BEAAquaLogic
Enterprise
Security™®

**Installing the
Administration Server**

Version: 3.0
Document Revised: December 2007

Contents

Introduction

This section describes the contents and organization of this guide.

- *"Document Scope and Audience" on page 1-1*

- *"Guide to this Document" on page 1-1*

- *"Related Documentation" on page 1-2*

- *"Contact Us!" on page 1-3*

Document Scope and Audience

This document is addressed to users who install the BEA AquaLogic Enterprise Security™ Administration Server. It gives installation instructions, describes post-installation tasks, and provides information about third-party products that operate with ALES.

Guide to this Document

The document is organized as follows:

- *Chapter 2, "Preparing for Installation,"* provides an overview of the installation process, lists pre-installation requirements, and gives information about product distribution.

- *Chapter 3, "Database Setup,"* describes how to run a script that adds a database user account that is needed in order to run the Administration Server installation program.

- *Chapter 4, "Installation,"* provides detailed installation instructions.

- *Chapter 5, "Post-Installation Tasks,"* describes how to install the database schema, start/stop ALES processes, and launch the administration consoles.

- *"Appendix A: Generating a Verbose Installation Log,"* indicates how to generate a log that captures detailed installation events.

- *"Appendix B: Changing the Administrator Password,"* describes how to change the ALES administrator's password.

- *"Appendix C: Uninstalling the Administration Server,"* describes how to remove the Administration Server.

- *"Appendix D: Oracle Installation and Administration,"* provides information and guidelines for installing, configuring, and managing an Oracle database server.

- *"Appendix E: Sybase Installation and Administration,"* provides information and guidelines for installing, configuring, and managing a Sybase database server.

Related Documentation

For information about other aspects of AquaLogic Enterprise Security, see the following documents:

- *Getting Started with ALES 3.0*—Provides a number of tutorials that show how to use the Entitlements Management tool to secure application resources.

- *Introduction to BEA AquaLogic Enterprise Security*—Provides overview, conceptual, and architectural information for AquaLogic Enterprise Security.

- *SSM Installation and Configuration Guide*—Describes how to install and configure ALES Security Services Modules.

- *Policy Managers Guide*—Defines the ALES policy model and describes how to generate, import and export policy data.

- *Programming Security for Java Applications*—Describes how to implement security in Java applications. It includes descriptions of the security service API and programming instructions.

- *Programming Security for Web Services*—Describes how to implement security in web servers. It includes descriptions of the Web Services API.

- *Developing Security Providers for BEA AquaLogic Enterprise Security*—Provides security vendors and security and application developers with the information needed to develop custom security providers.

- *Java API*—Java API documentation (Javadocs).

- *Security Service Provider Interfaces*—SSPI documentation (Javadocs).

- *BLM API*—Business Logic Manager (BLM) API documentation (Javadocs).

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In your message, please indicate the software name and version you are using, as well as the title and date of your documentation. If you have any questions about this version of BEA AquaLogic Enterprise Security, or if you have problems installing and running BEA AquaLogic Enterprise Security products, contact BEA Customer Support at *http://www.bea.com*.

When contacting Customer Support, be prepared to provide the following information:

- Your name, e-mail address, phone number, and fax number

- Your company name and company address

- Your machine type and authorization codes

- The name and version of the product you are using

- A description of the problem and the content of pertinent error messages

Preparing for Installation

This section covers the following topics:

- "Installation Overview" on page 2-1

- "Requirements" on page 2-2

- "Product Distribution" on page 2-3

Installation Overview

The ALES Administration Server runs in a servlet container (WebLogic Server or Apache Tomcat) and provides several administrative utilities, including the Administration Console, the Entitlements Management Tool, a Service Control Manager, a Security Service Module, the Business Logic Manager (BLM), the Policy Importer, and the Policy Exporter.

The major tasks involved in installing the Administration Server are:

1. Installing the servlet container (not covered in this document).

2. Installing and configuring the database server (see appendixes for database specific information).

3. Installing the ALES Administration Server.

Requirements

Note: The Administration Server must have a static IP address. The IP address is used by the Security Service Modules and Service Control Manager for connectivity.

Table 2-1 System Requirements

Use	Component and Version
Platforms	One of the following: • Sun Solaris 8, 9, 10 (SPARC, 32-bit) • Windows 2000 SP4, 2003 R2, XP (File system must be NTFS) • Red Hat Adv. Server 3.0, 4.0 (x86, 32-bit)
Servlet Container	One of the following servlet containers must be installed prior to installing ALES: • WebLogic Server 10.0 MP1, 9.x, or 8.1 SP5, SP6 • Apache Tomcat 5.5.23
Java VM	One of the following: • Sun Java 2 SDK 1.4.2_08 (WebLogic Server 8.1) or Sun Java 2 JDK 5.0 (JDK 1.5) (WebLogic Server 9.1, 9.2, 10.0) • BEA JRockit 1.4.2_08 SDK (WebLogic Server 8.1) or BEA JRockit 5.0 (JDK 1.5) (WebLogic Server 9.1, 9.2, 10.0)
Policy Store (Database Storage)	Once of the following: • Oracle 9.2.0.5, 10.1.2, 10.2.0.2 • Sybase 12.5.3 • MS-SQL 2000 or 2005 (with MS-SQL 2005 driver) **Note:** MS-SQL 2000 driver is not supported. • PointBase 5.1 • DB2 Universal DB Enterprise Server 9.1
Web Browser	Microsoft Internet Explorer, Version 6.0 or later.
Memory	256 MB of RAM minimum, 512 MB or more is recommended. Each user session requires approximately 5 MB of memory.
Hard Disk Space	At least 206 MB free storage space (this does not include the servlet container).
Reporting	Log4j may be used to configure a reporting application to support audit features.

Product Distribution

BEA AquaLogic Enterprise Security products are distributed and installed using the BEA Installation and Distribution System.

To download the product from the BEA web site, contact BEA Sales at http://www.bea.com/framework.jsp?CNT=sales1.htm&FP=/content/about/contact/.

Database Setup

It has the following topics:

Overview

In order to run the installation program, you must first run a script that is downloadable from a BEA web site. The script adds a user account to the database that is used during installation.

NOTE: It is also possible to perform the database setup steps manually. For instructions, see "Appendix F: Manual Database Setup Steps".

Obtaining the Database Script

To obtain the program:

1. Open a browser and go to the ALES download site.

2. Click the **AquaLogic Enterprise Security 3.0** link.

3. On the next page, click the **AquaLogic Enterprise Security Database Configuration Tool** link.

4. On the ensuing pages, complete as required and download one of the following files:

Windows—`ales300_DBConfigTool_Win32.zip`

UNIX/Linux—`ales300_DBConfigTool_unix.tar.gz`

Running the Database Configuration Tool

After obtaining the file, unzip and run it as follows:

1. Open `DBConfig.bat|sh` in an editor and set the following properties:

   – JAVA-HOME — specify the fully-qualified path to a JDK.

   – INSTALL_HOME — specify the fully-qualified path to the directory where you unzipped `ales300_DBConfigTool_Win32.zip` or `ales300_DBConfigTool_unix.tar.gz`.

