Oracle® Syndication Server

User's and Administrator's Guide

Release 9.0.1

Oracle Syndication Server is an extensible content syndication server designed to syndicate any Internet content to any Internet subscriber, using any Internet communication protocol in a secure way. It provides extensibility at multiple levels; it supports all available communication mechanisms with the content subscriber, including the Information and Content Exchange (ICE) Version 1.1 protocol, while it allows access using a multitude of channels to Internet resources, enterprise portals, corporate databases, and conventional file systems. Oracle Syndication Server features a comprehensive administration system to persistently maintain subscriptions and profiles for subscribers and content providers. Subscribers can choose to actively request content from Oracle Syndication Server or have it automatically delivered to them.

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Oracle Syndication Server User's and Administrator's Guide, Release 9.0.1

Part No. A88787-01

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Preface

Oracle Syndication Server is an extensible content syndication server designed to syndicate any Internet content to any Internet subscriber, using any Internet communication protocol in a secure way. It provides extensibility at multiple levels; it supports all available communication mechanisms with the content subscriber, including the Information and Content Exchange (ICE) Version 1.1 protocol, while it allows access using a multitude of channels to Internet resources, enterprise portals, corporate databases, and conventional file systems. Oracle Syndication Server features a comprehensive administration system to persistently maintain subscriptions and profiles for subscribers and content providers. Subscribers can choose to actively request content from Oracle Syndication Server, or have it automatically delivered to them.

Audience

This guide is for developers who want to easily and more quickly develop and manage content subscription services for subscribers accessing information from content providers. An understanding of Oracle9*i*, Oracle Dynamic Services, Java, and XML is required.

Organization

This guide contains the following chapters and appendixes:

Chapter 1   Introduces Oracle Syndication Server; explains concepts.

Chapter 2   Describes Oracle Syndication Server installation and configuration.

Chapter 3   Describes how to use Oracle Syndication Server.

Related Documents

> **Note:** For information added after the release of this guide, see the online README.txt file in your *ORACLE_HOME* directory. Depending on your operating system, this file may be in:
>
> On UNIX systems:
>
> *ORACLE_HOME*/syndication/doc/README.txt
>
> On Windows NT systems:
>
> *ORACLE_HOME*\syndication\doc\README.txt
>
> See your operating-system specific installation guide for more information.
>
> For the latest documentation, see the Oracle Technology Network Web site:
>
> http://otn.oracle.com/

For more information, see the following manuals:

- *Oracle9i XML Reference*
- *PL/SQL User's Guide and Reference*
- *Oracle Internet Directory Administrator's Guide*
- *Oracle9i Java Developer's Guide*

- *Oracle9i Java Stored Procedures Developer's Guide*
- *Oracle9i Enterprise JavaBeans Developer's Guide and Reference*
- *Oracle9i JDBC Developer's Guide and Reference*
- *Oracle9i SQLJ Developer's Guide and Reference*

Conventions

In this guide, Oracle Syndication Server is sometimes referred to as Syndication Server.

The following conventions are used in this guide:

Convention	Meaning
. . .	Vertical ellipsis points in an example mean that information not directly related to the example has been omitted.
. . .	Horizontal ellipsis points in statements or commands mean that parts of the statement or command not directly related to the example have been omitted
boldface text	Boldface text indicates a term defined in the text, the glossary, or in both locations.
< >	Angle brackets enclose user-supplied names.
[ ]	Brackets enclose optional clauses from which you can choose one or none.

