HP IT Analytics

for the Windows operating system

Software Version: 2.00

Installation and Configuration Guide

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Contents

1 Getting Started

The IT Analytics installation package guides the installation and configuration of all the components necessary to run the application successfully.

Installation Prerequisites

There are requirements for drivers and external tools that the IT Analytics application needs to run successfully. For example, you need a Java Runtime Environment (JRE), the right Microsoft SQL Server software and drivers, and a new (or existing) installation of SAP® BusinessObjects Enterprise XI 3.1 (BOE) to manage the data used by IT Analytics. For more information about the environment requirements, read Chapter 2, Requirements.

Data Warehouse

The installation process builds a data warehouse, using your external RDBMS, that is the repository for key business data that is cleansed, consolidated, and organized to support efficient queries, reports, and to populate a variety of business analytics. The contents of the data warehouse depend on the external HP applications that generate business data. For example, the data may originate with an HP Financial applications such as Asset Manager, or HP Demand and Portfolio Management applications like Project and Portfolio Management.

The data warehouse consolidates the data from one or more of these external applications and makes it available for analysis by Financial Planning and Analysis.

Distributed or Consolidated Environment?

You can consolidate all of the required components, such as the RDBMS, data warehouse, BOE, and Financial Planning and Analysis on a single server as shown in Figure 2 on page 12. This configuration is useful for building prototypes and test environments.

For production, it is probable that you will need to deploy the components in a distributed environment. In that case, the metadata, staging, target, and ABC components can be configured in separate databases on separate servers.

To use a distributed environment successfully, your RDBMS must be Microsoft SQL Server.

This distributed environment might look different in different installations, depending on how you decide to deploy each component. For example:

Case 1: You could define one database for the metadata on one server, a separate database for staging on the same server, and merge the target and ABC areas into a single database on another server.

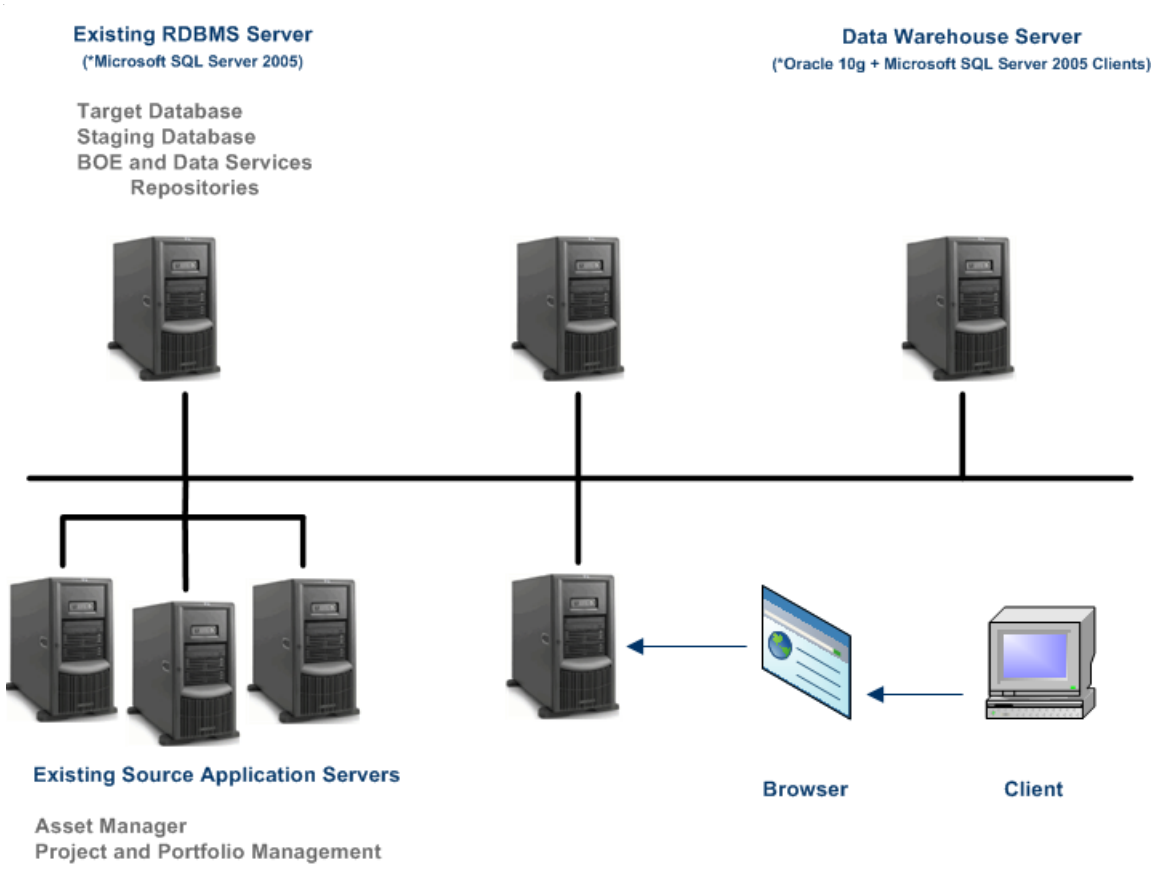
Case 2: You could define four separate databases on separate servers, one each for metadata, staging, target, and ABC.

Distributed Server Environment

Most combinations of servers and deployment scenarios will work in a distributed environment. Although you can install all components on one server, the data warehouse typically runs in a distributed server environment. Data sources are usually on remote servers.

Before you begin the IT Analytics installation process, verify that you have an existing RDBMS server running Microsoft SQL Server 2005, and that you have network connections to your remote data sources. Figure 1 shows the recommended distributed configuration after you complete the IT Analytics installation process.

Figure 1 Distributed Server Environment



Supported Configuration Variations

If you already use BOE for other applications, or you have Apache Tomcat running on another server, you can eliminate the IT Analytics web server by:

- Installing the IT Analytics web application on the BOE server. See Existing BOE Server on page 11.

  and

- Using the BOE-embedded instance of Tomcat to run the IT Analytics web application. See Non-BOE Tomcat on page 11.

You can modify the IT Analytics installation scenario to accommodate existing instances of BOE and Apache Tomcat.

Existing BOE Server

You do not have to install a second instance that is dedicated to IT Analytics. You can use an existing BOE installation on a separate server, but it must be version 3.1 and have the fix packs required by IT Analytics.

- If this is the case, skip Chapter 7, Installing SAP BusinessObjects Enterprise and proceed to Chapter 8, Installing the Data Warehouse Server.
- You can use the BOE Apache Tomcat server to run other web applications, such as BODS and IT Analytics. It is not necessary to create multiple instances of Tomcat.
- After the installation is complete, make sure that you enable enterprise authentication on the existing BOE server. For more information, see Chapter 10, Configuring User Roles and Authentication.

Non-BOE Tomcat

You may have an existing instance of Apache Tomcat on another server that you want to use to deploy the IT Analytics web application. You can use it instead of the BOE Tomcat if it meets the version requirements described in the HP IT Analytics 2.00 Compatibility Matrix. For more information, see Chapter 2, Requirements.

The Chapter 4, Installation Checklists chapter prompts you to gather this information before you begin the installation process.When you complete the tasks in Chapter 9, Installing the Web Application Server, you must specify the location of this existing Tomcat installation directory and its service name, the login name, and the password to be used by IT Analytics.

Unsupported Configuration Variations

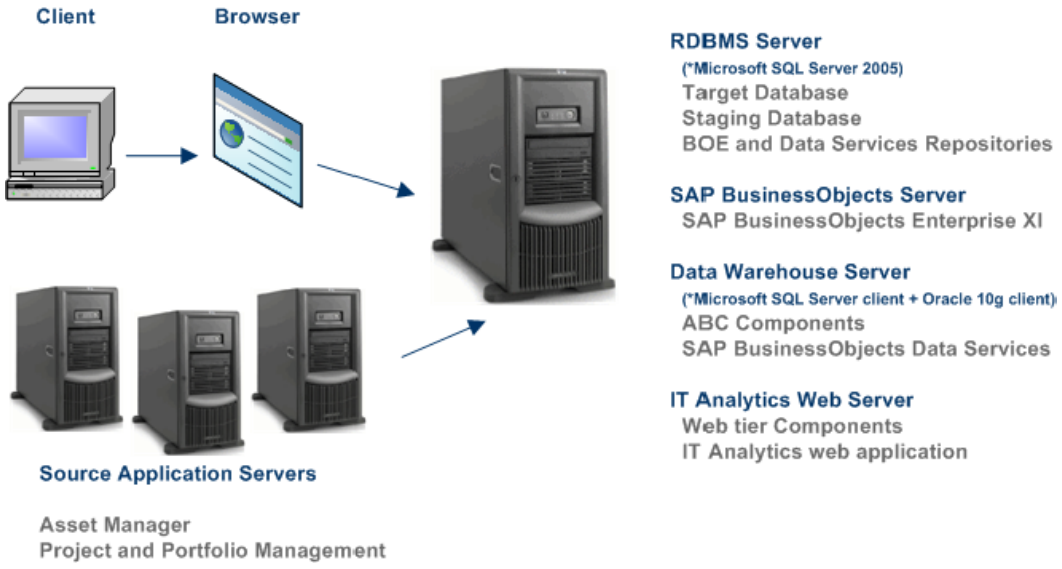
There are some installation scenarios that are not supported. In general, you should follow the described multiple server or single server scenarios described in this chapter. Only the exceptions noted in Existing BOE Server or Non-BOE Tomcat are supported. If you customize the server combination scenarios, you may not be able to install components successfully. For example, you cannot use an existing instance of BODS on a different server. You must install a new instance on the data warehouse server.

Consolidated Server Environment

You can replicate a distributed configuration on a single server. In this scenario, all components share the same server. BODS has an integrated installation with BOE where BODS shares the Apache Tomcat instance installed with BOE.

You must have an RDBMS installation of Microsoft SQL Server 2005 on that server before you begin the IT Analytics installation process. The data sources can be remote or local. Complete the installation of all other components on the same server. Figure 2 on page 12 shows a consolidated configuration where all components are on the same server.

Figure 2 Consolidated Environment



Other HP Software Products

The data warehouse imports source data created by other HP applications using an integral ETL process. This source data should reside on servers that are separate from the installed IT Analytics and related data warehouse components.

Installation Media

The installation media consolidates all the required components into two DVDs. DVD 1, labeled HP IT Analytics 2.00, contains all the application installation files for BOE, BODS, the IT Analytics application, and the data warehouse. Use this DVD to complete the tasks described in Chapter 7 through Chapter 9.

DVD 2, labeled HP IT Analytics 2.00 (Dashboard Development Kit), contains the installation files for the optional installation of SAP BusinessObjects Xcelsius Engage Server (BOXES). Install this product if you plan to use the dashboard feature of the IT Analytics application. For more information, see Appendix A, Installing SAP BusinessObjects Xcelsius.

Installation Guide Overview

This guide contains information about how to install the HP Data Warehouse. Table 1 summarizes the content of each chapter.

Table 1 Document Map

Chapter	Describes
Chapter 1, Getting Started	Product overview.
Chapter 2, Requirements	Hardware, software, and other requirements.
Chapter 3, HP Licensing	How to obtain your license keys and passwords.
Chapter 4, Installation Checklists	Checklists of server names, passwords, and paths that you need to gather before you begin the installation.
Chapter 5, Configuring Required Databases	Everything that you need to define on the RDBMS server.
Chapter 6, Installation and Configuration	The IT Analytics installation and configuration tools.
Chapter 7, Installing SAP BusinessObjects Enterprise	Everything that you need to install and configure on the BOE server.
Chapter 8, Installing the Data Warehouse Server	Everything that you need to install and configure on the data warehouse server.
Chapter 9, Installing the Web Application Server	Everything that you need to install and configure on the web application server.
Chapter 10, Configuring User Roles and Authentication	Configuring user access for LDAP, Active Directory, or file based authentication.
Chapter 11, Next Steps	The remaining tasks for the initial sync and ETL run.
Appendix A, Installing SAP BusinessObjects Xcelsius	How to install BusinessObjects Xcelsius.

Other Documentation Resources

There are other documentation sources that you need to reference for data management and administration tasks.

When you complete all the tasks described in this guide to install and configure a complete working environment for the IT Analytics application, you can turn to the *HP Data Warehouse Administration Guide* for the information you need to prepare the data warehouse for the first ETL job and other ongoing maintenance tasks. This guide, and related IT Analytics documentation, is available on the product manuals web site at HP Software Product Manuals (**http://h20230.www2.hp.com/selfsolve/manuals**).

This site requires you to register as an HP Passport user and sign in. To register for an HP Passport, go to HP Passport Registration (**http://h20229.www2.hp.com/passport-registration.html**).

For all BOE or BODS tasks and troubleshooting, refer to the BOE documentation that accompanies the BusinessObjects installation software.

Before You Begin

You can avoid problems by reading Chapter 2, Requirements carefully. Review the Support or Compatibility Matrix for each HP application that will access the data warehouse to ensure that you have the required environment for all applications to export data to, or import data from, the data warehouse. For more information, see the **HP Software Support** web site (**http://support.openview.hp.com/sc/support_matrices.jsp**).

2 Requirements

Read this chapter to learn more about the preparation required before you begin the IT Analytics installation.

Hardware Requirements

Table 2 describes the minimum hardware requirements for the data warehouse. If you have a consolidated server environment, make sure that this server meets the combined total minimum space requirement. HP also recommends that you increase the number of processors for this single server to four.

Table 2 Hardware Requirements

Item	Minimum Requirement
RAM	Application server: 2 GB. Data warehouse server: 2 GB. SAP BusinessObjects Enterprise XI 3.1 (BOE) server with SAP Business Objects Data Services XI 3.1 (BODS) job server: 4 GB. Web server: 2 GB.
Virtual Memory	Application server: 2 GB. Data warehouse server: 2 GB. BOE server with BODS job server: 4 GB. Web server: 2 GB.
Disk Space	Application server: 3 GB. Data warehouse server: 5 GB. BOE server with BODS job server: 10 GB.† Web server: 2 GB.

† You can install BOE on an auxiliary disk drive; however, the installation process requires a minimum of 5 GB of temporary file space on the C drive. Do not begin the installation until you verify that you have this free space available.

Operating System Requirements

All servers in the Financial Planning and Analysis environment require the Windows Server™ 2003 operating system with SP2. SAP BusinessObjects Xcelsius software can run on Windows XP or Vista operating systems.

Third Party Software Requirements

The data warehouse requires third party components to support importing and exporting data. Use the Self-solve knowledge search feature on the HP Support web site to locate the IT Analytics 2.00 Compatibility Matrix (**HP software support (www.hp.com/go/hpsoftwaresupport)**. You must meet all software and hardware requirements described in the HP IT Analytics 2.00 Compatibility Matrix before you begin the installation process.

Java Memory Options

The Java virtual machine that runs the Tomcat application server hosting both the IT Analytics web application and BOE Web tier requires specific memory options.

Note: If you have an external Tomcat, you **must** set the memory options to ensure that the BOE installation works.

If you use the Tomcat embedded with BOE, no additional configuration is required. If you have an external Tomcat instance, use the Configuration Tool to specify the Tomcat location, Service name, and whether the Configuration Tool can modify the server.xml file. Then configure the JVM running the Tomcat service with the following memory options. These are the minimum required values by BOE:

-Xmx1024m -XX:MaxPermSize=256m

If you have other applications that the Java virtual machine is hosting, you may have to adjust this setting.

For more information, see your Java or Apache Tomcat documentation.

Microsoft Patches

Install these Microsoft operating system patches before you begin the installation process.

- Install the Microsoft Windows Server 2003 (**KB925336**) patch on the SAP Business Objects software server.

  For more information, see the **Microsoft Download Center** web site (**www.microsoft.com/downloads/details.aspx?FamilyId=8EFFE1D9-7224-4586-BE2B-42C9AE5B9071&displaylang=en**)

- Install the **Microsoft Visual C++ 2005 SP1 Redistributable Package (x86)** patch that contains Visual C++ Libraries runtime components on any server where you plan to install IT Analytics components. In a distributed server environment, make sure that you install this patch on the IT Analytics, Data Warehouse, and SAP Business Objects servers.

  For more information, see the **Microsoft Download Center** web site (**http://www.microsoft.com/downloads/details.aspx?FamilyID=200b2fd9-ae1a-4a14-984d-389c36f85647&displaylang=en**).

- If you do not have an installed version of Microsoft Core XML Services (MSXML) 6.0 SP1, install the following on the BOE server:
  - Microsoft Core XML Services (MSXML) 6.0 Service Pack 1 (**msxml6_x86.msi**).

    Microsoft Core XML Services (MSXML) 6.0 Service Pack 2 (**msxml6-KB954459-enu-x86.exe**) is an optional security patch on MSXML 6.0 SP1.

    For more information, see the **Microsoft Download Center** web site (**http://www.microsoft.com/downloads/details.aspx?displaylang=en&FamilyID=d21c292c-368b-4ce1-9dab-3e9827b70604**) and see (**http://www.microsoft.com/downloads/details.aspx?FamilyId=59914795-60c7-4ebe-828d-f28cb457e6e3&displaylang=en**)

Other Requirements

Review and verify that the servers where you plan to install IT Analytics components meet the requirements described in the HP IT Analytics 2.00 Compatibility Matrix. There are other considerations before you begin the complete IT Analytics installation process. Make sure that:

- You have Administrator rights to access your database server, the name of the server, and the password.
- Users who will log on to the BOE server have appropriate rights.
- You have the JRE version described in the HP IT Analytics 2.00 Compatibility Matrix on every server where you plan to install an IT Analytics component.
- You create a JAVA_HOME environment variable that points to the supported JRE on every server where you plan to install an IT Analytics component. In case there are multiple versions installed on any server, JAVA_HOME will always point to the correct JRE.