   – DB_JDBC_DRIVER_LOC — For Pointbase and MSSQL, specify the fully-qualified path to the JDBC driver. (This is not required for Oracle or Sybase databases.) Examples:

   (Pointbase) `C:\bea\weblogic92\common\eval\pointbase\lib\pbclient.jar`

   (MS-SQL) `C:\Program Files\Microsoft SQL Server 2005 JDBC Driver\sqljdbc_1.2\enu\sqljdbc.jar`

2. Enter `dbconfig.bat` or `dbconfig.sh` on a command line. The program issues a number of prompts to answer.

3. Respond to the prompts as described in the table below:

Prompt	Description
Please input DB type<oracle|sybase|mssql|pointbase>	Enter one of the database names listed.
Please input JDBC URL	Enter the JDBC URL for the database server.
	Oracle—jdbc:oracle:thin:@**\<server>**:**\<port>**:**\<sid>** Sybase— jdbc:sybase:Tds:**\<server>**:**\<port>** Sql Server— jdbc:sqlserver://**\<server>**:**\<port>** Pointbase—jdbc:pointbase:server://**\<server>**/ales
	\<server>—name or IP address of database machine **\<port>**—port where the database listener is running **\<sid>**—SID for Oracle database

Please input JDBC Driver	Enter the JDBC driver used to connect to the database. This entry varies by database type:
	Oracle—oracle.jdbc.driver.OracleDriver Sybase—com.sybase.jdbc3.jdbc.SybDriver Sql—com.microsoft.sqlserver.jdbc.SQLServerDriver Pointbase—com.pointbase.jdbc.jdbcUniversalDriver
Please input new database user name	Enter a username for the account being created.
Please input new database user password	Enter a password for the new user.
Please input database admin username (not required for Pointbase)	Enter the database administrator user name.
Please input database admin password (not required for Pointbase)	Enter the database administrator password.
Additional Sybase Prompts	Respond to prompts by entering: —Logical name of the device storing policy data —Path to the above device (c:\sybase15\ales_policy.dat) —Logical name of the device storing log data —Path to the above device (c:\sybase15\ales_log.dat) —Database name

4. The script runs and displays messages like the following:

```
-- Configuring table space [ales_oracle]
** Tablespace [ales_oracle] exists in DB server. Continuing with the same.
-- Creating new user [ales_db_admin] .......Done
-- Configuring ALES role [asi_role]
-- Assigning privs to ALES role .......Done
-- Assigning privs to new user [ales_db_admin].......Done
-- Closing down connection
-- Successfully created ALES Database Account --
```

At the completion of these steps, you may install the Administration Server. See the next section for instructions.

Database Setup

Installation

This chapter contains the following sections:

Obtaining the Installation Program

To obtain the installation program:

1. Open a browser and go to the ALES download site.

2. Click the **AquaLogic Enterprise Security 3.0** link.

3. On the next page, click the **AquaLogic Enterprise Security Administration Application 3.0** link.

4. On the next page, select the operating system from the **OS Platform** field and click **Select>>**.

5. On the remaining pages, complete as appropriate and download the file.

Installation Steps

To install the ALES Administration Server:

1. Shut down any ALES processes on the machine and launch the install program using one of the options described below:

Platform	Command
Windows	Start `ales300admin_win32.exe`
Sun Solaris	1. Change the protection on the install file by entering: `chmod u+x ales300admin_solaris32.bin` 2. Enter: `./ales300admin_solaris32.bin`
Red Hat	1. Change the protection on the install file by entering: `chmod u+x ales300admin_linux.bin` 2. Enter: `./ales300admin_linux.bin`

NOTES:

– (UNIX, Linux) If there is not enough temporary space, use `add – Djava.io.tmpdir=<path>`

– (UNIX, Linux) The installation program loads in GUI mode if the machine supports Java-based GUI. Otherwise, it starts in console mode.

2. Complete the installation prompts as described in the following table:

Table 4-1 Administration Server Installation

In this Window:	Perform this Action:
Welcome	Click **Next**.
BEA License Agreement	Click **Yes** and then **Next**.
Choose BEA Home Directory	Select the default BEA home or use the Browse button to specify a different one. Then click **Next**.
Choose Product Installation Directories	This window carries forward the BEA home specified on the previous window. Accept this value and click **Next**. **NOTE:** If an earlier ALES version is detected, a window asks if you want to upgrade. To do so, click **Next** and see "Upgrading from Earlier Versions" on page 4-5.

Table 4-1 Administration Server Installation (Continued)

In this Window:	Perform this Action:
Choose Service Control Manager Directory	Accept the provided location and click **Next**.
Choose Application Server	Select the server type from the **Web Server Type** dropdown list. If you select Tomcat, also complete the **Web Server Installation Directory** field by navigating to and selecting the Tomcat directory. Then click **Next** **Warning:** The Tomcat directory name cannot contain spaces.
Choose Network Interfaces	Select the **IP address** checkbox used to listen for requests to distribute policy and configuration data and click **Next**. **Notes:** • IPV6 is not supported. • For machines with multiple network cards, select an internal address to avoid exposing the SCM through a public address.
Configure Administration Application	**HTTP Port (7000)**—HTTP port for the application server's (WebLogic or Tomcat) administration console. **SSL Port (7010)**—HTTPS port for the Administration Server. **WARNING:** The port specified must be the first of five consecutive ports reserved for use by ALES. Failure to reserve these ports for ALES will prevent connection between ALES components. **CA Duration**—Years the certificate remains in effect.

Table 4-1 Administration Server Installation (Continued)

In this Window:	Perform this Action:
Configure Database Connection	**Database client**—Select the type from the dropdown list.
	JDBC URL—Replace the bracketed values. These vary by database type:
	<SERVER>—name/IP address of the database machine
	<PORT>—port number where the database listener is running
	<INSTANCE>—instance name to connect to on <server>
	<SID>—database SID of database
	JDBC driver—Accept the default
	Driver location—If required, browse to and select the directory.
	Login ID—user created using the database setup script described in "Database Setup" on page 3-1.
	Password—user password.
	Install Database Schema—Accept the default to install the schema unless you are installing the server as a failover server.
	When you click **Next**, the JDBC connection is tested. If unsuccessful, you are re-prompted for the information.
Key Protection Password Selection	**Generate Random Password**—select to randomly generate key passwords for ALES components.
	Advanced Password Configuration—select this option if you want to specify these passwords. Then supply the passwords as prompted.
	These options are equally secure. The only reason for specifying your own passwords is that they are required to decrypt SCM and SSM cache files, which may be useful for debugging.
Choose JDK	The installation auto-selects a JDK. Accept this value or specify a different one.

3. On the **Installation Complete** window, click **Done**. If you selected to install the schema, a script will perform the following actions:

    – Create database tables and ALES objects

    – Load ALES objects for starting the Administration Server.

    – Start the SCM and Administration Server

– Load the ALES administration policy

When the script completes, you may open the administration tools (see "Starting the Administration Tools" on page 5-4).

Note: If you did not install the schema and need to do so separately, see "Installing the Policy Database Schema" on page 5-1.

Upgrading from Earlier Versions

If the installation program detects a previous version of the Administration Server on the machine, a window asks if you want to run the upgrade wizard.

Note: The upgrade wizard launches only when running the installation in GUI mode.

To upgrade, you run the wizard to completion. After the wizard finishes, you must start the Administration Server and execute a script that adds policies to the database.

To perform the upgrade:

1. When you see the **Run Upgrade Wizard** checkbox on the installation window, select it and click **Done**. This launches the wizard.

2. On the initial window, click **Next**. A window displays status messages and then closes when the upgrade completes.

3. Start the Administration Server.

4. Run **upgrade_policies.bat|sh** script located in `BEA_HOME/ales30-admin/upgrade`.

Notes:

- Upgrade the Administration Server before upgrading SSMs.

- SSMs on other machines can remain running while the Administration Server is being upgraded. They will also continue operating as expected with the upgraded Administration Server.

- For ALES 2.5 and earlier, you must have administrative access to the directories containing the existing ALES files.

- During an upgrade, the option to install the schema is disabled.

Installation

Post-Installation Tasks

This section contains the following topics.

Installing the Policy Database Schema

If you installed without adding the schema, you must run a script before starting the Administration Server. The script creates database tables and ALES objects, starts the server, and loads the ALES administration policy.

To install the policy database schema:

1. Change to the `BEA_HOME\ales30-admin\bin` directory.

   Important: For UNIX and Linux, all scripts in the directory must have *execute* permission.

2. Run `install_ales_schema.bat|sh` followed by the database administrator username and password.

   For example:

   ```
   install_ales_schema.bat <db-username> <db-password>
   ```

Starting ALES Processes

How Administration Server processes run depends on the platform:

- On Windows, the Administration Server and SCM are installed as services with a default startup type of *manual*. To configure the services for automatic startup, use the Windows Services applet.

- On UNIX, the Administration Server and SCM are registered with the UNIX `init` subsystem and not configured to start automatically. To configure them for automatic startup, the system administrator must link it into the correct `init` runlevel, as shown below.

