

Oracle® Universal Content Management

Content Server JCR Repository Adapter

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This document describes the Oracle Content Server JCR Repository Adapter and provides deployment and configuration information.

Oracle adapters are fully standards-based and compliant with both the J2EE Connector Architecture and the Web Services Architecture. The Content Server JCR adapter can be deployed on any JSR-170-compliant application to enable communication with Oracle Content Server via the standards-based JCR specification.

1 Java Content Repository (JCR)

The Java Content Repository API is a specification for accessing content repositories in a standardized manner. This specification was developed under the Java Community Process as JSR-170 and includes the Content Repository for Java API and the Java Content Repository (JCR).

The standard APIs associated with the JSR-170 specification are functional and exposed in the Content Server JCR adapter. The JCR 1.0 API is required and must be pre-deployed and integrated as part of the underlying framework.

Content Server JCR Adapter API Documentation

The API documentation for the Content Server JCR adapter is provided as a JavaDoc, and is included in the Oracle Content Server JCR Repository Adapter distribution file.

JCR 1.0 API Documentation

The API documentation for the JCR 1.0 API is available online as a JavaDoc and can be referenced from the Apache Software Foundation website or the Java Community Process website.

Apache Software Foundation:

<http://www.apache.org/>

Java Community Process:

<http://www.jcp.org/>

2 Required APIs and Runtime Libraries

The Content Server JCR adapter can be used with any application that supports the JSR-170 specification, but requires a custom integration. This custom

integration requires that an underlying framework consisting of several APIs and runtime libraries be installed.

Note: All of these APIs and runtime libraries are provided with Oracle JDeveloper and WebCenter, with the exception of `cis-client-8.0.0.jar` which is included with the Content Server JCR adapter distribution file and is also available with the Oracle Content Integration Suite (CIS) distribution file.

ADF Runtime Libraries

Several of the Application Development Framework (ADF) runtime libraries are required and must be installed on your application. These files are available on your Oracle JDeveloper instance. You can perform the installation using the ADF Runtime Installer wizard in JDeveloper or you can do it manually.

The following ADF runtime libraries must be deployed on your application:

- `adf-share-base.jar`
- `adf-share-ca.jar`
- `adf-share-support.jar`
- `adflogginghandler.jar`

If you choose to manually install these libraries on your application, they must be installed to the *lib* directory. For example, an installation on Tomcat would use the `TOMCAT_HOME/common/lib` directory and an installation on WebLogic would use the `WEBLOGIC_HOME/ADF/lib` directory (on WebLogic, you must create these directories).

CIS Client

The Content Integration Suite (CIS) Client application must be deployed on your application. The CIS client is included with the Content Server JCR adapter distribution file and is also available with the CIS distribution file.

- `cis-client-8.0.0.jar`

JCR 1.0 API

The Java Content Repository (JCR) 1.0 API must be deployed on your application. The JCR 1.0 API is available with Oracle JDeveloper, for download from the Apache Software Foundation, and as part of the JSR-170 specifications download from the Java Community Process website.

- `jcr-1.0.jar`

Apache Software Foundation:

<http://www.apache.org/>

Java Community Process:

<http://www.jcp.org/>

JCR Integration Libraries

The following JCR integration libraries are required and must be deployed on your application:

- jcr-common-runtime.jar
- ojc.jar
- ojdbc5.jar

These files are available on your Oracle JDeveloper instance.

XML Integration Files

The following XML integration libraries are required and must be deployed on your application:

- xmlparserv2.jar
- xquery.jar

These files are available on your Oracle JDeveloper instance.

3 Content Server JCR Adapter Deployment

The Content Server JCR adapter must be deployed on your application to enable communication with an Oracle Content Server instance. The Content Server JCR adapter utilizes the Content Integration Suite (CIS) Client application as part of the underlying framework and works in conjunction with the general JSR-170 architecture.

