Oracle® Retail Back Office

Installation Guide

Release 13.1.5

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ORACLE®

Oracle Retail Back Office Installation Guide, Release 13.1.5

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Value-Added Reseller (VAR) Language

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Preface

This Installation Guide describes the requirements and procedures to install this Oracle Retail Back Office, and the optional Labels and Tags module, release.

Audience

This Installation Guide is written for the following audiences:

- Database Administrators (DBA)
- System analysts and designers
- Integrators and implementation staff

Related Documents

For more information, see the following documents in the Oracle Retail Back Office Release 13.1.5 documentation set:

- *Oracle Retail Back Office Release Notes*
- *Oracle Retail Back Office User Guide*
- *Oracle Retail Strategic Store Solutions Configuration Guide*
- *Oracle Retail Strategic Store Solutions Implementation Guide*
- *Oracle Retail Strategic Store Solutions Licensing Information*

Customer Support

To contact Oracle Customer Support, access My Oracle Support at the following URL:

`https://support.oracle.com`

When contacting Customer Support, please provide the following:

- Product version and program/module name
- Functional and technical description of the problem (include business impact)
- Detailed step-by-step instructions to re-create
- Exact error message received
- Screen shots of each step you take

Review Patch Documentation

When you install the application for the first time, you install either a base release (for example, 13.1) or a later patch release (for example, 13.1.5). If you are installing the base release, additional patch, and bundled hot fix releases, read the documentation for all releases that have occurred since the base release before you begin installation. Documentation for patch and bundled hot fix releases can contain critical information related to the base release, as well as information about code changes since the base release.

Oracle Retail Documentation on the Oracle Technology Network

Documentation is packaged with each Oracle Retail product release. Oracle Retail product documentation is also available on the following Web site:

http://www.oracle.com/technology/documentation/oracle_retail.html

(Data Model documents are not available through Oracle Technology Network. These documents are packaged with released code, or you can obtain them through My Oracle Support.)

Documentation should be available on this Web site within a month after a product release.

Conventions

The following text conventions are used in this document:

Convention	Meaning
boldface	Boldface type indicates graphical user interface elements associated with an action, or terms defined in text or the glossary.
italic	Italic type indicates book titles, emphasis, or placeholder variables for which you supply particular values.
`monospace`	Monospace type indicates commands within a paragraph, URLs, code in examples, text that appears on the screen, or text that you enter.

1

Preinstallation Tasks

This chapter describes the requirements that must be met before the application can be installed.

> **Note:** The Oracle stack and IBM stack are the configurations that are supported for this release. The components required for each stack are listed in this chapter. For each component, the supported products and versions are included. While Back Office may work in other configurations, these are the configurations that are supported for this release.

Patch Contents

Patch releases include all defect fixes that have been released through bundled hot fix releases since the last patch release. Patch releases may also include new defect fixes and enhancements that have not previously been included in any bundled hot fix release. This patch release contains all fixes from the following bundled hot fix releases:

- Oracle Retail Back Office 13.1.4.1
- Oracle Retail Back Office 13.1.4.2
- Oracle Retail Back Office 13.1.4.3
- Oracle Retail Back Office 13.1.4.4

Check for the Current Version of the Installation Guide

Corrected versions of Oracle Retail installation guides may be published whenever critical corrections are required. For critical corrections, the rerelease of an installation guide may not be attached to a release; the document will simply be replaced on the Oracle Technology Network Web site.

Before you begin installation, check to be sure that you have the most recent version of this installation guide. Oracle Retail installation guides are available on the Oracle Technology Network at the following URL:

http://www.oracle.com/technology/documentation/oracle_retail.html

An updated version of an installation guide is indicated by part number, as well as print date (month and year). An updated version uses the same part number, with a higher-numbered suffix. For example, part number E123456-**02** is an updated version of an installation guide with part number E123456-**01**.

If a more recent version of this installation guide is available, that version supersedes all previous versions. Only use the newest version for your installation.

Determine the Back Office Distribution

This document covers installation of two different product releases:

1. Oracle Retail Back Office (ORBO): Back Office application without the Labels and Tags module.
2. Oracle Retail Labels and Tags (ORLAT): Back Office application plus the Labels and Tags module.

Note: The Labels and Tags module requires AccessVia software.

The Oracle Retail Labels and Tags installation contains the full Oracle Retail Back Office installation. You should have one of the above distributions, but not both.

Check Supported Oracle Retail Merchandising Version

The integration with Oracle Retail Merchandising requires release 13.1.5 of the following products:

- Oracle Retail Merchandising System
- Oracle Retail Price Management
- Oracle Retail Sales Audit

Check Supported Database Server Requirements

Table 1–1 lists the general requirements for a database server running Oracle Retail Back Office and the versions supported for this release.

Table 1–1 Database Server Requirements

Supported on	Oracle Stack	IBM Stack
Operating System	■ Oracle Linux 2 Update 2 (OL 5.2) for Linux x86-64 ■ Red Hat Enterprise 5.2 for Linux x86-64	IBM IRES version 2.1.5 SUSE Linux Enterprise Server 9 Patch Level 3
Database	Oracle Database 11gR2 Enterprise Edition version 11.2.0.1 (64-bit)	IBM DB2 version 9.5 with fixpack 3b (64-bit)

Required Settings for Database Installation

The following settings must be made during database creation:

- The database must be set to UTF8.
- When using the Oracle 11g database server, make the following changes to the system settings:

```
ALTER SYSTEM SET NLS_NUMERIC_CHARACTERS = '.,-' SCOPE=SPFILE;
ALTER SYSTEM SET NLS_DATE_FORMAT ='YYYY-MM-DD' SCOPE=SPFILE;
ALTER SYSTEM SET NLS_TIMESTAMP_FORMAT = 'YYYY-MM-DD HH24:MI:SS.FF'
    SCOPE=SPFILE;
```

Secure JDBC with Oracle 11g Database

Creating the Oracle wallet and certificate for the server requires that the Advanced Security options are installed with the database server. For more information, see "Secure the JDBC for the Oracle 11g Database" in Chapter 2.

Check Supported Application Server Requirements

Table 1–2 lists the general requirements for an application server capable of running Oracle Retail Back Office and the versions supported for this release.

Table 1–2 Application Server Requirements

Supported on	Oracle Stack	IBM Stack
Operating System	Windows 2003 Server	IBM IRES version 2.1.5 SUSE Linux Enterprise Server 9 Patch Level 3
J2EE Application Server	Oracle Application Server 10g Enterprise Edition version 10.1.3.5 **Note:** This release of Back Office is only supported in a managed OC4J instance as part of OracleAS 10g. It is not supported on OC4J standalone.	IBM WebSphere version 6.1.0.35
J2EE Application Server JVM	Oracle JRE 5 Update 22	IBM JRE 1.5.22
Messaging Provider	included in Oracle Application Server	IBM WebSphere MQ 6.0.2.10
System Management Agent	OEM 10.1.3.5	IBM WebSphere Admin Console 6.1.0.35
Reports publisher	Oracle Business Intelligence Publisher for Retail Back Office, version 10.1.3.4 **Note:** This software is included in the Back Office distribution.	Oracle Business Intelligence Publisher for Retail Back Office, version 10.1.3.4 **Note:** This software is included in the Back Office distribution.

Note: Back Office does not support a clustered environment.

Table 1–3 lists the general requirements for Labels and Tags and the versions supported for this release. This software is only needed if Back Office with the Labels and Tags module is being installed.

Table 1–3 Labels and Tags Requirements

Supported on	Versions Supported
Print Engine for Labels and Tags	AccessVia 7.5 (includes the GD graphics library 2.0.0 and Xerces 2.7.0)
Client software	Oracle Instant Client 11.1.0.7 (includes basic_11.1.0.7 + odbc11.1.0.7)

Install Required Patches for the Oracle Stack

To use Oracle Application Server version 10.1.3.5 with an Oracle 11g database, you must use the OPatch utility to apply a patch to Oracle Application Server. Download the patches from My Oracle Support:

https://support.oracle.com

1. Download and install OPatch version 10.1.0.0.0 for your platform. The patch number is 6880880.
2. Use OPatch to apply patch number 5649850.

Check for SSL Certificate

Oracle Retail Back Office is accessed through a secure HTTP connection. The installation of an SSL Certificate is required on your application server. If the certificate is not installed, warnings are displayed when trying to access Oracle Retail Back Office.

For information on installing the SSL Certificate, refer to your application server documentation.

Check that the Fonts Needed for Reports are Installed

To correctly export reports from Oracle Retail Back Office to a PDF file, any fonts used in the PDF must exist in the application server JVM. To install fonts to the application server:

1. Stop the application server.
2. Copy any needed fonts to the library folder of the JRE used by the application server. The following are examples of the path name to the folder:
   - For Oracle Application Server:

     <Oracle Application Server installation directory>/jdk/jre/lib/fonts

   - For IBM WebSphere:

     <IBM WebSphere installation directory>/AppServer/java/jre/lib/fonts
3. Start the application server.

Check Java Key Store Requirement

Oracle Retail Back Office requires that a Java Key Store is created prior to installation. A Key Store connector RAR file is required to enable the connection between Oracle Retail Back Office and the Key Store. During installation, the RAR file must be deployed to the application server. Specific information for configuring the Key Store and deploying the RAR file is entered on the Security Setup: Key Store installer screens.

If you are using the RSA Key Manager, you must use version 2.1.3 and install the Java Cryptography Extension Unlimited Strength Jurisdiction Policy Files 5.0.

- For the Oracle stack using Windows, see "Install the Java Cryptography Extension (JCE)" in Chapter 2.
- For the IBM stack, see "Install the Java Cryptography Extension (JCE)" in Chapter 4.

WARNING: A simulated key management package is bundled with Oracle Retail Back Office. It is not compliant with either the Payment Application Data Security Standard (PA-DSS) or Payment Card Industry Data Security Standard (PCI-DSS). It is made available as a convenience for retailers and integrators. If you use the simulated key manager, you will not be PCI-DSS compliant. Therefore, the simulated key manager should be replaced with a compliant key manager.

Hardware Requirements

Specific hardware requirements for the machines running Oracle Retail Back Office depend on variables including the number of users and other applications running on the same machine.

Please note the following about the hardware requirements:

- The CPU requirement depends on variables including the operating system and middleware selected.
- Memory requirements and performance depend on variables including the number of active promotions and best deal calculations when Back Office is installed on the same machine as the Point-of-Service server.
- Disk size can vary based on the operating system and middleware requirements as well as the amount of data storage needed. Data storage depends on variables including the number of items and promotions defined, data retention period, and so on.

You need to determine your hardware requirements, based on the variables mentioned here, as well as any additional variables specific to your environment. For more information, contact Customer Support.

Check Supported Client PC and Web Browser Requirements

The general requirements for the client system include the following:

- Adobe Acrobat Reader or another application capable of rendering Portable Data Format (PDF) files

The following Web browser is supported for this release:

- Microsoft Internet Explorer 6

Payment Application Data Security Standard

This release of Oracle Retail Back Office complies with the requirements of the Payment Application Data Security Standard (PA-DSS).

The following document is available through My Oracle Support. Access My Oracle Support at the following URL:

https://support.oracle.com

Oracle Retail Strategic Store Solutions Security Implementation Guide **(Doc ID: 858613.1)**

This guide provides information on the PA-DSS requirements.

2

Installation of the Oracle Stack on Windows

Before proceeding, you must install the database and application server software. If you are installing Back Office with Labels and Tags, you must also install the AccessVia software. For a list of supported versions, see Chapter 1.

During installation, the Back Office database schema will be created and the Back Office application will be deployed to an OC4J instance within the OracleAS 10g installation. The Java JDK that is included with the Oracle Application Server (under `%ORACLE_HOME%\jdk`) will be used to run the application.

Note: J2EE_HOME refers to the directory `%ORACLE_HOME%\j2ee\<instancename>`

Create a New OC4J Instance for Back Office

You can skip this section if you are redeploying to an existing OC4J instance.

The Back Office application must be deployed to its own dedicated OC4J instance. For instructions on how to create a new OC4J instance, see Adding and Deleting OC4J Instances in the Reconfiguring Application Server Instances chapter of the *Oracle Application Server Administrator's Guide*.

To create a new OC4J instance:

1. Log onto the server, which is running your OracleAS 10g installation, as the user who owns the OracleAS 10g installation. Set your `ORACLE_HOME` environment variable to point to this installation. You must use forward slash file separators when setting this variable.
2. Choose a name for the new OC4J instance. In the remainder of this installation guide, `<orbo-inst>` is used for the name.
3. Create this OC4J instance as documented in the *Oracle Application Server Administrator's Guide*, for example:

   ```
   %ORACLE_HOME%\bin\createinstance -instanceName <orbo-inst>
   -groupName <group name>
   ```

   Including a group name is optional.

Note: When prompted for the oc4jadmin password, provide the same administrative password you gave for the OracleAS 10g installation. All OC4J instances running Oracle Retail applications must have the same oc4jadmin password.

Note: The `jms` and `rmi` port numbers should be set so that the numbers do not overlap between all the instances in your configuration. Also, a specific port number should be set rather than a range of port numbers. If a range of port numbers is specified, the same port number may not be used each time the instance is started.

The port numbers are defined in the `$ORACLE_HOME\opmn\conf\opmn.xml` file. The following is an example definition of the port numbers in that file.

Port number definitions for the home instance:

```
<port id="rmi" range="12401-12401"/>
<port id="jms" range="12601-12601"/>
```

Port number definitions for the Back Office instance:

```
<port id="rmi" range="12403-12403"/>
<port id="jms" range="12603-12603"/>
```

4. Start the OC4J instance. You can do this through the Enterprise Manager web interface, or on the command line using the opmnctl utility:
   a. `%ORACLE_HOME%\opmn\bin\opmnctl start`
   b. `%ORACLE_HOME%\opmn\bin\opmnctl startproc process-type=<orbo-inst>`
5. Verify that the OC4J instance was fully started. If you are using the Enterprise Manager web interface, the instance should have a green arrow indicating that it is running. On the command line, verify that the instance has a status of "Alive".

   `%ORACLE_HOME%\opmn\bin\opmnctl status`

   If you are unable to start the OC4J instance after several attempts, try increasing the startup timeouts in `%ORACLE_HOME%\opmn\conf\opmn.xml`. If that does not help, consult the Oracle Application Server documentation for further assistance.

Create the Database Schema Owner and Data Source Connection Users

The following recommendations should be considered for schema owners:

- Database administrators should create an individual schema owner for each application, unless the applications share the same data. In the case of Oracle Retail Back Office and Point-of-Service, the database schema owner are the same because these applications share a database.
- The schema owners should only have enough privileges to install the database.

For information on the best practices for passwords, see Appendix H.

To create the database schema owner and data source connection users:

1. Log in using the database administrator user ID.
2. Create a role in the database to be used for the schema owner.

   `create role <schema_owner_role>;`

3. Grant the privileges, shown in the following example, to the role.

```
grant CREATE TABLE, CREATE VIEW, CREATE SEQUENCE, CREATE PROCEDURE, ALTER
SESSION, CONNECT, SELECT_CATALOG_ROLE to <schema_owner_role>;
```

4. Create a role in the database to be used for the data source user.

```
create role <data_source_role>;
```

5. Grant the privileges, shown in the following example, to the role.

```
grant CONNECT, CREATE SYNONYM, SELECT_CATALOG_ROLE to
<data_source_role>;
```

6. Create the schema owner user in the database.

```
CREATE USER <schema_username>
IDENTIFIED BY <schema_password>
DEFAULT TABLESPACE users
TEMPORARY TABLESPACE TEMP
QUOTA UNLIMITED ON users;
```

7. Grant the schema owner role to the user.

```
GRANT <schema_owner_role> to <schema_username>;
```

8. Create the data source user.

```
CREATE USER <data_source_username>
IDENTIFIED BY <data_source_password>
DEFAULT TABLESPACE users
TEMPORARY TABLESPACE TEMP
QUOTA UNLIMITED ON users;
```

9. Grant the data source role to the user.

```
GRANT <data_source_role> to <data_source_username>;
```

The installer grants the data source connection user access to the application database objects. If you choose **No** on the Manual Deployment Option screen, you need to grant the access after the installer completes. For more information, see "Manual Deployment of the Back Office Application".

Expand the Back Office Distribution

To extract the Back Office files:

1. Extract the `ORBO-13.1.5.zip` (or `ORLAT-13.1.5.zip`) file from the Back Office 13.1.5 distribution zip file.
2. Create a new staging directory for the Back Office application distribution (`ORBO-13.1.5.zip` or `ORLAT-13.1.5.zip`) file, for example, `c:\tmp\j2ee\orbo-inst\orbo-staging`.

> **Note:** The staging area (*<staging_directory>*) can exist anywhere on the system. It does not need to be under `ORACLE_HOME`.

3. Copy or upload ORBO-13.1.5.zip (or ORLAT-13.1.5.zip) to *<staging_directory>* and extract its contents. The following files and directories should be created under *<staging_directory>*\ORBO-13.1.5:

```
ant\
ant-ext\
antinstall\
backoffice\
connectors\
external-lib\
installer-resources\
.postinstall.cmd
.postinstall.sh
.preinstall.cmd
.preinstall.sh
.preinstall-oas.cmd
.preinstall-oas.sh
.preinstall-was.cmd
.preinstall-was.sh
antinstall-config.xml
build.xml
build-common.xml
build-common-backoffice.xml
build-common-oas.xml
build-common-was.xml
build-common-webapps.xml
build-test.xml
checkdeps.cmd
checkdeps.sh
install.cmd
install.sh
jmsconfiguration.dat
prepare.xml
retail-OCM.zip
```

For the remainder of this chapter, *<staging_directory>*\ORBO-13.1.5 is referred to as *<INSTALL_DIR>*.

Obtain the Third-Party Library File Required by Back Office

The Back Office application uses the Pager Tag Library from JSPTags. You must download the pager-taglib.jar file from the JSPTags website before running the Back Office application installer.

1. Download the pager-taglib-2.0.war file from the JSPTags website: http://jsptags.com/tags/navigation/pager/download.jsp
2. Extract the pager-taglib.jar file from the WEB-INF\lib subdirectory in the pager-taglib-2.0.war file. Copy pager-taglib.jar into *<INSTALL_DIR>*\external-lib\.

Set Up to Integrate with the Central Office JMS Server

On the Central Office JMS Server Integration installer screen, you select whether Back Office will be integrated with the Central Office JMS server. See Figure A–25 in Appendix A.

If **Yes** is selected on the screen, the Central Office application must be running in order for the Back Office files to be installed correctly.

Installation Options

During installation, there are options that enable you to select whether the installer completes parts of the installation or if you want to complete those parts manually. For information on the available options, see the following sections:

- "Database Install Options"
- "Manual Deployment of the Back Office Application"
- "Install Parameters"

For information on manually deploying the Key Store, see "Manual Deployment of the Key Store". For information on loading the templates for Labels and Tags, see "Load Templates for Labels and Tags".

Database Install Options

The database schema must be created and populated before configuring the application server. On the Database Install Options screen, you select whether the installer creates and populates the database schema and seed data or if you want to do this manually.

- If you choose Yes, you do not need to perform any further steps. The installer will create and populate the database. This is the default selection on the screen.
- If you choose No, the installer does not create and populate the database schema.

> **Note:** You must populate the database schema before running the installer. Otherwise, the installer will fail when configuring security.

To create and populate the database schema:

1. Change to the `<INSTALL_DIR>\backoffice\db` directory.
2. Set the JAVA_HOME and ANT_HOME environment variables. You can use the JDK and Ant that are installed with the Oracle Application Server.

   ```
   JAVA_HOME=%ORACLE_HOME%\jdk; ANT_HOME=<INSTALL_DIR>\ant;
   export JAVA_HOME ANT_HOME
   ```

3. Add `$JAVA_HOME\bin` and `$ANT_HOME\bin` to the front of the PATH environment variable.

   ```
   PATH=$JAVA_HOME\bin:$ANT_HOME\bin:$PATH; export PATH
   ```

4. Expand the `backofficeDBInstall.jar` file.

   ```
   jar -xvf backofficeDBInstall.jar
   ```

5. Modify `db.properties`.
   a. Uncomment the Oracle properties and comment out the properties for the other vendors such as DB2 and MS-SqlServer.

b. Set the following properties with your database settings. The values to be set are shown in bold in the examples.

Set the hash algorithm, for example, to SHA-256.

```
# Hash Algorithm
inst.hash.algorithm=HASH_ALGORITHM
```

Enter the values for the users shown in bold in the following example:

```
inst.app.admin.user=my-pos-admin-user
inst.app.admin.password-encrypted=my-encrypted-pos-admin-password

db.user=DB_USER_ID
db.password-encrypted=DB_PASSWORD_ENCRYPTED

db.owner.user=DB_OWNER_USER_ID
db.owner.password-encrypted=DB_OWNER_PASSWORD_ENCRYPTED
```

The ant target will prompt for the passwords. Run the following ant target to encrypt the passwords:

```
ant -f db.xml encrypt-webapp-passwords
```

Enter the values for the URL used by the Back Office application to access the database schema. See Appendix E for the expected syntax:

```
db.jdbc-url=jdbc:oracle:thin:@DB_HOST_NAME:1521:DB_NAME
```

c. Set the `ora.home.dir` property to point to your Oracle Application Server installation.

d. Set the host name and port number for the `parameter.apphost` property to point to your Back Office installation.

e. In the `parameters.classpath` property, replace the semicolons used as separators with colons. This is needed to run with UNIX systems.

f. To enable VAT functionality, uncomment the tax.enableTaxInclusive property in the tax properties section.

6. Uncomment the following properties in `jndi.properties`. This file is in the `jndi` directory.

```
java.naming.factory.initial=com.evermind.server.rmi.RMIInitialContextFactory
java.naming.security.principal=<user>
java.naming.security.credentials=<user>
```

7. Run one of the available Ant targets to create the database schema and load data.

- load_sql: creates tables and other objects; calls seed_data and load_reports
- seed_data: loads seed data
- load_reports: loads report data

For example: `ant load_sql`

To specifically load the report data, use the following command:
`ant -f db.xml load_reports`

Secure the JDBC for the Oracle 11g Database

On the Enable Secure JDBC screen, you select whether secure JDBC will be used for communication with the database. See Figure A–8.

- If **Yes** is selected, the installer sets up the secure JDBC.
- If **No** is selected and you want to manually set up the secure JDBC after the installer completes, see Appendix I.

Install the Java Cryptography Extension (JCE)

If you are using the RSA Key Manager, you must update the security for your JRE. You need to obtain version 5.0 of the Java Cryptography Extension (JCE) Unlimited Strength Jurisdiction Policy Files.

1. Make a backup copy of `local_policy.jar` and `US_export_policy.jar`.

   ```
   cd %ORACLE_HOME%\jdk\jre\lib\security
   copy local_policy.jar local_policy.jar.bak
   copy US_export_policy.jar US_export_policy.jar.bak
   ```

2. Download version 5.0 of the JCE.
   a. Go to the following website:

      `http://java.sun.com/javase/downloads/index_jdk5.jsp`

   b. Under Other Downloads, find **Java Cryptography Extension (JCE) Unlimited Strength Jurisdiction Policy Files 5.0**.
   c. Click **Download**.
   d. Follow the instructions to download the JCE.
3. Copy the jar files into the JRE security directory. The files are bundled as `jce_policy-1_5_0.zip`.

Configure AccessVia for Labels and Tags

If you are installing Back Office with Labels and Tags, you must install and configure the AccessVia software before running the Back Office installer. See Chapter 3.

The `dJava.jar` and `dsign.ini` files required for AccessVia are found in the following directories:

- The `dJava.jar` file is found in the following directory:

  ```
  <INSTALL_DIR>\backoffice\lib\thirdparty\accessvia7.5\
  accessvia_WIN\accessvia\windows\dJava.jar
  ```

- The `dsign.ini` file is found in the following directory:

  ```
  <INSTALL_DIR>\backoffice\lib\thirdparty\accessvia7.5\
  accessvia_WIN\accessvia\windows\test\dsign.ini
  ```

Run the Back Office Application Installer

An OC4J instance must be configured and started before you can run the Back Office application installer. This installer will configure and deploy the Back Office application.

Note: To see details on every screen and field in the application installer, see Appendix A.

---

1. Change to the *<INSTALL_DIR>* directory.
2. Set the ORACLE_HOME and JAVA_HOME environment variables.

   ORACLE_HOME should point to your OracleAS 10g installation, for example, `C:\Oracle\10.1.3.5\OracleAS_1`.
   JAVA_HOME should point to `%ORACLE_HOME%\jdk`.

   Note: The installer is not compatible with versions of Java earlier than 1.5.

   ---

3. If you are using an X server such as Exceed, set the DISPLAY environment variable so that you can run the installer in GUI mode (recommended). If you are not using an X server, or the GUI is too slow over your network, unset DISPLAY for text mode.

   Caution: Password fields are masked in GUI mode, but in text mode your input is shown in plain text in the console window.

   ---

4. Run the install.cmd script. This will launch the installer. After installation is complete, a detailed installation log file is created: `orbo-install-app.<timestamp>.log`.

   Note: The usage details for install.cmd are shown below. The typical usage for GUI mode does not use arguments.

   ```
   install.cmd [text | silent oracle]
   ```

   ---

5. Verify that the installer was able to delete the `%ORACLE_HOME%\jdk\jre\lib\ext\security-360-ora.jar` file. This is a file that is temporarily created by the installer. If the installer was unable to delete the file, you must shut down all OC4J instances, delete the file manually, and start the OC4J instances back up again.

   Note: If the installer is unable to delete this file, it prints a warning that instructs you to delete it manually. This warning also shows up at the end of the installer log file.

Resolving Errors Encountered During Application Installation

If the application installer encounters any errors, it will halt execution immediately. You can run the installer in silent mode so that you do not have to reenter the settings for your environment. For instructions on silent mode, see Appendix C.

For a list of common installation errors, see Appendix F.

Since the application installation is a full reinstall every time, any previous partial installs will be overwritten by the successful installation.

Oracle Configuration Manager

The Oracle Retail OCM Installer packaged with this release installs the latest version of OCM.

The following document is available through My Oracle Support. Access My Oracle Support at the following URL:

https://support.oracle.com

Oracle Retail Oracle Configuration Manager (OCM) Installer Guide **(Doc ID: 835024.1)**

This guide describes the procedures and interface of the Oracle Retail Oracle Configuration Manager Installer that a retailer runs near the completion of its installation process.

OCM Documentation Link

http://www.oracle.com/technology/documentation/oracle_retail.html

Backups Created by Installer

The Back Office application installer will back up modified application server files and directories by renaming them with a timestamp. This is done to prevent the removal of any custom changes you might have. These backup files and directories can be safely removed without affecting the current installation. For example, the file could be named `jms.xml.200605011726`.

Manual Deployment of the Key Store

If you implement a Key Store interface, you can use the rar file to manually deploy the Key Store on the application server.

- To deploy using an ant target:

  1. Copy the following properties into the `ant.install.properties` file:

     ```
     ## Properties from Page:InternalDeployKeyStoreRAR
     input.internal.keystore.rar.deploy.enabled = true
     input.internal.keystore.rar.deploy.name = keystoreconnector
     input.internal.keystore.rar.deploy.file = <INSTALL_DIR>/connectors/
     sim-keystoreconnector-rar.rar
     ```

  2. Run the following ant target:

     ```
     install.cmd ant init keystore-rar-deploy -propertyfile
     ant.install.properties
     ```

- To deploy from the application server console, log in to the application server console and deploy the rar file. The rar file is located at:

  `<INSTALL_DIR>\connectors\sim-keystoreconnector-rar.rar`

Install Database Option

The database must be populated before configuring the application server. On the Install Database Option screen, you select whether the installer completes installation of the database schema and seed data.

- If you chose Yes, you do not need to perform any further steps to populate the database. This is the default selection on the screen.
- If you chose No, the installer did not populate the database schema. If you want to manually populate the database, execute the `ant load_sql` command in the `<INSTALL_DIR>\backoffice\configured-output\db` directory.

Manual Deployment of the Back Office Application

Skip this section if you chose the default option of allowing the installer to complete installation to the application server.

The installer includes the option to configure the application locally and skip deployment to the application server. If this option is chosen, the installer will make the configured application files available under `<INSTALL_DIR>\backoffice\configured-output\`.

If you chose this installer option, you complete the installation by following these steps:

- To deploy using the ant target:

  1. Check that the Key Store JNDI name in the `<orbo-inst>\applib\spring.properties` file matches the JNDI name of the Key Store deployed on the application server.
  2. Update the following property in the `ant.install.properties` file.

     ```
     input.install.to.appserver = true
     ```

  3. Run the following ant target:

     ```
     install.cmd ant init app-ear-deploy -propertyfile ant.install.properties
     ```

- To deploy from the application server console, log in to the application server console and deploy the ear file. The ear file is located at:

  `<INSTALL_DIR>\backoffice\configured-output`

  When deploying the ear file, you should provide the same application name and context root you gave to the installer. These values were stored in the `<INSTALL_DIR>\ant.install.properties` file by the installer for later reference.

Install Parameters

The application parameters must be installed before the Back Office application is fully operational. On the Install Parameters screen, you select whether the installer completes installation of the parameters.

- If you chose Yes, you do not need to perform any further steps to install the parameters. This is the default selection on the screen.
- If you chose No, the installer did not install the parameters. For information on installing the parameters, see "Import Initial Parameters".