To start the Administration Server and SCM, use the methods described in Table 5-1:

Table 5-1 Starting the Administration Server and SCM

Platform	Description

Windows	**ADMINISTRATION SERVER**
	Open the Start menu and select **Programs>BEA Aqualogic Enterprise Security>Administration Server>Start Server**.
	To use a command line, go to the *BEA_HOME***ales30-admin****bin** directory and enter WLESadmin.bat start or WLESadmin.bat console.
	WLESadmin.bat console starts server processes in separate console windows.
	SCM
	Open the Start menu and select **Programs>BEA Aqualogic Enterprise Security>Service Control Manager>Start SCM**.
	To use a command line, go to the *BEA_HOME***ales30-scm****bin** directory and enter WLESscm.bat start or WLESscm.bat console.
	WLESscm.bat console starts SCM processes in separate console windows.
UNIX or Linux	**ADMINISTRATION SERVER**
	Enter WLESadmin.sh start or WLESadmin.sh console.
	Either command starts Administration Server processes as daemon processes and provides the same results.
	SCM
	Go to the *BEA_HOME***ales30-scm****bin** directory and enter WLESscm.sh start or WLESscm.sh console.
	Either command starts SCM processes as daemon processes and provides the same results.

Startup Option on Linux Reboots

To allow the SCM and Administration Server to start up after a reboot on Linux, set them to start on runlevel3 (non-graphical runlevel) and runlevel5 (graphical runlevel). To do this, run the following commands as root:

```
chkconfig --level 35 WLESscm on
chkconfig --level 35 WLESadmin on
```

To check the Administration Server runlevel, run:

```
chkconfig --list WLESscm
chkconfig --list WLESadmin
```

Stopping ALES Processes

Stop the Administration Server and SCM as described in Table 5-2.

Table 5-2 Stopping the Administration Server and SCM

Platform	Description
Windows	**ADMINISTRATION SERVER** Open the Start menu and select **Programs>BEA Aqualogic Enterprise Security>Administration Server>Stop Server**. To use a command line, go to the ***BEA_HOME*\ales30-admin\bin** directory and enter `WLESadmin.bat stop`. **SCM** Open the Start menu and select **Programs>BEA Aqualogic Enterprise Security>Service Control Manager>Stop SCM**. NOTE: To use a command line, go to the ***BEA_HOME*\ales30-scm\bin** directory and enter `WLESscm.bat stop`.
UNIX or Linux	**ADMINISTRATION SERVER** Go to the ***BEA_HOME*\ales30-admin\bin** directory and enter `WLESadmin.bat stop`. **SCM** Go to the **BEA_HOME\ales30-scm\bin** directory and enter `WLESscm.bat stop`.

Starting the Administration Tools

Installation of the Administration Server provides two administration tools:

- The **Entitlements Management Tool** allows you perform the key administrative functions of managing Resources, Identities, Roles, Authorization Policies, and Membership Rules. It does not include the ability to manage SSM configurations.

- The **Administration Console** has existed in all previous ALES versions. Although it possesses the full range of administrative features it should be used primarily for managing SSM configurations.

To log on the administration tools:

1. In Internet Explorer, enter as follows:

– Entitlements Management Tool—
`https://<host>:<port>/entitlementsadministration`

– Administration Server Console— `https://<host>:<port>/asi`

where

`<host>`—the host name or IP address
`<port>`—the administration SSL port assigned during installation (default 7010)

2. When you see a message about the security certificate being used, click **Yes** to display the log on window.

3. On the log on page, enter the username and password (the defaults are `system` and `weblogic` respectively).

Notes:

• For production environments, the default username and password should be used for initial log on. See "Appendix B: Changing the Administrator Password," for information on how to do this.

• You should set up additional administrative users and configure an Authentication provider to authenticate them with an external source (e.g., LDAP or Microsoft Windows NT). This requires updating the administration policies involved.

• What users can see and do in the console depends on their access rights as determined by existing policies. For example, users without **edit** rights will see "Access Denied" if they attempt to change some value.

Post-Installation Tasks

Appendix A: Generating a Verbose Installation Log

If you start the installation process from the command line, you can specify the `-log` option to generate a verbose installation log. This log contains messages about events that occur during the installation, including informational, warning, error, and fatal messages. This can be especially useful for silent installations.

Note: Unless the log contains a 'fatal' error, the installation completed successfully.

Instructions

To create a verbose log file during installation, use the following command lines or scripts:

- For Windows:

```
ales30admin_win32.exe -log=D:\bea\logs\ales_install.log
-log_priority=debug
```

- For UNIX:

```
ales30admin_solaris32.bin -log=/bea/logs/ales_install.log
-log_priority=debug
```

- For Linux:

```
ales30admin_rhas3_IA32.bin -log=/bea/logs/ales_install.log
-log_priority=debug
```

Note: The `-log` parameter is optional. By default, the installation log is put in the `log` directory where you install the Administration Server. If for some reason, the installer fails, use this switch to generate a more detailed log: `-log_priority=debug`.

The path must be the full path to a file name. If the file does not exist, all folders in the path must exist before you execute the command or the installation program does not create the log file.

Appendix B: Changing the Administrator Password

This section describes how to change the ALES administrator password.

Instructions

Perform the following steps to change the default password for the ALES administrator:

1. In the Entitlements Management Tool's left pane, expand the **Identity** node and select the **asi** directory.

2. In the right pane, select the **Users** tab. Then select the user named `system` and click **Modify User** at the bottom of the pane.

3. On the **Modify User** window, enter the current and new passwords and click **OK**. Then save your changes.

4. If WebLogic is the servlet container:

   – open `boot.properties` in `.../ales30-admin/asiDomain/servers/asiAdminServer/security/` and replace the encrypted password with the new password value.

   – run `asipassword` utility in `.../ales30-shared/bin` to encrypt and save the password.

      Example: `asipassword system ../keys/password.xml ../keys/password.key`

      For further details, see information about the asipassword utility.

5. Restart the Administration Server.

Appendix C: Uninstalling the Administration Server

This section describes how to uninstall the Administration Server from Windows, UNIX, and Linux:

Note: To save existing policy and configuration data, you must export it. See *Importing and Exporting Policy* in the *Policy Managers Guide*.

Uninstallation on Windows

To uninstall the Administration Server, do the following:

1. Shut down any running ALES services.

2. From the **Start** menu, select **Programs > BEA AquaLogic Enterprise Security > Uninstall Administration Application.**

3. On the **Welcome** window, click **Next**.

4. On the **Choose Components** window, be sure the checkboxes are selected and click **Next**.

5. On the **Uninstall Options** window, select the components to remove and click **Next**.

   Note: If the directories contain user generated files that you want to save (for example, files in the /log or /ssl directories), do not delete the directories.

6. On the final window, note the details provided about the removal process and click **Done**.

   Note: If the **Uninstall SCM** checkbox is not selected, the SCM files must be manually deleted.

7. Click **Done** to remove Administration Server.

8. To remove the ActiveX controls, open the **Control Panel > Add or Remove Programs** and uninstall the ActiveX control named "BEA ALES Administration Console".

Uninstallation on UNIX or Linux

To uninstall the Administration Server software:

1. Log in to the machine.

2. Shut down any servers and services that are running.

3. Open a command shell and go to the directory where you installed the product, for example:

   BEA_HOME/ales30-admin/uninstall

   where *BEA_HOME* represents the directory in which you installed product.

4. At the command prompt, type uninstall.sh.

   The **BEA Uninstaller - Administration Server** window appears and the uninstall process begins.

   Note: If your system supports a graphical user interface, the uninstall program runs in graphical mode. Otherwise, it runs in console mode.

5. Respond to the prompts to uninstall the product.

# Appendix D: Oracle Installation and Administration

This section provides information and guidelines about installing, configuring, and managing an Oracle database server to use with ALES. This must be performed before installing the ALES Administration Server.

To perform a database installation and setup, you must be a database administrator with permission to create a new instance.

Overview of the Oracle Client/Server Architecture

Each Oracle service is identified by a global database name and an Oracle system identifier referred to as the `SID` (see Figure D-1). The Oracle global database name is the full name of a database that uniquely differentiates it from any other databases in your network domain. One global database name can represent several database instances. The global database name is also known as the service name. The `SID` distinguishes the database instance from any other database instances on the same machine.

