

Oracle® Endeca Information Discovery

Installation Guide

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Table of Contents

Copyright and disclaimer	2
Preface	6
About this guide	6
Who should use this guide	6
Conventions used in this document	6
Contacting Oracle Customer Support	7

Part I: Before You Begin

Chapter 1: Oracle Endeca Information Discovery Installation Overview	9
About this release	9
Overview of the Oracle Endeca Information Discovery modules	10
About the Oracle Endeca Server	10
About Integrator	11
About Studio	11
Interaction with Liferay Portal	12
Installation order	12
Chapter 2: System Requirements	13
Oracle Endeca Server system requirements	13
Hardware requirements	13
Supported operating systems	14
Linux utilities dependencies	15
Disk space requirements	15
Required Information Discovery components	16
Integrator system requirements	16
Studio system requirements	16
Changing the JavaScript time-out value on Internet Explorer 8	18
Chapter 3: Downloading the Oracle Endeca Information Discovery Software	20
Downloading the Oracle Endeca Information Discovery software	20

Part II: Installing Oracle Endeca Server

Chapter 4: Installing Oracle Endeca Server	24
Installing Oracle Endeca Server on Windows	24
Installing the Cluster Coordinator package	25
Installing silently on Windows	26
Installing Oracle Endeca Server on Linux	26
Installing silently on Linux	27

Testing your installation	28
Package contents and directory structure	28
List of Web services and their versions	29

Part III: Installing Integrator

Chapter 5: Installing Integrator	32
Integrator installation packages	32
Integrator installation on Windows	33
Integrator installation on Linux	33
Integrator Server installation	34
Tomcat configuration recommendations	35

Part IV: Installing Studio

Chapter 6: Installing Studio	38
About the installation process	38
Installing the Studio Windows Tomcat bundle	39
Changing the context root for the Windows Tomcat bundle	40
Running Studio as a Windows service	41
About running Studio as a Windows service	41
Obtaining the service installer files	41
Configuring the service	42
Installing and starting the service	43
Troubleshooting the service installation	44
Installing the Studio Linux Tomcat bundle	45
Changing the context root in the Linux Tomcat bundle	46
Installing Studio on WebSphere Application Server version 7	47
High-level overview of WebSphere Application Server 7 deployment	47
Deploying Studio dependency libraries on WAS 7	47
Extracting the standalone portal WAR on WAS 7	48
Deploying the standalone portal WAR on WAS 7	48
Creating the Liferay Home directory on WAS 7	49
Configuring and deploying portal-ext.properties for WAS 7	50
Editing portal-ext.properties for WAS 7 deployment	50
Updating the application to include the portal-ext.properties file on WAS 7	51
Uploading portal-ext.properties to Liferay Home on the server on WAS 7	51
Starting the Studio application on WAS 7	51
Deploying components and other plugins in WAS 7	52
About Liferay component pre-processing in WAS 7	52
Deploying components in WAS 7	52
Deploying generated .war files on WAS 7 with the Integrated Solutions Console	52
Using wsadmin to deploy the generated .war file on WAS 7	53
Installing the Studio license	53
Troubleshooting WAS 7 deployment	54
Installing Studio on Oracle WebLogic Server 11gR1 (10.3.5)	54

Prerequisites for installing Studio on WebLogic	54
Updating settings for your WebLogic domain	54
Creating and configuring the Liferay Home directory for WebLogic	55
Configuring a non-root context for a WebLogic instance	55
Deploying the Studio .ear file	56
Chapter 7: Getting Started with Studio	58
Starting and logging in to Studio	58
Using the Control Panel to configure Studio	58
Updating the default data source to point to your Endeca Server	59
Importing the Data Explorer and Schema Explorer sample pages	60
Exploring the Quick Start Sample Application in Studio	62
Chapter 8: Other Studio Installation Tasks	63
Using a different database to store application data	63
About using a different database	63
Overview of the process for switching to a different database	63
 Part V: Uninstallation Tasks	
Chapter 9: Uninstalling Oracle Endeca Information Discovery	66
Uninstalling the Oracle Endeca Server	66
Uninstalling the Oracle Endeca Server on Windows	66
Uninstalling the Oracle Endeca Server on Linux	67
Uninstalling Integrator	67
Uninstalling Integrator on Windows	67
Uninstalling Integrator on Linux	68
Uninstalling Integrator Server	68
Uninstalling Studio	68

Preface

Endeca Information Discovery Studio is an industry-leading application composition environment and discovery experience that allows business users to easily upload and mash up multiple diverse data sources, and then quickly configure discovery applications - all within the context of an enterprise framework that maintains existing governance and enterprise definitions.

Studio includes world-class search, guided navigation, and filtering, as well as offering an array of powerful interactive visualizations, for rapid intuitive analysis that requires zero training.

About this guide

This guide contains installation instructions for setting up Oracle Endeca Information Discovery on Windows and Linux.

Installing Oracle Endeca Information Discovery consists of installing:

- Oracle Endeca Server
- Integrator
- Studio

Who should use this guide

This guide is intended for system administrators installing Oracle Endeca Information Discovery on Windows or Linux, as well as for developers who are building applications using Studio.

Conventions used in this document

The following conventions are used in this document.

Typographic conventions

The following table describes the typographic conventions used in this document.

Typeface	Meaning
User Interface Elements	This formatting is used for graphical user interface elements such as pages, dialog boxes, buttons, and fields.
Code Sample	This formatting is used for sample code phrases within a paragraph.
<i>Variable</i>	This formatting is used for variable values. For variables within a code sample, the formatting is <i>Variable</i> .
File Path	This formatting is used for file names and paths.

Symbol conventions

The following table describes symbol conventions used in this document.

Symbol	Description	Example	Meaning
>	The right angle bracket, or greater-than sign, indicates menu item selections in a graphic user interface.	File > New > Project	From the File menu, choose New, then from the New submenu, choose Project.

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Oracle Customer Support provides registered users with important information regarding Oracle software, implementation questions, product and solution help, as well as overall news and updates from Oracle.

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Part I

Before You Begin



Chapter 1

Oracle Endeca Information Discovery Installation Overview

This chapter provides a brief overview of the Oracle Endeca Information Discovery components and the installation process.

[About this release](#)

[Overview of the Oracle Endeca Information Discovery modules](#)

[Installation order](#)

About this release

Read this section to understand the assumptions under which you can use this release. This section lists those aspects of the release that may change in the future. These aspects may represent limitations in the configuration process or feature availability.

Consider the following characteristics of this release:

- **Support for the Oracle Endeca Server, Studio, and Integrator is limited to those versions that are included in this release of Oracle Endeca Information Discovery.** This release relies on the data files created with the version of the Oracle Endeca Server that supports Oracle Endeca Information Discovery. Similarly, this release only supports Studio and Integrator versions that are compatible with Oracle Endeca Information Discovery.
- **Options for loading the data sources.** In this release, the recommended way of loading the data is through Integrator.
- **Notes about the configuration and development process.** In this release, the configuration and development process takes place in Integrator and is complemented by options available to the power users in Studio.

Oracle Endeca Information Discovery language support

Oracle Endeca Information Discovery has been optimized to support ingest, display, full search, navigation and text enrichment for the English language. It also provides language packs for French, German, Spanish, Italian, Dutch and Portuguese enabling search capabilities. Currently, all product interfaces are provided in English only.

Overview of the Oracle Endeca Information Discovery modules

Oracle Endeca Information Discovery is made up of three major modules.

- Oracle Endeca Server
- Integrator
- Studio

The Oracle Endeca Server has a separate download. Integrator and Studio are contained in the same download.



Note: These Oracle Endeca Information Discovery 2.3.x modules are compatible with each other. However, modules shipped as part of Oracle Endeca Information Discovery 2.3.x are not compatible with earlier versions.

About the Oracle Endeca Server

The Oracle Endeca Server software provides the query engine that serves as the foundation for all front-end applications utilizing it. The software includes the Oracle Endeca Server which is the management facility for administering the Endeca data stores.

Front-end applications built on top of the Oracle Endeca Server can answer end-user queries and provide business analytics information to the front-application's users.



Note: The term Oracle Endeca Server is used in two related contexts — on the one hand, it is the name of the entire software package for the server. On the other hand, the Oracle Endeca Server is the management facility for administering your data stores.

The Oracle Endeca Server lets you administer your Endeca data stores. The Endeca data store is where the source data records are stored after being loaded from your ETL client (typically, Integrator). With the Oracle Endeca Server, you can:

- Create an Endeca data store, including assigning it a name that will later be used to access and manage it.
- Stop and start Endeca data stores.
- View the status of any Endeca data store.
- List the jobs that are running on a specific Endeca data store.

In addition, the Oracle Endeca Server constantly monitors the status of the running Endeca data stores and will automatically restart them (for example, if one crashes).

As the query engine, the Dgraph process of the Oracle Endeca Server uses proprietary data structures and algorithms that allow it to provide real-time responses to client requests issued to the data store that is running on the server. The Dgraph process receives client requests via the application tier, queries the data files, and returns the results.

Each Endeca data store contains a set of versioned Web services for loading, configuring, and querying the data. These Web services, together with the Bulk Load Interface provide the interface to the Oracle Endeca Server.

About the cluster of nodes

A cluster is composed of a set of nodes, all of which can serve query requests. Only one node is identified as the leader node; All other nodes are follower nodes. One copy of the data files is shared and used by all nodes. The Cluster Coordinator provides communication between the nodes in the cluster. It also notifies the reader nodes about index updates and updates to the configuration.

If one of the cluster nodes fails, queries continue to be processed by other nodes in the cluster. A cluster also provides increased throughput by the Oracle Endeca Server. By adding nodes to a cluster you can spread the query load across multiple Oracle Endeca Servers without the need to increase storage requirements at the same rate. Nodes can be added or removed dynamically, without having to stop the cluster.

In the development environment, you can start with a single Oracle Endeca Server that is not part of a cluster. (Without the cluster services, having a single running Oracle Endeca Server is a valid configuration for starting in the development environment.) You can then expand your single instance implementation by first building a simple single-node cluster configuration and then adding more nodes. When you move to a production environment, you can duplicate a multi-node cluster that you built in the development environment.

In this release, the cluster implementation requires that you download and install the Cluster Coordinator package. For information on configuring and running the cluster, see the chapter on clustering in the *Oracle Endeca Server Administrator's Guide*.

About Integrator

Oracle Endeca Information Discovery Integrator is a high-performance data integration platform that lets you extract source records from a variety of source types (from flat files to databases).

Integrator then loads that data in an Endeca data store via the Data Ingest Web Service or the Bulk Load Interface.

From a high level, the Integrator suite consists of:

- **Integrator.** With its powerful graphical interface, you can use the Integrator client to build graphs that can load source data into the an Endeca data store, as well as the schema for your attributes and the index configuration documents for various Endeca features.
- **Information Discovery connectors.** Developed by Endeca, these connectors are Integrator components that are easily configured to perform various data ingest operations on the Endeca data stores.
- **Integrator Server.** The Server is used to run graphs in an enterprise-wide environment. In this environment, different users and user groups can access and run the graphs.

About Studio

Oracle Endeca Information Discovery's Studio enables rapid configuration of dashboard applications that offer the highly interactive Guided Navigation® user experience across a full range of structured and unstructured enterprise data.

Studio is easy to deploy and ideal for the agile development of enterprise-quality applications. Due to the component-based nature of Studio, these applications are simple to control, adapt, and extend. It provides granular layout and configuration control to enable users to manage and personalize their own experiences.

Studio consists of an enterprise-class portal framework and a library of UI components that embody best practices in Information Discovery applications.

About the Component SDK

The Component SDK is a packaged development environment for portlets, themes, layout templates, and other portal elements. We have modified Liferay's version of its Plugins SDK to include enhancements such as the `EndecaPortlet` core class.

The installation and use of the Component SDK is covered in the *Oracle Endeca Information Discovery Studio Developer's Guide*.

Interaction with Liferay Portal

Studio is built upon the Liferay Portal Enterprise Edition.

Liferay Portal is an open-source JSR-286 portal technology. Studio extends basic Liferay functionality to provide enhanced user management, security, cross-component interaction, and performance-optimized communication with Endeca Servers.

This version of Studio is built upon Liferay Portal 5.2 Enterprise Edition Service Pack 5.

Installation order

Following the recommended order of installation helps you minimize component dependencies.

Endeca recommends that you install the components in this order:

1. Oracle Endeca Server (see [Installing Oracle Endeca Server on page 23](#)). The last step in the installation lets you start the Oracle Endeca Server.
Note that you can start the Oracle Endeca Server without creating an Endeca data store.
2. Integrator (see [Installing Integrator on page 31](#)). After installing, open Integrator to verify that it was installed correctly.
3. Studio (see [Installing Studio on page 37](#)). After installing, to verify the installation, log in to Studio. Use a created Endeca data store to provide the data source.
4. Integrator Server (optional, see [Installing Integrator on page 31](#)). After installing, use a browser to access the Integrator Server home page and log in.

The verification procedures for each component are described in the installation section for that component.



Chapter 2

System Requirements

This chapter describes the requirements for each component of an Oracle Endeca Information Discovery installation.