Import Initial Parameters

Note: If you did not choose to have the installer set the initial parameters, you must import an initial set of parameters before you can use Oracle Retail Back Office. For more information on parameters, see the *Oracle Retail Strategic Store Solutions Configuration Guide*.

This section provides an overview of the procedures for importing an initial set of parameters. You can import the parameters through the Oracle Retail Back Office user interface or by using an ant target. You only need to use one of the procedures. The procedure for importing parameters through the application user interface is described in more detail in the *Oracle Retail Back Office User Guide*.

These instructions assume you have already expanded the `backofficeDBInstall.jar` file under the `<INSTALL_DIR>` directory as part of the database schema installation earlier in this chapter.

Importing Parameters Through the User Interface

To import the initial parameters through the user interface:

1. Open the Oracle Retail Back Office application in a web browser. The address is provided at the end of the installer output and in the log file.

   ```
   https:\\<host name>:<port number>\<context root>
   ```

2. Log in to the application as any user ID that has full administrative rights.
3. Click the **Admin** tab and then the **Job Manager** subtab. Click the **Available Imports** left navigation link. The Available Imports screen appears.
4. To import the master parameter set, click the **File** link in the Import Parameters for Distribution row. Follow the instructions to import `parameterset.xml` from the `<INSTALL_DIR>\backoffice\db` folder.
5. To import the initial set of Oracle Retail Back Office application parameters, click the **File** link in the Import BackOffice Parameters row. Follow the instructions to import `backoffice.xml` from the `<INSTALL_DIR>\backoffice\db` folder.

Importing Parameters By Using an Ant Target

To import parameters using an ant target:

1. Change to the <*INSTALL_DIR*>\backoffice\configured-output\db directory.
2. Edit the db.properties file. Update the following properties in the "Properties for Parameter Loading" section.
   a. Change ora.home.dir to your installation directory.

      ```
      ora.home.dir=C:\Oracle\10.1.3.5\OracleAS_1
      ```

   b. Change ORA_HOST_NAME to your host name. Change 12401 to your port number.

      ```
      parameters.apphost=ormi:\\ORA_HOST_NAME:12401\BackOffice
      ```

3. Execute the following command:

   ```
   ant load_parameters
   ```

Load Templates for Labels and Tags

To load the templates for Oracle Retail Labels and Tags:

1. Change to the <*INSTALL_DIR*>\backoffice\configured-output\db directory.
2. Run the following command:

   ```
   ant init_labels
   ```

Load Optional Purge Procedures

For information on the procedures provided for purging aged data, see the *Oracle Retail Back Office Operations Guide*.

To load the purge procedures:

1. Log in as the database schema owner, <schema_owner_user>.
2. Run the available Ant target to load the procedures.

   ```
   ant load_purge_procedures
   ```

3. Create a user for running the purge procedures. This user should only have the privileges required to run the purge procedures.

Using the Back Office Application

> **Note:** When you are done installing Back Office, log out and close the browser window. This ensures that your session information is cleared and prevents another user from accessing Back Office with your login information.

After the application installer completes and you have run the initial parameter load, you should have a working Back Office application installation. To launch the application, open a web browser and go to
`https:\\<servername>:<portnumber>\<context root>`

For example, https:\\myhost:8080\backoffice

> **Note:** Before viewing any reports for the first time after Back Office is installed, you must open the store. Opening the store creates data that is needed for Reports functionality to work correctly.

3

Configuring the AccessVia Print Engine for the Oracle Stack on Windows

This document also pertains to Oracle customers who have licensed Oracle Retail Signs in conjunction with Oracle Retail Labels and Tags. The Oracle Retail Labels and Tags product restricts printing not to exceed six square inches. To print a size greater than six square inches, the customer must license Oracle Retail Signs.

In order to use the Labels and Tags functionality of Back Office, you need to install the AccessVia product and configure the AccessVia Print engine.

Before configuring the AccessVia Print engine, you must have completed the following procedures:

- The installation and configuration of all prerequisite software including the AccessVia product and the database server.
- The installation of the database and creation of the database schema.
- The installation of the application server.
- The installation of the printer.

The following libraries are required for using Labels and Tags. For the supported versions, see Chapter 1:

- AccessVia print engine
- Oracle Instant Client
- ODBC libraries
- GD library
- Xerces

Configuring the AccessVia Print engine includes the following tasks:

- "Creating the AccessVia Print Engine .ini File"
- "Configuring the Database for the AccessVia Print Engine"
- "Configuring for Oracle Application Server"
- "Testing the AccessVia Print Engine"
- "Configuring Multiple Printers"

To troubleshoot printing problems, see "Troubleshooting Labels and Tags Problems on the Oracle Stack with Windows".

Creating the AccessVia Print Engine .ini File

The AccessVia Print engine requires an .ini file for configuration. An initial version of this file is found at *<staging_directory>*\backoffice\lib\thirdparty\accessvia7.5\accessvia_WIN\accessvia\windows\test\dsign.ini.

Updates to the .ini file are done as part of the configuration for the application server. For a description and example of this file, see "AccessVia Print Engine .ini File".

Configuring the Database for the AccessVia Print Engine

Because Labels and Tags needs to access data from Back Office, AccessVia requires open database connectivity (ODBC) to the Back Office database. AccessVia stores template information in the following Back Office data tables:

- SGFORM—This table stores templates.
- SGELEM—This table stores template attributes.
- SGSQL—This table stores .zip files of SQL, which fetch template data at the time of printing.
- SGCONFIG—This table stores the paths for .ini files required by AccessVia.

Configuring for Oracle Application Server

For the following steps, *<staging_directory>*\backoffice\lib\thirdparty\accessvia7.5\accessvia_WIN is referred to as *<ACCESSVIA_HOME>*.

To configure for Oracle Application Server:

1. Download Oracle Instant Client version 11.1.0.7.0 from either of the following Oracle Web sites:

   http://www.oracle.com/technology/tech/oci/instantclient/index.html

   http://www.oracle.com/technetwork/indexes/downloads/index.html

   a. Select **Instant Client**.

   b. Download the following zip files and extract the zip files to C:\:

      Basic: instantclient-basic-win32-11.1.0.7.0.zip

      ODBC: instantclient-odbc-win32-11.1.0.7.0.zip

2. Install the Oracle Instant Client ODBC driver. For information on this install, see the Readme file in C:\instantclient_11_1.

   C:\instantclient_11_1\BIN\odbc_install.exe

3. Copy the tnsnames.ora file from *<ACCESSVIA_HOME>*\instantclient_11_1 to C:\instantclient_11_1.

4. Update the database information in the C:\instantclient_11_1/tnsnames.ora file for your configuration.

5. Copy the updated C:\instantclient_11_1\tnsnames.ora file to $ORACLE_HOME\NETWORK\ADMIN.

6. Copy the *<ACCESSVIA_HOME>*\dsign folder to C:\.

7. Create the following environment variables:
   - `ACCESS_VIA = C:\accessvia\windows\test\program`
   - `TNS_ADMIN = C:\instantclient_11_1`
8. Add the environment variables to the path.
9. Add the data source:
   a. From the control panel, select **Administrative Tools**.
   b. Open Data Sources (ODBC).
   c. Select the **System DSN** tab.
   d. Click **Add**.
   e. Use the values entered in the `tnsnames.ora` file. For the user ID, enter the assigned database user name.
   f. Test the connection.
   g. If the connection is successful, save the data source.
10. Add the environment information after the `process-type` tag into the `opmn.xml` file for the instance running Back Office with Labels and Tags:
    a. Stop Oracle Application Server.
    b. Edit the file found at `$ORACLE_HOME\opmn\conf\opmn.xml`. Update the `process-type` entry for the OC4J instance created for the Back Office with Labels and Tags installation. For more information, see "Create the Database Schema Owner and Data Source Connection Users" in Chapter 2. There is also a sample file at *<ACCESSVIA_HOME>*.

       The following is an example of the information you need to add:

       Note: `environment` must be the first element after the `process-type` tag.

```
<process-type>
  <environment>
    <variable id="PATH" value="C:\accessvia\windows\test\program"
append="true"/>
    <variable id="PATH" value="C:\instantclient_11_1" append="true"/>
  </environment>
     ...
</process-type>
```

    c. Start Oracle Application Server.
11. Encrypt the database password in the `C:\accessvia\windows\test\dsign.ini` file:
    a. Enter the clear text password in clear text for the PWD property. The field is highlighted in the following example.

```
CONNECTION=DSN=orbolat1;UID=ORBOLAT1;PWD=mypassword12;DBQ=ORCL;DBA=W;APA=T;
EXC=F;FEN=T;QTO=T;FRC=10;FDL=10;LOB=T;RST=T;BTD=F;BNF=F;BAM=IfAllSuccessful
;NUM=NLS;DPM=F;MTS=T;MDI=F;CSR=F;FWC=F;FBS=64000;TLO=O;
```

    b. To encrypt the password, run the following command:

```
C:\accessvia\windows\test\program\dsignw32.exe
```

c. Select **File**, **Open**, and then the ini file to be modified. You are prompted to open the file in Notepad, but this is not necessary.

d. Select **File** and then **UDF**. A dialog is displayed to enter the command switches.

e. In the dialog box, enter **ENCRYPT_DSN**.

f. Copy the encrypted password from the PWD property.

g. Update the dsn name with the odbc data sources. See Step a for an example of the CONNECTION string.

Back Office Installation

After completing the steps in "Configuring for Oracle Application Server", run the installer. The following information is needed during the install:

- The paths to the `dJava.jar` and `dsign.ini` files are entered on the AccessVia Configuration installer screen. See Figure A–22. These files are found in the following locations:
  - `C:\accessvia\windows\djava.jar`
  - `C:\accessvia\windows\test\dsign.ini`
- Sample templates are shipped with the release. On the Load Templates Options installer screen, you select whether to load the templates into the database. See Figure A–32. For information on the templates, see "Labels and Tags Templates".

Labels and Tags Templates

The templates shipped with this release are found in the following zip file:

`<install_dir>\backoffice\configured-output\db\template.zip`

The installer imports the templates in this zip file into the database. For the location of the templates in the database, see "Configuring the Database for the AccessVia Print Engine".

Updating or Creating Templates

If templates are updated or new templates are created, a zip file containing the templates can be imported into Back Office using the **Import Labels and Tags Template** import task. For information on the import, see the *Oracle Retail Back Office User Guide*.

Software is available, for example from AccessVia, that can be used to create and update templates. For more information, contact your integrator or implementation staff.

Configuring Multiple Printers

To use multiple printers for printing labels and tags:

1. To enable users to select from a list of printers on the Add Batch and Batch Detail screens, set up the Allow Multiple Printers parameter. For information on the parameter, see the *Oracle Retail Strategic Store Solutions Configuration Guide*.

2. If you did not set up the list of printers before running the Back Office installer, add the printers to the %ORACLE_HOME%\j2ee\<*instancename*>\applib\printers.properties file. The instructions for adding printers are included in the printers.properties file.

Testing the AccessVia Print Engine

After Back Office is installed and all of the previous steps have been completed, test the AccessVia Print engine.

To test AccessVia in Oracle 11g:

1. Compile the test program by executing the command <*AccessVia_install_dir*>\test\compileTest.bat. This file may need to be updated to meet your configuration.
2. Run the test program by executing <*AccessVia_install_dir*>\test\runTest.bat. This file may need to be updated to meet your configuration.
3. The template SALTEMPL prints.
   - If you are getting lib not found, the required dll is not in the system path.
   - If you are getting unsatisfiedLinkerror, the dSIGN dlls and SDK dll do not match.

AccessVia Print Engine .ini File

The AccessVia Print engine requires an .ini file for configuration. This file controls all AccessVia operations and includes the settings for printers, resource paths (fonts and graphics), data source to be used, and so on. For information on the file contents, see ".ini File Settings".

The default name for the AccessVia .ini file is dsign.ini. That name is used to refer to it throughout this chapter.

To create the AccessVia configuration file:

1. Create an .ini file. For an example of an .ini file, see ".ini File Example".
2. Save your .ini file at <*AccessVia_install_dir*>\program.

.ini File Settings

This file contains a series of settings:

- Path settings—These are used by the AccessVia APIs to fetch appropriate attributes at the time of printing. These paths, which are located in the System Setup section, lead to the directories described in "Configuring the Database for the AccessVia Print Engine".

  GraphicPath, FontPath, and ExePath must point to individual folders. The remaining paths can point to a common folder because they are not used as often. In order for UserPath to be functional, Back Office must have write permission to the dst directory.

  - DataPath—This must point to the folder that contains all the necessary data (data).
  - GraphicPath—This must point to the folder that contains all images required for the print templates (images).

  - FontPath—This must point to the folder that contains all the font files required by the print templates (fonts).
  - UserPath—This must point to the user directory (dst).
  - ExePath—This must point to the folder that contains all AccessVia .dll files (program).
  - SystemPath—This must point to the folder that contains all necessary system files (system).
  - WorkPath—This must point to the folder used by AccessVia APIs to write temp files during the printing process.
- Printer settings—These are the printer attributes. They are located in the Printer Setup section. Most of them are the same as the system printer settings. PrintFile, PrintToFile, and PrinterName are the most important attributes; the remaining ones can use default settings.
  - PrinterPort=WS:
  - PrintFile=<*AccessVia_install_dir*>\temp\output.prn
  - PrintToFile=No. However, for initial testing, you can arrange for templates to be printed in an output file (PrintFile) by setting PrintToFile to Yes.
  - PrinterDriver=POSTSCRIPT. The AccessVia Print engine prefers PostScript printers to PCL printers.
  - PrinterName=Lexmark Optra T (or the default printer)
  - PortSetting1=172.16.34.12. This printer IP address has proven successful for Oracle Retail network printers.
  - PortSetting2=9100. This port has proven successful for Oracle Retail network printers.
- Data source settings—These provide AccessVia APIs with the location of templates and template data. These can be stored in the same place, in which case the two settings are identical. In the data sources, set the DSN name, database name, server name, user ID, and password correctly.
  - DATABASE—This is the data source for template data.
  - FORMATS—This is the data source for templates and template attributes.

.ini File Example

The following is an example of an .ini file.

```
;--------------------------------------------------------------------
;---  Database Connection Section  -------------------- ---------------
;------------------------------------------------------ --------------
[DCM Global]
DataDriver=ODBC
ConnectRetry=4

;-------  DATABASE Connection Properties  ----------------------------
[DATABASE]
Enabled=True
CONNECTION=DSN=orbolat1;UID=ORBOLAT1;PWD=E*s
"q#|,<*:(8&6$4"2;DBQ=ORCL;DBA=W;APA=T;EXC=F;FEN=T;QTO=T;FRC=10;FDL=10;LOB=T;RST=T;
BTD=F;BNF=F;BAM=IfAllSuccessful;NUM=NLS;DPM=F;MTS=T;MDI=F;CSR=F;FWC=F;FBS=64000;TL
```

```
O=O;
Userid=ORBOLAT1
Password=E*s "q#|,<*:(8&6$4"2
SchemaSys=ORBOLAT1


[SYSTEM]
Enabled=False

[FORMATS]
Enabled=False

[IMPORTS]
Enabled=False

[EXPORTS]
Enabled=False

[STARTUP]
InitApp=No
;---------------- System Setup
DataPath=C:\accessvia\windows\test\data\
GraphicPath=C:\accessvia\windows\test\images\
FormatPath=C:\accessvia\windows\test\data\
ExePath=C:\accessvia\windows\test\program\
SystemPath=C:\accessvia\windows\test\system\
FontPath=C:\accessvia\windows\test\fonts\
WorkPath=C:\accessvia\windows\test\data\
UserPath=C:\accessvia\windows\test\data\
MailPath=



;---------------- Printer Setup
PrinterDriver=PS
PrinterName=DEFAULT
PrinterPort=WS:
PrinterOptimizationType=NONE
PrintFile=output.ps
PrintToFile=N
PaperTray=
PrintCopies=1
PrintMode=No
SignOffset=1
PrinterPortMode=NEW
PageTotal=No
PortSetting1=10.143.200.26
PortSetting2=9100
PortSetting3=9600,n,8,1
PrintItem=Yes
;The Values are Yes or No
CustomPaperSize=No
InlineHTML=No



;---------------- Messaging and Errors
ErrorLog=dsign.err
;Debug=No
;MessageMode=SILENT
```

```
;DebugMode=SILENT
Debug=Yes
MessageMode=EXTENSIVE
DebugMode=EXTENSIVE

;MessageMode=VERBOSE
;DebugMode=VERBOSE
[FONTS]
```

Setting up a USB Printer in a Network

To set up the printer for printing labels:

1. Install the driver that was included with the printer on the device where the printer is connected.
2. Add an anonymous user.
   a. Open the Printer Properties for the printer.
   b. Select the **Security** tab.
   c. Click **Add**.
   d. Add the user—**ANONYMOUS LOGON**.
   e. Click **OK**.
3. Enable network access to the anonymous user.
   a. From the Control Panel, open **Administrative Tools**. Select **Local Security Policy**.
   b. Expand Local Policies. Select **Security Options**.
   c. Select **Network access: Let Everyone permissions apply to anonymous users**. In the window, select **Enabled** and then click **OK**.
4. Add the following printer settings to the `dsign.ini` file.

```
---------------- Printer Setup -------------------------
PrinterDriver=GDI
PrinterName=\\<printer_IP_address>\DYMO,WinPrint,USB002
PrinterPort=<port_number>
PrinterOptimizationType=NONE
PrintFile=output.ps
PrintToFile=No
PrintCopies=1
PrintMode=No
SignOffset=-d
PrinterPortMode=NEW
PageTotal=No
PortSetting1=
PortSetting2=
PortSetting3=9600,N,8,1
PrintItem=Yes
CustomPaperSize=No
```

Troubleshooting Labels and Tags Problems on the Oracle Stack with Windows

This section contains information that may be useful if you encounter problems using Labels and Tags.

- If the test program fails, check the `dsign.ini` file. The Userid field must be all uppercase, for example:

  ```
  Userid=ORBOLAT1
  ```

- If you see an error related to print format, modify the printer settings. The possible values for the PrinterDriver field are GDI and PS. The possible values for PrinterPort are PM: and WS:.
- After the test runs successfully, if you still see problems running from Oracle Application Server, modify the security settings on Windows.
  1. Select Control Panel, Administrative Tools, and then Local Security Policy.
  2. Under Local Policies, select Security Options.
  3. Enable Network access: Let everyone permissions apply to anonymous users.
- In the Printer Setup section, verify that the printer IP address is correct.
- In the `dsign.ini` file, modify the PortSetting field to the IP address for your network printer.

  ```
  PortSetting1=10.143.200.26
  ```

- To improve performance, turn off debug mode in the `dsign.ini` file.

  ```
  Debug=No
  ```

- If there is any problem related to the configuration, turn on debug mode in the `dsign.ini` file. Look for the errors in the `dsDebug.txt` and `dsign.err` files.

  ```
  Debug=Yes
  ```

- If the testing runs fine but printing from the application server fails, set PrintToFile=Y in the `dsign.ini` file. This settings causes the output to be printed to the `output.ps` file. Open the file with Notepad and see if the item information is present.
- If you see an unsatisfiedLinkError, verify the paths used to load the AccessVia libraries.
- If you have a problem connecting to the database using Designer 7.5, make sure that during the creation of a connection, the schema name is uppercase under the advanced settings.
- If there is any problem with the database connections not getting closed after printing a template, the may be a memory leak issued. Contact AccessVia for more information.
- Postscript does not support frames, rules, and layers. When creating templates with AccessVia, do not use these options.
- Make sure the ini file path in the SGCONFIG table is correctly pointing to the ini file. If it is not, run the update sql. For example:

  ```
  update SGCONFIG set FCONFIGPARAMVALUE='C:\accessvia\windows\test\dsign.ini'
  where FCONFIGPARAMNAME='AccessViaIniFilePath'
  ```

4

Installation of the IBM Stack

Before proceeding, you must install the database and application server software. For a list of supported versions, see Chapter 1.

During installation, the Back Office database schema will be created and the Back Office application will be deployed. The Java JDK that is included with the IBM WebSphere Application Server will be used to run the application.

> **Note:** The Authentication Cache Timeout setting for the IBM WebSphere application server must be set correctly for Back Office password processing. For information on how to determine the value you should use for this setting and how to set it for the application server, refer to your IBM WebSphere documentation.

Create the Database Schema Owner and Data Source Users

The following recommendations should be considered for schema owners:

- Database administrators should create an individual schema owner for each application, unless the applications share the same data. In the case of Oracle Retail Back Office and Point-of-Service, the database schema owner are the same because these applications share a database.
- The schema owners should only have enough privileges to install the database.

For information on the best practices for passwords, see Appendix H.

To create the database schema owner and database source users:

1. Log in using the database administrator user ID.
2. Create the schema owner user.

   ```
   CREATE SCHEMA <schema_name> AUTHORIZATION <schema_username>
   ```

3. Grant the privileges, shown in the following example, to the user.

   ```
   GRANT CREATETAB, BINDADD, CONNECT, IMPLICIT_SCHEMA ON DATABASE TO USER
   <schema_username>
   ```

4. Grant the following object level privileges to the schema owner user.

   ```
   GRANT CREATEIN, DROPIN, ALTERIN ON SCHEMA <schema_name> TO USER
   <schema_username> WITH GRANT OPTION
   ```

5. Create the data source user.

   ```
   CREATE SCHEMA <data_source_schema_name> AUTHORIZATION <data_source_username>
   ```

6. Grant the privileges, shown in the following example, to the data source user.

```
GRANT CONNECT, IMPLICIT_SCHEMA ON DATABASE TO USER <data_source_username>
```

7. Grant the following object level privileges to the data source user.

```
GRANT CREATEIN ON SCHEMA <data_source_schema_name> TO USER <data_source_
username> WITH GRANT OPTION
```

The installer grants the data source user access to the application database objects. If you choose **No** on the Manual Deployment Option screen, you need to grant the access after the installer completes. For more information, see "Manual Deployment of the Back Office Application".

Expand the Back Office Distribution

To extract the Back Office files:

1. Extract the `ORBO-13.1.5.zip` (or `ORLAT-13.1.5.zip`) file from the Back Office 13.1.5 distribution zip file.
2. Log into the UNIX server as the user who owns the IBM WebSphere installation. Create a new staging directory for the Back Office application distribution (`ORBO-13.1.5.zip` or `ORLAT-13.1.5.zip`), for example, `/tmp/orbo-staging`.

> **Note:** The staging directory (*<staging_directory>*) can exist anywhere on the system. It does not need to be under `tmp`.

3. Copy or upload `ORBO-13.1.5.zip` (or `ORLAT-13.1.5.zip`) to *<staging_directory>* and extract its contents. The following files and directories should be created under *<staging_directory>*`/ORBO-13.1.5`:

```
ant\
ant-ext\
antinstall\
backoffice\
connectors\
external-lib\
installer-resources\
.postinstall.cmd
.postinstall.sh
.preinstall.cmd
.preinstall.sh
.preinstall-oas.cmd
.preinstall-oas.sh
.preinstall-was.cmd
.preinstall-was.sh
antinstall-config.xml
build.xml
build-common.xml
build-common-backoffice.xml
build-common-oas.xml
build-common-was.xml
build-common-webapps.xml
build-test.xml
checkdeps.cmd
checkdeps.sh
```

```
install.cmd
install.sh
jmsconfiguration.dat
prepare.xml
retail-OCM.zip
```

For the remainder of this chapter, *<staging_directory>*/ORBO-13.1.5 is referred to as *<INSTALL_DIR>*.

Obtain Third-Party Library Files Required by Back Office

The Back Office application uses the Pager Tag Library from JSPTags and the DB2 drivers from IBM. Before running the Back Office application installer, you must download the necessary files from the JSPTags website and the IBM website.

1. Download the pager-taglib-2.0.war file from the JSPTags website: http://jsptags.com/tags/navigation/pager/download.jsp
2. Extract the pager-taglib.jar file from the WEB-INF/lib subdirectory in the pager-taglib-2.0.war file. Copy pager-taglib.jar into *<INSTALL_DIR>*/external-lib/.
3. Download the db2_db2driver_for_jdbc_sqlj.zip file from the IBM website: http://www.ibm.com/software/data/db2/java/

   You need an IBM ID, which you can request from the Sign in screen, in order to log in to this website.
4. Extract the db2jcc.jar file from the db2_db2driver_for_jdbc_sqlj directory in the db2_db2driver_for_jdbc_sqlj.zip file. Copy db2jcc.jar into *<INSTALL_DIR>*/external-lib/.
5. Obtain the db2jcc_license_cu.jar file from your database server. Copy db2jcc_license_cu.jar into *<INSTALL_DIR>*/external-lib/.

Note: The db2jcc_license_cu.jar file is needed to permit JDBC/SQLJ connectivity to the IBM DB2 database. The file is the standard license included with all editions of the IBM DB2 database.

Set Up to Integrate with the Central Office JMS Server

On the "Central Office JMS Server Integration" installer screen, you select whether Back Office will be integrated with the Central Office JMS server. See Figure B–26 in Appendix B. To integrate with Central Office, select **Yes** on the screen.

Before running the Back Office installer, verify that the Central Office application is running. The Central Office application must be running in order for the Back Office files to be installed correctly.

Installation Options

During installation, there are options that enable you to select whether the installer completes parts of the installation or if you want to complete those parts manually. For information on the available options, see the following sections:

- "Database Install Options"
- "Manual Deployment of the Back Office Application"
- "Install Parameters"

For information on manually deploying the Key Store, see "Manual Deployment of the Key Store". For information on loading the templates for Labels and Tags, see "Load Templates for Labels and Tags".

Database Install Options

The database schema must be created and populated before configuring the application server. On the Database Install Options screen, you select whether the installer creates and populates the database schema and seed data or if you want to do this manually.

- If you choose Yes, you do not need to perform any further steps. The installer will create and populate the database. This is the default selection on the screen.
- If you choose No, the installer does not create and populate the database schema.

Note: You must populate the database schema before running the installer. Otherwise, the installer will fail when configuring security.

To create and populate the database schema:

1. Change to the `<INSTALL_DIR>/backoffice/db` directory.
2. Set the JAVA_HOME and ANT_HOME environment variables. You can use the JDK and Ant that are installed with the IBM WebSphere Application Server.

   ```
   JAVA_HOME=<WAS_INSTALL_DIR>/Java; ANT_HOME=<INSTALL_DIR>/ant; export JAVA_HOME
   ANT_HOME
   ```

3. Add `$JAVA_HOME/bin` and `$ANT_HOME/bin` to the front of the PATH environment variable.

   ```
   PATH=$JAVA_HOME/bin:$ANT_HOME/bin:$PATH; export PATH
   ```

4. Expand the `backofficeDBInstall.jar` file.

   ```
   jar -xvf backofficeDBInstall.jar
   ```

5. Modify `db.properties`.
   a. Uncomment the DB2 properties and comment out the properties for the other vendors such as Oracle and MS-SqlServer.

b. Set the following properties with your database settings. The values to be set are shown in bold in the examples.

Set the hash algorithm, for example, to SHA-256.

```
# Hash Algorithm
inst.hash.algorithm=HASH_ALGORITHM
```

Enter the values for the users in the following example:

```
inst.app.admin.user=my-pos-admin-user
inst.app.admin.password-encrypted=my-encrypted-pos-admin-password

db.user=DB_USER_ID
db.password-encrypted=DB_PASSWORD_ENCRYPTED

db.owner.user=DB_OWNER_USER_ID
db.owner.password-encrypted=DB_OWNER_PASSWORD_ENCRYPTED
```

The ant target will prompt for the passwords. Run the following ant target to encrypt the passwords:

```
ant -f db.xml encrypt-webapp-passwords
```

Enter the values for the URL used by the Back Office application to access the database schema. See Appendix E for the expected syntax:

```
db.jdbc-url=jdbc:db2://DB_HOST_NAME:50001/DB_NAME
```

c. Set the `was.home.dir` property to point to your IBM WebSphere Application Server installation.

d. Set the host name and port number for the `parameter.apphost` property to point to your Back Office installation.

e. In the `parameters.classpath` property, replace the semicolons used as separators with colons. This is needed to run with UNIX systems.

6. Uncomment the following properties in `jndi.properties`. This file is in the `jndi` directory.

```
java.naming.factory.initial=com.evermind.server.rmi.RMIInitialContextFactory
java.naming.security.principal=<user>
java.naming.security.credentials=<user>
```

7. Run one of the available Ant targets to create the database schema and load data:

a. load_sql: creates tables and other objects; calls seed_data

b. seed_data: loads seed data

For example, `ant load_sql`

Secure the JDBC for the IBM DB2 Database

On the Enable Secure JDBC screen, you select whether secure JDBC will be used for communication with the database. See Figure B–8 in Appendix B.

- If **Yes** is selected, you must install the database digital certificate into the application server truststore.

  1. Log in to the WebSphere Integrated Solutions Console (Admin Console).

  2. Expand the Security menu.

3. Click the **SSL certificate and key management** option.
4. In the Related Items list, click **Key stores and certificates**.
5. Click the **NodeDefaultTrustStore** link in the list.
6. In the Additional Properties list, click the **Signer certificates** link.
7. Click the **Add** button.
8. Enter a distinct alias and the full path to the certificate file on the server in the File name field. Make sure the Data type corresponds to the type in the file. The certificate should appear in the list of Signer certificates.

- If **No** is selected and you want to manually set up the secure JDBC after the installer completes, see Appendix J.