License Requirements

If you have an existing BOE installation, you can use that instance. If you purchase BOE with the HP application, the purchase includes the required licenses.

Other applications that generate or use data require separate licenses. For more information about licenses, contact your HP sales representative or visit the **HP software support (www.hp.com/go/hpsoftwaresupport)** web site. If you obtain SAP BusinessObjects software products from HP, the HP License Key Delivery Service web site (**webware.hp.com**) manages HP software licensing for the IT Analytics application. For more information, see Chapter 3, HP Licensing.

RDBMS License Requirements

Obtain Microsoft SQL Server 2005 Enterprise Edition software and license keys directly from Microsoft Corporation to manage the BOE, data warehouse, target and staging databases.

In addition, BODS requires an Oracle client installation on the data warehouse server. If you do not have Oracle Database 10g client software, go to the **Oracle.com** site to download and install the free Database 10g Instant Client version 10.2.0.4 software before you begin the tasks in Chapter 8, Installing the Data Warehouse Server.

3 HP Licensing

The **HP License Key Delivery Service** web site (**webware.hp.com**) manages HP software licensing for the IT Analytics application. You can view or download the latest version of the *ESD and Webware License Management Guide* from this site. The guide describes the current process to obtain your *entitlement certificate*, which contains the HP order number that you need to generate your permanent license keys.

Follow the steps in the *ESD and Webware License Management Guide* to present your HP order number, select the products that need licenses, and provide other required information. If you are a first time visitor to the web site, you will be asked to create an account with an email address and password. Most requests to generate permanent license keys require the following:

- IT Analytics product name and number shown on the product receipt or in the email sent by HP to acknowledge the order
- The order number from the entitlement certificate
- A target server name and IP address
- Contact information, such as company name, your name, fax and phone numbers, and license ownership details

Managing Permanent License Keys

After you create your user account on the **HP License Key Delivery Service** web site, generate the entitlement certificate, and generate the license keys, the License Key Delivery Service sends permanent keys to you in an email text file attachment. When you receive the permanent license key file, stage it in a convenient directory on one of the servers where you plan to install IT Analytics components.

If necessary, you can return to the **HP License Key Delivery Service** web site and retrieve the permanent license keys again by selecting **Manage Licenses** on the web site home page and logging into your account.

Porting the License File

From the stored location of the license file, you must copy it to a similar directory on each server where you plan to install one of these IT Analytics components:

- SAP BusinessObjects Enterprise XI 3.1
- SAP Business Objects Data Services XI 3.1
- IT Analytics data warehouse
- IT Analytics web application

To port the license file, copy it to an external USB storage device, or use a File Transfer Protocol (FTP) tool to store the license file on each affected server. During installation, the Configuration Tool will request the path to the permanent license file on each of these servers.

4 Installation Checklists

The IT Analytics complete installation requires many login names, passwords, and other connection information. If you gather this information before you begin, you can ensure that you apply consistent naming conventions across the server environment. Complete the following checklist before you begin the file installation. Use it as a reference as you install the application, data warehouse, and create data source connections among the different servers.

Naming Limitations

RDBMS applications, BOE, and BODS allow blank or empty database passwords. However, IT Analytics does *not* support databases with blank or empty passwords. You can use the same password for each database if you want to simplify access control.

Unsupported Password Characters

The ampersand special character (&), asterisk (*), at sign (@), exclamation point (!), and the double quotation mark (“) are not supported within a password. Underscores are valid.

Database Naming Conventions

HP recommends that you do not create database names with embedded spaces. IT Analytics supports only alphanumeric characters and the underscore in database names. You can use underscores or camel case to create more descriptive names. For example, boecms can be boe_cms or boeCms, but avoid “boe cms” with an embedded blank space. If database names have embedded blank spaces, dashes, or other special characters, results may be unpredictable.

Target and Staging Database Naming

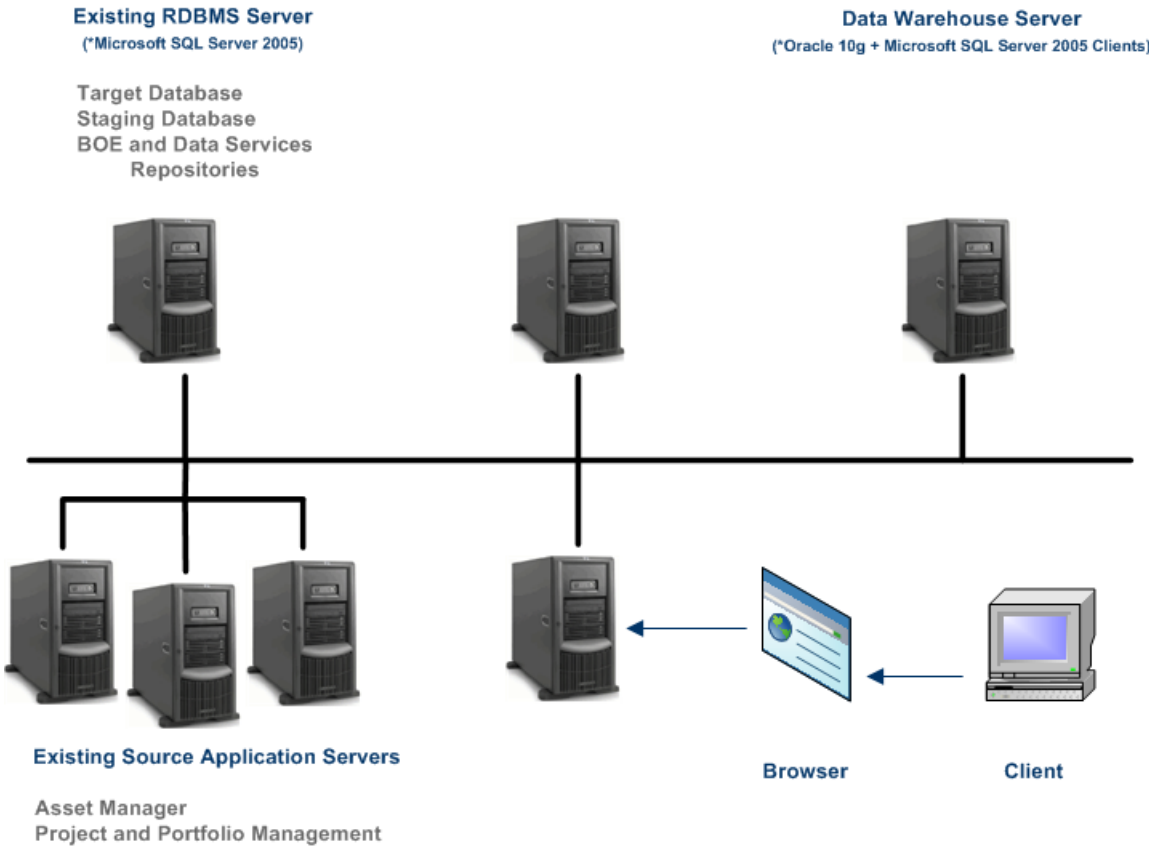
The first character of the Target database name and Staging database name must begin with an alpha character. The DBinit utility will fail if you use database names that begin with numbers.

Using the Checklists

These checklists help you prepare for the steps that you complete to install a complete working environment for IT Analytics and configure all the necessary connections shown in Figure 3. There are separate checklists to gather all of the configuration information that you need before you start each new step in the installation process:

- Part 1: SAP BusinessObjects Enterprise XI 3.1Server Checklist on page 23.
- Part 2: IT Analytics Data Warehouse Checklist on page 24.
- Part 3: IT Analytics Web Application Checklist on page 28.

Figure 3 IT Analytics Working Environment



Part 1: SAP BusinessObjects Enterprise XI 3.1Server Checklist

✓	Configurable Information	Your Value
	License information	
☐	License text file location	
	**BOE CMS Database Connections** There are no requirements for naming; however, the recommendation is lower case with a suffix to distinguish the ODBC DSN from the database name and login.	
☐	BOE CMS ODBC data source name	Example: boecms-dsn
☐	BOE CMS database name (Do not create a BOE CMS database with embedded blanks or special characters in the database name)	Example: boecms Invalid: boe cms, boe-cms, boe@cms
☐	BOE CMS database login name	Example: boecms
☐	BOE CMS database password	Windows or Microsoft SQL Server password, depending on authentication method.
	**BOE Audit Database Connections** There are no requirements for naming; however, the recommendation is lower case with a suffix to distinguish the ODBC DSN from the database name and login. This database is optional. You can store audit information in the CMS database.	
☐	BOE Audit database ODBC DSN	Example: boeaudit-dsn
☐	BOE Audit database name (Do not create a BOE Audit database with embedded blanks or special characters in the database name)	Example: boeaudit Invalid: boe audit, boe-audit, boe@audit
☐	BOE Audit database login name	Example: boeaudit
☐	BOE Audit database password	Windows or Microsoft SQL Server password, depending on authentication method.

Part 2: IT Analytics Data Warehouse Checklist

This phase of the installation has three separate installation steps: SAP Business Objects Data Services XI 3.1 (BODS), the data sources for ETL, and the data warehouse.

✓	Configurable Information	Your Value
	License information	
☐	License text file location	
	**2a) BODS Configuration Information** There are no requirements for naming; however, the recommendation is lower case. You cannot use a pre-existing instance of BODS.	
☐	BODS server name	
☐	BODS database registration name (User-defined name to register the database on the BODS Management Console)	Example: bods_repository
☐	BODS database name (Do not create a BODS database with embedded blanks or special characters in the database name)	Example: bods Invalid: bo ds, bo-ds, bo@ds
☐	BODS login (**admin** is the default login value. You can change it after the initial login)	Example: bods
☐	BODS password	Windows or Microsoft SQL Server password, depending on authentication method.
☐	BODS database TCP port number	Example: 1433
	**2b) ETL Data Source Configuration Information for Asset Manager** You can configure a connection for a maximum of two data sources: one Asset Manager source and one Project and Portfolio Management data source.	
☐	Database type	Microsoft SQL Server 2005 (MSSQL) or Oracle 10g
☐	Server name (MSSQL only)	
☐	Database name (MSSQL only)	
☐	Schema name (MSSQL only)	
☐	Oracle JDBC library location (Oracle only)	Example: C:\oraclexe\app\oracle\product\10.2.0\server\jdbc\lib\ojdbc14.jar

✔	Configurable Information	Your Value
☐	Connection name (Oracle only)	
☐	Login	
☐	Password	
☐	Time Zone† (If available, this information is obtained from Asset Manager. If not, you must provide the correct value.)	Example: America/Indiana/Indianapolis
	**2b) ETL Data Source Configuration Information for Project and Portfolio Management** You can configure a connection for a maximum of two data sources: one Asset Manager source and one Project and Portfolio Management source.	
☐	Oracle JDBC library location	Example: C:\oraclexe\app\oracle\product\10.2.0\server\jdbc\lib\ojdbc14.jar
☐	Connection name	
☐	Login	
☐	Password	
	**2c) Data Warehouse Configuration Staging Database Information** The ETL process uses the staging database to consolidate extracted data from external sources.	
☐	Staging database server name	
☐	Staging database name (Do not create a staging database with embedded blanks or special characters in the database name.)	Example: staging Invalid: boe staging, boe-staging, boe@staging
☐	Staging server administrator login	Example: sa
☐	Staging server administrator password	Windows or Microsoft SQL Server password, depending on authentication method.
☐	Staging database owner password	Windows or Microsoft SQL Server password, depending on authentication method.

✓	Configurable Information	Your Value
	2c) Data Warehouse Configuration Target Database Information The target database contains the final version of the extracted data.	
☐	Target database server name	Example: target
☐	Target database name (Do not create a target database with embedded blanks or special characters in the database name.)	Example: target Invalid: boe target, boe-target, boe@target
☐	Target server administrator login	Example: sa
☐	Target server administrator password	Windows or Microsoft SQL Server password, depending on authentication method.
☐	Target database owner password	Windows or Microsoft SQL Server password, depending on authentication method.
	2c) Time and Currency Information This information identifies the right data to populate analytics.	
☐	Date dimension start year	
☐	Date dimension end year †‡	Minimum: One year after start year
☐	Time granularity	
☐	Data presentation time zone †	Example: America/Indiana/Indianapolis
	2c) Related Servers	
☐	SAP BOE server name	
☐	Web application server name	
☐	Web application server port	

† Time zone assignment depends on whether the IT Analytics Configuration Tool can auto-detect GMT offset information in the Asset Manager source data. If this is the case, IT Analytics can provide the precision to capture time zone information that includes GMT +/- hh:mm:ss; however, there is no automatic adjustment for daylight savings time variations.

The most definitive reference for time zone specification is the public domain Time Zone and Daylight Saving Time (tz) database, which uses region/city/smallest_region formatting. This is the default Configuration Tool time zone model.

For more information, see **http://www.twinsun.com/tz/tz-link.htm**.

‡ If the date range that you specify is shorter than the actual date range of the source data, your initial sync with the remote data source will fail. Make sure the date range that you specify is all-inclusive.

Part 3: IT Analytics Web Application Checklist

✓	Configurable Information	Your Value
	License information	
☐	License text file location	
	Apache Tomcat The Tomcat tab appears if you use an existing instance of Apache Tomcat that is part of a pre-installed instance of BOE.	
☐	Tomcat location	Example: C:\....\Tomcat
☐	Service name From **Control Panel** > **Administrative Tools** > **Services**, right-click the Apache Tomcat service to find the Service name on the General tab.	Example: Tomcat5
	Pre-Existing BOE Server Configuration Information The SAP BOE tab appears if you use a pre-installed instance of BOE.	
☐	BOE server name	Example: server.name.com
	Financial Planning and Analysis (FPA) Application Information	
☐	Database server	Example: \....\server.name
☐	Database name (This is the *same* target database identified in 2c) Data Warehouse Configuration Target Database Information on page 26.)	Example: target
☐	Login	Required: itaapp
☐	Password	
☐	JDBC URI (optional)	

5 Configuring Required Databases

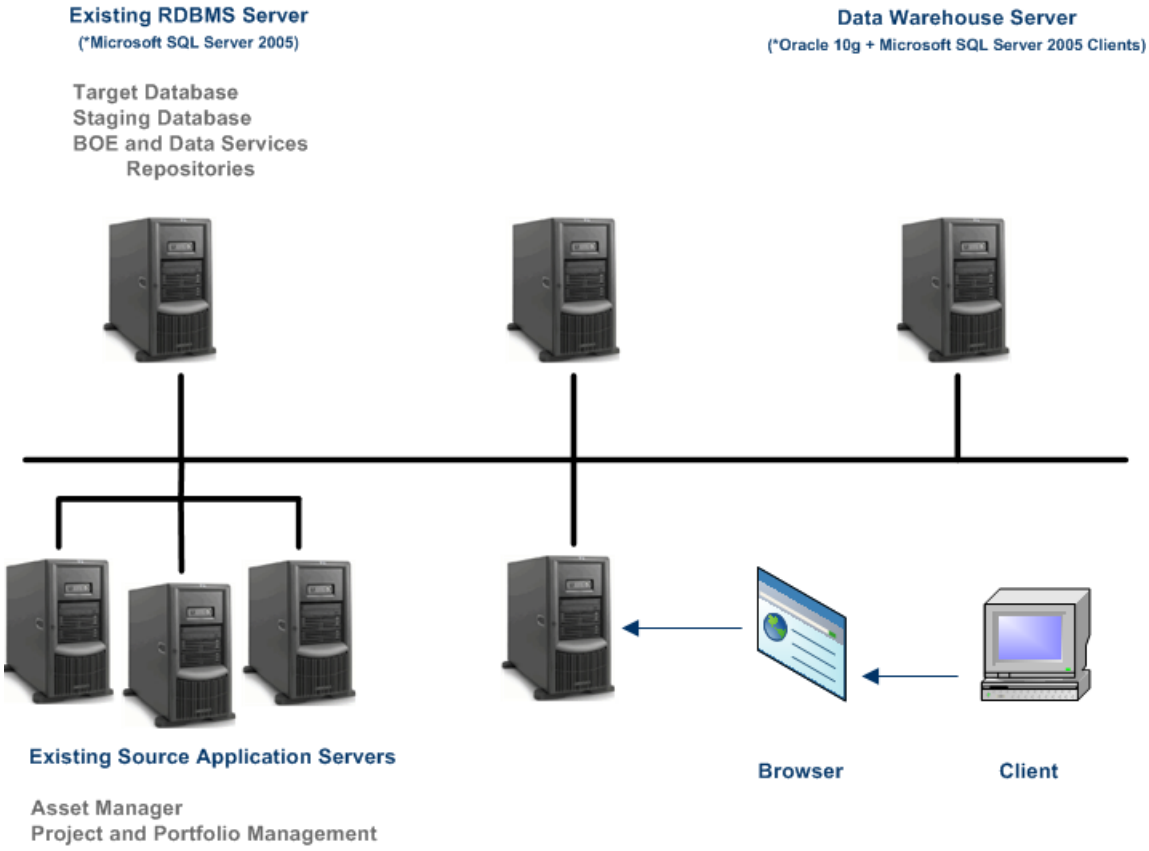
The supported RDBMS is Microsoft SQL Server 2005. Verify that you have a complete installation and configuration of the RDBMS server environment before you install the IT Analytics components. There are required databases that you must create on the RDBMS server and ODBC connections that you must define to connect IT Analytics applications and the IT Analytics data warehouse to these databases. Figure 4 shows the RDBMS server and the resident databases to be configured. Complete these tasks on the RDBMS server.