[Oracle Endeca Server system requirements](#)

[Integrator system requirements](#)

[Studio system requirements](#)

Oracle Endeca Server system requirements

Here are the system requirements for Oracle Endeca Server.

[Hardware requirements](#)

[Supported operating systems](#)

[Linux utilities dependencies](#)

[Disk space requirements](#)

[Required Information Discovery components](#)

Hardware requirements

The Oracle Endeca Server has the following hardware requirements.



Note: In this guide, the term "x64" refers to any processor compatible with the AMD64/EM64T architecture. You might need to upgrade your hardware, depending on the data you are processing. All run-time code must fit entirely in RAM. Likewise, hard disk capacity must be sufficient based on the size of your data set. Please contact your Oracle representative if you need more information on sizing your hardware.

Windows and Linux on x64

Minimum hardware requirements:

- x64 processor, minimum 1.8 GHz
- At least 3 GB of RAM, depending on the size of the application data set
- 80 GB hard drive, depending on the size of the application data set

Recommended hardware requirements:

- x64 3.0+ GHz processors; Intel Xeon (including Nehalem) or AMD Opteron processors are recommended

- 8 GB of RAM or more, depending on the size of the application data set
- High performance network-attached storage (for example, attached via a dedicated iSCSI or fibre channel network), or high performance locally-attached RAID storage (for example, a RAID 6 or RAID 0+1 array with battery-backed write caching, operating on 72GB or 146 GB spindles at 10k or 15k RPM spindle speed)
- Gigabit Ethernet

Hardware requirements for running a cluster of nodes

These requirements exist:

- Shared file system. All nodes in the cluster must have access to a shared file system on which the data files for the data store are stored.
- Load balancer. In most production deployments, it is desirable to configure a load balancer between Studio and a cluster of the Oracle Endeca Server nodes. Include host names and ports of all nodes into the load balancer configuration. For more information, see the cluster section of the *Oracle Endeca Server Administrator's Guide*.

Supported operating systems

The Oracle Endeca Server supports the following 64-bit operating systems running on servers with x64 capabilities:

Operating System	Description
Oracle Linux 5	Only the Red Hat Compatible Kernel is supported.
Linux RHEL 5	<ul style="list-style-type: none"> • Red Hat Enterprise Linux Server (version 5 for x64) running on x64 processors. • Red Hat Enterprise Linux Advanced Platform (version 5 for x64) running on x64 processors. <p>For best performance on Red Hat Linux version 5 (Server and Advanced), Endeca recommends the latest version of RHEL 5.</p>
Windows 2008	Windows Server 2008 R2 Enterprise running on x64 processors.

Notes

Windows 7 is not supported for production deployment, but operates sufficiently to enable training and small-scale development work.

Windows XP is not supported.

If you intend to install the Oracle Endeca Server as part of a cluster of nodes, all nodes must be running on the same operating system — you cannot create a cluster in which some nodes are running on Windows while other nodes are running on Linux.

Linux utilities dependencies

The Oracle Endeca Server installer requires several Linux utilities.

The following Linux utilities must be present in the `/bin` directory:

```
basename
cat
chgrp
chown
date
dd
df
mkdir
more
rm
sed
tar
true
```

The following Linux utilities must be present in the `/usr/bin` directory:

```
awk
cksum
cut
dirname
expr
gzip
head
id
perl
printf
tail
tr
wc
which
```

If these utilities are not in the specified locations, the installation fails with a message similar to the following:

```
Required dependency is not executable: /bin/df. Aborting.
```

Disk space requirements

You should ensure that adequate disk space is available before installing the Oracle Endeca Server.

On Windows, the installation process requires a minimum of 400 MB in the system partition and 200 MB in the target partition. To avoid an "out of drive space" error during the installation process, you should allow the minimum of memory required on the system and target partitions.

The Windows installation process unpacks its `.MSI` installation file, and other temporary and log files, to a location on the system drive (typically the user's `%TEMP%` folder). These files add another 400MB during the installation. When the process completes the installation, it deletes the temporary files and frees the 400 MB space it consumed.

On Linux, the Oracle Endeca Server unpacks to approximately 430 MB. Because multiple versions may eventually be stored, a destination in a large disk partition is recommended.

Required Information Discovery components

The Oracle Endeca Server does not require any other Information Discovery components to be previously installed. If you are planning to run a cluster of Oracle Endeca Server nodes, then a Cluster Coordinator package must be installed after you install the Oracle Endeca Server.

Integrator system requirements

The Integrator components have the following installation requirements.

The 2.3.x version of the Integrator is compatible only with the 2.3.x version of the Oracle Endeca Server.

Hardware requirements

The 64-bit version of Integrator client has the same hardware requirements as Oracle Endeca Server, which are documented in this topic: [Hardware requirements on page 13](#).

Supported operating systems

The 64-bit version of Integrator client is supported on the same operating systems as Oracle Endeca Server, which are documented in this topic: [Supported operating systems on page 14](#).

The 32-bit version of Integrator client is supported only on platforms running the 32-bit version of Windows 7. Note that Windows 7 is not supported for production deployment, but operates sufficiently to enable training and small-scale development work.



Note: The *Oracle Endeca Discovery Integrator Guide* lists other supported operating systems. However, that list is superseded by the list in the linked topic above.

Software requirements

- The only pre-requisite for an Integrator client installation on Linux is an X Window System.
- Integrator client requires Java version 6 (also called 1.6) JDK, which is included in the Integrator installer.
- Integrator Server must be installed on a stand-alone Apache Tomcat, version 6.0.x. Note that you should not install Integrator Server on the Tomcat that is hosting another application, such as Studio.

Studio system requirements

Here are the system requirements for Studio.

The installation instructions also assume that you have a running Oracle Endeca Server at which to point Studio. This version of Studio is compatible with the 2.3.x version of Oracle Endeca Server.

Hardware requirements

Minimum hardware requirements:

- x64 processor, minimum 1.8 GHz
- At least 2 GB of RAM, depending on the size of the application data set

- 80 GB hard drive, depending on the size of the application data set

Recommended hardware requirements:

- x64 3.0+ GHz processors; we recommend Intel Xeon (including Nehalem) or AMD Opteron processors
- 8 GB of RAM or more, depending on the size of the application data set
- High performance network-attached storage (for example, attached via a dedicated iSCSI or fibre channel network) or high performance locally-attached RAID storage (for example, a RAID 6 or RAID 0+1 array with battery-backed write caching, operating on 72GB or 146 GB spindles at 10k or 15k RPM spindle speed)
- Gigabit Ethernet



Note: In this guide, the term "x64" refers to any processor compatible with the AMD64/EM64T architecture. You might need to upgrade your hardware, depending on the data you are processing. All run-time code must fit entirely in RAM. Likewise, hard disk capacity must be sufficient based on the size of your data set. Please contact your Oracle representative if you need more information on sizing your hardware.


Supported operating systems

Platform	Description
Oracle Linux 5	Oracle Linux 5 (version 5 for x64) running on x64 processors. Only the Red Hat Compatible Kernel is supported.
Linux RHEL 5	<ul style="list-style-type: none"> • Red Hat Enterprise Linux Server (version 5 for x64) running on x64 processors. • Red Hat Enterprise Linux Advanced Platform (version 5 for x64) running on x64 processors. <p>For best performance on Red Hat Linux version 5 (Server and Advanced), we recommend the latest version of RHEL 5.</p>
Windows 2008	Windows Server 2008 R2 Enterprise running on x64 processors.

Software requirements

Studio is a Web-based application that runs in an application server. It supports the following software:

Software	Supported Versions
Application server	<ul style="list-style-type: none"> • Tomcat 6 • WebSphere Application Server (WAS) 7 • Oracle WebLogic Server 11gR1 (10.3.5)

Software	Supported Versions
Java	<ul style="list-style-type: none"> • Tomcat 6 and WebLogic are supported with Sun Java 6 • WAS 7 is supported with IBM Java 6 For Sun Java 6, update 18 or greater is required.
Database system	<ul style="list-style-type: none"> • MySQL 5.1 • Oracle 11g
Browser	<ul style="list-style-type: none"> • Firefox 3.6 on Windows • Firefox 6.0 on Windows • Internet Explorer 8 (with compatibility mode disabled) on Windows Firefox is recommended.  Important: Running Internet Explorer 8 in compatibility mode is not supported.
Browser plugin	Adobe Flash 10.0

Alternative database support

The Liferay Portal server uses a relational database to store configuration and state. By default, Liferay uses Hypersonic, but this is not recommended for production use due to performance issues. Studio has been tested on MySQL and Oracle 11g. However, many other databases are expected to work.

Customers should feel free to use any database, including shared systems they may already have in place. As with application servers, customers who choose to deploy on un-tested databases will always be supported on any issue that can be traced back to core Studio code and can be reproduced on a supported database.

The Studio section of this guide, combined with the *Liferay Portal Administrator's Guide*, provides detailed instructions on how to switch to another database system.

Changing the JavaScript time-out value on Internet Explorer 8

Internet Explorer 8 keeps track of the number of JavaScript lines executed. After a fixed value, the browser issues an error message, prompting the user to decide whether he or she would like to continuing running the script. Because Studio is a rich Internet application that leverages JavaScript heavily in all components, it can trigger this error during normal usage.

Microsoft describes this issue in Knowledge Base Article 175500 and specifies a fix. More detail can be found in the Knowledge Base Article (<http://support.microsoft.com/kb/175500>). The following is a condensed version of Microsoft's fix for the Internet Explorer 8 issue.



Important: If you intend to run Studio on Internet Explorer 8, Endeca strongly recommends that you apply the fix outlined here.

To change the script time-out value:

1. Using a registry editor such as `Regedt32.exe`, open this key:

```
HKEY_CURRENT_USER\Software\Microsoft\Internet Explorer\Styles
```



Note: If the `Styles` key is not present, create a new key that is called `Styles`.

2. Create a new `DWORD` value called "MaxScriptStatements" under this key, and set the value to the desired number of script statements. You will have to try different values for your application environment, but the suggested starting point is a `DWORD` value of `0x1CFFFF`.



Note: You can turn off this Internet Explorer 8 feature using a `DWORD` value of `0xFFFFFFFF`.



Chapter 3

Downloading the Oracle Endeca Information Discovery Software

Downloading the Oracle Endeca Information Discovery software

Downloading the Oracle Endeca Information Discovery software

The Oracle Endeca Information Discovery modules are downloaded from the Oracle Software Delivery Cloud.

This procedure includes the downloads for each platform for all of the modules:

- The Oracle Endeca Server. The Oracle Endeca Server download includes the Cluster Coordinator package, used to run a cluster of Endeca servers.
- Integrator
- Studio

To download the Oracle Endeca Information Discovery software:

1. Log in to <https://edelivery.oracle.com>.
2. Accept the terms and restrictions.
3. On the **Media Pack Search** page:
 - (a) From the **Select a Product Pack** drop-down list, select **Oracle Endeca**.
 - (b) From the **Platform** drop-down list, select the platform you are installing on.
 - (c) Click **Go**.

The list of media packs for the selected product and platform is displayed.

For the Windows platform, the media pack is **Oracle Endeca Information Discovery (2.3) Media Pack v1 for Microsoft Windows x64 (64-bit)**.

For the Linux platform, the media pack is **Oracle Endeca Information Discovery (2.3) Media Pack v1 for Linux x86-64**.

4. In the media pack list, click the name of the media pack.
The **Download** page displays, listing the downloads for the selected media pack.
5. For the Oracle Endeca Server and Cluster Coordinator package, for Windows, download **Oracle Endeca Server (2.3) for Microsoft Windows x64 (64-bit)**.

The downloaded file, ES23_win.zip, contains:

ES_2.3.exe	Oracle Endeca Server installer.
------------	---------------------------------

ES_2.3_cluster_coordinator_win.tgz	Cluster coordinator package. Used when running a multiple Endeca Server nodes in a clustered environment.
ES_2.3_doc.zip	Oracle Endeca Server documentation.
ES_2.3_readme.txt	Oracle Endeca Server release notes.

For Linux, download **Oracle Endeca Server (2.3) for Linux x86-64**. The downloaded file, ES23_Linux.zip, contains:

ES_2.3.sh	Oracle Endeca Server installer
ES_2.3_cluster_coordinator_linux.tgz	Cluster coordinator package. Used when running a multiple Endeca Server nodes in a clustered environment.
ES_2.3_doc.zip	Oracle Endeca Server documentation.
ES_2.3_readme.txt	Oracle Endeca Server release notes.



Note: The Cluster Coordinator package is required if you would like to run a number of Endeca server nodes in a clustered environment. You install the Cluster Coordinator package on one server you will include in a cluster as a leader node. For information on using a cluster, see the *Oracle Endeca Server Administrator's Guide*.

- The Oracle Endeca Information Discovery package includes both Integrator and Studio.