Install the Java Cryptography Extension (JCE)

If you are using RSA Key Manager, you must update the security for your JRE. You need to obtain version 1.4.2+ of the Java Cryptography Extension (JCE) Unlimited Strength Jurisdiction Policy Files. The 1.4.2+ version for the JCE Unlimited Strength Encryption is compatible with the IBM Java5 JRE.

1. Make a backup copy of `local_policy.jar` and `US_export_policy.jar`.

```
cd <WAS_INSTALL_DIR>/java/jre/lib/security
mv local_policy.jar local_policy.jar.bak
mv US_export_policy.jar US_export_policy.jar.bak
```

2. Download version 1.4.2+ of JCE.
   a. Go to the following website:

      `http://www.ibm.com/developerworks/java/jdk/security/50/`

   b. Click **IBM SDK Policy Files**. You are prompted to log in. You need an IBM ID, which you can request from the Sign in screen, in order to log in to this website.
   c. After you log in, follow the instructions to download the JCE.
3. Copy the jar files into the JRE security directory. The files are bundled as `unrestricted.zip`.

Configure AccessVia for Labels and Tags

If you are installing Back Office with Labels and Tags, you must install and configure the AccessVia software before running the Back Office installer. See Chapter 5.

The `dJava.jar` and `dsign.ini` files required for AccessVia are found in the following directory:

```
<INSTALL_DIR>\backoffice\lib\thirdparty\accessvia
```

Run the Back Office Application Installer

The installer will configure and deploy the Back Office application.

> **Note:** To see details on every screen and field in the application installer, see Appendix B.

1. Change to the *<INSTALL_DIR>* directory.
2. Set the JAVA_HOME environment variable to point to the Java in the IBM WebSphere application server, that is, *<WAS_INSTALL_DIR>*/Java.

   > **Note:** The installer is not compatible with versions of Java earlier than 1.5.

3. If you are using an X server such as Exceed, set the DISPLAY environment variable so that you can run the installer in GUI mode (recommended). If you are not using an X server, or the GUI is too slow over your network, unset DISPLAY for text mode.

   > **Caution:** Password fields are masked in GUI mode, but in text mode your input is shown in plain text in the console window.

4. Run the installer.
   a. Log into the UNIX server as a user who is authorized to install software.
   b. Change the mode of `install.sh` to executable.
   c. Run the `install.sh` script. This will launch the installer.

   > **Note:** The usage details for install.sh are shown below. The typical usage for GUI mode does not use arguments.
   >
   > ```
   > install.sh [text | silent websphere]
   > ```

   After installation is complete, a detailed installation log file is created: `orbo-install-app.<timestamp>.log`
5. The installer leaves behind the `ant.install.properties` file for future reference and repeat installations. This file contains all the inputs you provided, including passwords. As a security precaution, make sure that the file has restrictive permissions.

   ```
   chmod 600 ant.install.properties
   ```

Resolve Errors Encountered During Application Installation

If the application installer encounters any errors, it will halt execution immediately. You can run the installer in silent mode so that you do not have to reenter the settings for your environment. For instructions on silent mode, see Appendix C.

For a list of common installation errors, see Appendix F.

Since the application installation is a full reinstall every time, any previous partial installs will be overwritten by the successful installation.

Oracle Configuration Manager

The Oracle Retail OCM Installer packaged with this release installs the latest version of OCM.

The following document is available through My Oracle Support. Access My Oracle Support at the following URL:

https://support.oracle.com

***Oracle Retail Oracle Configuration Manager (OCM) Installer Guide* (Doc ID: 835024.1)**

This guide describes the procedures and interface of the Oracle Retail Oracle Configuration Manager Installer that a retailer runs near the completion of its installation process.

OCM Documentation Link

http://www.oracle.com/technology/documentation/oracle_retail.html

Manual Deployment of the Key Store

If you implement a Key Store interface, you can use the rar file to manually deploy the Key Store on the application server.

- To deploy using an ant target:

  1. Copy the following properties into the `ant.install.properties` file:

     ```
     ## Properties from Page:InternalDeployKeyStoreRAR
     input.internal.keystore.rar.deploy.enabled = true
     input.internal.keystore.rar.deploy.name = keystoreconnector
     input.internal.keystore.rar.deploy.file = <INSTALL_DIR>/connectors/
     sim-keystoreconnector-rar.rar
     ```

  2. Run the following ant target:

     ```
     install.sh ant init keystore-rar-deploy -propertyfile
     ant.install.properties
     ```

- To deploy from the application server console, log in to the application server console and deploy the rar file. The rar file is located at:

  <INSTALL_DIR>/connectors/sim-keystoreconnector-rar.rar

Configure IBM WebSphere MQ

IBM WebSphere MQ, formerly known as IBM MQ Series, must be configured with a queue manager and the JMS queues and topics required by Back Office, before Back Office can be deployed. On the Configure MQ Series Option screen, you select whether the installer configures IBM WebSphere MQ or if you manually configure it.

Note: If IBM WebSphere MQ is installed on a different machine than IBM WebSphere Application Server, you must manually configure it.

Typically, when IBM WebSphere MQ is installed, a special user ID (usually `mqm`), and a user group (also `mqm`) are created in the operating system. The MQ installation files and directories have their owner and group set to the IBM WebSphere MQ user ID and group ID.

The user ID used for the Back Office installation, must be made a member of IBM WebSphere MQ's user group, before attempting to create the Back Office queue manager, queues, and topics. For example, if Back Office is installed as user `root`, then `root` must be made a member of the `mqm` group.

Use the following commands to configure IBM WebSphere MQ. `MQ_Install_Dir` is the directory where IBM WebSphere MQ was installed. The values for `<input.jms.server.queue>` and `<input.jms.server.port>` come from the `ant.install.properties` file.

```
<MQ_Install_Dir>/bin/crtmqm   -q <input.jms.server.queue>
<MQ_Install_Dir>/bin/strmqm      <input.jms.server.queue>
<MQ_Install_Dir>/bin/runmqlsr -m <input.jms.server.queue> -p
    <input.jms.server.port> -t tcp &
<MQ_Install_Dir>/bin/runmqsc     <input.jms.server.queue> <
    <INSTALL_DIR>/backoffice/appserver/was/createq.dat

<MQ_Install_Dir>/bin/runmqsc     <input.jms.server.queue> <
    <MQ_Install_Dir>/java/bin/MQJMS_PSQ.mqsc
<MQ_Install_Dir>/bin/strmqbrk    -m <input.jms.server.queue>
```

Manual Deployment of the Back Office Application

Skip this section if you chose the default option of allowing the installer to complete installation to the application server.

The installer includes the option to configure the application locally and skip deployment to the application server. If this option is chosen, the installer will make the configured application files available under *<INSTALL_DIR>*/backoffice/configured-output/.

If you chose this installer option, you can deploy the Back Office ear file by following these steps:

- To deploy using the ant target:
  1. Check that the Key Store JNDI name in the *<orbo-inst>*/applib/spring.properties file matches the JNDI name of the Key Store deployed on the application server.
  2. Update the following property in the ant.install.properties file.

     ```
     input.install.to.appserver = true
     ```

  3. Run the following ant target:

     ```
     install.sh ant init app-ear-deploy  -propertyfile ant.install.properties
     ```

- To deploy from the application server console, log in to the application server console and deploy the ear file. The ear file is located at:

  <INSTALL_DIR>/backoffice/configured-output

  When deploying the ear file, you should provide the same application name and context root you gave to the installer. These values were stored in the *<INSTALL_DIR>*/ant.install.properties file by the installer for later reference.

Install Parameters

The application parameters must be installed before the Back Office application is fully operational. On the Install Parameters screen, you select whether the installer completes installation of the parameters.

- If you chose Yes, you do not need to perform any further steps to install the parameters. This is the default selection on the screen.
- If you chose No, the installer did not install the parameters. For information on installing the parameters, see "Import Initial Parameters".

Import Initial Parameters

Note: If you did not choose to have the installer set the initial parameters, you must import an initial set of parameters before you can use Oracle Retail Back Office. For more information on parameters, see the *Oracle Retail Strategic Store Solutions Configuration Guide*.

This section provides an overview of the procedures for importing an initial set of parameters. You can import the parameters through the Oracle Retail Back Office user interface or by using an ant target. You only need to use one of the procedures. The procedure for importing parameters through the application user interface is described in more detail in the *Oracle Retail Back Office User Guide*.

These instructions assume you have already expanded the `backofficeDBInstall.jar` file under the *<INSTALL_DIR>* directory as part of the database schema installation earlier in this chapter.

Importing Parameters Through the User Interface

To import the initial parameters through the user interface:

1. Open the Oracle Retail Back Office application in a web browser. The address is provided at the end of the installer output and in the log file.

   `https://<your host name>:<port number/<context root>`

2. Log in to the application as user ID **pos** and password **pos**, or any other user ID that has full administrative rights.
3. Click the **Admin** tab and then the **Job Manager** subtab. Click the **Available Imports** left navigation link. The Available Imports screen appears.
4. To import the master parameter set, click the **File** link in the Import Parameters for Distribution row. Follow the instructions to import `parameterset.xml` from the *<INSTALL_DIR>*`/backoffice/db` folder.
5. To import the initial set of Oracle Retail Back Office application parameters, click the **File** link in the Import BackOffice Parameters row. Follow the instructions to import `backoffice.xml` from the *<INSTALL_DIR>*`/backoffice/db` folder.

Importing Parameters By Using an Ant Target

To import parameters using an ant target:

1. Change to the *<INSTALL_DIR>*`/backoffice/tmp/db` directory.
2. Execute the following command:

   ```
   ant load_parameters
   ```

Load Templates for Labels and Tags

To load the templates for Oracle Retail Labels and Tags:

1. Change to the `<INSTALL_DIR>/backoffice/configured-output/db` directory.
2. Run the following command:

   ```
   ant init_labels
   ```

Load Optional Purge Procedures

For information on how to invoke the procedures provided for purging aged data, see the *Oracle Retail Back Office Operations Guide*.

To load the purge procedures:

1. Run the available Ant target to load the procedures.

   ```
   ant load_purge_procedures
   ```

2. Log in as the database schema owner, <*schema_username*>.
3. Create a user for running the purge procedures. This user should only have the privileges required to run the purge procedures.

Using the Back Office Application

Note: When you are done installing Back Office, log out and close the browser window. This ensures that your session information is cleared and prevents another user from accessing Back Office with your login information.

After the application installer completes and you have run the initial parameter load, you should have a working Back Office application installation. To launch the application, open a web browser and go to
`https://<servername>:<portnumber>/<context root>`

For example, https://myhost:9443/backoffice

Note: Before viewing any reports for the first time after Back Office is installed, you must open the store. Opening the store creates data that is needed for Reports functionality to work correctly.

5

Configuring the AccessVia Print Engine for the IBM Stack

This document also pertains to Oracle customers who have licensed Oracle Retail Signs in conjunction with Oracle Retail Labels and Tags. The Oracle Retail Labels and Tags product restricts printing not to exceed six square inches. To print a size greater than six square inches, the customer must license Oracle Retail Signs.

In order to use the Labels and Tags functionality of Back Office, you need to install the AccessVia product and configure the AccessVia Print engine.

Before configuring the AccessVia Print engine, you must have completed the following procedures:

- The installation and configuration of all prerequisite software including the AccessVia product and the database server.
- The installation of the database and creation of the database schema.
- The installation of the application server.
- The installation of the printer.

The following libraries are required for using Labels and Tags. For the supported versions, see Chapter 1:

- AccessVia print engine
- IBM DB2 Client
- unixODBC
- GD library
- Xerces

Configuring the AccessVia Print engine includes the following tasks:

- "AccessVia Print Engine .ini File"
- "Configuring the Database for the AccessVia Print Engine"
- "Testing the AccessVia Print Engine"
- "Configuring Multiple Printers"

To troubleshoot printing problems, see "Troubleshooting Labels and Tags Problems on the IBM Stack".

Creating the AccessVia Print Engine .ini File

The AccessVia Print engine requires an .ini file for configuration. An initial version of this file is found in *<staging_directory>*/backoffice/lib/thirdparty/accessvia7.5/accessvia_IRES/dsign/program/dsign.ini.

Updates to the .ini file are done as part of the configuration for the application server. For a description and example of this file, see "AccessVia Print Engine .ini File".

Configuring the Database for the AccessVia Print Engine

Because Labels and Tags needs to access data from Back Office, AccessVia requires open database connectivity (ODBC) to the Back Office database. AccessVia stores template information in the following Back Office data tables:

- SGFORM—This table stores templates.
- SGELEM—This table stores template attributes.
- SGSQL—This table stores .zip files of SQL, which fetch template data at the time of printing.
- SGCONFIG—This table stores the paths for .ini files required by AccessVia.

Configuring for IBM WebSphere

For the following steps, *<staging_directory>*/backoffice/lib/thirdparty/accessvia7.5/accessvia_IRES is referred to as *<ACCESSVIA_HOME>*.

To configure for IBM WebSphere:

1. Install the DB2 client and catalog the database for CLI. To catalog the database:
   a. db2 catalog tcpip node node1 remote <*host_name*> server 50001
   b. db2 catalog database <*database_name*> as <*database_alias_name*> at node node1

      The <*database_alias_name*> is used for DBALIAS in the dsign.ini file. See ".ini File Example".
2. The DB2 client includes unixODBC. Verify that unixODBC is installed at /usr/lib/unixODBC.
3. Copy the *<ACCESSVIA_HOME>*/dsign folder to /usr/ on the IRES server.
4. Copy libgd.so.2.0.0 from *<ACCESSVIA_HOME>*/usr/lib to /usr/lib on the IRES server.

   Note: If the files already exist, do not replace them.

5. Copy the following files from *<ACCESSVIA_HOME>*/usr/local/lib to /usr/local/lib on the IRES server:
   - libxerces-c.so.27.0
   - libxerces-depdom.so.27.0
6. Copy the odbcinst.ini file from *<ACCESSVIA_HOME>*/etc/unixODBC to /usr/local/lib on the IRES server. Verify that the driver path is correct.
7. Copy the .odbc.ini file from *<ACCESSVIA_HOME>*/root to /root on the IRES server. Update the database related information.

8. Give executable permissions to all the .so files under `/usr/dsign/program`, `/usr/lib/libgd.so.*`, and `/usr/local/lib`.
9. Give executable permission to the dsign and *.sh files under `/usr/dsign/program`.
10. Create the following links. Open a command shell and run the following commands:

    Navigate to `/usr/lib`.

    a. ln -s libgd.so.2.0.0 libgd.so.2

    b. ln -s libgd.so.2 libgd.so

    Navigate to `/usr/local/lib`.

    a. ln -s libodbcpsql.so.1.0.0 libodbcpsql.so.1

    b. ln -s libxerces-c.so.27.0 libxerces-c.so.27

    c. ln -s libxerces-c.so.27 libxerces-c.so

    d. ln -s libxerces-depdom.so.27.0 libxerces-depdom.so.27

    e. ln -s libxerces-depdom.so.27 libxerces-depdom.so

11. Encrypt the database password in the `/usr/dsign/program/dsign.ini` file:

    a. Update the user ID and password information for the database schema owner. For information on the schema owner, see "Create the Database Schema Owner and Data Source Users" in Chapter 4.

    b. Enter the password in clear text for the PWD property. The field is highlighted in the following example.

    ```
    CONNECTION=DSN=orbolat1;UID=ORBOLAT1;PWD=mypassword12;DBQ=ORCL;DBA=W;APA=T;
    EXC=F;FEN=T;QTO=T;FRC=10;FDL=10;LOB=T;RST=T;BTD=F;BNF=F;BAM=IfAllSuccessful
    ;NUM=NLS;DPM=F;MTS=T;MDI=F;CSR=F;FWC=F;FBS=64000;TLO=O;
    ```

    c. Run the `/usr/dsign/program/env.sh` script.

    d. To encrypt the password, run the following command:

    ```
    /usr/dsign/program/dsign -zdsign.ini -x"ENCRYPT_DSN()"
    ```

    e. Verify that the password is encrypted in the file.

12. Edit `.bashrc` and verify that the environment is correctly set. There is a sample file at *<ACCESSVIA_HOME>*.

Back Office Installation

After completing the steps in "Configuring for IBM WebSphere", run the installer. The following information is needed during the install:

- The paths to the `dJava.jar` and `dsign.ini` files are entered on the AccessVia Configuration installer screen. See Figure B–22. These files are found in the following locations:
  - `usr/dsign/program/djava.jar`
  - `usr/dsign/program/dsign.ini`

- Sample templates are shipped with the release. On the Load Templates Options installer screen, you select whether to load the templates into the database. See Figure B–33. For information on the templates, see "Labels and Tags Templates".

Labels and Tags Templates

The templates shipped with this release are found in the following zip file:

`<install_dir>/backoffice/configured-output/db/template.zip`

The installer imports the templates in this zip file into the database. For the location of the templates in the database, see "Configuring the Database for the AccessVia Print Engine".

Updating or Creating Templates

If templates are updated or new templates are created, a zip file containing the templates can be imported into Back Office using the **Import Labels and Tags Template** import task. For information on the import, see the *Oracle Retail Back Office User Guide*.

Software is available, for example from AccessVia, that can be used to create and update templates. For more information, contact your integrator or implementation staff.

Configuring Multiple Printers

To use multiple printers for printing labels and tags:

1. To enable users to select from a list of printers on the Add Batch and Batch Detail screens, set up the Allow Multiple Printers parameter. For information on the parameter, see the *Oracle Retail Strategic Store Solutions Configuration Guide*.
2. If you did not set up the list of printers before running the Back Office installer, add the printers in the `<WAS_PROFILE_DIR>/properties/printers.properties` file. The instructions for adding printers are included in the file.

Testing the AccessVia Print Engine

After the steps in "Configuring for IBM WebSphere" are completed and Back Office is installed, test the AccessVia print engine.

Note: The test program is intended to only be used with test data.

To test AccessVia for IBM WebSphere:

1. Stop the IBM WebSphere server.
2. Change to the `/usr/dsign/program` directory.
3. To compile the test program, run `compileTest.sh`. This file may need to be updated to meet your configuration.

4. Run the `test_j.sh` test program. This file may need to be updated to meet your configuration.

   The template SALTEMP prints.

   - If you are getting lib not found, the required dll is not in the system path.
   - If you are getting unsatisfiedLinkerror, the dSIGN dlls and SDK dll do not match.

5. Start the IBM WebSphere server.

AccessVia Print Engine .ini File

The AccessVia Print engine requires an .ini file for configuration. This file controls all AccessVia operations and includes the settings for printers, resource paths (fonts and graphics), data source to be used, and so on. For information on the file contents, see ".ini File Settings". For an example of an .ini file, see ".ini File Example".

The default name for the AccessVia .ini file is `dsign.ini`. That name is used to refer to it throughout this chapter.

.ini File Settings

This file contains a series of settings:

- Path settings—These are used by the AccessVia APIs to fetch appropriate attributes at the time of printing. See the `System Setup` section for the paths.

  `GraphicPath`, `FontPath`, and `ExePath` must point to individual folders. The remaining paths can point to a common folder because they are not used as often. In order for `UserPath` to be functional, Back Office must have write permission to the `dst` directory.

  - `DataPath`—This must point to the folder that contains all the necessary data (`data`).
  - `GraphicPath`—This must point to the folder that contains all images required for the print templates (`images`).
  - `FontPath`—This must point to the folder that contains all the font files required by the print templates (`fonts`).
  - `UserPath`—This must point to the user directory (`dst`).
  - `ExePath`—This must point to the folder that contains all AccessVia `.dll` files (`program`).
  - `SystemPath`—This must point to the folder that contains all necessary system files (`system`).
  - `WorkPath`—This must point to the folder used by AccessVia APIs to write temp files during the printing process.

- Printer settings—These are the printer attributes. They are located in the `Printer Setup` section. Most of them are the same as the system printer settings. `PrintFile`, `PrintToFile`, and `PrinterName` are the most important attributes; the remaining ones can use default settings.

  - `PrinterPort=WS:`
  - `PrintFile=output.ps`

  - PrintToFile= No. However, for initial testing, you can arrange for templates to be printed in an output file (PrintFile) by setting PrintToFile to Yes.
  - PrinterDriver=POSTSCRIPT. The AccessVia Print engine prefers PostScript printers to PCL printers.
  - PrinterName=*<printer name>*
  - PortSetting1=*<printer IP address>*
  - PortSetting2=*<printer port number>*
- Data source settings—These provide AccessVia APIs with the location of templates and template data. These can be stored in the same place, in which case the two settings are identical. In the data sources, set the DSN name, database name, server name, user ID, and password correctly.
  - DATABASE—This is the data source for template data.
  - FORMATS—This is the data source for templates and template attributes.

.ini File Example

The following is an example of an .ini file.

```
;--------------------------------------------------------------------
;---  Database Connection Section  -------------------- ---------------
;------------------------------------------------------ ---------------
[DCM Global]
DataDriver=ODBC
ConnectRetry=4

;-------  DATABASE Connection Properties  -----------------------------
[DATABASE]
Enabled=True
DataDriver=ODBC
CONNECTION=DSN=ACCVIA;DBALIAS=ACCVIA;UID=orbolat1;PWD=xxxxxxxxxxxxxxxxxxxx
SCHEMA_SYS=orbolat1

[SYSTEM]
Enabled=False

[FORMATS]
Enabled=False

[IMPORTS]
Enabled=False

[EXPORTS]
Enabled=False

[STARTUP]
InitApp=No
;---------------- System Setup
DataPath=/usr/dsign/program/
GraphicPath=/usr/dsign/program
FormatPath=/usr/dsign/program
ExePath=/usr/dsign/program/
SystemPath=/usr/dsign/system/
FontPath=/usr/dsign/program/
WorkPath=/usr/dsign/program/
```

```
UserPath=/usr/dsign/program/

;---------------- Printer Setup
PrintDriver=POSTSCRIPT
PrinterName=LEXMARK OPTRA T
PrinterPort=WS:
;PrinterPort=/dev/lp0
PrintToFile=N
PrintFile=output.ps
PrintSpooler=
BumpPageX=0
BumpPageY=0
PaperTray=
PrintCopies=1
PrintMode=No
SignOffset=1
PrinterPortMode=NEW
PrinterOptimizationType=NONE
PageTotal=No
PortSetting1=10.1.1.49
PortSetting2=9100
PortSetting3=9600,n,8,1

;---------------- Messaging and Errors
ErrorLog=dsign.err
Debug=Yes
MessageMode=EXTENSIVE
DebugMode=EXTENSIVE

[FONTS]
```

Setting up a USB Printer in a Network

To set up the printer for printing labels:

1. Install the driver that was included with the printer on the device where the printer is connected.
2. Add an anonymous user.
   a. Open the Printer Properties for the printer.
   b. Select the **Security** tab.
   c. Click **Add**.
   d. Add the user—**ANONYMOUS LOGON**.
   e. Click **OK**.
3. Enable network access to the anonymous user.
   a. From the Control Panel, open **Administrative Tools**. Select **Local Security Policy**.
   b. Expand Local Policies. Select **Security Options**.
   c. Select **Network access: Let Everyone permissions apply to anonymous users**. In the window, select **Enabled** and then click **OK**.

4. Add the following printer settings to the `dsign.ini` file.

```
---------------- Printer Setup -------------------------
PrinterDriver=GDI
PrinterName=\\<printer_IP_address>\DYMO,WinPrint,USB002
PrinterPort=<port_number>
PrinterOptimizationType=NONE
PrintFile=output.ps
PrintToFile=No
PrintCopies=1
PrintMode=No
SignOffset=-d
PrinterPortMode=NEW
PageTotal=No
PortSetting1=
PortSetting2=
PortSetting3=9600,N,8,1
PrintItem=Yes
CustomPaperSize=No
```

Troubleshooting Labels and Tags Problems on the IBM Stack

This section contains information that may be useful if you encounter problems using Labels and Tags.

- If any problem occur running the test program, make sure the correct version of unixODBC is installed.
- If `test_j.sh` fails, check the `dsign.ini` file. The Userid field must be all uppercase, for example:

  ```
  Userid=ORBOLAT1
  ```

- If you see an error related to print format, modify the printer settings. The possible values for the PrinterDriver field are GDI and PS. The possible values for PrinterPort are PM: and WS:.
- In the Printer Setup section, verify that the printer IP address is correct.
- In the `dsign.ini` file, modify the PortSetting field to the IP address for your network printer.

  ```
  PortSetting1=10.143.200.26
  ```

- To improve performance, turn off debug mode in the dsign.ini file.

  ```
  Debug=No
  ```

- If there is any problem related to the configuration, turn on debug mode in the `dsign.ini` file. Look for the errors in the `dsDebug.txt` and `dsign.err` files.

  ```
  Debug=Yes
  ```

- f the testing runs fine but printing from the application server fails, set PrintToFile=Y in the `dsign.ini` file. This settings causes the output to be printed to the `output.ps` file. Open the file with Notepad and see if the item information is present.
- If you see an unsatisfiedLinkError, verify the paths used to load the AccessVia libraries.

- If there is any problem with the database connections not getting closed after printing a template, the may be a memory leak issued. Contact AccessVia for more information.
- Postscript does not support frames, rules, and layers. When creating templates with AccessVia, do not use these options.
- Make sure the ini file path in the SGCONFIG table is correctly pointing to the ini file. If it is not, run the update sql. For example:

```
update SGCONFIG set FCONFIGPARAMVALUE='/usr/dsign/program/dsign.ini'
where FCONFIGPARAMNAME='AccessViaIniFilePath'
```

A

Appendix: Back Office Application Installer Screens for the Oracle Stack on Windows

You need specific details about your environment for the installer to successfully deploy the Back Office application, or the Back Office application with the Labels and Tags module, on the Oracle Stack. Depending on the options you select, you may not see some screens or fields.

For each field on a screen, a table is included in this appendix that describes the field. If you want to document any specific information about your environment for any field, a Notes row is provided in each table for saving that information.

> **Note:** When installing the Back Office application with the Labels and Tags module, the title on the installer screens is Labels and Tags Installer. The content of the screens is the same for either installer.

Figure A–1 Introduction

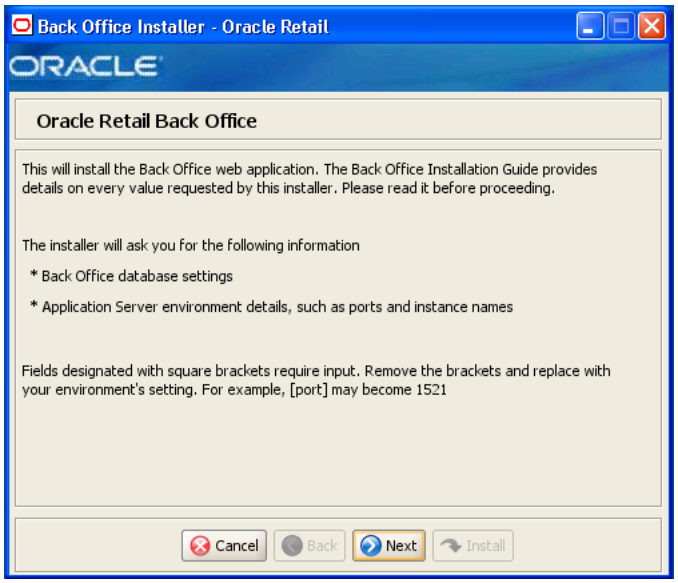


Figure A–2 Requirements

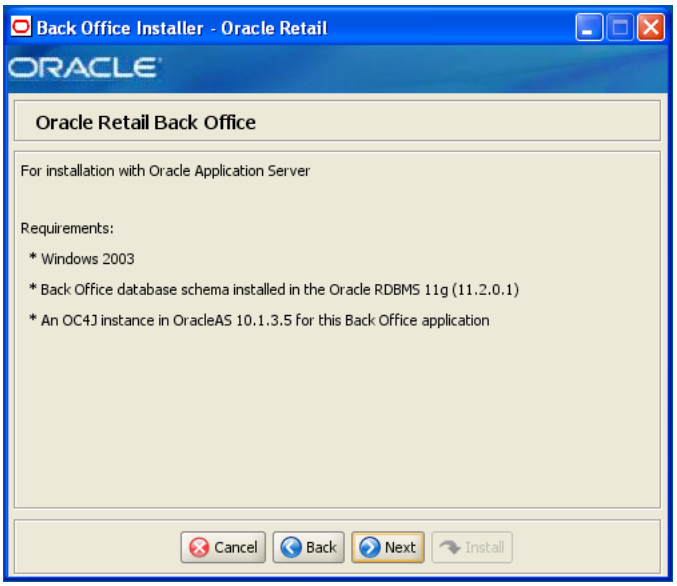
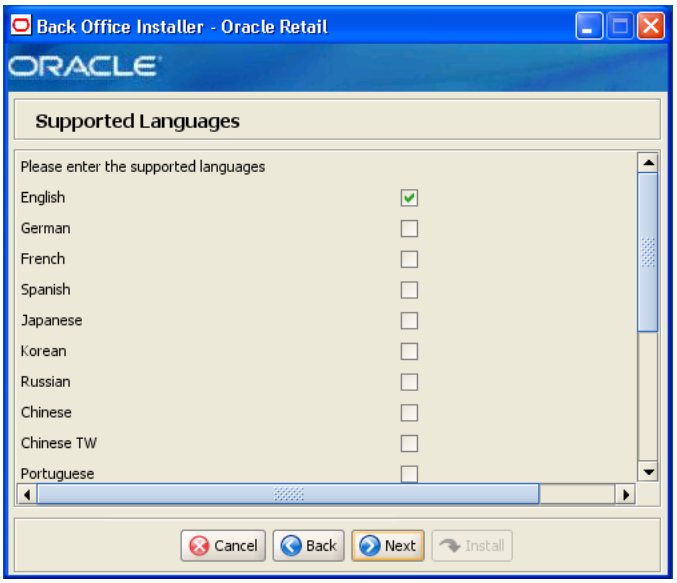


Figure A–3 License Agreement

Note: You must choose to accept the terms of the license agreement in order for the installation to continue.