Follow the general instructions of your specific JSR-170-compliant application for deploying JCR adapters. The Content Server JCR adapter uses an embedded deployment descriptor (`rep_descriptor.xml`). Upon deployment, many applications will use the deployment descriptor to populate the configuration entries as part of an administration interface or deployment wizard. If your application does not use an administration interface or deployment wizard, you will need to edit the deployment descriptor directly and provide the required values.

4 Configuration Settings

You must supply several configuration values to enable communication between the Content Server JCR adapter and Content Server.

Connection Method

Supply the provider name and communication method.

- `CIS_SOCKET_TYPE_CONFIG`: This configuration setting defines the communication method with Content Server. Options are *socket*, *web*, or *socketssl*. The *socket* communication method specifies that CIS should use the Content Server listener port. The *web* communication method specifies that CIS should communicate via the web server filter (requires individual authentication for each request). The *socketssl* communication method specifies that secure socket communication (SSL) be used as the communication protocol. The default value is *socket*.

```
oracle.stellent.jcr.configuration.cis.config.socket.type
```

- If *socket* (listener port) is used as the communication method, you must provide the required configuration values. See "[Socket Communication \(Listener Port\)](#)" on page 4 for more information.

- If *socketssl* (secure socket communication) is used as the communication method, you must provide configuration values for both socket communication and secure socket communication. See "[Socket Communication \(Listener Port\)](#)" on page 4 and "[Secure Socket Communication \(SSL\)](#)" on page 4 for more information.
- If *web* (web server filter) is used as the communication method, you must provide the required configuration value. See "[Web Communication \(Web Server Filter\)](#)" on page 4 for more information.

Socket Communication (Listener Port)

You must supply values for these configuration settings if CIS is connecting through the Content Server listener port (socket communication) or if secure socket communication (SSL) is used as the communication protocol:

- **SERVER_HOST_CONFIG:** The hostname of the machine on which Content Server is running. The default value is *localhost*.
`oracle.stellent.jcr.configuration.server.host`
- **SERVER_PORT_CONFIG:** The port on which Content Server is listening. The default value is *4444*.
`oracle.stellent.jcr.configuration.server.port`

Secure Socket Communication (SSL)

You must supply values for both socket communication (listener port) and values for these configuration settings if secure socket communication (SSL) is used as the communication protocol:

- **KEYSTORE_LOCATION:** The location and name of the keystore file.
`oracle.stellent.jcr.configuration.ssl.keystore.location`
- **KEYSTORE_PASSWORD:** The password for the keystore file.
`oracle.stellent.jcr.configuration.ssl.keystore.password`
- **PRIVATE_KEY_ALIAS:** The private key alias for authentication.
`oracle.stellent.jcr.configuration.ssl.privatekey.alias`
- **PRIVATE_KEY_PASSWORD:** The private key password.
`oracle.stellent.jcr.configuration.ssl.privatekey.password`

Web Communication (Web Server Filter)

You need to supply a value for this configuration settings if CIS is connecting through the web server filter (web communication):

- **SERVER_WEB_URL_CONFIG:** The full URL to the Content Server web server plugin. Include the protocol (usually *http* or *https*), hostname, port, relative web root, and the plugin root (usually *idcplg*). If a port other than port 80 is used, the port number needs to be specified.

For example: `http://myserver:8080/UCM/idcplg/`

`oracle.stellent.jcr.configuration.server.web.url`

Temporary Directory

You may optionally supply a value for this configuration setting:

- **CIS_TEMPORARY_DIRECTORY**: Optional setting specifying a directory where the CIS application is allowed to write temporary files.

For example: /tmp/cistemp

```
oracle.stellent.jcr.configuration.server.web.url
```

5 JCR Data Model

The JCR standard uses a hierarchical data model based on extensible node types and content properties. This data model is used by the repository's underlying storage subsystems. Refer to the JCR and JSR-170 standards for additional information.