- Task 1: Install Microsoft SQL Server 2005 SP2 and sqlcmd Utility on page 30.
- Task 2: Set Authentication Properties on page 30.
- Task 3: Enable TCP/IP on page 30.
- Task 4: Create the Required Databases on page 31.
- Task 5: Configure the BODS Database Port Number on page 32.

Complete this task on the data warehouse server:

- Task 6: Verify the RDBMS Clients on page 32.

Figure 4 RDBMS server



Task 1: Install Microsoft SQL Server 2005 SP2 and sqlcmd Utility

Any installation of Microsoft SQL Server 2005 must have Microsoft SQL Server 2005 service pack (SP) 2 applied. If you already installed SP2 and you are working in the single server configuration, you can proceed to Task 2: Set Authentication Properties.

If your data warehouse is on a separate server, as shown in Figure 4 on page 29, you must install the Microsoft SQL Server 2005 sqlcmd utility, found in the **Feature Pack for Microsoft SQL Server 2005** on the RDBMS server.

For more information, see the **Microsoft Download** web site (**http://www.microsoft.com/downloads/details.aspx?FamilyID=d09c1d60-a13c-4479-9b91-9e8b9d835cdc&displaylang=en**).

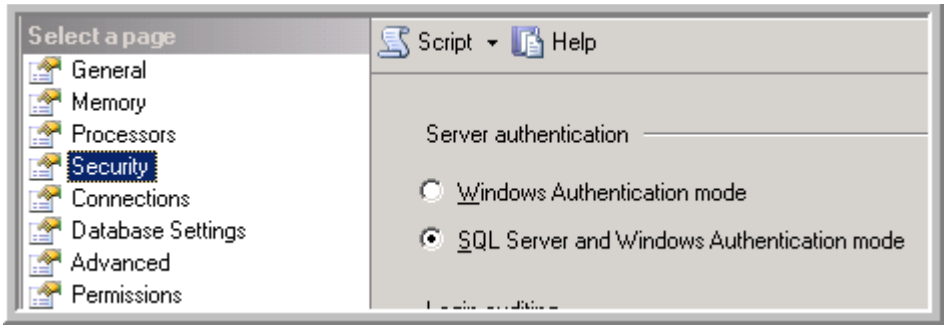
After you complete the utility installation, you must define the location of utility in the Path system variable.

Task 2: Set Authentication Properties

To set your server authentication properties, follow these steps.

1. From the Windows **Start** menu, click > **All Programs** > **Microsoft SQL Server 2005** > **SQL Server Management Studio**.
2. Log in the with appropriate credentials.
3. In the **Object Explorer**, right-click the server name and select **Properties**.
4. Click **Security** in the left navigation pane (**Select a page**).
5. If necessary, select **SQL Server and Windows Authentication mode**, shown in Figure 5.

Figure 5 Server Security Properties



Task 3: Enable TCP/IP

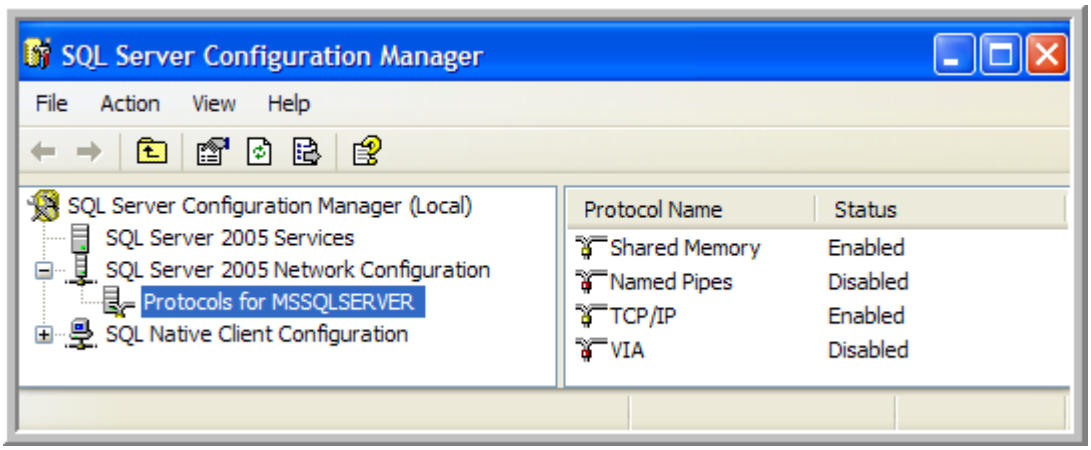
To enable TCP/IP, follow these steps.

1. From the Windows **Start** menu, click > **All Programs** > **Microsoft SQL Server 2005** > **Configuration Tools** > **SQL Server Configuration Manager**.
2. In the navigation pane, expand **SQL Server 2005 Network Configuration**.

3 Click **Protocols for MSSQLSERVER**.

4 If necessary, right-click **TCP/IP** and select **Enable**. Figure 6 shows the correct Protocol settings.

Figure 6 Configuration Manager



Task 4: Create the Required Databases

Follow the RDBMS instructions to create the required BOE CMS and Audit databases. You can refer to the information in Database Naming Conventions on page 21 for tips about database names. The names of the databases are user-defined but if you use the suggested names in this guide, the names will be descriptive and meet all syntax requirements. For later reference, the name in the Checklist should be the same value that you specify in the naming process.

When you define each required database, you must specify a collation that supports Unicode *nchar*, *nvarchar* and *ntext* column data types. To meet this criteria, right-click the database name and select **Properties** > **Options** and choose **SQL_Latin1_General_CP1_CI_AS** from the drop-down list.

Before you create the databases, make sure that each database is on a *separate named instance* of Microsoft SQL Server. For more information, see your Microsoft SQL Server documentation.

The required databases are:

- boecms (required for BOE)
- boeaudit (required for BOE)
  - The login for each BOE database must have read/write/administration rights.
  - The default database for the boecms login must be the boecms database.
  - The default database for the boeaudit login must be the boeaudit database.
- staging (required for data warehouse ETL)
- target (required for data warehouse ETL)
- bods (required by BODS)

You will create the ODBC connections to these databases when you begin the BOE server installation in Chapter 7, Installing SAP BusinessObjects Enterprise.

Task 5: Configure the BODS Database Port Number

When you install BODS on the data warehouse server, you will have to create a connection to the BODS database on the RDBMS server. To complete this task, you will need the port number.

1. From the Windows **Start** menu, click > **Programs** > **Microsoft SQL Server 2005** > **Configuration Tools** > **SQL Server Configuration Manager**.
2. In the navigation pane, expand **SQL Server 2005 Network Configuration**.
3. Click **Protocols for MSSQLSERVER**.
4. Right-click **TCP/IP** and select **Properties**.
5. Select the **IP Addresses** tab.
6. If necessary, expand (or scroll down to) the **IPAll** section.
7. Record the TCP Port number in the 2a) BODS Configuration Information section of the Checklist on page 24. You will need this information later.

Task 6: Verify the RDBMS Clients

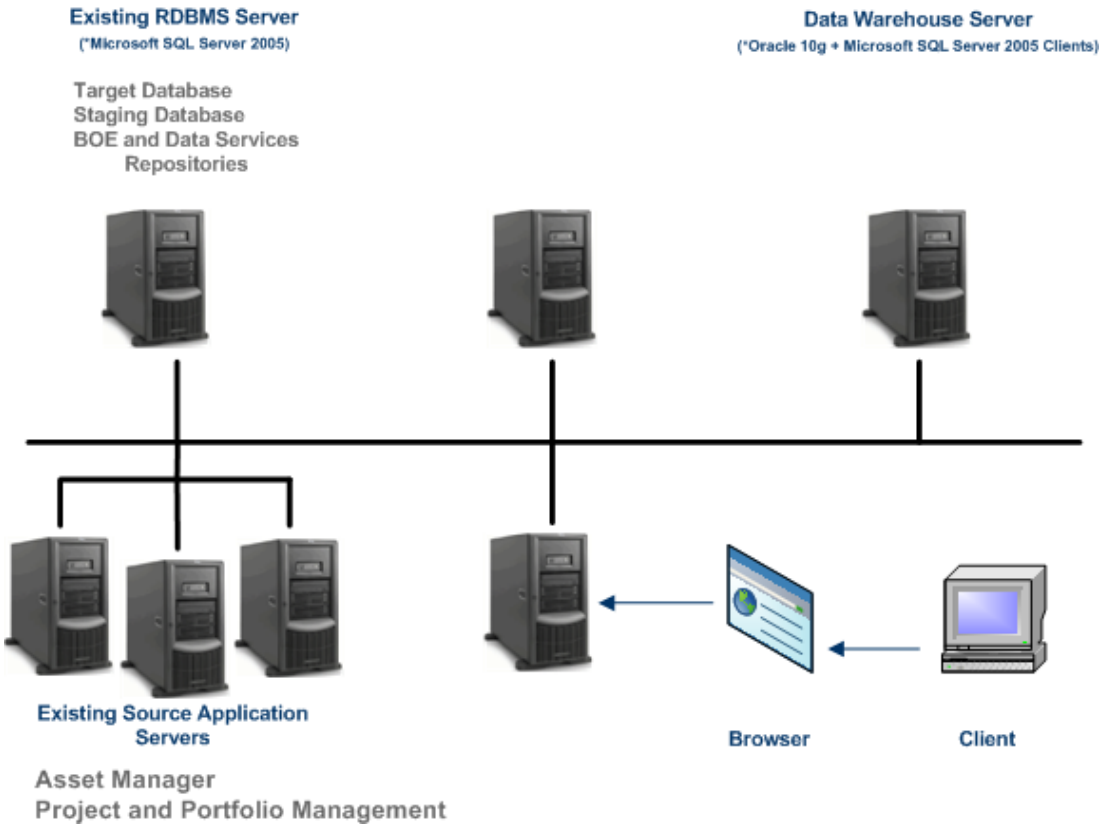
Verify that there is RDBMS client software installed on the data warehouse server. You must have two clients:

- A Microsoft SQL Server 2005 client to support connection to the databases on the RDBMS server. Use your licensed Microsoft SQL Server 2005 installation media to install only a client on this server. A full installation is not required.
- An Oracle client to support BODS. If you do not have licensed Oracle 10g Release 2 (10.2.x.x) client software, go to the **Oracle.com** web site to download free client software before you begin the data warehouse installation (Chapter 8, Installing the Data Warehouse Server).

  For more information, see the **Oracle.com** web site (**http://www.oracle.com/technology/software/products/database/xe/htdocs/102xewinsoft.html**).

Figure 7 on page 33 shows the two RDBMS clients on the data warehouse server.

Figure 7 RDBMS Clients



6 Installation and Configuration

The IT Analytics installer is self-directing with embedded instructions and default values. You can change these values to suit your local environment. There are two installation tools:

- The installer builds the directory structure and positions the files for configuration.
- The Configuration Tool collects relevant information and installs the associated components.

Before you start the installation process on any server, verify that you completed the steps to acquire the license keys file from HP and port it to the target server. For more information, see Chapter 3, HP Licensing.

Running the Installer

The installer builds the directory structure on the target server and stages the files for final installation in the specified path. As you proceed through the installation, you can choose a complete setup for a single server, or a custom setup for a multiple server environment.

Installation Path

During the IT Analytics installation, you can override the default installation path and choose a custom path. On Windows operating systems, depending on the folder hierarchy and length of file names, you can create a directory structure that fails because the combination of required folder nesting and file name length exceeds the maximum permitted by Windows (260 characters). Avoid all special characters in paths except underscores (_), periods (.), back slashes (\), and blanks. HP recommends that you use the default path to avoid installation path issues.

The BOE software installation is nested within the IT Analytics installation and creates the longest path to component files. If you specify a shorter path than the default path, you will have no path errors. If you specify a longer path using custom folder names, results may be unpredictable.

Importing the License File

Before you start this process, verify that you completed the steps to acquire the license text file from HP that are described in Chapter 3, HP Licensing. On a single server, you will import the license file only once. In a multiple server environment, you will import the license each time you begin installation on a different server.

Running the Configuration Tool

The Configuration Tool is a user interface that collects required information, such as login names, passwords, and other information and applies it as needed to the actual file installation. The Configuration Tool divides the installation process into three parts:

1 Install BOE

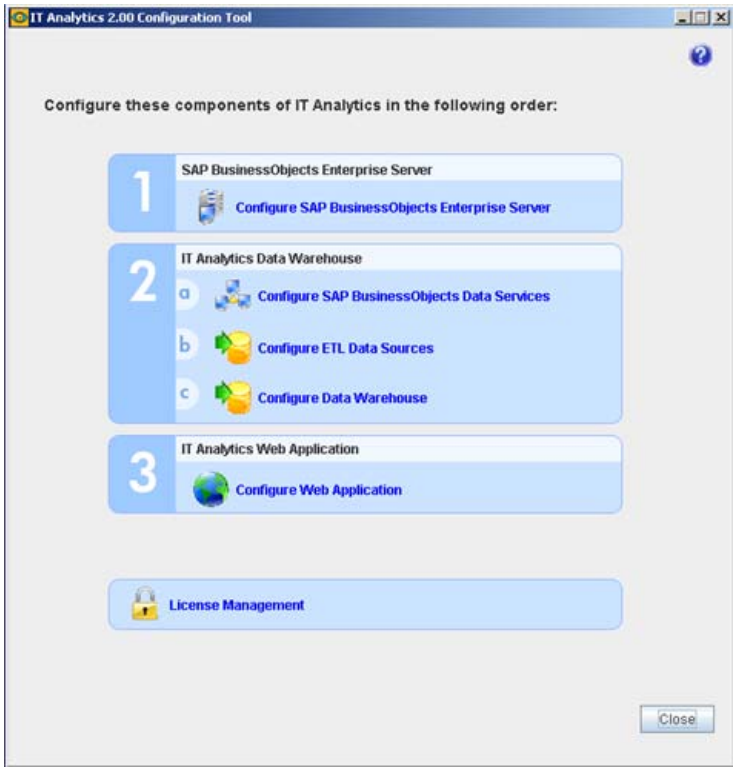
2 Install BODS and build the data warehouse

3 Install the IT Analytics web application

You must follow this logical order because the installation of one component depends on the success of the prior steps.

The Configuration Tool marks each step when you complete it successfully with a green check mark. If the step is not successful, the Configuration Tool displays a red X for that step. If you exit and restart the Configuration Tool, always begin after the last successful step. The Configuration Tool abandons a step and displays a red X if you exit before the successful completion of that step. Figure 8 shows the three main parts of the installation and the subordinate steps in Part 2.

Figure 8 Configuration Tool



Uninstalling the Software

Although you can uninstall the software using the Windows Control Panel Add or Remove Programs utility, HP recommends that you also remove related databases to delete data generated by the data warehouse.

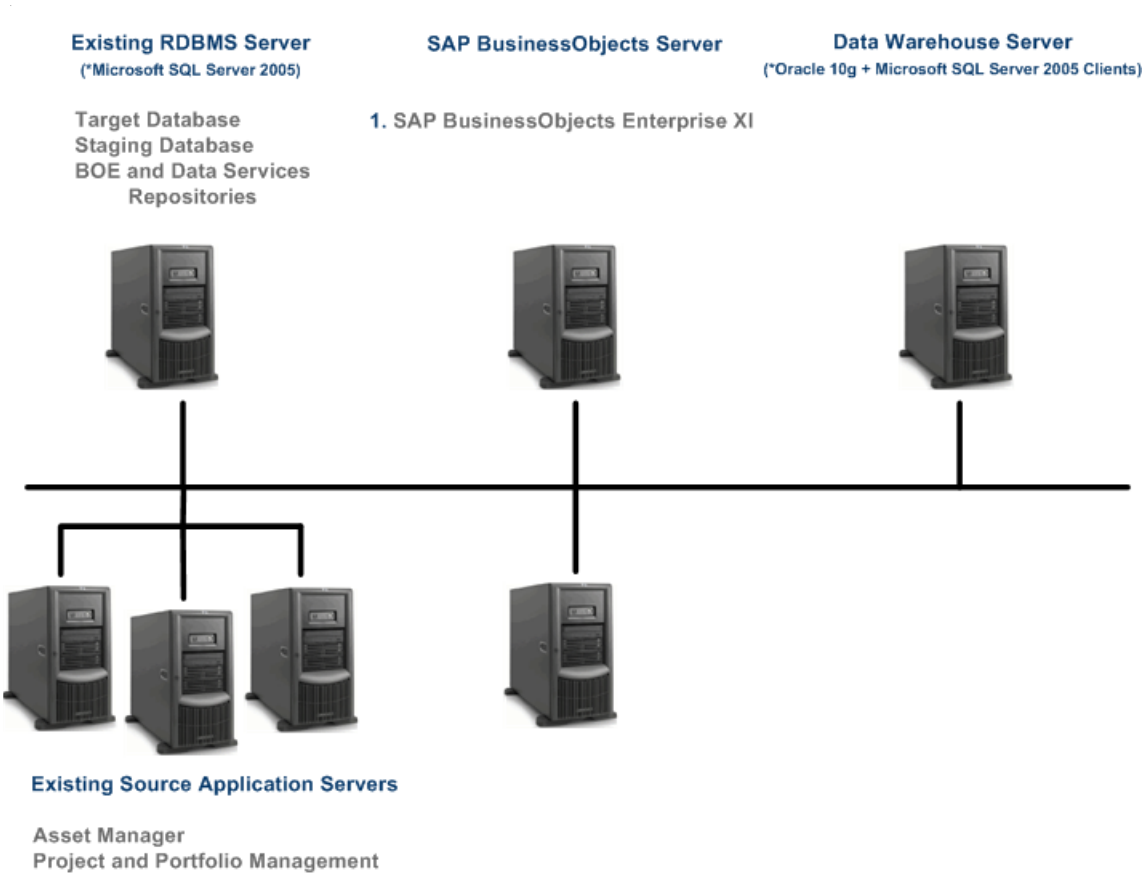
7 Installing SAP BusinessObjects Enterprise

IT Analytics uses BOE server software for a variety of tasks. The BOE server software typically is on a separate server, as shown in Figure 9.