Figure D-1 Oracle Database Setup
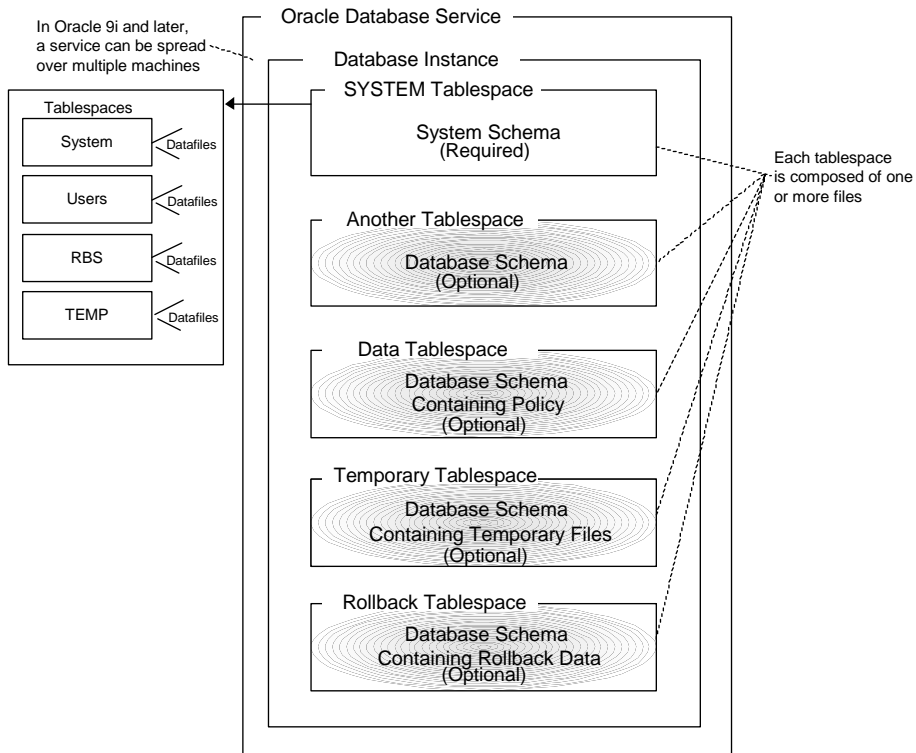
An Oracle instance is a running Oracle database made up of memory structures and background processes. Each instance is associated with an SID. With the Oracle Parallel Server, multiple instances can exist on different machines for a single database.

The policy database is a set of database schemas in which all data are stored. A database schema is a collection of objects associated with a particular schema name. The objects include tables, views, domains, constraints, assertions, privileges, and so on.

A datafile is an Oracle term for a file that contains the contents of logical database structures, such as tables and indexes. One or more datafiles form a logical unit of storage called a tablespace. A datafile is associated with only one tablespace and only one database.

A tablespace is a logical portion of a database used to allocate storage for table and index data. Each tablespace corresponds to one or more physical datafiles. Every Oracle database has a

tablespace called SYSTEM and may have additional tablespaces. A tablespace is used to group related logical structures. The database username or user ID is a login that is given permission by the database administrator to access a specific database instance. This user is also called the schema owner, that is, the owner of the schema objects such as tables, views and triggers that are created.

Oracle Database System Requirements

Table D-1, "Oracle Setup Requirements," on page D-3 describes the minimum requirements for the system on which the Oracle database server is installed.

Table D-1 Oracle Setup Requirements

Requirement	Description
Software version	Oracle database server: • Version 9i Release 2 (9.2.x) • Version 10g Release 1 (10.1.0.4)
Server platform	Any platform supported by Oracle.
Memory	As required by Oracle server installation (64 MB minimum).
Disk space for the starter database	As required by Oracle server installation, plus space required to store policy data; 500 MB recommended.
Disk space for Oracle software	Refer to your installation guide for the Oracle Database Server.
Disk space for policy database	Minimum of one tablespace with 250 MB of free space is required.

Installing and Configuring the Oracle Database

This section provides additional instructions for installing and configuring an Oracle database for use with the AquaLogic Enterprise Security Administration Server.

To install and configure the database, perform the following tasks:

● "Installing the Oracle Database" on page D-4—Use this procedure only if you are going to install the Oracle database software and create and configure an instance of the database.

- "Configuring the Oracle Database Listener for Remote Connections" on page D-7—Use this procedure only if you intend to install the AquaLogic Enterprise Security Administration Server on a machine that is remote to the machine on which you install the Oracle database.

- "Creating an Instance of an Oracle Database" on page D-8—Use this procedure only if the Oracle database software is already installed and you want to create another instance of the database.

Installing the Oracle Database

This section provides recommendations for installing the Oracle database and creating a database instance. When you run the Oracle installation program, it automatically starts the Database Configuration Assistant, which you use to create an instance of the database. If the Oracle database is already installed on the database host machine, you can skip this procedure and go to "Creating an Instance of an Oracle Database" on page D-8.

To install the Oracle database and create a database instance, perform these steps:

1. Ensure that the system requirements are satisfied as defined in Table D-1 and install the Oracle database according to instructions in the *Oracle Database Installation Guide*. When the Oracle Universal installer runs, select the install options as specified in Table D-2. For other installer options, accept the default settings or set them as you desire.

Table D-2 Recommended Selections in the Oracle Universal Installer

Installer Option	Recommended Selections
Available Products	Oracle 9i Database 9.2.x
Installation Types	Enterprise Edition
Database Configuration	General Purpose
Oracle MTS Recovery Service Configuration Port Number	Accept the default setting.
Global Database Name (For Oracle 10g only)	The full Oracle database name that distinguishes the database from any other databases in your network domain, for example `asi.ales`, where `asi` is the database name and `ales` is the domain.

Table D-2 Recommended Selections in the Oracle Universal Installer

Installer Option	Recommended Selections
Database System Identifier (For Oracle 10g only)	The Oracle system identifier (SID). The SID distinguishes the database instance from any other database instances on the same machine, for example asi,
Passwords (For Oracle 10g only)	The install program creates four user accounts, SYS, SYSTEM, SYSMAN, and DBSNMP and assigns default passwords. During the installation, you are prompted to change these passwords. For security reasons, Oracle recommends that you specify new passwords for these user accounts when you install the database software. Be sure to record your password settings as you will need them later.

2. For Oracle 9i, when the Database Configuration Assistant starts, step through the screens and use the settings specified in Table D-3.

> **Note:** For Oracle 10g, the Database Configuration Assistant is run after the installer program (just as it is with Oracle 9i), however, for 10g, it does not prompt you for input.

Table D-3 Oracle 9.1.2 Database Configuration Assistant Settings

Database Configuration Assistant Screen	Recommended Setting
Step 1 of 8: Operations	Select Create a database, and click Next.
Step 2 of 8: Templates	Select New Database, and click Next **Note:** This selection specifies the template to use to create the instance of the database.
Step 3 of 8: Database Identification	Specify the Global Database Name, for example asi.ales. Specify the SID, for example asi, and click Next.
Step 4 of 8: Database Features	Set these check boxes to on: Oracle spatial, Oracle Ultra Search, Oracle Data Mining, Oracle OLAP, Example Schemas and all check boxes below, and click Next.
Step 5 of 8: Database Connection Options	Select Dedicated Server Mode, and click Next

Table D-3 Oracle 9.1.2 Database Configuration Assistant Settings

Database Configuration Assistant Screen	Recommended Setting
Step 6 of 8: Initialization Parameters	Select the Memory tab, click the Custom radio button, and set the parameters as follows: • Shared Pool: 69 Mbytes • Buffer Cache: 24 Mbytes • Java Pool: 32 Mbytes • Large Pool: 8 Mbytes • PGA: 24 Mbytes Click Next.
Step 7 of 8: Database Storage	Click Next. The Database Assistant creates the database.
Database Configuration Assistant	Set passwords for the SYS and SYSTEM accounts and record these passwords as you will need them later. Click Exit. The Database Assistant completes.
End of Installation	Click Exit.

3. For Oracle 9i, do one of the following to set your system PATH environment variables:

    – For Windows systems, set the environment variables as shown in Listing D-1.

