA WebLogic 10
- IBM WebSphere 6.1



*Refer to your application server documentation for detailed deployment instructions.*

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*P6 Web Services supports the HTTPS communication protocol. Refer to the appropriate application server documentation for instructions on configuring HTTPS on your application server.*

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### Deploying into JBoss 4.0.5 on Windows

To deploy P6 Web Services into JBoss on Windows, copy the **p6ws.war** file from the \<P6 Web Services home>\server folder to the following JBoss folder:

**<JBoss INSTALL LOCATION>\server\default\deploy\**

After placing the p6ws.war file in the folder above, start the JBoss server.



## Deploying into Weblogic 10



*Primavera recommends that the WebLogic application server should be set to run in “non-production” mode (i.e. Development Mode). To run in non-production mode, the WebLogic Startup Parameter “StartMode=” must be left blank. After performing the steps below to complete the P6 Web Services deployment, set the WebLogic Startup Parameter “StartMode=” to true and reboot the WebLogic application server.*

*However, if you want to keep the WebLogic application server in production mode, you need to manually deploy the `p6ws.war` file.*

Do the following to deploy P6 Web Services into Weblogic:

- 1 Run the WebLogic Configuration Wizard to create a server domain for P6 Web Services. On the Configure Server Start Mode and JDK window, you **MUST** select **Development Mode** in the **WebLogic Domain Startup Mode** left hand pane.
- 2 Copy the `p6ws.war` file from the `\<P6 Web Services home>\server` folder to the following WebLogic folder for auto-deployment.

```
<bea_home>\user_projects\domains\  
<P6 Web Services domain>\autodeploy
```

- 3 Before starting P6 Web Services, add the following JVM option to the `startWeblogic.cmd` file :

```
-Djavax.xml.soap.MessageFactory  
=com.sun.xml.messaging.saaj.soap.ver1_1.SOAPMessageFactory1_1Impl
```

For example:

```
set JAVA_OPTIONS=%SAVE_JAVA_OPTIONS% -Djavax.xml.soap.Message-  
Factory=com.sun.xml.messaging.saaj.soap.ver1_1.SOAPMessageFactory1_1I  
mpl
```

### Deploying into Websphere 6.1

Do the following to deploy P6 Web Services into Websphere:

- 1 Start the Websphere Application Server.
- 2 Launch the WebSphere Application Server Administrative Console.
- 3 In the left-hand navigation pane, expand **Applications** and click **Install New Application**.
- 4 Specify the path to the war file in the p6wsHOME folder. For example:  
`c:\p6wsHOME\applications\p6ws.war`
- 5 For the **Context Root**, type **p6ws** then click **Next**.
- 6 In the Step 1 section **Select Installation Options**, select the **Deploy Web Services** option, then click **Next**.
- 7 In the Step 2 section **Map Modules to Servers**, mark the **cxfruntime** checkbox, and click **Next**.
- 8 In the Step 3 section **Map Virtual Host for Web Modules**, mark the **cxfruntime** checkbox, and click **Next**.
- 9 On the Step 4 screen (**Summary**), click **Finish**. Note that the application war file is now deploying and this process may take several minutes.
- 10 To save the master Websphere configuration, click **Save**. This process may also take several minutes.
- 11 On the Administrative Console Main screen, in the left-hand navigation, expand **Applications** and click **Enterprise Applications**.
- 12 If it does not already exist, create a folder named **endorsed** in **\$WebSphere\_HOME/java/jre/lib/** folder.
- 13 Follow the instructions located at <http://cwiki.apache.org/CXF20DOC/appserverguide.html#AppServerGuide-Websphere> under the heading "**Put the jar file in the endorsed folder.**"
- 14 Restart the Websphere application server.

## Changing Database Configuration Settings

The Primavera Database Configuration wizard lets you create a new configuration or switch to a different configuration than the one specified during P6 Web Services installation.

The database you connect to during the installation stores one or more P6 Web Services configurations. Each configuration specifies a set of configurable parameters that determine how P6 Web Services operates. The first time you install P6 Web Services, if no configuration exists in the database, you must create a new configuration. For subsequent installs, you can choose an existing configuration or create a new one. After installation, you can use the Database Configuration wizard to select a different P6 Web Services configuration or create a new one.



*After selecting a different P6 Web Services configuration or creating a new configuration, you must stop and restart the server for the changes to take effect.*

---

### Starting the Database Configuration wizard

- On Windows, from the Start menu, choose **Programs > Primavera P6 Web Services > Database Configuration**.
- On Solaris/Linux, change to the PrimaveraWebServices6.2 directory under the application server install directory and run the `dbconfig.sh` script.

## Enabling Access to P6 Web Services

**For more information on creating users and enabling access to applications, refer to the Primavera P6 Administrator's Guide, which is available in the \Documentation\<language>\<industry> folder of the P6 physical media or download.**

You can enable access to P6 Web Services for any user defined in the Project Management module.

To enable access to P6 Web Services:

- 1 Log on to the Project Management module as a user with administrative privileges.
- 2 On the **Admin** menu, choose **Users**.
- 3 In the **Users** dialog box, select the appropriate user, then click the **Licensing** tab.
- 4 On the **Licensing** tab, mark the **Named User** checkbox next to **Web Services**.

## Using the Primavera Administrator Application

As the system administrator, you can use the Primavera Administrator Application to review, modify, add, and delete server configurations. P6 Web Services server configurations are stored in the database specified during installation. These configurations contain all of the settings used to run the P6 Web Services server.



*Only experienced administrators should use the Administrator Application to modify configuration settings.*

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## Starting the Primavera Administrator Application

After launching the Administrator Application, you will be prompted for a database level password for the **privuser** account.

### Starting the Administrator Application

- On Windows, from the Start menu, choose **Programs > Primavera P6 Web Services > Primavera Administrator**.
- On Solaris/Linux, change to the `primavera-p6ws-6.2` directory under the application server install directory and run the `admin.sh` script.

## Reviewing and Modifying P6 Web Services Configurations

The Primavera Administrator Application presents configuration settings in a tabbed dialog box. Tree view and Table view display the current configurations and settings. Log displays a history of configuration changes, additions, or deletions for the current session.

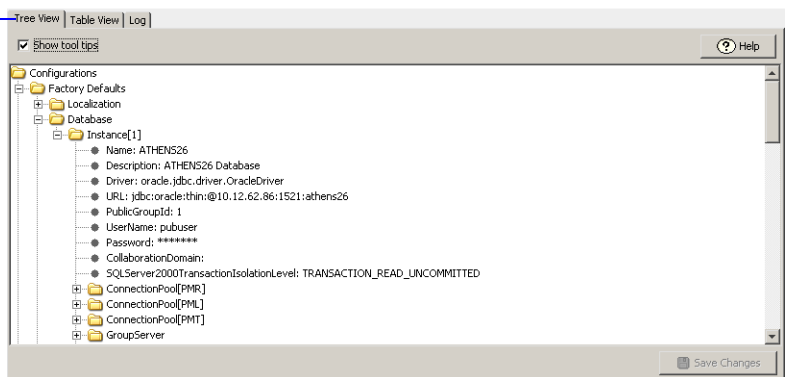


*You cannot edit the Factory Default configuration settings. You can only modify custom configurations.*

To display brief setting descriptions in Tree or Table view, mark the Show tool tips checkbox. Then, position the mouse over a setting to read the popup description.

*Click to display a hierarchical view of the configuration data.*

*To return a setting to its default value, select it, then right-click and choose Revert to default value. To change a setting value, triple-click on the setting name, then type a new value. On Windows, you can also press F2 to change to Edit mode.*



Click to display configuration settings in a table format.

To change a setting value, select the setting, click in the Value column, then type a new value.

To sort the table, click a column heading. Sorting can help you distinguish similar settings contained in multiple configurations.