Complete these tasks on the BOE server.

- Task 1: Configure the BOE CMS Database DSN on page 40.
- Task 2: Configure the BOE Audit Database DSN on page 41.
- Task 3: Configure the Data Warehouse Administration DSN on page 41.
- Task 4: Configure the Data Warehouse Operations DSN on page 42.
- Task 5: Configure the IT Analytics DSN on page 42.
- Part 1: Install SAP BusinessObjects Enterprise Server on page 43.

Figure 9 SAP BusinessObjects server



The BOE installation also populates the boecms and boeaudit databases that you created in Chapter 5, Configuring Required Databases with schemas and data.

Before you begin the BOE installation, make sure that the server meets the requirements described in Chapter 2, Requirements. BOE must have enough free space to complete the installation and perform daily tasks. If there is not enough free space, the installation will fail.

At the end of this installation process, you will have a complete installation of the BOE server software and access to all the BOE components, including:

- BusinessObjects Enterprise Central Management Console
- BusinessObjects Enterprise Java InfoView
- Central Configuration Manager
- Query as a Web Service
- Universe Builder
- BOE documentation

Creating ODBC Connections

Before you begin the BOE installation, create the required ODBC connections. These connections are from the BOE server to databases on the RDBMS server:

- BOE Central Management Server (CMS) database
- BOE audit database
- The data warehouse databases (to view two types of data warehouse reports)
- The IT Analytics universe

Use the Windows ODBC Data Source Administrator wizard to complete the following tasks.

Task 1: Configure the BOE CMS Database DSN

Use the information in the BOE CMS Database Connections section of the Checklist on page 23. Create this DSN to access the BOE CMS database.

1. From the Windows **Start** menu, click **Control Panel** > **Administrative Tools** > **Data Sources (ODBC)**. Windows displays the ODBC Data Source Administrator wizard.
2. Click the **System DSN** tab.
3. Click **Add**.
4. Select **SQL Server** from the list of drivers.
5. Click **Finish**.
6. Type the **Name** of the new data source connection (DSN). For example: boecms-dsn. Refer to the naming convention that you defined in the Checklist on page 23.
7. Type a brief **Description** of the DSN.
8. Select the name of the **Server** where SQL Server resides. If the server is remote, the server name will appear in the drop-down list.

9 Click **Next**.

10 Select the **SQL Server** authentication option.

11 Type the **Login ID** and **Password** to access the server.

12 Click **Next**.

13 Click **Next**, then **Finish** to accept the remaining default values shown in the remaining dialog boxes.

14 Click **Test Connection** to verify that you can connect to the RDBMS server.

15 Click **OK** to return to the **ODBC Data Source Administrator** wizard.

If you chose to create a single BOE database to serve both CMS and Audit functions in Task 4: Create the Required Databases on page 31, you can skip Task 2 and go to Task 3: Configure the Data Warehouse Administration DSN.

Task 2: Configure the BOE Audit Database DSN

Use the information in the BOE Audit Database Connections section of the Checklist on page 23. Create this DSN to access the BOE audit database.

1 On the **System DSN** tab, click **Add**.

2 Select **SQL Server** from the list of drivers.

3 Click **Finish**.

4 Type the **Name** of the new DSN. For example: boeaudit-dsn. Refer to the naming convention that you defined in the Checklist on page 23.

5 Type a brief **Description** of the DSN.

6 Select the name of the **Server** where SQL Server resides. If the server is remote, the server name will appear in the drop-down list.

7 Click **Next**.

8 Select the **SQL Server authentication** option.

9 Type the **Login ID** and **Password** to access the server.

10 Click **Next**.

11 Click **Next**, then **Finish** to accept the remaining default values shown in the remaining dialog boxes.

12 Click **Test Connection** to verify that you can connect to the RDBMS server.

13 Click **OK** to return to the **OCBC Data Source Administrator** wizard.

Task 3: Configure the Data Warehouse Administration DSN

Create this DSN to view data warehouse administrative reports using BOE Infoview tools.

1 On the **System DSN** tab, click **Add**.

2 Select **SQL Server** from the list of drivers.

3 Click **Finish**.

4 Type the **Name** of the new DSN. You *must* specify this name: ita_admin.

5 Type a brief **Description** of the DSN. For example: ABC administration reports connection.

6 Select the name of the **Server** where SQL Server resides. If the server is remote, the server name will appear in the drop-down list.

7 Click **Next**.

8 Select the **SQL Server** authentication option.

9 Type the **Login ID** and **Password** to access the server.

Use **sa** and the accompanying password until you establish your own ODBC connection. See Check ODBC Connections on page 54.

10 Click **Next**.

11 Click **Next**, then **Finish** to accept the remaining default values shown in the remaining dialog boxes.

12 Click **Test Connection** to verify that you can connect to the RDBMS server.

13 Click **OK** to return to the **OCBC Data Source Administrator** wizard.

Task 4: Configure the Data Warehouse Operations DSN

Create this DSN to view data warehouse operations reports using BOE Infoview tools.

1 On the **System DSN** tab, click **Add**.

2 Select **SQL Server** from the list of drivers.

3 Click **Finish**.

4 Type the **Name** of the new DSN. You *must* specify this name: ita_operations.

5 Type a brief **Description** of the DSN. For example: ABC operational reports connection.

6 Select the name of the **Server** where SQL Server resides. If the server is remote, the server name will appear in the drop-down list.

7 Click **Next**.

8 Select the **SQL Server** authentication option.

9 Type the **Login ID** and **Password** to access the server.

Use **sa** and the accompanying password until you establish your own ODBC connection. See Check ODBC Connections on page 54.

10 Click **Next**.

11 Click **Next**, then **Finish** to accept the remaining default values shown in the remaining dialog boxes.

12 Click **Test Connection** to verify that you can connect to the RDBMS server.

13 Click **OK** to return to the **OCBC Data Source Administrator** wizard.

Task 5: Configure the IT Analytics DSN

Create this DSN to view the analytics produced by the IT Analytics application using BOE Infoview tools.

1 On the **System DSN** tab, click **Add**.

2 Select **SQL Server** from the list of drivers.

3 Click **Finish**.

4 Type the **Name** of the new DSN. You *must* specify this name: itafpaqry.

5 Type a brief **Description** of the DSN. For example: FPA analytics query.

6 Select the name of the **Server** where SQL Server resides. If the server is remote, the server name will appear in the drop-down list.

7 Click **Next**.

8 Select the **SQL Server** authentication option.

9 Type the **Login ID** and **Password** to access the server.

Use **sa** and the accompanying password until you establish your own ODBC connection. See Check ODBC Connections on page 54.

10 Click **Next**.

11 Click **Next**, then **Finish** to accept the remaining default values shown in the remaining dialog boxes.

12 Click **Test Connection** to verify that you can connect to the RDBMS server.

13 Click **OK** to return to the **OCBC Data Source Administrator** wizard.

14 Click **OK** to close the ODBC Data Source Administrator wizard.

Part 1: Install SAP BusinessObjects Enterprise Server

Consolidated Server: Complete step 11 on page 44 through step 18 on page 45 on the consolidated server.

Sequence is important with SAP BusinessObjects tools. If you plan to use the BOE instance of Apache Tomcat for BODS, you must install BOE before you install BODS.

If you uninstall BOE and BODS uses the shared Apache Tomcat, BODS will lose access to Apache Tomcat.

Multiple Servers: From the BOE server, follow these steps.

1 If necessary, complete the steps to copy and port the license file. For more information, see Porting the License File on page 19.

2 Insert the IT Analytics media into the DVD/CD-ROM drive.

3 Complete the **Welcome** tasks.

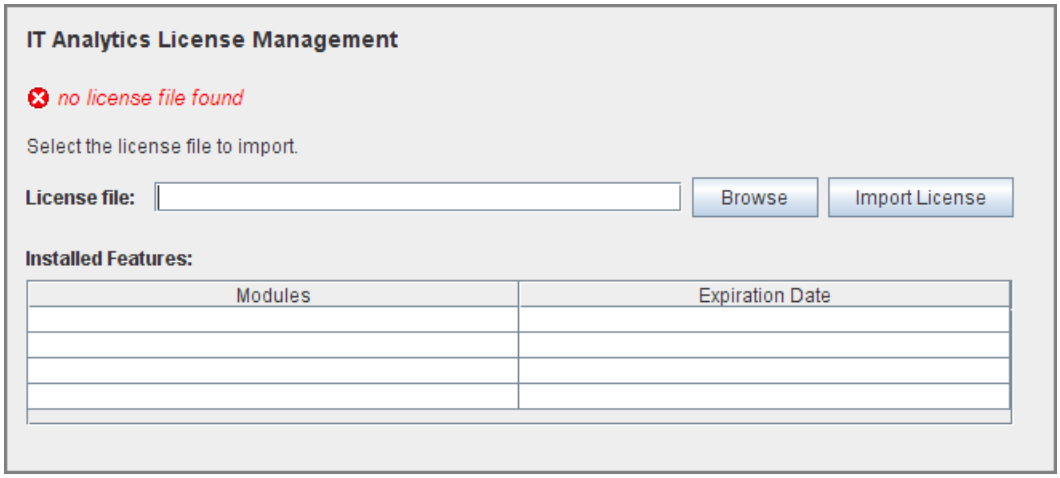
4 Choose **Custom Setup.**

5 Select **SAP BusinessObjects Enterprise Server**.

6 Confirm (or change) the installation path and click **Next**.

7 The IT Analytics installer copies the required files from the installation media. Click **Finish** to start the Configuration Tool.

8 When you begin the configuration process, the first task is to specify the location of the license file. Click **Browse** to locate the license file path that you specified in the Part 1: SAP BusinessObjects Enterprise XI 3.1Server Checklist on page 23.

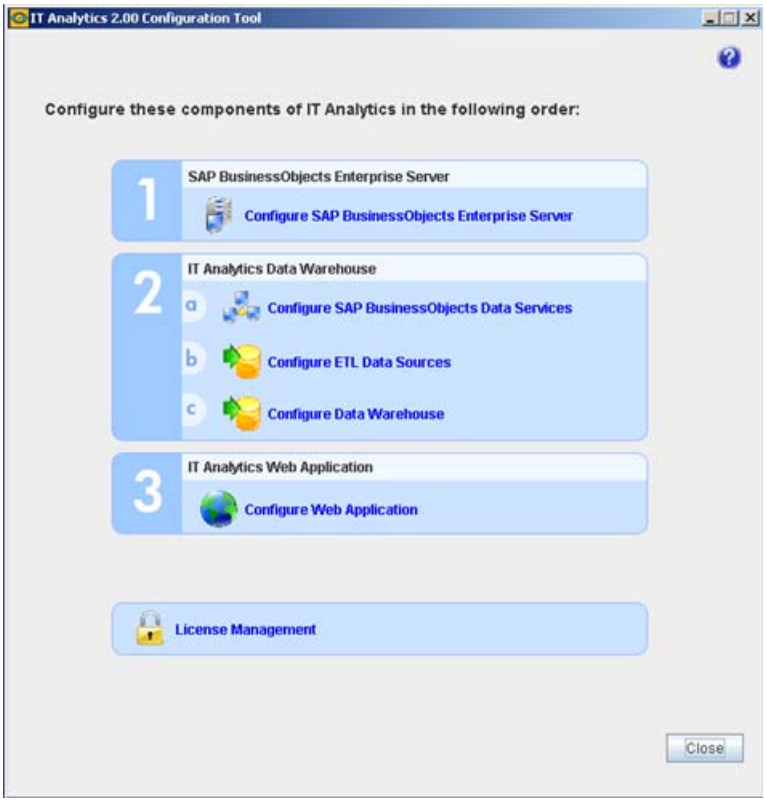


9 Click **Import License** to store the license details and expiration dates.

10 Click **Continue to Main Menu** to proceed with configuring the IT Analytics component.

11 From the Configuration Tool main menu, shown in Figure 10, select **Configure SAP BusinessObjects Enterprise Server**.

Figure 10 Configuration Tool



12 Now you must specify the same database connection and login information that you used to build the BOE CMS and Audit databases on the RDBMS server, and the names of the ODBC connections that you created on the BOE server. Refer to the names that you specified in Part 1: SAP BusinessObjects Enterprise XI 3.1Server Checklist on page 23.

On the **CMS Database** tab, specify the ODBC data source (DSN) name, database name, login, and password.

13 Click **Verify Connection** to ensure that you have database connectivity, then click **Next**.

14 On the **Audit Database** tab, specify the ODBC data source (DSN) name, database name, login, and password that you specified in Part 1: SAP BusinessObjects Enterprise XI 3.1Server Checklist on page 23. If you chose to create a single database, select the option to **Use the same database as the CMS**, click **Next**, and skip to step 16.

15 Click **Verify Connection** to ensure that you have database connectivity, then click **Next**.

16 Click **Next** to review the configuration information.

17 Click **Run Configuration** to begin the file installation process.

Make sure that you do not click **Run Configuration** until you are ready to commit to the BOE installation. BOE is a large product that requires a significant amount of time to install, and if you terminate the installation process, you will have to manually clear partially installed files. Even if you close the config tool window, the BOE silent installation will continue.

18 Click **Finish** when the file installation process is complete.

Verification

You can confirm that the BOE server installation is successful.

- From the Windows **Start** menu, click **All Programs** to verify that there is a **BusinessObjects XI 3.1** > **BusinessObjects Enterprise** program group.
- You should be able to start any of the applications listed in the BusinessObjects Enterprise program group.

Troubleshooting

The Configuration Tool displays a list of actions and a check mark when each finishes successfully. If an error occurs, the installation and configuration process stops.

The Configuration Tool maintains a log that is a running history of all installation events. If an error occurs during the installation process, log messages can provide information to help you remedy the error. If an error occurs during the installation and configuration process, click **View Logs** to display the related logs. The log generated by the Configuration Tool is

C:\Program Files\HP\IT Analytics 2.00\Setup\Config Tool\logs\ita_config.log

The Configuration Tool appends new event information as you complete each step. Therefore, an error may occur that is captured in the log, and then the correction shows that the next attempt is successful. To locate the information about the most recent error, scroll to the bottom of the log and read upwards.

BOE Errors

If an error occurs, click **View Logs**. The Configuration Tool displays a BOE log file and the Configuration Tool log. The log generated by the BOE installer is C:\Program Files\HP\IT Analytics 2.00\Setup\BO Installers\boe\boeConfig.log

Verify that:

- You have enough free disk space to manage the installation. There should be at least 10 GB of free space available before you begin.
- You have no previous installation of BOE on that server. Use the Add or Remove Programs utility in the Windows Control Panel to verify that you have no existing installation of BOE that should be uninstalled.
- You have access to the folders where the installation software resides. You can be a SYSTEM user, or a named user.

BOE Fixpack 1.2 Installation

The installation process includes application of BOE FP 1.2. You can verify that the fixpack installed correctly if you open this log:

C:\Program Files\HP\IT Analytics 2.00\BO\boe\BusinessObjects Enterprise 12.0\Logging \BOE_SP1FP2_Install_0.log

Look for this message:

```
Product: BusinessObjects Enterprise XI 3.1 - Update 'BusinessObjects
Enterprise XI 3.1 FP1.2' installed successfully.
```

Fixpack Failure

The fixpack application that occurs during the BOE installation may fail if there is a missing operating system component: MSXML 6.0. This component should be available if the BOE server has the Windows Server 2003 Service Pack 2 applied before you begin the installation.

1. Look for these messages in this log:

   C:\Program Files\HP\IT Analytics 2.00\Setup\Config Tool\logs\ita_config.log:

   ```
   [INFO] com.hp.ita.configtool.util.StreamReader - Wed May 20 15:45:24 PDT
   2009 OK: ERROR - FixPack installation failed. See log file.
   [ERROR] com.hp.ita.configtool.util.SwingWorkerManager - Install SAP BOE
   fix pack failed: 2
   ```

2. And look for this message in this log:

   C:\Program Files\HP\IT Analytics 2.00\Setup\BO Installers\boe\boeConfig.log:

   ```
   [INFO] com.hp.ita.configtool.util.SwingWorkerManager - SAP BOE
   configuration failed
   ```

3. Verify that the MSXML 6.0 component is installed, or obtain the component from Microsoft and install it. For more information, see Microsoft Patches on page 16.
4. Click the following to restart the fixpack installation:

   C:\Program Files\HP\IT Analytics 2.00\Setup\resources\media\boe-fp1.2\setup.exe
5. Restart the Configuration Tool and proceed to the next step.