For Windows, download **Oracle Endeca Information Discovery (2.3) for Microsoft Windows x64 (64-bit)**. The downloaded file, EID23_Win.zip, contains:

EID_2.3_Integrator_designer.exe	Installer for Integrator 64-bit client.
EID_2.3_Integrator_designer_win32.exe	Installer for Integrator 32-bit client.
EID_2.3_Integrator_server.zip	Installer for Integrator Server.
EID_2.3_Studio_portal.zip	Studio Tomcat bundle.
EID_2.3_Studio_portal_dependencies.zip	Studio dependencies file for the WAS installation.
EID_2.3_Studio_portal_war.zip	Studio .war file for the WAS installation.
EID_2.3_Studio_components.zip	Studio components. Needed for the Tomcat bundle and WAS installations.
EID_2.3_Studio_portal_weblogic.zip	Files for the WebLogic installation.

EID_2.3_Studio_components_sdk.zip	Studio Component SDK. Used for development of custom components. For information on developing custom components, see the <i>Oracle Endeca Information Discovery Studio Developer's Guide</i> .
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For Linux, download **Oracle Endeca Information Discovery (2.3) for Linux x86-64**. The downloaded file, EID23_Linux.zip, contains:

EID_2.3_Integrator_designer.sh	Installer for Integrator client.
EID_2.3_Integrator_server.zip	Installer for Integrator Server.
EID_2.3_Studio_portal.tgz	Studio Tomcat bundle.
EID_2.3_Studio_portal_dependencies.zip	Studio dependencies file for the WAS installation.
EID_2.3_Studio_portal_war.zip	Studio .war file for the WAS installation.
EID_2.3_Studio_components.zip	Studio components. Needed for the Tomcat and WAS installations.
EID_2.3_Studio_portal_weblogic.zip	Files for the WebLogic installation.
EID_2.3_Studio_components_sdk.zip	Studio Component SDK. Used for development of custom components.

You can also download the **Oracle Endeca Information Discovery (2.3) Documentation**. This .zip file contains the Integrator and Studio release notes and documentation.

Part II

Installing Oracle Endeca Server



Chapter 4

Installing Oracle Endeca Server

This section contains instructions for installing the Oracle Endeca Server.

[Installing Oracle Endeca Server on Windows](#)

[Installing the Cluster Coordinator package](#)

[Installing silently on Windows](#)

[Installing Oracle Endeca Server on Linux](#)

[Installing silently on Linux](#)

[Testing your installation](#)

[Package contents and directory structure](#)

[List of Web services and their versions](#)

Installing Oracle Endeca Server on Windows

This topic describes how to install Oracle Endeca Server on a Windows client machine.

Oracle Endeca Server is installed on Windows as a machine-wide installation. This type of installation requires administrator permissions and is used because it is intended for a production environment.

This procedure assumes that you have downloaded the Oracle Endeca Server installer for Windows.

To install Oracle Endeca Server on a Windows client:

1. Double-click the installer file to start the wizard.
The wizard verifies the contents of the installation package.
2. Click **Next** to begin the installation process.
The **Important Information** screen appears with Copyright and legal information.
3. Read the information on this screen, and click **Next**.
4. In the **Destination Folder** screen, either accept the default installation folder or select another installation location. Then click **Next**.

You cannot install the Oracle Endeca Server into a folder that contains content.

The wizard displays both the required and available disk space for the target directory chosen. The Oracle Endeca Server requires approximately 200 MB of disk space. The installer requires approximately 400 MB of space on the system drive for temporary files. These temporary files are cleared after the installation process completes.

5. In the **Completing the Setup Wizard** screen, click **Next**.
The wizard begins to install the Oracle Endeca Server files.

6. When the wizard confirms that you have successfully completed the installation, a checkbox lets you choose whether to start the Oracle Endeca Server now or later:
 - To start the Oracle Endeca Server immediately after installation, leave the box checked.
 - To start the Oracle Endeca Server later, uncheck the box.
7. Click **Finish**.
8. After installation is complete, enable secure mode (SSL) on Oracle Endeca Server by following the procedure in the *Oracle Endeca Server Administrator's Guide*.

If you chose to start the Oracle Endeca Server now, the server is started and a command window opens for standard output.

The installation also creates an **Oracle Endeca Server 2.3.0** entry in the Start Menu with these shortcut options:

- **Start Oracle Endeca Server**
- **Stop Oracle Endeca Server**
- **Uninstall Oracle Endeca Server 2.3.0**

Installing the Cluster Coordinator package

To run in a cluster, the Cluster Coordinator package must be installed and the Cluster Coordinator service must be running on the one cluster node that is designated to be the leader node.

It is assumed that you have downloaded the Cluster Coordinator package and also have installed the Oracle Endeca Server on the node.

You install the Cluster Coordinator by unzipping its package into the `localdisk:\Oracle\Endeca\ClusterCoordinator\<version>` directory. If you installed the Oracle Endeca Server, this directory will be parallel to the directory in which the server is installed.

To install the Cluster Coordinator on the leader node:

1. Download the following packages to your `localdisk:\Oracle\Endeca` directory:

Windows	<code>ES_version_cluster_coordinator_win.tgz</code>
Linux	<code>ES_version_cluster_coordinator_linux.tgz</code>

where `<version>` is the current version of the Oracle Endeca Server software package.

2. Unzip the Cluster Coordinator package, using the command similar to the following example (on Linux):

```
cd /localdisk tar xzf /Oracle/Endeca/ES_version_cluster_coordinator_linux.tgz
```

The Cluster Coordinator package is installed in:

```
Oracle/Endeca/ClusterCoordinator/<version>
```

on Linux.

For Windows, the path is:

```
Oracle\Endeca\ClusterCoordinator\<version>
```

Once the Cluster Coordinator package is installed on the leader node, its service can be started. For information on starting the cluster, see the *Oracle Endeca Server Administrator's Guide*.

Installing silently on Windows

Running the silent installer on Windows has different effects depending on whether or not the user has administrator permissions.

If the silent installer is run with administrator permissions, it creates a per-machine installation. Otherwise, it creates a per-user installation. Variables on the command line can be used to override this default behavior.

To install silently on Windows:

1. From a command prompt, navigate to the directory where you downloaded the installer.
2. Run the silent installer with a command (on a single line), similar to this example:

```
start /wait ES_2.3.exe /s TARGETDIR=C:\Oracle\EndecaServer230
```

You can replace the TARGETDIR path location in the example with the location to which you want to install. However, if you set the install location to a non-empty directory or to a drive that does not exist, the silent installation will fail with a non-zero status code.

Additionally, an administrator can override the default behavior and create a per-user installation by setting ALLUSERS=FALSE.

3. After installation is complete, enable secure mode (SSL) on Oracle Endeca Server by following the procedure in the *Oracle Endeca Server Administrator's Guide*.

The installation also creates an **Oracle Endeca Server 2.3.0** entry in the Start Menu with these shortcut options:

- **Start Oracle Endeca Server**
- **Stop Oracle Endeca Server**
- **Uninstall Oracle Endeca Server 2.3.0**

When running the silent installer on Windows, you can turn on logging. This can be useful, for example, if you need to debug a failed silent installation. To turn on logging during a silent installation on Windows, add /l=<path>. An absolute path is required.

Installing Oracle Endeca Server on Linux

The Oracle Endeca Server is distributed as a self-extracting tar file and install script. It can be installed at any location.



Note: The Oracle Endeca Server unpacks to approximately 200 MB. Because multiple versions may eventually be stored, a destination in a large disk partition is recommended.

To install the Oracle Endeca Server:

1. Determine where you will install the Oracle Endeca Server. Verify that the target directory on which you plan to install has enough available disk space, and has write permissions (is not read-only). For example, in this procedure we assume that the target directory is `/localdisk` and that you have write permissions for it.
2. Run the Endeca installation script with a command similar to this example:

```
./ES_2.3.sh --target /localdisk
```

3. The copyright notice displays first. Review the copyright notice and scroll to the end of it. When you reach the end of the notice, the installation begins.
The installer displays a message that it is about to extract files in the specified directory. The installer also checks that the directory has enough available disk space, and that it can write to this directory. If these conditions are met, the installer proceeds with the installation and completes it. If they are not met, the installer issues an error and discontinues the installation.

The installation is finished when you see this confirmation message:

```
Installation complete!
```

4. After installation is complete, enable secure mode (SSL) on Oracle Endeca Server by following the procedure in the *Oracle Endeca Server Administrator's Guide*.

As a result of the installation, the Oracle Endeca Server is installed in:

```
Oracle/Endeca/Server/2.3.0
```

To start up the Oracle Endeca Server, run the `start.sh` script in the `endeca-server` directory.

Installing silently on Linux

The silent installer is useful if you want to add the installation of the Oracle Endeca Server to your own install script, or push out the installation on multiple machines.

The silent installer is not interactive.

To install silently on Linux:

1. From a command prompt, navigate to the directory where you downloaded the installer.
2. Issue a command (on a single line) similar to this example:

```
./ES_2.3.sh --silent --target /localdisk
```

Note that `--target` must be the last parameter specified.

The installation is finished when you see this confirmation message:

```
Installation complete!
```

3. After installation is complete, enable secure mode (SSL) on Oracle Endeca Server by following the procedure in the *Oracle Endeca Server Administrator's Guide*.

To start up the Oracle Endeca Server, run the `start.sh` script in the `endeca-server` directory.

Testing your installation

To verify the installation, you can create an instance of an Endeca data store.



Note: The instructions in this topic are based on Windows. If you installed on Linux, the steps will be similar, though you will need to substitute executables and paths.

To test that the installation succeeded, perform the following steps:

1. To start the Endeca Server on Windows, use the **Oracle Endeca Server 2.3.0>Start Oracle Endeca Server** option in the Start Menu.
2. Open a Command Prompt and navigate to the `\Oracle\Endeca\Server\2.3.0\endeca-cmd` folder.
3. Use the `endeca-cmd create-ds` command to create and start an Endeca data store.

```
endeca-cmd create-ds adventureworks
```

The command creates an initial index for the Endeca data store and starts it.

4. Use the `endeca-cmd status-ds` command to verify that the Endeca data store is running:

```
endeca-cmd status-ds adventureworks
```

The Endeca data store will be fully running when you see this output in the Command Prompt window:

```
Current State: Started

Data Files: C:\Oracle\Endeca\Server\2.3.0\endeca-server\data\adventureworks
WS Port: 7771
Bulk Load Port: 7772
Startup Timeout (s): 60
Shutdown Timeout (s): 60
```

For detailed information on the Oracle Endeca Server and its commands, see the *Oracle Endeca Server Administrator's Guide*.

Package contents and directory structure

The Oracle Endeca Server installation creates the following directory structure.

The default root directory for the Oracle Endeca Server is:

- For Windows: `C:\Oracle\Endeca\Server\<version>`
- For Linux: the directory specified with the installer's `--target` option.

The root directory contains files and software modules for all of the Oracle Endeca Server components:

Directory	Contents
root directory	The release notes (<code>README.txt</code>), the <i>Oracle Endeca Information Discovery Licensing Guide</i> , and the <code>version.txt</code> file.

Directory	Contents
/apis	The directories for the Oracle Endeca Server API Reference (the /doc directory), the Java client examples for sending queries to the Oracle Endeca Server (the /examples directory), the WSDL and XSD documents for each Web service packaged with the Oracle Endeca Server (the /web-services directory), and the JAR file representing the packaged Bulk Ingest interface.
/endeca-cmd	The JAR for the endeca-cmd command-line interface, as well as the command script that calls the Oracle Endeca Server commands. Also, the lib directory contains utilities used for SSL support.
/endeca-server	The start and stop scripts for the Oracle Endeca Server. Also contains, the Endeca data store's Dgraph process, and the Jetty Java application server.
logs	The logs directory for the Oracle Endeca Server and the Endeca data stores.
state	The directory for storing internal information about the data store configuration. The contents of this directory is used by the Oracle Endeca Server. This directory is not intended to be used by the data store administrators.
/shared	The JRE (Java Runtime Environment) used by the Oracle Endeca Server.

List of Web services and their versions

Once you install the Oracle Endeca Server and create a data store in it, you can use the packaged Web services with the specified versions for each of them, to send requests.

The WSDL and XSD documents for the following Web services are installed in the Oracle\Endeca\Server\2.3.0\apis\web-services directory of your installation:

- Data Ingest Web Service 1.0, ingest (documented in the *Oracle Endeca Server Data Loading Guide*)
- Configuration Web Service 1.0, config (documented in the *Oracle Endeca Server Developer's Guide*)
- Conversation Web Service 1.0, conversation (documented in the *Oracle Endeca Server Developer's Guide*)
- Transaction Web Service 1.1, transaction (documented in the *Oracle Endeca Server Developer's Guide*)
- Administration Web Service 1.0, admin (documented in the *Oracle Endeca Server Administrator's Guide*)

In addition to these Web services, additional Web services are available with the Oracle Endeca Server:

- The LQL Parser Web Service 2.0, lql_parser — a Web service used by the Conversation Web Service to parse Endeca Query Language queries and filters.
- The Entity Configuration Web Service 1.0, sconfig, used by Integrator and Studio to create and manage views.
- The Control Web Service 1.0, control, used by the Oracle Endeca Server commands.