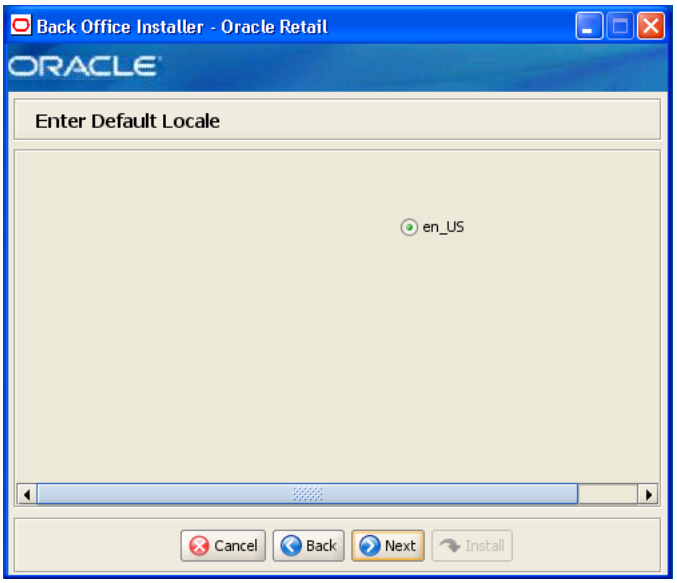
Figure A–4 Supported Languages



The field on this screen is described in the following table.

Field Title	Please enter the supported languages
Field Description	Select the languages that will be available for the Back Office application. The languages selected on this screen determine the available choices on the Enter Default Locale screen.
Example	English
Notes	

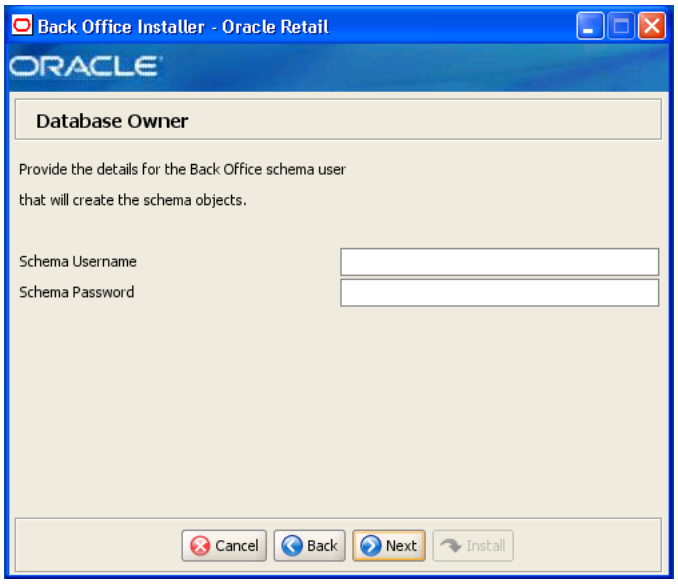
Figure A–5 Enter Default Locale



The field on this screen is described in the following table.

Field Title	Enter Default Locale
Field Description	Locale support in Back Office enables the date, time, currency, calendar, address, and phone number to be displayed in the format for the selected default locale. The choices for default locale are dependent on the selections made on the Supported Languages screen. For each selected language, the default locale for that language is displayed on the Enter Default Locale screen. For example, if English and French are selected on the Supported Languages screen, en_US and fr_FR are the available choices for the default locale.
Example	en_US
Notes	

Figure A–6 Database Owner

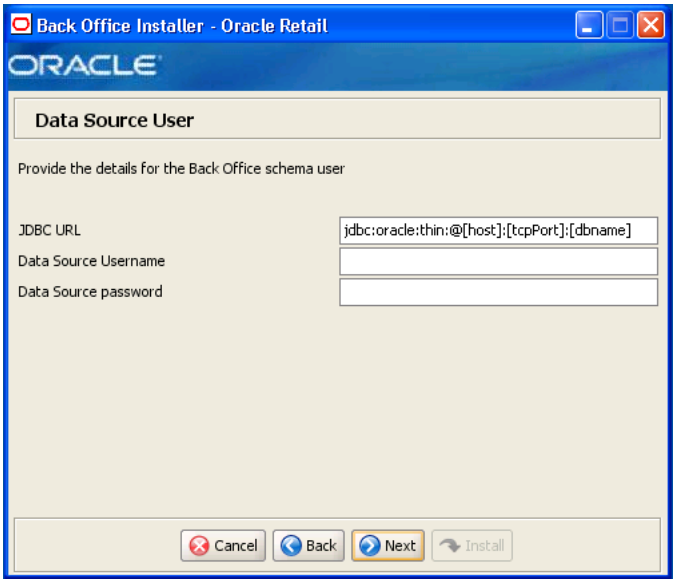


The fields on this screen are described in the following tables.

Field Title	Schema Username
Field Description	Schema user name that manages the objects in the schema. This user has Create, Drop, and Alter privileges in the schema, that is, Data Definition Language (DDL) execution privileges. For information on creating this user, see "Create the Database Schema Owner and Data Source Connection Users" in Chapter 2. **Note:** This user creates the database objects used by Back Office.
Example	DBOWNER
Notes	

Field Title	Schema Password
Field Description	Password for the database owner.
Notes	

Figure A–7 Data Source User



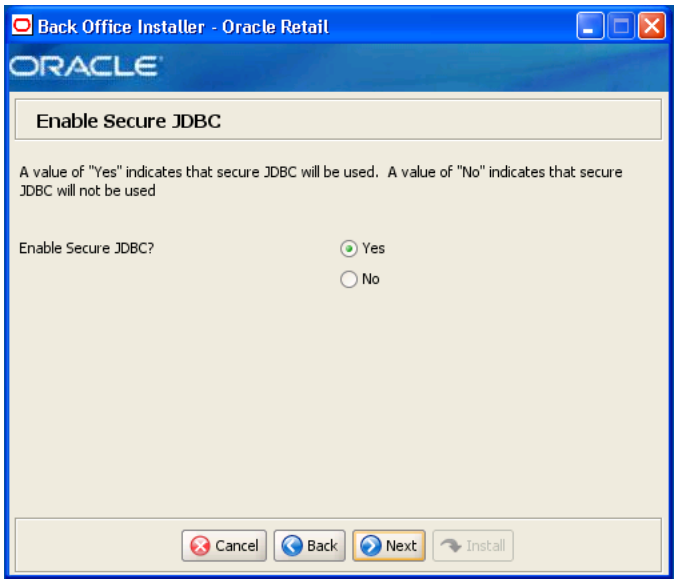
The fields on this screen are described in the following tables.

Field Title	JDBC URL
Field Description	URL used by the Back Office application to access the database schema. See Appendix E for the expected syntax.
Example	`jdbc:oracle:thin:@myhost:1525:mydatabase`
Notes	

Field Title	Data Source Username
Field Description	Database user name that can access and manipulate the data in the schema. This user can have Select, Insert, Update, Delete, and Execute privileges on objects in the schema, that is, Data Manipulation Language (DML) execution privileges. For information on creating this user, see "Create the Database Schema Owner and Data Source Connection Users" in Chapter 2. **Note:** This schema user is used by Back Office to access the database.
Example	DBUSER
Notes	

Field Title	Data Source Password
Field Description	Password for the data source user.
Notes	

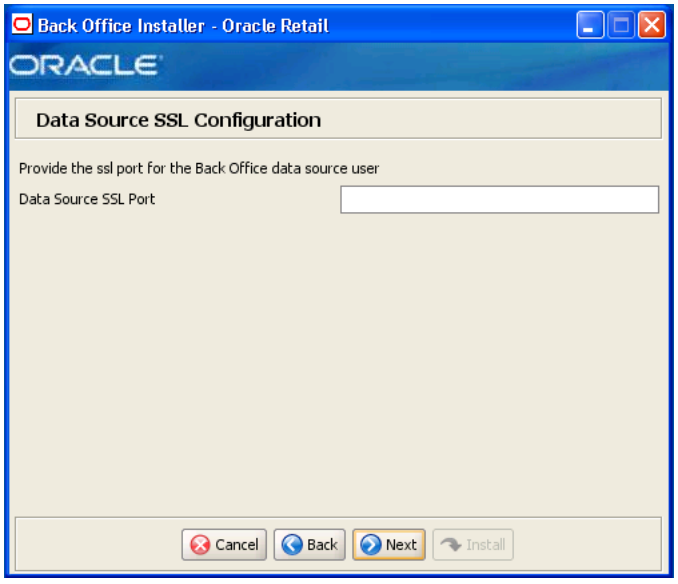
Figure A–8 Enable Secure JDBC



The field on this screen is described in the following table.

Field Title	Enable Secure JDBC?
Field Description	Select whether secure JDBC is to be used for communication with the database.
Example	Yes
Notes	

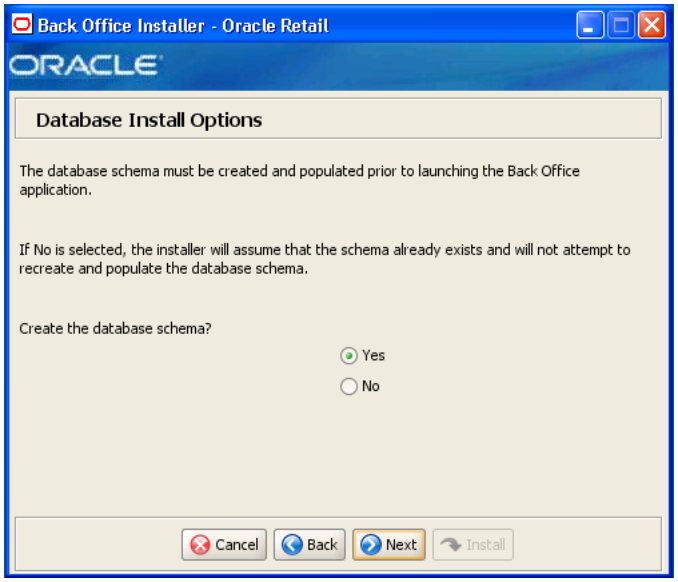
Figure A–9 Data Source SSL Configuration



This screen is only displayed if **Yes** is selected on the Enable Secure JDBC screen. The field on this screen is described in the following table.

Field Title	Data Source SSL Port
Field Description	SSL port used to access the database.
Example	2484
Notes	

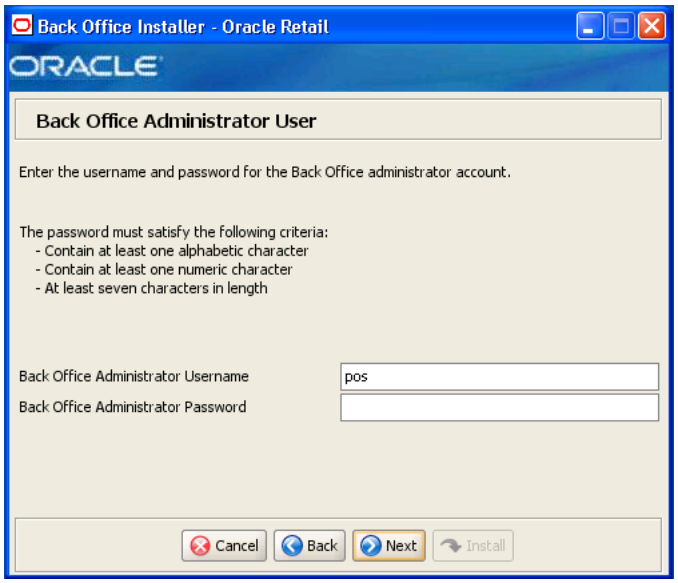
Figure A–10 Database Install Options



The field on this screen is described in the following table.

Field Title	Create the database schema?
Field Description	The database schema must be created and populated before starting Back Office. This screen gives you the option to have the installer create and populate the database schema or leave the database schema unmodified. ▪ To have the installer create and populate the database schema, select **Yes**. ▪ To have the installer leave the database schema unchanged, select **No**. For more information, see "Database Install Options" in Chapter 2.
Example	Yes
Notes	

Figure A–11 Back Office Administrator User

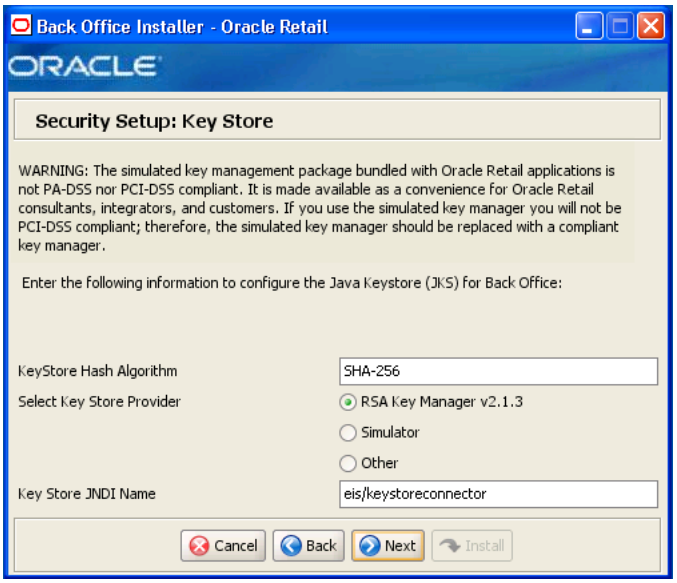


The fields on this screen are described in the following tables.

Field Title	Back Office Administrator Username
Field Description	Administrator user for the Back Office application.
Example	pos
Notes	

Field Title	Back Office Administrator Password
Field Description	Password for the administrator user.
Notes	

Figure A–12 Security Setup: Key Store



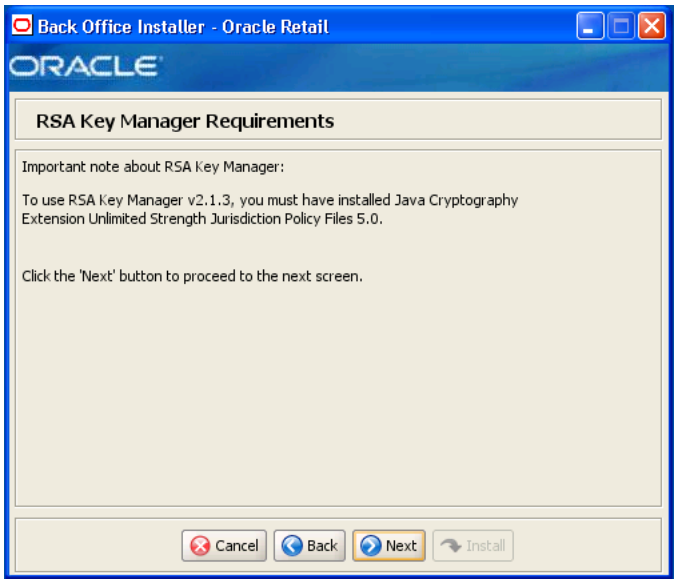
The fields on this screen are described in the following tables.

Field Title	Key Store Hash Algorithm
Field Description	Enter the name of the algorithm used by the Key Store to hash sensitive data.
Example	SHA-256
Notes	

Field Title	Select Key Store Provider
Field Description	Provider for Key Store management. ▪ To use the RSA key management package, select **RSA Key Manager v2.1.3**. The next screen displayed is Figure A–14. ▪ To use the simulated key management package, select **Simulator**. The next screen displayed is Figure A–16. ▪ To use a different key management provider, select **Other**. The next screen displayed is Figure A–17.
Example	RSA Key Manager v2.1.3
Notes	

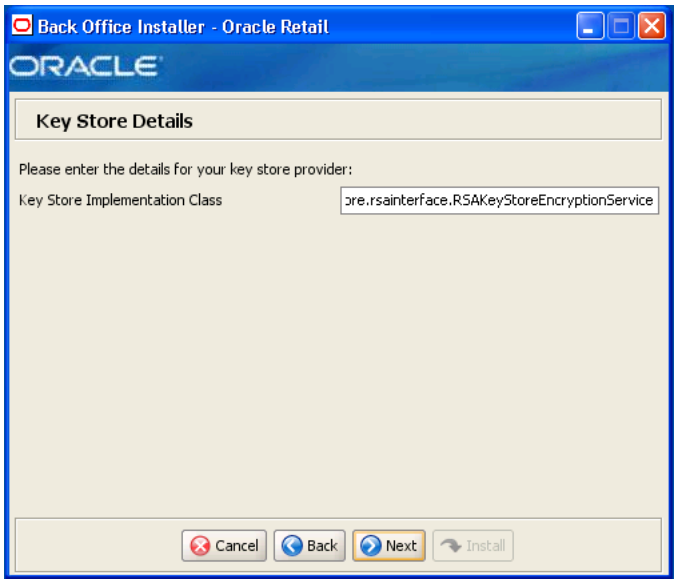
Field Title	Key Store JNDI Name
Field Description	Name of the Key Store JNDI.
Example	eis/keystoreconnector
Notes	

Figure A–13 RSA Key Manager Requirements



This screen is only displayed if **RSA Key Manager v2.1.3** is selected for the Key Store provider on the Security Setup: Key Store screen. This informational screen explains the requirements to use the RSA Key Manager. Verify that you meet the requirements and then click **Next**.

Figure A–14 Key Store Details for RSA Key Manager 2.1.3

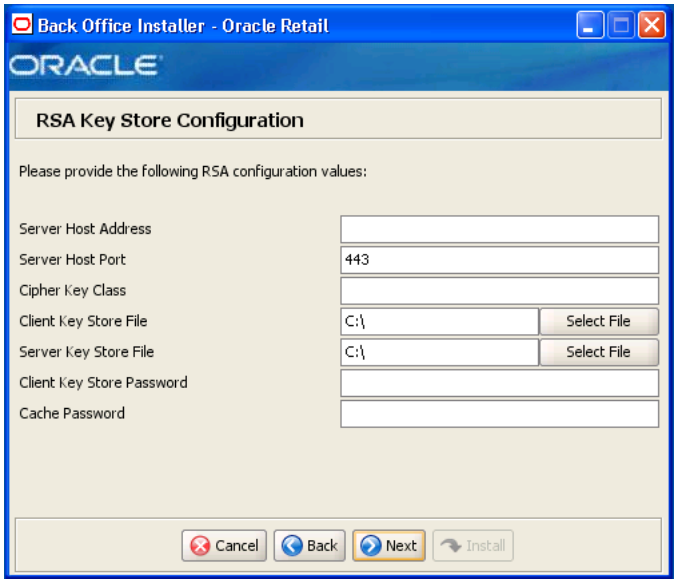


This screen is only displayed if **RSA Key Manager v2.1.3** is selected for the Key Store provider on the Security Setup: Key Store screen.

The field on this screen is described in the following table.

Field Title	Key Store Implementation Class
Field Description	Enter the class that invokes the RSA Key Manager interface.
Example	oracle.retail.stores.rsakeystore.rsainterface.RSAKeyStoreEncryptionService
Notes	

Figure A–15 RSA Key Store Configuration



This screen is only displayed if **RSA Key Manager v2.1.3** is selected for the Key Store provider on the Security Setup: Key Store screen.

The fields on this screen are described in the following tables.

Field Title	Server Host Address
Field Description	Enter the IP address of the RSA server host.
Notes	

Field Title	Server Host Port
Field Description	Enter the port number for the RSA server host.
Example	443 443 is the default used by the RSA Key Manager.
Notes	

Field Title	Cipher Key Class
Field Description	Enter the RSA Key Manager cipher key class.
Notes	

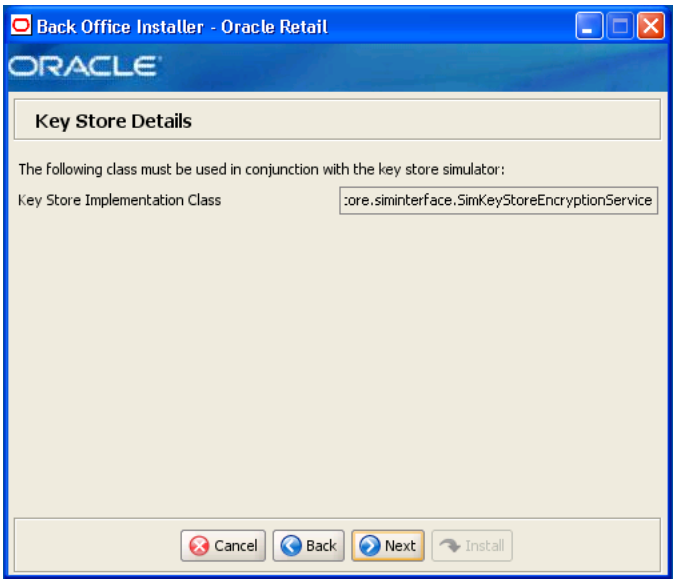
Field Title	Client Keystore File
Field Description	Select the location of the RSA Key Manager client Key Store file.
Notes	

Field Title	Server Key Store File
Field Description	Select the location of the RSA Key Manager server Key Store file.
Notes	

Field Title	Client Key Store Password
Field Description	Enter the password used to access the RSA Key Manager client Key Store.
Notes	

Field Title	Cache Password
Field Description	Enter the password used to access the RSA Key Manager cache.
Notes	

Figure A–16 Key Store Details for Simulator Key Manager

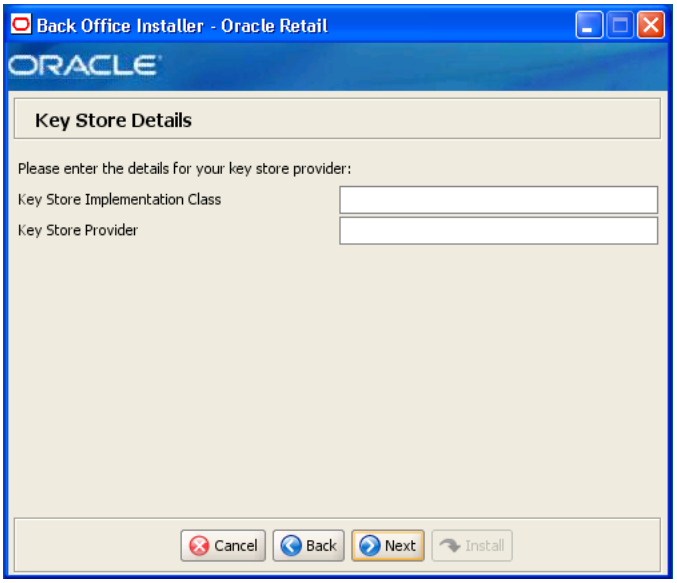


This screen is only displayed if **Simulator** is selected for the Key Store provider on the Security Setup: Key Store screen.

The field on this screen is described in the following table.

Field Title	Key Store Implementation Class
Field Description	Enter the class that invokes the simulated key manager interface.
Example	oracle.retail.stores.simkeystore.siminterface.SimKeyStoreEncryptionService
Notes	

Figure A–17 Key Store Details for Other Key Manager



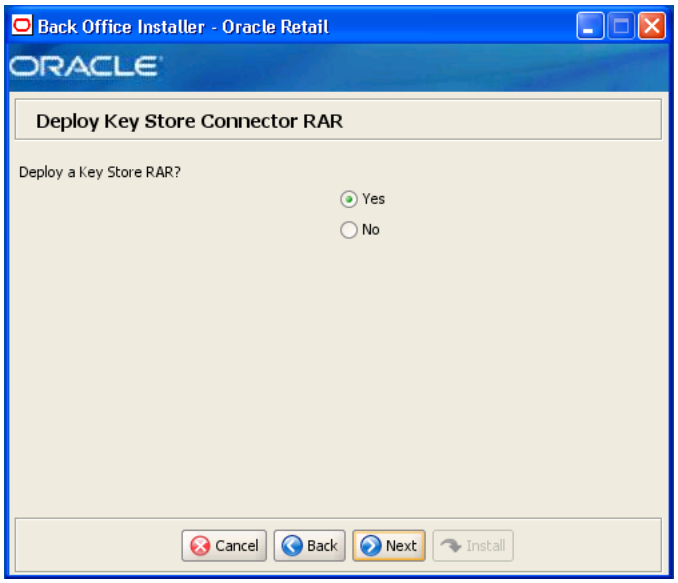
This screen is only displayed if **Other** is selected for the Key Store provider on the Security Setup: Key Store screen.

The fields on this screen are described in the following tables.

Field Title	Key Store Implementation Class
Field Description	Enter the class that invokes the key manager interface.
Notes	

Field Title	Key Store Provider
Field Description	Enter the name of the provider for the Key Store.
Notes	

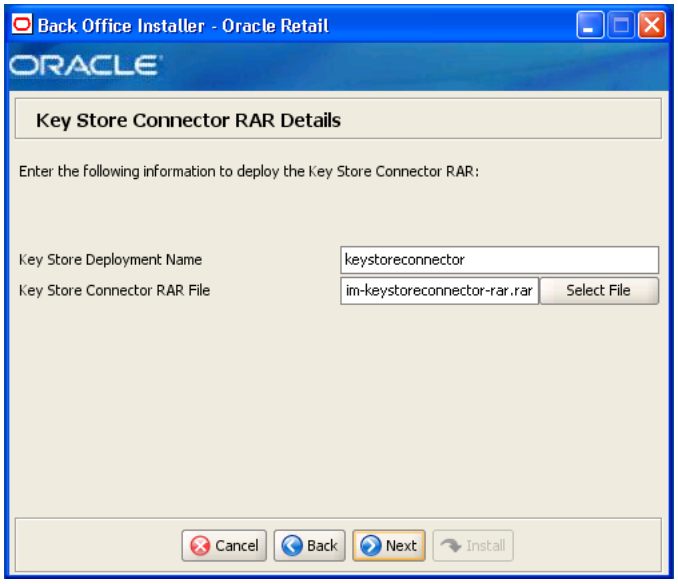
Figure A–18 Deploy Key Store Connector RAR



The field on this screen is described in the following table.

Field Title	Deploy a Key Store RAR?
Field Description	Select whether a Key Store RAR is to be deployed.
Example	Yes
Notes	

Figure A–19 Key Store Connector RAR Details

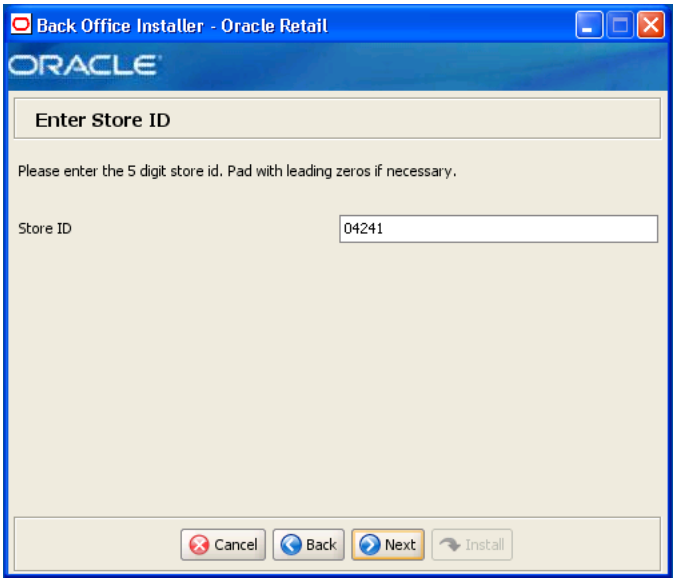


This screen is only displayed if **Yes** is selected on the Deploy Key Store Connector RAR screen. The fields on this screen are described in the following tables.

Field Title	Key Store Deployment Name
Field Description	Name to which the Key Store connector will be deployed.
Example	keystoreconnector
Notes	

Field Title	Key Store Connector RAR File
Field Description	Path name to the KeyStore Connector RAR file.
Example	`\connectors\keystoreconnector-rar.rar`
Notes	

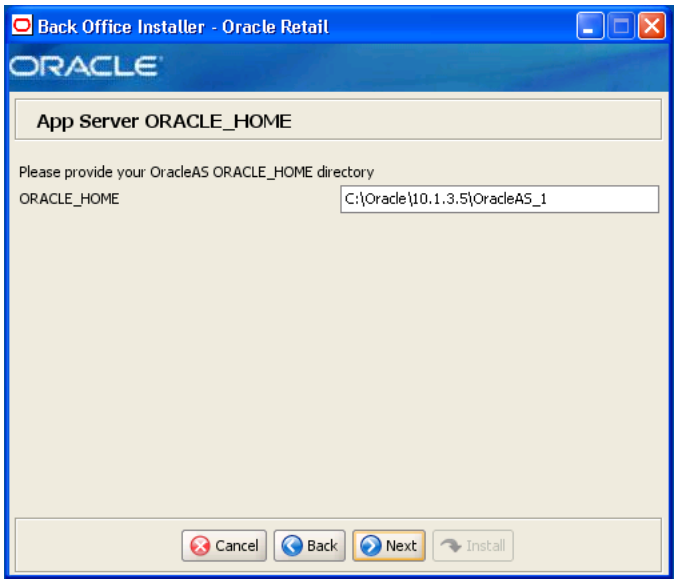
Figure A–20 Enter Store ID



The field on this screen is described in the following tables.