    – For Solaris and Linux systems, refer to the *Oracle Installation Guide Release 2 (9.2.0.1.0) for UNIX systems* for instructions.

Listing D-1   Oracle 9i System PATH Environment Variable Settings for Windows

```
<drive>:\oracle\ora920\bin;

C:\Program Files\Oracle\jre\1.3.1\bin;

C:\Program Files\Oracle\jre\1.1.8\bin;

Where <drive> is the hard drive on which the Oracle database is installed.
```

4. For Oracle 10g, do one of the following to set environment variables:

- On Microsoft Windows, the installer program sets the environment variables for you.

- On Solaris, refer to the *Oracle Database Installation Guide* 10g release 1 (10.1.0.4) for Solaris.

- On Linux, refer to the *Oracle Database Installation Guide* 10g release 1 (10.1.0.4) for Linux.

5. If you want to allow remote connections to this database instance, proceed to "Configuring the Oracle Database Listener for Remote Connections" on page D-7.

Configuring the Oracle Database Listener for Remote Connections

To configure the Oracle database to accept remote connections from the Administration Server, you must configure an Oracle listener. This would only be necessary if you intend to install the Administration Server on a machine other than the machine on which the Oracle data is installed.

To configure an Oracle listener, perform the following steps:

1. Start the Oracle Net Configuration Assistant and respond to the assistant screens as directed in Table D-4.

Table D-4 Oracle Listener Setting

Assistant Screen	Setting
Welcome	Select Listener configuration, and click Next.
Listener	Select Add, and click Next.
Listener Name	Enter listener name, for example, `asi`, and click Next.
Select Protocols	Select TCP, and click Next.
TCP/IP Protocol	Select the standard port 1521, and click Next.

2. To verify that the listener is configured, open a command window on a remote system and enter this command: `SQLplus system/`*`password`*`@`*`listenername`*.

   where *`password`* is the password you assigned to the `SYSTEM` account upon installation and *`listenername`* is the name you assigned to the Oracle listener, for example `asi`.

Creating an Instance of an Oracle Database

This section describes how to create and configure an instance of an Oracle database. It assumes that the Oracle database software was installed.

Note: You should only perform this procedure when you want to create and configure instances of the database in addition to the instance that was created when the database software was installed.

Perform the following steps to create an instance of an Oracle database:

Note: The section provides guidance to assist you, but it does not supersede the documentation provided by Oracle.

1. To start the Oracle Database Configuration Assistant, click Start>Programs>Oracle-<*OraHome*>Configuration and Migration Tools>Database Configuration Assistant, where *OraHome* indicates the version of the software. The Database Configuration Assistant starts.

2. When the Database Configuration Assistant starts, step through the screens and select settings as specified in Table D-3.

Administering an Oracle Policy Database

This section covers the following topics:

- "Using the Database Administration Utilities with Oracle" on page D-8
- "Backing Up an Oracle Database" on page D-9

Using the Database Administration Utilities with Oracle

lists and describes the batch and shell files provided for database administration. The files are located in the following directory:

```
bea\ales30-admin\bin\
```

where:

- `bea` is the `BEA_HOME` directory.
- `ales30-admin` is the installation directory for the Administration Server.

Table D-5 Oracle Database Administration Utilities

File Name	Used to:
policyexporter.bat policyexporter.sh	Exports policy data. See the *BEA AquaLogic Enterprise Security Policy Managers Guide* for information on how to export policy. The *dbtype* is the type of database, Sybase or Oracle.
install_ales_schema.bat install_ales_schema.sh	Installs the policy database schema. See "Installing the Policy Database Schema" on page 5-1 for information on how to install the database schema.
uninstall_ales_schema.bat uninstall_ales_schema.sh	Uninstall the policy database schema from the database server. The parameters for this script are the same as the install_ales_schema script.

Before running these scripts with an Oracle database, you need to ensure the following setup steps are completed:

- The current path (.) is in your PATH environment.

- For Windows, ensure that the PATH includes the BIN and DLL directory of Oracle installation.

- For Solaris, ensure that the environmental variable ORACLE_HOME is set, $ORACLE_HOME/bin is in the PATH, and $ORACLE_HOME/lib in the LD_LIBRARY_PATH.

- Ensure that you can connect to the Oracle database server using command sqlplus (the Net Service Name, login ID and password).

Backing Up an Oracle Database

BEA strongly recommends that you backup your original policy database regularly. A database backup is always recommended before you uninstall or re-install the policy database. You may need to contact your database or system administrator to assist with this process. Backups should be done on a regularly scheduled basis.

For instructions on backing up your Oracle database, see the *Oracle Backup and Recovery Guide* that comes with your Oracle documentation.

Appendix E: Sybase Installation and Administration

Overview of the Sybase Client/Server Architecture

The Sybase Adaptive Server is the server in the Sybase client/server architecture (see Figure E-1). It manages multiple databases and multiple users, keeps track of the actual location of data on disks, maintains mapping of logical data description to physical data storage, and maintains data and procedure caches in memory.

The policy database is a set of database schemas in which all data are stored. The Sybase database contains a set of related data tables and other database objects organized and presented to serve a specific purpose.

A database device is a Sybase term that represents the portion of a device (a portion of a hard drive, such as a partition) that is dedicated to holding database data. When creating the database device, you can choose either a raw partition or an existing file system. Choosing a raw partition can increase the performance of the database server.

Figure E-1 Sybase Adaptive Server Setup
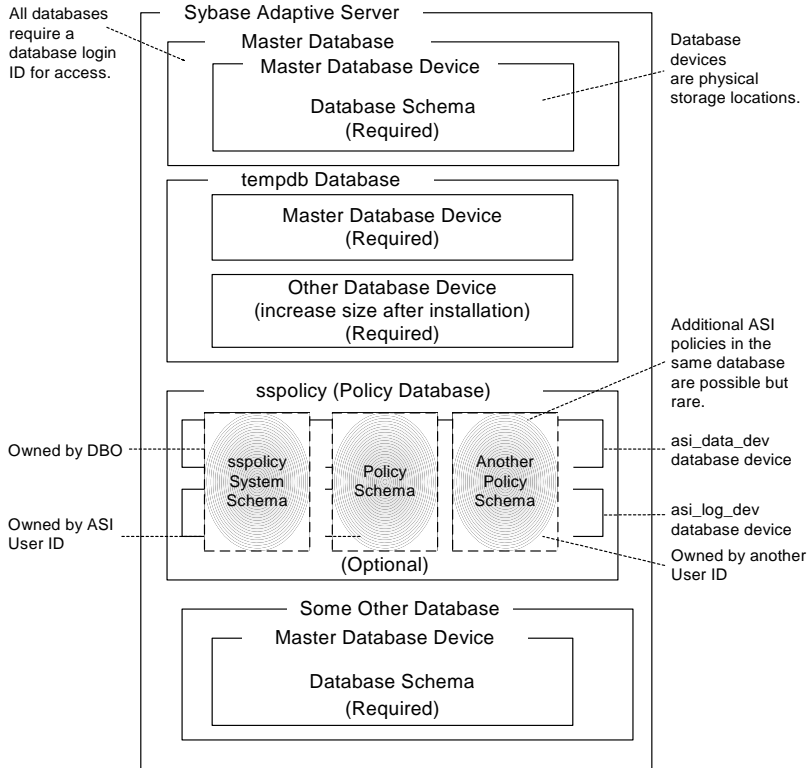
The Database Login ID is a login created by a system administrator to log onto the Adaptive Server. Each Database Login has a password and a default database to access. A login is valid if the Adaptive Server has an entry for that user in the system table syslogins.

The Database Administrator (DBA) has a special database login ID that can access all databases in the Adaptive Server. The DBA is also referred to as the system administrator. In fact, the name of the DBA login is sa (for System Administrator).

The Database Owner (DBO) is a special database login with permission to perform all actions on a policy database. Usually, the login that creates the database automatically becomes the DBO. The Database User ID is dbo (lowercase), which is different from its Database Login ID. For your policy database, you can use any Database Login ID as the DBO.