Note: Each Web service is versioned with the major and minor version numbers listed in its WSDL document. If you are planning to use Web service calls directly or use client-side code created with stubs generated from a web service, ensure that you use a supported version of the Web service. For detailed information on Web service versions, see a section in the *Oracle Endeca Server Developer's Guide*.

The Bulk Load Interface is also installed in the `Oracle\Endeca\Server\2.3.0\apis` directory of your installation. Together with the Data Ingest Web Service, The Bulk Load interface loads the records into the Oracle Endeca Server. For more information on this interface, see the *Oracle Endeca Server Data Loading Guide*.

Part III

Installing Integrator

This section describes how to install Integrator on Linux and Windows platforms.

[*Integrator installation packages*](#)

[*Integrator installation on Windows*](#)

[*Integrator installation on Linux*](#)

[*Integrator Server installation*](#)



This section describes how to install Integrator on Linux and Windows platforms.

[Integrator installation packages](#)

[Integrator installation on Windows](#)

[Integrator installation on Linux](#)

[Integrator Server installation](#)

Integrator installation packages

There are Integrator installation packages for Linux and Windows clients, and one for the Server.

Linux client installer

The Linux client installer is a shell script file named `EID_2.3_Integrator_designer.sh`.

Windows client installers

There are two Integrator installers for Windows clients:

- The 64-bit installer executable file is named `EID_2.3_Integrator_designer.exe`.
- The 32-bit installer file is named `EID_2.3_Integrator_designer_win32.exe`.

Each installation contains a complete version of the Integrator client utility, including the Endeca connectors.

Integrator Server installation package

The Integrator Server installation package is named `EID_2.3_Integrator_server.zip`. This ZIP file contains two components:

- The `clover.war` file contains the server version of the Integrator, including the Endeca connectors.
- The `clover-license.war` file contains the license for the Integrator Server.

The contents of the package can be installed on either a Linux or Windows machine.

Integrator installation on Windows

This topic describes how to install Integrator on a Windows client machine.

The Information Discovery Integrator is installed as a machine-wide installation on Windows. This type of installation requires administrator permissions and is used because it is intended for a production environment.

This procedure assumes that you have downloaded the Integrator installer for Windows. Make sure that you have the correct version (32-bit or 64-bit) for your machine.



Note: These installation instructions apply to both the 32-bit and 64-bit versions of Integrator, as both installers have the same installation steps.

To install Integrator on a Windows client:

1. Double-click the installer file to start the wizard.
The wizard verifies the contents of the installation package.
2. Click **Next** to begin the installation process.
3. In the **Copyright and Legal** screen, click **Next**.
4. In the **Destination Folder** screen, either accept the default installation folder or select another installation location. Then click **Next**.
You cannot install Integrator into a folder that contains content.
5. In the **Completing the Setup Wizard** screen, click **Next**.
The wizard begins to install the Information Discovery Integrator files.
6. When the wizard confirms that you have successfully completed the installation, click **Finish**.

After installation, double-click the Integrator shortcut icon to start the program.

Integrator installation on Linux

This topic describes how to install Integrator on a Linux client machine.

This procedure assumes that you have downloaded the Integrator installer for Linux.

To install Integrator on a Linux client:

1. Determine where you will install the Integrator client. Verify that the target directory on which you plan to install has write permissions (is not read-only).
For example, in this procedure we assume that the target directory is `/localdisk` and that you have write permissions for it. If you do not set these permissions, the install script will not run.
2. Run the Integrator installation script with a command similar to this example:

```
./EID_2.3_Integrator_designer.sh --target /localdisk
```
3. The copyright notice displays first. Scroll to the end of the copyright notice. When you reach the end of the notice, the installation begins.
The installer displays a message that it is about to extract files in the specified directory. The installer also checks that the directory has enough available disk space, and that it can write to this directory. If

these conditions are met, the installer proceeds with the installation and completes it. If they are not met, the installer issues an error and discontinues the installation.

The installation is finished when you see this confirmation message:

```
Installation complete!
```

As a result of the installation, Integrator is installed in:

```
Oracle/Endeca/Discovery/Integrator/2.3.0
```

To start up Integrator, run the `integrator` executable file in the `Integrator/2.3.0` directory.

Integrator Server installation

This topic provides information on installing the Integrator Server.

The Integrator Server must be installed on a stand-alone Apache Tomcat, version 6.0.x.



Note: Do not install Integrator Server on a Tomcat server that is being used to host other applications. For example, do not install Integrator Server on the Tomcat that is hosting Oracle Endeca Information Discovery Studio.

To install Integrator Server:

1. Make sure that the install machine has the Java SDK version 1.6.x or higher installed. Also ensure that the `JAVA_HOME` and `JRE_HOME` environment variables are set. If `JRE_HOME` is not set, it defaults to the `JAVA_HOME` setting.
2. The Integrator Server requires a stand-alone Apache Tomcat version 6.0.x to run. If you have not already done so, you can install Apache Tomcat 6.0.x as follows:
 - (a) Download the binary distribution from: <http://tomcat.apache.org/download-60.cgi>
 - (b) Unpack the ZIP file to a directory of your choosing.
 - (c) By default, Tomcat starts up on HTTP connector 8080. If another application on the install machine is already using port 8080 (for example, if you have another instance of Tomcat on the machine), then change the default startup port by modifying the `conf/server.xml` file.
 - (d) Run Tomcat with the `startup.sh` (for Linux) or `startup.bat` (for Windows) program file in the Tomcat `bin` directory.
 - (e) Use a browser to check whether Tomcat is running on URL **`http://localhost:8080`**. The default Tomcat home page should appear if Tomcat is running properly. If you need more detailed installation instructions, go to: <http://tomcat.apache.org/tomcat-6.0-doc/setup.html>
For instructions on installing Tomcat as a Windows service, go to: <http://tomcat.apache.org/tomcat-6.0-doc/windows-service-howto.html>
3. Shut down Tomcat to continue with the rest of the installation procedure.
4. Copy the `clover-license.war` and `clover.war` files to the Tomcat `webapps` directory.
5. Create a `setenv` file and configure the Tomcat memory settings appropriate for your needs. For details on creating this file, see the section [Creating a setenv file on page 35](#).
6. Restart Tomcat.

- Using a browser, verify that the Integrator Server license was successfully deployed by using the **http://localhost:8080/clover-license** URL command. The browser should show this light-weight page:

```
This webapp runs on context /clover-license, which is correct.
```

- Using a browser, bring up the Integrator Server home page by using the **http://localhost:8080/clover** URL command.
- Log into the Integrator Server by doing the following:
 - Click **Log in to Server Administration**.
 - At the Access Server GUI page, use **clover** as both the username and password and click the **login** button.

After the Integrator Server is running, you can access the *Reference Manual* from either the Integrator Server home page or via this URL:

```
http://localhost:8080/clover/docs/index.html
```

The *Reference Manual* provides comprehensive documentation on the operations available in the Integrator Server.

Tomcat configuration recommendations

This topic provides some configuration tips for getting started with your Tomcat application server.

Keep in mind that complete documentation on configuring and using the Tomcat server is available at this URL for the server:

```
http://localhost:8080/docs/
```

This topic provides some configuration tips that are specific to the Integrator Server application.

Creating a setenv file

It is recommended that you create a file named `setenv.bat` (Windows) or `setenv.sh` (Linux) and place it in the Tomcat `bin` directory. With this file (which is run by the `catalina.bat` and `catalina.sh` scripts), you can change the following Tomcat environment settings with the `JAVA_OPTS` variable:

- You can set the minimum and maximum memory heap size with the JVM `-Xms` and `-Xmx` parameters. The best limits depend on many conditions, such as transformations which Information Discovery Integrator should execute. For these types of transformations, a maximum of 1 GB is recommended. For example, to set the minimum heap size to 128 MB and the maximum heap size to 1024 MB, use:

```
JAVA_OPTS=" -Xms128m -Xmx1024m"
```

- You should set the maximum limit of the PermGen (Permanent Generation) memory space to a size larger than the default. The default of 64 MB is not enough for enterprise applications. A suitable memory limit depends on various criteria, but 256 MB would make a good choice in most cases. If the PermGen space maximum is too low, `OutOfMemoryError: PermGen space` errors may occur. You can set the PermGen maximum limit with the following JVM parameter:

```
-XX:MaxPermSize=256m
```

- For performance reasons, it is recommended that the application is run in Server mode. Apache Tomcat does not run in Server mode by default. You can set the Server mode by using the JVM `-server`

parameter. You can set the JVM parameter in the `JAVA_OPTS` variable in the environment variable in the `setenv` file.

The following is an example of a `setenv.bat` file:

```
set "JAVA_OPTS=%JAVA_OPTS% -Xms128m -Xmx1024m -XX:MaxPermSize=256m -server"
```

About database connections

The default installation (without changes to the configuration) uses the embedded Apache Derby DB, and therefore does not need an extra database server. In addition, the installation (as regards to the DB) does not need any subsequent configuration.

Integrator Server configures itself during the first startup. Database tables and some necessary records are automatically created on the first startup with an empty database. In the **Sandboxes** tab of the Integrator Server Administration GUI, you can check that there is one default sandbox created with one test graph.

Only one Integrator Server instance can work with the embedded DB. If you need more instances, you should configure an external DB.

You will have to determine if the embedded Apache Derby DB is sufficient for your application when you are ready for production deployment. If the Apache Derby DB is not sufficient, you can configure an external DB connection such as Microsoft SQL or Oracle. For details on configuring external DBs, see the *Reference Manual* for the Integrator Server.

Part IV

Installing Studio



Chapter 6

Installing Studio

After downloading the Studio software, you install it on your development server.

[About the installation process](#)

[Installing the Studio Windows Tomcat bundle](#)

[Installing the Studio Linux Tomcat bundle](#)

[Installing Studio on WebSphere Application Server version 7](#)

[Installing Studio on Oracle WebLogic Server 11gR1 \(10.3.5\)](#)

About the installation process

You can install Studio on one of the available platforms for Windows and Linux operating systems.

The options are:

- Studio with the Windows Tomcat bundle. This is based on Tomcat 6 and Java 1.6.
- Studio with the Linux Tomcat bundle. This is based on Tomcat 6 and Java 1.6.
- Studio as a standalone application on Websphere Application Server 7. WebSphere can be used on both Linux and Windows.
- Studio as a standalone application on Oracle WebLogic Server 11g. WebLogic can be used on both Linux and Windows.

Regardless of which installation option you use, you should enable secure mode (SSL) on your Endeca Server and Studio. For details on enabling SSL on Studio, see the *Oracle Endeca Information Discovery Studio User's Guide*.

Note on the changing the default portal database

The following steps deploy the portal using the default embedded Hypersonic database, which is not intended for production use.

In production, you must deploy using an alternate database. For more information about this process, see [Using a different database to store application data on page 63](#).

Briefly, to deploy an alternate database, you can modify the `portal-ext.properties` file to specify the appropriate JDBC connection information for the desired database.

Alternatively, you can follow the instructions in the *Liferay Portal Administrator's Guide* to set up a JDBC provider and data source in your application server, and then configure `portal-ext.properties` to look up the data source by JNDI name.

Note on maintaining the Endeca Theme

To start up, Studio requires the Endeca Theme. Even if you do not intend to use the Endeca Theme in production, you should not uninstall the Endeca Theme (`endeca-theme-<version>.war`) from the `endeca-portal\deploy` directory.

Note on configuring the default data source

The data sources in your Studio application must always include a default data source. This data source is automatically assigned to all data-source-backed components when they are initially added to a page.

When you install a new instance of Studio, it creates a placeholder `default` data source. For details on configuring this data source to point to your server, see [Updating the default data source to point to your Endeca Server on page 59](#).

Installing the Studio Windows Tomcat bundle

In the Tomcat bundle version of Studio, Tomcat 6 and the JVM 1.6 are embedded.

Installing the Studio Tomcat bundle requires the following files from the Oracle Endeca Information Discovery download for Windows (`EID23_Win.zip`):

- `EID_2.3.x_Studio_portal.zip`
- `EID_2.3.x_Studio_components.zip`

To install the Studio Tomcat bundle:

1. Unzip `EID_2.3.x_Studio_portal.zip` to the directory of your choice.

Studio creates a directory called `endeca-portal` in that directory. For example, if you unzip into `C:`, Information Discovery Studio installs into `C:\endeca-portal`.

It is recommended that you create a directory `C:\Oracle\Endeca\Discovery\2.3.0\` to extract the file into.

2. Extract the `.war` files from `EID_2.3.x_Studio_components.zip` and place them into the `endeca-portal\deploy` directory.

The `.war` files go in the root of `endeca-portal\deploy`. There should be no subdirectories.



Note: This directory already contains themes, hooks, and layouts required by the portal. It is safe to overwrite these files with the versions in `EID_2.3.x_Studio_Components.zip`.

3. If the environment variables `CATALINA_HOME` or `JAVA_HOME` are already set, update them to point to your newly installed Tomcat directory and a valid 1.6 JRE.

For example, set `CATALINA_HOME` to `C:\<path_to_endeca-portal>\tomcat-6.0.29`, and set `JAVA_HOME` to `C:\<path_to_endeca-portal>\tomcat-6.0.29\jre1.6.0_21\win`.