Fixpack Workaround

If the fixpack installation fails, follow these steps to install it manually:

1. Exit from the Configuration Tool.
2. Click the following to restart the fixpack installation:

   C:\Program Files\HP\IT Analytics 2.00\Setup\resources\media\boe-fp1.2\setup.exe
3. Restart the Configuration Tool and proceed to the next step.

BOE Installation Log Messages

If a CMS warning popup appears during BOE installation, an installation problem occurred. The warning says that the CMS could not (or did not) start and you have a choice to **Retry** or **Cancel**. The installation can fail because of access issues to the database, such as unsupported characters in the password, unauthorized access rights, or other user limitations.

If the Retry option produces the same error message, do the following:

- Open the BOE CMS database and look in the tables folder to verify that tables exist in the CMS database. If there are no tables, verify that you specified the correct login credentials.
- Navigate to the installation log file:

  C:\Documents and Settings\dwuser\Local Settings\Temp\1\BOEInstall_0.log

  Look for messages that describe an error condition:

  ```
  MSI (s) (08:5C) [15:38:21:224]: Invoking remote custom action. DLL:
  C:\WINNT\Installer\MSI60.tmp, Entrypoint: FixService
  ```

```
MSI (s) (08:70) [15:38:21:584]: Executing op:
ActionStart(Name=BOBJConfigDbServer.60F4A18A_ACCB_48F0_A673_017C6A585288,
Description=Configuring Databases,Template=Server: [1], Database: [2])

MSI (s) (08:70) [15:38:21:599]: Executing op:
CustomActionSchedule(Action=BOBJConfigDbServer.60F4A18A_ACCB_48F0_A673_01
7C6A585288,ActionType=25665,Source=BinaryData,Target=**********,CustomAct
ionData=**********)

MSI (s) (08:10) [15:38:21:662]: Invoking remote custom action. DLL:
C:\WINNT\Installer\MSI61.tmp, Entrypoint: BOBJConfigDbServer
5/27/2009, 15:38:22: [ODBC] About to connect to ODBC Server
5/27/2009, 15:38:22: [ODBC] SQLDriverConnect failed: SQL_ERROR
5/27/2009, 15:38:22: [ODBC] 28000 [Microsoft][ODBC SQL Server Driver][SQL
Server]Login failed for user 'dbuser'.
```

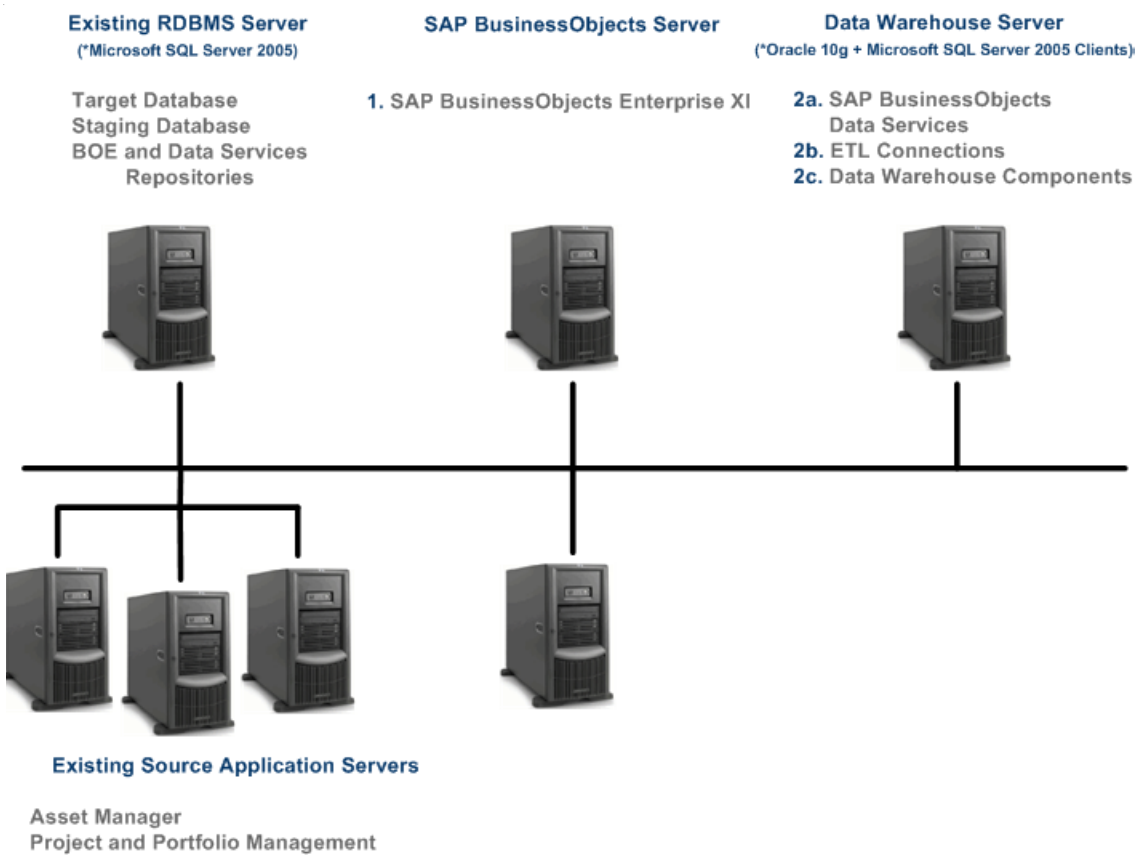
- Verify that you met all the requirements described in the Compatibility Matrix before you began the installation.
- Verify that the passwords you specified do not contain blanks or unsupported characters.
- Use the Windows Control Panel Add/Remove Programs feature to uninstall any IT Analytics components that appear in the Programs list.
- Restart the server.
- Restart the installation process from the beginning.

8 Installing the Data Warehouse Server

IT Analytics uses SAP Business Objects Data Services XI 3.1 (BODS) software to extract data from remote data sources. The BODS software is on the data warehouse server, as shown in Figure 11. Complete these tasks on the data warehouse server.

- Part 2a: Configure SAP BusinessObjects Data Services on page 51.
- Part 2b: Configure ETL Data Sources on page 53.
- Part 2c: Configure the Data Warehouse on page 54.

Figure 11 Data Warehouse Server



At the end of this part of the installation process, the data warehouse server contains:

- Data warehouse developer tools
- ABC tools to run ETL jobs
- BODS

- The bods database that you created in Chapter 5, Configuring Required Databases populated with schemas and data.
- The data warehouse staging and target databases that you created in Chapter 5, Configuring Required Databases populated with schemas and data.

RDBMS Clients

Verify that you have a Microsoft SQL Server client and an Oracle 10g client installed on the data warehouse server. The data warehouse requires a Microsoft SQL Server client to update the databases that you created on the RDBMS server. BODS and the data warehouse depend on an Oracle client for connectivity to source databases. The client must be compatible with the Asset Manager and Project and Portfolio Management source databases.

License Installation

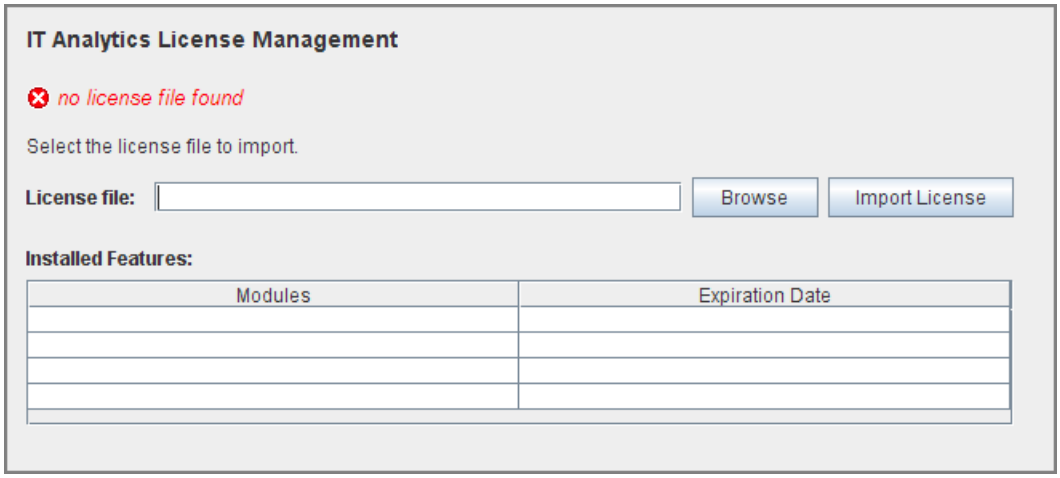
Consolidated Server: Skip to Part 2a: Configure SAP BusinessObjects Data Services on page 51 to continue the installation on the consolidated server.

Sequence is important with SAP BusinessObjects tools. If you plan to use the BOE instance of Apache Tomcat for BODS, you must install BOE before you install BODS.

If you uninstall BOE and BODS uses the shared Apache Tomcat, BODS will lose access to Apache Tomcat.

Multiple Servers: From the data warehouse server, follow these steps.

1. If necessary, complete the steps to copy and port the license file. For more information, see Porting the License File on page 19.
2. Insert the IT Analytics media into the DVD/CD-ROM drive.
3. Complete the **Welcome** tasks.
4. Choose **Custom Setup.**
5. Select **Data Warehouse Environment**.
6. Confirm the installation path and click **Next**.
7. The IT Analytics installer copies the required files from the installation media. Click **Finish** to start the Configuration Tool.
8. When you begin the configuration process, the first task is to specify the location of the license file. Click **Browse** to locate the license file path that you specified in Part 2: IT Analytics Data Warehouse Checklist on page 24.



9 Click **Import License** to store the license details and expiration dates.

10 Click **Continue to Main Menu** to proceed with configuring the IT Analytics component.

Part 2a: Configure SAP BusinessObjects Data Services

1 From the Configuration Tool main menu, shown in Figure 12 on page 52, select **Configure SAP BusinessObjects Data Services.**

2 Now you must specify the same database connection and login information that you used to build the BODS database on the RDBMS server and define the ODBC connections on the data warehouse server. Refer to the names that you specified in the 2a) BODS Configuration Information section of the Checklist on page 24.

On the **Repository** tab, specify the server name, database name, login, and password.

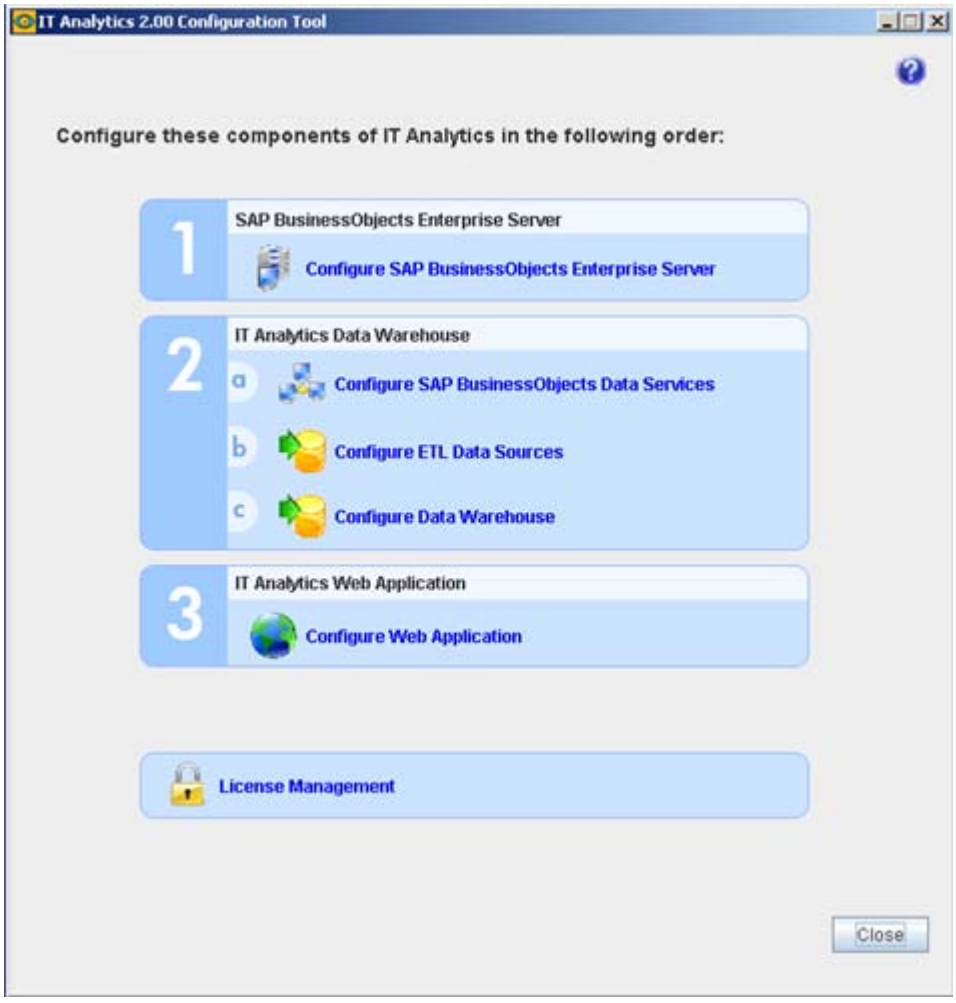
3 Click **Verify Connection** to ensure that you have database connectivity, then click **Next**.

4 Click **Next** to review the configuration information.

5 Click **Run Configuration** to begin the file installation process.

6 Click **Finish** when the file installation process is complete. If an error occurs, see Troubleshooting on page 56.

Figure 12 Configuration Tool



Verification

You can confirm that the BODS installation is successful.

- From the Windows Start menu, click **All Programs > BusinessObjects XI 3.1** to verify that there is a **BusinessObjects Data Services** program group.
- You should be able to start any of the applications listed in the BusinessObjects Data Services program group.

Adding the BODS Database Connection

You must register the BODS database that you defined on the RDBMS server on the BODS Management Console before you can install the data warehouse files.

1 Restart the data warehouse server.

2 Click **All Programs** > **BusinessObjects XI 3.1** > **BusinessObjects Data Services** > **Data Services Management Console**.

3 Type your login and password. The default login for BODS is **admin** and the default password is **admin**.

4 Click **Login**.

5 Select **Administrator**.

6 In the left navigation pane, expand **Management** and select **Repositories**.

7 In the main pane, click **Add**.

For the following steps, use the information that you recorded in the 2a) BODS Configuration Information section of the Checklist on page 24.

8 Type the **Repository name** (the BODS registration name in the Checklist).

9 Choose the **Database type**. It should be Microsoft_SQL_Server.

10 If appropriate, select **Windows authentication**.

11 Type the **Machine name** (the BODS server name in the Checklist).

12 Type the **Database port** (the BODS database TCP port number in the Checklist. 1433 is the default value).

13 Type the **Database name** (the BODS database name in the Checklist).

14 Type the **User name** (the BODS login in the Checklist).

15 Type the **Password** (the BODS password in the Checklist).

16 Click **Apply**.

The MS SQL Server default port number value is 1433. BODS verifies that a connection exists using the port number that you specify.

You can change the default login value and password before you close the BODS application.

Troubleshooting

If an error occurs, click **View Logs**. The Configuration Tool displays a BODS log file and the Configuration Tool log. Read each log message to identify the error and recommended corrective action.

Part 2b: Configure ETL Data Sources

1 From the Configuration Tool main menu, shown in Figure 11 on page 49, select **Configure ETL Data Sources.**

2 On the Data Sources tab, select **Asset Manager** or **Project and Portfolio Management** (or both) data sources. Use the information that you recorded in 2b) ETL Data Source Configuration Information for Asset Manager or 2b) ETL Data Source Configuration Information for Project and Portfolio Management in the Checklist on page 25. The Configuration Tool displays one or both tabs to specify the required configuration information.

3 For each data source, make sure that you click **Verify connection** before you proceed.

4 The Configuration Tool will capture time zone information if it can. If not, choose the time zone where the data source originates from the drop-down lists.

5 Click **Next** to review the configuration information.

6 Click **Run Configuration** to apply the data sources information.

7 Click **Finish** when the data sources information is complete. If an error occurs, see Troubleshooting on page 56.

Part 2c: Configure the Data Warehouse

1 From the Configuration Tool main menu, shown in Figure 11 on page 49, select **Configure Data Warehouse.**

2 Use the information that you recorded in 2c) Data Warehouse Configuration Staging Database Information and 2c) Data Warehouse Configuration Target Database Information in the Checklist on page 25 and page 26 to configure the data warehouse.

3 On the **Units of Measure** tab, provide the time and date constraints for ETL processing.

4 In a multiple server installation, confirm the data warehouse password on the **Server** tab.

5 Click **Next** to review the configuration information.

6 Click **Run Configuration** to begin the data warehouse configuration process.

7 Click **Finish** when the data warehouse configuration process is complete. If an error occurs, see Troubleshooting.

Check ODBC Connections

The installation creates static user IDs for databases and universes. These IDs may conflict with the ones you configured. You must correct the universe and ODBC connection information to ensure that you have database access. For each universe, follow these steps.