Field Title	Store ID
Field Description	ID for this store.
Example	04241
Notes	

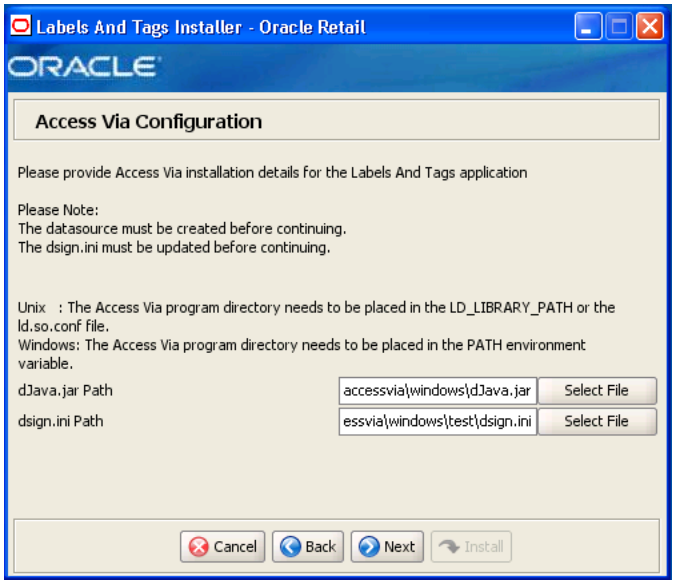
Figure A–21 App Server ORACLE_HOME



The field on this screen is described in the following table.

Field Title	ORACLE_HOME
Field Description	ORACLE_HOME directory for the Oracle Application Server installation.
Example	`C:\Oracle\10.1.3.5\OracleAS_1`
Notes	

Figure A–22 Access Via Configuration

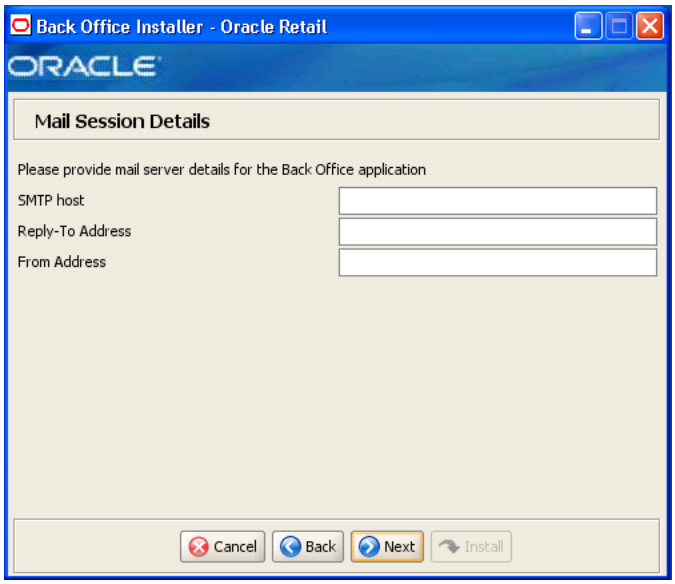


This screen is only displayed when installing Oracle Retail Back Office with the Labels and Tags module. The fields on this screen are described in the following tables.

Field Title	dJava.jar Path
Field Description	Path to the `dJava.jar` file.
Example	`<INSTALL_DIR>\backoffice\lib\thirdparty\accessvia7.5\accessvia_WIN\accessvia\windows\dJava.jar`
Notes	

Field Title	dsign.ini Path
Field Description	Path to the AccessVia Print Engine configuration file.
Example	`<INSTALL_DIR>\backoffice\lib\thirdparty\accessvia7.5\accessvia_WIN\accessvia\windows\test\dsign.ini`
Notes	

Figure A–23 Mail Session Details



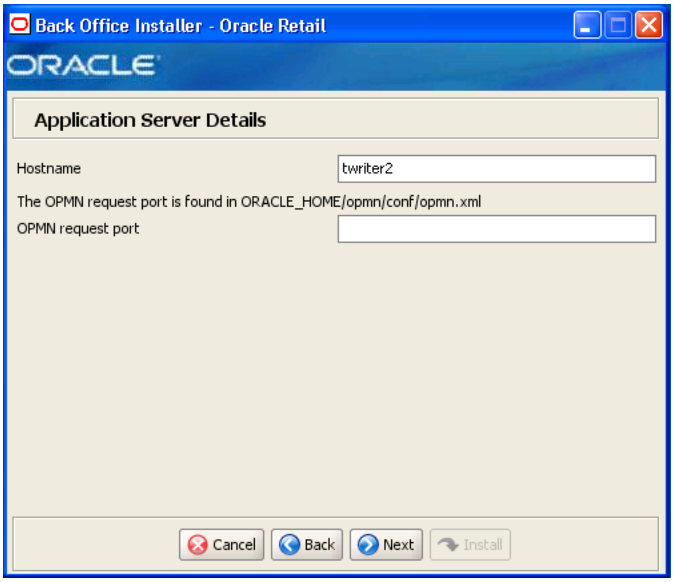
The fields on this screen are described in the following tables.

Field Title	SMTP host
Field Description	Host where the SMTP server is running.
Example	`mail.mycompany.com`
Notes	

Field Title	Reply-To Address
Field Description	Reply-to address in e-mails generated by Back Office.
Example	`donotreply@mycompany.com`
Notes	

Field Title	From Address
Field Description	From address in e-mails generated by Back Office.
Example	`donotreply@mycompany.com`
Notes	

Figure A–24 Application Server Details



The fields on this screen are described in the following tables.

Field Title	Hostname
Field Description	Host name of the application server.
Example	myhost
Notes	

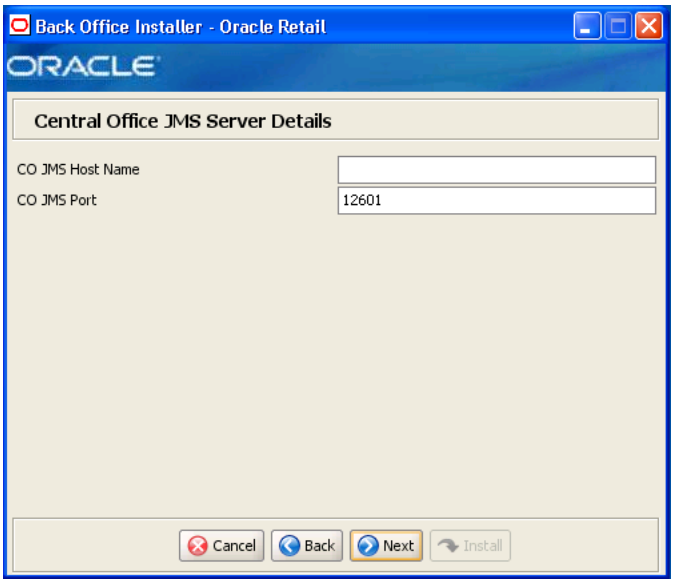
Field Title	OPMN request port
Field Description	Port on which OPMN listens for requests to forward on to OC4J instances. This port can be found in the `ORACLE_HOME\opmn\conf\opmn.xml` file: `<port local="6100" remote="6200" request="6003"/>`
Example	6003
Notes	

Figure A–25 Central Office JMS Server Integration

The field on this screen is described in the following table.

Field Title	Integrate with Central Office JMS Server?
Field Description	This screen gives you the option to integrate the Back Office application with a Central Office JMS server. **Note:** If you select **Yes**, the Central Office application must be running in order for the Back Office files to be installed correctly.
Example	Yes
Notes	

Figure A–26 Central Office JMS Server Details

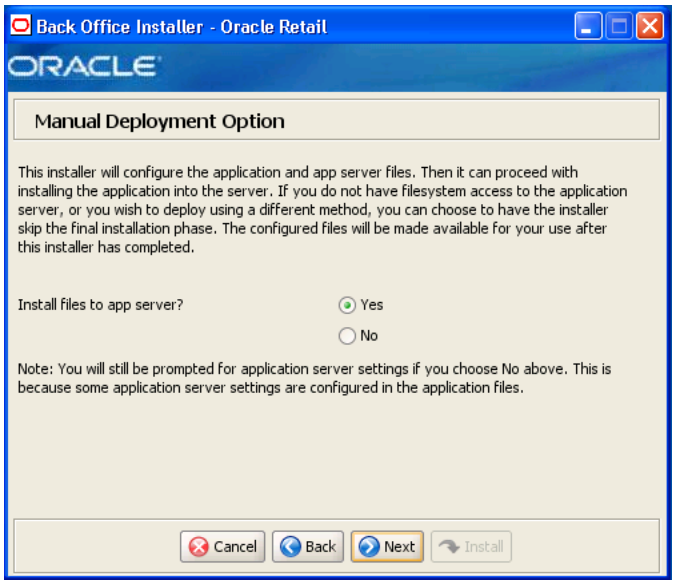


This screen is only displayed if **Yes** is selected on the Central Office JMS Server Integration screen. The fields on this screen are described in the following tables.

Field Title	CO JMS Host Name
Field Description	Name of the Central Office JMS server. **Note:** Always use the actual host name and not the IP address or "localhost". There may be problems integrating with Point-of-Service if the actual host name is not used.
Example	Server1
Notes	

Field Title	CO JMS Port
Field Description	Port number used by the Central Office JMS server.
Example	12601
Notes	

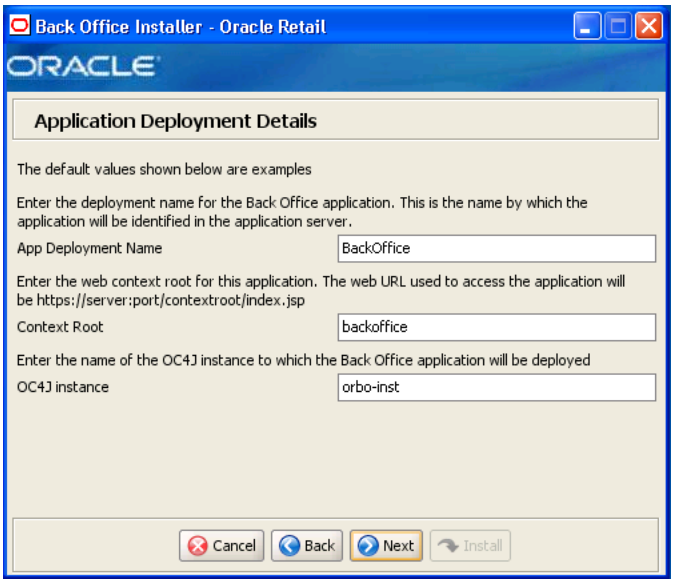
Figure A–27 Manual Deployment Option



The field on this screen is described in the following table.

Field Title	Install files to app server?
Field Description	By default, the installer will deploy the ear file and copy files under the application server ORACLE_HOME. This screen gives you the option to leave ORACLE_HOME unmodified and configure the application in the staging area for use in a manual installation at a later time. This option can be used in situations where modifications to files under ORACLE_HOME must be reviewed by another party before being applied. If you choose No, see "Manual Deployment of the Back Office Application" in Chapter 2 for the manual steps you need to perform after the installer completes.
Example	Yes
Notes	

Figure A–28 Application Deployment Details



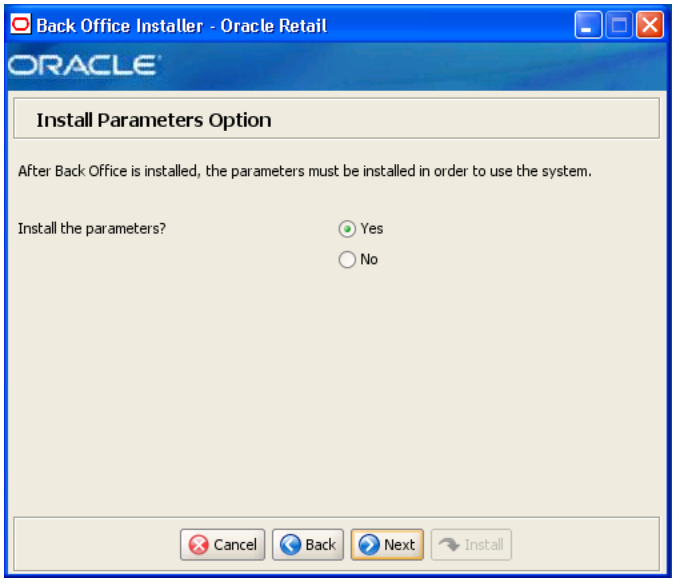
The fields on this screen are described in the following tables.

Field Title	App Deployment Name
Field Description	Name by which this Back Office application will be identified in the application server.
Example	BackOffice
Notes	

Field Title	Context Root
Field Description	Path under the HTTPS URL that will be used to access the Back Office application. For example, a context root of 'backoffice' will result in the application being accessed at `https://host:port/backoffice/index.jsp`.
Example	backoffice
Notes	

Field Title	OC4J Instance
Field Description	Name of the OC4J instance that was created for this Back Office application.
Example	orbo-inst For Back Office with the Labels and Tags module, an example would be orlat-inst.
Notes	

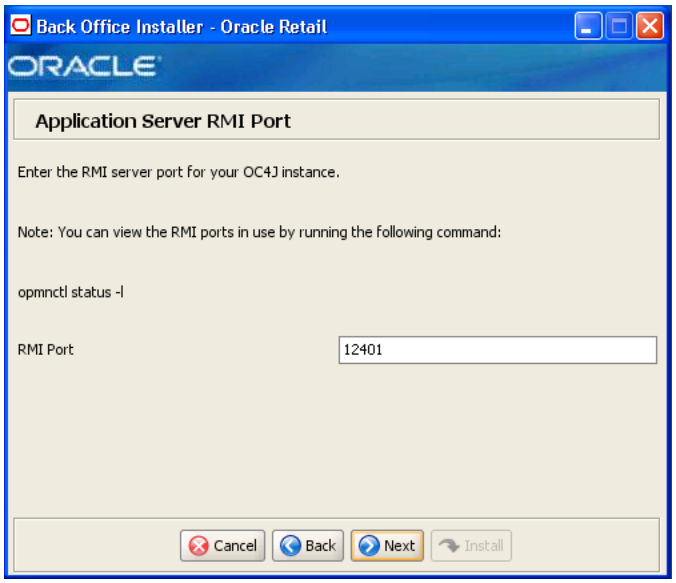
Figure A–29 Install Parameters Options



The field on this screen is described in the following table.

Field Title	Install the parameters?
Field Description	The application parameters must be set up before Back Office can be used. This screen gives you the option to set up the parameters manually. If you choose No, see "Install Parameters" in Chapter 2 for the manual steps you need to perform after the installer completes.
Example	Yes
Notes	

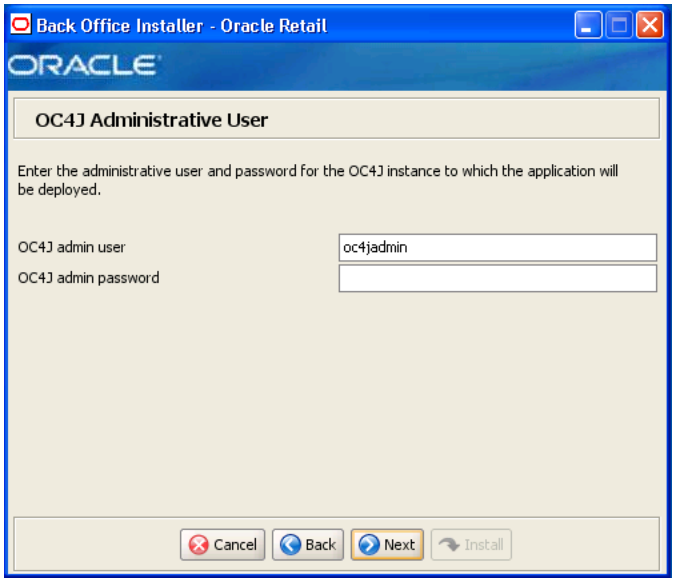
Figure A–30 Application Server RMI Port



This screen is only if **Yes** is selected for the Install the Parameters option. The field on this screen is described in the following table.

Field Title	RMI Port
Field Description	Port to be used for installing parameters. This port can be found in the `ORACLE_HOME\opmn\conf\opmn.xml` file.
Example	12402
Notes	

Figure A–31 OC4J Administrative User

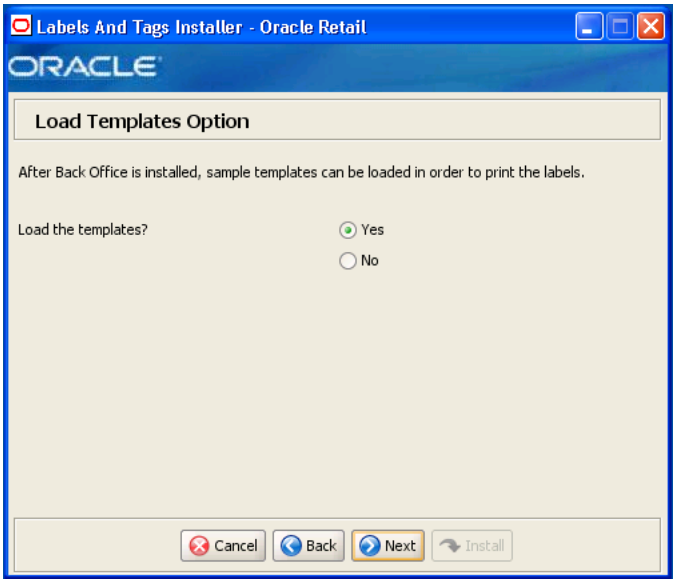


The fields on this screen are described in the following tables.

Field Title	OC4J admin user
Field Description	User name of the administrative user for the OC4J instance to which the Back Office application is being deployed.
Example	oc4jadmin
Notes	

Field Title	OC4J admin password
Field Description	Password for the OC4J administrative user. You chose this password when you created the OC4J instance.
Notes	

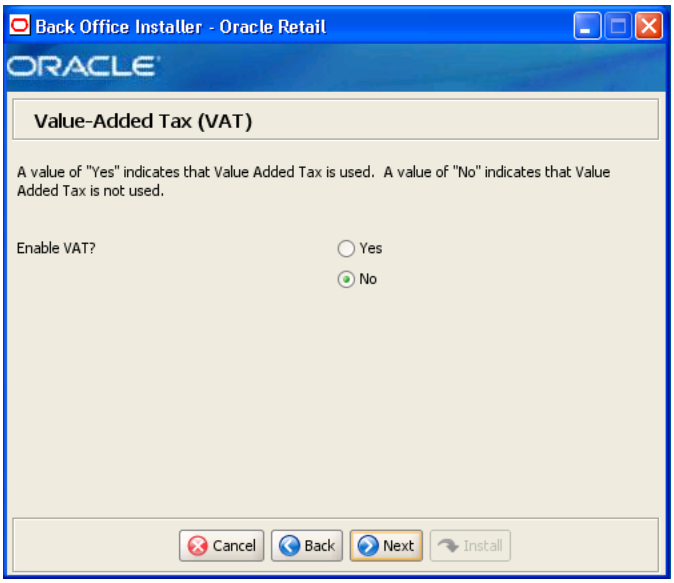
Figure A–32 Load Templates Option



This screen is only displayed when installing Oracle Retail Back Office with the Labels and Tags module. The field on this screen is described in the following table.

Field Title	Load the templates?
Field Description	Sets whether sample templates for printing labels are loaded into the database after Back Office is installed. For more information, see "Labels and Tags Templates" in Chapter 3. ■ To load the templates, choose Yes. ■ To not load the templates, choose No.
Example	Yes
Notes	

Figure A–33 Value-Added Tax (VAT)



The field on this screen is described in the following table.

Field Title	Enable VAT?
Field Description	Sets whether Value-Added Tax is used in Back Office. ■ To enable Back Office to use VAT, choose Yes. ■ To not use VAT, choose No.
Example	No
Notes	

Figure A–34 Installation Progress

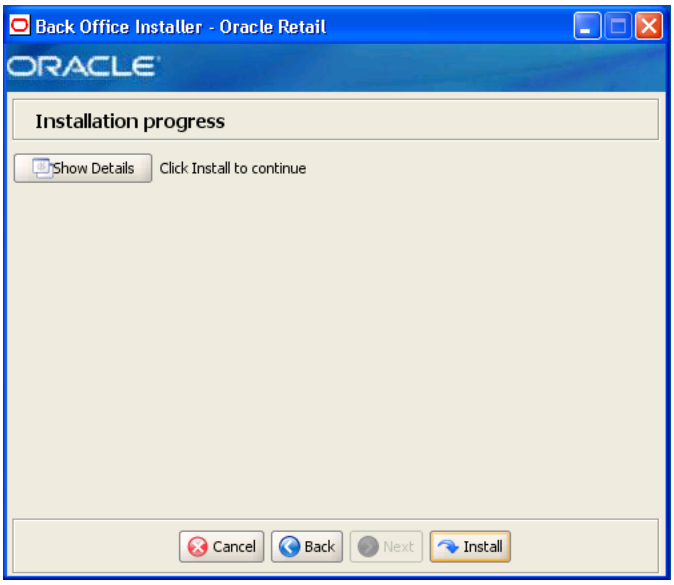
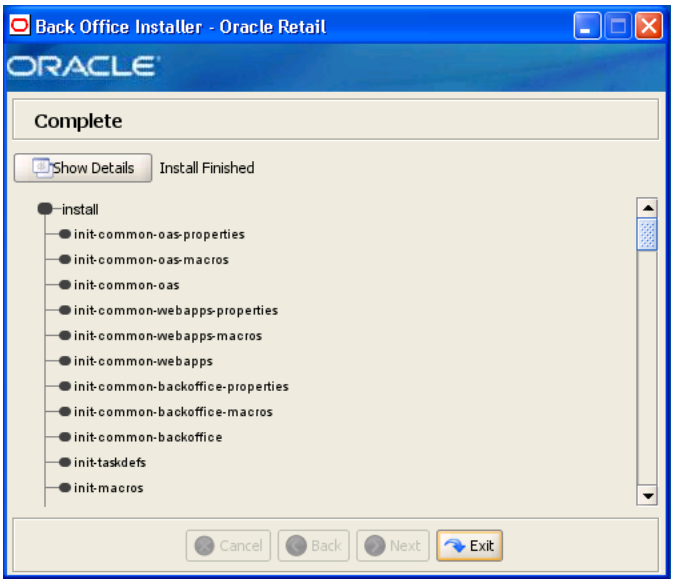


Figure A–35 Installation Complete



After the installer completes, the Oracle Configuration Manager (OCM) installer runs if OCM is not already installed. For information on OCM, see "Backups Created by Installer" in Chapter 2.

B

Appendix: Back Office Application Installer Screens for the IBM Stack

You need specific details about your environment for the installer to successfully deploy the Back Office application, or the Back Office application with the Labels and Tags module, on the IBM Stack. Depending on the options you select, you may not see some screens or fields.

For each field on a screen, a table is included in this appendix that describes the field. If you want to document any specific information about your environment for any field, a Notes row is provided in each table for saving that information.

> **Note:** When installing the Back Office application with the Labels and Tags module, the title on the installer screens is Labels and Tags Installer. The content of the screens is the same for either installer.

Figure B–1 Introduction

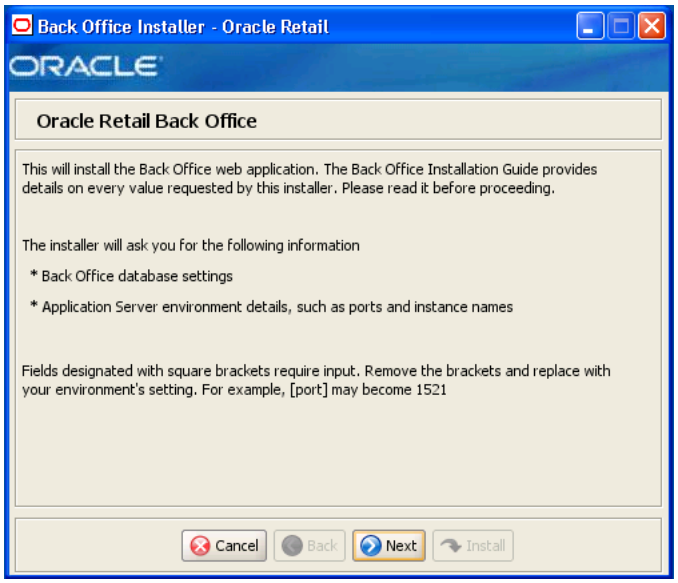


Figure B–2 Requirements

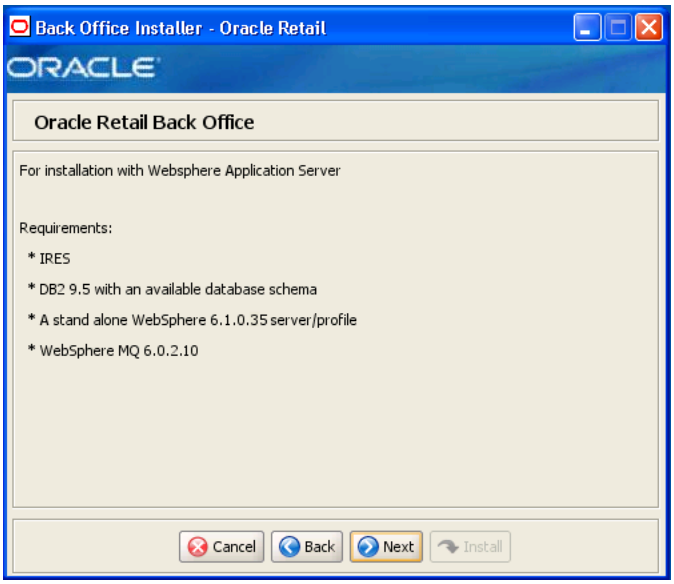
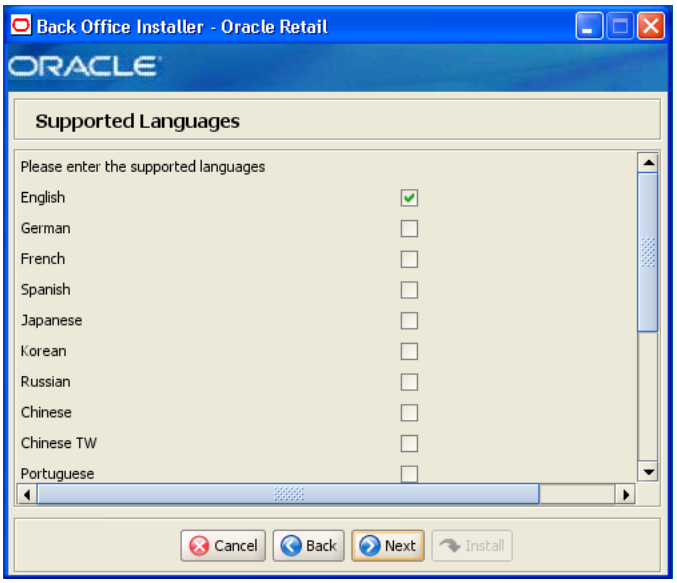


Figure B–3 License Agreement

Note: You must choose to accept the terms of the license agreement in order for the installation to continue.

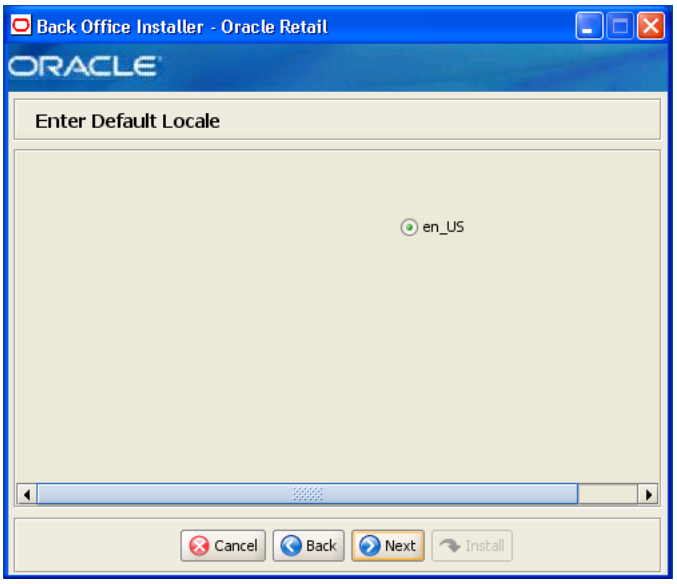
Figure B–4 Supported Languages



The field on this screen is described in the following table.