If you do not have these environment variables set, you can leave them un-set.

4. To start the portal's Tomcat instance, run `endeca-portal\tomcat-6.0.29\bin\startup.bat`.



Note: Server startup can take several minutes. You can follow the log messages to ascertain when the process is complete. Do not shut down the Tomcat window while Studio is running.

5. To test that the application is running, go to the portal (<http://localhost:8080/>) in your browser. Log in using the following default credentials:

Login:	admin@oracle.com
Password:	admin

For better security, after logging in for the first time, you should probably either:

- Change the password for this user
 - Create new administrative users for your instance, and then remove this user
6. Optionally, you can set up [log4j](#) logging. `log4j` provides configurable, Java-based logging in an open-source utility.



Note: For more information about Studio logging, see the *Oracle Endeca Information Discovery Studio User's Guide*.

[Getting Started with Studio](#)

[Other Studio Installation Tasks](#)

Changing the context root for the Windows Tomcat bundle

Optionally, after installing the Windows Tomcat bundle, you can change the context root.

When you first install the bundle, it uses the default context root of "/", and you get access to Studio by going to <http://localhost:8080/>. If you change the context root to "sales", then the URL would be <http://localhost:8080/sales>.

Note that any change to the context root only affects the Studio application. Components, themes, and other hooks still use their default context paths.

To change the context root:

1. Rename `endeca-portal\tomcat-6.0.29\conf\Catalina\localhost\ROOT.xml` file to `<context root>.xml`.

For example, if your context root is `sales`, the file name should be `sales.xml`.

For multi-level context paths, separate the name with #. For example, for a context path of `/sales/east`, the file name should be `sales#east.xml`.

2. Modify the XML file created in the previous step as needed:
 - For a root context: `<Context path=" " />`
 - For a context of `/sales`: `<Context path="/sales" />`
 - For a context of `/sales/east`: `<Context path="/sales/east" />`

3. Rename the `endeca-portal\tomcat-6.0.29\webapps\ROOT` directory to `endeca-portal\tomcat-6.0.29\webapps\<context root>`.

For multi-level context paths, use a multi-level path such as: `endeca-portal\tomcat-6.0.29\webapps\sales#east`.

4. Edit the `endeca-portal\portal-ext.properties` file.

Find the `portal.ctx` property at the beginning of the file, and change the value to be the same context root value you used above.

Do not include a trailing slash in the `portal.ctx` value. For example, use this value:

```
portal.ctx=/mycompany/portal
```

Do not use this value:

```
portal.ctx=/mycompany/portal/
```

Running Studio as a Windows service

If you have installed the Windows Tomcat bundle, then you can run Studio as a Windows service.

About running Studio as a Windows service

Running Studio as a Windows service requires the Tomcat service installer files.

The Studio bundle does not include the Tomcat service installer files. You will need to obtain those files from the Tomcat download, which is available from the Apache web site.

After you obtain the files, you then configure and install the service.

You also should install the Tomcat service monitor. The monitor is used to configure and monitor the Windows service, and is useful for troubleshooting. The service monitor executable also is available from the Tomcat download.

Obtaining the service installer files

The service installer and monitor files are part of the Tomcat download.

You must use the files for Tomcat version 6.0.29. If your JVM is 64-bit, then you must use the files for Tomcat 6.0.30 or later.

To obtain the files and add them to Studio:

1. From the Apache Tomcat website (<http://tomcat.apache.org>), download the Tomcat file `apache-tomcat-6.0.29-windows-x86.zip`.

A sample URL for the archive directory is: <http://archive.apache.org/dist/tomcat/tomcat-6/v6.0.29/bin/>

If you are not using the bundled JVM, and your JVM is 64-bit, then you must download the 64-bit version of the zip file for Tomcat 6.0.30 or later. For example, `apache-tomcat-6.0.33-windows-x64.zip`.

2. Extract the file to a temporary directory.
3. In the `bin` subdirectory of the temporary download directory, locate the following files:
 - `service.bat`
 - `tomcat6.exe`
 - `tomcat6w.exe`. This is the Tomcat service monitor.

4. Copy these files to the `bin` directory of Information Discovery Studio:

```
endeca-portal\tomcat-6.0.29\bin
```

Configuring the service

In the `service.bat` file, you need to configure the service name, description, and memory allocation. The Tomcat monitor file name also must be updated to reflect the change to the service name.

After you copy the Tomcat service installation files, before you can start the service, you need to update `service.bat` to:

- Edit the service name and descriptions to reflect your Studio installation
- Add additional JVM startup arguments
- Increase the memory allocation. Studio requires more memory than is set in the default values.

If you change the service name, then you also must change the name of the Tomcat monitor executable.

To update the configuration:

1. Open the file `service.bat`.

2. In the file, find the following lines:

```
set SERVICE_NAME=Tomcat6
set PR_DISPLAYNAME=Apache Tomcat 6
```

3. Change the name and display name to reflect your Studio installation. For example:

```
set SERVICE_NAME=Studio23
set PR_DISPLAYNAME=Studio 2.3
```

4. Next, find the following line:

```
set PR_DESCRIPTION=Apache Tomcat 6.0.29 Server -
http://tomcat.apache.org/
```

5. Change the service description to reflect your Studio installation. For example:

```
set PR_DESCRIPTION=Studio server, version 2.3
```

6. Next, find the following line:

```
"%EXECUTABLE%" //US//%SERVICE_NAME% ++JvmOptions "-Djava.io.tmpdir=%CATALINA_BASE%\temp
;-Djava.util.logging.manager=org.apache.juli.ClassLoaderLogManager
;-Djava.util.logging.config.file
=%CATALINA_BASE%\conf\logging.properties" --JvmMs 128 --JvmMx 256
```

7. Replace the last part of the line:

```
-Djava.util.logging.config.file
=%CATALINA_BASE%\conf\logging.properties" --JvmMs 128 --JvmMx 256
```

with:

```
-Djava.util.logging.config.file=%CATALINA_BASE%\conf\logging.properties;-XX:MaxPermSize
=256m" --JvmMs 256 --JvmMx 1024
```

Make sure that there are no manual line breaks or extra spaces.

8. Immediately below that line, add the following line:

```
"%EXECUTABLE%" //US//%SERVICE_NAME% ++JvmOptions "-Dfile.encoding=UTF8
;-Djava.net.preferIPv4Stack=true;-Duser.timezone=GMT;-XX:MaxPermSize=256m"
```

Make sure there are no manual line breaks or extra spaces.

9. Save and close the file.
10. Create a copy of the Tomcat monitor file (tomcat6w.exe). Rename the copy to be <value of SERVICE_NAME>w.exe.

For example, if you set SERVICE_NAME=Studio23 in service.bat, then you must rename the copy of the tomcat6w.exe to Studio23w.exe.

Installing and starting the service

To install the service, you run the service.bat file. You also must update the Tomcat monitor to point to the JVM.

Before you install the service, make sure that you have updated the configuration.

Also, if you are not using the bundled JVM, then make sure that the JAVA_HOME environment variable is set to the location of your JDK. By default, service.bat looks for %JAVA_HOME%\jre\server\jvm.dll.

To install and start the Studio service:

1. From the command line, navigate to the Studio Tomcat bin directory.


```
endeca_portal\tomcat-6.0.29\bin\
```
2. Run the following command:


```
service.bat install
```
3. Configure the Tomcat monitor to point to the JVM:
 - (a) Double-click the monitor executable (for example, Studio23w.exe).
 - (b) On the properties dialog, click the **Java** tab.
 - (c) Uncheck **Use default**.
 - (d) In the **Java Virtual Machine** field, set the full path to jvm.dll.

For the bundled JVM, the file is endeca-portal\tomcat-6.0.29\jre1.6.0_21\win\bin\server\jvm.dll.

If you are not using the bundled JVM, then set the path to your JVM.
 - (e) Click **OK**.
4. When you install the service, it is set up to be started manually. To configure the service to start automatically:
 - (a) Display the **Services** list (**Control Panel>Administrative Tools>Services**).
 - (b) In the list, double-click the Studio service.

The properties dialog for the service is displayed.
 - (c) From the **Startup type** drop-down list, select **Automatic**.
 - (d) Click **OK**.
5. From the **Services** list, to start the service for the first time, right click the service, then click **Start**.

Troubleshooting the service installation

If the service installs properly, but fails to start, you can use the steps provided here to troubleshoot.

For additional details on using the Tomcat service and service monitor, see <http://tomcat.apache.org/tomcat-6.0-doc/windows-service-howto.html>.

As you are troubleshooting, check the log files (endeca-portal\tomcat-6.0.29\logs\jakarta_service*.log) for the relevant messages.

If the service will not start:

1. Make sure that you have used the correct version of the Tomcat download:
 - Tomcat version 6.0.29
 - For a 32-bit JVM (including the bundled JVM), apache-tomcat-6.0.29-windows-x86.zip
 - For a 64-bit JVM, apache-tomcat-6.0.29-windows-x64.zip
2. If you are not using the bundled JVM, make sure that the `JAVA_HOME` environment variable is set to the location of your JDK.

By default, `service.bat` looks for `%JAVA_HOME%\jre\server\jvm.dll`.

To change `JAVA_HOME` after the service is installed:

- (a) Uninstall the service. To uninstall the service, run the following command:
`service.bat remove`
 - (b) Update `JAVA_HOME`.
 - (c) Reinstall and restart the service.
3. Make sure the Tomcat service monitor is configured to point to the location of your JVM.
 - (a) Double-click the monitor executable.
 - (b) On the properties dialog, click the **Java** tab.
 - (c) Uncheck **Use default**.
 - (d) In the **Java Virtual Machine** field, specify the path to `jvm.dll`.

For the bundled JVM, the file is `endeca-portal\tomcat-6.0.29\jre1.6.0_21\win\bin\server\jvm.dll`.

If you are not using the bundled JVM, then set the path to your JVM.
 - (e) Click **OK**.
 4. Use the Tomcat service monitor to set the startup and shutdown modes to Java.
 - (a) Double-click the monitor executable.
 - (b) On the properties dialog, click the **Startup** tab.
 - (c) From the **Mode** drop-down list, select **Java**.
 - (d) Click the **Shutdown** tab.
 - (e) From the **Mode** drop-down list, select **Java**.
 - (f) Click **OK**.

Installing the Studio Linux Tomcat bundle

In the Linux Tomcat bundle version of Studio, Tomcat 6 is embedded.

Installing the Studio Linux Tomcat bundle requires the following files from the Oracle Endeca Information Discovery for Linux download (EID23_Linux.zip):

- EID_2.3.x_Studio_portal.tgz
- EID_2.3.x_Studio_components.zip

To install the Studio Linux Tomcat bundle:

1. Extract EID_2.3.x_Studio_portal.tgz to the directory of your choice.

Studio creates a directory called `endeca-portal` in that directory.

It is recommended that you create a directory `Oracle/Endeca/Discovery/2.3.0/` to extract the file into.

2. Extract the `.war` files from EID_2.3.x_Studio_components.zip and place them into the `endeca-portal/deploy` directory. The `.war` files go in the root of `endeca-portal/deploy`. There should be no subdirectories.



Note: This directory already contains themes, hooks, and layouts required by the portal. It is safe to overwrite these files with the versions in EID_2.3.x_Studio_components.zip.

3. If the environment variable `CATALINA_HOME` is already set, update it to point to your newly installed Tomcat directory.
4. Make sure that the `JAVA_HOME` environment variable is set to point to a valid 1.6 JRE.
5. To start the portal's Tomcat instance, run `endeca-portal/tomcat-6.0.29/bin/startup.sh`.



Note: Server startup can take several minutes. You can follow the log messages to ascertain when the process is complete.

6. To test that the application is running, go to the portal (`http://localhost:8080/`) in your browser. Log in using the following default credentials:

Login:	<code>admin@oracle.com</code>
Password:	<code>admin</code>

For better security, after logging in for the first time, you should probably either:

- Change the password for this user
 - Create new administrative users for your instance, and then remove this user
7. Optionally, you can set up [log4j](#) logging. `log4j` provides configurable, Java-based logging in an open-source utility.



Note: For more information about Studio logging, see the *Oracle Endeca Information Discovery Studio User's Guide*.

[Getting Started with Studio](#)

[Other Studio Installation Tasks](#)

Changing the context root in the Linux Tomcat bundle

Optionally, you can change the context root used by your Studio application.

When you first install the bundle, it uses the default context root of "/", and you get access to Studio by going to `http://localhost:8080/`. If you change the context root to "sales", then the URL would be `http://localhost:8080/sales`.

Note that any change to the context root only affects the Studio application. Components, themes, and other hooks still use their default context paths.

To change the context root:

1. Rename `endeca-portal/tomcat-6.0.29/conf/Catalina/localhost/ROOT.xml` file to `<context root>.xml`.

For example, if your context root is `sales`, the file name should be `sales.xml`.

For multi-level context paths, separate the name with #. For example, for a context path of `/sales/east`, the file name should be `sales#east.xml`.