1 Click **All Programs** > **BusinessObjects XI 3.1** > **BusinessObjects Enterprise** > **Designer**.

2 Login with the appropriate credentials. Administrator is the default user name.

3 Click **File** > **Import**.

4 In the Import Universe dialog box, click **Browse** to locate the folder that contains the data warehouse universes.

5 Select a universe from the list of Available Universes.

6 Click **OK**. The selected universe should import successfully.

7 Click **File** > **Parameters**.

8 If you click **Test**, the connection fails and returns an error message.

9 Click **Edit**. At the Warning prompt, click **Yes** to change the connection information.

10 In the **Login Parameters [2/4]** dialog box, click **Next**.

11 In the Configuration Parameters dialog box, change these parameters.

Table 3 Configuration Parameters

Parameter	Value
Connection pool mode	Keep the connection for
Pool timeout	10
Array fetch size	10
Array bind size	5
Login timeout	600

12 Click **Next**.

13 Click **Finish**.

14 Click **OK**.

15 Click **File** > **Export** to save the changes back to the database.

16 Click **Continue**.

17 Click **OK** to complete the export process.

18 Click **OK** when the confirmation message appears.

19 Click **File** > **Close**.

When you finish updating the connection information, complete these steps for each connection.

1 From the Windows **Start** menu, click **Administrative Tools** > **Data Sources (ODBC)**.

2 Click the **System DSN** tab.

3 Choose one of these connections: ita_admin, ita_operations, itafpaqry.

4 Click **Configure**.

5 On the first dialog box, click **Next**.

6 Change the **Login ID** and **Password** to match the values in the following table.

Table 4 Configuration Parameters

This ODBC Connection	Uses This Login ID	For this Target Database
ita_admin	dwmetadata	Staging
ita_operations	dwabc	Staging
itafpaqry	itafpaqry	Target

7 Test each database to verify that you have connectivity.

Troubleshooting

If an error occurs, click **View Logs**. The Configuration Tool displays a Windows Explorer view of all the data warehouse log files that contain information about the error, and the Configuration Tool log.

If a step in the data warehouse configuration fails, there is a reference in the Configuration Tool log to the related data warehouse log where the information about the failure appears. There may be references to other logs that are available in the same Windows Explorer window. Sort the list of logs by date and read them sequentially, starting from the most recent, for the source of the error and recommended corrective action.

Database Collation Sequence

If you failed to specify the correct collation value for a staging or target database, you may have to return to the RDBMS to change that value. For more information, see Task 4: Create the Required Databases on page 31.

BODS Registration

If you failed to register the BODS repository, you must complete that step first before you build the data warehouse. For more information, see Adding the BODS Database Connection on page 52.

Oracle Client Configuration

If your installation of an Oracle client does not set the TNS_ADMIN or ORACLE_HOME environment variable to point to TNSNAMES.ORA, the connection to the Oracle database through the TNS name will fail. You can use the Oracle Net Configuration Assistant to create the TNS entry. For more information, see your Oracle documentation.

After you create the environment variable, follow the steps in Restarting the Data Warehouse Installation on page 56.

Restarting the Data Warehouse Installation

If an error occurs after you begin Part 2c: Configure the Data Warehouse on page 54, you must delete the data warehouse tables created during the installation and repeat some steps to configure the new databases.

On the RDBMS server:

1. From Microsoft SQL Server Management Studio, delete these databases:
   - bods

     The bods database will have a connection to a BODS repository. Make sure that you select the option to close that connection when you delete this database.
   - staging
   - target
2. Recreate these three databases and specify the correct collation sequence. For more information, see Task 4: Create the Required Databases on page 31.

On the data warehouse server:

3 From the Windows **Start** menu, click **All Programs** > **BusinessObjects Data Services** > **Data Services Repository Manager**.

4 Specify the following information about the bods database:

- **Repository type.**
- **Database type** (Microsoft SQL Server is the default value).
- **Database server name.**
- **Database name.**
- Choose **Windows authentication** or specify the **User name** and **Password**.
- Click **Create** to re-establish the connection between the BODS application and the bods database.

5 From the Windows **Start** menu, click **All Programs** > **BusinessObjects Data Services** > **Data Services Server Manager.**

6 Select **JobServer 1**.

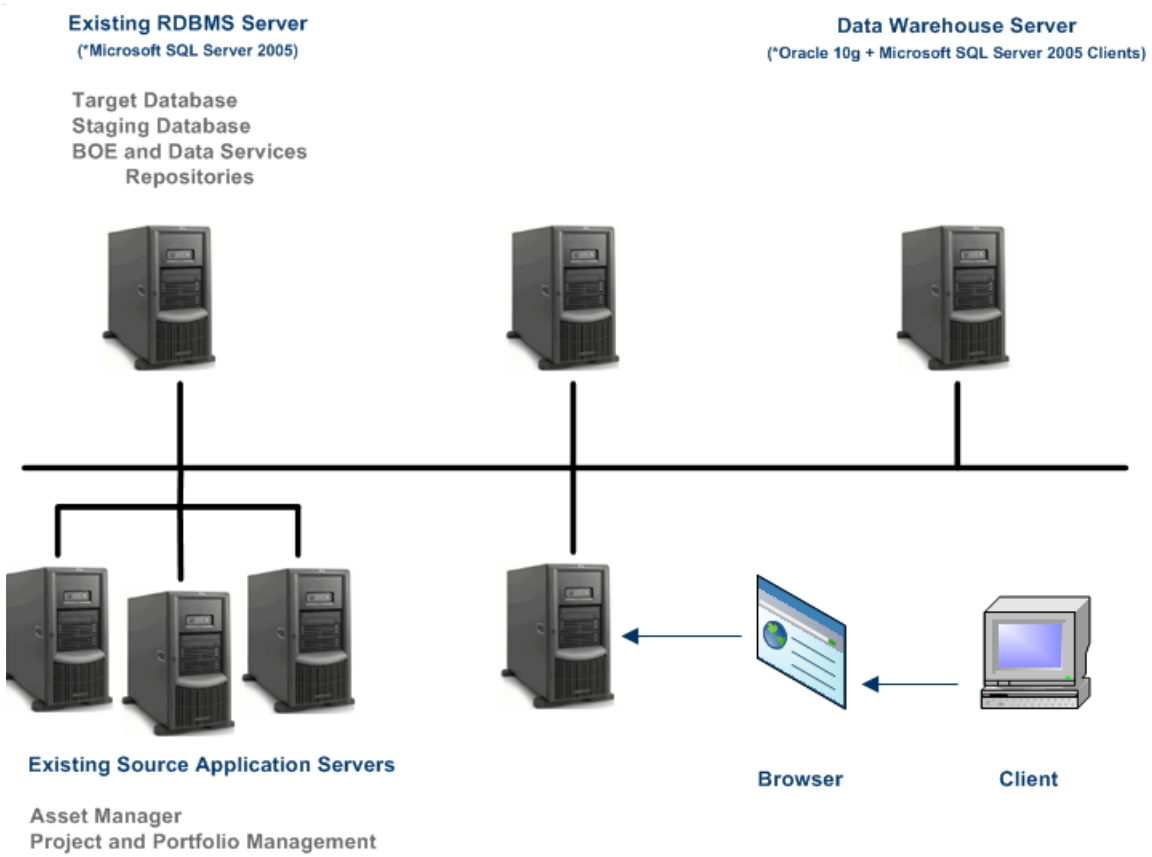
7 Click **Restart**.

8 Repeat Part 2c: Configure the Data Warehouse on page 54.

9 Installing the Web Application Server

The final step is to install and configure the IT Analytics web application. At the end of this part of the installation process, the web application server contains the IT Analytics web application for Financial Planning and Analysis. Figure 13 shows how the web application displays in a browser window on a client workstation. Complete these tasks on the web application server.

Figure 13 Web Application Server



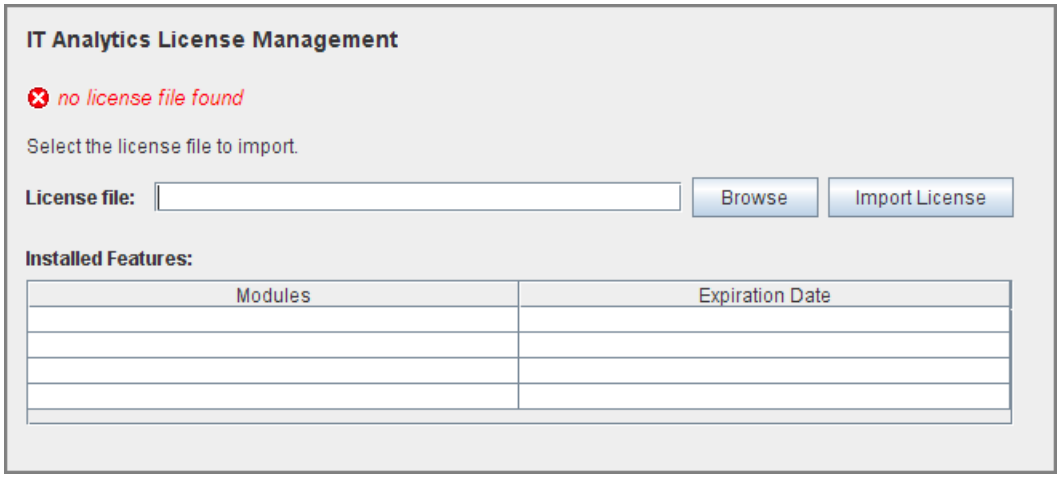
At the end of the installation, you should be able to see the startup page of the IT Analytics web application in a browser window. You must complete the authentication procedures described in Chapter 10, Configuring User Roles and Authentication before you can login and run the application.

Part 3: Configure the Web Application

Consolidated Server: Complete step 11 through step 19 on page 61 on the consolidated server.

Multiple Servers: From the web application server, follow these steps.

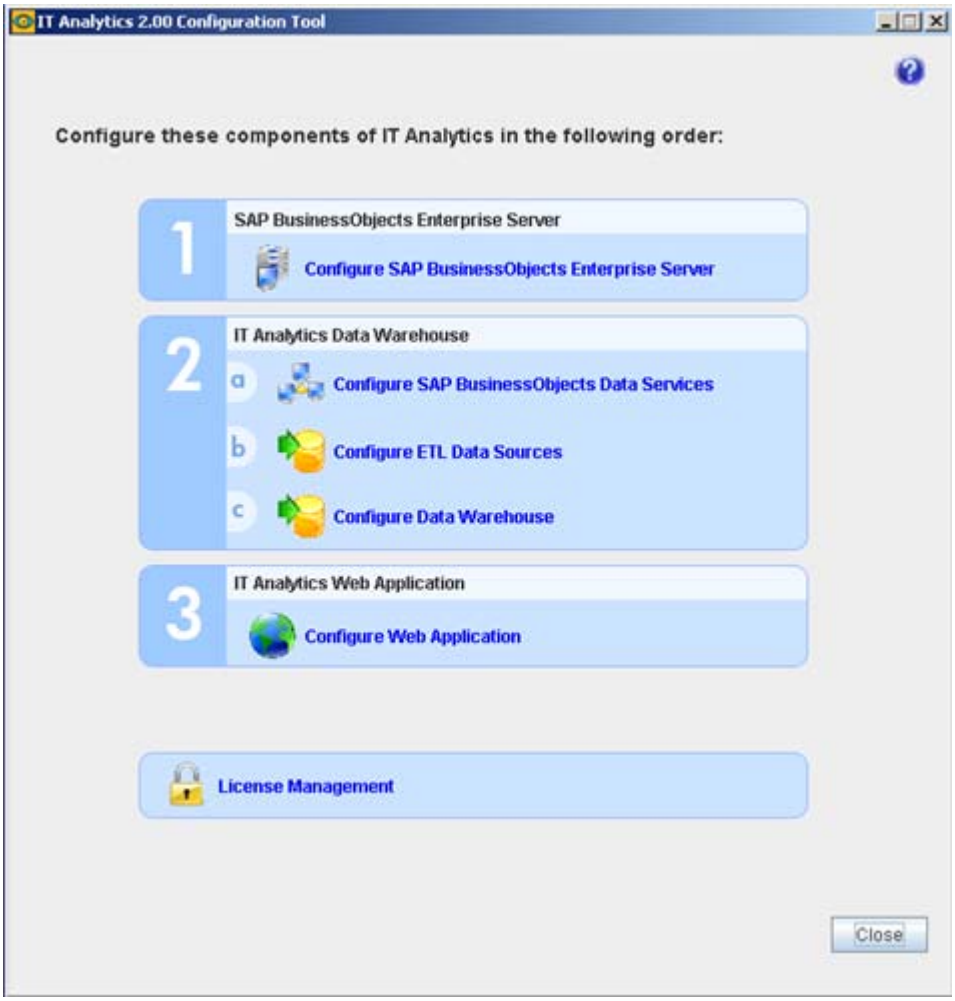
1. If necessary, complete the steps to copy and port the license file. For more information, see Porting the License File on page 19.
2. Insert the IT Analytics media into the DVD/CD-ROM drive.
3. Complete the **Welcome** tasks.
4. Choose **Custom Setup.**
5. Select **Configure the Web Application**.
6. Confirm the installation path and click **Next**.
7. The IT Analytics installer copies the required files from the installation media. Click **Finish** to start the Configuration Tool.
8. When you begin the configuration process, the first task is to specify the location of the license file. Click **Browse** to locate the license file path that you specified in the Part 3: IT Analytics Web Application Checklist on page 28.



9. Click **Import License** to store the license details and expiration dates.

10. Click **Continue to Main Menu** to proceed with configuring the IT Analytics component.
11. From the Configuration Tool main menu, shown in Figure 14 on page 61, select **Configure Web Application.**

Figure 14 Configuration Tool



12 The **Tomcat** tab enables you to specify a pre-existing (external) Tomcat that is not created by the IT Analytics BOE installation. IT Analytics can use an external Tomcat if it has the **Location** and **Service name**.

13 The **SAP BOE** tab asks for the **SAP BOE server name** to establish a web service session between the IT Analytics application and BOE.

14 On the **FPA Application** tab, specify the database server name, target database name, login, and password. Refer to the configuration information that you specified in the 2c) Data Warehouse Configuration Target Database Information section of the Checklist on page 26.

15 Click **Verify Connection** to ensure that you have database connectivity, then click **Next**.

16 Click **Next** to review the configuration information.

17 Click **Run Configuration** to begin the file installation process.

18 When the installation is complete, click **Main Menu**.

19 Click **Close**.

Task 1: Restart Tomcat

After you complete the installation, HP recommends that you stop and restart Apache Tomcat to ensure that the application deploys correctly.

Task 2: Start the Web Application

Type this URL to start the IT Analytics application:

http://*server_name*:8080/ITAnalytics/

You can display the login window, but you will not be able to log into the application until you configure user authentication that is consistent with your security requirements. In an enterprise environment, user profiles are usually managed through Lightweight Directory Access Protocol (LDAP) or Windows Active Directory (AD) authentication. For insolated installations, or test environments, file based authentication may be appropriate. For more information, see Chapter 10, Configuring User Roles and Authentication.

Troubleshooting

If you need to re-install the IT Analytics application, follow these steps.

1. Stop the Tomcat service.
2. From the Windows **Control Panel**, select **Add/Remove Programs**.
3. Remove HP IT Analytics 2.00.
4. Repeat step 2 on page 60 through step 19 on page 61.

Tomcat Session Time out Parameters

The default time out value for BOE applications is 20 minutes. To extend the session time out parameter for the applications and for Tomcat, follow these steps.

1. Stop the Tomcat service.
2. Open this file with a text editor:

   C:\Program Files\HP\IT Analytics 2.00\BO\boe\Tomcat55\webapps\dswsbobje

   \WEB-INF\classes\dsws.properties
3. Add this property at the end of the file. Express the time out value in seconds. For example, a session time-out value of 24 hours would be

   ```
   # Session timeout
   session.timeout = 86400
   ```
4. Save and close the file.
5. Open this file with a text editor:

   C:\Program Files\HP\IT Analytics 2.00\BO\boe\Tomcat55\conf\server.xml
6. Update the connectionTimeout property to match the value that you specified, but express the timeout value for the Tomcat instance in milliseconds. For example, a session timeout value of 24 hours would be

   ```
   connectionTimeout = 86400000
   ```

7 Save and close the file.

8 Restart the Tomcat service.

Java Memory Options

If you encounter error messages in the log when you start the web application, you must adjust the heap size available to the Java virtual machine used by Apache Tomcat. For example:

```
SEVERE: Context [/ITAnalytics] startup failed due to previous errors
...
java.lang.OutOfMemoryError: PermGen space
```

This issue might be due to the Tomcat configuration. For more information, see Java Memory Options on page 16.

10 Configuring User Roles and Authentication

Financial Planning and Analysis security models use predefined access levels and security roles. Administrators must grant access rights to the groups and security roles using the BOE Central Management Console (CMC).

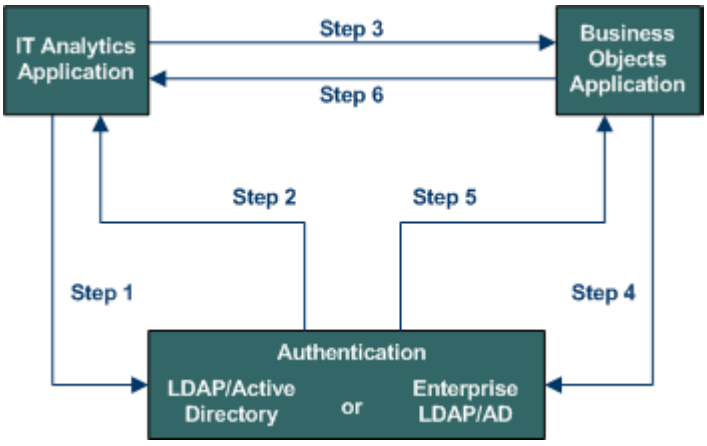
IT Analytics supports Lightweight Directory Access Protocol (LDAP) or Windows Active Directory (AD) authentication. Administrators can configure the Common Web Client (CWC) to enable LDAP. The BI Authentication Processing filter validates users and groups.