Configuration	Setting Name	Value
Factory Defaults	Database.Instance[1].SessionSetting...	
Factory Defaults	Database.Instance[1].SessionSetting...	
Factory Defaults	Database.Instance[1].URL	jdbc:oracle:thin:@10.12.62.86:1521:athens26
Factory Defaults	Database.Instance[1].UserName	pubuser
Factory Defaults	IntegrationServer.RMI.CompressionS...	<input checked="" type="checkbox"/>
Factory Defaults	IntegrationServer.RMI.CompressionS...	0
Factory Defaults	IntegrationServer.RMI.Enable	<input checked="" type="checkbox"/>
Factory Defaults	IntegrationServer.RMI.HTTPServiceE...	<input type="checkbox"/>
Factory Defaults	IntegrationServer.RMI.HTTPServicePort	0
Factory Defaults	IntegrationServer.RMI.HTTPsServiceE...	<input type="checkbox"/>
Factory Defaults	IntegrationServer.RMI.HTTPsServiceP...	0
Factory Defaults	IntegrationServer.RMI.RegistryPort	9099
Factory Defaults	IntegrationServer.RMI.SSLServiceEna...	<input checked="" type="checkbox"/>
Factory Defaults	IntegrationServer.RMI.SSLServicePort	0
Factory Defaults	IntegrationServer.RMI.StandardServi...	<input checked="" type="checkbox"/>
Factory Defaults	IntegrationServer.RMI.StandardServi...	0
Factory Defaults	IntegrationServer.SessionTimeout	120

**Add P6 Web Services configurations** To create a new configuration, you can duplicate an existing configuration.

- To duplicate a configuration, select the configuration name in Tree View, then right-click and choose Duplicate. Enter a name for the configuration, then click OK. Edit the settings as needed.
- To create a new configuration based on factory default settings, right-click on Factory Defaults in Tree View and choose Duplicate.

**Add database instances to a configuration** P6 Web Services enables you to access data from different project management databases. When you configure P6 Web Services to support multiple database instances, you can choose the instance you want at login.

To add a new database instance to a P6 Web Services configuration, you duplicate an existing instance.

- To duplicate a database instance, select the icon representing the instance, then right-click and choose Duplicate. Enter a unique name for the new instance and edit other settings as needed.



### Delete P6 Web Services configurations and database instances

To delete a configuration or database instance, select it, then right-click and choose Delete.

You cannot delete the Factory Defaults configuration. You can delete any custom configuration, but not all of them. There must always be at least one custom configuration.

You can delete any database instance associated with a configuration, but not all of them. Each configuration must have at least one database instance.

For more information, see **Database.Instance.Driver** and **Database.Instance.URL** in the [“P6 Web Services Configuration Settings”](#) on page 19.

**Database driver configurations** The following table lists the database drivers P6 Web Services supports for each application server/database configuration. Use the `Database.Instance.Driver` configuration setting to specify the database driver you are using.

Application Server	Database Type	Database Driver	Default
WebLogic	Oracle	Oracle Thin Client	Y
WebLogic	SQL Server, SQL Server Express	SQL Server 2005 JDBC	Y
JBoss	Oracle	Oracle Thin Client	Y
JBoss	SQL Server, SQL Server Express	SQL Server 2005 JDBC	Y
WebSphere	Oracle	Oracle Thin Client	Y
WebSphere	SQL Server, SQL Server Express	SQL Server 2005 JDBC	Y

**Configure P6 Web Services Authentication** P6 Web Services uses a single configuration setting to support authentication.

■ `Authentication.Mode`

Because one P6 Web Services server instance may control more than one database, in addition to specifying an authentication mode for a database through the Authentication Configuration wizard, you use the `Authentication.Mode` configuration setting to specify the overall mode you want to use for the P6 Web Services server. For LDAP authentication with secure communication (SSL) between the P6 Web Services server and the LDAP server, two additional configuration settings are required.

For more information about each of these settings, refer to the “[[Authentication Settings](#)]” on page 20.



*A P6 Web Services configuration might include database instances that are not set to the same authentication mode as the P6 Web Services server. If a user connects and requests a database that is set to a different authentication mode than the P6 Web Services server, an error message displays. The user must select a database that matches the authentication mode set for the P6 Web Services server.*

---

## P6 Web Services Configuration Settings

You can review and modify configuration settings in the Primavera Administrator Application Tree View or Table View. Configuration settings are stored in the database specified during installation.



*Only experienced administrators should use the Primavera Administrator Application to modify configuration settings.*



*Localization settings are not applicable to P6 Web Services.*

You can specify durations (time-related values) in several ways:

- As a simple number, which is treated as milliseconds.  
For example, 240000 would be equivalent to 4 minutes (240000/60000).
- In the form <n>d<n>h<n>m<n>s, where “d” is days, “h” is hours, “m” is minutes, and “s” is seconds. All parts are optional.

For example, you can enter:

1d2h30m20s

4m

1h30s

### [Localization Settings]

Setting Name and Description	Default	Valid Ranges/Values
<b>Localization/System Language</b> Language for server string constants	en	—
<b>Localization/System Country</b> Country for server string constants	US	—

**[Authentication Settings]**

Setting Name and Description	Default	Valid Ranges/Values
<b>Authentication/Mode</b> The method used for client authentication.	NATIVE	Native, LDAP, WebSSO
<b>Authentication/Web Single Sign-On/User Name Header Key</b> The name of the http header you specified in SiteMinder.  The value you specify must match the property of a SiteMinder response you have created under the policy domain/realm within which the Web server for P6 Web Access resides. The value of this response should be smuser=uid, where smuser is configurable and uid matches the LDAP server attribute that maps to the Primavera database USER_Name field.	smuser	—
<b>Authentication/Web Single Sign-On/Context Path Override</b> The path used to pass web requests from the SiteMinder Web server to the server of P6 Web Access.	/Primavera	—
<b>Authentication/Web Single Sign-On/Server and Port Override</b> The fully qualified domain name and port for the Web server that SiteMinder is controlling.	http:// servername.domain.co m:82	—
<b>Authentication/LDAP/SSL Certificate Store</b> The full path to the keystore that holds the SSL certificate for the LDAP server.	—	—
<b>Authentication/LDAP/SSL Store Password</b> The password for the keystore that holds the SSL certificate.	—	—

**[Database Settings]**

Setting Name and Description	Default	Valid Ranges/Values
<b>Database/Instance/Name</b> The name of this database instance.	—	up to 32 characters
<b>Database/Instance/Description</b> A description of this database instance.	—	up to 128 characters
<b>Database/Instance/Schema</b> The schema that will be defined for the database.	PMDB	—
<b>Database/Instance/URL</b> The database URL used to establish a connection to the database.  Oracle example: jdbc:oracle:thin:@xx.xxx.xxx.xx:yyyy:zzzz  SQL example: jdbc:sqlserver://xxxx:yyyy;database=zzzz;  x = IP address or hostname y = database listen port z = database name	—	—
<b>Database/Instance/Public Group ID</b> The public group ID used to establish a connection to the database.	1	—
<b>Database/Instance/User Name</b> The name used to establish a connection to the database.	pubuser	—
<b>Database/Instance/Password</b> The password used to establish a connection to the database.	pubuser	—
<b>Database/Instance/User Security/Log Login Attempts</b> Specifies whether or not login attempts to P6 Web Access are tracked in the Web Access logs.	All	All, None, Failed Attempts, Successful Attempts
<b>Database/Instance/User Security/Login Lockout Count</b> The number of times a user can attempt to login before the account is locked. A setting of “0” allows an unlimited number of attempts. The count resets after each successful login.	0	0-100000

### [Database Settings]

Setting Name and Description	Default	Valid Ranges/Values
<b>Database/Instance/User Security/Login Lockout Duration</b> The length of time that a user is blocked from logging into P6 Web Access, starting from the point at which the Logging Lockout Count was exceeded. This setting will be overridden if a user's session is manually reset by an Admin Super user. For more information, see the <i>Primavera P6 Administrator's Guide</i> .	1h	0-24d
<b>Database/Instance/User Security/Allow Multiple User Sessions</b> Specifies whether a single user can be simultaneously logged into Web Access. A setting of "Yes" will allow a single user to login multiple times on any machine. A setting of "No" restricts a user to logging in only once on any machine. A setting of "Single Machine" allows a user to log in multiple times on the same machine, as long as the application server is configured properly to determine the IP address of the machine making the request. For example, if the application server is behind a proxy server, this setting will default to "Yes" instead of "Single Machine."	Yes	Yes, No, Single Machine
<b>Database/Instance/Connection Pool [aaa]/Resize Rate</b> The timeout period after which the system will adjust the number of database connections to be equal to the maximum number of database connections concurrently used during the last period. [PMR] Used for the standard connection pool, which is the most frequently used connection pool in the Business Rule Engine. [PML] Used for the long running connection pool, which is used in the Business Rule Engine when scheduling long running jobs. [PMT] Used for the transactional connection pool, which is used in the Business Rule Engine when a client transaction is requested.	4m	4m - 12h