The Database User ID pertains to one specific database and is a login given permission by the DBO or DBA (system administrator) to access that one database. In most cases, the database user ID is the same as the Database Login ID. However, in some cases, they may be different, as with the special dbo user ID.

A database schema is a collection of objects associated with a particular schema name. The objects include tables, views, domains, constraints, assertions, privileges, and so on.

The policy owner is a Database User ID that controls the set of database schema in the database. BEA recommends that you not use dbo as a policy owner because it requires special administration. The AquaLogic Enterprise Security architecture allows multiple policy owners in its database, each owning a policy different from the other policies.

Sybase Database System Requirements

Table E-1 describes the minimum requirements for the system on which the Sybase Adaptive Server is installed.

Table E-1 Sybase Database Minimum Requirements

Requirement	Description
Software Version	Sybase Adaptive Server Enterprise 12.5.2.
Server Platform	Any platform supported by Sybase.
Memory	As required by Sybase server installation (42 MB minimum).
Disk Space for the default database	As required by Sybase server installation.
Disk Space for Sybase software	Refer to the *Sybase Adaptive Server Enterprise Installation Guide* for details.
Disk Space for the Policy Database	A minimum of two database devices is required, each having 250 MB.
Required Sybase page size	8K page size required for ALES schema.

Installing the Sybase Database

This section provides recommendations for installing and configuring the Sybase database software. If the Sybase database is already installed on the database host machine, you can skip this procedure and go to "Creating Sybase Database Devices" on page E-4.

To install the Sybase Adaptive Server, perform these steps:

1. To install a Sybase Adaptive Server database software, follow the Sybase installation instructions in the *Sybase Adaptive Server Enterprise Installation Guide*. When the Sybase Installer displays the Configure New Server screen, select the Configure new Adaptive Server and Configure new XP Server check boxes and proceed with the installation.

2. When the final installer screen appears, select the Yes, restart my computer radio button and click Finish.

    Note: By default SYBASE names your database server based on your machine name.

3. After the machine restarts, start the SYBASE Server (Sybase SQLServer) manually.

Creating Sybase Database Devices

The policy database requires at least two database devices, each having at least 250 MB of free space. The first device stores policy data and the other stores the transaction log. You must create these two database devices before you create and configure the policy database.

Note: For better performance, BEA recommends a raw partition as the best configuration for the database device. Obviously, you must allocate sufficient disk space to ensure that the database meets your performance requirements.

To Create Sybase Database devices on the Windows platform, perform the following steps:

1. To start the Sybase Central tool, click Start-->Programs-->Sybase-->Sybase Central Java Edition. The Sybase Central tool opens.

2. Click Tools, select Connect and log in as user sa (no password is required). The Sybase Central screen appears as shown in Figure E-2.
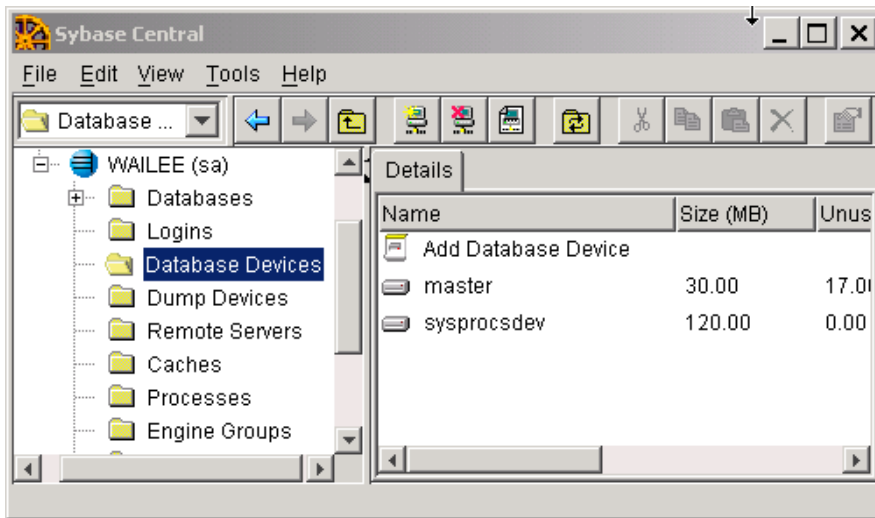
    Note: The user sa does not have a password by default.

Figure E-2 Sybase Central
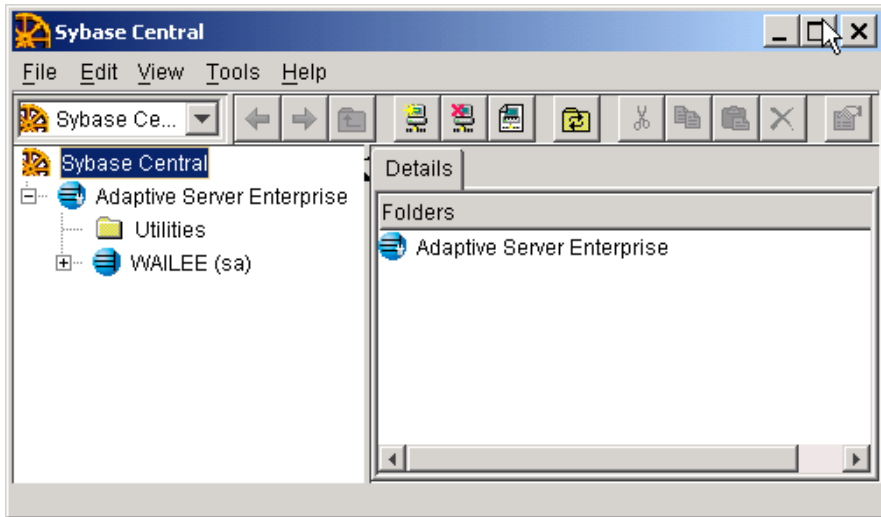
3. Expand the Sybase Database server node in the left pane (shown as WAILEE in Figure E-2, but your server is displayed instead) and click Database Devices. Add Device Database appears in the right pane (see Figure E-3).

Figure E-3 Add Database Device Screen

4. Double click Add Database Devices. The Specify the Name and Path screen appears (see Figure E-4).

Figure E-4 Database Device Name and Path Screen
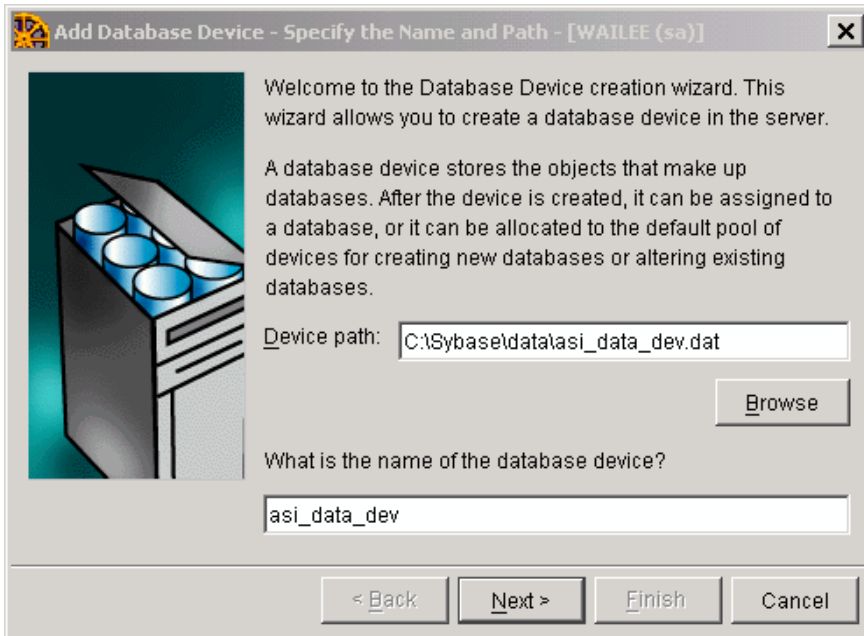
5. Specify the path (for example C:\Sybase\data\asi_data_dev.dat) and the device name (for example asi_data_dev), and click Next. The Add Database Device - Advanced Options screen appears (see Figure E-5).