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```
http://www.oracle.com/accessibility/
```

JAWS, a Windows screen reader, may not always correctly read the code examples in this document. The conventions for writing code require that closing braces should appear on an otherwise empty line; however, JAWS may not always read a line of text that consists solely of a bracket or brace.

1

Introduction

As a feature of Oracle9*i*, Oracle Syndication Server is an extensible content syndication server designed to syndicate any Internet content to any Internet subscriber, using any Internet communication protocol in a secure way. It supports all available communication mechanisms including the Information and Content Exchange (ICE) Version 1.1 protocol. It allows access using a multitude of channels to Internet resources, enterprise portals, corporate databases, and conventional file systems. It features a comprehensive administration system to persistently maintain subscriptions for subscribers and profiles for content providers. It allows for the automated, controlled exchange, and management of online information among affiliated partners.

1.1 Content Syndication Concepts

Content syndication is the aggregation, exchange, and distribution of information from content providers to syndicators to subscribers. The content providers provide the content, the syndicators send the content, and the subscribers, who subscribe to a set of subscriptions from a catalog, use the content.

With the advent of the Internet, syndication is rapidly evolving to:

- Automate the process of information aggregation and exchange
- Handle a wide variety of content formats
- Deliver content to a wide variety of distribution channels automatically

A content subscriber acquires a content catalog of subscription offers from a content syndicator and selects the desired subscription offers. In the process of selecting each desired subscription, the content subscriber may negotiate business terms and delivery policies for each subscription with the content syndicator. When both sides come to an agreement, the subscription process is complete. As part of this

agreement, a subscriber may wish to search for new information or have it automatically provided to them either when it is updated, or at some specified time interval.

1.1.1 Business Problems or Technical Challenge

Typically, sharing content (information) among affiliated groups of content providers through affiliate networks is an expensive, impromptu process. Each new partner requires customized, manual, time-consuming processes to update, share, and exchange content. As Figure 1–1 shows, the content syndicator struggles with each new affiliate member over content format, validation, delivery options and frequency, notification, reporting and monitoring, content integration into disparate Web servers, operating systems, databases, and other proprietary technology. Content comes from a variety of sources including dialup and ISDN connections, satellite dishes, FM broadcasts, SMTP e-mail servers, FTP servers, hard disks, and magnetic tapes.

Figure 1–1   Typical Problems Facing Content Syndicators
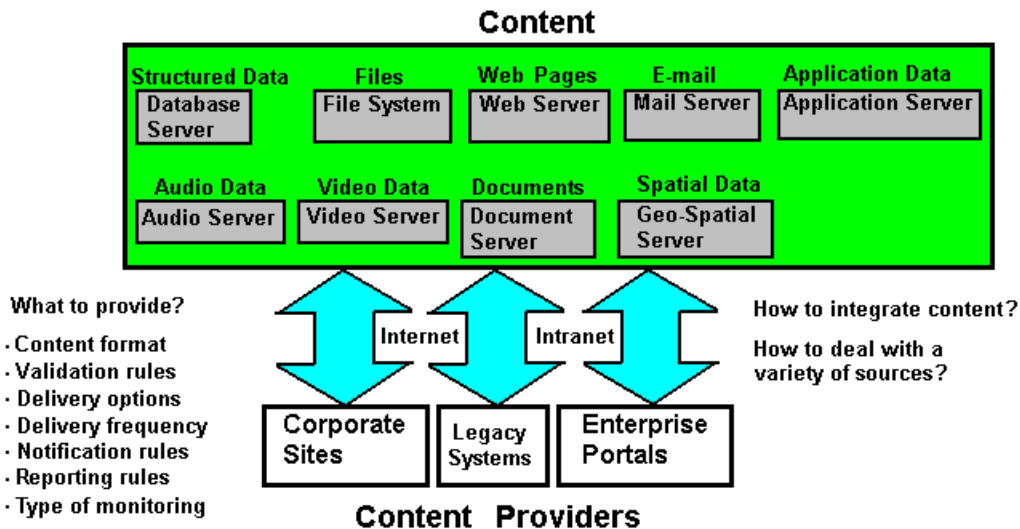
With the emergence of the business-to-business (B2B) and business-to-consumer (B2C) markets, there is great demand for automating content exchange as well as business content online. The exchange is used for acquiring content for publishing

and to fulfill business process requirements. Content syndication is the automated exchange of this content.

1.1.2 Standardized Solution Emerges

The Information and Content Exchange (ICE) standard (Version 1.1) manages and automates the establishment of syndication relationships, content transfer, and results analysis. The purpose of ICE is to replace these impromptu efforts of content exchange with a standardized, low-cost mechanism for managed, automated content exchange and content sharing of Web site assets between partners. Through the adoption of an industry-specific vocabulary, ICE provides a complete solution for syndicating any type of information between content syndicators and content subscribers. Content subscribers include networked partners and their affiliates.

As ICE becomes universally accepted and implemented across the Web, it will enable companies and industries of all sizes to take advantage of the vast amount of content on the Web, and establish business-to-business value chains in a low-cost, automated way. Web application developers can use ICE as a standard platform to exchange multiple data types, rapidly deploy applications, while protecting data privacy and incorporating existing standards. ICE dramatically reduces the cost and difficulty of creating and operating online distribution networks, and building value chains between suppliers, partners, distributors, and customers. ICE increases the value of business alliances by facilitating the controlled exchange and management of content among networked affiliates. Businesses can form partnerships with multiple affiliates at minimal incremental cost.

ICE defines a complete server-to-server syndication protocol and processing model. Within ICE, an XML-based common language and architecture is used to describe catalogs of content packages as subscriptions, as well as to schedule content delivery (*push* and *pull*), update type (incremental versus full), business rules, intellectual property rights, and all other aspects of automated content exchange.

1.2 Syndication Server Solution

Oracle Syndication Server is designed to deliver *any* Internet content to *any* Internet subscriber, and to automatically provide *any* content updates using *any* standards across *any* network. This radically simplifies the process of syndication or automated content exchange. Oracle Syndication Server provides a comprehensive solution for content aggregation, syndication, and distribution by letting you make available any or all of your content, to anywhere, at anytime, and deliver it securely. Content syndicators can use Oracle Syndication Server with the following benefits:

- Aggregate content from any source, including existing Web sites, databases, enterprise applications, e-mail repositories, and legacy systems. Using the Oracle Dynamic Services framework to extract or adapt content from any source, this content is consolidated into a single point of access known as a content catalog, accessible to any content subscriber.

- Personalize the content to be delivered based on the profiles of their subscribers and deliver content updates based on the delivery policies associated with each subscription.

- Automate content delivery by sending content to subscribers when information relevant to them changes, or schedule a content delivery when establishing a subscription with subscribers, and deliver it to subscribers over multiple communication channels.

- Transform any content from any formatted source to a markup language suitable for the subscriber.

Figure 1–2 shows the key features of Oracle Syndication Server.

Figure 1–2   Key Features of Oracle Syndication Server
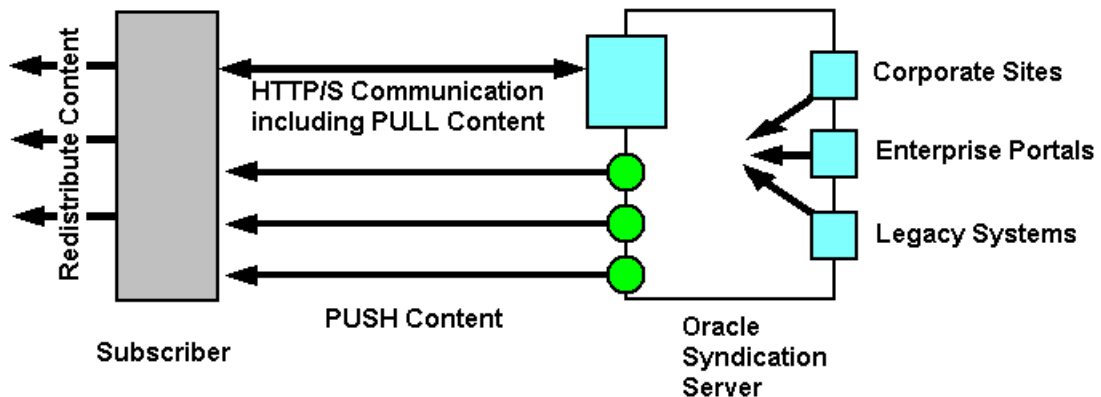
Oracle Syndication Server uses an ICE agent layered on Dynamic Services to take a content syndication or a content subscription request in the form of an XML document, which is validated against a predetermined ICE protocol Document Type Definition (DTD). A separate service request for each subscriber or syndicator is stored by using Oracle Dynamic Services. Each service request includes:

- The communication type

- Whether it is a subscription or syndication

- The address to which the request can be transmitted

- A user-packaged data unit for delivery

- Whether it is an ICE protocol request or response

The ICE agent uses the underlying Dynamic Services engine to handle authorization, license management, transaction control, and billing management. The syndicator/subscriber relationship begins with establishing a subscription. The

subscriber subscribes to particular syndicator subscription offers with mutually agreeable delivery methods and schedules. In one ICE communication channel, the syndicator distributes content to the subscriber. Each business entity could be either the syndicator or the subscriber, and both can issue an ICE request. Every logical ICE operation requires the request to be followed by the response.

ICE uses XML document exchange as its fundamental protocol model. ICE messages are valid XML documents, with a single ICE-payload root element and a structured hierarchy of tags describing the ICE operations and data.

ICE is bound to HTTP and uses a sequenced package model. The two basic ICE actions are *push* and *pull*. To send an ICE/HTTP payload, the sender performs an HTTP POST to a URL provided by the receiver. A payload is a single instance of an XML document formatted according to the protocol definitions contained in the ICE specification. ICE requests are specified using an ICE-request XML element, and ICE responses are specified using an ICE-response element. For ICE/HTTP, the ICE-request must be sent in an HTTP POST, and the ICE-response to that request must be sent in the HTTP response to that POST. Therefore, a single ICE request/response pair always maps directly to a single HTTP POST/corresponding response pair. Event logs are exchanged automatically for helping exception handling or problem diagnostics.

1.3 Overview of Concepts

Oracle Syndication Server consists of the following components:

- Transport protocol manager

- Syndication manager

- Subscription manager

- Affiliates manager

- Content provider adaptor

- Content provider developer's kit

Table 1–1 describes each of these components.

Table 1–1   Syndication Server Components and Their Functions

Components	Functions
Transport protocol manager	Handles both the *pull* and *push* content deliveries from Oracle Syndication Server to subscribers and transforms the XML-formatted content to an appropriate subscriber-specific markup language, such as HTTP, HTTPS, or WAP, and transports the content over a specified transport layer.
Syndication manager	Coordinates the handling of request messages from content subscribers and response messages from content providers through the delivery manager, using subscription profile information maintained by the subscription manager.
	Interacts with the transport protocol and affiliates managers.
	Serves as a central dispatcher of messages.
Subscription manager	Manages subscriber profiles and the subscriptions of each subscriber by maintaining mappings between subscriptions and catalog offers.
Affiliates manager	Manages all the profiles of the content providers. Each content provider profile includes its preferred content provider adaptor implementation and all necessary parameters to this adaptor, its delivery policy, its business terms, and its account and billing preferences.
Content provider adaptor	Provides the interface for the Oracle Syndication Server engine to access each registered content provider as a set of Dynamic Services services.
	Oracle Syndication Server supports two types of content provider adaptors:
	Simple Dynamic Services Adaptor
	The Simple Dynamic Services Adaptor models each of the following three supported types of content providers as a service in the Dynamic Services framework:
	■ File
	■ Database
	■ Web
	Complex Dynamic Services Adaptor
	The Complex Dynamic Services Adaptor models each service in the Dynamic Services framework as content, and syndicates applications in the form of services.

Table 1–1   Syndication Server Components and Their Functions (Cont.)

Components	Functions
Content provider developer's kit (CPDK)	Contains client library, API Javadoc, and the user interface for:
	■ Adding subscribers
	■ Determining to which content providers subscribers have access
	■ Selecting catalog contents from content providers
	■ Making subscriptions from catalog content offerings; managing subscription information for subscribers
	■ Managing affiliate information, such as the business terms and delivery policy (*push* - event or time-based, *pull*) for a given content provider
	■ Canceling subscriptions
	■ Adding a new set of syndication catalogs
	■ Registering new Syndication Server service packages

Figure 1–3 shows the Oracle Syndication Server architecture.

Oracle Syndication Server uses the Oracle Dynamic Services framework that uses XML and Java. Syndication Server communicates using a Java servlet, which is deployed in a servlet container with any industry-standard Web listener, to receive and send messages, to adapt any content or information from Web sites, Internet applications, or a database into an XML representation. Syndication Server uses the Java servlet to transform that XML representation into a markup language specific to the subscriber through the use of XSL stylesheets. Each of these content source types (file, database, or Web) is modeled as a minimal set of services in the Oracle Dynamic Services framework.

All information about subscribers, their subscriptions, and content resources are stored in the Syndication Server registry residing in an Oracle9*i* database schema.

Figure 1–3   Syndication Server Architecture
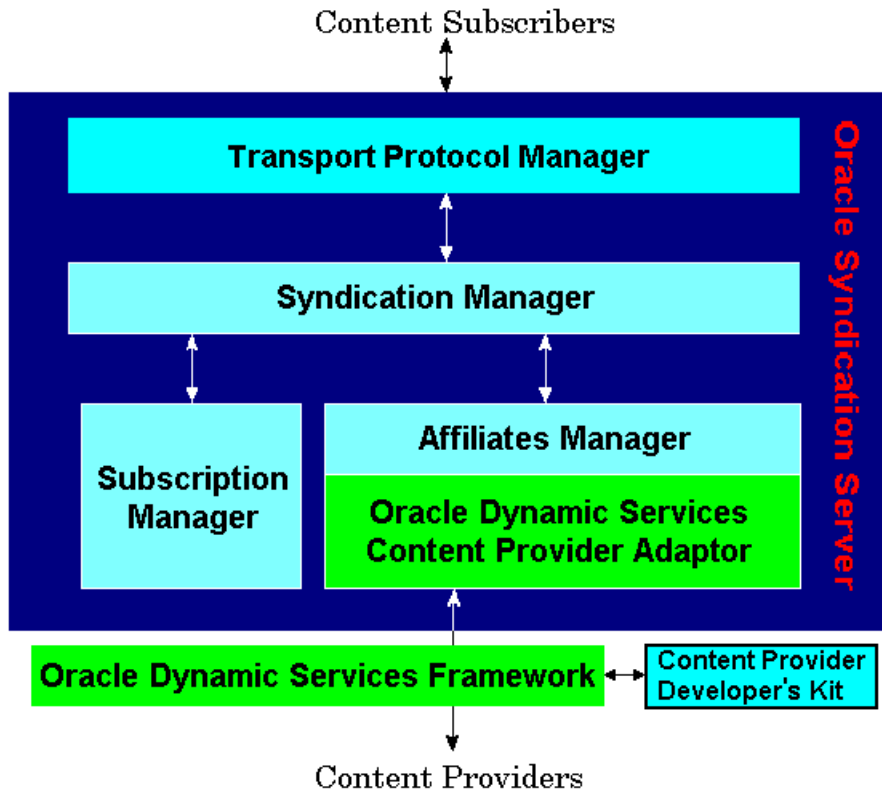
1.4 Roles in Content Exchange Scenario

Section 1.4.1 through Section 1.4.3 describe the roles of content subscribers, the Oracle Dynamic Services framework, and the content provider developer's kit in syndicating information.

1.4.1 Content Subscribers