**[Database Settings]**

Setting Name and Description	Default	Valid Ranges/Values
<b>Database/Instance/Connection Pool [aaa]/ Maintenance Frequency</b> The run frequency of the maintenance that ensures leases have not exceeded the maximum duration. [PMR] Used for the standard connection pool, which is the most frequently used connection pool in the Business Rule Engine. [PML] Used for the long running connection pool, which is used in the Business Rule Engine when scheduling long running jobs. [PMT] Used for the transactional connection pool, which is used in the Business Rule Engine when a client transaction is requested.	1m	10s - 1h
<b>Database/Instance/Connection Pool [aaa]/ Lease Request Wait Timeout</b> The amount of time a request for a database connection will wait. [PMR] Used for the standard connection pool, which is the most frequently used connection pool in the Business Rule Engine. [PML] Used for the long running connection pool, which is used in the Business Rule Engine when scheduling long running jobs. [PMT] Used for the transactional connection pool, which is used in the Business Rule Engine when a client transaction is requested.	30s	5s - 2h
<b>Database/Instance/Connection Pool [aaa]/ Maximum Connections</b> The maximum number of connections the server will have to the database. [PMR] Used for the standard connection pool, which is the most frequently used connection pool in the Business Rule Engine. [PML] Used for the long running connection pool, which is used in the Business Rule Engine when scheduling long running jobs. [PMT] Used for the transactional connection pool, which is used in the Business Rule Engine when a client transaction is requested.	50	5 - 15000

**[Database Settings]**

Setting Name and Description	Default	Valid Ranges/Values
<b>Database/Instance/Connection Pool [aaa]/Fetch Size</b> A hint to the database driver for how many rows to fetch at a time. [PMR] Used for the standard connection pool, which is the most frequently used connection pool in the Business Rule Engine. [PML] Used for the long running connection pool, which is used in the Business Rule Engine when scheduling long running jobs. [PMT] Used for the transactional connection pool, which is used in the Business Rule Engine when a client transaction is requested.	120	—
<b>Database/Instance/Connection Pool [aaa]/Trace SQL</b> Trace all SQL sent to the database. [PMR] Used for the standard connection pool, which is the most frequently used connection pool in the Business Rule Engine. [PML] Used for the long running connection pool, which is used in the Business Rule Engine when scheduling long running jobs. [PMT] Used for the transactional connection pool, which is used in the Business Rule Engine when a client transaction is requested.	false	true/false
<b>Database/Instance/Connection Pool [aaa]/Renewable Free Limit</b> The minimum number of connections that should be available for leases to be renewed. [PMR] Used for the standard connection pool, which is the most frequently used connection pool in the Business Rule Engine. [PML] Used for the long running connection pool, which is used in the Business Rule Engine when scheduling long running jobs. [PMT] Used for the transactional connection pool, which is used in the Business Rule Engine when a client transaction is requested.	3	3 - 5



**[Database Settings]**

Setting Name and Description	Default	Valid Ranges/Values
<b>Database/Instance/Connection Pool [aaa]/Renewable Leases</b> If false, each connection can be leased only for the MaxLeaseDuration period. If true, connection leases are renewed if database statements are completed within the MaxLeaseDuration time period. When true, the code can hold onto the connection as long as it needs, provided SQL statements are completed within the MaxLeaseDuration period. When true, the connection is revoked if no SQL statements are issued within the MaxLeaseDuration period or if one statement takes longer to execute than that period. [PMR] Used for the standard connection pool, which is the most frequently used connection pool in the Business Rule Engine. [PML] Used for the long running connection pool, which is used in the Business Rule Engine when scheduling long running jobs. [PMT] Used for the transactional connection pool, which is used in the Business Rule Engine when a client transaction is requested.	PMR - false PML - false PMT - true	true/false
<b>Database/Instance/Connection Pool [aaa]/Maximum Lease Duration</b> The maximum amount of time a database connection can be leased before it is revoked. [PMR] Used for the standard connection pool, which is the most frequently used connection pool in the Business Rule Engine. [PML] Used for the long running connection pool, which is used in the Business Rule Engine when scheduling long running jobs. [PMT] Used for the transactional connection pool, which is used in the Business Rule Engine when a client transaction is requested.	PMR - 2m PML - 10m PMT - 10m	PMR - 5s - 4h PML - 5s - 6h PMT - 5s - 6h
<b>Database/Instance/Group Server/Protocol</b> Protocol for GroupServer	socket	http, https, socket
<b>Database/Instance/Group Server/Server</b> GroupServer host machine name	servername	—
<b>Database/Instance/Group Server/Port</b> GroupServer host listen port	9002	—

**[Database Settings]**

Setting Name and Description	Default	Valid Ranges/Values
<b>Database/Instance/Group Server/URL</b> GroupServer servlet URL.	http:// servername	—
<b>Database/Instance/Methodology Management/Name</b> Name of this database instance.	—	—
<b>Database/Instance/Methodology Management/Description</b> Description of this database instance.	—	—
<b>Database/Instance/Methodology Management/URL</b> Database URL used to establish a connection to the database.	—	—
<p>Oracle example: jdbc:oracle:thin:@xx.xxx.xxx.xx:yyyy:zzzz</p> <p>SQL example: jdbc:sqlserver://xxxx:yyyy;database=zzzz;</p> <p>x = IP address or hostname y = database listen port z = database name</p>		
<b>Database/Instance/Methodology Management/User Name</b> The name used to establish a connection to the database.	—	—
<b>Database/Instance/Methodology Management/Password</b> The password used to establish a connection to the database.	—	—
<b>Database/Instance/Methodology Management/Public Group ID</b> The Group ID used to establish a connection to the database.	1	—
<b>Database/Instance/Methodology Management/Database Alias</b> The DB Alias name used by the Project Architect job service to create a project plan from a methodology.	MMDB	—
<b>Database/Instance/Methodology Management/Connection Pool [MMR]/Resize Rate</b> The timeout period after which the system will adjust the number of database connections to be equal to the maximum number of database connections concurrently used during the last period.	4m	4m - 12h

**[Database Settings]**

Setting Name and Description	Default	Valid Ranges/Values
<b>Database/Instance/Methodology Management/Connection Pool [MMR]/Maintenance Frequency</b> The run frequency of the maintenance that ensures leases have not exceeded the maximum duration.	1m	10s - 1h
<b>Database/Instance/Methodology Management/Connection Pool [MMR]/Lease Request Wait Timeout</b> The amount of time a request for a database connection will wait.	30s	5s - 2h
<b>Database/Instance/Methodology Management/Connection Pool [MMR]/Maximum Connections</b> The maximum number of connections the server will have to the database.	50	5 - 15000
<b>Database/Instance/Methodology Management/Connection Pool [MMR]/Fetch Size</b> A hint to the database driver for how many rows to fetch at a time.	120	—
<b>Database/Instance/Methodology Management/Connection Pool [MMR]/Trace SQL</b> Trace all SQL sent to the database.	false	true/false
<b>Database/Instance/Methodology Management/Connection Pool [MMR]/Renewable Free Limit</b> The minimum number of connections that should be available for leases to be renewed.	3	3 - 5
<b>Database/Instance/Methodology Management/Connection Pool [MMR]/Renewable Leases</b> If false, each connection can be leased only for the MaxLeaseDuration period. If true, connection leases are renewed if database statements are completed within the MaxLeaseDuration time period. When true, the code can hold onto the connection as long as it needs, provided SQL statements are completed within the MaxLeaseDuration period. When true, the connection is revoked if no SQL statements are issued within the MaxLeaseDuration period or if one statement takes longer to execute than that period.	false	true/false
<b>Database/Instance/Methodology Management/Connection Pool [MMR]/Maximum Lease Duration</b> The maximum amount of time a database connection can be leased before it is revoked.	2m	5s - 4h

**[Database Settings]**

Setting Name and Description	Default	Valid Ranges/Values
<b>Database/Instance/Content Repository/URL</b> Database URL used to establish a connection to the database.  Oracle example: embedded://jdbc:oracle:thin:@xx.xxx.xxx.xx:yyyy:zzzz  SQL example: embedded://jdbc:sqlserver://xxxx:yyyy;database=zzzz;  x = IP address or hostname y = database listen port z = database name	—	—
<b>Database/Instance/Content Repository/Database User Name</b> The name used to establish a connection to the database. By default, this is admuser for Oracle and sa for SQL.	—	—
<b>Database/Instance/Content Repository/Database Password</b> The password used to establish a connection to the database. By default, this is admuser for Oracle and sa for SQL.	—	—
<b>Database/Instance/Content Repository/Repository Home</b> Location where content repository files will be stored. Specify a location, or type a name and a folder will be created for you in the Bootstrap home directory.	—	—
<b>Database/Instance/Content Repository/Admin User Name</b> Application admin user name for the content repository.	—	—
<b>Database/Instance/Content Repository/Admin Password</b> Application admin password for the content repository.	—	—
<b>Database/Instance/Content Repository/Enable Connection Pooling</b> Provides a pool of shared database connections to the content repository. Utilizes the c3po connection pool.	true	true/false
<b>Database/Instance/Content Repository/Maximum Connections</b> The maximum number of connections that the repository connection pool will have to the database.	25	2-5000

