Image Services Resource Adapter

Installation and Deployment Guide

For Oracle 10g Application Server

Release 3.2.1

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About This Manual

This manual provides information about installing and configuring Image Services Resource Adapter (ISRA) version 3.2.1 on Oracle 10g platform.

Conventions Used in the Document

The table lists the formatting conventions used in this document.

Convention	Description
`Fixed Size font`	Used for commands entered at the system command prompt.
Arial font	Used for important notes
Bold	Occasionally used to refer to portions of user interface, such as the Next button or the Install button

Education

FileNet provides various forms of instruction. Please visit the Global Learning Services in FileNet's Service & Support area at www.filenet.com.

Related References

For all ImageViewer parameters please refer to the FNImageViewer documentation provided with ISRA installation media.

<ISRA-home>\ISRA321\FNImageViewer\docs

For all P8 System Manager related information, please refer to P8 System Manager documentation provided with ISRA installation media.

<ISRA-home>\ISRA321\SystemManager\docs

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1
ISRA Installation

This document describes how to install, deploy and configure FileNet Image Services Resource Adapter (ISRA) version 3.2.1 on Oracle 10g Application Server platform.

ISRA Overview

Integration with existing Enterprise Information Systems (EIS) is the key to success, in business moving towards an e-business strategy.

The Java 2 Enterprise Edition (J2EE) Connector Architecture defines a standard architecture to connect the J2EE platform with the heterogeneous EIS's.

ISRA is a system-level software driver compliant with the J2EE Connector Architecture v1.0. It is used by a Java application component or client to connect to FileNet Image Services (IS).

ISRA provides an alternative to IDM Web Services for IS customers. In addition, it provides a Web solution that does not require Microsoft technology or product support.

ISRA Package Overview

ISRA is bundled into a single package called the Resource Adapter Module, which contains all necessary files and information for the correct deployment, on supported Application Server.

ISRA is available in two editions:

- View edition: Supports ISRA Read-only interactions
- Enterprise edition: Supports additional interactions that allow creation of documents and folders, and update of their properties. User can also print/fax the documents.

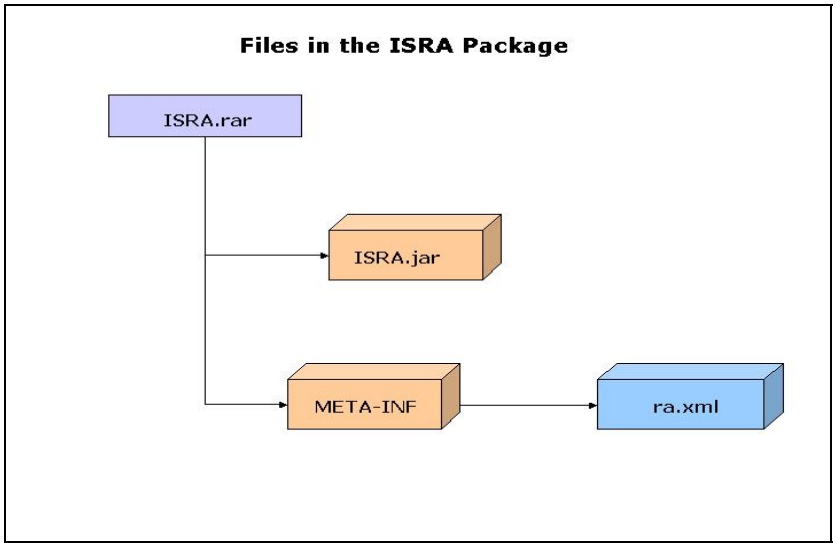
Resource Adapter Module

The contents of the Resource Adapter Module are:

- Jar file that consists of ISRA class library.
- Deployment descriptor (XML file) that defines the run-time behavior of ISRA.

Structure of the ISRA Package

The following figure illustrates a listing of files in the ISRA package:



Installing ISRA

Note The screen shots shown in this guide (taken on Windows Server, which includes both 2000 and 2003 Servers) may look slightly different on the system, depending on the platform version or settings etc.

ISRA is installed from an executable installer file. The steps for installation are:

1. Mount CD-ROM

   On UNIX:

   Perform this step only if CD-ROM device is not already mounted. Note that you must have the root user privileges to perform these tasks. Load the ISRA CD into the drive, open a terminal window and create the `/cdrom` directory using the following command:

   ```
   # mkdir /cdrom
   ```

   On Sun Solaris 9:

   - Using a preferred editor (for example, vi), edit the `/etc/vfstab` file by adding an entry `/vol/dev/dsk/c0t2d0/cdrom - /cdrom hsfs 4 - ro`

     where, `/vol/dev/dsk/c0t2d0/cdrom` is the CD-ROM device file path, `/cdrom` is the mount point for the CD and `hsfs` is the file system format of the CD. Refer to Solaris system manual for more details on mounting devices.

– On the system prompt, enter `# mount /cdrom` to mount the CD-ROM.

On IBM AIX 5.1 and 5.2:

– At the system prompt enter the following command to mount the CD-ROM: `# mount –rv cdrfs /dev/cd0 /cdrom`

where `/dev/cd0` is the CD-ROM device file path, `/cdrom` is the mount point for the CD and `cdrfs` is the file system format of the CD.

On HPUX:

– Using a preferred editor (for example, vi), edit the `/etc/pfs_fstab` file by adding an entry similar to the following:

```
/dev/dsk/c2t2d0 /cdrom pfs-rrip xlat=unix 0 0
```

where `/dev/dsk/c2t2d0` is the CD-ROM device file path and `/cdrom` is the mount point for the CD.

– On the system prompt, enter:

```
# pfs_mountd &
# pfsd &
```

- On the system prompt enter the following command to mount the CD-ROM: `# pfs_mount /cdrom.`

To ensure that CD-ROM is mounted correctly, on a terminal window, enter `# mount`.

This lists the CD-ROM device.

On Linux:

Open a terminal window and enter `# mount /dev/hdc /mnt/cdrom` where, `/dev/hdc` is the CD-ROM device file path and `/mnt/cdrom` is the mount point for the CD. Refer to the Linux system manual for more details on mounting devices.

To ensure that CD-ROM is mounted correctly, on a terminal window, enter `# mount`

This lists the CD-ROM device.

On Windows:

Open the explorer and select the CD-ROM drive that contains the ISRA CD.

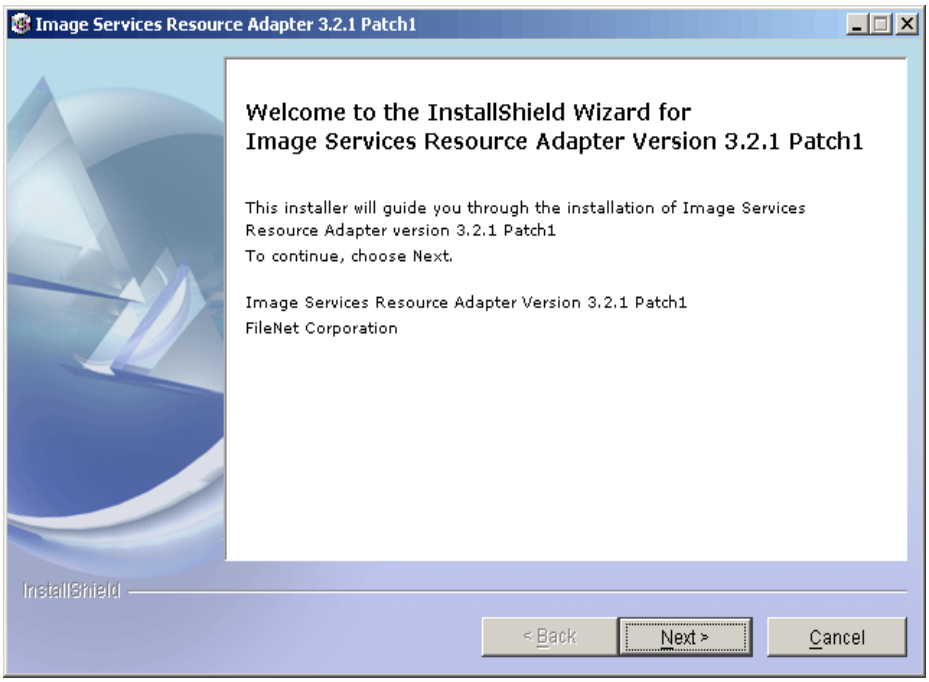
2. Launch the ISRA installer by executing **setup.bin** on HPUX, Linux, IBM AIX and Solaris or **setup.exe** on Windows Server.

- On HPUX, Solaris, IBM AIX or Linux server, open a terminal, change directory to the respective folders on CD-ROM drive for locating `setup.bin`. To do this, enter the following commands on the command prompt:

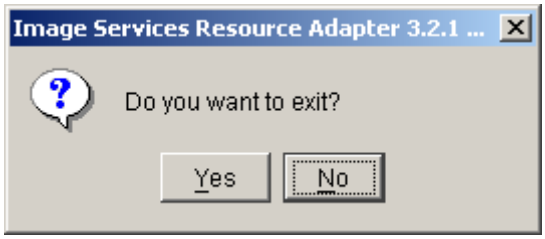
```
# cd cdrom/<HPUX, Solaris, AIX, Linux>
# ./setup.bin
```

- On Windows Server, locate `setup.exe` in the Windows folder of the CD-ROM drive. Double-click setup.exe to launch the ISRA installer.