In the business of content syndication, a content subscriber is one of the two parties who obtains and repackages information and content from a content syndicator.

1.4.2 Oracle Dynamic Services Framework

A Java-based programmatic framework for incorporating, managing, and deploying Internet and Intranet services. Application developers can rapidly, and more easily incorporate valuable services from Web sites, local databases, and proprietary systems into their applications using the Oracle Dynamic Services framework.

1.4.3 Content Provider Extensibility Through Oracle Dynamic Services

Oracle Dynamic Services content providers provide the content. Syndication Server provides three types of sample content providers: file, database, and Web. For each type of content provider, there is an instance of an Oracle Dynamic Services content provider adaptor. Each type of content provider must have the following minimum set of Oracle Dynamic Service (DS) services:

- Catalog DS service

  The Catalog DS service is used for content providers to provide catalog information of their available subscription offers. This service is used to enforce the uniformed input and output formats for all individually developed catalog DS services. However, each content provider defines its own semantics of a subscription offer.

- Subscribe DS service

  The Subscribe DS service is used as a way for certain content providers to approve subscriptions before storing them in Syndication Server. The Subscribe DS service takes in a subscription request, which is forwarded by Syndication Server as input and returned as an approved subscription if the content provider agrees to all the terms. Upon disagreement, an exception is issued so that Syndication Server can start a negotiation process with the subscriber.

- Content Access DS service

  The Content Access DS service takes the unique subscription ID as input in order to collect all the related information and constructs a response payload according to the given DS service interface. Subscribers can initiate the process of *pulling* content from Syndication Server or have content *pushed* to them. Either path of content access executes a Content Access DS service.

The Dynamic Services content provider adaptor is also an extensible layer, so you can add additional types of content provider adaptors to support additional types of content providers.

Figure 1–4 shows the combined architecture of Oracle Syndication Server with Oracle Dynamic Services, and how the content provider adaptors relate to specific Oracle Dynamic Services services designed for Syndication Server.

Figure 1–4   Oracle Syndication Server and Oracle Dynamic Services Architecture
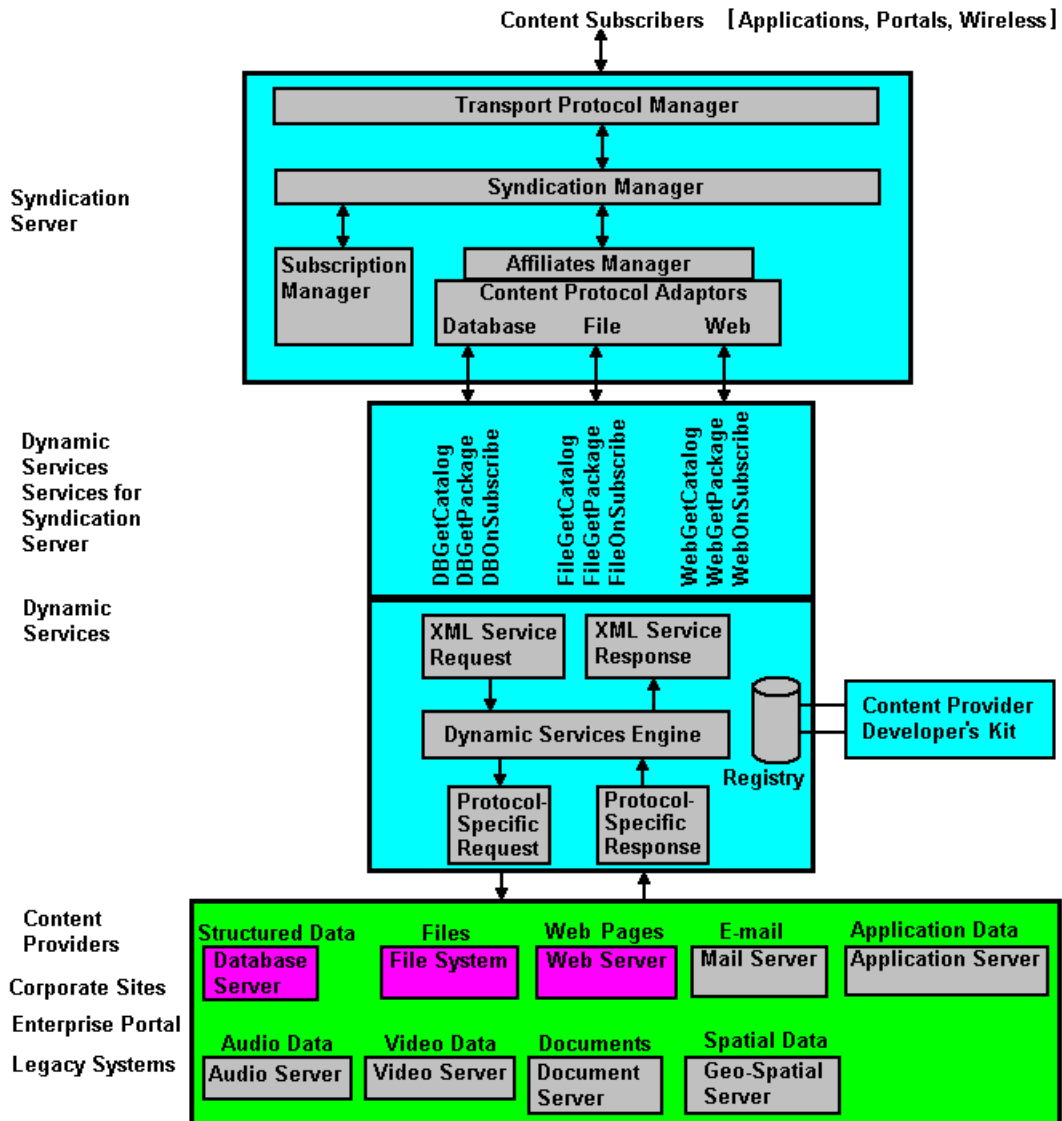
1.5 Syndication Server Operations Overview

Section 1.5.1through Section 1.5.5 describe and explain how the major operations of Oracle Syndication Server work beginning with processing a request from a subscriber who wants to access a specific content resource through Syndication Server. The operations involve:

- Setting up a subscriber account on Syndication Server
- Reviewing the catalog offerings
- Subscribing to a subscription
- Accessing content for that subscription

1.5.1 Setting Up a Subscription

Before a subscriber can access Syndication Server, an account must be created on Syndication Server for that subscriber. After the subscriber has reviewed all contractual, monetary, and business implications of the relationship with the Syndication Server, the Syndication Server administrator creates a user account for the subscriber and sends back a confirmation message. This confirmation message contains information about the subscribers account, such as his subscriber ID, subscription expiration date, the business terms of the subscription agreement, the delivery policy for delivering content, the location of the catalog of subscription offers, and how to obtain that catalog.

1.5.2 Reviewing Catalog Offerings

With his new subscriber account ID, the subscriber may make a get-catalog request to view all the catalog offerings. Syndication Server contacts all content catalogs from all the content providers that this subscriber has been given access to based on its profile information. After receiving all responses from the content providers, Syndication Server constructs a single catalog response and returns it to the subscriber. Each content catalog from a content provider is considered a single offer group in the generated catalog response, which is marked by that content provider's unique ID. Using the Oracle Dynamic Services service execution model, Syndication Server can aggregate content catalogs from a variety of content providers.

1.5.3 Making a Subscription

The subscriber reviews the catalog and chooses one content offer. He then supplies additional information as to his preference for negotiable parameters such as delivery policies, and business terms and then makes a request to get approval for a subscription. Syndication Server invokes the subscription manager to process the request, and possibly involves the corresponding content provider as needed. Following a possible negotiation process with the content provider, a subscription agreement is made, and having agreed to a set of terms, the subscriber receives a message indicating that the subscription is set and active.

1.5.4 Accessing Content for a Subscription

If the subscription is enabled for *pulling* content delivery, the subscriber initiates a content access request and provides his subscription ID. Syndication Server *pulls* content from the corresponding content provider and returns it to the subscriber.

If the subscription is enabled for automatically *pushing* content to the subscriber, then the subscriber has two choices:

- Having content *pushed* to him based on an event, such as whenever content is updated

- Having content *pushed* to him based on a content update time interval, in which content is periodically updated, for example every hour based on how the scheduler is set.

1.5.5 Runtime Operations

Syndication Server runtime operations are described in Section 1.5.5.1, Section 1.5.5.2, and Section 1.5.5.3.

1.5.5.1 Affiliates Manager

Based on the type of request (Catalog, Subscribe, or Content Access) that is made by the content subscriber, the affiliates manager invokes the specified Dynamic Services content provider adaptor, which dynamically transforms the subscriber's request into an Oracle Dynamic Services service request that is then issued to the specified Dynamic Services engine.

1.5.5.2 Dynamic Services Content Provider Adaptor

At runtime, the Syndication Server invokes the specified Dynamic Services content provider adaptor. The adaptor dynamically transforms the subscriber's request into

an Oracle Dynamic Services service request issued to the Dynamic Services engine, then collects the response of the service execution in a well-defined XML format, and returns it to the subscriber.

1.5.5.3 Transport Protocol Manager

At runtime, the transport protocol manager selects a delivery Dynamic Services service corresponding to a specified protocol and executes it through the underlying Dynamic Services framework.

The transport protocol manager does the automatic packaging of content. This is an extensible layer for non-ICE protocols.

2

Installation

This chapter describes the basic installation and configuration Oracle Syndication Server.

The installation requires that the person installing this software have sysadmin privileges, is a database administrator, and has application development skills.

After you have completed the installation steps described in this chapter, you will have an understanding of the system requirements needed to install Syndication Server, you will have installed the Syndication Server schema, and you can begin using Syndication Server to syndicate content to subscribers.

To understand how to manage Syndication Server, you *must* first configure and run the OSSAdmin utility as described in Chapter 3. Then you can manage subscribers, manage affiliates or content providers, manage subscriptions, and do Syndication Server system administration operations, which are all described in Chapter 5.

The primary steps necessary to install and configure Oracle Syndication Server software are as follows:

1. Install the required software: Oracle9*i* Standard Edition or Enterprise Edition Release 1 (9.0.1) and Oracle Dynamic Services. See Section 2.1.

2. Install, configure, and test Oracle Syndication Server. See Section 2.3.

3. Configure the sample content provider adaptors and the set of Dynamic Services services for each sample content provider. See Section 2.4.

Section 2.1, Section 2.3, and Section 2.4 describe each of these steps in more detail.

2.1 System Requirements

The following are the system requirements:

- Oracle release: Oracle9*i* Standard Edition or Enterprise Edition Release 1 (9.0.1), which also includes Oracle Dynamic Services.

  > **Note:** *<ORACLE_HOME>* is referred to as the installation directory of the Oracle9*i* Standard Edition or Enterprise Edition Release 1 (9.0.1) distribution.

- Syndication Server supports Oracle9*i* Standard Edition and Enterprise Edition running JDK 1.2.2.
- Java version: JDK 1.2.2 or later (Java2) distribution.

  > **Note:** *<JAVA2_HOME>* is the installation directory of the JDK 1.2.2 or later distribution.

Be sure you have a full installation of Oracle9*i* Standard Edition or Enterprise Edition Release 1 (9.0.1) (a full installation in this case includes a typical Oracle9*i* Standard Edition or Enterprise Edition Release 1 (9.0.1) installation. Follow Oracle9*i* installation instructions to complete a full installation.

> **Important:** In Section 2.2 and Section 2.3, directory paths often show only the UNIX path "/" specification. If you are installing on a Windows NT system, the path specification is "\" and you must make this change, as needed, for the installation to be successful.

2.2 Syndication Server Distribution

For release 9.0.1, Oracle Syndication Server is distributed as a zip archive file. Future distributions will be packaged with the Oracle Universal Installer. Unzip the archive file in the *syndication* directory within your *<ORACLE_HOME>* directory. The distribution contains the subdirectories shown in Table 2–1.

Table 2–1 Oracle Syndication Server syndication Directory Contents

Subdirectories	Description
admin	Contains a collection of SQL scripts.
admin/redist	Dynamic Services Gateway SQL scripts,

Table 2–1   Oracle Syndication Server syndication Directory Contents (Cont.)

Subdirectories	Description
bin	Contains the OSSAdmin command-line utility for managing subscribers, affiliates, and subscriptions and system monitoring. Also contains the Syndication Server services configuration script.
demo	Contains the sample Syndication Server client.
doc	Contains the documentation about Dynamic Services including the README.txt file, the Oracle Dynamic Services FAQ file (syndfaq.txt), and the JavaDoc API (syndclientapi.zip), which contains those classes that are necessary for developers to build and run Syndication Server.
etc	Contains the Syndication Server properties file.
etc/ossadmin	Contains a properties file.
etc/services	Contains the services needed for Syndication Server and the configuration files.
lib	Contains the jar files of the Syndication Server and Syndication Client code and the Syndication Server properties file.
lib/redist	Contains the Dynamic Services Gateway jar (dsgw.jar) file.

2.3 Installing, Configuring, and Testing Oracle Syndication Server

> **Note:**   Before using this installation and configuration guide, be sure to read the following conventions:
>
> *<ORACLE_HOME>* refers to the directory where Oracle is installed.
>
> *<DS_HOME>* refers to the directory *<ORACLE_HOME>*/ds.
>
> *<SYNDICATION_HOME>* refers to the directory *<ORACLE_HOME>*/syndication.
>
> Unless otherwise specified, all relative directory paths used in this document start from the *<SYNDICATION_HOME>* directory.

Before you install Oracle Syndication Server, make sure your servlet engine can access your Oracle Dynamic Services library.

The following libraries from Oracle9*i* Standard Edition or Enterprise Edition Release 1 (9.0.1) are required by Oracle Syndication Server:

- *<ORACLE_HOME>* /lib/classgen.jar -- Oracle Class Generator

- *<ORACLE_HOME>* /lib/xmlparserv2.jar -- Oracle XML Parser (version 2.1.0.0 or later)

- *<ORACLE_HOME>* /jdbc/lib/classes12.zip -- Oracle JDBC Driver (compliant with JDK 1.2 (version 9.0.1))

- *<ORACLE_HOME>*/ds/lib/ds.jar -- Oracle Dynamic Services Library

- *<ORACLE_HOME>*/syndication/lib/redist/dsgw.jar -- Oracle Dynamic Services Gateway Library

- *<ORACLE_HOME>*/syndication/lib/syndserver.jar -- Oracle Syndication Server Library

The first three libraries are installed upon installing the Oracle9*i* Standard Edition or Enterprise Edition. The ds.jar library is installed with an Oracle Dynamic Services installation and the dsgw.jar and syndserver.jar libraries are installed with the Oracle Syndication Server installation. If you are using Apache Jserv, you must put these libraries into your jserv.properties file specified as wrapper.classpaths.

Oracle Syndication Server works with any servlet engine behind any Web listener, for example, it works with Apache Jserv installed with Oracle9*i* Standard Edition or Enterprise Edition Release 1 (9.0.1). The following steps assume you are using the Apache Jserv servlet engine:.

1. Modify jserv.conf in *<ORACLE_HOME>*/Apache/Jserv/etc to add a virtual path syndserver by adding the following lines to the ApJservMount area:

```
# Syndication Server mountpoint
ApJServMount /syndserver /syndserver
```

2. Create a zone for Oracle Syndication Server.

   a. Follow your servlet engine/container instructions for creating a zone.

   For example, if you are using *i*AS Apache, modify the jserv.properties file located in *<ORACLE_HOME>*/Apache/Jserv/etc and add the zone of syndserver, if your servlet engine permits, for example:

   ```
   zones= <existing zones>,syndserver
   ```

You must also add a property file to the zones as follows:

```
syndserver.properties=<SYNDICATION_HOME>/etc/syndserver.properties
```

b. Ensure the repository of that zone points to the Oracle Syndication Server library in your zone configuration file, `syndserver.properties`, which is located in `<SYNDICATION_HOME>/etc`.

The Syndication Server library is located as:

```
<SYNDICATION_HOME>/lib/syndserver.jar
```

For example, using *i*AS Apache, the repository is:

```
repositories=<ORACLE_HOME>/syndication/lib/syndserver.jar
```

3. Create a more recognizable name or alias for the servlet to access the server in the `syndserver.properties` file.

Create an alias, for example, "OSS" and point it to the class in the zone's property file as follows:

```
"servlet.OSS.code=oracle.syndication.server.servlet.OSS"
```

4. Modify the `<ORACLE_HOME>/Apache/Jserv/jserv.properties` file and include the wrapper classpath for the Dynamic Services Gateway jar (`dsgw.jar`) file as follows:

```
wrapper.classpath=${ORACLE_HOME}/syndication/lib/redist/dsgw.jar
wrapper.classpath=${ORACLE_HOME}/ds/lib/ds.jar
```

5. Create the tables and packages for Oracle Syndication Server.

a. If the DSGATEWAY is not installed, go to `/admin/redist/` and run the `dsgatewayinstall.sql` file as user dba. For example,

```
sqlplus "sys/change_on_install as sysdba"
```

b. Go up one level to the `/admin` directory, then connect as DSGATEWAY/DSGATEWAY and run the SQL script, `ossinstall.sql`.

By default, running the PL/SQL script `ossinstall.sql` under the `/admin` directory creates the tables and packages for the database schema `DSGATEWAY` for exclusive use by Syndication Server and makes DSGATEWAY the basis of communication for the OSS servlet.

6. Create an Oracle Dynamic Services Gateway Context for Oracle Syndication Server.

Each Dynamic Services Gateway Context defines the properties for establishing an Oracle Dynamic Services Connection for the purposes of services execution. You must create one for Syndication Server.

a. Modify the sample SQL file of Gateway Context Creation `ossinit.sql` under the `/admin` directory by entering your database tnsname for `oci8` or the `thin` driver for where your Dynamic Services (DS) engine is installed. For example:

```
'jdbc:oracle:oci8:@<tns-name-entry-to-where-DSengine-is-installed>'
or
'jdbc:oracle:thin@<your-host-name>:<your-port-number>:<tns-name-entry-to
-where-DSengine-is-installed>'
```

b. Run the `ossinit.sql` script as user `DSGATEWAY/`*<DSGATEWAY-password>* to create the new gateway context for Oracle Syndication Server.

7. Configure the init parameters for your OSS servlet in the `syndserver.properties` file.

a. Find the sample `syndserver.properties` file in `etc/syndserver.properties`.

There is a list of parameters that must be added to the Aliased Servlet Init Parameters section that the servlet picks up to configure a database connection to the Gateway Context that was created in Step **6**.

The parameters are:

```
servlets.OSS.initArgs=GWCTX_DBURL=<gwctx-db-url>
servlets.OSS.initArgs=GWCTX_USERNAME=<gwctx-db-username>
servlets.OSS.initArgs=GWCTX_PASSWORD=<gwctx-db-password>
servlets.OSS.initArgs=GWCTX_DBPOOLSIZE=<gwctx-db-pool>
servlets.OSS.imitArgs=OSS_PUSH_GWCTX_ID=<gwctx-push-gatewat-context-id>
```

where *<gwctx-db-url>* is either `jdbc:oracle:oci8:@`*<your-TNS-NAME-ENTRY>* or
`jdbc:oracle:thin:@`*<your-host-name>:<your-port-number>:<your-TNS-NAME-ENT RY>*, *<gwctx-db-username>* is the user DSGATEWAY, *<gwctx-db-password>* is the password for user DSGATEWAY, *<gwctx-db-pool>* is the gateway context connection pool parameter value, and *<gwctx-push-gateway-context-id>* is the gateway context entry you created in Step **6**, `OSS_Context_Id_0x0001`.

   b. Enter the values for each of these parameters mentioned in the previous step and save the file.

   Note: The value 5 for the GWCTX_DBPOOLSIZE parameter is a recommended value. You can change this value as needed.

   ---

8. Test your Oracle Syndication Server installation.

   a. Start or restart your Web server.

   For example, if you are using the Apache Web server, restart Apache.

   To restart Apache on UNIX systems, execute the commands shown as follows:

   ```
   cd <Apache installation directory>
   bin/apachectl restart
   ```

   On Windows NT, restart the Apache server from the Start bar. For Oracle9*i* 9.0.1, start from your Oracle home, select Oracle HTTP Server, then Start HTTP Server powered by Apache.

   b. Test the servlet installation by going to a browser and opening the following link:

   ```
   http://<your-web-server>:<port>/syndserver/OSS
   ```

   You should see on the resulting page that your Syndication Server is up and running.

   c. If your resulting page indicates a problem, you can check the log files of your Web server.

   For example, if you are using the Apache Web server, inspect the contents of the `error_log` file in the `<ORACLE_HOME>`/Apache/Apache/logs directory as well as the contents of the `jserv.log` and `mod_jserv.log` files in the `ORACLE_HOME>`/Apache/Jserv/logs directory.

2.4 Configuring the Sample Content Provider Adaptors and Services

Oracle Syndication Server has an extensibility layer for the content providers that feed into it. This is achieved through the Oracle Dynamic Services integration. Packaged with the default installation of Oracle Syndication Server, are three

sample content providers that communicate with Oracle Syndication Server through the Oracle Dynamic Services framework.

The first sample content provider "eShop" is a demonstration of how a set of database-based Oracle Dynamic Services services can be used to provide content to Oracle Syndication Server.

The second sample content provider "File" is a demonstration of how a set of file-based Oracle Dynamic Services services can be used to provide content to Oracle Syndication Server.

The third sample content provider "Web" is a demonstration of how a set of Web-based Oracle Dynamic Services services can be used to provide content to Oracle Syndication Server.

These three sample content providers have been provided with the package, and can be registered and readily used, provided the appropriate properties are configured for your installation as follows:

1. Install the schema used by database-based Dynamic Services for the sample content provider "eShop" and its set of database-based Dynamic Services services.

   Naturally, for the database-based Oracle Dynamic Services set of services to function, there must be a schema sitting somewhere in some database instance containing the information for which the service is asking. This is done by running the eShop_init.sql script in any schema (user) on any database instance that you have running. For example, you can use the scott sample schema. Read the SQL script before running it and make sure that there are no table name conflicts. For future reference, remember which schema or database on which this schema is installed because you will need this information during configuration of the services in Step 3.

> **NOTE:** Refer to Chapter 10 Managing Job Queues in *Oracle9i Database Administrator's Guide* to make sure that you have enabled processes for executing jobs. The two issues to be concerned about are:
>
> - The value for the dynamic initialization parameter, `JOB_QUEUE_PROCESSES`. For example,
>
>   ```
>   sqlplus "sys/change_on_install as sysdba"
>   ALTER SYSTEM SET JOB_QUEUE_PROCESSES=20
>   ```
>
> - Disabling a restricted session in an Oracle9i instance using the initialization parameter, DISABLE RESTRICTED SESSION. For example,
>
>   ```
>   sqlplus "sys/change_on_install as sysdba"
>   ALTER SYSTEM DISABLE RESTRICTED SESSION
>   ```
>
> Because both of these initialization parameters are dynamic, any changes you make will take effect immediately without having to stop and restart the database instance.

2. Add the categories and register the Dynamic Services services for the three sample content providers by running the DSAdmin utility script `install.dss`, which is located in `<SYNDICATION_HOME>`/etc/services.

To add the categories and register the services needed for the three sample content providers, you must run the Dynamic Services DSAdmin utility script `install.dss`.

Change the directory to the Oracle Syndication Server home directory at `<SYNDICATION_HOME>` and execute the following command on UNIX:

```
<DS_HOME>/bin/dsadmin -u <DS_USERNAME>/<DS_PASSWORD>@<DS_NICKNAME>
         -i etc/services/install.dss
```

Or, execute the following command on Windows NT:

```
<DS_HOME>\bin\dsadmin.bat -u <DS_USERNAME>/<DS_PASSWORD>@<DS_NICKNAME>
             -i etc\services\install.dss
```

`<DS_USERNAME>` and `<DS_PASSWORD>` are the Oracle Dynamic Services username/password pair that is needed to connect to an Oracle Dynamic Services engine when running the DSAdmin utility. `<DS_NICKNAME>` is

comparable to a TNS_NAME_ENTRY for Oracle Dynamic Services (see *Oracle Dynamic Services User's and Administrator's Guide* for more information on how to run the DSAdmin utility).

Usually, this task should be delegated to an Oracle Dynamic Services Administrator (which may be synonymous to the Oracle Syndication Server Administrator). After this step, the services necessary for the three sample content providers are installed.

3. Configure the services for these three sample content providers.

   To configure the services for these sample content providers to make them usable, you must edit a configuration file before proceeding.

   a. Find and open the sample version of the following configuration file in an editor. For example, on UNIX:

      ```
      <SYNDICATION_HOME>/etc/services/config_sample.xml
      ```

      Or, on Windows NT:

      ```
      <SYNDICATION_HOME>\etc\services\config_sample.xml
      ```

      The fields you must modify in this file are (using the XPath (XML Path Language) convention):

      ```
      //OSSConfig/DSUser:
      ```

      The DSUser DSSYS, is the Oracle Dynamic Services consumer name that you want to have all Oracle Dynamic Services connections using. This should correspond to the Oracle Dynamic Services user name specified in your gateway context (see the contents of the `ossinit.sql` file in Step 6 in Section 2.3 to check for the presence of the DSSYS DSUser name).

      ```
      //OSSConfig/Services/DB/URL:
      ```

      This is the database URL to connect to for the database-based Oracle Dynamic Services service "eShop". Refer to Step 1 in this section for this information.

      ```
      //OSSConfig/Services/DB/Username:
      ```

      The database user name to connect to the URL mentioned previously is:

      ```
      //OSSConfig/Services/DB/Password:
      ```

      The database password to connect to the URL mentioned previously is:

//OSSConfig/Services/File/RootPath:

This is the path to start traversing from for all File "Catalog" listings.

Note: There is no //OSSConfig/Services/Web section. This is because the Web content provider does not need to be configured.

After you have made all necessary modifications to this file, save it.

b. Next, you must run the configure (UNIX) or configure.bat (Windows NT) file with the input file, config_sample.xml. For example, on UNIX:

<SYNDICATION_HOME>/bin/configure.sh *<SYNDICATION_HOME>*/etc/services/config_sample.xml

Or, on Windows NT:

<SYNDICATION_HOME>\bin\configure.bat *<SYNDICATION_HOME>*\etc\services\config_sample.xml

Running this configuration file and its associated input file adds the necessary properties to the Oracle Dynamic Services user that your installation of Oracle Syndication Server uses.

If you are running this script for the first time, you will see some error messages, such as "object not found". You can ignore these error messages.

You are now ready to start syndicating content to your subscribers using Oracle Syndication Server by using the sample content providers to help you get started.

2.5 Syndication Server Configuration

After the installation is complete, you can begin using Syndication Server to syndicate content to subscribers. To understand how to manage Syndication Server, you *must* first configure and run the OSSAdmin utility as described in Chapter 3. Then you can manage subscribers, manage affiliates, manage subscriptions, and do Syndication Server system administration operations. In addition, you can also begin to develop your own content provider adaptors, which is described in Chapter 4.

3

Configuration

To manage Oracle Syndication Server, you must first configure and run the OSSAdmin utility. This chapter describes configuring and running the OSSAdmin utility. See Chapter 5 for information about using the OSSAdmin utility to manage subscribers, affiliates or content providers, and subscriptions, and to do Syndication Server system administration operations.

3.1 Configuring and Running the OSSAdmin Utility

To verify a successful installation, use the OSSAdmin command-line utility (ossadmin on UNIX or ossadmin.bat on Windows NT).

> **Note:** For UNIX and Windows NT, you must first edit the ossadmin or ossadmin.bat file to specify the correct *<ORACLE_HOME>* before using the OSSAdmin utility. On UNIX systems, the ossadmin file is located in the following directory:
>
> *<ORACLE_HOME>*/syndication/bin/
>
> On Windows NT systems, the ossadmin.bat file is located in the following directory:
>
> *<ORACLE_HOME>*\syndication\bin\

The OSSAdmin utility allows command-line interactions with the Oracle Syndication Server and lets you perform common operations, such as managing subscribers, managing affiliates, managing subscriptions, and doing Syndication Server system administration operations.

3.1.1 Configuring the OSSAdmin Utility

Before you run the OSSAdmin utility, you must configure its configuration XML file, OSSAdminConfig.xml, located in the following directory on UNIX systems:

```
$<ORACLE_HOME>/syndication/etc/ossadmin/
```

Or, on Windows NT systems:

```
$<ORACLE_HOME>\syndication\etc\ossadmin\
```

Note that this is the default path where the OSSAdmin utility expects to find its configuration file. You can also have your own configuration file and point to it by running the command shown in Example 3–1 (the -c option and additional options are described later in this section).

Example 3–1   Configure the OSSAdmin Utility

```
On UNIX systems:
<ORACLE_HOME>/syndication/bin/ossadmin -c <your config file>

On Windows NT systems:
<ORACLE_HOME>\syndication\bin\ossadmin -c <your config file>
```

The configuration file conforms to the specifications of an XML document containing elements and values. The specific elements that you can configure in the file are described in Table 3–1.

With the basic installation, only connections using your connection description nickname can be used. Change the name SAMPLE to match your connection name. The only other element you need to change is the OSS_URL element. Change the OSS_URL element to point to your database instance that hosts Syndication Server connection descriptor, as shown in Example 3–2.

Example 3–2   Change the OSS_URL Element

```
<OSS_CONNECTION_DESCRIPTOR name="SAMPLE">
   <annotation>
     -| For Nickname "Sample":
      | These are specifications of the DB Connection pool
   </annotation>
   <OSS_URL>jdbc:oracle:thin:@<your-host-name>:<your-port-number>:<your-SID></OSS_URL>
   <OSS_POOL_SIZE>5</OSS_POOL_SIZE>
</OSS_CONNECTION_DESCRIPTOR>
```

To add additional OSSAdmin DB connections, you can add as many OSS_ CONNECTION_DESCRIPTOR sections within the OSS_CONNECTION_ DESCRIPTORS section as needed, each containing a unique connection nickname and its associated OSS_URL element value. Note that the OSS_CONNECTION_ DESCRIPTOR is analogous to a service entry in the Oracle tnsnames.ora file.

Table 3–1   OSSAdmin Utility Configuration Elements

Element	Description
OSS_ADMIN_CONFIG	The root element of the OSSAdmin utility configuration document.
OSS_CONNECTION_ DESCRIPTORS	The connection descriptor section. Contains descriptions of the connection nickname and associated URL.
OSS_CONNECTION_ DESCRIPTOR	The connection descriptor. Contains the name attribute describing the nickname for the connection that is used to open Syndication Server connections to be used throughout the lifetime of the OSSAdmin utility.
OSS_URL	The name of the URL. This URL is used to open a Syndication Server connection.The URL can be jdbc:oracle:oci8:@db, where db represents the tnsname of where you installed your Syndication Server schema or jdbc:oracle:thin:@<your-host-name>:<your-port-name>:<your-SID>).

> **Note:**   The paths specified are relative; thus, you should always execute the OSSAdmin utility from the Syndication Server installation directory.

3.1.2 Running the OSSAdmin Utility

Run the OSSAdmin utility by executing the command shown in Example 3–3.

Example 3–3   Run the OSSAdmin Utility