2. Modify the XML file created in the previous step as needed:
 - For a root context: `<Context path="" />`
 - For a context of `/sales`: `<Context path="/sales" />`
 - For a context of `/sales/east`: `<Context path="/sales/east" />`

3. Rename the `endeca-portal/tomcat-6.0.29/webapps/ROOT` directory to `endeca-portal/tomcat-6.0.29/webapps/<context root>`.

For multi-level context paths, use a multi-level path such as: `endeca-portal/tomcat-6.0.29/webapps/sales#east`.

4. Edit the `endeca-portal/portal-ext.properties` file.

Find the `portal.ctx` property at the beginning of `portal-ext.properties`.

Change the value of this setting to be the same context root value you used above.

Do not include a trailing slash in the `portal.ctx` value. For example, use this value:

```
portal.ctx=/sales/east
```

Do not use this value:

```
portal.ctx=/sales/east/
```

Installing Studio on WebSphere Application Server version 7

You can deploy Studio as a standalone application on WebSphere Application Server (WAS) version 7.0.

Before following the steps here, consult the *Liferay Portal Administrator's Guide*, which contains portal deployment instructions and examples for WebSphere Application Server 7.0.



Note: The examples in this section are based on a Linux server WAS deployment. If you are installing on Windows, the steps will be similar, though you will need to substitute Windows executables and paths. In certain examples, backslashes are used to escape the dollar sign (\$) character on Linux, because the shell would otherwise attempt a variable substitution for this character. These backslashes should not be required on a Windows system.

High-level overview of WebSphere Application Server 7 deployment

Here is an overview of the steps for deploying Studio on WAS 7. This overview is followed by the details for each step.

Installing Studio on WAS 7 requires the following files from the Oracle Endeca Information Discovery download for Windows or Linux (EID23_Win.zip or EID23_Linux.zip).

- EID_2.3.x_Studio_portal_dependencies.zip
- EID_2.3.x_Studio_portal_war.zip
- EID_2.3.x_Studio_components.zip
- EID_2.3.x_Studio_license.xml

Here is an overview of each step in the process of deploying Studio on WAS 7. This overview is followed by specific instructions and details for each step:

1. Deploy the dependency .jar files.
For the exact list of required files and destination directories, see the specific instructions for this step.
2. Start (or restart) the WAS server.
3. Install the Studio .war file as an enterprise application.
4. Edit and deploy portal-ext.properties.
5. Install the Endeca theme, components, and other framework .war files.
6. Install the Liferay license.
7. Start the Studio enterprise application.
8. Optionally, repeat step 5 for any additional plugins you want to add.

Deploying Studio dependency libraries on WAS 7

For WAS 7, Studio requires the deployment of several Java libraries.

These libraries are deployed to a global class loader, making them available to multiple applications.

To deploy the Studio dependency libraries:

1. Unzip the `.jar` files found in `EID_2.3.x_Studio_portal-dependencies.zip`.
2. Upload the following `.jar` files from the `.zip` file to the WAS server's external library directory.

(For example, if WAS is installed in `/usr/local/WAS/AppServer`, you would deploy the selected `.jar` files into `/usr/local/WAS/AppServer/lib/ext/`.)

```
annotations.jar
commons-lang.jar
cxf-2.2.8.jar
cxf-orawSDL-adapter.jar
endeca-images.jar
endeca-portal.jar
ext-service.jar
hsqldb.jar
jabsorb.jar
jackson-core-lgpl-1.7.2.jar
jackson-mapper-lgpl-1.7.2.jar
log4j.jar
mdex-bindings.jar
oracle.http_client_11.1.1.jar
orawSDL.jar
portal-kernel.jar
portal-service.jar
portlet.jar
slf4j-api.jar
slf4j-log4j12.jar
XmlSchema-1.4.3.jar
```

3. Restart the WAS server so that it can pick up the newly available `.jar` files.

Extracting the standalone portal WAR on WAS 7

Before you can install the standalone portal WAR, you must extract it from its download package.

To extract the standalone portal WAR on WAS 7:

1. Unzip `EID_2.3.x_Studio_portal_war.zip` into a temporary directory.
This zip file contains the `portal-<version>.war` file and the `copyright.txt` file.
2. Read the `copyright.txt` file, then save it to the location of your choice.
3. Note the location of the `portal-<version>.war` file, as you will need it for the next step.

Deploying the standalone portal WAR on WAS 7

After downloading and extracting the necessary files, you can deploy Studio as an enterprise application in WebSphere Application Server, and then install portlets, themes, and other plugins as modules in that enterprise application.

The following steps document the installation procedure by using the IBM Integrated Solutions Console for a WebSphere Application Server installed and maintained without the use of the Deployment Manager, and consisting of one cell with one node and one server.

The instructions may need to be adjusted for clustered environments, environments maintained with the Deployment Manager, or for environments where administration is performed using tools such as `wsadmin`, rather than the Integrated Solutions Console.

The following steps assume that no other applications are deployed in the same application server. If there are other applications, ensure that no applications are bound to context root / (or that any such applications are stopped during the Studio deployment).

After following these steps, you can adjust the context root for the Studio application, to ensure it does not conflict with other applications.

To deploy the Studio standalone portal WAR on WAS 7:

1. Start the WAS server.
2. Log in to the WAS Integrated Solutions Console, using the appropriate administrator credentials.
3. In the WAS Integrated Solutions Console, select **Applications>New Application>New Enterprise Application**.
4. Click to browse to and select the Studio WAR you downloaded earlier (`portal-<version>.war`), and then click **Next**.
5. Select **Choose to generate default bindings and mappings**. Check the following options:
 - **Generate default bindings**
 - **Override existing bindings**
6. Still in the **Choose to generate default bindings and mappings** section, check **Use default virtual host name for Web and SIP modules**, and then enter `default_host` in the text field.

Click **Next**.

7. By default, the application name is `portal-<version>_war`. Set the application name to a more relevant name (for example, `StudioDevInstance`). All other installation options can remain unchanged. Click **Next**.



Note: Do not use spaces in the application name. For example, use **StudioDevInstance** instead of **Studio Dev Instance**.

8. In **Map modules to servers**, accept the default settings, and then click **Next**.
9. In **Map context roots for Web modules**, set the context root to the desired path for your Studio installation, and then click **Next**.



Note: Make a note of your context root, as you will need to reference it several times during the deployment process.

10. In **Install New Application**, confirm that your settings are correct, and then click **Finish**.
11. Wait for installation. If the installation is successful, click **Save directly to master configuration**.

Creating the Liferay Home directory on WAS 7

The remaining instructions for the WAS 7 installation refer to a directory called Liferay Home. The Liferay Home directory is created relative to the user's home directory.

Manually create a Liferay Home directory (`/home/endeca/liferay/`), along with the following subdirectories:

- `/home/endeca/liferay/data`

- `/home/endecca/liferay/data/endecca-data-sources`
- `/home/endecca/liferay/websphere-deploy`

Configuring and deploying `portal-ext.properties` for WAS 7

After you edit the default version of the `portal-ext.properties` file, you then deploy it in WAS.

To deploy the file, you can either:

- Update the application to include the `portal-ext.properties` file.
- Upload the `portal-ext.properties` file to the Liferay Home directory on the server.

Editing `portal-ext.properties` for WAS 7 deployment

Studio provides a default version of `portal-ext.properties` to use as a starting point. Before you can deploy the file, you must add and edit settings to reflect your WAS deployment.

The default version of `portal-ext.properties` is included in the package `EID_2.3.x_Studio_portal_dependencies.zip`.

To update the file:

1. Open the `portal-ext.properties` file.
2. Add the following lines to the end of the file:

```
# Specify a directory where Liferay will "deploy" processed plugins.
# From this directory, WAS users will deploy WARs as modules in the
# Information Discovery Studio enterprise application.
#
auto.deploy.dest.dir=${liferay.home}/websphere-deploy
#
# Set this to true to enable JMX integration in
# com.liferay.portal.cache.EhcachePortalCacheManager.
#
ehcache.portal.cache.manager.jmx.enabled=false
```

The destination directory (specified by the `auto.deploy.dest.dir` setting) must exist before the plugin is hot-deployed.

In the above example, you must manually create the `websphere-deploy` directory if it does not exist.

3. Find the `portal.ctx` property at the beginning of `portal-ext.properties`.

Change the value of this setting to be the same context root value you used when deploying the standalone portal WAR. However, do not include a trailing slash in the `portal.ctx` value.

For example, use this value:

```
portal.ctx=/mycompany/portal
```

Do not use this value:

```
portal.ctx=/mycompany/portal/
```

4. Save the file.

Updating the application to include the portal-ext.properties file on WAS 7

After you create the `portal-ext.properties` file, you can use the IBM Integrated Solutions Console to include it in the `portal.war` module.

These steps may be performed using the `wsadmin` tool instead of the Integrated Solutions Console, and may need to be adjusted for alternate WAS configurations.



Note: Whenever users make changes to `portal-ext.properties`, they will need to repeat these steps to update the file in the application.

In some environments, it may therefore be more appropriate to deploy `portal-ext.properties` to the Liferay Home directory, where it can be updated without updating the deployed application. See [Uploading portal-ext.properties to Liferay Home on the server on WAS 7 on page 51](#).

To deploy `portal-ext.properties` in the Integrated Solutions Console:

1. Go to **Applications>Application Types>WebSphere Enterprise Applications**.
2. Select the enterprise application created when you deployed the portal WAR, then click **Update**.
3. Select **Replace or add a single file**.
4. Specify the path to deploy the file into the `WEB-INF/classes` directory of the portal Web application.
For example: `portal-<version>.war/WEB-INF/classes/portal-ext.properties`
5. Browse to where you created the file on your computer.
6. When the file has successfully updated, click **Save directly to master configuration**.

Uploading portal-ext.properties to Liferay Home on the server on WAS 7

Another option for deploying the updated `portal-ext.properties` file is to manually upload it to WAS.

To manually upload the `portal-ext.properties` file:

1. Upload the `portal-ext.properties` file to the Liferay Home directory.
For example: `/home/endeca/liferay/portal-ext.properties`.
2. When the Studio application is started, Liferay reads these properties.

Starting the Studio application on WAS 7

Once the Studio application has been deployed, and the `portal-ext.properties` file has been configured and deployed, the application needs to be started.

The following steps describe this process in the IBM Integrated Solutions Console.

To start the application:

1. Go to **Applications>Application Types >WebSphere Enterprise Applications**.
2. Select the enterprise application created when you deployed the portal WAR.
3. If the application is not already running, click **Start** to start it.

Deploying components and other plugins in WAS 7

Next, you need to deploy components, themes, hooks, and other plugins in WAS 7.

These plugins are located in `EID_2.3.x_Studio_components.zip`.

About Liferay component pre-processing in WAS 7

WAS does not support the hot deployment of components. However, Liferay's deployment code must update plugins by adding necessary libraries and configuration files.

For example, Liferay's portlet deployment code adds the following important piece of configuration to a portlet component's `web.xml` file:

```
<context-param>
  <param-name>com.ibm.websphere.portletcontainer.PortletDeploymentEnabled</param-name>
  <param-value>>false</param-value>
</context-param>
```

This context parameter is important for WAS deployment, as it ensures that WAS's portal server does not attempt to load the new portlet, and instead allows Studio to load the newly deployed portlet.

For this reason, Liferay must be allowed to pre-process components before they are deployed to WAS. You upload your `.war` files to Liferay's `deploy` directory so that Liferay's deployer can find and process them.

Deploying components in WAS 7

Before you can deploy the Studio components in WAS 7, Liferay must first pre-process them.



Important: To start up, Studio requires the Endeca Theme. Even if you do not intend to use the Endeca Theme in production, you should deploy the Endeca Theme (`endeca-theme-<version>.war`).

To deploy Studio components in WAS 7:

1. Copy all component `.war` files from `EID_2.3.x_Studio_components.zip` to `${liferay.home}/deploy`.
2. Wait while Liferay pre-processes the `.war` files and places them in the `${liferay.home}/websphere-deploy` directory.
3. Deploy the `.war` files generated in the previous step as modules in the Studio enterprise application. To do this, you can either use:
 - The WebSphere Integrated Solutions Console.
 - The command line, using `wsadmin`.

Deploying generated `.war` files on WAS 7 with the Integrated Solutions Console

You can use the IBM Integrated Solutions Console to deploy the `.war` files it finds in the `websphere-deploy` directory.



Note: These steps may need to be adjusted for alternate WAS configurations.

To deploy a generated `.war` file with the Integrated Solutions Console:

1. Go to **Applications>Application Types>WebSphere Enterprise Applications**.
2. Select the enterprise application created when you deployed the portal `.war` file, then click **Update**.
3. Select **Replace or add a single module**.
4. Specify the path to deploy the file as the display name of the new module.
For example, if you are adding `endeca-navigation-portlet.war`, specify the path as `endeca-navigation-portlet`.
5. Browse the remote file system to the newly created `.war` file in the Liferay deploy output directory.
Continuing the example above, this might be `/home/endeca/liferay/websphere-deploy/endeca-navigation-portlet.war`.
6. After finding the file, click **Ok**.
7. Select the detailed install path. Keep the defaults on all screens except the context root.
Set the context root to match the display name of the new plugin (in this example, `/endeca-navigation-portlet/`).
8. Once it has successfully updated, click **Save directly to master configuration**.