The installation screen appears.

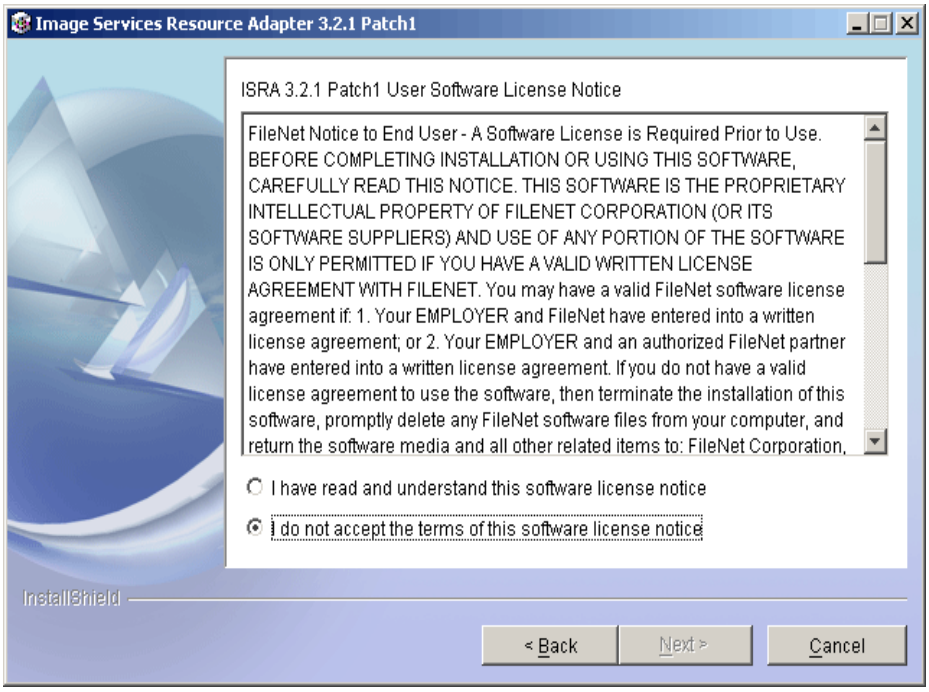


3. If user clicks **Cancel**, the following dialog box appears:

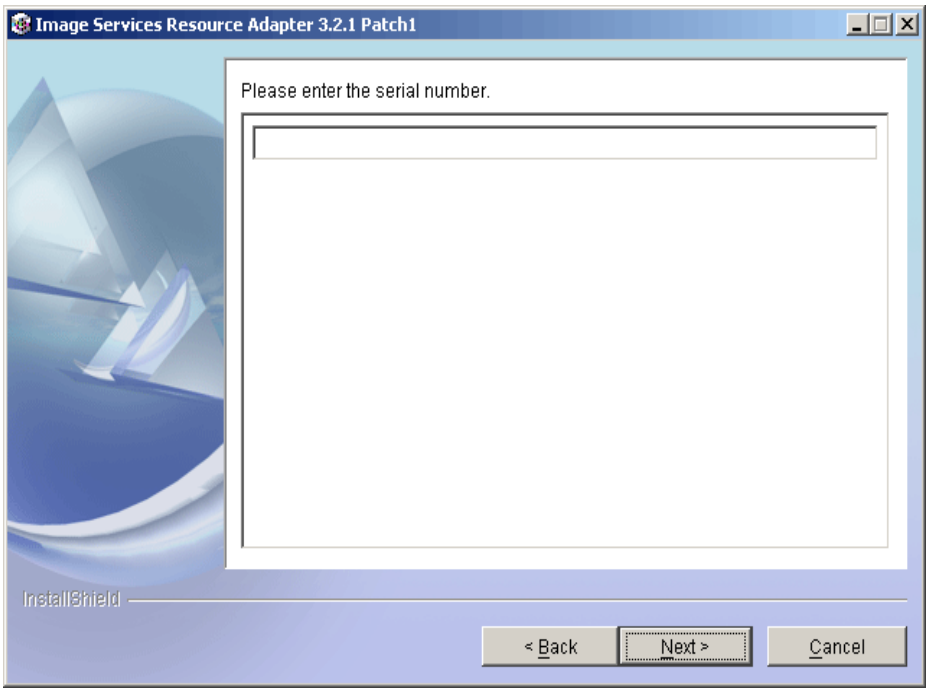


Click **No** to go back to the previous screen.

4. Click **Next** to proceed. The following screen appears:



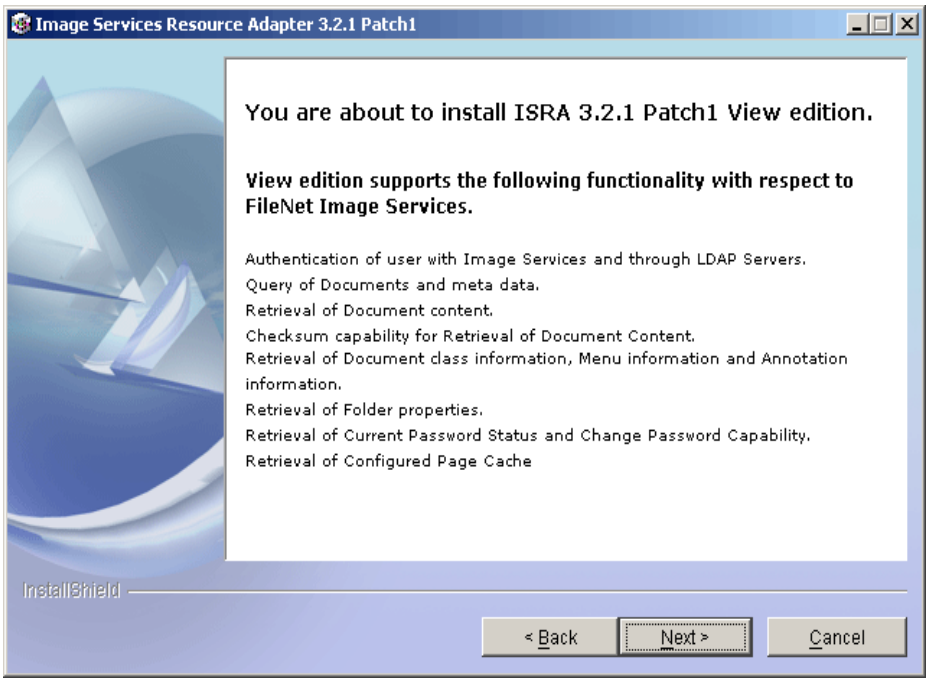
5. Accept the license agreement and click **Next** to proceed.



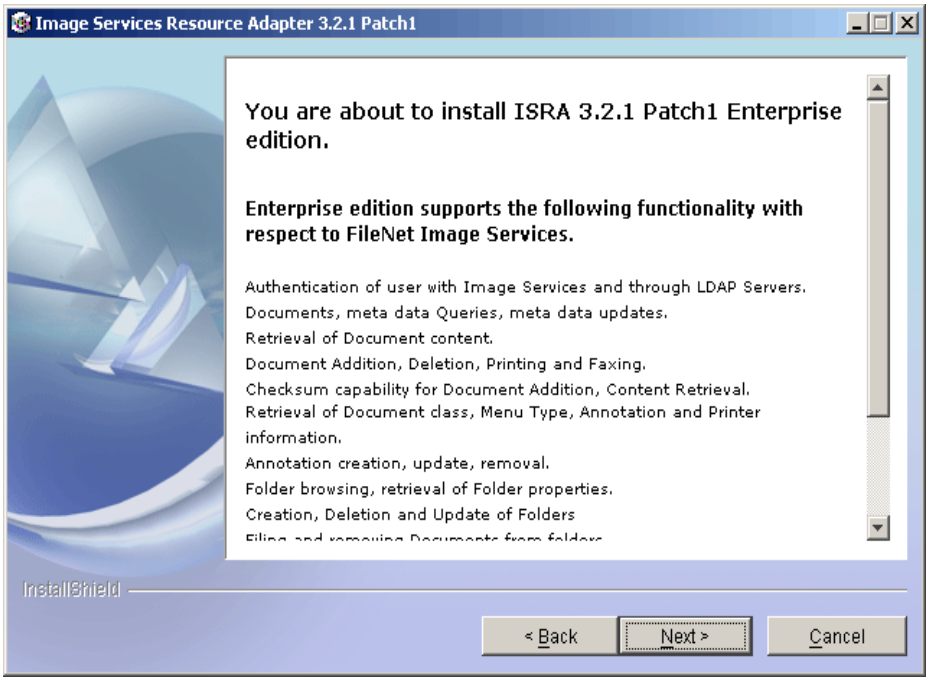
6. Enter the serial number and click **Next** to proceed.

Depending on the serial number, either View edition or Enterprise edition of ISRA will be installed.