```
On UNIX systems:
<ORACLE_HOME>/syndication/bin/ossadmin

On Windows NT systems:
<ORACLE_HOME>\syndication\bin\ossadmin
```

Following each prompt, enter the user name DSGATEWAY, *<DSGATEWAY-password>* (default is DSGATEWAY), and then enter 1 to select the OSSConnection nickname named for your SID.

The command-line options for running the OSSAdmin utility are described in Table 3–2.

Table 3–2   OSSAdmin Utility Command-Line Options

Option	Description
-c <config file>	Allows the OSSAdmin utility to load configuration files from any location.
-h	Displays help. Lists the OSSAdmin utility command-line options.
-i <script file>	Allows actions to be scripted through this option. The OSSAdmin utility interprets each command separately and displays the result in standard output.
-u <username>/<password>@<nickname>	Allows a user name, password, and OSSConnection nickname to be specified upon invoking the OSSAdmin utility. Note the nickname must be uppercase.

After you have successfully run the OSSAdmin utility, you can begin using this utility to manage subscribers, manage affiliates or content providers, and manage subscriptions (see Chapter 5 for more information). In addition, you can also begin to develop your own content provider adaptors (see Chapter 4 for more information).

4

Syndication Server Development

This chapter describes the process of developing your own content provider adaptors using Oracle Dynamic Services and how you can test your custom content provider adaptor after you build one.

4.1 Adding Your Own Content Provider Adaptors Using Oracle Dynamic Services

One way to extend the list of content provider types is through Oracle Dynamic Services. As mentioned in Section 1.4.3, there is a content provider adaptor that is dedicated to implementing content provider feature through Oracle Dynamic Services services.

That is, there is a service used to implement the get-catalog feature as well as one for the get-package feature, and so forth. This is a very powerful concept in that it allows Oracle Syndication Server to syndicate content from any sources that the Oracle Dynamic Services framework allows.

4.1.1 Writing New Services

The best way to start writing new services is to copy each of the service packages for one of the shipped content providers (eShop Audio, File, or Web) to a new name, and then unzip them into some directory so you can modify them. Before modifying these files, read the following sections for instructions on rules to follow during modifications.

This is the recommended way to write your services because the schema/DTD files that the service requests/responses conform to are already packaged with these services. If you want to write your own services, you must copy these schema/DTD files into your own service package and point to them in your service descriptor.

4.1.2 Using Syndication Server Naming Conventions for Naming the Services

There is a heuristic that Oracle Syndication Server follows in retrieving services for the Oracle Dynamic Services content provider adaptor. The identifier for the service that needs to be registered must have the following format:

```
urn:com.<cp-prefix>:<cp-function>.oss
```

In this example, *<cp-prefix>* is your choice for the new content provider that will be using Oracle Dynamic Services and the *<cp-function>* corresponds to values like get-catalog, on-subscribe, and so forth. The value of *<cp-prefix>* shall be constant for all the services that implement one content provider. That is, for a new content provider called samplecpa, services with the following three identifiers should be registered:

```
"urn:com.samplecpa:get-catalog.oss"
"urn:com.samplecpa:on-subscribe.oss"
"urn:com.samplecpa:get-package.oss"
```

4.1.3 Conforming to Some Service Interface

Naturally, each of these services must conform to some service interface so that the Oracle Dynamic Services content provider adaptor can return a sensible ICE version 1.1 compliant response. The following are the service interfaces to which each of the services must conform. The name of the interface is given with the paths (within the shipped service packages) of the schemas.

4.1.3.1 Function for "ice-get-catalog"

```
Interface Name: SyndicationGetCatalog
Input Schema Path: /www.icestandard.org/spec/GetCatalog-ICE11.dtd
Output Schema Path: /www.icestandard.org/spec/Catalog-ICE11.dtd
```

4.1.3.2 Function for "ice-offer" (Subscribe)

```
Interface Name: SyndicationOnSubscribe
Input Schema Path: /www.icestandard.org/spec/OnSubscribe-ICE11.dtd
Output Schema Path: /www.icestandard.org/spec/Subscription-ICE11.dtd
```

4.1.3.3 Function for "ice-get-package"

```
Interface Name: SyndicationGetPackage
Input Schema Path: /www.icestandard.org/spec/GetPackage-ICE11.dtd
Output Schema Path: /www.icestandard.org/spec/Package-ICE11.dtd
```

With this information in mind, you can design new services that Oracle Syndication Server can use when using the Oracle Dynamic Services content provider adaptor. But in addition to registering these services, you must update Oracle Syndication Server using SQL*Plus as described in Section 4.2 and Section 4.2.1.

4.2 Adding a New Content Provider to Oracle Syndication Server

When you ran the ossinit.sql script file in Step 6 in Section 2.3 as part of the installation and configuration of Syndication Server, it updated Oracle Syndication Server for the three provided sample content providers. For now, this is one way to add content providers to Syndication Server using SQL*Plus commands. To add a new content provider, do the following:

1. Connect as DSGATEWAY or whichever schema the Gateway Context is installed in Step 5b in Section 2.3.

2. Issue the INSERT statement (the example shown here is for the database-based Oracle Dynamic Services service):

```
"INSERT INTO OSSAffiliateProfile (
        CP_ID
        BIZ_TERM
        DELIVERY_POL
        ADAPTOR_CLASS_NAME
        SERVICE_PREFIX
        GTWCTX_ID )
VALUES (
        '<Content Provider ID>',
        EMPTY_CLOB(),
        EMPTY_CLOB(),
        'oracle.syndication.server.cpa.ice.ds.' ||
        'ICEDSSimpleContentProviderAdaptor',
        'eshopaudio',
        '<Gateway Context ID>'
    );"
```

The *<Gateway Context ID>* should point to the one created in Step 6a in Section 2.3, and the *<Content Provider ID>* can be named as you choose. Make sure that you do not have two content providers with the same ID.

4.2.1 Allowing Subscribers to See the New Content Provider

After Oracle Syndication Server has been updated to see the new content provider, it needs to give its subscribers the privilege to see contents from your new content

provider. Using SQL*Plus, grant a content provider to a subscriber by doing the following:

1. Connect as DSGATEWAY or whichever schema the Gateway Context is installed in Step 5b in Section 2.3.

2. Issue the INSERT statement (the example shown here is for the database-based Oracle Dynamic Services service):

```
"INSERT INTO OSSSubscriberAccount (
    SUBSCRIBERID
    CONTENTPROVIDERID )
VALUES (
   '<Subscriber ID>',
   '<Content Provider ID>'
);"
```

The `<Subscriber ID>` is the UUID (unique user ID) given to each subscriber by the system manager. The `<Content Provider ID>` should refer to the ones inserted in Section 4.2.

Now, you are ready to syndicate to your subscribers content from the new content provider that you have created.

4.3 Adding Push Delivery Mechanisms Using Oracle Dynamic Services

The mechanism used to extend the scope of *push* delivery is through Oracle Dynamic Services. Built into Oracle Syndication Server is an extensible framework for plugging in new push delivery channels. The push mechanism that is prescribed by ICE is through an HTTP POST request to an HTTP listener that is hosted by the subscriber. Oracle Dynamic Services is used to extend the scope of push delivery by allowing Oracle Syndication Server to push content through other protocols, this time to handle the delivery path, thus allowing for easy extensibility.

Whenever the scheduler informs Oracle Syndication Server of an update to be pushed to the subscriber, an Oracle Dynamic Services service is invoked with the content package as the service request. Currently, Oracle Syndication Server extensibility maps one delivery protocol to one Dynamic Services service. In the case of HTTP delivery, the service is an HTTP Dynamic Services service that takes the content package and makes a POST request to the HTTP listener on the subscriber's side.

Being extensible to allow different channel protocols for push delivery has an implication on the selection of the Dynamic Services service at runtime. The mechanism is one in which the subscriber URL is used to determine the channel

protocol and therefore the Dynamic Services service that is needed. For example, the subscriber URL `http://www.oracle.com/syndication/Client` triggers the invocation of the push service associated with HTTP, and the subscriber URL `mailto:oss@oss.com` triggers the invocation of the push service associated with the mailto URL.

4.3.1 Writing New Push Services

The best way to start writing new push services is to copy the HTTP push service package (SyndicationPushPackage, located in the `/etc/services` directory on UNIX systems or `\etc\services` directory on Windows NT systems) to a new name, and then unzip them into some directory so you can modify them. Before modifying these files, read Section 4.3.2 and Section 4.3.3 for instructions on rules to follow during modifications.

4.3.2 Using Syndication Server Naming Conventions for Naming the Services

There is a heuristic that Oracle Syndication Server follows in retrieving push Dynamic Services services. The identifier for the service must have the following format:

```
"urn:com.push:<push-protocol>.oss"
```

Where `<push-protocol>` is the channel protocol with which to push the content. The heuristic followed maps HTTP for `http` and SMTP to `mailto` and so forth.

4.3.3 Push Service Interface: SyndicationPushPackage

Each of these services must conform to some service interface as defined by the Dynamic Services architecture, so that it allows Oracle Syndication Server to always be able to pass in the content package as a service request and receive an acknowledgment back as a service response.

4.3.3.1 Input Schema

The input schema envelopes the ice-package element with an ice-push-package element containing an attribute specifying the push URL. The service can forward this URL to the protocol handler to perform the protocol-specific actions for this URL.

4.3.3.2 Output Schema

The output schema models the ice-code element returning either an OK message or the error encapsulated in a comprehensive structure.

4.3.4 Registering the Service

After you have developed and registered your new push service, it is ready for use. The next subscription that contains a subscriber URL with a protocol matching the registered service will be able to start using your new service during push delivery.

5

Syndication Server Administration

This chapter provides a brief overview of the OSSAdmin utility used for Syndication Server administration tasks.

The features of the OSSAdmin utility are categorized into four sections (see Table 5–1), which represents the top-level menu.

Table 5–1 Syndication Server Administrative Commands

Command Name	Description
Sys (S): System Monitor	Manages the Syndication Server runtime system (monitoring and tuning). See Section 5.1.
Sbm (B): Subscriber management	Manages the subscriber profile. See Section 5.2.
Afm (A): Affiliate Management	Manages the affiliate or content provider accounts. See Section 5.3.
Sum (U): Subscription management	Manages subscriptions. See Section 5.4.

Section 5.1 through Section 5.4 describe the operations available for each specific set of administrative tasks.

5.1 Syndication Server Runtime System Administration

Table 5–2 describes the Syndication Server runtime system administration operations.

Table 5–2   Syndication Server Runtime System Administration Operations

Command Name	Description
List (L): List all the schedulers	Gets the list of scheduler IDs for the current running system. This operation helps the administrator monitor the resource usage of the Syndication Server system.
Show (S): Show the details for the scheduler	Retrieves the details for a scheduler with a given scheduler ID. This operation is used for the administrator to keep track of which scheduler is doing what task.
Cancel (C): Cancel a scheduler	Cancels a scheduler and releases its resources. This operation is used in a severe situation in which a scheduler cannot work properly and must be shut down.

5.2 Subscriber Profile Management

Table 5–3 describes the subscriber profile management operations.

Table 5–3   Subscriber Profile Management Operations

Command Name	Description
Add (A): Add a new subscriber	Registers a new subscriber. The administrator creates a new account for the subscriber. It does not grant content provider access to the subscriber.
Show (S): Show all subscriber IDs	Gets the list of subscriber IDs. This operation is used for the administrator to browse the current set of registered subscribers.
Profile (P): Get profile for a subscriber	Retrieves account information for a given subscriber.
List (L): List all content providers accessible to a subscriber	Gets the list of accessible content providers for a given subscriber.
Grant (G): Grant access to a subscriber for a content provider	Grants access to the subscriber for a given content provider. This operation allows the subscriber to access the specified content provider and retrieve catalog information from it.
Revoke (R): Revoke access to a content provider	Revokes access to a content provider by a subscriber.
Cancel (C): Cancel a subscriber	Unregisters a given subscriber. This operation removes all of its related subscriptions as well as all the system resources allocated to those subscriptions at runtime.

5.3 Affiliate or Content Provider Profile Management

Table 5–4 describes the affiliate or content provider profile management operations.

Table 5–4   Affiliate or Content Provider Profile Management Operations

Command Name	Description
Add (A): Add a new content provider	Registers a new content provider.
List (L): List all content providers	Gets the list of content provider IDs. This operation is used for browse purposes.
Profile (P): Get profile for the content provider	Retrieves the profile for the given content provider.
Cancel (C): Cancel a content provider	Unregisters a given content provider. All of its associated subscriptions are removed. A notification is sent to each relevant subscriber.

5.4 Subscription Management

Table 5–5 describes the subscription management operations.

Table 5–5   Subscription Management Operations

Command Name	Description
List (L): List all existing subscriptions	Gets the list of established subscription IDs.
Info (I): Get information for a subscription	Retrieves the details for a specified subscription.
Cancel (C): Cancel a subscription	Removes a given subscription. All of its associated system resources, such as schedulers, are also released.

6

Known Issues and Problems

For problems and issues that have become known after the release of this guide, see the online README.txt file in your *ORACLE_HOME* directory. Depending on your operating system, this file may be in:

On UNIX systems: *ORACLE_HOME*/syndication/doc/README.txt

On Windows NT systems: *ORACLE_HOME*\syndication\doc\README.txt

A

Frequently Asked Questions

A text file containing a list of frequently asked questions is available online after installing Oracle Syndication Server.

This text file can be found at:

On UNIX systems:

$ORACLE_HOME/syndication/doc/dsfaq.txt

On Windows NT systems:

$ORACLE_HOME\syndication\doc\dsfaq.txt

B

Links

The following is a list of Web sites that you may find useful during the use or development of Syndication Server services.

- W3C Extensible Markup Language (XML) 1.0 (Second Edition) Specification

  `http://www.w3.org/TR/2000/WD-xml-2e-20000814`

- W3C Extensible Stylesheet Language (XSL) Specifications

  `http://www.w3.org/TR/xsl/`

- W3C XSL Transformations (XSLT) Specifications

  `http://www.w3.org/TR/1999/PR-xslt-19991008`

- W3C XML Schema Specifications Part 0: Primer

  `http://www.w3.org/TR/xmlschema-0/`

- W3C XML Schema Specifications Part 1: Structures

  `http://www.w3.org/TR/xmlschema-1/`

- W3C XML Schema Specifications Part 2: Datatypes

  `http://www.w3.org/TR/xmlschema-2/`

- W3C Namespaces in XML

  `http://www.w3.org/TR/1999/REC-xml-names-19990114/`

- W3C Extensible HyperText Markup Language (XHTML) Specifications

  `http://www.w3.org/TR/1999/xhtml1-19990505/lastCallDiff`

- W3C HTTP 1.0 Specification

  `http://www.w3c.org/Protocols`

- Information Content and Exchange (ICE) Protocol Specifications

  `http://www.icestandard.org/`

- Information Content and Exchange (ICE) Protocol V1.1 Specification

  `http://www.icestandard.org/spec/SPEC-ICE1.01-20000511.html`

C

Syndication Server Error Messages

The following sections describe the error messages of Oracle Syndication Server.

C.1 Syndication Server Errors

The following messages are associated with Syndication Server.

C.1.1 2*nn*: Success Status Codes

SYND-200, OK

Cause: The operation completed successfully.

Action: No action need be taken.

SYND-201, Confirmed

Cause: The operation is confirmed.

Action: No action need be taken.

SYND-202, Package sequence state already current

Cause: A subscriber requested a package update but the subscriber is already in the current package sequence state, therefore there are no updates at the moment.

Action: No action need be taken.

C.1.2 3*nn*: Payload Level Status Codes

SYND-300, Generic catastrophic payload error

Cause: A generic status code indicating an inability to comprehend the received payload.

Action: Check the request payload and resend it; if the problem persists, have your Syndication Server administrator check the status of the requester's account.

SYND-301, Payload incomplete or cannot parse

Cause: The payload sent is severely garbled and cannot be parsed possibly because it is not an XML payload. Expecting an XML payload and received a payload that was not XML.

Action: Resend the payload and be sure it is an XML payload.

SYND-302, Payload not well formed XML

Cause: The payload sent is recognizable as XML, but is not well formed per the definition of XML.

Action: Ask your Syndication Server administrator to fix the corresponding syndication service.

SYND-303, Payload validation failure

Cause: The payload failed validation according to the DTD.

Action: Check the request payload. It must conform to the specified request DTD provided by Syndication Server.

SYND-304, Temporary responder problem

Cause: The responder is either too busy, an update is in progress, and so forth. Eventually an identical retry request might succeed.

Action: Check the requester's local message system for any notification of system downtime, or try again later.

SYND-320, Incompatible version

Cause: The communication protocol used in the request is not supported.

Action: If you use the Syndication Server client library, check the list of protocol versions it supports and then contact Oracle Customer Support Services. If you do not use the Syndication Server client library, contact your local system administrator for help.

SYND-390, Payload temporary redirect

Cause: The payload is being redirected temporarily using the supplied new transport communication endpoint. In ICE/HTTP, this means a new URL is supplied.

Action: Contact Oracle Customer Support Services.

SYND-391, Payload permanent redirect

Cause: The payload is being redirected permanently using the supplied new transport endpoint. In ICE/HTTP, this means a new URL is supplied.

Action: Contact Oracle Customer Support Services.

C.1.3 4*nn*: Request Level Status Codes

SYND-400, Generic request error

Cause: A generic status code indicating an inability to comprehend the request.

Action: Check the request payload for errors and resend it.

SYND-401, Incomplete or cannot parse

Cause: The request sent is severely garbled and cannot be parsed.

Action: Check the request payload for errors and also make sure you close the communication channel only after the request is completely sent out.

SYND-402, Not well formed XML

Cause: The request sent is unrecognizable XML, but is not well formed per the definition of XML.

Action: Check the request payload for errors.

SYND-403, Validation failure

Cause: The request failed validation according to the DTD.

Action: Make sure the request payload conforms to the request DTD provided by Syndication Server.

SYND-405, Unrecognized sender

Cause: The sender does not have permission to access the current server.

Action: Contact your Syndication Server administrator to verify sender information.

SYND-406, Unrecognized subscription

Cause: Either the subscription ID is not correct, or the subscription is not in a consistent state.

Action: Contact your Syndication Server administrator to verify sender information.

SYND-407, Unrecognized operation

Cause: The request type is not supported at the server side.

Action: Make sure the operation you want to perform is supported for Syndication Server.

SYND-408 Unrecognized operation arguments

Cause: The request argument is not supported at the server side.

Action: Check the request payload against the request DTD provided by Syndication Server. If the error persists, contact Oracle Customer Support Services.

SYND-409, Not available under this subscription

Cause: The requester has referred to something not covered by the subscription referenced in the request.

Action: Resubscribe with additional conditions.

SYND-410, Not found

Cause: A generic error for being unable to find something.

Action: Check the error message for the detail description.

SYND-411, Unrecognized package sequence state

Cause: The package sequence identifier supplied by the sender is not understood by the receiver.

Action: Check the payload for errors. If the error persists, contact Oracle Customer Support Services.

SYND-412, Unauthorized

Cause: The subscriber does not have permission to access Syndication Server or a certain set of content providers.

Action: Contact your Syndication Server administrator.

SYND-413, Forbidden

Cause: Access violation according to the subscriber's profile.

Action: Contact your Syndication Server administrator.

SYND-414, Business term violation

Cause: The current operation or the content of the current request does not

comply with the business terms between the subscriber and Syndication Server.

Action: Review the business terms for the subscriber account and adjust the request.

SYND-420, Constraint failure

Cause: A violation or inconsistency for the subscriber's request for content occurred from Syndication Server according to constraints specified in the subscriptions.

Action: Review the constraint for the subscription and adjust the subscriber's request payload.

SYND-422, Schedule violation, try again later

Cause: The request was made at an incorrect time.

Action: Issue the request for a package update within the agreed-upon timing window.

SYND-430, Not confirmed