Field Title	Please enter the supported languages
Field Description	Select the languages that will be available for the Back Office application. The languages selected on this screen determine the available choices on the Enter Default Locale screen.
Example	English
Notes	

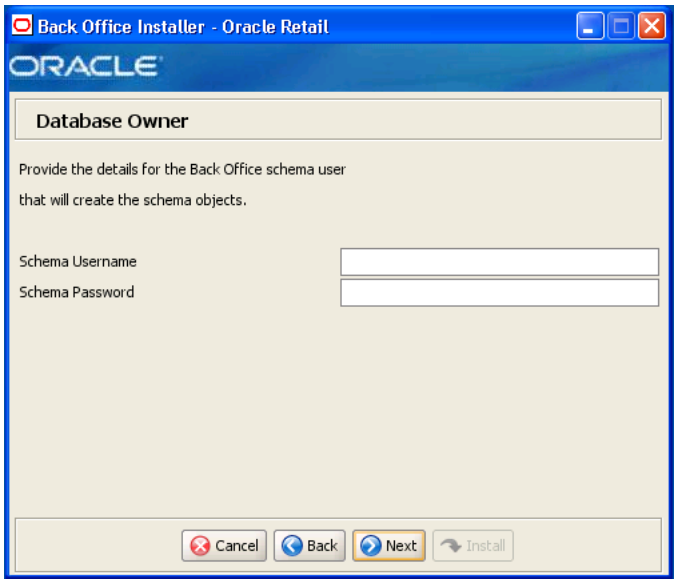
Figure B–5 Enter Default Locale



The field on this screen is described in the following table.

Field Title	Enter Default Locale
Field Description	Locale support in Back Office enables the date, time, currency, calendar, address, and phone number to be displayed in the format for the selected default locale. The choices for default locale are dependent on the selections made on the Supported Languages screen. For each selected language, the default locale for that language is displayed on the Enter Default Locale screen. For example, if English and French are selected on the Supported Languages screen, en_US and fr_FR are the available choices for the default locale.
Example	en_US
Notes	

Figure B–6 Database Owner

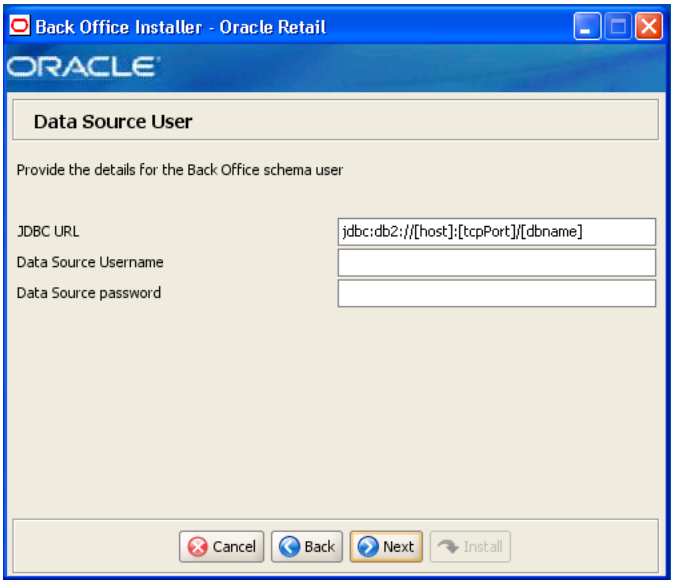


The fields on this screen are described in the following tables.

Field Title	Schema Username
Field Description	Schema user name that manages the objects in the schema. This user has Create, Drop, and Alter privileges in the schema, that is, Data Definition Language (DDL) execution privileges. For information on creating this user, see "Create the Database Schema Owner and Data Source Users" in Chapter 4. **Note:** This user creates the database objects used by Back Office.
Example	DBOWNER
Notes	

Field Title	Schema Password
Field Description	Password for the database owner.
Notes	

Figure B–7 Data Source User



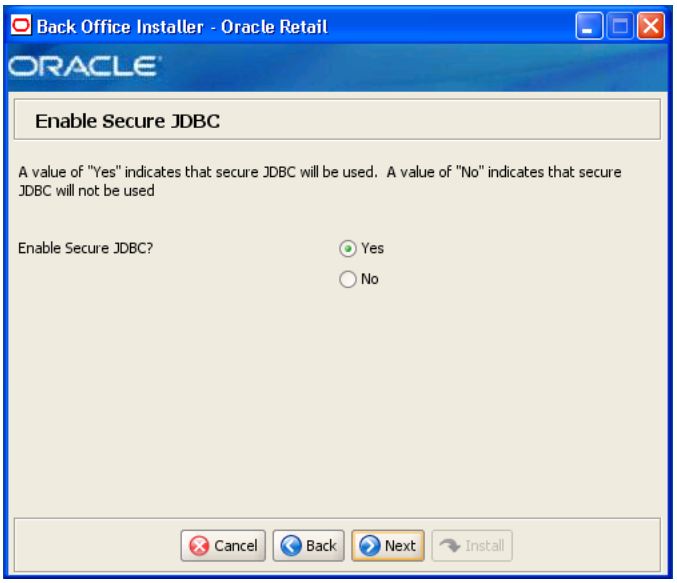
The fields on this screen are described in the following tables.

Field Title	JDBC URL
Field Description	URL used by the Back Office application to access the database schema. See Appendix E for the expected syntax.
Example	`jdbc:db2://myhost:50001/mydb`
Notes	

Field Title	Data Source Username
Field Description	Database user name that can access and manipulate the data in the schema. This user can have Select, Insert, Update, Delete, and Execute privileges on objects in the schema, that is, Data Manipulation Language (DML) execution privileges. For information on creating this user, see "Create the Database Schema Owner and Data Source Users" in Chapter 4. **Note:** This schema user is used by Back Office to access the database.
Example	DBUSER
Notes	

Field Title	Data Source Password
Field Description	Password for the data source user.
Notes	

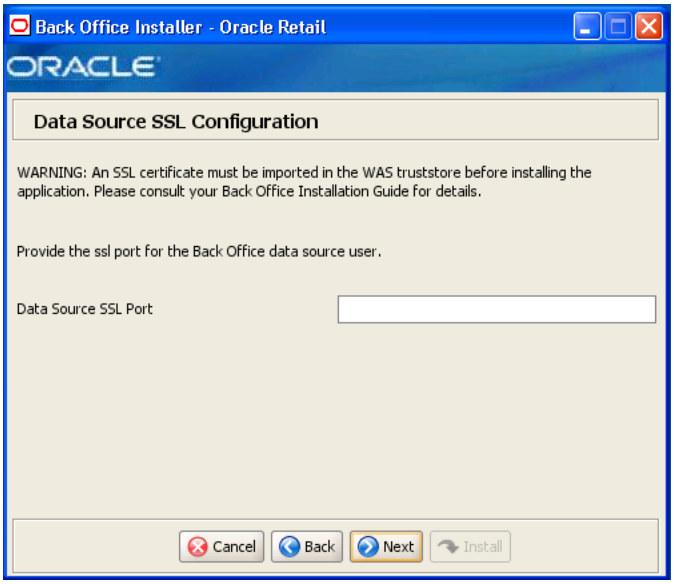
Figure B–8 Enable Secure JDBC



The field on this screen is described in the following table.

Field Title	Enable Secure JDBC?
Field Description	Select whether secure JDBC is to be used for communication with the database.
Example	Yes
Notes	

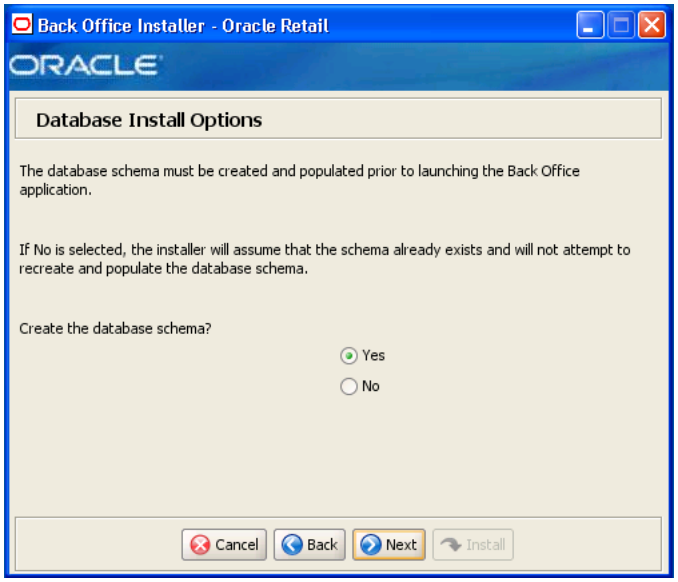
Figure B–9 Data Source SSL Configuration



This screen is only displayed if **Yes** is selected on the Enable Secure JDBC screen. The field on this screen is described in the following table.

Field Title	Data Source SSL Port
Field Description	SSL port used to access the database.
Example	1521
Notes	

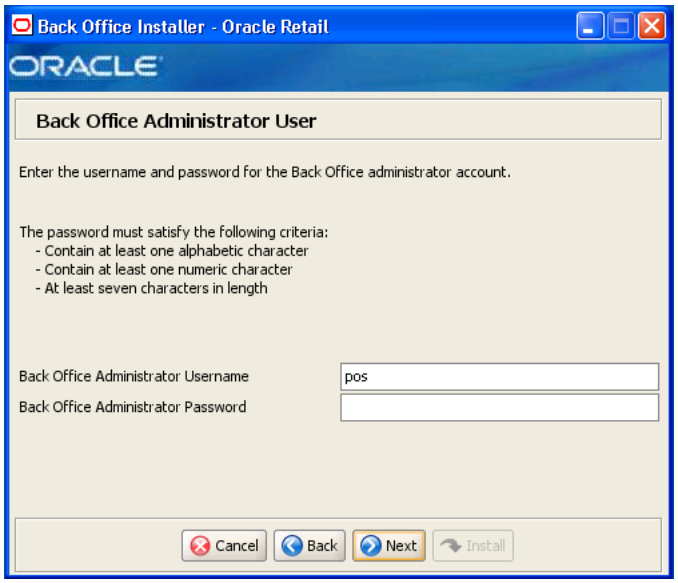
Figure B–10 IDatabase Install Options



The field on this screen is described in the following table.

Field Title	Create the database schema?
Field Description	The database schema must be created and populated before starting Back Office. This screen gives you the option to have the installer create and populate the database schema or leave the database schema unmodified. ▪ To have the installer create and populate the database schema, select **Yes**. ▪ To have the installer leave the database schema unchanged, select **No**. For more information, see "Database Install Options" in Chapter 4.
Example	Yes
Notes	

Figure B–11 Back Office Administrator User

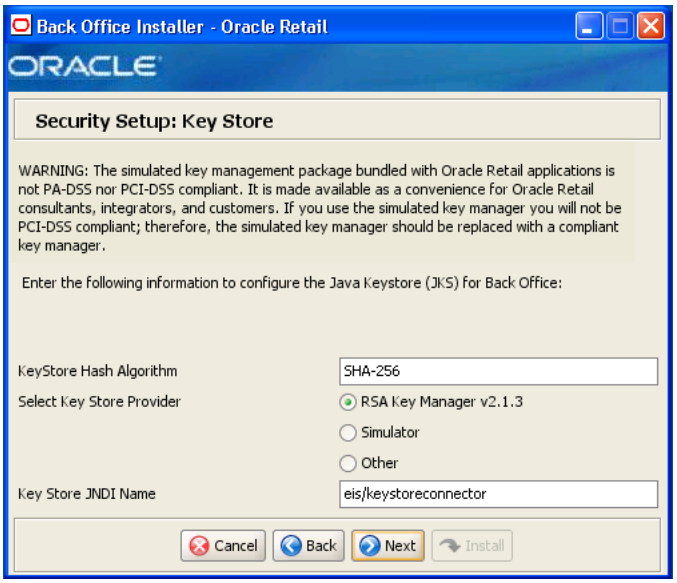


The fields on this screen are described in the following tables.

Field Title	Back Office Administrator Username
Field Description	Administrator user for the Back Office application.
Example	pos
Notes	

Field Title	Back Office Administrator Password
Field Description	Password for the administrator user.
Notes	

Figure B–12 Security Setup: Key Store



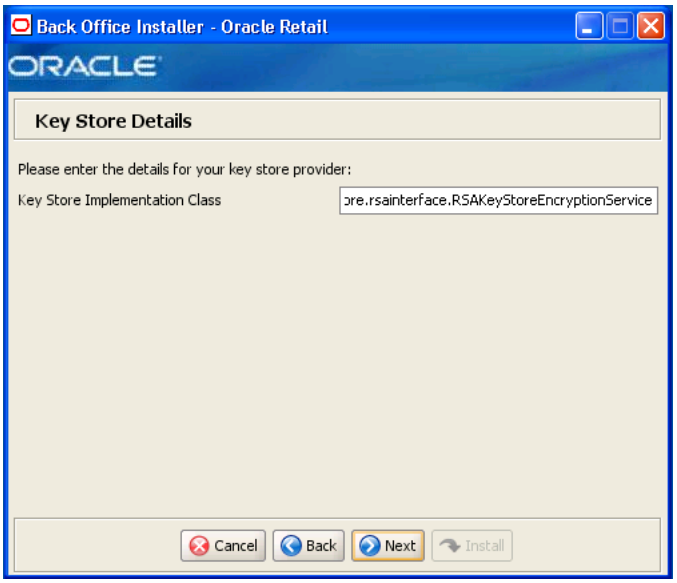
The fields on this screen are described in the following tables.

Field Title	Key Store Hash Algorithm
Field Description	Enter the name of the algorithm used by the Key Store to hash sensitive data.
Example	SHA-256
Notes	

Figure B–13 RSA Key Manager Requirements

This screen is only displayed if **RSA Key Manager v2.1.3** is selected for the Key Store provider on the Security Setup: Key Store screen. This informational screen explains the requirements to use the RSA Key Manager. Verify that you meet the requirements and then click **Next**.

Figure B–14 Key Store Details for RSA Key Manager 2.1.3



This screen is only displayed if **RSA Key Manager v2.1.3** is selected for the Key Store provider on the Security Setup: Key Store screen.

The field on this screen is described in the following table.

Field Title	Key Store Implementation Class
Field Description	Enter the class that invokes the RSA Key Manager interface.
Example	oracle.retail.stores.rsakeystore.rsainterface.RSAKeyStoreEncryptionService
Notes	

Figure B–15 RSA Key Store Configuration

This screen is only displayed if **RSA Key Manager v2.1.3** is selected for the Key Store provider on the Security Setup: Key Store screen.

The fields on this screen are described in the following tables.

Field Title	**Server Host Address**
Field Description	Enter the IP address of the RSA server host.
Notes	

Field Title	**Server Host Port**
Field Description	Enter the port number for the RSA server host.
Example	443 443 is the default used by the RSA Key Manager.
Notes	

Field Title	**Cipher Key Class**
Field Description	Enter the RSA Key Manager cipher key class.
Notes	

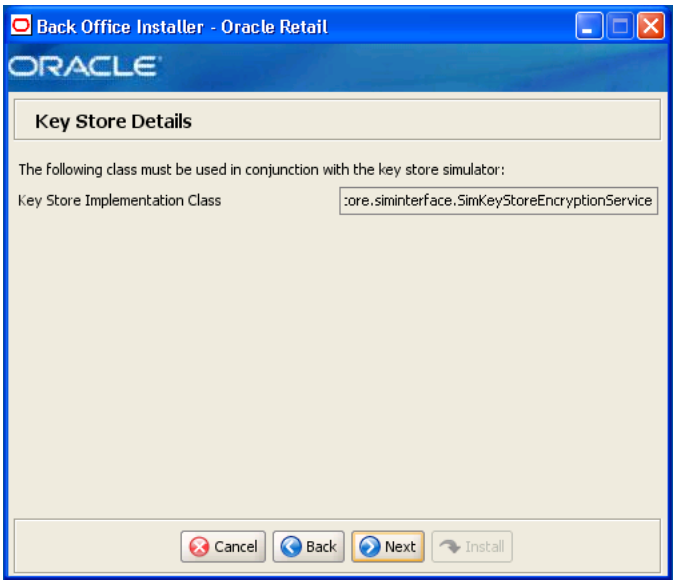
Field Title	**Client Keystore File**
Field Description	Select the location of the RSA Key Manager client Key Store file.
Notes	

Field Title	Server Key Store File
Field Description	Select the location of the RSA Key Manager server Key Store file.
Notes	

Field Title	Client Key Store Password
Field Description	Enter the password used to access the RSA Key Manager client Key Store.
Notes	

Field Title	Cache Password
Field Description	Enter the password used to access the RSA Key Manager cache.
Notes	

Figure B–16 Key Store Details for Simulator Key Manager

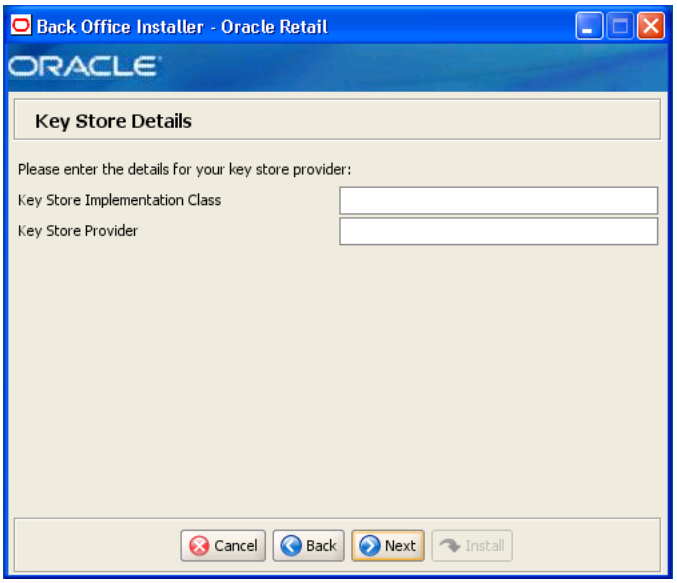


This screen is only displayed if **Simulator** is selected for the Key Store provider on the Security Setup: Key Store screen.

The field on this screen is described in the following table.

Field Title	Key Store Implementation Class
Field Description	Enter the class that invokes the simulated key manager interface.
Example	oracle.retail.stores.simkeystore.siminterface.SimKeyStoreEncryptionService
Notes	

Figure B–17 Key Store Details for Other Key Manager



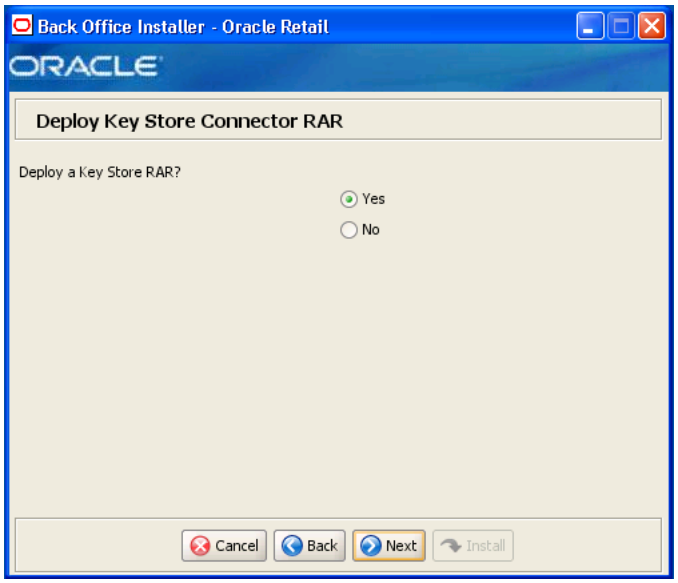
This screen is only displayed if **Other** is selected for the Key Store provider on the Security Setup: Key Store screen.

The fields on this screen are described in the following tables.

Field Title	Key Store Implementation Class
Field Description	Enter the class that invokes the key manager interface.
Notes	

Field Title	Key Store Provider
Field Description	Enter the name of the provider for the Key Store.
Notes	

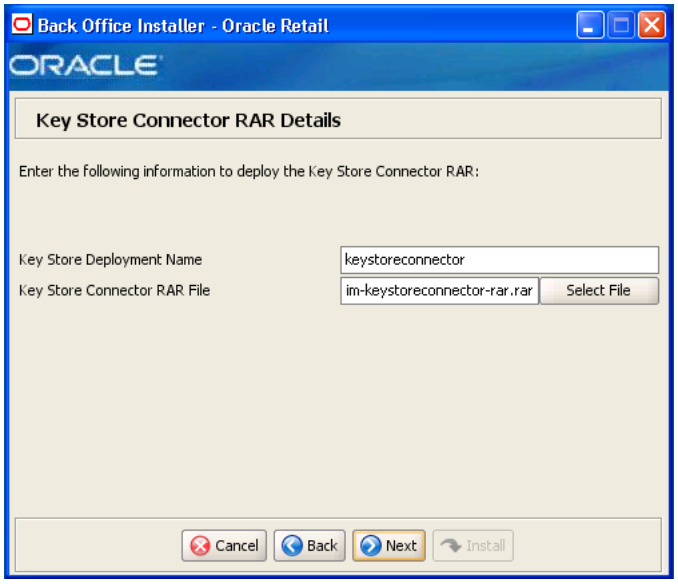
Figure B–18 Deploy Key Store Connector RAR



The field on this screen is described in the following table.

Field Title	Deploy a Key Store RAR?
Field Description	Select whether a Key Store RAR is to be deployed.
Example	Yes
Notes	

Figure B–19 Key Store Connector RAR Details

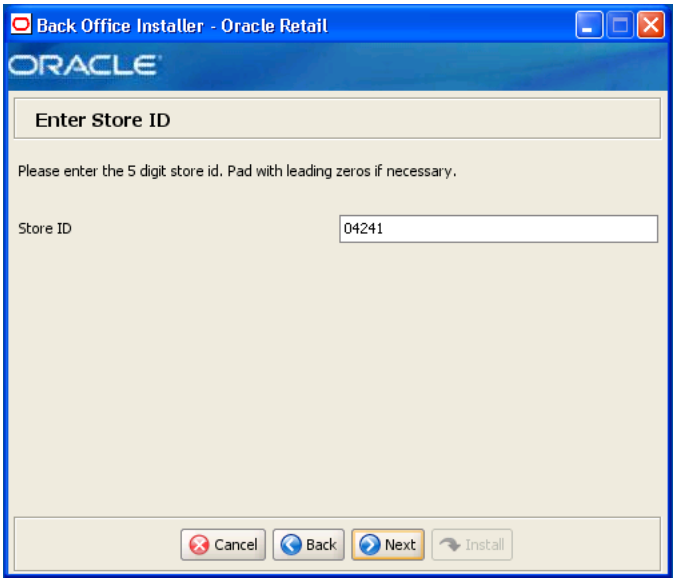


This screen is only displayed if **Yes** is selected on the Deploy Key Store Connector RAR screen. The fields on this screen are described in the following tables.

Field Title	Key Store Deployment Name
Field Description	Name to which the Key Store connector will be deployed.
Example	keystoreconnector
Notes	

Field Title	Key Store Connector RAR File
Field Description	Path name to the KeyStore Connector RAR file.
Example	`/opt/connectors/keystoreconnector-rar.rar`
Notes	

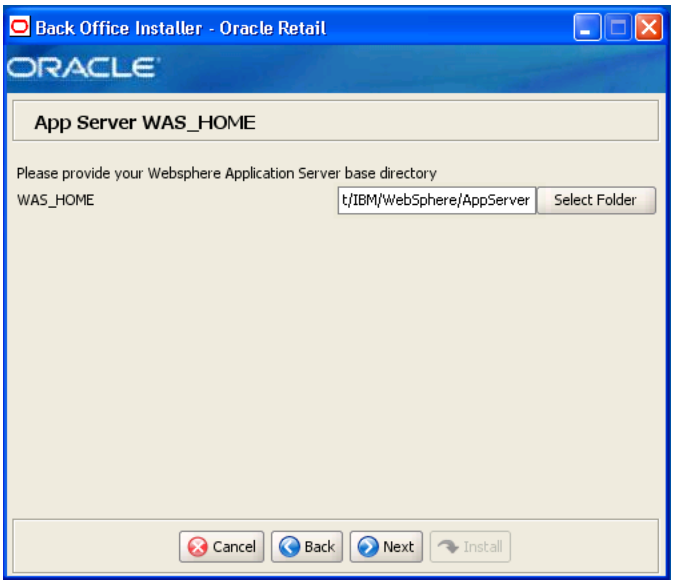
Figure B–20 Enter Store ID



The field on this screen is described in the following tables.

Field Title	Store ID
Field Description	ID for this store. **Note:** Seed data includes sample data used to evaluate the application and demonstrate core functions of the software. There are references in the seed data to store ID 01291. During installation, if 01291 is selected for the store ID, SQL errors occur during the loading of the database. The SQL errors are caused by those references.
Example	04241
Notes	

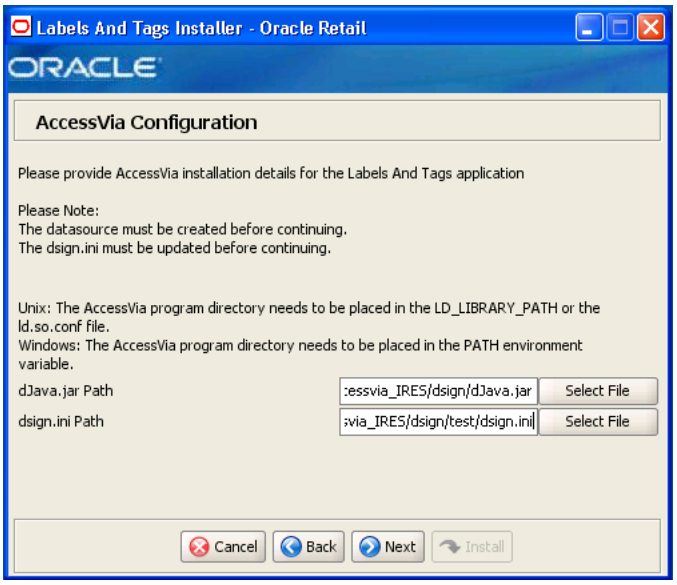
Figure B–21 App Server WAS_HOME



The field on this screen is described in the following table.

Field Title	WAS_HOME
Field Description	Base directory for the IBM WebSphere Application Server installation.
Example	`/opt/IBM/WebSphere/AppServer`
Notes	

Figure B–22 Access Via Configuration

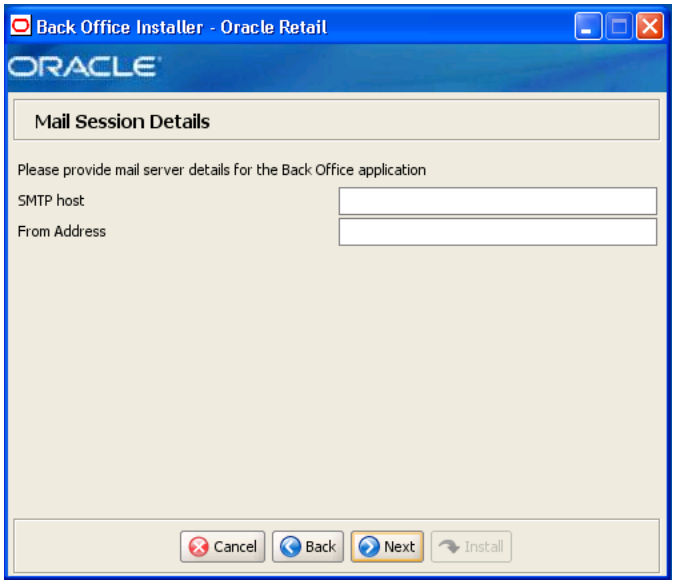


This screen is only displayed when installing Oracle Retail Back Office with the Labels and Tags module. The fields on this screen are described in the following tables.

Field Title	dJava.jar Path
Field Description	Path to the `dJava.jar` file.
Example	`<INSTALL_DIR>/backoffice/lib/thirdparty/accessvia7.5/accessvia_IRES/dsign/program/dJava.jar`
Notes	

Field Title	dsign.ini Path
Field Description	Path to the AccessVia Print Engine configuration file.
Example	`<INSTALL_DIR>/backoffice/lib/thirdparty/accessvia7.5/accessvia_IRES/dsign/test/dsign.ini`
Notes	

Figure B–23 Mail Session Details

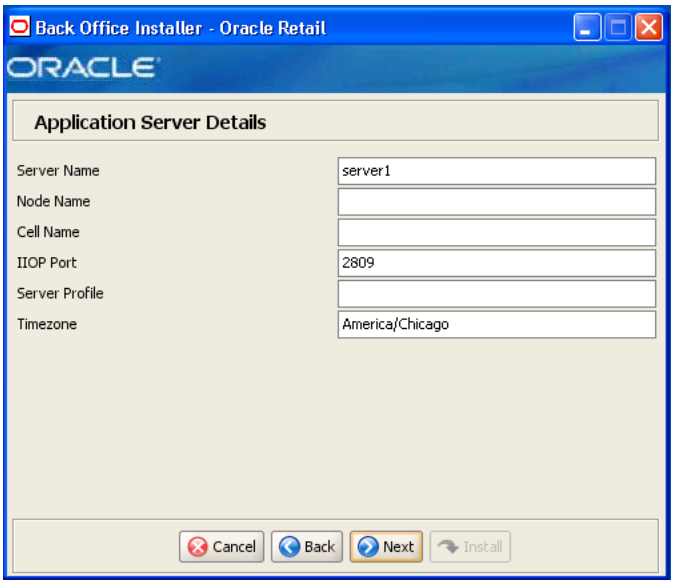


The fields on this screen are described in the following tables.

Field Title	SMTP host
Field Description	Host where the SMTP server is running.
Example	`mail.mycompany.com`
Notes	

Field Title	From Address
Field Description	From address in e-mails generated by Back Office.
Example	`donotreply@mycompany.com`
Notes	

Figure B–24 Application Server Details



The fields on this screen are described in the following tables.