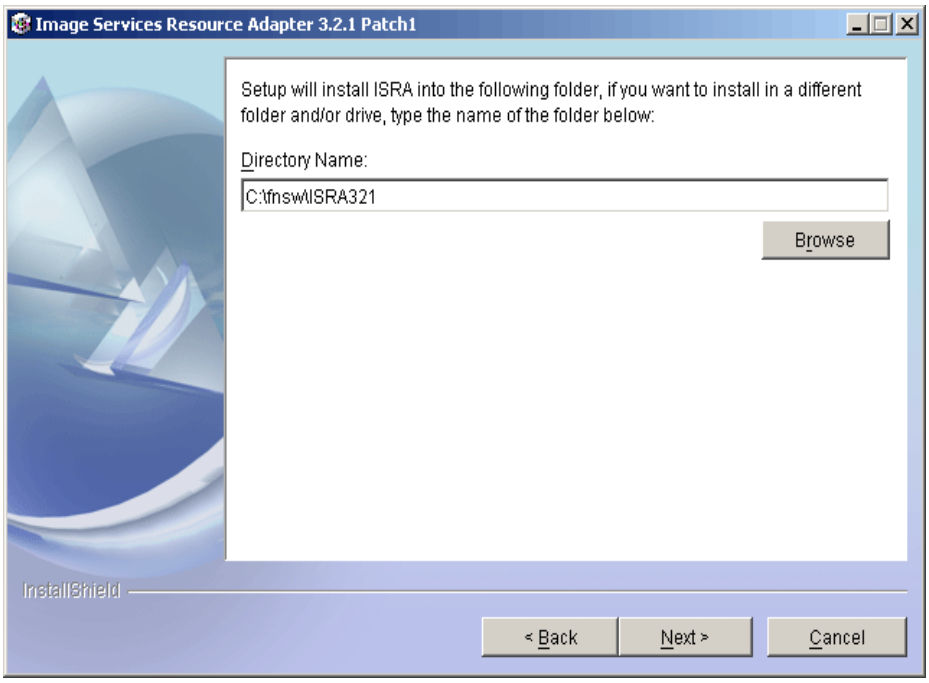
- The View edition screen appears as below:



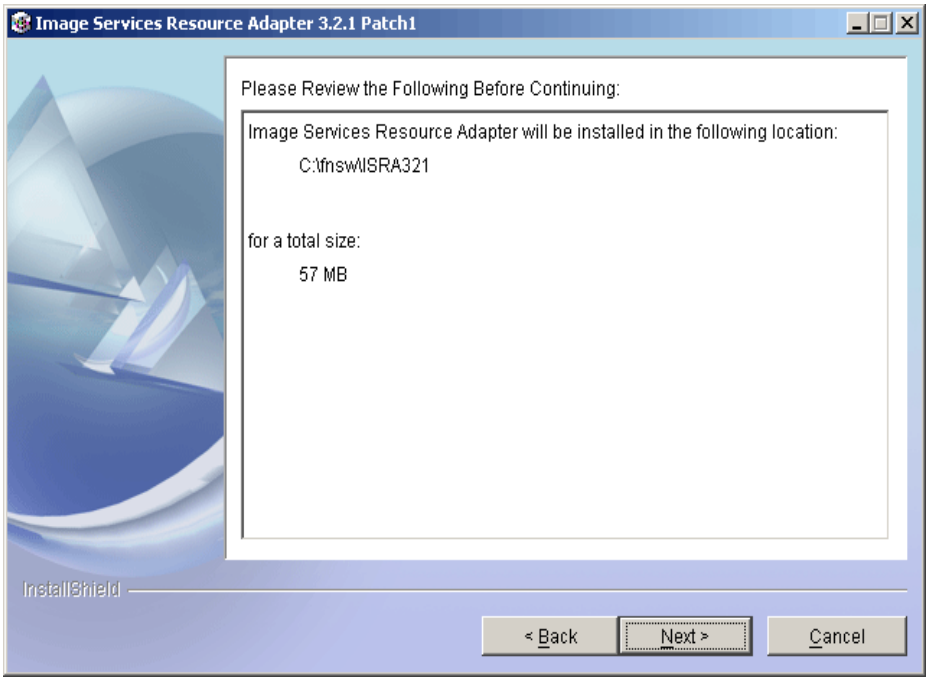
- The Enterprise edition screen appears as below:



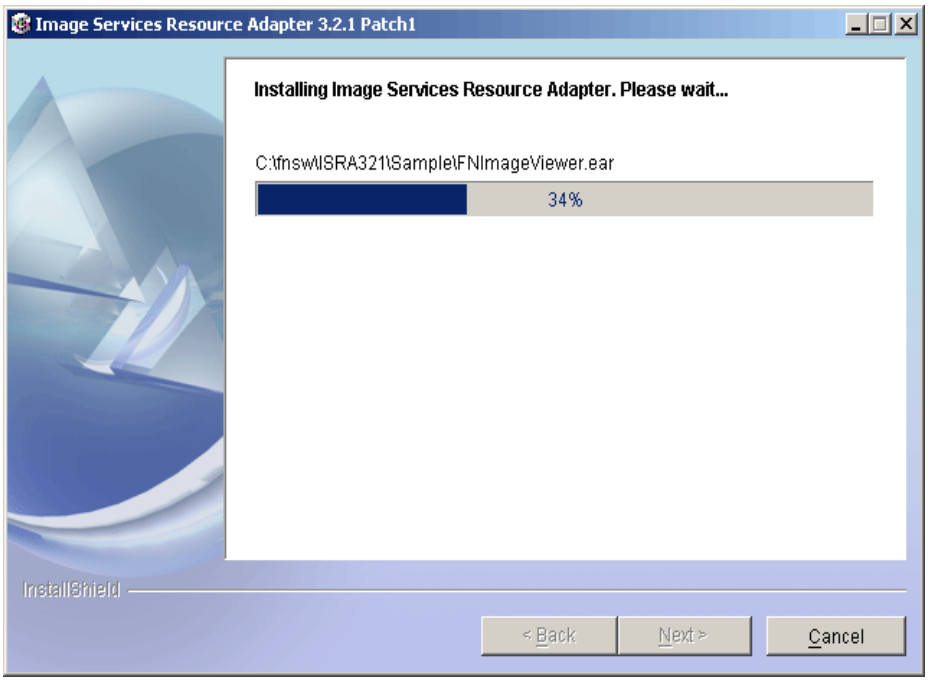
7. Click **Next** to proceed with the installation.



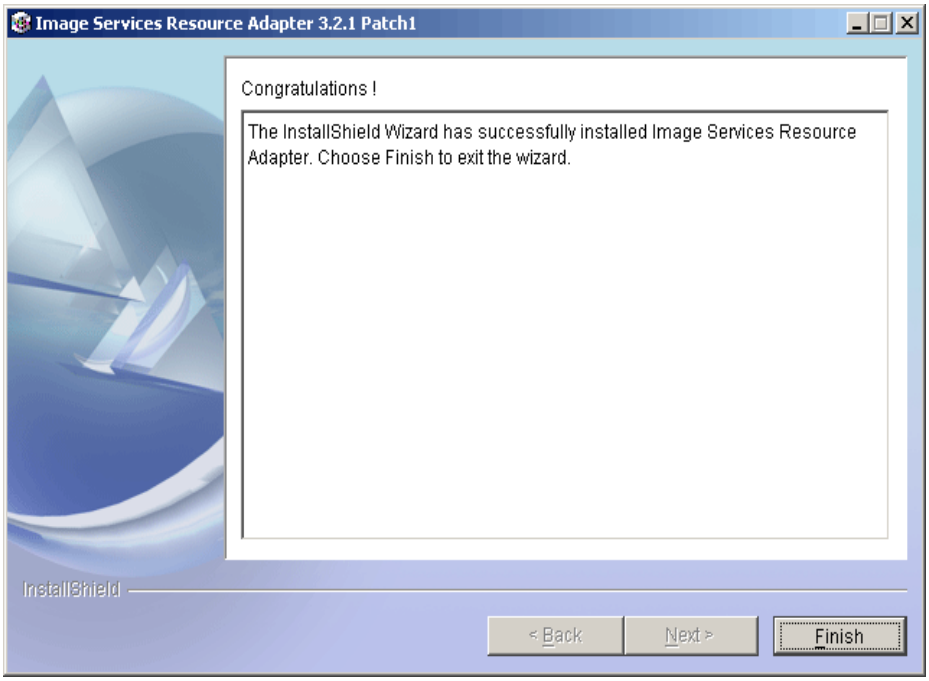
8. Choose the directory to install ISRA and click **Next** to proceed. On UNIX/Linux systems, the default path shown is `/fnsw/ISRA321`.



9. Verify the information. If there are any errors, click **Back** to make the necessary changes. Else, click **Next** to proceed with the installation of ISRA. The following screen appears:



10. When ISRA installation completes, the following screen appears:



11. Click **Finish**.

For UNIX platforms, login as root user and execute the following command to unmount the CD-ROM:

```
# umount /cdrom
```

For Linux, enter `# umount /mnt/cdrom`

Remove the CD from the drive.

Silent Installation of ISRA

For Silent Installation of ISRA, perform the following steps:

1. Execute the following command on the command prompt to generate a template file:

```
java –cp setup_ISRA321Patch1.jar run –options–
template <Real Path>/<name of template file>,
e.g. fnsw\ISRASilent\ISRASilent.txt
```

2. Copy the template file and **setup_ISRA321Patch1.jar** to a desired location.
3. Set the following values in template file:
   - -P installLocation = <value> variable to -P ISRAProductBean.installLocation = <value>.
   - LicenseBean.selection variable as 1 to accept the license agreement
   - SerialNumberFieldBean.SerialNumber variable to the specific serial number for Enterprise or View edition
   - ISRAProductBean.installLocation variable to the directory under which the installation has to take place in the template file.
4. Set the path to location containing **setup_ISRA321Patch1.jar** file on command prompt. Execute the following command to start the Silent installation:

```
java -cp setup_ISRA321Patch1.jar run -silent -options
<Real Path>/ISRASilent.txt
```

2
ISRA Deployment

ISRA can be deployed on a J2EE 1.3 compliant Application Server. This manual describes the deployment of ISRA on the Oracle 10g Application Server platform.