Figure E-5 Sybase Add Database Device - Advanced Options Screen
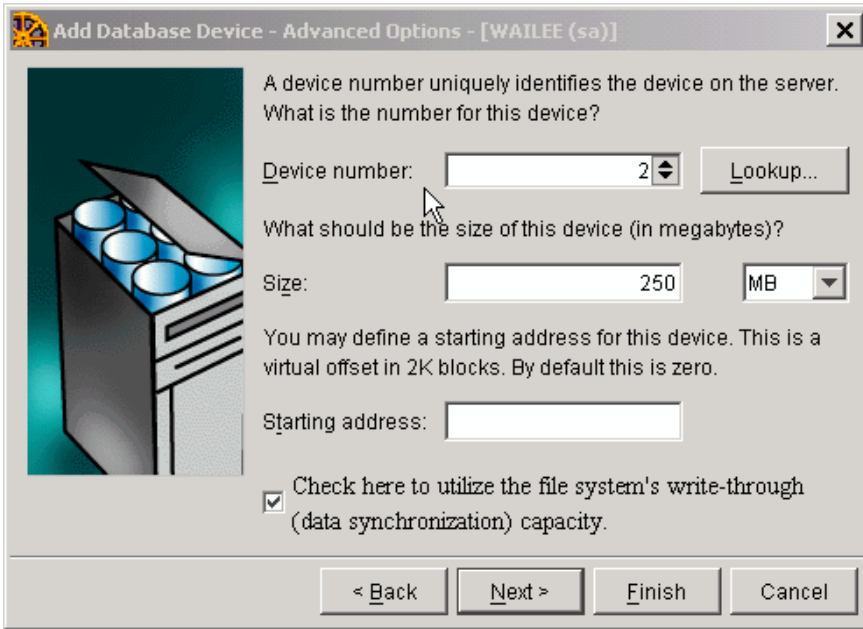
6. Set the Device number to 2, Size to 250 MB, click the check box to on, and click Finish.

7. To add database device `asi_log_dev`, repeat steps 4. to 6., but set the database device name to `asi_log_dev` instead of `asi_data_dev`, and click Finish.

Note: For instructions for creating Sybase database devices on Solaris and Linux platforms, see the Chapter "Managing Adaptive Server Databases" in the *Sybase Adaptive Server Enterprise Configuration Guide* for the particular platform.

Administering the Sybase Policy Database

Table E-2 lists and describes the batch and shell files provided for database administration. The files are located in the following directory:

`bea\ales30-admin\bin\`

where:

- `bea` is the `BEA_HOME` directory.

- ales30-admin is the installation directory for the Administration Server.

Table E-2 Database Administration Utilities

File Name	Used to:
policyexporter.bat policyexporter.sh	Exports policy data. See the *BEA AquaLogic Enterprise Security Policy Managers Guide* for information on how to export policy. The *dbtype* is the type of database, Sybase or Oracle.
install_ales_schema.bat install_ales_schema.sh	Installs the policy database schema. See "Installing the Policy Database Schema" on page 5-1 for information on how to install the database schema.
uninstall_ales_schema.bat uninstall_ales_schema.sh	Uninstall the policy database schema from the database server. The parameters for this script are the same as the install_ales_schema script.

Before running these scripts with a Sybase database, you need to ensure the following setup steps are completed:

- The current path (.) is in your PATH environment.

- Ensure that the SYBASE environmental variable is set.

- In Windows, ensure that PATH includes %SYBASE%\OCS-12_5\bin and %SYBASE%\OCS-12_5\dll.

- In Solaris, ensure that PATH includes $SYBASE/OCS-12_5/bin and that LD_LIBRARY_PATH includes $SYBASE/OCS-12_5/lib.

- Ensure you can connect to the Sybase database server using the isql command (the name of the database server, login ID and password).

Backing Up a Sybase Database

BEA strongly recommends that you backup your original policy database regularly. A database backup is always recommended before you uninstall or re-install the policy database. You may need to contact your database or system administrator to assist with this process. Backups should be done on a regularly scheduled basis.

If you have an existing backup procedure in place, you may choose to run it. Otherwise, follow these steps:

1. Login to your Sybase database server as the system administrator, database operator, or database owner.

   The database owner is not the same as the policy owner.

2. Backup the transaction log by using the Sybase `dump transaction` command.

3. Backup the database by using the Sybase `dump database` command.

Note: See your Sybase documentation for further information on using these commands.

Appendix F: Manual Database Setup Steps

Overview

Before running the ALES installation program, you must create a policy database and ALES user. If you choose not to accomplish this using the DBConfig tool, you may do so manually. This appendix describes the manual steps in the following sections:

Oracle

1. To login to the Oracle database server as a database administrator, enter:

   ```
   sqlplus dba/password@ASERVER
   ```

   where:

   dba — username you use to access the database

   password — database administrator password

   ASERVER — name of the Oracle service (as defined in your `tnsnames.ora` file).

2. To create the policy database, enter the following commands at the SQL> prompt:

```
SQL>connect sys as sysdba
SQL>create tablespace DATA datafile 'C:/Oracle/oradata/ASI/data.dbf'
size 10M autoextend on next 1M MAXSIZE 250M;
```

3. To create a ASI role, enter:

```
SQL> create role asi_role;
SQL> grant create session to asi_role;
SQL> grant create table to asi_role;
SQL> grant create sequence to asi_role;
SQL> grant create trigger to asi_role;
```

where: *asi_role* is the new role.

This automatically uses the default tablespaces generated when Oracle was installed, but you can specify and use any tablespaces.

4. To create the ALES user, enter:

```
SQL> create user username identified by password
SQL> default tablespace DATA quota unlimited on DATA;
```

where:

> *username* — name to assign to the new ALES user
>
> *password* — password to assign to the new user account
>
> *unlimited* — size of the tablespace (shown here as set to unlimited).

5. To grant the ASI role with the necessary privileges to the ALES user, enter:

```
conn sys as sysdba;
grant asi_role to username;
commit;
```

In this case, you grant SELECT permission to the new ALES user. The Oracle database server does not allow you to grant the permission to the *asi_role*. ALES uses this dynamic view to check whether one of its tables is currently being accessed. Therefore, the SELECT permission is required.

6. Exit SQLplus.

After performing these steps, the Administration Server may be installed as described in .

Sybase

To install ALES with Sybase, you must first create the policy database and a ALES user account.

Note: BEA strongly recommends that you not use the `dbo` of the policy database as the policy owner. This requires additional database configuration that is beyond the scope of this guide.

Please refer to "Creating Sybase Database Devices" on page E-4 if you have not already created the required database devices `asi_data_dev` and `asi_log_dev` as shown in this section.

To set up a policy database and the ALES user, perform these steps:

1. Log in as the System Administrator.

2. At the command prompt, enter: `isql -Usa -S server_name`

   where `server_name` is the database server name.

3. Enter the following commands:

   ```
   1>use master
   2>go
   1>create database database_name on asi_data_dev = 250
   log on asi_log_dev = 250
   2>go
   ```

   where

   `database_name` — name of the new database

   `asi_data_dev` — data device name

   `asi_log_dev` — log device name

   Note: You may use a larger minimum database size if needed.

4. To set the database options, type the following commands at the `isql` command prompt:

   ```
   1>use master
   2>go
   1>sp_dboption sspolicy, "select into/bulkcopy", true
   2>go
   1>sp_dboption sspolicy, "abort tran on log full", true
   2>go
   1>sp_dboption sspolicy, "trunc log on chkpt", true
   2>go
   1>sp_dboption sspolicy, "trunc. log on chkpt.", true
   2>go
   ```

   For more information on the `sp_dboption` system procedure, see *Sybase Adaptive Server Enterprise Reference Manual: Procedures*.

> **Note:** For development databases, set the `trunc log on chkpt` option to *false* if periodic dump transactions are not required. For production databases, set this option to *true* to back up and truncate the database and transaction logs.

5. To create the ASI Database Login ID, enter the following at the `isql` command prompt:

```
1>use master
2>go
1>sp_addlogin asi, password, database_name, null, "asi login"
2>go
```

where:

password — ALES user password, at least six alphanumeric characters or other characters allowed by Sybase

database_name — name of the ALES database. If an `asi` login already exists, you must use the `sp_modifylogin` command to set its default database to *database_name*.