Using wsadmin to deploy the generated .war file on WAS 7

You can also use the `wsadmin` tool to deploy the generated `.war` file from the command line.



Note: These steps may need to be adjusted for alternate WAS configurations.

In the `wsadmin` tool, enter a command similar to the example below, where the command is executed from the Liferay deploy output directory (that is, the directory containing the `endeca-navigation-portlet.war` file):

```
[WAS]/AppServer/bin/wsadmin.sh -c "\$AdminApp update Studio
modulefile {-operation addupdate -contents endeca-navigation-port-
let.war -contextroot /endeca-navigation-portlet/ -contenturi endeca-navi-
gation-portlet -usedefaultbindings}" -c "\$AdminConfig save"
```

In this example:

- The enterprise application is named `Studio`.
- The file name for the module being added is `endeca-navigation-portlet.war`.
- The module display name is `endeca-navigation-portlet`
- The command is executed in `/home/endeca/liferay/websphere-deploy/`.

Installing the Studio license

Before you can start Studio, you must install the license, which is provided in the Oracle Endeca Information Discovery package.

To install the license:

1. Extract the Studio license (EID_2.3.x_Studio_license.xml) from the components .zip file (EID_2.3.x_Studio_components.zip).
2. Save the file to the `${liferay.home}/deploy` directory of your Studio installation.

When you start Studio, the license is installed.

Troubleshooting WAS 7 deployment

When deploying Studio on WAS 7, keep the following in mind.

Updating the Studio .war file

If you need to update the Studio .war file (not any individual plugin, but the portal .war itself), you must restart the WAS server. If you only restart the module, the restart might not be successful.

Installing Studio on Oracle WebLogic Server 11gR1 (10.3.5)

You can deploy Information Discovery Studio as a standalone application on Oracle WebLogic Server.

Installing Studio on WebLogic requires the file `EID_2.3.x_Studio_portal_weblogic.zip` from the Oracle Endeca Information Discovery download for Windows or Linux (`EID23_Win.zip` or `EID23_Linux.zip`).

Prerequisites for installing Studio on WebLogic

Before you can install Studio for WebLogic, the following items must already be in place.

You must have:

- Installed Oracle WebLogic Server 11gR1 (10.3.5)
- Installed Sun Java 6
- Created a WebLogic domain

Also make sure you are logged in as an administrative user.

For information on how to install WebLogic and Java, see the Oracle documentation.

Updating settings for your WebLogic domain

Before you can deploy Studio, you need to update some WebLogic settings.

The relevant settings are in the `setDomainEnv` script file (`setDomainEnv.sh` for Linux).

The file is located in the `bin` subdirectory of the domain directory (`<WebLogicInstallDirectory>/user_projects/domains/<DomainName>/bin/`) where:

- `<WebLogicInstallDirectory>` is the directory where you installed WebLogic.
- `<DomainName>` is the name of the domain where you are installing Studio.

In the file:

1. If you are using SSL-enabled data sources, set the initial value of the `JAVA_OPTIONS` argument to "`-DUseSunHttpHandler=true`".
Because this value is concatenated with other settings, it needs to be located close to the top of the file.
2. Set the max perm size setting to "`-XX:MaxPermSize=512m`".
3. Update the memory arguments setting to "`-Xms256m -Xmx1024m`".

Creating and configuring the Liferay Home directory for WebLogic

For the WebLogic installation, the default location of the Liferay Home directory is `<WebLogicInstallDirectory>/user_projects/domains`, where `<WebLogicInstallDirectory>` is the directory where you installed WebLogic. You can, if needed, use a different directory as the Liferay Home directory.

To create and configure a different location for the Liferay Home directory:

1. Create the directory you want to be Liferay Home directory.
2. Next, you need to update the version of `portal-ext.properties` located in the `.war` file, which is located in the `.ear` file, which is contained in the `.zip` file.

This version of `portal-ext.properties` is only used to provide a pointer to the Liferay Home directory.

3. Add the `liferay.home` parameter to the top of the file.

For example:

```
liferay.home=/localdisk/liferay
```

4. Repackage the file into the `.war` file.

Configuring a non-root context for a WebLogic instance

By default, Studio uses the root context. If you are installing Studio on a non-root context, then before you deploy the Studio `.ear` file, you need to update the `application.xml` file to specify the context root.

Note that any change to the context root only affects the Studio application. Components, themes, and other hooks still use their default context paths.

To change the context root:

1. Open the `META-INF/application.xml` file in `endeca-portal-weblogic.ear`.
2. Find the following xml snippet:

```
<module>
  <web>
    <web-uri>endeca-portal.war</web-uri>
    <context-root>/</context-root>
  </web>
</module>
```

3. Update the value of the `context-root` element to your chosen context root path.

The value should have a trailing slash. For example:

```
<module>
  <web>
    <web-uri>endeca-portal.war</web-uri>
    <context-root>/mycompany/portal/</context-root>
  </web>
</module>
```

For a non-root context, you also must specify the context root in the `portal-ext.properties` that you install in the Liferay Home directory. [Deploying the Studio .ear file on page 56](#) includes instructions for installing and updating this version of `portal-ext.properties`.

Deploying the Studio .ear file

To install Studio, you deploy the .ear file into the WebLogic domain.

To deploy the Studio .ear file:

1. Extract the `portal-ext.properties` file from `EID_2.3.x_Studio_portal_weblogic.zip`, and place it in the Liferay Home directory.

This version of the file is at the top level of the .zip file, and contains the complete set of Studio default settings.

2. If you have changed the Liferay Home directory from the default, then you must add the `liferay.home` parameter to the top of the file.

For example:

```
liferay.home=/localdisk/liferay
```

3. If you are using a non-root context, then you also need to update the `portal.ctx` property to use the same context root value you set in the `META-INF/application.xml` (See [Configuring a non-root context for a WebLogic instance on page 55](#)).

The property is at the beginning of the file.

When setting the `portal.ctx` value, do not include a trailing slash. For example, use this value:

```
portal.ctx=/mycompany/portal
```

Do not use this value:

```
portal.ctx=/mycompany/portal/
```

4. Create the `/data/endeca-data-sources` directory in the Liferay Home directory.

If your data sources are connected to a secured Endeca Server, then this directory will contain the associated Java Keystore (JKS) files.

For details on connecting data sources to a secured Endeca Server, see the *Oracle Endeca Information Discovery Studio User's Guide*.

5. Create the `deploy` directory in the Liferay Home directory.
6. Create the `weblogic-deploy` directory in the Liferay Home directory.

7. Extract the .ear file from `EID_2.3.x_Studio_portal_weblogic.zip`, and then deploy the .ear file into the domain.

For example, for Linux:

```
cp endeca-portal-weblogic-2.3.ear <DomainDirectory>/autodeploy
```

Where `<DomainDirectory>` is the path to the domain directory.

You could also deploy the .ear file using the WebLogic console.

Note that when you deploy the .ear file, you are deploying the complete set of standard Studio components. To remove components, or add custom components, you need to update the .ear file. For information on adding components to and removing components from the .ear file, see the *Oracle Endeca Information Discovery Studio Developer's Guide*.

8. Before you can start Studio, you need to install the Studio license file. To install the file:
 - (a) Extract the Studio license (`EID_2.3.x_Studio_license.xml`) from `EID_2.3.x_Studio_portal_weblogic.zip`.
 - (b) Save the file to the Liferay Home `deploy` directory.
9. If WebLogic isn't already started, then to start it, run the WebLogic startup script. For Linux, the script name is `startWebLogic.sh`.

The startup script is in the `bin` subdirectory of the domain directory.
10. The startup and deployment may take several minutes. Make sure you do not try to log in to Studio before the deployment is complete.
11. To verify that Studio has deployed successfully:
 - (a) Open a Web browser.
 - (b) In the browser, go to `http://<hostName>:<portNumber>`, where `<hostName>` is the name of the server, and `<portNumber>` is the number of the port used by WebLogic.

By default, WebLogic uses port 7001.

You should see the Studio welcome page.



Chapter 7

Getting Started with Studio

After installing Studio, use the following steps to launch and configure Studio and begin to work with it.

For more comprehensive information about Liferay components and concepts, see the *Liferay Portal Administrator's Guide*.

[Starting and logging in to Studio](#)

[Using the Control Panel to configure Studio](#)

[Updating the default data source to point to your Endeca Server](#)

[Importing the Data Explorer and Schema Explorer sample pages](#)

[Exploring the Quick Start Sample Application in Studio](#)

Starting and logging in to Studio

After you complete the Studio installation, you can start and log in to the application.

To start Studio:

1. Start your application server.
2. In your Web browser, go to the portal.
3. Log in using the default login and password:

Login:	admin@oracle.com
Password:	admin

For better security, after logging in for the first time, you should probably either:

- Change the password for this user
- Create new administrative users for your instance, and then remove this user

Using the Control Panel to configure Studio

The **Control Panel** provides access to a wide range of edit controls, including managing accounts, adding new users, and monitoring performance. There are also Studio-specific components for managing data sources, configuring Studio settings, and monitoring Studio performance.

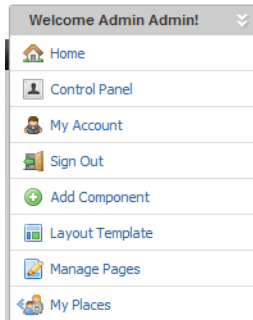
For full documentation on **Control Panel** capabilities, see the *Liferay Portal Administrator's Guide*.

For information on the Studio-specific **Control Panel** components, see the *Oracle Endeca Information Discovery Studio User's Guide*.

To display the **Control Panel**:

1. Click the Dock in the upper-right corner of the page.

The Dock is labeled "Welcome <user name>!"



2. From the drop-down menu, select **Control Panel**.

Updating the default data source to point to your Endeca Server

When you first install Studio, all components that require a backing data source are bound to a data source called `default`.

If no other data sources are present, then Studio creates a placeholder `default` data source.

Before you can start working with components in Studio, you must either:

- Use the **Data Sources** component to update this data source to point to the correct server, port, and data store name.
- Add a new data source to Studio, then use the **Framework Settings** component to configure that data source to be the default.

The **Data Sources** and **Framework Settings** components are both available from the **Control Panel**.

To update the `default` data source:

1. In the Studio **Control Panel** menu, in the **Information Discovery** section, click **Data Sources**.
2. On the **Data Sources** component, click the **Edit** button for the `default` data source.
3. In the data source definition, edit the server, port, and data store name to reflect your Endeca Server.

For example:

```
{
  "server": "localhost",
  "port": "5555",
  "datastoreName": "acmeDB"
}
```

4. Click **Save**.

For details on creating and managing data sources, see the *Oracle Endeca Information Discovery Studio User's Guide*.

Importing the Data Explorer and Schema Explorer sample pages

Studio provides a set of sample pages you can use as a starting point for working with components and viewing data and configuration settings.

One page, called **Data Explorer**, contains components bound to the `default` data source. This page allows you to explore the data in the `default` data source.

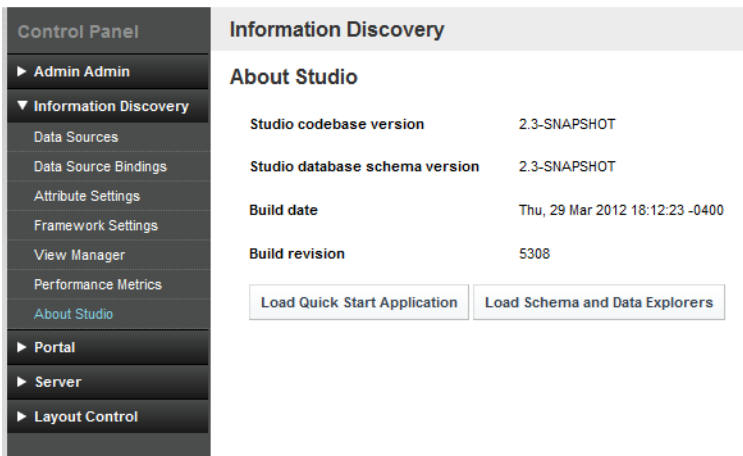
The other page, **Schema Explorer**, contains similar components. The components on the **Schema Explorer** page are bound to the `default-schema` data source, which only displays configuration records. This page allows you to explore the configuration settings for the `default` data source.

The **About Studio** component includes a button to import these pages into Studio. The pages are loaded into a new community called **explorers**. If needed, Studio also creates the data sources.

To import these sample pages into Studio:

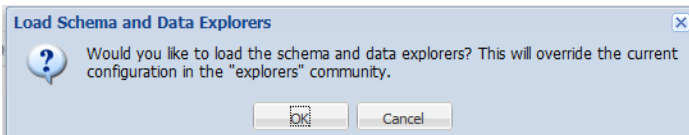
1. From the Dock menu, select **Control Panel**.
2. On the **Control Panel** menu, under **Information Discovery**, click **About Studio**.

The **About Studio** component is displayed.