Note The installation procedure for Oracle 10g Application Server is outside the scope of this document. This guide assumes that the required settings and configurations have already been made.

The ISRA module is a set of Java interfaces/classes that implements J2EE Connector Architecture specified contracts and the EIS specific functionality. ISRA plugs into a J2EE 1.3 compliant Application Server in a modular manner.

Deployment Requirements

This section lists the minimum software and hardware requirements for successful deployment of ISRA on Oracle 10g Application Server.

Hardware Requirements

- Please refer to the Oracle 10g Application Server system requirements section at: http://otn.oracle.com
- ISRA installation will require at least 80MB of free disk space.

Software Requirements

- Oracle 10g Application Server installed on HPUX 11i, Sun Solaris 8 and 9, IBM AIX 5.1 and 5.2 , LINUX or Microsoft Windows 2000 and 2003 Servers
- FileNet IS 3.6 SP2 and above

Deploying ISRA

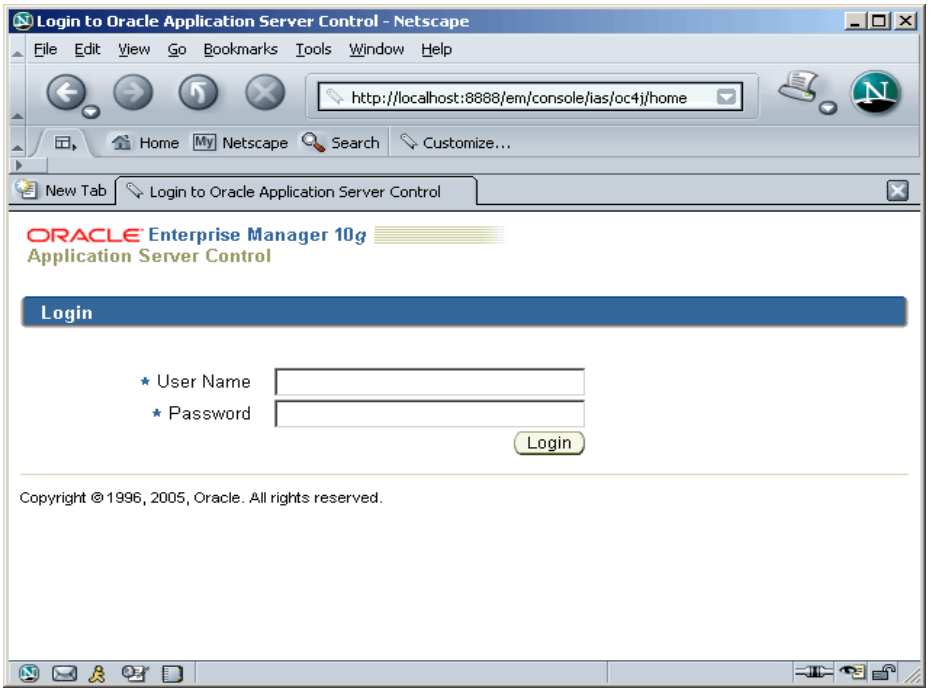
ISRA is deployed using the Oracle 10g Application Server console. The Resource Adapter can be deployed on Oracle 10g Application Server by deploying **ISRA.rar** file.

Deploying ISRA.rar

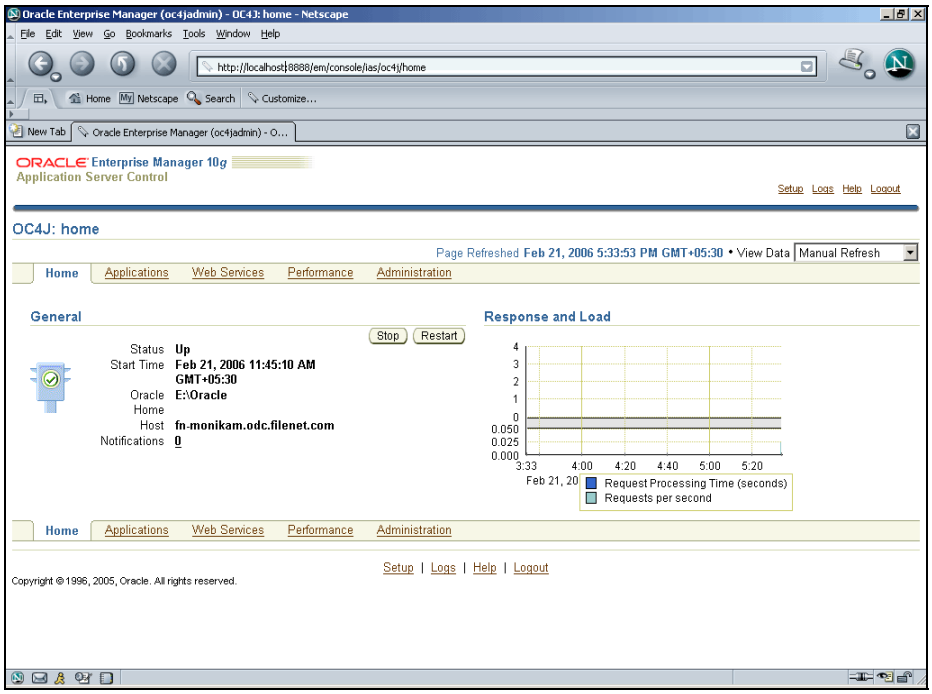
After the installation is complete, the ISRA software and documentation installed is in `C:\fnsw\ISRA321`, deploy the ISRA connector on OC4J.

To deploy the **ISRA.rar** file:

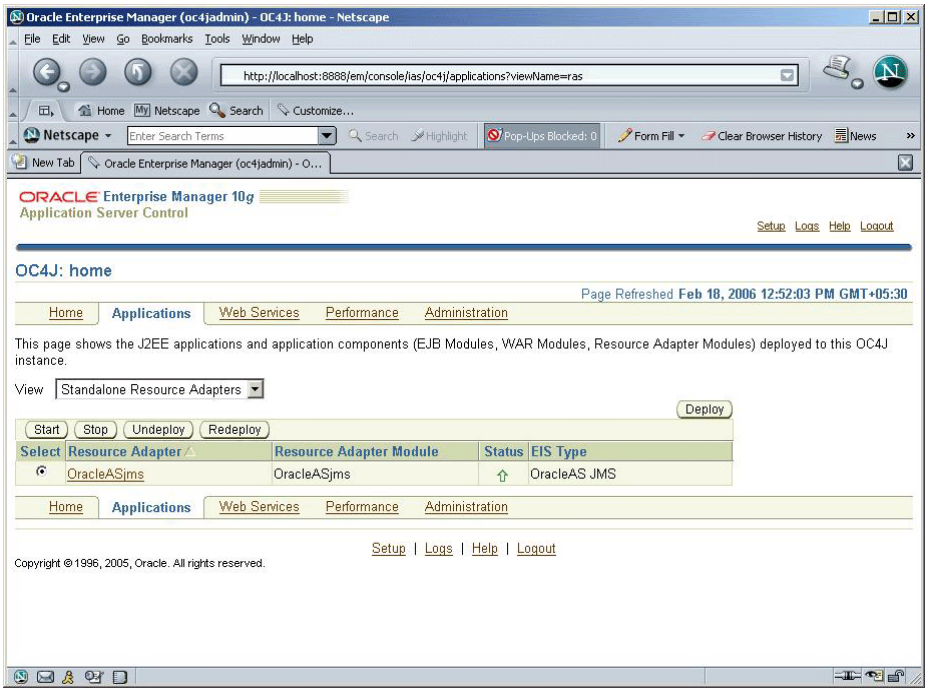
1. Start OC4J server by executing the command on the DOS prompt `\Oracle_Directory\bin\oc4j –start.`
2. Launch a Web browser and enter the URL as `http://localhost:<Port Number>/em` in the Address bar to start the Oracle 10g Application Server console. The following screen appears:



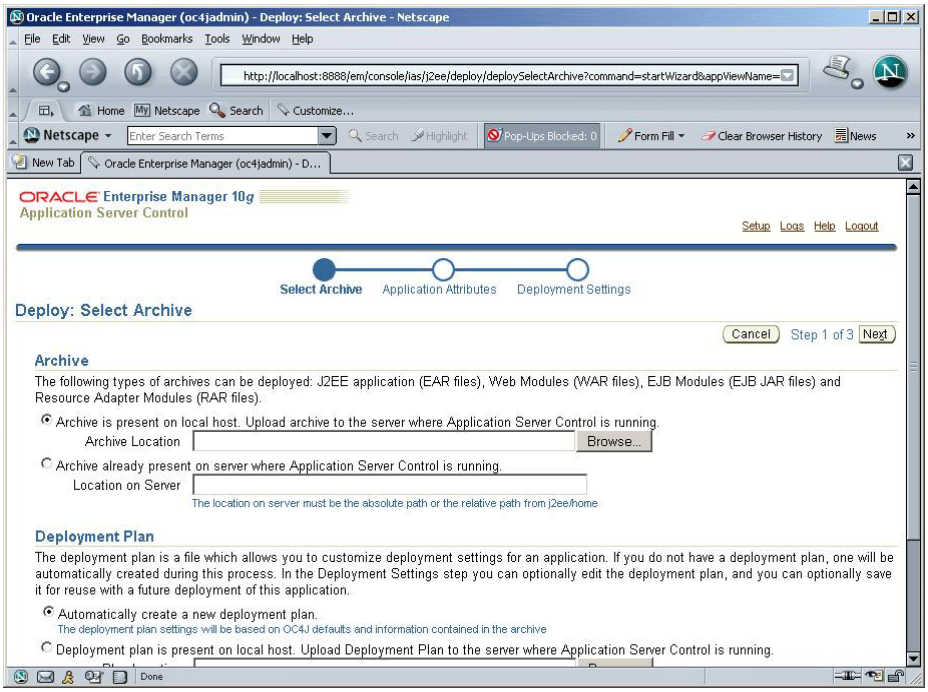
3. Enter the **User Name** and **Password**. Click **Login**. The following screen appears:



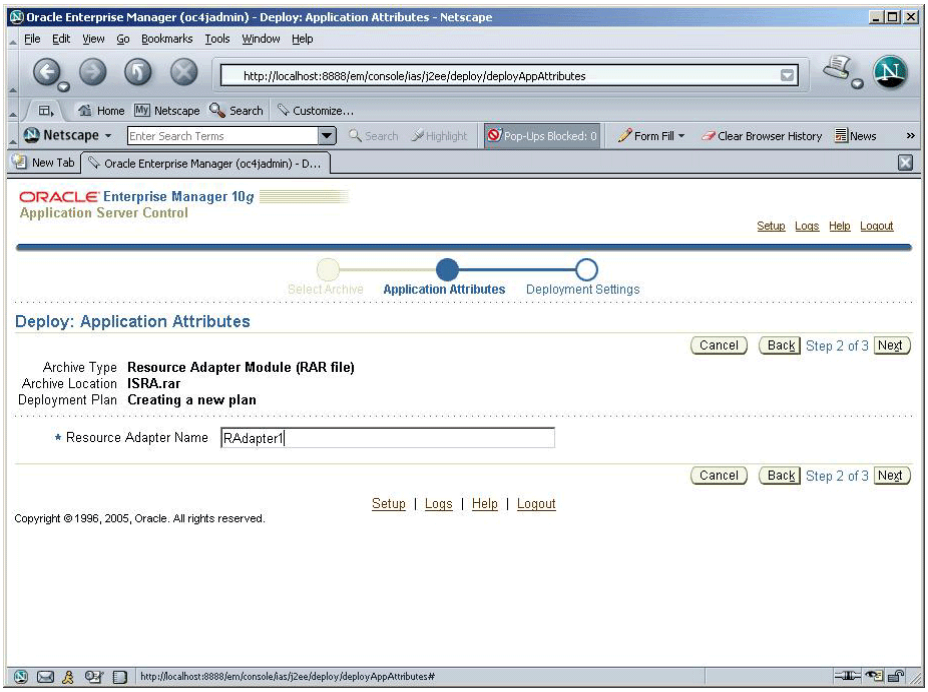
4. Click the **Applications** tab and select **Standalone Resource Adapter** in the **View** dropdown box. The following screen appears:



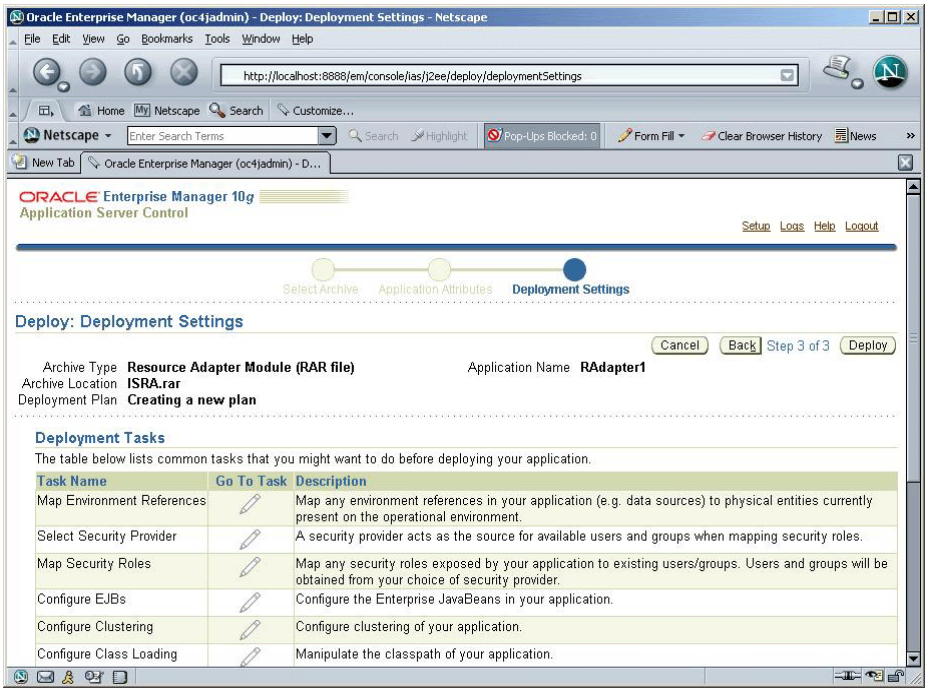
5. Click **Deploy**. The following screen appears:



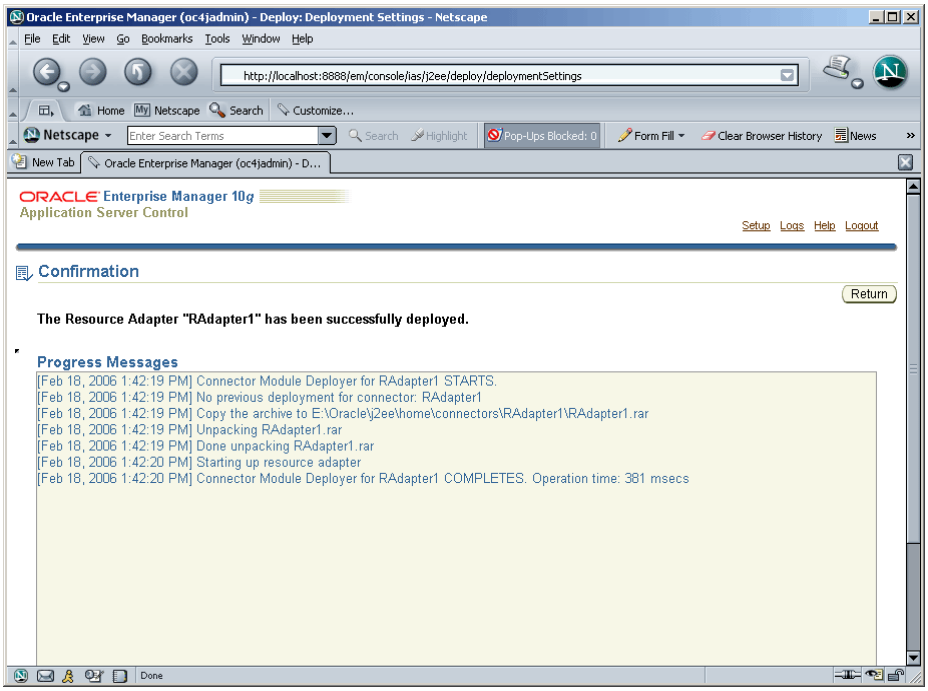
6. Click **Browse.** Navigate to the directory where ISRA 3.2.1 is installed. Select the **ISRA.rar** file from the jar folder of ISRA installation directory. Click **Next**. The following screen appears:



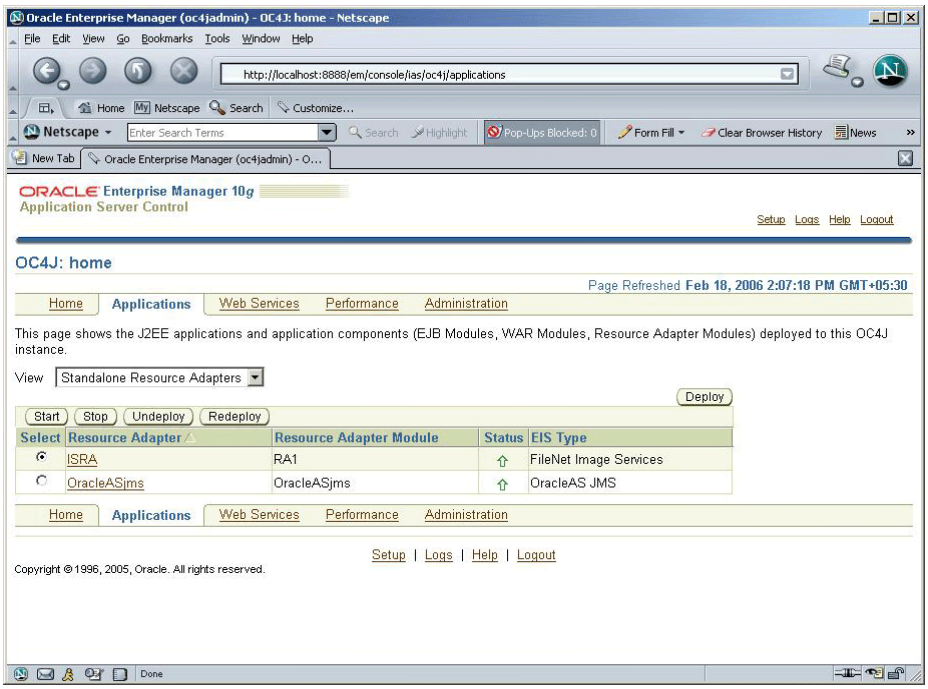
7. Enter the **Resource Adapter Name** and click **Next**. The following screen appears:



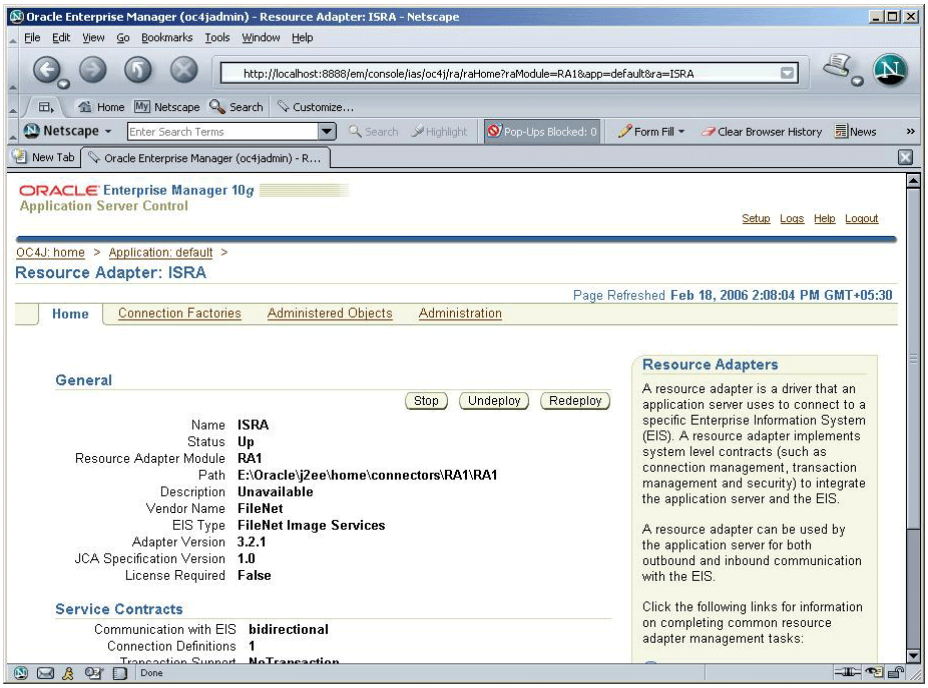
8. Click **Deploy**. The Confirmation screen appears:



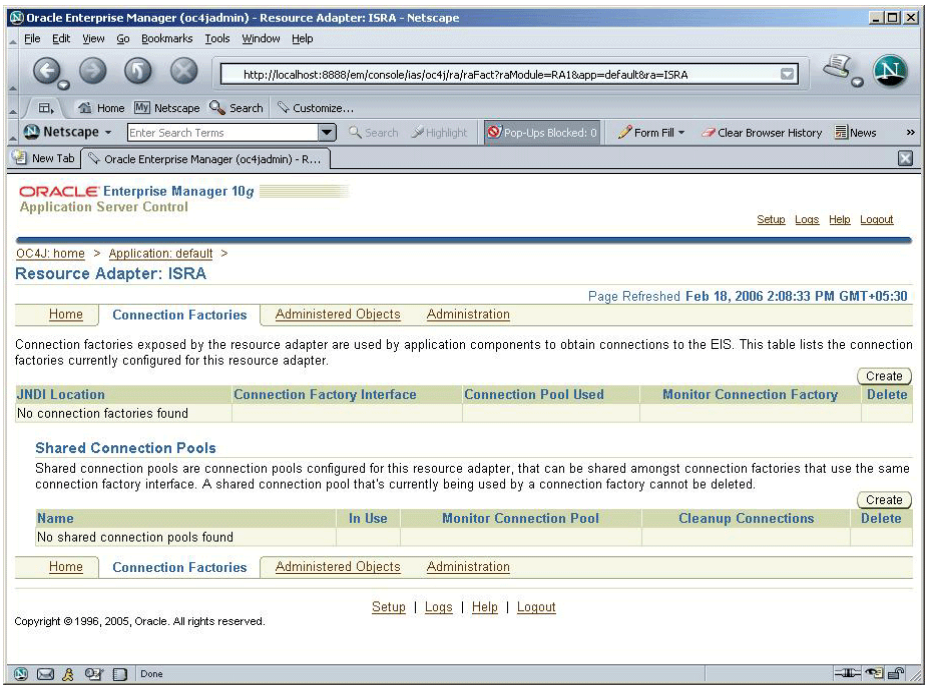
9. Click **Return**. The following screen appears:



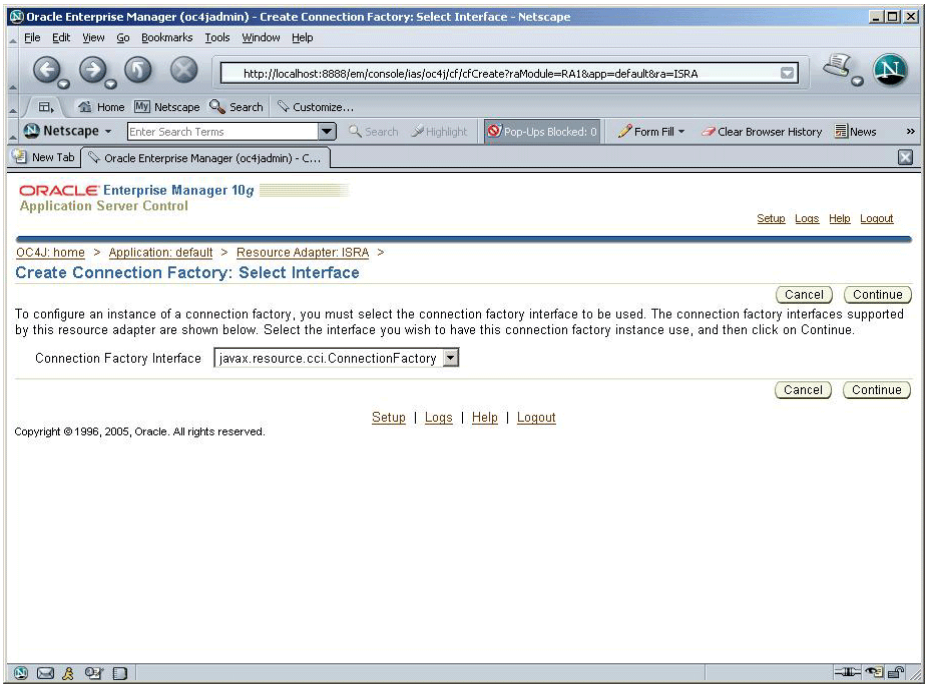
10. Click **Home** tab. The following screen appears:



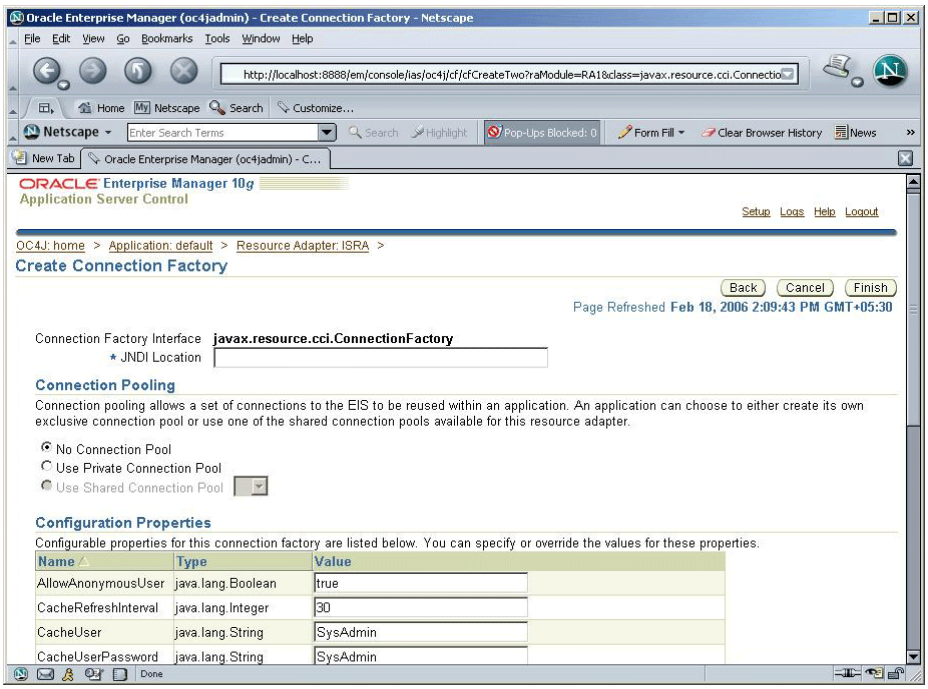
11. Click **Connection Factories** tab to configure the connection factory for the deployed resource adapter. The following screen appears:



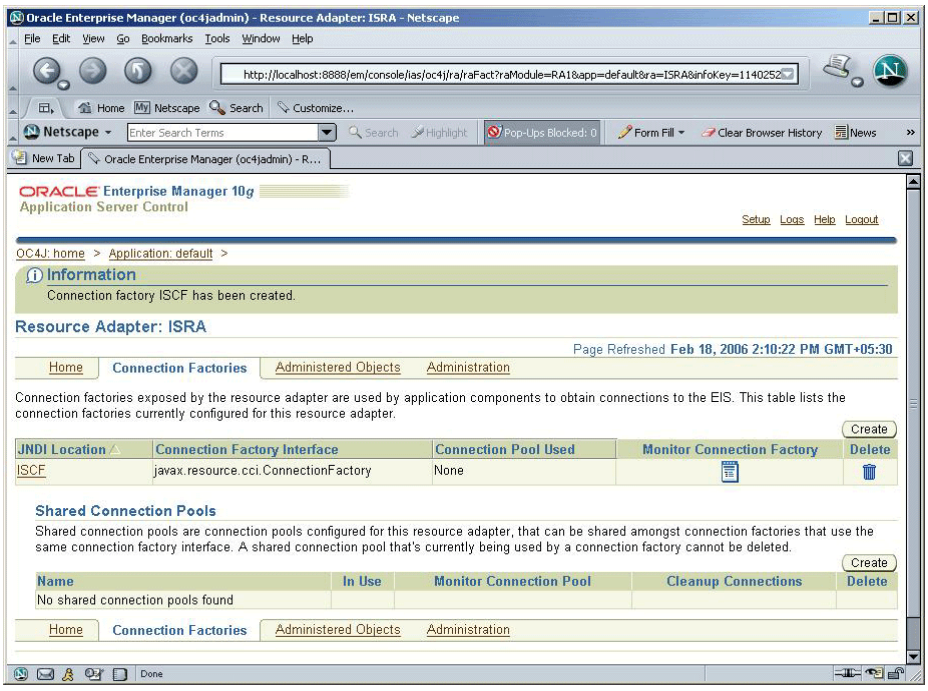
12. Click **Create**. The following screen appears:



13. Select the **Connection Factory Interface** and click **Continue**. The following screen appears:



14. Specify the **JNDI Location** and click **Finish**. The following screen appears with the list of configured connection factories:



Alternatively, the JNDI name can also be specified using the **oc4j-ra.xml** file located at:

```
<drive>:\your_directory\j2ee\home\application-
deployments\default\ISRA\oc4j-ra.xml
```

Open the **oc4j-ra.xml** file and edit the connection factory tag to include the location value. This is the JNDI name that the Sample Application will use to find the connector. The Sample Application, by default, uses ISCF. For example, `<connector-factorylocation="ISCF" connector-name="ISRA">`

1. Before stopping and restarting the OC4J server, modify the descriptor xml files by changing the property names to begin with lower case. (*Please see Appendix B for examples of these files after the changes have been made.)*
2. Using Windows Explorer, navigate to the following directory:

   ```
   <drive>:\your_directory\j2ee\Home\connectors\ISRA\META-
   INF
   ```

   User is required to have a backup of these XML files, in case, an error occurs.
3. Edit all the property names in **ra.xml** file to start with a lower case, for example,

   ```
   <config-property-name>DomainName</config-property-name>
   ```

   is changed to

   ```
   <config-property-name>domainName</config-property-name>
   ```
4. Modify the property value of both the Domain Name and Organization Name to match the domain and Organization name of the IS Server, which is being connected. For example,

   ```
   <config-property-value>YOUR_DOMAIN</config-property-value>
   <config-property-value>YOUR_ORG</config-property-value>
   ```
5. Change the server setting in the **oc4j-ra.xml** file at the following location:

   ```
   <drive>:\your_directory\j2ee\home\application-
   deployments\default\ISRA\
   ```
6. Open the file **oc4j-ra.xml** in a text editor.
7. Edit all the property names to start with a lower case. For example:

   ```
   <config-property name="DomainName" value="DemoIS" />
   ```

   is changed to

```
<config-property name=”domainName” value=”DemoIS” />
```

8. Edit the value of the DomainName and OrganizationName to match the IS environment.
9. Stop the OC4J server by executing the following command at the DOS prompt:

   ```
   \Oracle_directory\bin\ oc4j -shutdown -port <port no> –
   password <pwd>
   ```

   Or

   Press ^c (Ctrl+c) in the window, where the process was started.
10. After the shutdown is complete, restart the OC4J server.

    The server should start without errors. If there are case sensitive errors in any of the configuration files edited above, correct them, stop the server and again restart the server. If the server initializes without errors then the connector is deployed.

This completes the ISRA deployment.

Mandatory Requirements for ISRA 3.2.1

The mandatory requirements for ISRA 3.2.1 include:

1. Include the folder in which **WinPerfMon.dll** is present in the system path in case of Windows operating system. In UNIX/Linux, this file is not required.
2. The files **listener.jar** and **log4j-1.2.8.jar** are not present in **ISRA.rar**. For Oracle 10g, the **listener.jar** and **log4j-1.2.8.jar** need to be bundled in the **ISRA.rar** file before deploying **ISRA.rar** on the Application Server.

3
ISRA Configuration

This chapter describes the configuration of ISRA deployed on oracle 10g Application Server.

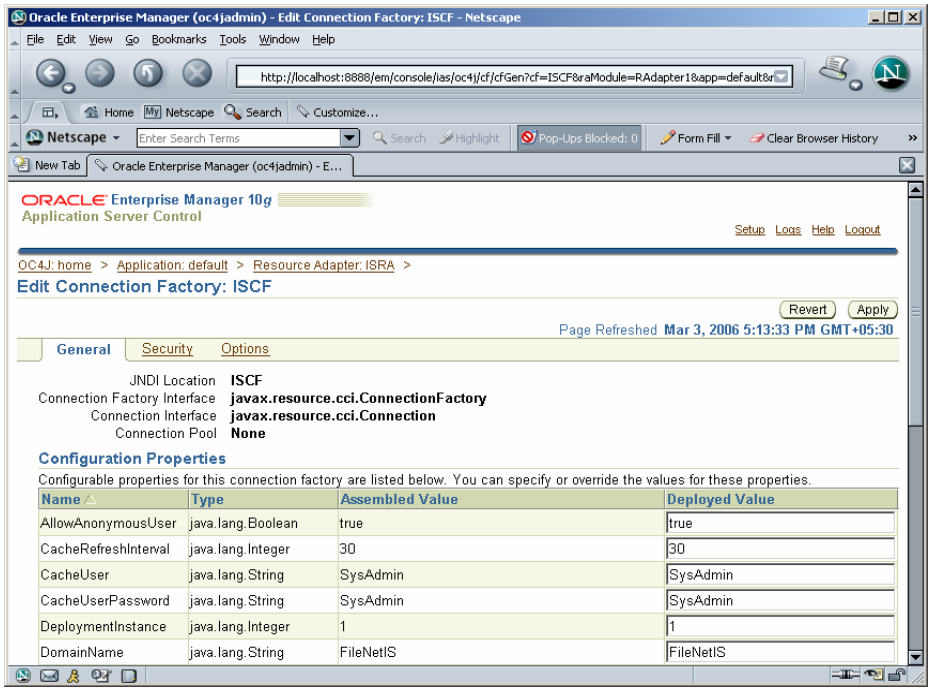
Configuring Deployed ISRA

This section describes how to edit the ISRA deployment descriptor before deployment.

ISRA uses the J2EE Connector Architecture deployment descriptor, called **ra.xml**, to define its operational parameters. The deployment descriptor is defined by Sun Microsystems in the J2EE Connector Architecture 1.0 specification. It describes the Resource Adapter related attributes, types, and deployment properties, using a standard Document Type Definition (DTD).

To edit the ISRA deployment descriptor:

1. Click the Connection Factory created (Refer to Deploying ISRA.rar section for details). The following screen appears:



2. Modify the required property and click **Apply**. Restart the server for settings to take place.

Alternatively,

1. Remove all files from ISRATemp directory and copy **ISRA.rar** in it. Change directory to ISRATemp.

   In the **ISRATemp** directory, run the command `jar –xvf ISRA.rar`

   This command will cause the **ISRA.rar** file to extract in the current directory.

2. Select the **ra.xml** file in the META-INF folder and edit the **ra.xml** file in a preferred text editor. The configurable properties that may be set (modified) in **ra.xml** are:

   - DomainName
   - OrganizationName
   - LogFileName
   - LoggingLevel
   - LoggingMode
   - LogFileSize
   - PageBufferSize
   - CacheRefreshInterval
   - LdapImplClassName
   - LdapImplClassString

For more details, refer Configurable ra.xml entities and Changing ISRA Specific Parameters for LDAP.

Note	It is mandatory to configure DomainName and OrganizationName properties, as the ISRA needs these properties to access the IS. The other properties are optional. DomainName and OrganizationName are the second and third part of the three-part IS library name (for example: DefaultIMS:FileNetIS:FileNet).

3. After making the modifications, save the **ra.xml** file in the same folder.
4. To reconstruct the **ISRA.rar** file, enter the command from ISRATemp directory:

   ```
   jar –cvf ISRA.rar *
   ```

   This command will create **ISRA.rar** file with modified **ra.xml** bundled into it.

Changing ISRA Specific Parameters

Configurable ra.xml Entities

The configurable properties to be set (modified) in **ra.xml** are:

- DomainName
- OrganizationName
- LogFileName
- LoggingLevel
- LoggingMode
- LogFileSize
- PageBufferSize
- CacheRefreshInterval
- CacheUser/CacheUserPassword
- DeploymentInstance
- PCHLogging
- AllowAnonymousUser
- RPCLogging

DomainName

This is the domain name of the IS server. The default value of DomainName is FileNetIS. It should be set according to the operational environment. Change this property to the domain name of the IS.