File based security is a quick way to set up authentication for proof-of-concept, demo, or prototype installations.

Authentication Model

The Authentication process involves the IT Analytics application and BOE. Whether you install BOE with IT Analytics, or you use an existing BOE server, you must complete the required authentication configuration. The authentication process consists of these steps:

1. The IT Analytics application passes the user name and password to the authentication source (LDAP or AD). This step uses the jaas.config and applicationContext.xml files.
2. The Authentication Source replies with the user name and attribute details.
3. The IT Analytics application passes the information received in Step 2 to BOE. This action starts the second phase of the authentication process and references the web.xml file.
4. BOE queries the Authentication Source with the user name and password.
5. BOE receives authorization from the Authentication source.
6. BOE passes a session ID to the IT Analytics application.



Before you begin, make sure that you have access to your local LDAP or Active Directory servers and consult your BOE documentation. Follow the Authentication Checklist on this page to complete the authentication tasks. If you want to configure simple authentication, see File Based Authentication on page 80.

Authentication Checklist

Print this checklist to use during the installation process. As you complete each task, mark it finished. Complete these tasks on the LDAP or Active Directory server.

- ☐ Task 1: Create IT Analytics Users and Groups on page 67.

If You Choose LDAP Authentication

- ☐ Task 2a: Configure LDAP Authentication on page 68.
  - — Step 1: Configure LDAP on the BOE Central Management Console on page 68.
  - — Step 2: Add User Groups on the BOE Central Management Console on page 69.
  - — Step 3: Configure the LDAP Options on the BOE Central Management Console on page 69.
  - — Step 4: Test BOE Central Management Console Configuration Access on page 69.
  - — Step 5: Modify the web.xml File on page 70.
  - — Step 6: Modify the applicationContext.xml File on page 70.
  - — Step 7: Modify the jaas.config File on page 70.
  - — Step 8: Test InfoView Access on page 71.

If You Choose Active Directory Authentication

- ☐ Task 2b: Configure Active Directory Authentication on page 71.
  - — Step 1: Enable Active Directory on the BOE Central Management Console on page 72.
  - — Step 2: Configure Administration Credentials on the BOE Central Management Console on page 72.
  - — Step 3: Add Member Groups on the BOE Central Management Console on page 73.
  - — Step 4: Choose Kerberos Authentication Options on page 73.
  - — Step 5: Choose Active Directory Authentication Options on page 73.
  - — Step 6: Test BOE Central Management Console Configuration Access on page 74.

Finishing Authentication Tasks for Active Directory

- ☐ Task 3: Configure JAVA Authentication for Active Directory on page 74.
  - — Step 1: Create a krb5.ini File on page 74.
  - — Step 2: Create a bscLogin.conf File on page 75.

Final Steps

Task 1: Create IT Analytics Users and Groups

You must configure the LDAP or Active Directory host before you make configuration changes to BusinessObjects Enterprise XI. This includes adding Financial Planning and Analysis out-of-box groups and your own groups to the LDAP or Active Directory server. Changes to group names require changes to both the web.xml file and the LDAP or Active Directory server.

Financial Planning and Analysis (FPA) recognizes the following out-of-box groups.

Table 5 User Groups

Group Name	Group User Role	Application Rights
FPA_ANALYTIC	FPA analytic designer or user	Read and write access to FPA analytics

Table 5 User Groups

Group Name	Group User Role	Application Rights
FPA_CE_CONFIG	FPA user	FPA read/write analytic access + Cost Explorer configuration owner + read-only access to Cost Explorer allocation scenarios
FPA_ADMIN	FPA administrator or super user	Read and write access to: • FPA analytics • Cost Explorer configuration • Cost Explorer allocation scenarios
DW_ADMIN	Data warehouse administrator	Read access to the data warehouse operational and administrative reports

If you create these groups and assign the user name **itauser** to each one on the LDAP or Active Directory server, you will be able to log in to the Financial Planning and Analysis application. Make sure that you also assign the appropriate access rights within BOE for these users; otherwise, they will be unable to refresh reports. For more information, see the BOE documentation.

Task 2a: Configure LDAP Authentication

Lightweight Directory Access Protocol (LDAP) is the default authentication tool for Financial Planning and Analysis. Before you define and enable LDAP authentication, create an LDAP server and ensure that your LDAP directory is valid. For more information, see your LDAP documentation.

Complete the following steps to configure the host, Secure Socket Layer authentication, LDAP mapping options, and LDAP groups.

Step 1: Configure LDAP on the BOE Central Management Console

1. Click **Start > Programs > BusinessObjects XI 3.1 > BusinessObjects Enterprise > BusinessObjects Enterprise Central Management Console**.
2. Log in with your user name and password.
3. Click **Authentication**, then click the **LDAP** tab.
4. Click **Start LDAP Configuration Wizard**.
5. In the **Add LDAP Host (hostname: port)** field, type your host and port information.
6. Click **Add**.
7. Click **Next**.
8. In the **LDAP Server Type** drop-down list, select your server, and click **Next**.
9. In the **Base LDAP Distinguished Name** field, type the distinguished name and click **Next**.

10 Type the LDAP host credentials:

   — In **LDAP Server Administration Credentials**, type the distinguished name and password for a user account that has rights to administer your LDAP server.

   — In **LDAP Referral Credentials,** type the same distinguished name and password you entered for LDAP Server Administration Credentials.

11 In the **Maximum Referral Hops** field, type the number of referral hops to limit forwarding the credential request. If you set this field to zero, no referral hops are allowed.

12 Click **Next**.

13 From the **Type of SSL authentication** drop-down list, select **Basic (no SSL)** and click **Next**.

14 From the Authentication drop-down list, select **Basic (no SSO)** and click **Next**.

Step 2: Add User Groups on the BOE Central Management Console

1 Click **Start > Programs > BusinessObjects XI 3.1 > BusinessObjects Enterprise > BusinessObjects Enterprise Central Management Console**.

2 Log in with your user name and password.

3 Click **Authentication**, then click the **LDAP** tab.

4 In **Mapped LDAP Member Groups**, add each out-of-box group listed in Table 5 on page 67 in the **Add LDAP group (by cn or dn)** field.

5 Click **Add**.

6 Click **Update**.

7 Repeat step 4 through step 6 to add another group.

8 To remove a group, select the group entry, click **Delete**, then click **Update**.

Step 3: Configure the LDAP Options on the BOE Central Management Console

1 Select the following LDAP options:

   — **Create a new account for every added LDAP alias**

   — **Create new aliases only when the user logs on**

   — **New users are created as named users**

2 Click **Next**.

3 Click **Finish**.

Step 4: Test BOE Central Management Console Configuration Access

1 Click **Start > Programs > BusinessObjects XI 3.1 > BusinessObjects Enterprise > BusinessObjects Enterprise Central Management Console**.

2 To log in:

   a Type your user name and password.

b From the Authenticationdrop-down menu, select **LDAP**.

No navigation items are available because the groups do not have rights.

3 If the login fails, repeat Steps 1 through 3 in Task 2a on page 68.

Step 5: Modify the web.xml File

1 Open this file with a text editor:

C:\Program Files\HP\IT Analytics 2.00\Web Application\WEB-INF\web.xml

2 Locate the **biAuthType** parameter section.

3 Change the parameter value to **secLDAP**. The result should look like this:

```
<init-param>
   <param-name>biAuthType</param-name>
   <param-value>secLDAP</param-value>
</init-param>
```

4 Save and close the file.

Step 6: Modify the applicationContext.xml File

1 Open this file with a text editor:

C:\Program Files\HP\IT Analytics 2.00\Web Application\WEB-INF\applicationContext.xml

2 Locate the **loginContextName** property in the **jaasAuthenticationProvider** section.

3 Change the parameter value to **dpJndi**. The result should look like this:

```
<bean id="jaasAuthenticationProvider"
class="org.acegisecurity.providers.jaas.JaasAuthenticationProvider">
   <property name="loginConfig" value="/WEB-INF/jaas.config"/>
   <property name="loginContextName" value="dpJndi"/>
   …
</bean>
```

4 Save and close the file.

Step 7: Modify the jaas.config File

1 Open this file with a text editor:

C:\Program Files\HP\IT Analytics 2.00\Web Application\WEB-INF\jaas.config

2 Locate the **dpJndi** section.

3 Change the parameter values to your local values. Verify whether the specified parameter values have case sensitivity restrictions. The last two statements enable sub-tree level searching.

The result should look like this:

```
dpJndi
{
   com.hp.ov.cwc.security.jaas.JndiLoginModule required
   user.provider.url="ldap://server.name.com:port_number/ou=People,
   dc=server,dc=name,dc=com"
   security.principal="uid=admin,ou=Administrators,ou=TopologyManagement,
   o=NetscapeRoot"
   security.credentials="password_value"
   group.provider.url="ldap://server.name.com:port_number/ou=groups,
   dc=server,dc=name,dc=com"
   group.search.objectClass="groupOfUniqueNames"
   user.search.scope = subtree_scope
   group.search.scope = subtree_scope;
};
```

where any value shown in italics is replaceable with a valid local value.

4 Save and close the file.

Step 8: Test InfoView Access

1 Click **Start > Programs > BusinessObjects XI 3.1 > BusinessObjects Enterprise > BusinessObjects Enterprise JavaInfoView.**

2 To log in:

   a Type the user name and password that you used in Step 4: Test BOE Central Management Console Configuration Access on page 69.

   b From the Authenticationdrop-down menu, select **LDAP**.

3 If the login fails, repeat Steps 1 through 3 in Task 2a on page 68.

At this time, you can assign appropriate access rights for users to enable them to refresh reports.

Task 2b: Configure Active Directory Authentication

Windows Active Directory is an optional method of authentication. Before you set up and enable Active Directory authentication, make sure that you have the correct domain and group information and that you have a user account on the Business Objects server that enables you to authenticate administrative users and groups.

You can avoid initial configuration issues by following these suggestions:

- Use the default IT Analytics groups. You can add custom groups after you successfully confirm the connection.
- Ensure that the Active Directory groups are Security Groups and not Distributed Groups.
- IT Analytics Active Directory authentication does not support multiple users across multiple domains. You can use InfoView to create and view reports.
- For initial testing, make sure that users are in the base directory that is specified in Business Objects and the URL of the jaas.config file.

- Do not use Secure Socket Layer during the initial configuration. You can add this option after you confirm authentication on port 389.

When you create a Security Principal user, follow these suggestions:

- Ensure that this user is a member of the Domain Users group with rights to search all users.
- Assign this user to the same Active Directory container as other users who will be trying to authenticate.
- Verify that this user has DES encryption set and that the password has not expired.
- Ensure that you do not select the **do not require Kerberos preauthentication** option for the Security Principal user.
- Add the Security Provider user to the default IT Analytics groups for initial testing with the Security Principal to confirm successful authentication.

Step 1: Enable Active Directory on the BOE Central Management Console

1. On the Business Objects server, ensure that the Central Management Server is running.
2. Click **Start** > **Programs** > **BusinessObjects XI Release 3.1** > **BusinessObjects Enterprise** > **BusinessObjects Enterprise Central Management Console**.
3. Type your **User Name**, **Password**, and click **Log On**.
4. In the **Manage** section, click **Authentication**.
5. Click the **Windows AD** tab.
6. If necessary, select **Windows Active Directory Authentication is enabled**.

Step 2: Configure Administration Credentials on the BOE Central Management Console

Administration credentials enable a Business Objects user to use Active Directory authentication, map groups, check rights, and perform other tasks.

1. Click the value for the **AD Administration Name** to change it.
2. Type the **Name** and **Password** of the domain user account configured on your Active Directory server. Business Objects Enterprise will use this name and password to authenticate Active Directory users and groups. Use one of these formats:
   - NT name (DomainName\UserName). For example:

     server.domain.com\dc_administrator
   - User Principal Name (UPN) (user@DNS_domain_name). For example:

     dc_administrator@DNS_domain.com
3. Type the **Default AD Domain** value. You must specify a default domain to enable Active Directory authentication and to map groups. For example:

   server.domain.com

   If you specify the Default AD Domain name, users do not have to specify the Active Directory domain name when they log in to Business Objects Enterprise with Active Directory authentication.

4 Click **Update**.

Step 3: Add Member Groups on the BOE Central Management Console

1 Type the group name in the **Add AD Group (Domain\Group)** field in this format:

*DomainName**GroupName*

For example:

server.domain\ITPA_AA

2 Click **Add**.

3 Repeat the following steps for each out-of-box group name described in Table 5 on page 67.

4 When you finish adding all groups, click **Update**.

Step 4: Choose Kerberos Authentication Options

1 Select **Use Kerberos authentication**.

2 Select **Cache security context (required for SSO to database)**.

3 Type the **Service principal name**. This should be the administrator user that you created in Step 2: Configure Administration Credentials on the BOE Central Management Console on page 72. For example:

ita_administrator@DNS_domain.com

Step 5: Choose Active Directory Authentication Options

1 Choose these options.

Table 6 Authentication 0ptions

Option	Description
Assign each added AD alias to an account with the same name	Use this option when you know users have an existing enterprise account with the same name. Active Directory aliases are assigned to existing users if auto alias creation is active. Users who do not have an existing enterprise account, or who do not have the same name in their enterprise and Active Directory account, are added as new Active Directory users.
New aliases will be added and new users will be created	Choose this option to automatically create a new alias for every Active Directory user mapped to Business Objects Enterprise.
New users are created as named users **or** **New users are created as concurrent users**	Choose this option for Named User licenses. or Choose this option for Processor licenses.

New Active Directory accounts are added for users without Business Objects Enterprise accounts, or for all users if you selected the **Create a new account for every added AD alias** option.

2 Click **Update**. A message appears stating that it will take several seconds to update the member groups.

3 Click **OK**.

Step 6: Test BOE Central Management Console Configuration Access

1 Click **Start > Programs > BusinessObjects XI 3.1 > BusinessObjects Enterprise > BusinessObjects Enterprise Central Management Console**.

2 To log in:

a Type your user name and password.

b From the Authenticationdrop-down menu, select **Windows AD**.

No navigation items are available because the groups do not have rights.

3 If the login fails, repeat Steps 1 through 3 in Task 2b on page 71.

Task 3: Configure JAVA Authentication for Active Directory

BOE uses a Java authentication module called Krb5AuthLoginModule. This log-in module requires some additional configuration information. There are two configuration files, krb5.ini and bscLogin.conf.

By default, the Java SDK automatically looks for these configuration files in the C:\winnt folder even if this folder does not exist. You can create the files in the C:\winnt folder, or in any other folder.

Step 1: Create a krb5.ini File

This file gives Java information about your domain and location of the Kerberos Key Distribution Center. This file can be simple or complex depending on the size and implementation of your Active Directory domain.

For example:

```
[libdefaults]
default_realm = DOMAIN.COM
dns_lookup_kdc = true
dns_lookup_realm = true
[realms]
DOMAIN.COM = {
kdc = ADSERVER.DOMAIN.COM
default_domain = DOMAIN.COM
}
```

Step 2: Create a bscLogin.conf File

The bscLogin.conf file is the JAAS log-in configuration file. It contains an entry that specifies the authentication technology to be used. When you use the SUN Java SDK, the entry looks like this:

```
com.businessobjects.security.jgss.initiate {
com.sun.security.auth.module.Krb5LoginModule required;
};
```

Step 3: Modify the web.xml File

1. Open this file with a text editor:

   C:\Program Files\HP\IT Analytics 2.00\Web Application\WEB-INF\web.xml

2. Locate the **biAuthType** parameter section.
3. Change the parameter value to **secWinAD**. The result should look like this:

   ```
   <init-param>
      <param-name>biAuthType</param-name>
      <param-value>secWinAD</param-value>
   </init-param>
   ```

4. Save and close the file.

Step 4: Modify the applicationContext.xml File

1. Open this file with a text editor:

   C:\Program Files\HP\IT Analytics 2.00\Web Application\WEB-INF\applicationContext.xml

2. Locate the **loginContextName** property in the **jaasAuthenticationProvider** section.
3. Change the parameter value to **QAAD**. The result should look like this:

   ```
   <bean id="jaasAuthenticationProvider"
   class="org.acegisecurity.providers.jaas.JaasAuthenticationProvider">
      <property name="loginConfig" value="/WEB-INF/jaas.config"/>
      <property name="loginContextName" value="QAAD"/>
      …
   </bean>
   ```

4. Save and close the file.

Step 5: Modify the jaas.config File

1. Open this file with a text editor:

   C:\Program Files\HP\IT Analytics 2.00\Web Application\WEB-INF\jaas.config

2. Locate the **QAAD** section.
3. Change the parameter values to your local values. Verify whether the specified parameter values have case sensitivity restrictions. The last two statements enable sub-tree level searching.

The result should look like this:

```
QAAD
{
   com.hp.ov.cwc.security.jaas.JndiLoginModule required
     user.provider.url="ldap://server.name:port/OU=Users,
       DC=server,DC=name,DC=com"
     security.principal="CN=administrator,OU=Users,DC=server,
       DC=name,DC=com"
     security.credentials="password_value"
     group.provider.url="ldap://server.name:port/OU=groups,
       DC=server,DC=name,DC=com"
     security.authentication="simple"
     use.samAccount.name="true"
     group.search.objectClass="group"
     user.search.scope = subtree_scope
     group.search.scope = subtree_scope;
};
```

where any value shown in italics is replaceable with a valid local value.