6. To create the ALES user, enter the following at the `isql` command prompt:

```
1>use sspolicy
2>go
1>sp_adduser asi
2>go
```

7. To grant permissions to the ALES user, enter the following at the `isql` command prompt:

```
1>use sspolicy
2>go
1>grant all to asi
2>go
```

After performing these steps, the Administration Server may be installed as described in .

Microsoft SQL Server

To install ALES with Microsoft SQL Server, you must first create the policy database and a ALES user account. This section describes how to do this.

Note: Microsoft SQL Server JDBC drivers are not shipped with ALES. ALES uses the MSSQL 2005 JDBC driver for connectivity to both MSSQL 2000 and MSSQL 2005. You can find this driver on the Microsoft download site.

Perform the following steps:

1. From the Window's **Start** menu, select **Programs->Microsoft SQL Server-> Enterprise Manager**.

2. From the **File** menu, select **Action->New Database**. Then enter the new database name and a collation name that creates the database in case-sensitive mode.

   Figure 5-1 shows that a database named `asiadmin` has been created.

Figure 5-1 Adding a Microsoft SQL Database
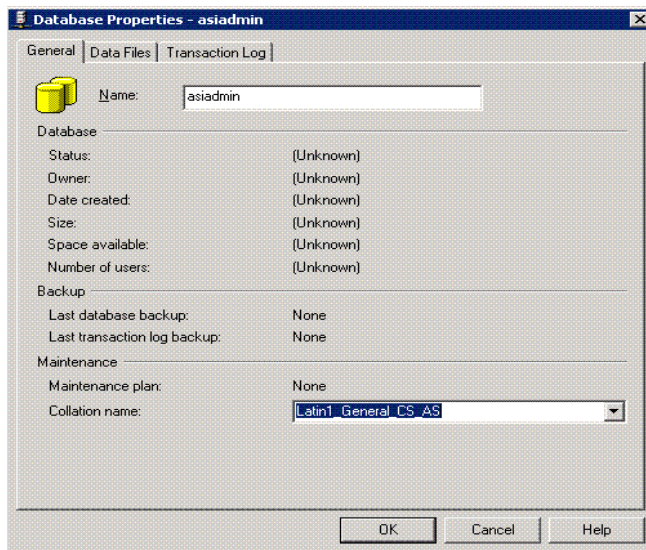
3. In the Enterprise Manager left pane, right-click **Logins** and select **New Login**. This opens the the **Login Properties** dialog box.

4. In the **Name** field, enter a name for the new ALES user. Then select the **SQL Server Authentication** radio button and enter the desired password. Finally, select the new database from the **Database** dropdown field.

Figure 5-2 Login Properties Dialog Box
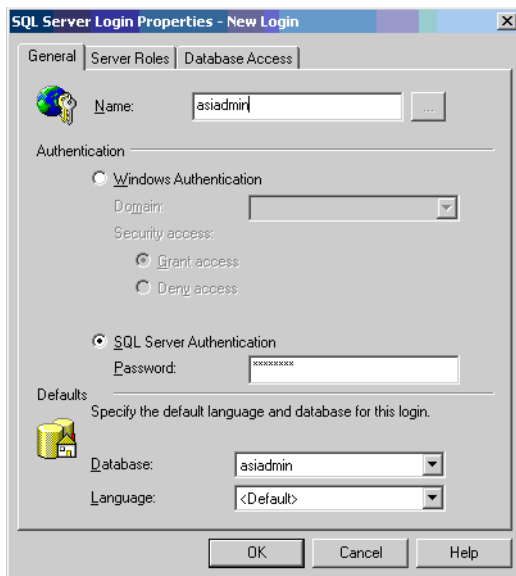
5. On the **Database Access** tab, select the **Permit** checkbox for the new database/user. Then select the **db_owner** checkbox in the lower box and click **OK**.

Figure 5-3 Database Access Dialog Box
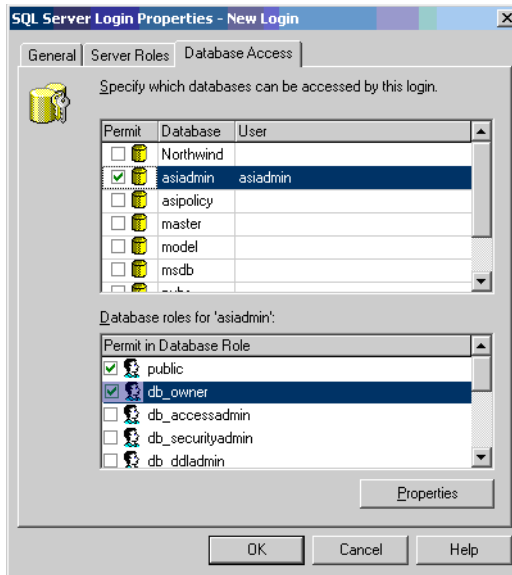
6. Under the **Database** folder in the Enterprise Security Manager's left pane, right-click the new database and select **Properties** from the context menu.

7. On the **Permissions** tab, make sure the user has the proper permissions on (Create Table, Create View, and Create Default).

After performing these steps, the Administration Server may be installed as described in "Installation" on page 4-1.

PointBase 5.1

To install ALES with PointBase 5.1, you must first create the policy database and a ALES user account. This section describes how to do this.

To create the database and ALES user, perform the following steps:

1. Start the PointBase database using the startPointbase.cmd/sh script located in *Weblogic_Home*/common/eval/pointbase/tools.

2. Start the PointBase Console using the `startPoinyBaseConsole.cmd/sh` script located in *Weblogic_Home*`/common/eval/pointbase/tools`.

3. In the **Connect to Database** dialog box, do the following:

   a. Modify the JDBC URL as follows:

   `jdbc:pointbase:server://<server>/<database_name>`

   b. Enter the desired ALES username and password.

   c. Select the **Create new database** radio button and click **OK**.

Figure 5-4 Confirming the PointBase Configuration Settings
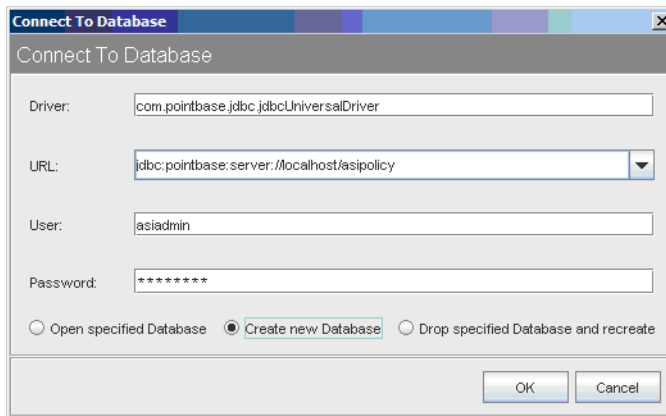
Make sure the database is up when running the ALES installer, because the installer connects to the database and installs ALES-related tables.

After performing these steps, the Administration Server may be installed as described in "Installation" on page 4-1.

DB2 Universal DB Enterprise Server 9.1

To install ALES with DB 2, you must first create the policy database and a ALES user account. This section describes how to do this.

To create the database and ALES user, perform the following steps:

1. Use the DB2 Control Centre to create a database for ALES or run the following SQL command:

```
CREATE DATABASE ALES AUTOMATIC STORAGE YES ON 'D:\' DBPATH ON 'D:\' USING
CODESET GBK TERRITORY CN COLLATE USING SYSTEM PAGESIZE 16384;
```

   Notes:

   – Specify the path information appropriate to your environment.

   – the PAGESIZE must be 16384 or greater.

2. Increase the database configuration parameter (`applheapsz`) to allow a larger application heap (from 256 to 512). The step also can be done by DB2 Control Centre.

3. Create a new user for the database. This user must be based on a system account. On Windows, for example, the Windows user is selected when creating the new database user.

   Note: The password of the system account must satisfy DB2 requirements (such as a combination of numbers and letters) or creation of the DB user will fail.

After performing these steps, the Administration Server may be installed as described in "Installation" on page 4-1.