**[Database Settings]**

Setting Name and Description	Default	Valid Ranges/Values
<b>Database/Instance/Workflow Repository/URL</b> Database URL used to establish a connection to the database.  Oracle example: jdbc:oracle:thin:@xx.xxx.xxx.xx:yyyy:zzzz  SQL example: jdbc:sqlserver://xxxx:yyyy;database=zzzz;  x = IP address or hostname y = database listen port z = database name	—	—
<b>Database/Instance/Workflow Repository/User Name</b> The name used to establish a connection to the database. By default, this is admuser for Oracle and sa for SQL.	—	—
<b>Database/Instance/Workflow Repository/Password</b> The password used to establish a connection to the database. By default, this is admuser for Oracle and sa for SQL.	—	—
<b>Database/Instance/Workflow Repository/Enable Connection Pooling</b> Provides a pool of shared database connections to the workflow system. Utilizes the c3po connection pool.	true	true/false
<b>Database/Instance/Workflow Repository/Maximum Connections</b> The maximum number of connections that the workflow repository connection pool will have to the database.	25	1-5000
<b>Database/Instance/Workflow Repository/Timeout</b> The number of seconds a connection can remain pooled, but unused, before being discarded. If a value of zero is entered, idle connections will never expire.	1m	5s-1h
<b>Database/Instance/Workflow Repository/Connection Test Period</b> The time, in seconds, in which all idle connections will be tested. If a value of zero is entered, no connections will be tested.	5m	5s-1d

**[Database Settings]**

Setting Name and Description	Default	Valid Ranges/Values
<b>Database/Instance/Session Settings/Setting 1-5</b> “Alter session” commands used to establish cursor sharing, rule-based mode, SQL trace, and more. Invalid settings in these fields are ignored.	—	alter session set _ = _
<b>Database/Instance/Cost Based Optimization Settings/Enable</b> Enable Cost Based Optimization if true.	false	true/false
<b>Database/Instance/Cost Based Optimization Settings/Dump Matching SQL</b> Set to true to dump the SQL where a match is found in the QUERYLIB table for a given SQL statement. Set to false to dump the SQL where a match is not found in the QUERYLIB table for a given SQL statement.	false	true/false

**[Thread Pool Settings]**

Setting Name and Description	Default	Valid Ranges/Values
<b>Thread Pool/Number of Threads</b> The number of server threads.	25	2-300
<b>Thread Pool/Maximum Task Duration</b> The maximum duration a thread can be used for one task.	3m	10s - 24d
<b>Thread Pool/Maximum Long Running Task Duration</b> The maximum duration a thread can be used for a long running task.	5m	10s - 24d
<b>Thread Pool/Maintenance Frequency</b> The frequency at which threads are checked for excess time durations.	45s	15s - 24d

**[Log Settings]**

Setting Name and Description	Default	Valid Ranges/Values
<b>Log/Console Logger/Severity Level</b> Log severity level for the Console Logger.  The ranges are inclusive. For example, choose “debug” to log all messages; choose “warning” to log both warning and error level messages.	error	debug, info, warning, error
<b>Log/Console Logger/Enabled</b> Enable the Console Logger	false	true/false
<b>Log/File Logger/Archive Size</b> The minimum size (in Kb) a log file must be before it is archived.	1024	1024 - 2073600000
<b>Log/File Logger/Severity Level</b> Log severity level for the HTML Logger.  The ranges are inclusive. For example, choose “debug” to log all messages; choose “warning” to log both warning and error level messages.	error	debug, info, warning, error
<b>Log/File Logger/Number of Archive Files</b> Maximum number of log files to be used. The default files are named WebAccessLog0.html through WebAccessLog5.html.	6	2 - 2073600000
<b>Log/File Logger/HTML</b> Log as HTML.	true	true/false

**[Log Settings]**

Setting Name and Description	Default	Valid Ranges/Values
<b>Log/File Logger/Enabled</b> Enable the HTML Logger.  Log files are created in a folder named WebAccessLogs, located as follows:  JBoss on Windows: <webaccesshome>\WebAccessLogs JBoss on Red Hat Enterprise Linux: /mount_point/<webaccesshome>/AppServer/ WebAccessLogs WebLogic on Windows: <webaccesshome>\WebAccessLogs WebLogic on Solaris: /mount_point/<webaccesshome>/WebAccessLogs WebSphere on Windows: <webaccesshome>\WebAccessLogs WebSphere on Red Hat Enterprise Linux: /mount_point/WebSphere/AppServer/WebAccessLogs	true	true/false
<b>Log/Email Logger/SMTP Host</b> SMTP server that will send the email message.	—	—
<b>Log/Email Logger/From Email Address</b> Set to the email address from which you would like log messages sent.	—	—
<b>Log/Email Logger/To Email Address</b> Set to the email address to which you would like log messages sent.	—	—
<b>Log/Email Logger/Email subject</b> The default Email subject.	P6 Web Access error	—
<b>Log/Email Logger/Enabled</b> Enable the Email logger.	false	true/false
<b>Log/Asynchronous</b> Log messages asynchronously for better performance.	true	true/false



**[Application Settings]**

Setting Name and Description	Default	Valid Ranges/Values
<b>Application/Prototype User</b> Prototype user login used to create and store default Dashboards and Global Preference settings for new P6 Web Access users.	—	—
<b>Application/Ignore Daylight Savings Time</b> Set to false to account for daylight savings time.	true	true/false
<b>Application/Timesheet URL</b> URL for invoking timesheet program	/action/ launchTimesheetSeemlesly	—
<b>Application/Timesheet Codebase</b> URL for the timesheet application Web site	server/GroupServer	—
<b>Application/Internet Explorer Java Plugin URL</b> URL for Internet Explorer users to download Java Plug-in (JRE).	Defaults to the plug-in version 1.6.0_07 that is installed during setup.	—
<b>Application/FireFox Java Plugin URL</b> URL for Firefox users to download Java Plug-in (JRE).	Defaults to the plug-in version 1.6.0_07 that is installed during setup.	—
<b>Application/Internet Explorer Java Plugin Version</b> JRE version used by applets in Internet Explorer	—	—
<b>Application/FireFox Java Plugin Version</b> JRE version used by applets in Firefox	—	—
<b>Application/Maximum Transactions for Excel Import</b> The maximum number of transactions (activities or resources) that can be imported at once from a .xls or .csv file	2000	100 - 2000
<b>Application/Maximum Excel Import File Size</b> The maximum size of the .xls or .csv file uploaded during an import attempt (KB)	1048	64 - 4096
<b>Application/Allow Auto-Summarize Option</b> Set to true to allow automatic summarization to be available in resource staffing user preferences.	true	true/false
<b>Application/Database Dropdown Key</b> Keyword to use for enabling database selection control in the login page. Pass this as a URL parameter db=keyword. Set this to an empty string if you do not want to require the keyword.	—	—

**[Application Settings]**

Setting Name and Description	Default	Valid Ranges/Values
<b>Application/Logout URL</b> Directs P6 Web Access to a specific URL when the user exits with the Logout/Close icon in the banner of P6 Web Access. Any valid URL can be used. If no URL is specified, P6 Web Access directs the user to the launch page of P6 Web Access.	—	—
<b>Application/Compress Applet Communication</b> Set to true to compress communication between applets and the server.	true	true/false
<b>Application/Compress HTML Content</b> Set to true to compress HTML-related content generated by P6 Web Access, including .html, .js, and css files, and Ajax content.	true	true/false
<b>Application/Maximum Projects in Portfolio</b> The maximum number of projects returned when creating a portfolio with a filter.	1000	1 - 100000
<b>Application/Maximum Loaded Resource Planning Projects</b> The maximum number of projects that can be open in the Resource Planning spreadsheet.	100	1 - 1000
<b>Application/Maximum Portlets per Dashboard</b> The maximum number of portlets that can be displayed in a dashboard on the Dashboards Home page.	12	1 - 50
<b>Application/Maximum Projects per Portfolio View</b> The maximum number of projects that can be displayed in a portfolio view on the Portfolio Analysis tab and in Portfolio View portlets on dashboards.	5000	1 - 20000
<b>Application/Maximum Activities per Activity View</b> The maximum number of activities that can be displayed in the Activities tab of the Projects section. If greater than 5000, the Maximum memory allocated to Java Applets setting (below) must be 128 or greater.	2000	1 - 15000

If a supported JRE prior to version 1.6.0\_10 is being used, the maximum number of activities displayed will be 5000. Also, Primavera recommends that the maximum value be set to 5000 (or lower) if users need to display Earned Value or Baseline-related information. Otherwise, database timeouts may occur.