The default security.authentication is “none” and provides no authentication. The “simple” option for this parameter provides a clear-text password.

If you select “true” for use.samAccount.name, users are searched in the LDAP tree. The default search is the userPrincipleName field.

4 Save and close the file.

Step 6: Test the Active Directory Connection

You can verify that your connection is valid by running a command line utility. Follow these steps:

1 Open a Windows command line window.

2 Change directories to:

C:\Program Files\HP\IT Analytics 2.00\BO\boe\javasdk\bin

3 Run this command:

kinit.exe *username@domain* <mailto:*username@domain*> *password*

The user name should identify the administrator that you created in Step 2: Configure Administration Credentials on the BOE Central Management Console on page 72. For example:

ita_administrator@DNS_domain.com *password*

Task 4: Configure Tomcat for Active Directory

Tomcat loads Java at startup. Java needs to know the location of the krb5.ini and bscLogin.conf files.

Step 1: Specify the krb5.ini and bscLogin.conf File Locations

1. Stop Tomcat.
2. Click **Start** > **Programs** > **Tomcat** > **Tomcat Configuration**.
3. Click the **Java** tab.
4. At the bottom of the list of options in the **Java Options** text box, type these values:

   ```
   -Djava.security.auth.login.config=C:\winnt\bscLogin.conf
   -Djava.security.krb5.conf=C:\winnt\Krb5.ini
   ```

5. Click **OK**.

Step 2: Edit Authentication Parameters

1. Open this file with a text editor:

   C:\Program Files\HP\IT Analytics 2.00\Web Application\WEB-INF\web.xml

2. Change this parameter:

   ```
   <init-param>
      <param-name>biAuthType</param-name>
      <param-value>secLDAP</param-value>
   </init-param>
   ```

   To

   ```
   <init-param>
      <param-name>biAuthType</param-name>
      <param-value>secWinAD</param-value>
   </init-param>
   ```

3. Save and close the file.
4. Open this file with a text editor:

   C:\Program Files\HP\IT Analytics 2.00\Web Application\WEB-INF\applicationContext.xml

5. Locate this section:

   ```
   <bean id="jaasAuthenticationProvider" class="....">
   ```

6. Change the value in this section:

   ```
   <property name="loginContextName">
      <value>dpJndi</value>
   </property>
   ```

   To

   ```
   <property name="loginContextName">
      <value>QAAD</value>
   </property>
   ```

7. Save and close the file.
8. Delete this directory:

   ...\Tomcat\work\Catalina\localhost\ITAnalytics

9. Restart the Tomcat service.

Step 3: Test InfoView Access

1. Click **Start > Programs > BusinessObjects XI 3.1 > BusinessObjects Enterprise > BusinessObjects Enterprise JavaInfoView**.
2. To log in:
   a. Type the user name and password that you used in Step 6: Test the Active Directory Connection on page 76.
   b. From the Authenticationdrop-down menu, select **Windows AD**.
3. If the login fails, repeat Steps 1 through 3 in Task 2b on page 71.

At this time, you can assign appropriate access rights for users to enable them to refresh reports.

Task 5: Configure BOE Access Rights

You must enable FPA users or groups to view or edit the contents of a BOE folder and disable the access to any folder that a user or group should not view or edit.

Step 1: Enable Access to the FPA Analytics Folder

Follow these steps to grant access to the ITA analytics folder.

1. From the Windows **Start** menu, click **Programs** > **BusinessObjects XI 3.1** > **BusinessObjects Enterprise** > **BusinessObjects Enterprise Central Management Console**.
2. Login with the appropriate credentials. (The default value is Administrator with no password.)
3. Select **Folders** from the drop-down list in the upper left corner.
4. Right-click the **FPA EN IT Financial** folder and select **User Security** from the context menu. The Central Management Console displays the **User Security: FPA EN IT Financial** window.
5. Select **Add Principals**. The Add Principals window appears.
6. Choose **FPA_Analytic_Group** from the list of **Available users/groups**.
7. Click the double right arrow (**>>**) to move this selection to the **Selected users/groups** list.
8. Click **Add and Assign Security.** The Central Management Console displays the Assign Security window.
9. Choose **Full Control** from the list of **Available Access Levels**.
10. Click the single right arrow (**>**) to move this selection to the **Assigned Access Levels** list.
11. Click **OK**.
12. Click **Close**.

Step 2: Enable Access to the Root Folder

Follow these steps to grant the users and groups access to the root folder.

1. If necessary, select **Folders** from the drop-down list in the upper left corner of the Central Management Console.
2. Right-click **All Folders** and select **Properties** from the context menu.
3. Select **User Security**. The Central Management Console displays the **User Security: Root Folder** window
4. Select **Add Principals**. The Add Principals window appears.
5. Choose **FPA_Analytic_Group** from the list of **Available users/groups**.
6. Click the double right arrow (**>>**) to move this selection to the **Selected users/groups** list.
7. Click **Add and Assign Security.** The Central Management Console displays the Assign Security window.
8. On the **Advanced** tab, click **Add/Remove Rights**.
9. Choose **Full Control** from the list of **Available Access Levels**.
10. In the right pane, scroll to select **View Objects** in the list. and do the following:
    a. Select **Give Access**.
    b. Clear the **Apply to SubObject** check box.
11. Click **OK** to return to the Add Principals window.
12. Click **OK** to return to the User Security: Root Folder window.
13. Click **Close**.

Step 3: Enable Users to Refresh Reports

You must assign access rights to the Universe Designer to refresh Webi reports and the BOXES Query-as-a-Web-Service (QaaWS) Designer.

1. Select **Users and Groups** from the drop-down list in the upper left corner of the Central Management Console.
2. In the right pane, right-click **FPA_ANALYTIC_GROUP** and select **Member Of** from the context menu.
3. Select **Join Group**. The Central Management Console displays the Join Group: FPA_Analytic_Group window.
4. Select **Group Hierarchy**.
5. Select **Universe Designer Users**.
6. Click the right arrow (**>**) to move it into the **Destination Group(s)** list.
7. Select **QaaWS Group Designer**.
8. Click the right arrow (**>**) to move it into the **Destination Group(s)** list.
9. Click **OK**.
10. Close the Central Management Console.

For more information, see the *SAP BusinessObjects Enterprise XI 3.1 Administration Guide*.

Task 6: Test Authentication

1. From a browser, type the IT Analytics URL. For example:

   http://localhost:8080/ITAnalytics/cwc/login.jsp
2. Type the user login and password for one of the user profiles that you created.
3. If the login fails, repeat the configuration tasks in the LDAP or Active Directory sections.
4. If the login succeeds, test the other user login and password combinations that you created.

File Based Authentication

Follow these steps to configure authentication specified by a file. This is a quick way to set up temporary authentication for a test environment or prototype.

Task 1: Create a User

1. From the Windows **Start** menu, click **All Programs** > **BusinessObjects XI 3.1** > **BusinessObjectsEnterprise** > **Business Objects Central Management Console**.
2. Click **Users and Groups**.
3. Right-click **User List** and select **New User**.
4. Type an **Account Name**, such as demo.
5. Type a **Password** value.
6. Re-type the password to **Confirm**.
7. Accept (or change) the default **Authentication Type** (Enterprise) and the **Connection Type** (Concurrent User).
8. Click **Create & Close**.

Task 2: Create a Group

1. From the Windows **Start** menu, click **All Programs** > **BusinessObjects XI 3.1** > **BusinessObjectsEnterprise** > **Business Objects Central Management Console**.
2. Login with the appropriate credentials.
3. From the upper left drop-down list, select **Users and Groups**.
4. In the left navigation pane, right-click **Group List** and select **New Group**.
5. Type a new **Group Name**. For example, type FPA_ADMIN.
6. Click **OK**. The new group appears in the right pane.
7. Right-click the new group and select **Add Members to Group**.
8. Add one or more users to the group by selecting a user role and clicking the right arrow (>) to move that user role into the group. For example, you can select **Everyone**, or select **Administrators** to limit the access to Administrators.

9 Click **OK** and close the Central Management Console.

Task 3: Configure File Based Authentication

1 Open this file with a text editor:

C:\Program Files\HP\IT Analytics 2.00\Web Application\WEB-INF\web.xml

2 Change this parameter:

```
<init-param>
   <param-name>biAuthType</param-name>
   <param-value>secLDAP</param-value>
</init-param>
```

To

```
<init-param>
   <param-name>biAuthType</param-name>
   <param-value>secEnterprise</param-value>
</init-param>
```

3 Save and close the file.

4 Open this file with a text editor:

C:\Program Files\HP\IT Analytics 2.00\Web Application\WEB-INF\applicationContext.xml

5 Locate this section:

```
<bean id="jaasAuthenticationProvider" class="....">
```

6 Change the value in this section:

```
<property name="loginContextName">
   <value>dpJndi</value>
</property>
```

To

```
<property name="loginContextName">
   <value>BILoginModule</value>
</property>
```

7 Save and close the file.

Task 4: Configure IT Analytics Access Rights

1 Stop the Tomcat service.

2 Delete this directory:

...\Tomcat\work\Catalina\localhost\ITAnalytics

3 Open this file with WinZip:

C:\Program Files\HP\IT Analytics 2.00\Web Application\WEB-INF\lib\ita-application-2.00.jar

4 Extract the biusers.properties file to this location:

C:\Program Files\HP\IT Analytics 2.00\Web Application\WEB-INF\classes\biusers.properties

5 Open it with a text editor.

6 Locate the last line and replace demo=demo with the login=password value that you specified when you defined the generic user in step 4 and step 5 on page 80.

7 Save and close the file.

8 Restart the Tomcat service.

Troubleshooting

When authentication fails, do the following:

- Review modified files for spelling errors and case sensitivity.
- Verify user and group settings in the BOE Central Management Console.
- Start the debugging feature in log4j.xml files to trace the authentication process.

LDAP Authentication

Modified Files

If LDAP authentication fails, review this information from these files located in the C:\Program Files\HP\IT Analytics 2.00\Web Application\WEB-INF directory:

- The biAuthType is set to secLDAP in web.xml.
- The loginContextName is set to dpJndi in applicationContext.xml.
- The dpJndi section is configured properly in jaas.config.

BOE Central Management Console

Verify this information from the CMC:

- The user names are spelled correctly with the correct case.
- The group names are spelled correctly with the correct case and match the groups that are in web.xml.
- The user has been added to the group.

InfoView Authentication

When accessing the InfoView login page from IT Analytics, the option to choose the authentication type might not be available. Updating the InfoView web.xml file enables users to select LDAP authentication.

1 Open this file with a text editor:

C:\Program Files\HP\IT Analytics 2.00\BO\boe\Tomcat55\webapps\InfoViewApp\ \WEB-INF\web.xml

2 Locate the **authentication.visible** parameter name.

3 Change the parameter value to **true**. The result should look like this:

```
<context-param>
     <param-name>authentication.visible</param-name>
     <param-value>true</param-value>
</context-param>
```

4 Save and close the file.

If a user cannot access InfoView, review the user and group settings. If a user can access infoView but not IT Analytics, check the group settings:

- If needed, delete the group from the BOE CMC and re-add it.
- Verify that the user is in a regular group, not an organization unit or security group.

Active Directory Authentication

When Active Directory authentication fails, review the spelling and case of these files located in the C:\Program Files\HP\IT Analytics 2.00\Web Application\WEB-INF directory:

- web.xml
- applicationContext.xml
- jaas.config

Check the spelling and case of the following files. They are in the location you specified when you configured Tomcat for Active Directory:

- krb5.ini
- bscLogin.conf

File Based Authentication

When file based authentication fails, review the spelling and case of these files located in the C:\Program Files\HP\IT Analytics 2.00\Web Application\WEB-INF directory:

- web.xml
- applicationContext.xml
- \classes\biusers.properties

BOE Central Management Console

Verify this information from the CMC:

- The user names are spelled correctly with the correct case.
- The group names are spelled correctly with the correct case and match the groups that are in web.xml.
- The user has been added to the group specified in the biusers.properties file.

Authentication Log Files

By setting the log files to trace the authentication process, you can identify possible security or configuration issues.

Creating Business Objects Logs

1. From the Windows **Start** menu, click **All Programs** > **Tomcat** > **Tomcat Configuration**.
2. Click the Java tab.
3. In Java Options, add this statement:

   ```
   -Dcrystal.enterprise.trace.configuration=verbose
   ```

4. Click **OK**.
5. View this file:
   C:\Program Files\HP\IT Analytics 2.00\BO\boe\Tomcat55\logs\stdout.log

   You can also view this file:
   C:\documents and settings\<*username*>\.businessobjects\jce_verbose.log

Creating IT Analytics Logs

To begin logging files, change the level value in log4j.xml for Common Web Client (CWC).

1. Open this file with a text editor:

   C:\Program Files\HP\IT Analytics 2.00\Web Application\WEB-INF\classes\log4j.xml

2. Locate **logger name="com.hp.ov.cwc"**.
3. Change the level value to **debug**. The result should look like this:

   ```
   <logger name="com.hp.ov.cwc" additivity="false">
        <level value="debug" />
        <appender-ref ref=”cwc”>
   </logger>
   ```

4. Verify that the log path for the cwc appender section is a valid server location. If not, log files will be located in C:\Windows\system32. For example:

   ```
   <!-- cwc file appender -->
    <appender name="cwc" class="org.apache.log4j.RollingFileAppender">
      <param name="File" value="C:\cwc.log"/>
      <param name="MaxFileSize" value="1000KB"/>
      <param name="MaxBackupIndex" value="3"/>
      <layout class="org.apache.log4j.PatternLayout">
         <param name ="ConversionPattern" value="%d [%-5p] %t %c - %m%n"/>
      </layout>
   </appender>
   ```

11 Next Steps

After you install the required components of the IT Analytics application and data warehouse, and configure security roles, you should be able to start the application user interface. The application components that rely on data cannot display meaningful content until you populate the data warehouse with the data produced by external application sources.

The next steps to create a successful initial ETL process are described in the *HP Data Warehouse Administration Guide*. Basic tasks include:

- Load data integration interface (DII) views on source databases
- Load and customize XREF views
- Set consolidation priorities
- Create related data base tables
- Create extraction folders
- Create or modify external flat files
- Create the initial ETL job
- Create the ABC schedule

You can download the current version of the *HP Data Warehouse Administration Guide* from the HP Support manuals web site. For more information, see Support on page 4.

A Installing SAP BusinessObjects Xcelsius

The SAP BusinessObjects Xcelsius Engage Server (BOXES) product is a visual tool that you can use to create and edit analytics and dashboards. DVD 2, labeled *HP IT Analytics 2.00 (Dashboard Development Kit)*, contains the files for the optional installation of BOXES.

If you install BOXES, you can take advantage of its ability to integrate with the Microsoft Office suite of tools. For example, if you have an SAP BusinessObjects Xcelsius installation, you can e-mail reports or embed analytics in Microsoft PowerPoint presentations. It also integrates with the IT Analytics installation of BOE to create new analytics or dashboards.

You must install BOXES at the command line. Do not use the Windows installer. Enterprise licensing for BOXES is not managed through the Windows interface and the command line installation also installs the required BOXES fixpacks.

Requirements

BOXES requires a Windows Server 2003 operating system and an existing installation of Microsoft Office XP, 2003, or 2007.

Table 7 describes the minimum hardware requirements for the server that hosts SAP BusinessObjects Xcelsius.

Table 7 BOXES Hardware Requirements

Item	Minimum Requirement
Disk Space	500 MB
RAM	1 GB
Processor	1 GHz

Command Line Syntax

You can install BOXES at the command line with language pack options.

Syntax

install -xcelsius [-installdir <*directory*>]

[-languagepacks <*langCode1,langCode2,....,langCodenn*>]

[-help]

Table 8 Syntax Options

Option	Required?	Description
-installdir *path_and_directory*	N	Installation path and directory. The default path is C:\Program Files\HP\IT Analytics 2.00\BO\xcelsius. **Note**: If other BOE applications exist on the host server, BOXES installs in the same directory, regardless of the -installdir specification.
-languagepacks <*langCode1,langCode2,....,langCodenn*>	N	List of language packs to install. For more information, see Available Language Packs on this page.
-help	N	Display command syntax.

Return codes

0 – Success

1 – Success with warnings

>1 – Errors

Examples

install -xcelsius -installdir “C:\Program Files\HP\IT Analytics 2.00\BO\xcelsius\”

install -xcelsius -languagepacks fr,de

Available Language Packs

Specify the language code for each language pack. Do not specify the actual language.

Table 9 Available Language Packs

Language	Code
Chinese (Simplified)	zh_CN
Chinese (Traditional)	zh_TW
Dutch	nl
French	fr
German	de
Italian	it
Japanese	ja
Korean	ko
Portuguese (Brazilian)	pt

Table 9 Available Language Packs

Language	Code
Russian	ru
Spanish	es
Swedish	sv

Installation Steps

To install SAP BusinessObjects Xcelsius:

1. Open a Windows command line window.
2. Switch to the C:\DVD-1\Setup\BO Installers\xcelsius directory.
3. Type:

   install -xcelsius

   where the default installation directory is the existing location of BOE and the default language pack is English.

To specify a different directory or add more language packs, see Command Line Syntax on page 87.