Field Title	Server Name
Field Description	Name of the IBM WebSphere server.
Example	server1
Notes	

Field Title	Node Name
Field Description	Name of the IBM WebSphere node.
Example	myhostNode01
Notes	

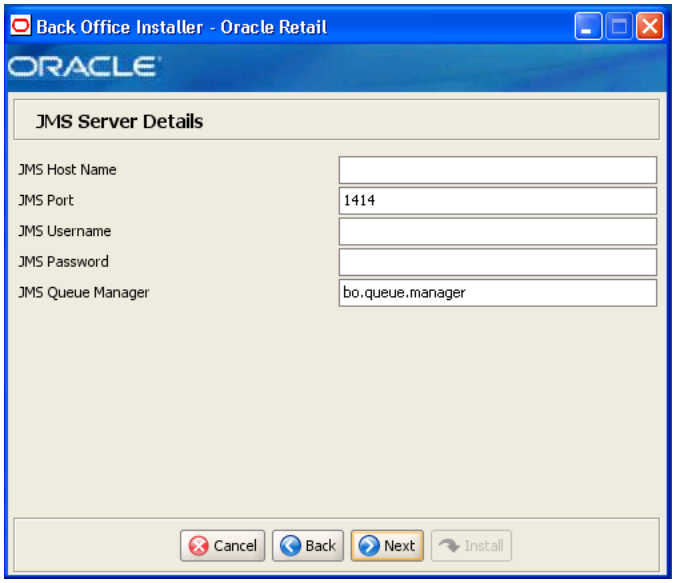
Field Title	Cell Name
Field Description	Name of the IBM WebSphere cell.
Example	myhostNode01Cell
Notes	

Field Title	IIOP port
Field Description	IIOP/BOOTSTRAP_ADDRESS port of the IBM WebSphere server. This port can be found in the *<WAS_HOME>*`/profiles/`*<profile name>*`/properties/portdef.props` file.
Example	2809
Notes	

Field Title	Server Profile
Field Description	Name of the IBM WebSphere profile.
Example	AppSrv01
Notes	

Field Title	Timezone
Field Description	Time zone where this server is running.
Example	America/Chicago
Notes	

Figure B–25 JMS Server Details



The fields on this screen are described in the following tables.

Field Title	JMS Host Name
Field Description	Name of the JMS server. **Note:** Always use the actual host name and not the IP address or "localhost". There may be problems integrating with Point-of-Service if the actual host name is not used.
Example	myhost
Notes	

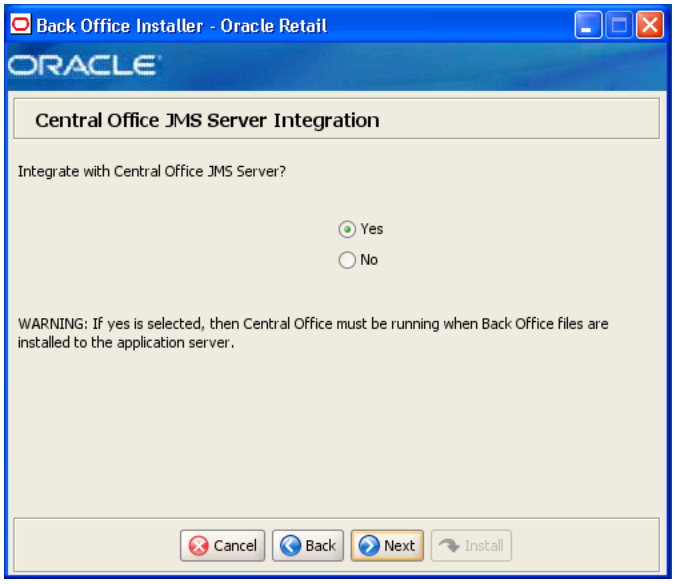
Field Title	JMS Port
Field Description	Port number used by the JMS server.
Example	1414
Notes	

Field Title	JMS Username
Field Description	User name for the JMS server. This user must exist in the Back Office schema.
Example	myuser
Notes	

Field Title	JMS Password
Field Description	Password for the JMS server.
Example	mypassword
Notes	

Field Title	JMS Queue Manager
Field Description	Name of the JMS queue manager.
Example	bo.queue.manager
Notes	

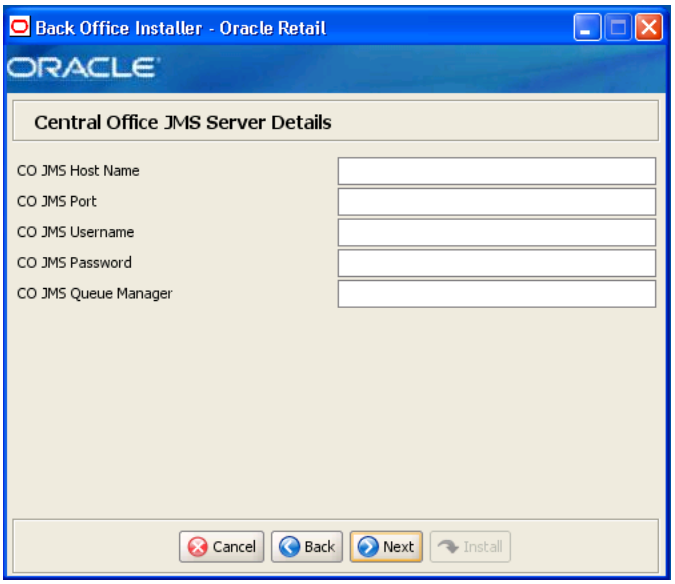
Figure B–26 Central Office JMS Server Integration



The field on this screen is described in the following table.

Field Title	Integrate with Central Office JMS Server?
Field Description	This screen gives you the option to integrate the Back Office application with a Central Office JMS server. **Note:** If you select **Yes**, the Central Office application must be running in order for the Back Office files to be installed correctly.
Example	Yes
Notes	

Figure B–27 Central Office JMS Server Details



This screen is only displayed if **Yes** is selected on the Central Office JMS Server Integration screen. The fields on this screen are described in the following tables.

Field Title	**CO JMS Server Name**
Field Description	Name of the Central Office JMS server. **Note:** Always use the actual host name and not the IP address or "localhost". There may be problems integrating with Point-of-Service if the actual host name is not used.
Example	Server1
Notes	

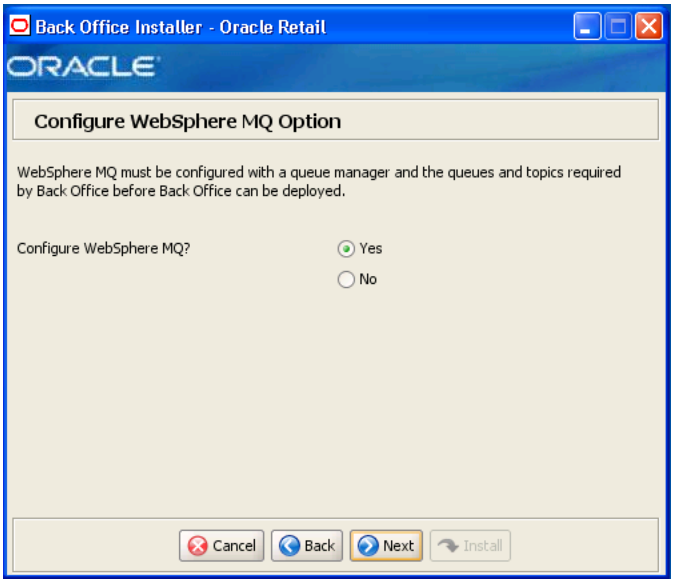
Field Title	**CO JMS Server Port**
Field Description	Port number used by the Central Office JMS server.
Example	1414
Notes	

Field Title	**CO JMS Username**
Field Description	User name for the Central Office JMS server. This user must exist in the operating system where Central Office is running and the user must be in the `mqm` group.
Example	myuser
Notes	

Field Title	**CO JMS Password**
Field Description	Password for the user name entered in the CO JMS Username field.
Notes	

Field Title	CO JMS Queue Manager
Field Description	Name of the Central Office JMS queue manager.
Example	co.queue.manager
Notes	

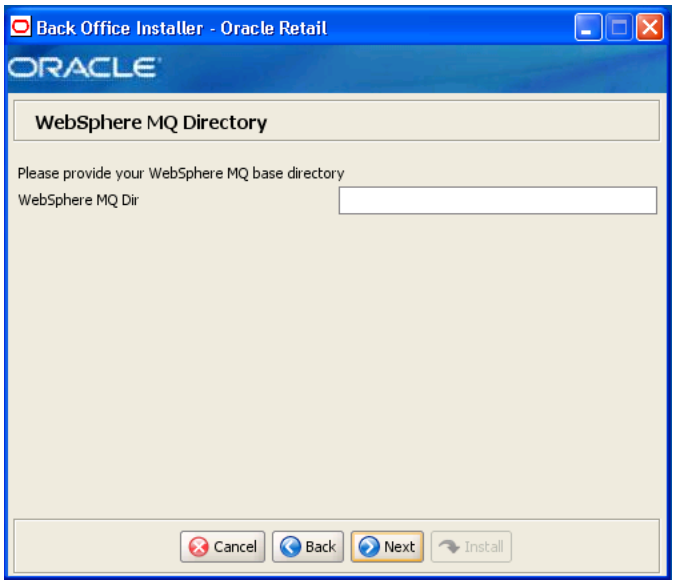
Figure B–28 Configure WebSphere MQ Option



The field on this screen is described in the following table.

Field Title	Configure WebSphere MQ?
Field Description	IBM WebSphere MQ must be configured with a queue manager and the queues and topics required by Back Office before Back Office can be deployed. This screen gives you the option to configure IBM WebSphere MQ manually. If you choose No, see "Configure IBM WebSphere MQ" in Chapter 4 for the manual steps you need to perform after the installer completes.
Example	Yes
Notes	

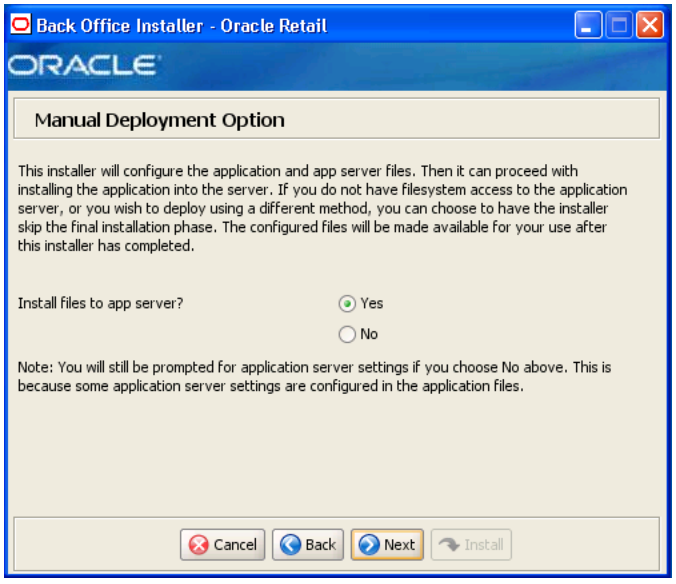
Figure B–29 WebSphere MQ Directory



This screen is only displayed if **Yes** is selected on the Configure WebSphere MQ Option screen. The field on this screen is described in the following table.

Field Title	WebSphere MQ Dir
Field Description	Base directory for IBM WebSphere MQ.
Example	/opt/mqm
Notes	

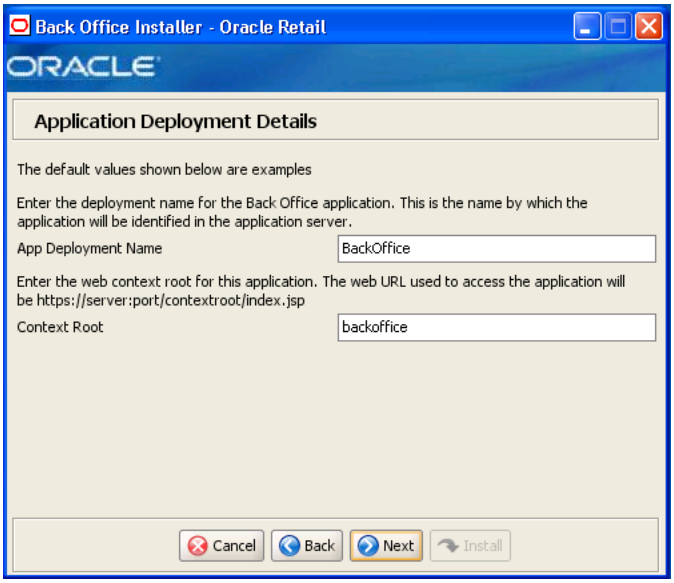
Figure B–30 Manual Deployment Option



The field on this screen is described in the following table.

Field Title	Install files to app server?
Field Description	By default, the installer will deploy the ear file. This screen gives you the option to configure the application in the staging area for use in a manual installation at a later time. This option can be used in situations where modifications to the deployed files must be reviewed by another party before being applied. If you choose No, see "Manual Deployment of the Back Office Application" in Chapter 4 for the manual steps you need to perform after the installer completes.
Example	Yes
Notes	

Figure B–31 Application Deployment Details

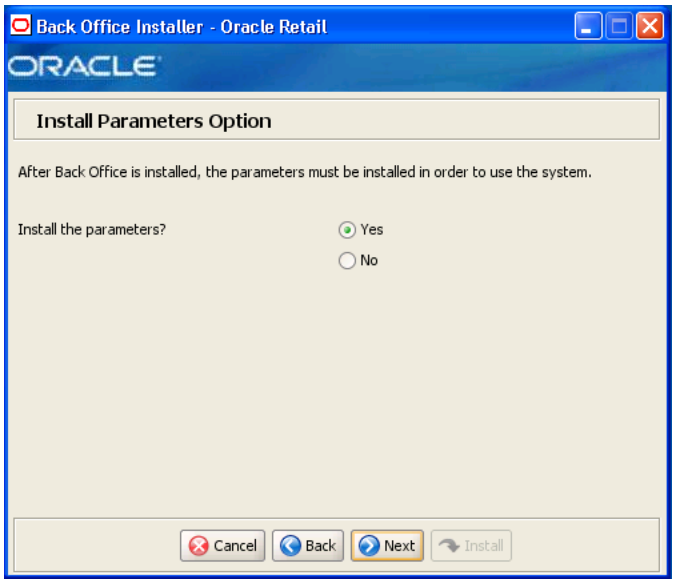


The fields on this screen are described in the following tables.

Field Title	App Deployment Name
Field Description	Name by which this Back Office application will be identified in the application server.
Example	BackOffice
Notes	

Field Title	Context Root
Field Description	Path under the HTTPS URL that will be used to access the Back Office application. For example, a context root of 'backoffice' will result in the application being accessed at `https://host:port/backoffice/index.jsp`.
Example	backoffice
Notes	

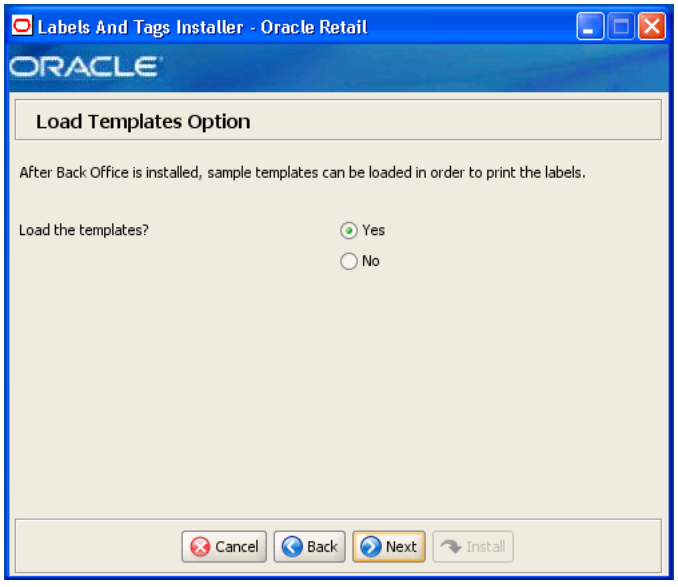
Figure B–32 Install Parameters Option



The field on this screen is described in the following table.

Field Title	Install the parameters?
Field Description	The application parameters must be set up before Back Office can be used. This screen gives you the option to set up the parameters manually. If you choose No, see "Import Initial Parameters" in Chapter 4 for the manual steps you need to perform after the installer completes.
Example	Yes
Notes	

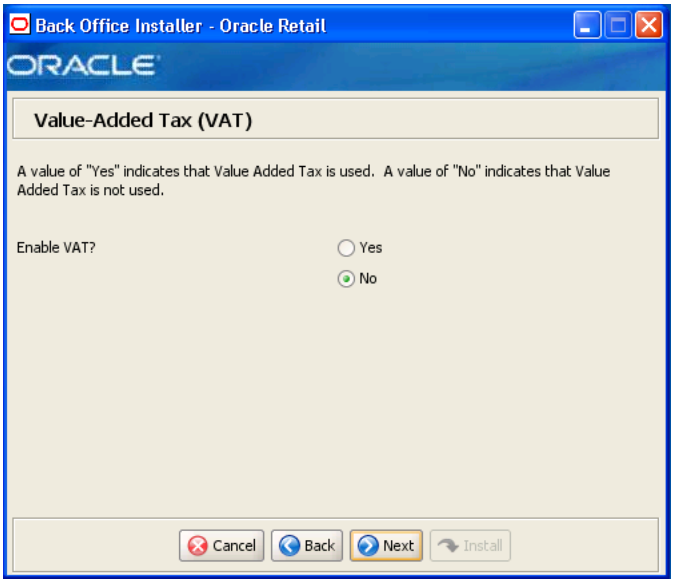
Figure B–33 Load Templates Option



This screen is only displayed when installing Oracle Retail Back Office with the Labels and Tags module. The field on this screen is described in the following table.

Field Title	Load the templates?
Field Description	Sets whether sample templates for printing labels are loaded into the database after Back Office is installed. For more information, see "Labels and Tags Templates" in Chapter 5. ■ To load the templates, choose Yes. ■ To not load the templates, choose No.
Example	Yes
Notes	

Figure B–34 Value-Added Tax (VAT)



The field on this screen is described in the following table.

Field Title	Enable VAT?
Field Description	Sets whether Value-Added Tax is used in Back Office. ■ To enable Back Office to use VAT, choose Yes. ■ To not use VAT, choose No.
Example	No
Notes	

Figure B–35 Installation Progress

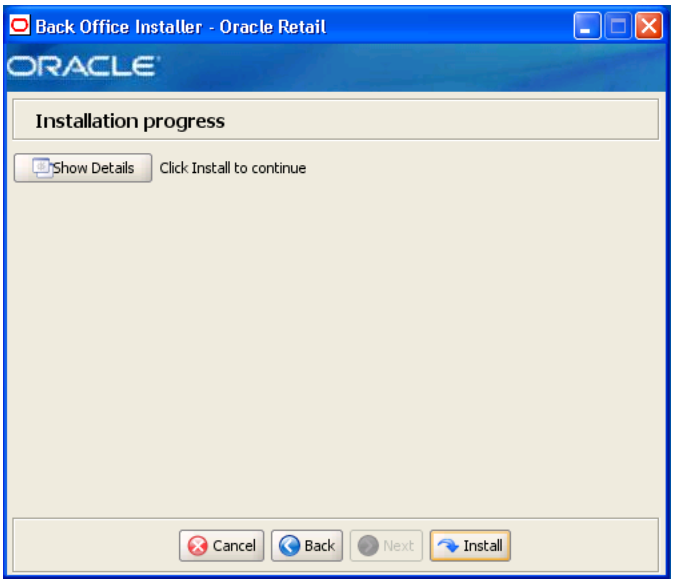
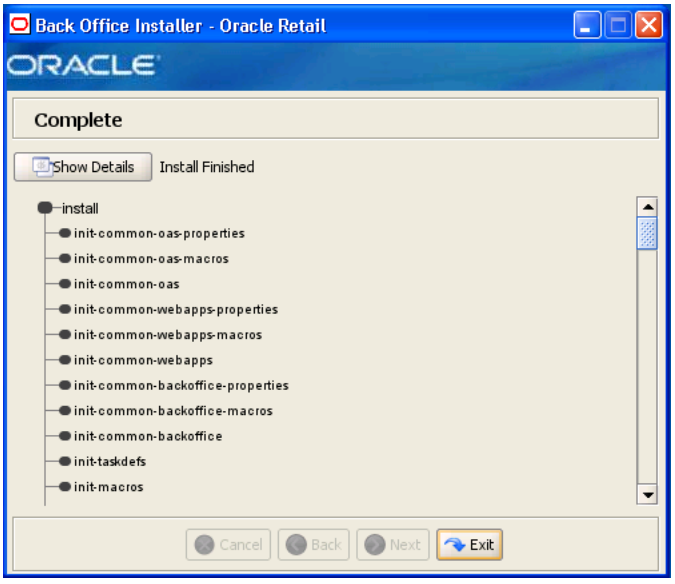


Figure B–36 Installation Complete



After the installer completes, the Oracle Configuration Manager (OCM) installer runs if OCM is not already installed. For information on OCM, see "Oracle Configuration Manager" in Chapter 4.

C

Appendix: Installer Silent Mode

In addition to the GUI and text interfaces of the Back Office installer, there is a silent mode that can be run. This mode is useful if you wish to run a new installation and use the settings you provided in a previous installation. It is also useful if you encounter errors in the middle of an installation and wish to continue after resolving them.

The installer runs in two distinct phases. The first phase involves gathering settings from the user. At the end of the first phase, a properties file named `ant.install.properties` is created with the settings that were provided. In the second phase, this properties file is used to provide your settings for the installation.

To skip the first phase and re-use the `ant.install.properties` file from a previous run, follow these instructions:

1. Edit the `ant.install.properties` file and correct any invalid settings that may have caused the installer to fail in its previous run.
2. Run the installer again with the silent argument.
   - `install.cmd silent`
   - `install.sh silent`

D

Appendix: Reinstalling Back Office

Back Office does not provide the capability to uninstall and reinstall the application. If you need to run the Back Office installer again, perform the following steps.

Reinstalling Back Office on the Oracle Stack

To reinstall:

1. Stop the OC4J Back Office instance.
2. Delete the instance.
3. Recreate the OC4J Back Office instance.
4. Start the instance.
5. Run the Back Office installer. For more information, see "Run the Back Office Application Installer" in Chapter 2.

Reinstalling Back Office on the IBM Stack

To reinstall:

1. Stop the WebSphere application server in the profile that contains Back Office.
2. Delete the profile.
3. Stop the WebSphere MQ queue manager and listener. For example, stop `bo.queue.manager`.
4. Delete the queue manager.
5. Recreate the profile.
6. Start the WebSphere application server in the profile.
7. Run the Back Office installer. For more information, see "Run the Back Office Application Installer" in Chapter 4.

E

Appendix: URL Reference

Both the database schema and application installers for the Back Office product will ask for several different URLs. These include the following.

URLs for the Oracle Stack

The following sections describe the URLs used for the Oracle stack.

JDBC URL for a Database

Used by the Java application and by the installer to connect to the database.

Syntax: `jdbc:oracle:thin:@<host>:<port>:<sid>`

- *<host>*: host name of the database server
- *<port>*: database listener port
- *<sid>*: system identifier for the database

For example, `jdbc:oracle:thin:@myhost:1525:mysid`

JNDI Provider URL for an Application

Used for server-to-server calls between applications.

Syntax: `opmn:ormi://<host>:<port>:<instance>/<app>`

- *<host>*: host name of the OracleAS environment
- *<port>*: OPMN request port of the OracleAS environment. This can be found in the *<ORACLE_HOME>*`/opmn/conf/opmn.xml` file
- *<instance>*: name of the OC4J instance running the application
- *<app>*: deployment name for the application

For example, `opmn:ormi://myhost:6003:rpm-oc4j-instance/rpm12`

Note: The JNDI provider URL can have a different format depending on your cluster topology. Consult the Oracle Application Server documentation for further details.

Deployer URI

Used by the Oracle Ant tasks to deploy an application to an OC4J instance. The application installer does not ask the user for this value. It is constructed based on other inputs and written to the `ant.install.properties` file for input to the installation script. For repeat installations using silent mode, you may need to correct mistakes in the deployer URI.

> **Note:** There are several different formats for the deployer URI depending on your cluster topology. Consult the Deploying with the OC4J Ant Tasks chapter of the *OC4J Deployment Guide* for further details.

Syntax (managed OC4J):
`deployer:cluster:opmn://<host>:<port>/<instance>`

- *<host>*: host name of the OracleAS environment
- *<port>*: OPMN request port of the OracleAS environment. This can be found in the *<ORACLE_HOME>*`/opmn/conf/opmn.xml` file.
- *<instance>*: name of the OC4J instance where the application will be deployed

For example, `deployer:cluster:opmn://myhost:6003/orco-inst`

Syntax (standalone OC4J): `deployer:oc4j:`*<host>*`:`*<port>*

- *<host>*: host name of the OracleAS environment
- *<port>*: RMI port of the OC4J server. This can be found in the *<ORACLE_HOME>*`/j2ee/home/config/rmi.xml` file.

For example, `deployer:oc4j:myhost:23791`

URLs for the IBM Stack

The following sections describe the URLs used for the IBM stack.

JDBC URL for a Database

Used by the Java application and by the installer to connect to the database.

Syntax: `jdbc:db2://`*<dbhost>*`:`*<dbport>*`/`*<dbname>*

- *<dbhost>*: host name of the database server
- *<dbport>*: database listener port
- *<dbname>*: system identifier for the database

For example, `jdbc:db2://myhost:50000/mydatabase`

JNDI Provider URL for an Application

Used for server-to-server calls between applications.

Syntax: `corbaloc:iiop:<host>:<iioport>`

- *<host>*: host name of the WebSphere server
- *<iioport>*: IIOP/BOOTSTRAP_ADDRESS port of the WebSphere server. This can be found in the *<WAS_HOME>*`/profiles/`*<profile_name>*`/properties/portdef.props` file.

For example, `corbaloc:iiop:myhost:2809`

F

Appendix: Common Installation Errors

This appendix describes some common errors encountered during installation of Back Office.

Unreadable Buttons in the Installer

If you are unable to read the text within the installer buttons, it probably means that your JAVA_HOME points to a pre-1.5 JDK. Set JAVA_HOME to a Java development kit of version 1.5 or later and run the installer again.

Installation Errors for the Oracle Stack Only

The following errors occur only when installing for the Oracle stack.

Oracle Application Server Forceful Shutdown

If an error occurs during installation, Oracle Application Server may not shutdown gracefully but will instead do a forceful shutdown. This is a known problem with Oracle Application Server.

You can use `opmnctl status` to check if the application server has stopped appropriately.

OC4J Instance Does Not Exist

Symptom:

The application installer quits with the following error message:

```
BUILD FAILED

C:\tmp\j2ee\bo\staging\ORBO-trunk\build.xml:697: The following error occurred
while executing this line:
C:\tmp\j2ee\bo\staging\ORBO-trunk\build-common-oas.xml:107: Exiting. OC4J instance
orbo-inst does not exist
```

Solution:

This error occurs because the OC4J instance provided does not exist.

Make sure that the OC4J instance exists, and then check the `ant.install.properties` file for entry mistakes. Pay close attention to the input.deployer.uri (see Appendix E), input.oc4j.instance, input.admin.user, and input.admin.password properties. If you need to make a correction, you can run the installer again with this file as input by running silent mode (see Appendix C).

OC4J Instance is Not Started

Symptom:

The application installer quits with the following error message:

```
BUILD FAILED

C:\tmp\j2ee\bo\staging\ORBO-trunk\build.xml:730: The following error occurred
while executing this line:
C:\tmp\j2ee\bo\staging\ORBO-trunk\build-common-oas.xml:115: Exiting. OC4J instance
orbo-inst exists but is not alive
```

Solution:

This error occurs because the OC4J instance provided is not running.

Make sure that the OC4J instance is running, and then check the `ant.install.properties` file for entry mistakes. Pay close attention to the input.deployer.uri (see Appendix E), input.oc4j.instance, input.admin.user, and input.admin.password properties. If you need to make a correction, you can run the installer again with this file as input by running silent mode (see Appendix C).

"Unable to get a deployment manager" Message

Symptom:

The application installer quits with the following error message:

```
[oracle:deploy] Unable to get a deployment manager.
[oracle:deploy]
[oracle:deploy] This is typically the result of an invalid deployer URI format
being supplied, the target server not being in a started state or incorrect
authentication details being supplied.
[oracle:deploy]
[oracle:deploy] More information is available by enabling logging -- please see
the Oracle Containers for J2EE Configuration and Administration Guide for details.
```

Solution:

This error can be caused by any of the following conditions:

- OC4J instance provided is not running
- Incorrect OC4J instance name provided
- Incorrect OC4J administrative user name, password, or both
- Incorrect OPMN request port provided

Make sure that the OC4J instance is running, and then check the `ant.install.properties` file for entry mistakes. Pay close attention to the input.deployer.uri (see Appendix E), input.oc4j.instance, input.admin.user, and input.admin.password properties. If you need to make a correction, you can run the installer again with this file as input by running silent mode (see Appendix C).