**[Application Settings]**

Setting Name and Description	Default	Valid Ranges/Values
<b>Application/Maximum memory allocated to Java Applets</b> The maximum amount of memory, in megabytes, that can be used by Java Applets. If the Maximum Activities per Activity View setting (above) is greater than 5000, the memory allocation must be set to 128 or greater.	64	64-1024
This setting is only valid when using JRE version 1.6.0_10 (or later).		
<b>Application/Maximum MRU List Items</b> The maximum number of items that can be displayed in a Most Recently Used (MRU) list.	5	1 - 10
<b>Application/Maximum Project Activity Codes</b> The maximum number of projects that can be selected and displayed in the Projects tab of the Activity Codes section.	350	1-350
<b>Application/Maximum Activity Code Values</b> The maximum number of activity code values that can be created or selected per Activity Code.	100000	1-1m
<b>Application/Custom Portlet URL Encryption Key</b> Encryption key for custom portlet user password. Assigning a key causes the password that is passed as part of the URL for a custom portlet to be encrypted. If you do not assign a value, the password is not encrypted. The value can be any alphanumeric character or string of characters. This encryption uses the Sun/Blowfish algorithm.	—	—
<b>Application/Transaction Monitor Execution Interval</b> The frequency at which the transaction monitor job runs, which ensures transactions have not been orphaned.	10m	1s - 24d20h31m23s647
<b>Application/Enable Cross Site Scripting Filter</b> Enable or disable the cross site scripting filter. It is not necessary to restart the server after changing the value of this setting.	false	true/false
<b>Application/Notifications/Enable Issue Notifications</b> Enable or disable automated notifications when Issues are added or modified.	false	true/false
<b>Application/Notifications/Enable Invitation Notifications</b> Enable or disable automated notifications when Invitations are added.	false	true/false

**[Application Settings]**

Setting Name and Description	Default	Valid Ranges/Values
<b>Application/Notifications/Enable Initiation Notifications</b> Enable or disable automated notifications when Invitations are pending.	false	true/false
<b>Application/Notifications/Override Notification Email from User</b> Set to true to always use the system's From email address. Set to false to use the email address of the user who causes notifications to be sent, if their email address is configured.	false	true/false
<b>Application/Notifications/Notification from Email User</b> The email address from which Notifications will be sent when either NotificationsFromEmailOverride is true or the user's email address is not configured	—	—

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**[Services Settings]**

Setting Name and Description	Default	Valid Ranges/Values
<b>Services/License Service/Recalculate Rate</b> The rate at which the database is checked for changes in total license counts.	5m	10s - 10m
<b>Services/License Service/Update Rate</b> The rate at which a Business Rule Engine synchronizes with the database for license counts.	30s	100 - 1m
<b>Services/License Service/Expiration Check Rate</b> The rate at which licenses are checked to see if they should expire.	2m	500 - 15m
<b>Services/Timestamp Service/Refresh Rate</b> The rate at which the database is queried to determine if a table change notification is necessary.	1m	15s - 1h
<b>Services/Registry Service/Refresh Rate</b> The rate at which the database is updated with the status of the Business Rule Engine.	1m30s	15s - 1h
<b>Services/Registry Service/Stale Period</b> The duration of inactivity that indicates an inoperable Business Rule Engine.	4m	1m - 10m

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**[Services Settings]**

Setting Name and Description	Default	Valid Ranges/Values
<b>Services/Registry Service/Port</b> The TCP/IP port on which requests to revive dead Business Rule Engines will be received.	9192	1024 - 65535
<b>Services/Next Key Service/Refresh Rate</b> The rate at which nextkey cache is refreshed.	1m	15s - 1h
<b>Services/Next Key Service/Maximum Cached Keys</b> Maximum nextkeys to cache per table	10	1 - 100
<b>Services/Performance/Use Enterprise Summary</b> Use enterprise level summary data for resources and roles.  This setting specifies whether you want to use EPS level records or Project level records to draw Resource Manager histograms. If true, performance is better because only one record (EPS record) is used for the histogram. If false, a much larger number of records (Project records) is used to draw the histogram chart, so performance is slower. However, it is important to note that histogram data is more accurate when the setting is false, using Project records.	false	true/false
<b>Services/Performance/Maximum Summary Node Count</b> The threshold for displaying summarized data in views such as Resource Usage and Resource Analysis. If the number of child elements contained in a node exceeds this number, no data is displayed.	1000	1-50000
<b>Services/Web Scheduler/Enabled</b> If true, scheduling for jobs from P6 Web Access is performed using the Web Scheduler. If false, scheduling is performed using the Job Service Scheduler.	true	true/false
<b>Services/Web Scheduler/Scheduling Interval</b> Amount of time the Web Scheduler will wait before scheduling the next available job.	5m	1s - 24d20h31m23s647
<b>Services/Web Scheduler/Concurrent Schedulers</b> The number of processes (active schedulers) used for scheduling on this server. A value of 0 (zero) indicates that scheduling will not be performed on this server.	2	0-20
<b>Services/Web Scheduler/Active Scheduler Mode</b> If true, jobs are processed continuously until all jobs are scheduled. If false, each job is processed according to the Scheduling Interval.	true	true/false

## [Services Settings]

Setting Name and Description	Default	Valid Ranges/Values
<b>Services/Web Scheduler/ASAP Cleanup Rate</b> Amount of time at which completed WebASAP scheduler jobs are removed from the database.	1d	1h - 24d20h31m23s647
<b>Services/Store Period Performance/Enabled</b> Service for storing period performance. If true, ThisPeriod values are stored in the specified financial period.	true	true/false
<b>Services/Store Period Performance/Execution Interval</b> Amount of time the service will wait before checking for any period performance jobs.	5m	1s - 24d20h31m23s647
<b>Services/Store Period Performance/Concurrent Tasks</b> The number of processes used for the PeriodPerformance service on this server. A value of 0 (zero) indicates that the service is not available on this server.	2	0 - 20
<b>Services/Sync Actual This Period/Enabled</b> Service for synchronizing actuals and ActualThisPeriod values. If true, recalculates actual units and costs for ThisPeriod.	true	true/false
<b>Services/Sync Actual This Period/Execution Interval</b> Amount of time the service will wait before checking for any SyncActualThisPeriod jobs.	5m	1s - 24d20h31m23s647
<b>Services/Sync Actual This Period/Concurrent Tasks</b> The number of processes used for the SyncActualThisPeriod service on this server. A value of 0 (zero) indicates that the service is not available on this server.	2	0 - 20

**[Services Settings]**

Setting Name and Description	Default	Valid Ranges/Values
<b>Services/Project Hierarchy Cache/Cache Policy</b> The cache policy to use. The cache policy determines how much data is in the cache and which data is removed to reclaim memory.	PRR	FIFO, LRU, JVMM, PRR, PRFIFO, PRLRU, PRCC
The allowable values are: <b>FIFO</b> (First In First Out-projects are cleared from the cache in the same order they were added to memory) <b>LRU</b> (Least Recently Used projects are cleared from the cache before more recently used ones) <b>JVMM</b> (Java Virtual Machine Managed-uses soft references to cached elements; memory used by soft references is reclaimed by the JVM as required) <b>PRR</b> (Projects are selected at random to be cleared from cache) <b>PRFIFO</b> (Periodic Refresh First In First Out-same as FIFO, except policy is enforced based on MaintenanceFrequency) <b>PRLRU</b> (Periodic Refresh Least Recently Used-same as LRU, except policy is enforced based on MaintenanceFrequency) <b>PRCC</b> (Periodic Refresh Clear Cache-ignores CacheLimit to flush the entire cache, based on MaintenanceFrequency)		
<b>Services/Project Hierarchy Cache/Cache Limit</b> The maximum number of projects stored in memory.	5000	1000 - 30000
<b>Services/Project Hierarchy Cache/Maintenance Frequency</b> The frequency for applying the specified cache policy. Application of the cache policy might result in memory used by the cache to be reclaimed.	5h	1m - 24d
<b>Services/Collaboration Synchronization Service/Synchronization Interval</b> The interval at which the collaboration synchronization service will run. The synchronization service deletes documents and workflows for projects that have been deleted.	1h	1m - 24d20h31m23s647
<b>Services/Asynchronous Jobs/Purge Interval</b> The frequency at which long running job records will be removed from the database.	1h	0 - 24d20h31m23s647
<b>Services/Asynchronous Jobs/Grace Time</b> The minimum age of long running job records removed during purge.	1d	0 - 24d20h31m23s647