Cause: A generic error indicating the operation is not confirmed.

Action: Check the subscriber's local system setting to send confirmation. If the error persists, contact Oracle Customer Support Services.

SYND-431, Error fetching external data

Cause: The receiver could not follow an external reference (URL) given to it by the sender.

Action: Check the subscriber's local system settings to enable such action.

SYND-440, Sorry

Cause: As part of the negotiation process, this response indicates the proposal is unacceptable for some reason.

Action: Review the subscription request and make necessary modifications; then resend the request.

SYND-441, Counter proposal

Cause: As part of the negotiation process, this response indicates an updated offer or a counter proposal.

Action: Review the counter offer subscription request and make necessary modifications, then send the response.

SYND-442, Renegotiation in progress

Cause: As part of the renegotiation process, this response indicates that renegotiation is in progress.

Action: Proceed to the renegotiation process.

SYND-443, Offer acknowledged but deferred

Cause: Used during parameter negotiation. The receiver of an offer cannot evaluate the offer without human intervention. The sender may try again later with the offered parameters and the same subscription ID. The receiver is expected to respond with a new offer (reflecting the result of the intervention) at some later time.

Action: After waiting for a reasonable period of time, if there is no response, contact your Syndication Server administrator to see if there was a network problem or system problem, which might explain why no response was received. If there were no obvious network or system problems, then the receiver may either contact the sender directly and come to some agreement, at which time the sender will send out a new offer, or the sender may resend the previous offer at a later time.

SYND-450, Range type invalid

Cause: Used during parameter negotiation. A protocol-specific RANGE of type numerical, lexical, time, or enumeration, has been incorrectly specified.

Action: Review the corresponding sections inside the request payload and make corrections.

SYND-451, Span selection out of range

Cause: Used during parameter negotiation. The value selected in a span is less than the minimum or greater than the maximum.

Action: Review the request payload and make the correction.

SYND-452, Selection error

Cause: Used during parameter negotiation. The number of items selected in an enumeration does not match the `select` attribute. For example, the `select` attribute may require one or more items to be selected but the number selected in the response was zero.

Action: Review the request payload and make the correction.

SYND-453, Enumeration selection empty or invalid

Cause: Used during parameter negotiation. The number of selectable `ice-enum-item` elements is not compatible with the `select` attribute. For example, the `select` attribute might indicate that at least one

ice-enum-item must be selected, but the actual number of items available is less than the number of ice-enum-item elements in the enumeration.

Action: Review the request payload and make the correction.

SYND-454, Span invalid

Cause: Used during parameter negotiation. A span has values that violate its structure. For example, a span point must not have a value less than the span minimum nor larger than the span maximum.

Action: Review the request payload and make the correction.

SYND-456, Time formats incompatible for comparison

Cause: Used during parameter negotiation. Two time values to be compared during negotiation are in incompatible formats. For example, a duration is being compared with an ICE date or time.

Action: Review the request payload and make the correction.

C.1.4 5*nn*: Implementation Errors and Operational Failures

SYND-500, Generic internal responder error

Cause: This is a catch-all response for general problems.

Action: Contact your Syndication Server administrator.

SYND-501, Temporary responder problem

Cause: The responder is too busy, an update is in progress, and so forth.

Action: Eventually, an identical retry request might succeed.

SYND-503, Not implemented

Cause: The server does not implement the requested operation.

Action: Make sure the operation you want to perform is supported by Syndication Server.

C.1.5 6*nn*: Pending State

SYND-601, Unsolicited message must be processing now

Cause: The syndicator has unsolicited messages to send to the subscriber, and the subscriber has not yet requested them.

Action: Issue the request for pending packages to Syndication Server.

SYND-602, Excessive confirmations outstanding

Cause: The syndicator had requested confirmation of package delivery, and now refuses to perform any additional operations until the subscriber supplies the confirmations (positive or negative).

Action: Issue the confirmation for the requested package delivery.

SYND-604, No more unsolicited messages

Cause: The subscriber sent an ice-unsolicited-now message but the syndicator has no unsolicited messages to send.

Action: Check the subscriber's local system; if the inconsistencies still persist, contact Oracle Customer Support Services.

C.2 ICE Errors

The following messages are associated with the Syndication Server implementation of the ICE Version 1.1 specification.

C.2.1 7*nn*: Local Use Codes - Reserved for Use by the Local ICE Implementation

SYND-701, Failed to process subscription

Cause: This error happens while Syndication Server is processing the subscription request.

Action: Review the request payload and correct the errors.

SYND-702, Subscription already exists

Cause: The identical subscription to the current one already exists.

Action: Abandon the current request or regenerate the subscription request with different content, such as ID.

SYND-703, Content provider already exists

Cause: The same content provider is already registered with Syndication Server. This is a Syndication Server administrator error message.

Action: Abandon the current transaction.

SYND-704, Content provider not found

Cause: Invalid content provider ID or the content provider has been removed. This is a Syndication Server administrator error message.

Action: Contact your Syndication Server administrator.

SYND-705, Content provider adaptor not found

Cause: Syndication Server could not locate the source to instantiate the adaptor.

Action: Contact your Syndication Server administrator to determine why there is an inconsistent state for the content provider.

SYND-706, Failed to load the Content Provider Adaptor class

Cause: The adaptor cannot be instantiated by Syndication Server.

Action: The content provider adaptor is corrupted. Contact your Syndication Server administrator.

SYND-707, I/O exception when trying to send a request

Cause: The transport manager failed to send out a payload due to protocol exceptions or because Syndication Server encountered an internal error. There may be a problem with your client library.

Action: Contact Oracle Customer Support Services.

SYND-708, HTTP response error

Cause: When using HTTP/S as the concrete network protocol, it indicated that some network errors happened. There may be a problem with your client library.

Action: Check and make sure the destination URL is correct; contact Oracle Customer Support Services.

SYND-709, Invalid content type for the response

Cause: When using HTTP/S as the concrete network protocol, the content type is not defined.

Action: Contact Oracle Customer Support Services.

SYND-710, Failed to spawn a scheduler

Cause: During the subscription process, if the subscriber asks for auto push delivery and Syndication Server cannot start up a scheduler to handle it, an exception will be returned.

Action: Contact your Syndication Server administrator.

SYND-711, Subscriber already exists

Cause: The subscriber account has already been created on Syndication Server. This is an administrator error message.

Action: Abandon the current registration process. Use the existing subscriber.

SYND-712, Subscriber not found

Cause: Invalid subscriber ID.

Action: Make sure the subscriber ID referred to in the request payload is correct.

SYND-713, No content provider associated with the current subscriber

Cause: According to the profile of the current subscriber, it cannot access any content providers registered with Syndication Server.

Action: Contact your Syndication Server administrator.

Glossary

catalog

A set of subscription offers. A subscriber obtains a catalog from a syndicator, and uses the offers within the catalog to initiate the ICE subscription protocol.

collection

A set of items generated over time by receipt of a package sequence. For example, on a subscriber's site, a collection would be all the different items acquired during the subscription's duration.

content provider

One who provides the content for content subscribers. Oracle Syndication Server supports three types of content providers: file, database, and Web, and is also extensible so it can support additional types of content providers.

Distinguished Name (DN)

The unique name of a directory entry in Oracle Internet Directory (OID). It includes all the individual names of the parent entries back to the root. The Distinguished Name tells you exactly where the entry resides in the directory's hierarchy. This hierarchy is represented by a directory information tree (DIT).

Document Type Definition (DTD)

An XML document used to validate other XML documents. Oracle Syndication Server uses an ICE agent layered on Dynamic Services to take a content syndication or a content subscription request in the form of an XML document, which is validated against a predetermined ICE protocol Document Type Definition (DTD).

ICE

Information and Content Exchange.

ICE payload

See **payload**.

item

A single delivery instance of an arbitrary data type.

ICE/HTTP

The specific binding of the ICE protocol to the HTTP protocol.

message

The abstract concept of an atomic unit of communication.

minimal subscriber

A subscriber ICE implementation that has no persistent server component and
therefore cannot receive syndicator-initiated request messages.

negotiation

A subscriber ICE implementation may negotiate to arrive at mutually agreeable
delivery methods and schedules.

package

A single delivery instance of a group of items. For example, a single issue of a parts
manual or a single set of headlines. A package is the atomic unit of information
distribution in ICE.

package sequence

An ordered series of packages delivered over time.

payload

A protocol structure encapsulating a set of logical ICE operations delivered at
discrete intervals. A payload is a single instance of an XML document formatted
according to the protocol definitions contained in this specification.

pull

The retrieval of content by a subscriber who polls a syndicator for new or updated
content provided by content providers.

push

The automatic delivery of content by sending it to subscribers when content changes or according to some schedule.

receiver

Generic term referring to the target of an ICE payload.

request

A message asking for the performance of an operation. Requests in ICE are messages carried by payloads.

requester

Generic term referring to the initiator of an ICE payload request.

response

A message containing the results of an operation. Responses in ICE are messages carried by payloads.

responder

Generic term referring to the recipient of an ICE payload request.

sender

Generic term referring to the originator of an ICE payload.

service

A component within the Internet computing model that delivers a specialized value-added function.

service provider

A business partner or application developer who provides and manages the content of a service for the Dynamic Services execution engine. Typically, the service provider is the owner of some data resource or process, such as, the owner of a currency exchange rate Web site. Also, it is someone who provides content for a service.

subscriber

In the world of content syndication, one of the two parties in an ICE relationship, who receives information and content from the other party, a syndicator. The subscriber uses ICE to obtain information and content from the syndicator.

subscription

An agreement to deliver a package sequence from a syndicator to a subscriber. There may be many independent subscriptions between a syndicator and a subscriber.

subscription element

The identifier for a logical concept represented by a specific item, or group of items, within a collection. The subscription element may have many versions over time, and thus may have been represented by different items. For example, a company logo is a single subscription element, that can be updated over time. Every subscription element has a unique subscription element ID assigned by the syndicator.

subscription offer

A proposed set of parameters for a particular subscription.

syndicator

In the world of content syndication, one of the two parties in an ICE relationship, who sends information and content to the other party, a subscriber. The syndicator uses ICE to send information and content to the subscriber. The role of content syndicator is carried out by Oracle Syndicator Server.

unsolicited message

A protocol mechanism used in ICE to provide a way for a syndicator to initiate communication to a minimal subscriber.

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