"Could not create system preferences directory" Warning

Symptom:

The following text appears in the installer Errors tab:

```
[May 22, 2006 11:16:39 AM java.util.prefs.FileSystemPreferences$3 run
WARNING: Could not create system preferences directory. System preferences are
unusable.
May 22, 2006 11:17:09 AM java.util.prefs.FileSystemPreferences
checkLockFile0ErrorCode
WARNING: Could not lock System prefs. Unix error code -264946424
```

Solution:

This is related to Java bug 4838770. The `/etc/.java/.systemPrefs` directory may not have been created on your system. See `http://bugs.sun.com` for details.

This is an issue with your installation of Java and does not affect the Oracle Retail product installation.

Installation Hangs at "Compiling EJB generated code"

Symptom:

The installer freezes for 10 minutes or more showing this as the last message:

```
[[myinstance.name] 06/11/17 16:51:57 Notification ==>Compiling EJB generated code
```

Solution:

Before cancelling the installation, check the OC4J log file. This file is usually located under `$ORACLE_HOME/opmn/logs` and is named after the OC4J instance. This could be a memory problem if you did not follow the steps to set the PermSize space. See "Creation of a New OC4J Instance for Back Office" in Appendix G.

"Failed to set the internal configuration" Message

Symptom:

The following text appears in the log file:

```
07/03/19 14:34:51 *** (SEVERE) Failed to set the internal configuration of the
OC4J JMS Server with: XMLJMSServerConfig[file:/D:/10.1.3/OracleAS_1/
j2ee/home/config/jms.xml]
```

Solution:

Check the OC4J log file. This file is usually located under `$ORACLE_HOME/opmn/logs` and is named after the OC4J instance. A NameNotFoundException for `jms/XAQueueConnectionFactory` appears in the log.

To resolve the problem, do the following:

1. Shutdown the application server.
2. Delete the `OracleAS_1/j2ee/<OC4J instance>/persistence/<OC4J instance>_default_group_1/*.lock` file.
3. Restart the application server.

G

Appendix: Troubleshooting Problems on the Oracle Stack

This appendix contains information that may be useful if you encounter errors running Back Office for the first time after an install. These steps are performed by the installer. If you have problems, you may want to ensure the steps were successfully completed by the installer.

Creation of a New OC4J Instance for Back Office

You can skip this section if you are redeploying to an existing OC4J instance.

To create a new OC4J instance:

1. Increase memory for the new OC4J instance by modifying `%ORACLE_HOME%\opmn\conf\opmn.xml`. Locate the OC4J instance you just created, and add the text, shown in bold in the following example, to the start-parameters section.

```
<process-type id="<orbo-inst>" module-id="OC4J" status="enabled">
   <module-data>
      <category id="start-parameters">
         <data id="java-options" value="-server  -XX:PermSize=128m
-XX:MaxPermSize=256m -Djava.security.policy=$ORACLE_
HOME/j2ee/orbo-inst/config/java2.policy -Djava.awt.headless=true
-Dhttp.webdir.enabled=false"/>
      </category>
```

2. Set the -userThreads OC4J option by modifying `%ORACLE_HOME%\opmn\conf\opmn.xml` similar to the previous step. Add the text shown in bold in the following example:

```
<process-type id="<orbo-inst>" module-id="OC4J" status="enabled">
   <module-data>
      <category id="start-parameters">
         <data id="java-options" value="-server  -XX:PermSize=128m
-XX:MaxPermSize=256m -Djava.security.policy=$ORACLE_
HOME/j2ee/orbo-inst/config/java2.policy -Djava.awt.headless=true
-Dhttp.webdir.enabled=false"/>
         <data id="oc4j-options" value="-userThreads"/>
      </category>
```

3. Reload OPMN for this change to take effect.

```
%ORACLE_HOME%\opmn\bin\opmnctl reload
```

4. Increase the transaction timeout for this OC4J instance:
   a. Log into the Enterprise Manager application.

      `http:\\<myhost>:<portnumber>\em`

   b. Click on the OC4J instance that was just created.

      <orbo-inst>

   c. Click the Administration tab, and then the Transaction Manager (JTA) task.
   d. Click the Administration tab of the Transaction Manager page.
   e. Locate the Transaction Timeout field and increase it to at least 120 seconds.
   f. Click **Apply** and then restart the OC4J instance.

Configuring the AccessVia Files for Oracle Application Server

To configure the files for the application server:

1. Copy `dJava.jar` to the *<AccessVia_install_dir>* directory and to the `%ORACLE_HOME%\j2ee\home\applib` directory.
2. Copy the *<AccessVia_install_dir>*`\program\dsign.ini` file to the `%ORACLE_HOME%\j2ee\home` directory.
3. Copy the dll files from *<AccessVia_install_dir>*`\program\` into `%ORACLE_HOME%\opmn\bin`.

Loading the Initial Data for Labels and Tags

This step is performed after configuring and testing the AccessVia print engine. To load the initial data, use `ant init_labels`. Verify the data load by printing a sample item label.

H

Appendix: Best Practices for Passwords

This appendix has information on the practices that should be followed for passwords. The following topics are covered:

Password Guidelines

To make sure users and their passwords are properly protected, follow these guidelines. The guidelines are based on the Payment Card Industry Data Security Standard (PCI-DSS):

- Verify the identity of the user before resetting any passwords.
- Set first-time passwords to a unique value for each user and require the password to be changed immediately after the first use.
- Immediately revoke access for any terminated users.
- Remove inactive user accounts at least every 90 days.
- Enable accounts used by vendors for remote maintenance only during the time period when access is needed.
- Communicate password procedures and policies to all users who have access to cardholder data.
- Do not use group, shared, or generic accounts and passwords.
- Require user passwords to be changed at least every 90 days.
- Require a minimum password length of at least seven characters.
- Require that passwords contain both numeric and alphabetic characters.
- Do not accept a new password that is the same as any of the last four passwords used by a user.
- Limit the number of repeated access attempts by locking out the user ID after not more than six attempts.
- Set the lockout duration to thirty minutes or until an administrator enables the user ID.

Special Security Options for Oracle Databases

The following information is based on Oracle Database version 10.2.0.3 and is found in the *Oracle Database Security Guide*.

Enforcing Password Policies Using Database Profiles

Password policies can be enforced via database profiles. The options can be changed using a SQL statement, for example:

```
alter profile appsample limit
```

Option	Setting	Description
FAILED_LOGIN_ATTEMPTS	4	Maximum number of login attempts before the account is locked.
PASSWORD_GRACE_TIME	3	Number of days a user has to change an expired password before the account is locked.
PASSWORD_LIFE_TIME	90	Number of days that the current password can be used.
PASSWORD_LOCK_TIME	30	Amount of time in minutes that the account is locked.
PASSWORD_REUSE_MAX	10	Number of unique passwords the user must supply before the first password can be reused.
PASSWORD_VERIFY_FUNCTION	<*routine_name*>	Name of the verification script that is used to ensure that the password meets the requirements of the password policy. See "Enforcing Password Policies Using a Verification Script".

Enforcing Password Policies Using a Verification Script

Password policies can be enforced via a password complexity verification script, for example:

```
UTLPWDMG.SQL
```

The password complexity verification routine ensures that the password meets the following requirements:

- Is at least four characters long
- Differs from the user name
- Has at least one alpha, one numeric, and one punctuation mark character
- Is not simple or obvious, such as welcome, account, database, or user
- Differs from the previous password by at least three characters

For example, to set the password to expire as soon as the user logs in for the first time:

```
CREATE USER jbrown
IDENTIFIED BY zX83yT
...
PASSWORD EXPIRE;
```

Special Security Options for IBM DB2 Databases

The security for DB2 is done at the operating system level. Consult your IBM DB2 documentation for information on creating a security profile that follows the password guidelines.

Appendix: Secure JDBC with Oracle 11gR2 Database

This appendix has information on setting up and communicating with a secured Oracle 11gR2 database server based on the following assumptions:

- Client authentication is not needed.
- The Oracle wallet is used as a trust store on the database server.

SSL encryption for Oracle JDBC has been supported in the JDBC-OCI driver since Oracle JDBC 9.2.x, and is supported in the THIN driver starting in 10.2. SSL authentication has been supported in the JDBC-OCI driver since Oracle JDBC 9.2.x. The THIN driver supports Oracle Advanced Security SSL implementation in Oracle Database 11g Release 1 (11.2).

For more information, see the following websites:

- http://www.oracle.com/technetwork/database/enterprise-edition/wp-oracle-jdbc-thin-ssl-130128.pdf
- http://download.oracle.com/docs/cd/E11882_01/network.112/e10746/toc.htm
- http://download.oracle.com/docs/cd/B28359_01/java.111/b31224/toc.htm

Creating the Oracle Wallet and Certificate for the Database Server

Note the following information:

- If you want have a user interface, run `owm` from `$ORACLE_HOME/bin` as `oracle`.
- The wallet you create must support Auto Login. It must be enabled on the new wallet.
- The following is the wallet directory default:
  - `ORACLE_HOME/admin/ORACLE_SID`
  - Test server wallet information:
    * Wallet password: securedb11g
    * Wallet directory: `/u01/oracle/admin/SECURDB11G`

- When generating a self-signed certificate, note the following:
  - Do not use keytool to create a certificate for using Oracle wallets. They are incompatible.
  - Two wallets are needed to generate a self-signed certificate. One wallet is needed to sign the certificate and another wallet is needed to use the certificate.
  - For command line wallet access, use `orapki`.
  - For instructions on generating a self-signed certificate, see *APPENDIX B CREATING TRUSTSTORES AND KEYSTORES* in the following document:

    http://www.oracle.com/technetwork/database/enterprise-edition/wp-oracle-jdbc-thin-ssl-130128.pdf
  - The following are examples of `orapki` commands:
    * To create the wallet:

      ```
      orapki wallet create -wallet <wallet directory>
      ```

    * To add the self-signed certificate:

      ```
      orapki wallet add -wallet <wallet directory> -dn
      CN=<certificate name>,C-US -keysize 2048 -self_signed -validity 3650
      ```

    * To view the wallet:

      ```
      orapki wallet display -wallet <wallet directory>
      ```
- The Wallet Manager UI can also be used to import certificates.

Securing the Listener on the Server

The `listener.ora`, `tnsnames.ora`, and `sqlnet.ora` files are found in the `$ORACLE_HOME/network/admin` directory. If the `sqlnet.ora` file does not exist, you need to create it.

To secure the listener on the server:

1. Add TCPS protocol to the `listener.ora` file.
2. Add TCPS protocol to the `tnsnames.ora` file.
3. Add the Oracle Wallet location to the `sqlnet.ora` and `listener.ora` files.
4. Add disabling of client authentication to the `sqlnet.ora` and `listener.ora` files.
5. Add encryption-only cipher suites to the `sqlnet.ora` file.
6. Bounce the listener once the file is updated.

Examples of Network Configuration Files

Examples of the following network configuration files are shown in this section:

- "listener.ora"
- "sqlnet.ora"
- "tnsnames.ora"

listener.ora

```
SID_LIST_LISTENER =
  (SID_LIST =
    (SID_DESC =
      (SID_NAME = PLSExtProc)
      (ORACLE_HOME = /u01/oracle/11g)
      (PROGRAM = extproc)
    )
  )

LISTENER =
  (DESCRIPTION_LIST =
    (DESCRIPTION =
      (ADDRESS = (PROTOCOL = TCP)(HOST = 10.143.44.108)(PORT = 1521))
      (ADDRESS = (PROTOCOL = TCPS)(HOST = 10.143.44.108)(PORT = 2484))
      (ADDRESS = (PROTOCOL = IPC)(KEY = EXTPROCO))
    )
  )

WALLET_LOCATION=(SOURCE=(METHOD=FILE)
  (METHOD_DATA=(DIRECTORY=/u01/oracle/admin/SECURDB11G)))

SSL_CLIENT_AUTHENTICATION=FALSE
```

Caution: To generate a trace log, add the following entries to the `listener.ora` file:

```
TRACE_LEVEL_LISTENER = ADMIN
TRACE_DIRECTORY_LISTENER = /u01/oracle/11g/network/trace
TRACE_FILE_LISTENER = listener.trc
```

sqlnet.ora

```
SSL_CLIENT_AUTHENTICATION=FALSE

SSL_CIPHER_SUITES=(SSL_DH_anon_WITH_3DES_EDE_CBC_SHA, SSL_DH_anon_WITH_RC4_128_
MD5, SSL_DH_anon_WITH_DES_CBC_SHA)

WALLET_LOCATION=(SOURCE=(METHOD=FILE)
  (METHOD_DATA=(DIRECTORY=/u01/oracle/admin/SECURDB11G)))
```

tnsnames.ora

```
SECURDB11G =
  (DESCRIPTION =
    (ADDRESS_LIST =
      (ADDRESS = (PROTOCOL = TCP)(HOST = 10.143.44.108)(PORT = 1521))
      (ADDRESS = (PROTOCOL = TCPS)(HOST = 10.143.44.108)(PORT = 2484))
    )
    (CONNECT_DATA =
      (SERVER = DEDICATED)
      (SERVICE_NAME = SECURDB11G)
    )
  )
```

Securing Client Access

Caution: Ensure you are using `ojdbc.jar` version 10.2.x or later. Version 10.1.x or earlier will not connect over TCPS.

To secure client access:

1. Export the self-signed certificate from the server Oracle Wallet and import it into a local trust store.
2. Use the following URL format for the JDBC connection:

```
jdbc:oracle:thin:@(DESCRIPTION= (ADDRESS= (PROTOCOL=tcps) (HOST=10.143.44.108)
(PORT=2484) ) (CONNECT_DATA= (SERVICE_NAME=SECURDB11G)))
```

3. The database connection call requires the following properties to be set, either as system properties or JDBC connection properties:

Property	Value
oracle.net.ssl_cipher_suites	(SSL_DH_anon_WITH_3DES_EDE_CBC_SHA, SSL_DH_anon_WITH_RC4_128_MD5, SSL_DH_anon_WITH_DES_CBC_SHA)
javax.net.ssl.trustStore	Path and file name of trust store For example: `/DevTools/Testing/Secure11g/truststore/truststore`
javax.net.ssl.trustStoreType	JKS
javax.net.ssl.trustStorePassword	Password for trust store

Specific Instructions for Back Office

Complete the following steps.

Configuring the Application Server Machine

To configure the application server machine, note the following:

- As a client, the application server machine needs to have the trusted certificate added to a local trust store. Follow the previous instructions for exporting the known certificate and importing it to a local trust store.

  This is not required as Release 13.1.4.3 Oracle Retail Back Office uses Diffie-Hellman anonymous authentication. With Diffie-Hellman anonymous authentication, neither the server nor the client will be authenticated.
- Oracle Application Server 10.1.3.5 is using the `ojdcb14.jar` file for 10.1.0.5 which does not support the SSL protocol. You need to update the JDBC driver to a 10.2.0.3 version.
- For information on securing a website, see the following website:

  http://download.oracle.com/docs/cd/B31017_01/web.1013/b28957/configssl.htm#CHDHGCDJ
- The following instructions describe creating a JDBC shared lib for application. By default, Oracle Appserver 10.1.3.5 comes up with JDBC drivers but they do not support TCPS protocol. TCPS is supported starting in database version 10.2.0.3.

For information on creating a secure JDBC shared library, see the following website:

http://download.oracle.com/docs/cd/B31017_01/web.1013/b28221/servdats005.htm#BABCEDIG

Securing the Data Source

To edit the data source definition in *<instance>*/config/data-sources.xml:

1. Update the URL to use the expanded Oracle format:

```
***(ex. jdbc:oracle:thin:@(DESCRIPTION= (ADDRESS= (PROTOCOL=tcps)
(HOST=10.143.44.108) (PORT=2484) ) (CONNECT_DATA= (SERVICE_NAME=SECURDB11G)))
```

2. Add the SSL JDBC properties. The following example shows part of the data-sources.xml file.

```
<connection-pool name="Oracle11GPool">
   <connection-factory factory-class="oracle.jdbc.pool.OracleDataSource"
user="securuser" password="->securuser"

url="jdbc:oracle:thin:@(DESCRIPTION=(ADDRESS=(PROTOCOL=tcps)(HOST=10.143.44.108
)(PORT=2484))(CONNECT_DATA=(SERVICE_NAME=SECURDB11G)))">
     <connection-properties>
  <property name="oracle.net.ssl_cipher_suites"
               value="(SSL_DH_anon_WITH_3DES_EDE_CBC_SHA, SSL_DH_anon_WITH_
RC4_128_MD5, SSL_DH_anon_WITH_DES_CBC_SHA)"/>
       </connection-properties>
    </connection-factory>
</connection-pool>
```

Creating a JDBC Shared Library for the Application

To create the library:

1. Create a directory in $ORACLE_HOME/j2ee/home/shared-lib/oracle.jdbc for the new Oracle JDBC driver shared library. For example, create the following folder:

   $ORACLE_HOME/j2ee/home/shared-lib/oracle.jdbc/10.3

   You reference the actual Oracle JDBC driver jar file relative to this directory. You can either put the Oracle JDBC driver jar file (ojdbc14.jar) from the database into this directory and simply reference the jar file by name, or put it into some other directory and reference the jar file with a partial path relative to this directory.

2. Define the new Oracle JDBC driver shared library and TopLink shared library in the server.xml file.

```
<shared-library name="oracle.jdbc" version="10.3">
<code-source path="ojdbc14.jar"/>
</shared-library>
<shared-library name="oracle.toplink" version="10.3" library-compatible="true">
<code-source path="../../../toplink/jlib/toplink.jar"/>
<code-source path="../../../toplink/jlib/antlr.jar"/>
<code-source path="../../../toplink/jlib/cciblackbox-tx.jar"/>
<import-shared-library name="oc4j.internal"/>
<import-shared-library name="oracle.xml"/>
<import-shared-library name="oracle.jdbc" max-version="10.3"/>
<import-shared-library name="oracle.dms"/>
```

```
</shared-library>
```

3. Import your new shared libraries for your application. To make the new oracle.jdbc and oracle.toplink shared libraries the default for all applications in your OC4J instance, update the `system-applications.xml` file as shown in the following example.

```
<imported-shared-libraries>
   <import-shared-library name="oracle.jdbc" min-version="10.3"
max-version="10.3"/>
   <import-shared-library name="oracle.toplink" min-version="10.3"
max-version="10.3"/>
</imported-shared-libraries>
```

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Appendix: Secure JDBC with IBM DB2

This appendix has information on how to enable SSL for IBM DB2. Information from the DB2 V9 Information Center, *Global Security Kit Secure Sockets Layer Introduction*, and *iKeyman User's Guide* is included in this appendix.

IBM DB2 has supported SSL encryption since version 9.1 Fix Pack 3. Information on how to configure SSL on the server and client can be found at the following websites:

- `http://publib.boulder.ibm.com/infocenter/db2luw/v9/index.jsp?topic=/com.ibm.db2.udb.uprun.doc/doc/t0025241.htm`
- `http://www-1.ibm.com/support/docview.wss?uid=swg21249656`

Summary

To secure JDBC on IBM DB2 requires the following:

- An SSL provider must be established on the DB2 server.
- The provider requires a digital certificate and corresponding private key to provide the secure communications.
- The client either needs to have a copy of the digital certificate or trust the signer of the server certificate.
- The client needs to be configured to use the secure service, and optionally use a FIPS-compliant SSL provider.

Prerequisites

The information in this section is from the DB2 V9 Information Center.

1. Make sure you have the required fix pack version of DB2.

   To determine the fix pack level you have, run the `db2level` command at the command line. If you have Version 9.1 with a fix pack version earlier than Fix Pack 3, you need to obtain Fix Pack 3 or a later version.

2. Make sure the GSKit is installed.

   On linux, it is located in `/usr/local/ibm/gsk7`.

3. Make sure the GSKit libraries are in the path.

   Make sure the `/usr/local/ibm/gsk7/lib` directory is included in LD_LIBRARY_PATH.

4. For information on how to check if the connection concentrator is in use, see the IBM documentation.

Setting up the Key Store

The information in this section is from *Global Security Kit Secure Sockets Layer Introduction* and *iKeyman User's Guide*.

1. If you are not already logged in to the server, log in as the instance owner.
2. Start iKeyman GUI gsk7ikm.

   If the Java Cryptographic Extension(JCE) files were not found, make sure the JAVA_HOME environment variable points to a JDK that contains the JCE.
3. Click **Key Database File** and then **New**.
4. Select a key database type, filename, and location.

   It is suggested that a CMS key database is created. This is consistent with the DB2 Infocenter example. For example:

   ```
   /home/db2inst1/GSKit/Keystore/key.kdb
   ```
5. Click **OK**. The Password Prompt window is displayed.
6. Enter a password for the key database.
7. Click **OK**. A confirmation window is displayed. Click **OK**.

Creating a Self-signed Digital Certificate for Testing

The information in this section is from *Global Security Kit Secure Sockets Layer Introduction* and *iKeyman User's Guide*.

1. If you are not already logged in to the server, log in as the instance owner.
2. Start iKeyman GUI gsk7ikm.

   If the Java Cryptographic Extension(JCE) files were not found, make sure the JAVA_HOME environment variable points to a JDK that contains the JCE.
3. Click **Key Database File** and then **Open**.
4. Select the key database file where you want to add the self-signed digital certificate.
5. Click **Open**. The Password Prompt window is displayed.
6. Select **Personal Certificates** from the menu.
7. Click **New Self-Signed**. The Create New Self-Signed Certificate Window is displayed.
8. Type a Key Label, such as `keytest`, for the self-signed digital certificate.
9. Type a **Common Name and Organization**, and select a **Country**. For the remaining fields, accept the default values or enter new values.
10. Click **OK**. The IBM Key Management Window is displayed. The Personal Certificates field shows the name of the self-signed digital certificate you created.

Configuring the IBM DB2 Server

The information in this section is from the DB2 V9 Information Center.

1. If you are not already logged in to the server, log in as the instance owner.

2. Create an SSL configuration file:

   - For Linux and UNIX:

     `<INSTHOME>/cfg/SSLconfig.ini`

     For example:

     `/home/db2inst1/sqllib/cfg/SSLconfig.ini`

   - For Windows:

     `<INSTHOME>\SSLconfig.ini`

     For example:

     `F:\IBM\SQLLIB\DB2\SSLconfig.ini`

   <INSTHOME> is the home directory of the instance.

   Caution: It is recommended that you set the file permission to limit access to the `SSLconfig.ini`, as the file might contain sensitive data. For example, limit read and write authority on the file to members of the SYSADM group if the file contains the password for the Key Store.

3. Add SSL parameters to the SSL configuration file. The `SSLconfig.ini` file contains the SSL parameters that are used to load and start SSL. The list of SSL parameters are shown in the following table:

SSL parameter name	Description
DB2_SSL_KEYSTORE_FILE	Fully qualified file name of the Key Store that stores the Server Certificate.
DB2_SSL_KEYSTORE_PW	Password of the Key Store that stores the Server Certificate.
DB2_SSL_KEYSTORE_LABEL	Label for the Server Certificate. If it is omitted, the default certificate for the Key Store is used.
DB2_SSL_LISTENER	Service name or port number for the SSL listener.

   The following is an example of an `SSLconfig.ini` file:

```
DB2_SSL_KEYSTORE_FILE=/home/db2inst1/GSKit/Keystore/key.kdb
DB2_SSL_LISTENER=20397
DB2_SSL_KEYSTORE_PW=abcd1234
```

4. Add the value SSL to the DB2COMM registry variable. For example, use the following command:

   `db2set -i <db2inst1> DB2COMM=SSL`

   where *<db2inst1>* is the IBM DB2 instance name.

   The database manager can support multiple protocols at the same time. For example, to enable both TCP/IP and SSL communication protocols:

   `db2set -i <db2inst1> DB2COMM=SSL,TCPIP`

5. Restart the IBM DB2 instance. For example, use the following commands:

   ```
   db2stop

   db2start
   ```

   At this point, the server should be ready to start serving SSL connections. You can check the `db2diag.log` file for errors. There should be no errors pertaining to SSL after the restart.

Exporting a Certificate from iKeyman

The information in this section is from *Global Security Kit Secure Sockets Layer Introduction* and *iKeyman User's Guide*.

In order to be able to talk to the server, the clients need to have a copy of the self-signed certificate from the server.

1. Start iKeyman. The IBM Key Management window is displayed.
2. Click **Key Database File** and then **Open**. The Open window is displayed.
3. Select the source key database. This is the database that contains the certificate you want to add to another database as a signer certificate.
4. Click **Open**. The Password Prompt window is displayed.
5. Enter the key database password and click **OK**. The IBM Key Management window is displayed. The title bar shows the name of the selected key database file, indicating that the file is open and ready.
6. Select the type of certificate you want to export: Personal or Signer.
7. Select the certificate that you want to add to another database.
   - If you selected Personal, click **Extract Certificate**.
   - If you selected Signer, click **Extract**.

   The Extract a Certificate to a File window is displayed.
8. Click **Data type** and select a data type, such as Base64-encoded ASCII data. The data type needs to match the data type of the certificate stored in the certificate file. The iKeyman tool supports Base64-encoded ASCII files and binary DER-encoded certificates.
9. Enter the certificate file name and location where you want to store the certificate, or click **Browse** to select the name and location.
10. Click **OK**. The certificate is written to the specified file, and the IBM Key Management window is displayed.

Configuring the IBM FIPS-compliant Provider for SSL (optional)

The information in this section is from the DB2 V9 Information Center.

The Sun JSSE SSL provider works with the IBM DB2 driver by following the above instructions. If you want to use the IBM FIPS-compliant provider, you have to use the IBM JDK and make the following configuration changes.

Note: If you are following the IBM documentation, note the following issues:

- Prior to the numbered steps, it says to add several lines to `java.security`. Do not add the lines.
- Step two incorrectly shows setting `ssl.SocketFactory.provider` twice. It only needs to be done once.

1. Set the `IBMJSSE2 FIPS` system property to enable FIPS mode:

   ```
   com.ibm.jsse2.JSSEFIPS=true
   ```

2. Set security properties to ensure that all JSSE code uses the IBMJSSE2 provider. The following example shows the entries in `java.security`.

   ```
   ssl.SocketFactory.provider=com.ibm.jsse2.SSLSocketFactoryImpl
   ssl.ServerSocketFactory.provider=com.ibm.jsse2.SSLServerSocketFactoryImpl
   ```

3. Add the IBMJCEFIPS cryptographic provider.

   Add com.ibm.crypto.fips.provider.IBMJCEFIPS to the provider list before the IBMJCE provider. Do not remove the IBMJCE provider. The IBMJCE provider is required for Key Store support.

   The following example shows the entries in `java.security`.

   ```
   # List of providers and their preference orders (see above):
   #
   security.provider.1=com.ibm.jsse2.IBMJSSEProvider2
   # inserted provider 2 for FIPS
   security.provider.2=com.ibm.crypto.fips.provider.IBMJCEFIPS
   security.provider.3=com.ibm.crypto.provider.IBMJCE
   security.provider.4=com.ibm.security.jgss.IBMJGSSProvider
   security.provider.5=com.ibm.security.cert.IBMCertPath
   security.provider.6=com.ibm.security.sasl.IBMSASL
   ```

Specific Instructions for Back Office

It is difficult to configure Oracle Retail Back Office to use secure JDBC from the start by using the URL that includes the sslConnection property and secure port number. The following instructions are for retrofitting it into the configuration after the install is complete.

To complete the configuration:

1. Install the database digital certificate into the application server truststore.
   a. Log in to the WebSphere Integrated Solutions Console (Admin Console).
   b. Expand the Security menu.
   c. Click the **SSL certificate and key management** option.
   d. In the Related Items list, click **Key stores and certificates**.
   e. Click the **NodeDefaultTrustStore** link in the list.
   f. In the Additional Properties list, click the **Signer certificates** link.
   g. Click the **Add** button.

h. Enter a distinct alias and the full path to the certificate file on the server in the File name field. Make sure the Data type corresponds to the type in the file. The certificate should appear in the list of Signer certificates.

2. Update all the data sources to use SSL. (jdbc/DataSource, jdbc/DimpDataSource, jdbc/DimpDataSource)
   a. Log in to the WebSphere Integrated Solutions Console (Admin Console).
   b. Expand the Resources menu option.
   c. Expand the JDBC menu option.
   d. Click the **Data sources** option. The list of data sources is displayed.
   e. Click on the data source to be edited.
   f. In the Additional Properties list, click the **Custom properties** link.
   g. Click the **New** button.
   h. Enter sslConnection in the Name field, true in the Value field, and click **OK**.
   i. Click the data source name in the bread crumb trail to return to the data source edit page.
   j. Change the Port number field from the TCPIP port to the SSL port.
   k. Click **OK**.
   l. Edit the remaining data sources.
   m. Save the configuration.
3. Stop the server.
4. Edit the custom user registry properties in `customRegistry.properties`.
   a. Change the JDBC URL to use the SSL port.
   b. Append `:sslConnection=true;` to the end.
5. Start the server.

Useful Links

For more information, see the following websites:

- http://publib.boulder.ibm.com/infocenter/db2luw/v9/topic/com.ibm.db2.udb.apdv.java.doc/doc/rjvdsprp.htm

  This website has documentation of all the properties available in the DB2 Driver for JDBC.

- http://publib.boulder.ibm.com/infocenter/db2luw/v9/topic/com.ibm.db2.udb.apdv.java.doc/doc/tjvjcccn.htm

  This website contains documentation of the URL syntax for connecting to DB2 using JDBC.

- http://www.redbooks.ibm.com/abstracts/sg247555.html

  An IBM Redbook on security related issues with DB2, including auditing and data encryption. The IBM Form Number is SG24-7555-00.