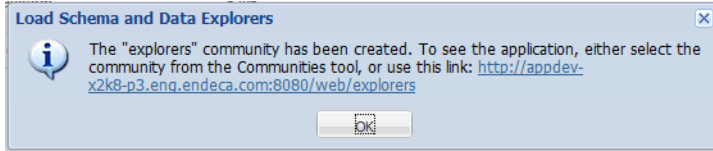
3. On the **About Studio** component, click **Load Schema and Data Explorers**.

Studio prompts you to confirm that you want to load the pages.



4. Click **OK**.

Studio displays a message confirming that it has created the new **explorers** community with the **Data Explorer** and **Schema Explorer** pages. The message dialog includes a link to the new community, or you can just click **OK** to close the dialog and continue.



If neither the `default` or `default-schema` data sources exist, then Studio creates them. In this case, both data sources contain placeholder values for the server, port, and data store name.

If the `default` data source exists, but `default-schema` does not exist, then Studio uses the server, port, and data store name values from `default` to create `default-schema`, and adds the configuration to only display configuration records.

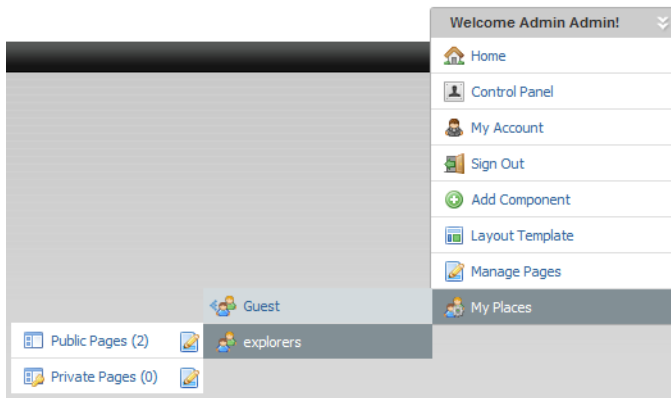
5. If needed, update the `default` and `default-schema` data sources to point to your Endeca Server.

See [Updating the default data source to point to your Endeca Server on page 59](#). The same process would apply for updating `default-schema`.

For `default-schema`, make sure you do not edit or remove the `mdex-records` parameter.

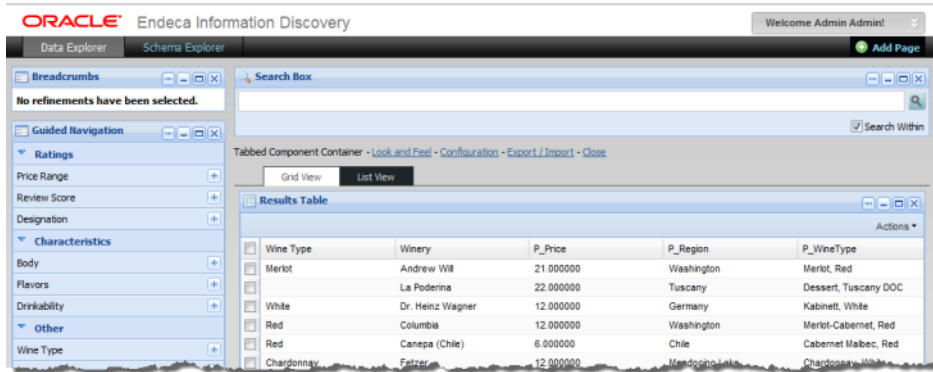
6. To navigate to the **explorers** community:

- (a) Click the Dock menu.
- (b) In the menu, click **My Places**.
- (c) Click **explorers**.



(d) Click **Public Pages**.

The **Data Explorer** and **Schema Explorer** pages are displayed.



Exploring the Quick Start Sample Application in Studio

Endeca Information Discovery's Quick Start allows you to quickly and easily create a new Endeca Server, then explore a Sample Application created for that data.

For instructions on how to download, run, and explore the Quick Start project and the Sample Application, see the *Oracle Endeca Information Discovery Quick Start Guide*.



For a production instance, you must use a database other than the default Hypersonic database.

[Using a different database to store application data](#)

Using a different database to store application data

For production instances, you need to switch from the default Hypersonic (HSQL) database.

About using a different database

The Liferay portal server uses a relational database to store configuration and state, such as portlet preferences, user permissions, system settings, and more.

By default, Liferay uses Hypersonic (HSQL), which is an embedded database running inside the Java virtual machine. HSQL is useful for standing up a Liferay instance very quickly, but must NOT be used in production due to performance issues and its inability to support clustered Liferay instances.

For instructions on switching to another supported database system, see the *Liferay Portal Administrator's Guide*. Keep the following details in mind:

- Studio ships with a `portal-ext.properties` file (in the portal distribution's root directory). You can modify this file instead of creating a new one.
- Studio has been tested on MySQL and Oracle 11g. Other databases are expected to work but have not been explicitly tested.

Overview of the process for switching to a different database

Here is a high-level overview of the steps involved in switching from the default Hypersonic database to the production RDBMS of your choice.

The details vary from database to database. For detailed information, see the *Liferay Portal Administrator's Guide*.

To switch to a different database:

1. Install and verify that your database is working.
2. Create a new empty database or schema for the Liferay portal.
3. Create a database user for the Liferay portal.

4. Grant that user access to the appropriate database/schema, with privileges to create tables, alter schemas, and so on in that database.

Ensure that the user has remote access from the Liferay application servers.

5. Stop Liferay if it is running.

6. Edit the `portal-ext.properties` file.

In the JDBC section, comment out the settings for Hypersonic, and uncomment the settings for your database.

7. Edit the settings for your database of choice, adding the appropriate username and password and editing the JDBC connection string as necessary.

8. Start Studio. Monitor its logs to ensure for any error messages while connecting to the database and creating tables.

9. After tables have been created and you have validated Liferay is running, you may remove the Liferay user's alter table privileges.

Note that you may have to add these back later if you upgrade Liferay or install components that require schema changes.

Part V

Uninstallation Tasks



Chapter 9

Uninstalling Oracle Endeca Information Discovery

This chapter describes how to uninstall the various modules of an Oracle Endeca Information Discovery installation.

Uninstalling the Oracle Endeca Server

Uninstalling Integrator

Uninstalling Studio

Uninstalling the Oracle Endeca Server

This section contains the procedures for uninstalling the Oracle Endeca Server package.

Uninstalling the Oracle Endeca Server on Windows

Follow these steps to uninstall the Oracle Endeca Server from your Windows machine.

Before you begin the uninstall process, back up files that you want to retain from the Oracle Endeca Server directory.

You also must:

- Stop all Endeca data stores.
- Stop the Oracle Endeca Server process.
- Close any open files in the Oracle Endeca Server directory, such as PDF and text files.

To uninstall the Oracle Endeca Server from your Windows machine:

1. Open the **All Programs** list in the Start Menu.
2. From the programs list, select **Oracle Endeca Server 2.3.0>Uninstall Oracle Endeca Server 2.3.0**.
3. In the uninstall wizard, select the **Uninstall** radio button and then click **Next**.
4. In the following dialog, click **Next** to begin the uninstall procedure.
5. When the wizard confirms that you have successfully completed the uninstall procedure, click **Finish** to exit the wizard.

Uninstalling the Oracle Endeca Server on Linux

Follow these steps to uninstall the Oracle Endeca Server from your Linux machine.

Before you begin the uninstall process, back up files that you want to retain from the Oracle Endeca Server directory.

Make sure that you stop all Oracle Endeca Server processes, including the Endeca data stores, before uninstalling the Oracle Endeca Server software.

To uninstall the Oracle Endeca Server from your Linux machine:

1. Change to the parent directory of the Oracle Endeca Server install directory. The default parent directory is `Oracle/Endeca`.
2. Issue an `rm` command as in this example:

```
rm -rf Server
```

This command removes the Oracle Endeca Server installation.

Uninstalling Integrator

This section contains the procedures for uninstalling the Integrator package.

Uninstalling Integrator on Windows

Follow these steps to uninstall Integrator from your Windows client machine.

Although the uninstall procedure does not delete the workspace folder used by the Integrator, it is a good practice to back up your Integrator projects before uninstalling.



Note: These instructions apply to both the 32-bit and 64-bit versions of Integrator, as the uninstallation procedure is the same.

To uninstall Integrator from your Windows machine:

1. Close the Integrator if you have it open.
2. Open **All Programs** in the Start menu.
3. Open the **Oracle Endeca Information Discovery 2.3.0** entry.
4. Click on **Uninstall Integrator**.
The Uninstall wizard is launched with the **Uninstall** option selected.
5. In the Uninstall wizard, click **Next**.
6. In the Completing the Setup Wizard dialog, click **Next**.
7. When the uninstallation procedure is completed, click **Finish**.

Note that alternatively, you can uninstall Integrator from the Windows Control Panel by selecting **Programs > Uninstall a program** and then choosing **Oracle Endeca Information Discovery Integrator 2.3.0** from the list of installed software.

Uninstalling Integrator on Linux

Follow these steps to uninstall Integrator from your Linux client machine.

Although the uninstall procedure does not delete the workspace directory for Integrator, it is a good practice to back up your Integrator projects before uninstalling.

To uninstall Integrator from your Linux machine:

1. Change to the parent directory of the Integrator install directory.
The default parent directory is `Oracle/Endeca/Discovery`.
2. Issue an `rm` command as in this example:

```
rm -rf Integrator
```

As mentioned above, the Integrator workspace folder is not deleted after Step 2. If you do not delete the workspace directory, you can re-use it if you re-install Integrator.

Uninstalling Integrator Server

Follow these steps to uninstall Integrator Server.

To uninstall Integrator Server from your Windows or Linux machine:

1. Shut down Tomcat.
2. Delete the Tomcat install directory.

Uninstalling Studio

To uninstall Studio, remove the packages and directories that you installed.

Index

A

about this release 9

C

Cluster Coordinator package, installing 25

context root

 changing for the Linux Tomcat bundle 46

 changing for the Windows Tomcat bundle 40

Control Panel, displaying in Studio 58

I

installation

 Integrator Linux client 33

 Integrator packages 32

 Integrator server 34

 Integrator Windows client 33

 Oracle Endeca Server 24

 Oracle Endeca Server on Linux 26

 Oracle Endeca Server silent on Linux 27

 Oracle Endeca Server silent on Windows 26

 requirements for Integrator 16

 Studio Linux Tomcat bundle 45

 Studio on Oracle WebLogic Server 54

 Studio on WAS 7 47

 Studio Windows Tomcat bundle 39

Integrator

 about 11

 downloading 20

 installing on Linux client 33

 installing on Windows client 33

 installing Server 34

 uninstalling from Linux 68

 uninstalling from Windows 67

Internet Explorer 8 JavaScript timeout issue 18

J

JavaScript time-out for Studio 18

L

language support 9

Liferay Portal, Studio interaction with 12

O

Oracle Endeca Server

 cluster of nodes 10

 downloading 20

 installation on Linux 27

 installation on Windows 24

 overview 10

 silent installation on Linux 27

 silent installation on Windows 26

P

package contents, Oracle Endeca Server 28

portal-ext.properties

 configuring for WAS 7 50

 default version for WAS 7 50

 editing for WAS 7 50

 updating the WAS 7 application with 51

 uploading to WAS 7 51

prerequisites 13

 Integrator 16

 Oracle Endeca Server 14

 Studio 16

S

Studio

 about 11

 changing from the Hypersonic database 63

 displaying the Control Panel 58

 downloading 20

 importing Data Explorer and Schema Explorer pages 60

 interaction with Liferay Portal 12

 JavaScript time-out 18

 Linux Tomcat bundle installation steps 45

 Oracle WebLogic Server installation steps 54

 running as Windows service 41

 starting 58

 system requirements 16

 uninstalling 68

 updating the default data source 59

 WAS 7 installation steps 47

 Windows Tomcat bundle installation steps 39

system requirements

 disk space 15

 hardware 13

 Integrator 16

 Linux utilities 15

 operating systems 14

 Studio 16

U

uninstalling

 Integrator on Linux 68

 Integrator on Windows 67

 Oracle Endeca Server on Linux 67

 Oracle Endeca Server on Windows 66

 Studio 68

W

WAS 7

- configuring portal-ext.properties for 50
 - creating the Liferay Home directory 49
 - deploying components 52
 - deploying dependency libraries 47
 - deploying generated .war files manually 52
 - deploying generated .war files using wsadmin 53
 - deploying the standalone portal WAR 48
 - editing portal-ext.properties 50
 - extracting the standalone portal WAR 48
 - high-level deployment overview 47
 - installing 47
 - installing the Studio license file 54
 - Liferay component pre-processing 52
 - manually uploading portal-ext.properties to 51
 - portal-ext.properties default version 50
 - starting the application 51
 - troubleshooting 54
- WebLogic
 - configuring the Liferay Home directory 55
 - deploying the .ear file 56
 - installing the license file 56
 - prerequisites for Studio installation 54
 - setting non-root context 55
 - updating settings 54
 - WebSphere Application Server 7
 - See WAS 7
 - Windows service for Studio
 - about 41
 - configuring 42
 - installing 43
 - installing Tomcat monitor 41
 - obtaining installer files 41
 - starting 43
 - troubleshooting 44