**[Services Settings]**

Setting Name and Description	Default	Valid Ranges/Values
<b>Services/Mail Service/Email Notification Server</b> Hostname or IP address of the email notification server for Timesheet Approval.	—	—
<b>Services/Mail Service/SMTP Port</b> The tcp/ip port of the outgoing SMTP server.	25	1 - 65535
<b>Services/Mail Service/Send Interval</b> The frequency at which queued mail messages are sent.	1m	0 - 24d20h31m23s647
<b>Services/Mail Service/Maximum Queue Length</b> The maximum size of the mail message queue	250	0 - 2147483647
<b>Services/Mail Service/Authorized User Name</b> The name of the account to use to send mail from this mail server.	—	—
<b>Services/Mail Service/Authorized User Password</b> The password of the account used to send mail from this mail server.	—	—

---

**[Performance Monitor Settings]**

Setting Name and Description	Default	Valid Ranges/Values
<b>Performance Monitor/Enabled</b> Performance monitor packets are sent when true.	false	true/false
<b>Performance Monitor/Monitor Host</b> The destination IP or machine name for the performance monitor packets	localhost	—
<b>Performance Monitor/Monitor Port</b> The destination port for the performance monitor packets	6990	1024 - 65535
<b>Performance Monitor/Update Interval</b> The rate at which the performance monitor packets are sent.	1s	250 - 1m

---



**[Tracer Settings]**

Setting Name and Description	Default	Valid Ranges/Values
<b>Tracer/Enabled</b> If true, debugging messages are sent to Tracer application.	false	true/false
<b>Tracer/Server Name</b> Hostname or IP address of destination for sending tracer information.	localhost	—
<b>Tracer/Port</b> Port to use for Tracer socket connection	9210	1024-65535
<b>Tracer/Use Background Send Thread</b> If true, use background thread for sending TCP messages to tracer.	true	true/false

**[Integration API Server Settings]**

Setting Name and Description	Default	Valid Ranges/Values
<b>Integration API server/RMI/Registry Port</b> The port for the RMI Registry. This value is usually set to at least 1024.	9099	1024 - 65535
<b>Integration API server/RMI/Enable</b> The setting that enables the RMI server.	true	true/false
<b>Integration API server/RMI/Enable Compression</b> The setting that enables compression service mode.	true	true/false
<b>Integration API server/RMI/Enable SSL</b> The setting that enables SSL service mode.	true	true/false
<b>Integration API server/RMI/Enable Standard Service</b> The setting that enables Standard service mode.	true	true/false
<b>Integration API server/RMI/Enable HTTP Service</b> The setting that enables HTTP tunneling mode.	false	true/false
<b>Integration API server/RMI/Enable HTTPS Service</b> The setting that enables secure HTTP (SSL) tunneling mode.	false	true/false

**[Integration API Server Settings]**

Setting Name and Description	Default	Valid Ranges/Values
<b>Integration API server/RMI/Compression Service Port</b> The port to use for Compression service mode. A setting of 0 indicates that any available port will be used. If the server will be accessed across a firewall, you must set this to a specific port.	0	0 - 65535
<b>Integration API Server/RMI/SSL Service Port</b> The port to use for SSL service mode. A setting of 0 indicates that any available port will be used. If the server will be accessed across a firewall, you must set this to a specific port.	0	0 - 65535
<b>Integration API Server/RMI/Standard Service Port</b> The port to use for Standard service mode. A setting of 0 indicates that any available port will be used. If the server will be accessed across a firewall, you must set this to a specific port.	0	0 - 65535
<b>Integration API Server/RMI/HTTP Service Port</b> The port to use for HTTP tunneling mode. A setting of 0 indicates that any available port will be used.	0	0 - 65535
<b>Integration API Server/RMI/HTTPS Service Port</b> The port to use for secure HTTP tunneling mode. A setting of 0 indicates that any available port will be used.	0	0 - 65535
<b>Integration API Server/Session Timeout</b> The amount of time after which an idle client connection will be terminated.	120	1 - 24d

# Configuring Authentication Modes

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***In this chapter:***

**Authentication Modes**

**Implementing Non-Native  
Authentication**

**Choosing an Authentication  
Scheme**

**Running the Authentication  
Configuration Wizard**

**Configuring P6 Web Services  
Authentication**

**Login/Logout Changes to Support  
Authentication Modes**

This chapter describes the authentication modes available and explains how to configure P6 Web Services to operate using a non-native authentication scheme.

## Authentication Modes

P6 Web Services supports the following authentication modes to validate user logons:

- **Native**

Native mode is the original Primavera authentication scheme and is the default for all applications. When a user attempts to log on to a Primavera application, native mode confirms the user's identity in the project management or methodology management database.

- **LDAP (Lightweight Directory Access Protocol)**

LDAP mode is available for the Primavera Project Management client module, P6 Web Access, the API, and P6 Web Services. In this mode, when a user attempts to log on to a Primavera application, the user's identity is confirmed in a directory server database.

## Implementing Non-Native Authentication

By default, all Primavera applications are installed using native authentication. Native authentication is handled directly through the Primavera application with the Primavera database acting as the authority.

To implement non-native authentication for Primavera applications

- uninstall current versions of Primavera applications, if you are upgrading
- install the new version of Primavera client applications and additional components required for your implementation
- run the Authentication Configuration Wizard to choose an authentication scheme for the project management database (PMDB) and, if applicable, methodology management database (MMDB)
- configure administrative settings for P6 Web Services

---

*The Borland Database Engine and the database client software must be installed on the machine used to run the Authentication Configuration Wizard.*

---

This guide describes the procedures for choosing an authentication scheme and configuring new administrative settings for P6 Web Services.

For detailed procedures on installing and uninstalling Primavera client applications and server components and upgrading the methodology management database, refer to the *Primavera P6 Administrator's Guide*.

## Choosing an Authentication Scheme

To specify the authentication scheme you want to use for Primavera applications, you use the Primavera Authentication Configuration Wizard. Although you specify authentication modes for client/server applications and Web applications separately, you must use a consistent authentication scheme within the Primavera suite. For example, client/server and Web applications must *both* be configured for either LDAP authentication or native authentication. For Custom mode, which is available only for client/server applications, you can choose LDAP for Web applications.

Authentication mode is database-driven, so the configuration utility enables you to first specify a database connection setting, then choose authentication modes for the applications that access that database.

For LDAP authentication, the configuration utility also enables you to specify LDAP servers, map LDAP attributes to Primavera database fields, and provision users.

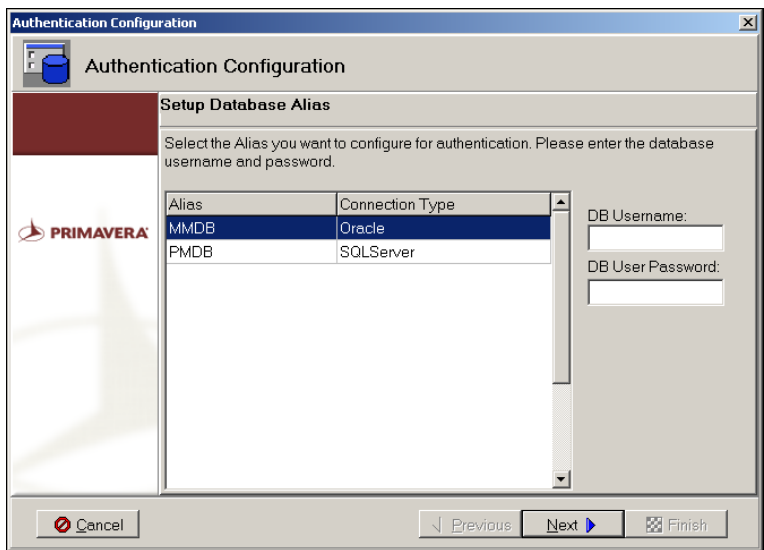
## Running the Authentication Configuration Wizard

Use the Authentication Configuration wizard to

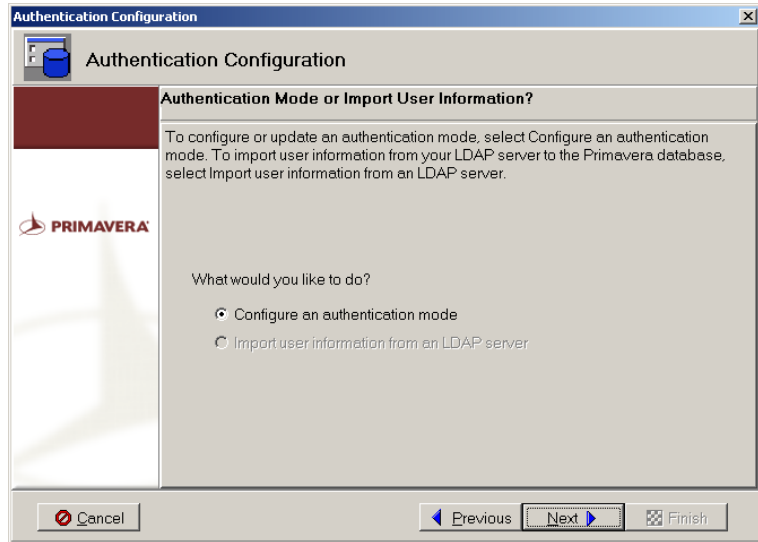
- Select an authentication mode and configure LDAP servers
- Provision LDAP user information to a Primavera database

### To select an authentication mode and configure LDAP servers

- 1 From the \Client\_Applications\Install\Database\ldap\_config folder of the P6 physical media or download, double-click LDAPCfgWiz.exe.
- 2 Select the database alias you want to configure for authentication, then type the database username and password.