- The **nt:folder** node type represents a structured collection of nodes. It is closely related to the directory or folder concept found in many file systems and is the node type that is normally used when mapping file system directories to a content repository.
- The **nt:resource** child node is normally used instead of a plain binary property when more resource metadata is required.
- The **nt:file** node type represents a file with some content.
- The **nt:unstructured** node type permits all kinds of properties and child nodes to be added to a node. It is normally used when nothing is known about the content that will be stored within a node.

Content Server JCR Adapter Data Model

This is the data model for the Content Server JCR adapter:

```
A Folder [nt:folder]
+- jcr:content [nt:resource]
  +- jcr:created DATE
    <returns dCreateDate for the folder>
  +- ojcr:owner STRING
    <returns dCollectionOwner for the folder>
  +- ojcr:creator STRING
    <returns the same as ojcr:owner
      we are unable to determine the creator for a folder>
  +- ojcr:lastModifier STRING
    <returns the same as ojcr:owner
      we are unable to determine the last modifier for a folder>
  +- ojcr:displayName STRING
    <returns dCollectionName for the folder>
  +- idc:defaultMetadata [nt:unstructured]
    <metadata that should by default be applied to content checked
      into this folder. see idc:metadata under nt:file/jcr:content for
      example fields>
  +- idc:folderMetadata [nt:unstructured]
    +- idc:dCollectionName STRING
    +- idc:dCreateDate DATE
    +- idc:dCollectionPath STRING
    +- idc:dLastModifiedDate DATE
    +- idc:dCollectionOwner STRING
    +- idc:dCollectionGUID STRING
    +- idc:dParentCollectionID INTEGER
```

```

+- idc:dCollectionQueries INTEGER
+- idc:dCollectionEnabled INTEGER
+- idc:dCollectionInherit INTEGER
+- idc:dChildManipulation INTEGER
+- idc:dCollectionID INTEGER
+- idc:folderPermissions [nt:unstructured]
+- idc:userCanRead INTEGER
+- idc:userCanWrite INTEGER
+- idc:userCanDelete INTEGER

A Document.txt [nt:file]
+- jcr:content [nt:resource]
+- jcr:data=...
+- jcr:created DATE
  <returns dCreateDate for the document>
+- ojcr:creator STRING
  <if xCreator exists as a metadata field, that is returned.
  Otherwise we return the document's dDocAuthor>
+- ojcr:lastModifier STRING
  <returns dDocAuthor for the document>
+- ojcr:author STRING
  <returns dDocAuthor for the document>
+- ojcr:comment STRING
  <if xComments exists as a metadata field, that is returned>
+- ojcr:displayName STRING
  <returns the filename>
+- ojcr:language STRING
  <if xIdcLanguage exists as a metadata field, that is returned>
+- idc:metadata [nt:unstructured]
+- idc:dID INTEGER
+- idc:dDocName STRING
+- idc:dDocTitle STRING
+- idc:dDocAuthor STRING
+- idc:dRevClassID INTEGER
+- idc:dRevisionID INTEGER
+- idc:dRevLabel STRING
+- idc:dIsCheckedOut INTEGER
+- idc:dSecurityGroup STRING
+- idc:dCreateDate DATE
+- idc:dInDate DATE
+- idc:dOutDate DATE
+- idc:dStatus STRING
+- idc:dReleaseState STRING
+- idc:dWebExtension STRING
+- idc:dProcessingState STRING
+- idc:dMessage STRING
+- idc:dDocAccount STRING
+- idc:dReleaseDate DATE
+- idc:dRendition1 STRING
+- idc:dRendition2 STRING
+- idc:dIndexerState STRING
+- idc:dPublishType STRING
+- idc:dPublishState STRING
+- idc:dWorkflowState STRING
+- idc:dRevRank INTEGER
  <all custom metadata properties for a revision
  like idc:xComments STRING>

```

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