3 Choose to configure an authentication mode.



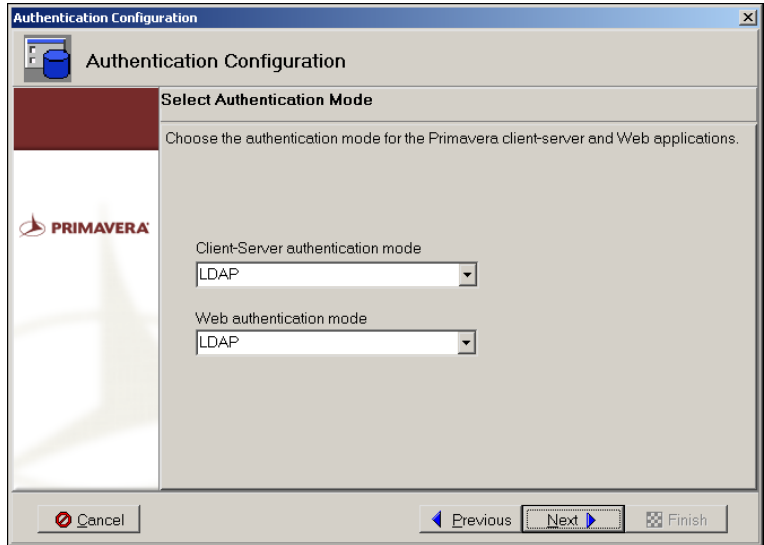
*The Import option is active only if the database has previously been configured for LDAP mode.*

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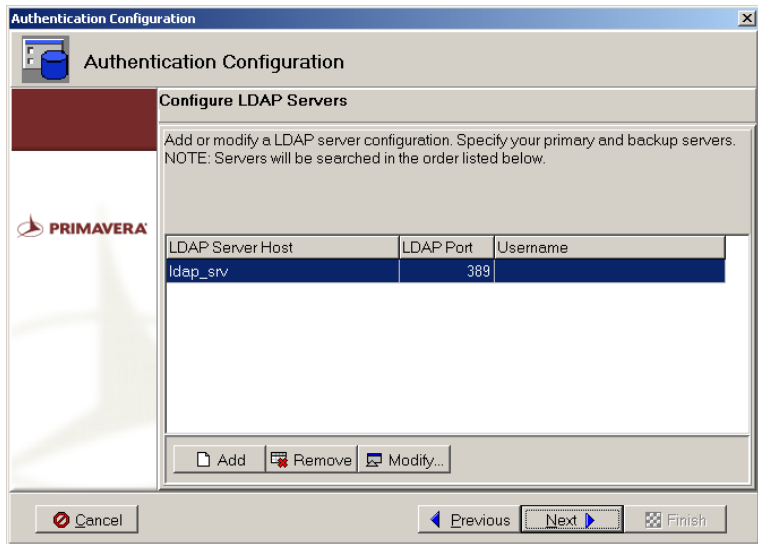
- 4 Choose an authentication mode for the client-server and Web applications.

If you choose Native, the Finish button becomes active so you can exit the wizard. For other modes, continue through the wizard to configure additional information as described in the following steps.



- 5 To add a new LDAP server, click New.

If previously configured LDAP servers are listed, you can modify the information or remove server entries.



- 6 On the General tab, specify the LDAP directory server host name or IP address, listening port, and Base Directory Node.

For Base Directory Node, specify the location in the directory information tree (DIT) that is the location from which to start the search for module users during login. Base Directory Node is also the location where the provisioning function begins the search for directory server users.

To use SSL protocol for communication with the LDAP server, mark the Enable SSL checkbox. To use referrals, mark the Chase Referrals checkbox.

The dialog box is titled "LDAP Configuration for LDAP://:389". It has two tabs: "General" and "Login (Optional)". The "General" tab is selected. The text inside says: "Please enter the host name or IP Address and port number for the LDAP Directory Server." There are two input fields: "Host name or IP address" and "LDAP Port (Default 389)". The port field has "389" entered. Below this, it says: "Please enter the LDAP directory node where the searches should begin. NOTE: Primavera users should reside directly under this branch or its subordinate branches." There is an input field for "Base Directory Node". At the bottom, there are two checkboxes: "Enable SSL" and "Chase Referrals", both of which are unchecked. On the right side of the dialog, there are three buttons: "OK" (with a green checkmark), "Cancel" (with a red X), and "Test" (with a green play button).

If the LDAP server does not allow anonymous searches, click the Login tab. Type the user name and password of an LDAP server user who has search access for the Base Directory Node you specified on the General tab.

The dialog box is titled "LDAP Configuration for LDAP://:389". It has two tabs: "General" and "Login (Optional)". The "Login (Optional)" tab is selected. The text inside says: "If your LDAP directory does not support anonymous searches, enter the username and password of the LDAP server user who has search access to the directory branch configured under the General tab." Below this, it says: "NOTE: The username must be the fully qualified username. Example: uid=admin,ou=people,dc=mycompany,dc=com". There are two input fields: "Username" and "Password". On the right side of the dialog, there are three buttons: "OK" (with a green checkmark), "Cancel" (with a red X), and "Test" (with a green play button).

When you are finished configuring the LDAP server, click OK or, to validate connection with the LDAP server, click Test and click OK after a successful connection message.

*USER\_NAME is a required field that must be mapped and can not be deleted. Up to four fields can be mapped between the LDAP store and the project manager/methodology manager database.*

- 7 Select an LDAP server. Then, in the LDAP attribute column, specify the term/field in the LDAP store that corresponds to the Primavera project management/methodology management database USER\_NAME field.

Optionally, specify the LDAP term/field for e-mail address, actual name, and office phone number. To add fields, click Add. To remove a field, select it and click Remove.



*If you are unsure of the correct LDAP terms, check with your LDAP directory server administrator.*

**Authentication Configuration**

**Create Mappings**

Highlight the appropriate LDAP server.

LDAP Server  
LDAP://ldap\_srv:389

Select a database field from the drop-down list and enter the corresponding LDAP attribute. NOTE: Field mappings for primary and backup servers should be synchronized to avoid data loss.

Database Field Name	LDAP Attribute
EMAIL_ADDR	mail
ACTUAL_NAME	sn
OFFICE_PHONE	phoneNumber

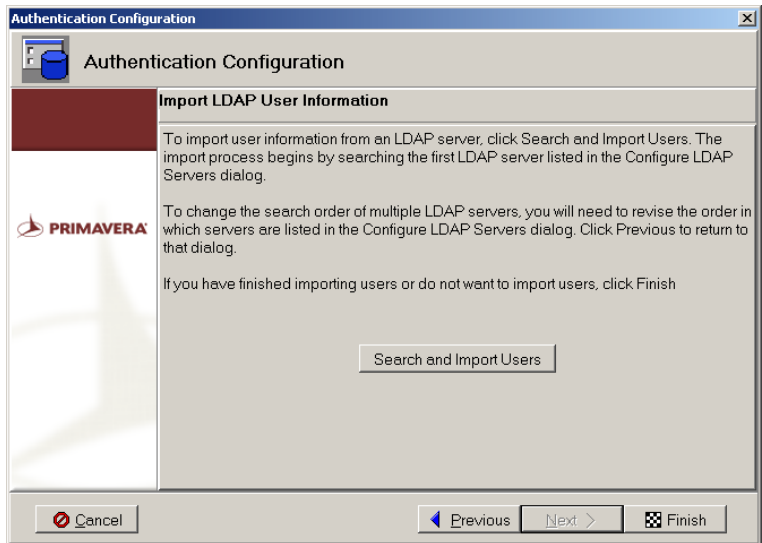
Add Remove

Cancel Previous Next Finish

- 8 To provision LDAP user information to the Primavera database, click Next. You can search the LDAP directory server or import an LDIF file to provision users.

To exit the wizard, click Finish.

- 9 Click Search and Import Users.



*When you provision users from the LDAP directory, changed records are updated in the Primavera database and new users are added. However, users that have been deleted from the LDAP directory are not automatically removed from the Primavera database. You will need to manually delete these users.*

**10 To import from an LDIF file,** click Load LDIF, then navigate to the file you want to import and click OK.

**To import from an LDAP server,** you can run an existing search or define a new search.

If one or more previously defined searches exist, the name of the most recently run search is displayed next to the Search Name drop-down list. To initiate the current search, click Run Search. Results display in the Available Users section. To specify a new search, click Define Criteria.

*Displays the name of the current search.*

*Starts the search based on the filter selected in the Search Name drop-down list.*

*To set the number of search results listed at one time, type a number or click the arrow buttons. To advance through the list, click Go.*

*Click to save information for the selected users to the Primavera database.*

*Click to remove the current search results or currently selected users.*

*After running a search, select the Available users you want to add to the Primavera database, then click the right arrow button. To remove a user from the Selected users list, click the left arrow button. Click the double arrows to add or remove all listed users.*

*For the selected users, click to compare records between the Primavera db and LDAP store. Status is indicated by background color. White indicates a match, blue indicates that the db record differs from the record in the LDAP store, and red indicates that the user record does not exist in the database.*

The screenshot shows the 'Import LDAP Users' dialog box. At the top, it displays 'Current LDAP Server: LDAP://ldap\_srv:389'. Below this is the 'LDAP User Search Criteria' section, which includes a 'Define Criteria' button, a 'Run Search' button, a 'Display next' field with a spinner set to '0', a 'records' label, and a 'Go' button. There is also a 'Search Name' dropdown menu. On the right side of the dialog, there are buttons for 'Close', 'Import Users', 'View Errors', and 'Load LDIF'. The main area is divided into two panes: 'Available users' on the left and 'Selected users' on the right. Each pane has a 'Clear' button and a table with columns 'User Name', 'Actual Name', and 'E-Mail'. Between the panes are navigation buttons: a single left arrow, double left arrows, double right arrows, and a single right arrow. A 'View Updates' button is located below these navigation buttons. The status of the records in the 'Selected users' table is indicated by the background color of the rows.

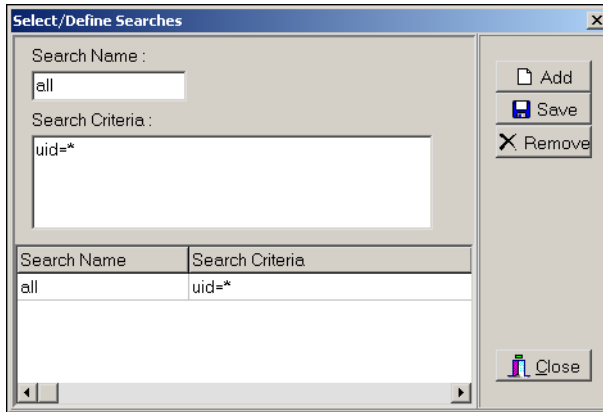
When you click Define Criteria, the Select/Define Searches dialog box displays so you can add, modify, and delete searches.

- To add a search, click Add. Type a unique name for the search. In the Search criteria field, specify the LDAP search filter you want to use. When finished specifying criteria, click Save and Close.



Search filter syntax should adhere to the rules outlined in RFC 2254.

- To modify a search name or criteria, edit the existing information, then click Save and Close.
- To delete a search, select it. Click Remove, then Close.



*After provisioning users, you will need to set up Primavera user accounts for the imported users by assigning security profiles and licenses through the Primavera Project Management Module.*

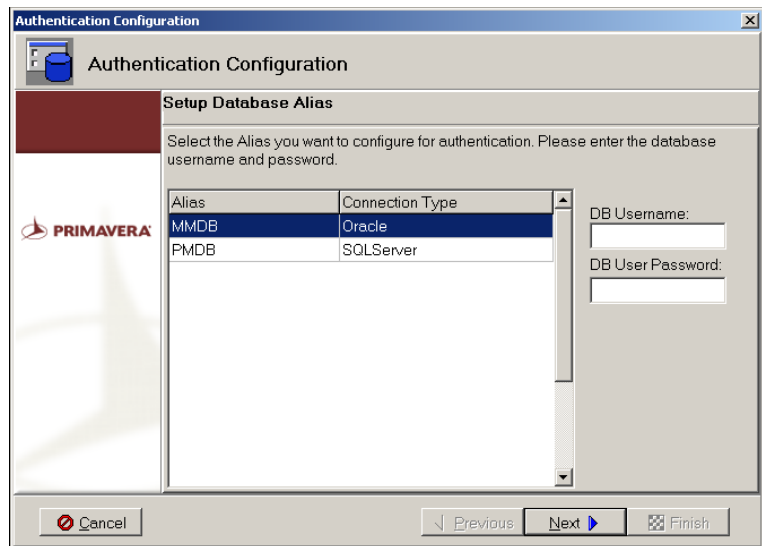
- 11 When finished importing user information, in the Import LDAP Users dialog box, click Close. To exit the Authentication Configuration wizard, click Finish.

## Provisioning LDAP user information to the Primavera database



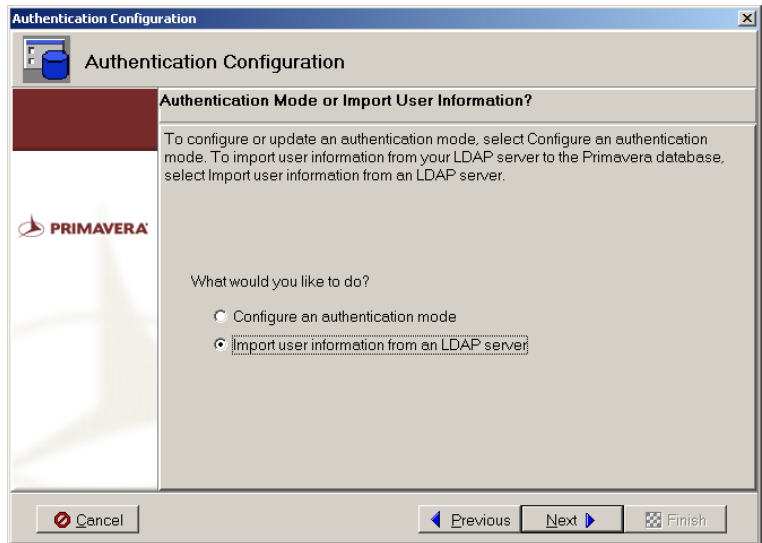
*When you provision users, changed records are updated in the Primavera database and new users are added. However, users that have been deleted from the LDAP directory or LDIF file are not automatically removed from the Primavera database. You will need to manually delete these users.*

- 1 From the \Client\_Applications\Install\Database\ldap\_config folder of the P6 physical media or download, double-click on the file LDAPCfgWiz.exe.
- 2 Select the database alias you want to provision LDAP information for, then type the database user name and password.



- 3 Choose to import user information.





*The Import option is active only if the database has previously been configured for either LDAP.*

- 4 Follow steps 9 - 11 (beginning on [page 52](#)), which describe how to provision users.

## Configuring P6 Web Services Authentication

Because one P6 Web Services server instance may control more than one database, in addition to specifying an authentication mode for a database through the Authentication Configuration wizard, you use an administrative configuration setting to specify the overall mode you want to use for the P6 Web Services server. P6 Web Services uses a single Primavera configuration setting, `Authentication.Mode`, to support authentication selection. For LDAP authentication with secure communication (SSL) between the P6 Web Services server and the LDAP server, two additional configuration settings are required.

Use the Primavera Administration Application to specify these configuration settings. For more information about the Administrator Application and these configuration settings, see [“Using the Primavera Administrator Application”](#) on page 13.



*A P6 Web Services configuration might include database instances that are not set to the same authentication mode as the Web Services server. If a user connects and requests a database that is set to a different authentication mode than the Web Services server, an error message displays. The user must select a database that matches the authentication mode set for the Web Services server.*

---

# Login/Logout Changes to Support Authentication Modes

## In Native mode

- Primavera modules present a login dialog that prompts for a user name and password. In Native mode, the use of passwords may be optional, depending on the password policy chosen in Administrative Preferences in the Project Management module.

## In LDAP mode

- All Primavera applications require a logon password.  
Additionally, because passwords are stored and authenticated against an LDAP directory, the capability for users to change passwords within a Primavera module is disabled.

## In Custom mode

- Client/server applications require a logon password. Custom mode is not supported by P6 Web Services.



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