OrganizationName

This is the FileNet IS organization name. The default value for OrganizationName is FileNet. It should be changed according to the operational environment.

LogFileName

The LogFileName is a string containing the name and path of the log file. The default Value of LogFileName is **ISRA.log**. A complete or relative path can be provided to create the log file at a specific location on disk.

LoggingLevel

This is an integer representing the amount of log information to be generated. The valid values are:

Logging Level	Description
0	Only Error and Warning messages will be logged by ISRA
1	Informative messages will also be logged by ISRA
2	Prints debug messages in the log

The default value of LoggingLevel is 0. It can be modified to other valid Logging Levels. It is recommended to keep the logging level to 0. LoggingLevel can be increased if user encounters a problem while accessing ISRA through the application.

LoggingMode

This is an integer representing the logging mode. The valid values are:

Logging Mode	Description
0	No Logging
1	Only console logging
2	Only file logging
3	Both console logging and file logging

The default Value of LoggingMode is 3. It can be changed to other valid values according to the operational environment.

LogFileSize

This is an integer representing the maximum size of the log file in Megabytes (MB). When the size of the file reaches this maximum limit, the log file is renamed, and a new file is created with the same name. For example, **ISRA.log** is renamed to **ISRA.log_1**, and a new file **ISRA.log** is created. The default value of LogFileSize is 5MB.

PageBufferSize

This is an integer value specified in kilobytes (KB). PageBufferSize specifies the chunk size that ISRA will use to transfer page data to and from IS. The default value is 64 KB. Specifying a higher value will require more memory for the Application Server process, and a low PageBufferSize will mean more trips to IS. The value should be set to an average page size on the target IS.

CacheRefreshInterval

This is an integer value specified in minutes. ISRA stores meta-data information, such as Document class, Indices and menu details in a local cache for faster retrieval. ISRA refreshes the cache information based on the CacheRefreshInterval value. The default value is 30 minutes.

CacheUser/CacheUserPassword

This is the name of the user that will be used to configure ISRA Cache. If there is no value set for this parameter then ISRA will use the name and password of the first user who logs into IS through ISRA to build its Cache.

Note	The CacheUser name has to be either empty or a valid IS user name otherwise access to the IS via ISRA will fail.

DeploymentInstance

This is the instance number of ISRA that is being deployed. It is a user defined number between 1 and 10. The default value for this parameter is 1 when none is specified. The maximum is 10, which means that 10 different instances of ISRA can be deployed on a single machine.

Each deployment/JNDI of ISRA on the same Web/Application server requires its own instance number. For example, you have 2 ISRA applications deployed on the same Web/Application server. Each deployment would require its own instance number and JNDI name. This number is used on the IS server to differentiate between multiple connections from the same IP address of the Web/Application server.

PCHLogging

This is a String parameter to enable/disable PCH logging in ISRA. The default value for this is disabled**.**

AllowAnonymousUser

It's a Boolean value to allow Anonymous user logon through LDAP, when blank password is passed from user/client. The default value of this parameter is false.

RPCLogging

This is an integer representing the RPC logging level. The valid values are:

RPCLogging	Description
0	Exceptions and Warnings
1	Info
2	Debug Level

Click **RPCLogging**. The default Value of RPCLogging is 1. It can be changed to other valid values according to the operational environment.

Configuring Oracle 10g-Specific Parameters (Optional)

Once the configurable properties are set for ISRA, the Application Server-specific parameters can be configured. In case of Oracle 10g server, the properties that can be specified are:

- maxConnections
- minConnections
- scheme
- waitTimeout

To configure the above properties modify the **oc4j-ra.xml** file present in the location `<drive>:\your_directory\j2ee\home\application-deployments\default\ISRA\`. Set the maxConnections, minConnections, scheme, and waitTimeout

maxConnections

This property represents the maximum number of managed connections that can be created by the ManagedConnectionFactory. After this number is reached, no new connections are created. If no value is specified then the number of connections can grow indefinitely.

minConnections

This parameter represents minimum number of managed connections maintained by the Application Server. If minConnections is greater than 0, the specified number of connections are opened on initialization of OC4J. OC4J may not be able to open the connections, if necessary information is unavailable at initialization time. For instance, if the connection requires a JNDI lookup, it cannot be created because JNDI information is not available until initialization is complete. The default value is 0.

scheme

This property specifies how OC4J handles connection requests after the maximum permitted number of connections is reached. The user must specify one of the following values:

- dynamic: OC4J always creates a new connection and returns it to the application, even if this violates the maximum limit. When these limit-violating connections are closed, they are destroyed instead of being returned to the connection pool.

Note	OC4J does not destroy pooled connections upon close of connection unless the pool size is above the maximum limit specified in the maxConnections property.

- fixed: OC4J raises an exception when the application requests a connection and the maximum limit has been reached.
- fixed wait: OC4J blocks the application's connection request until an in-use connection is returned to the pool. If `waitTimeout` is specified, OC4J throws an exception in case no connection becomes available within the specified time limit.

waitTimeout

This property represents the maximum number of seconds that OC4J waits for an available connection if `maxConnections` has been exceeded and the `fixed_wait` scheme is in effect. In all other cases, this property is ignored.

Note	If the user makes no waitTimeout specification, the default behavior is not to time out.

Configuring Multiple IS Servers with ISRA

To configure ISRA to access multiple IS servers:

1. Deploy a new ISRA instance for each IS that you want to connect. Before deploying the second (and subsequent) ISRA, rename the **ISRA.rar** file. Observe that the new ISRA will overwrite the previously deployed ISRA configuration settings if the .rar file is not renamed.
2. Ensure that the renamed **ISRA.rar** has the .rar file extension.
3. Configure the new ISRA and enter a DomainName and OrganizationName in **ra.xml** before deployment for connecting to the target IS.

4
Configuring and Deploying ISRA Sample Application

The ISRA Sample Application is packaged as an Enterprise Application Archive File (**ISRASample.ear**). It consists of:

- A Web module (**SampleWEB.war**)
- Deployment Descriptor (**Web.xml**)

The ISRA Sample Application can be deployed on a J2EE 1.3 compliant Application Server. This chapter illustrates the deployment and configuration of the Sample Application on Oracle 10g Application Server platform.

Note ISRA product media contains FileNet Image Viewer, which can be used to display the TIFF, JPEG, BMP, and other supported file formats on a Java-enabled browser.

This Sample Application is intended solely for illustrative purposes, and it should not be expected to perform useful work, or be used for production deployment. This Sample Application is to be used strictly as reference material.

Configuring Sample Application

This section describes how to deploy the Sample Application on Oracle Server to access ISRA in a managed environment. It is assumed that ISRA is deployed and configured for the target IS.

1. Extract ISRASampleWEB.war from ISRASample.ear.
2. Extract **web.xml** from **ISRASampleWEB.war**
3. Change param-value for "LIBRARY_NAMES" to

```
<param-value>ISCF</param-value>
```

Note The LIBRARY_NAMES property is mandatory and it should be the same as the **JNDI Binding Path** specified for the configured ISRA ConnectionFactory.

LIBRARY_NAMES is the name of the ConnectionFactory. Provide the JNDI name of the ISRA Connection Factory that the ISRA Sample Application uses to access IS resources.

The default value of LIBRARY_NAMES is ISCF. It can be changed according to the operational environment. Multiple Connection Factory names can be specified by using comma (,) as a separator. For example: ISCF, ISCF2.

4. To enable extended annotation functionality modify the following parameters in **web.xml**:

   i. Change env-entry-value for "DOCCLASSNAME" to the document class configured in the IS for digital signatures.

   ```
   <env-entry-value>digDocClass</env-entry-value>
   ```

   ii. Change env-entry-value for "MAXROWS" to the number of records to be fetched from the given document class.

   ```
   <env-entry-value>200</env-entry-value>
   ```

5. To enable Remote Printing functionality modify the following parameters in **web.xml**:

   i. Change env-entry-value for "USEPRINTVIEWOPTION" to either Yes or No. This value will determine whether to honor the print/view preference set in the **web.xml** or to take the value returned by ViewOne. Default value is No.

   ```
   <env-entry-value>No</env-entry-value>
   ```

   ii. Change env-entry-value for "PRINTVIEWOPTION" to either View Only =1, Print Only =2, Print/View =3. This value indicates the value of Print/View. The default value is 3.

   ```
   <env-entry-value>3</env-entry-value>
   ```

Note If the PRINTVIEWOPTION is set to 3 (default) then the sticky note would be saved as a normal sticky note. If PRINTVIEWOPTION value is specified as 1 or 2 then the annotations will be saved as an extended annotation (***Extended annotations*** *are non-standard annotations which are saved with a class name parameter (F_CLASSNAME) of "Proprietary", a class id property (CLASS_ID) of {A91E5DF2-6B7B-11D1-B6D7-00609705F027} and a subclass name property (F_SUBCLASS) that describes the annotation*).

The value of PRINTVIEWOPTION would be honored for each sticky note individually, and not for all the sticky notes on a document as a whole.

Thus, the setting for PRINTVIEWOPTION would be processed for either a new annotation being added or an existing annotation being modified.

---

6. Update **web.xml** in **ISRASampleWEB.war**
7. Update **ISRASampleWEB.war** in **ISRASample.ear**

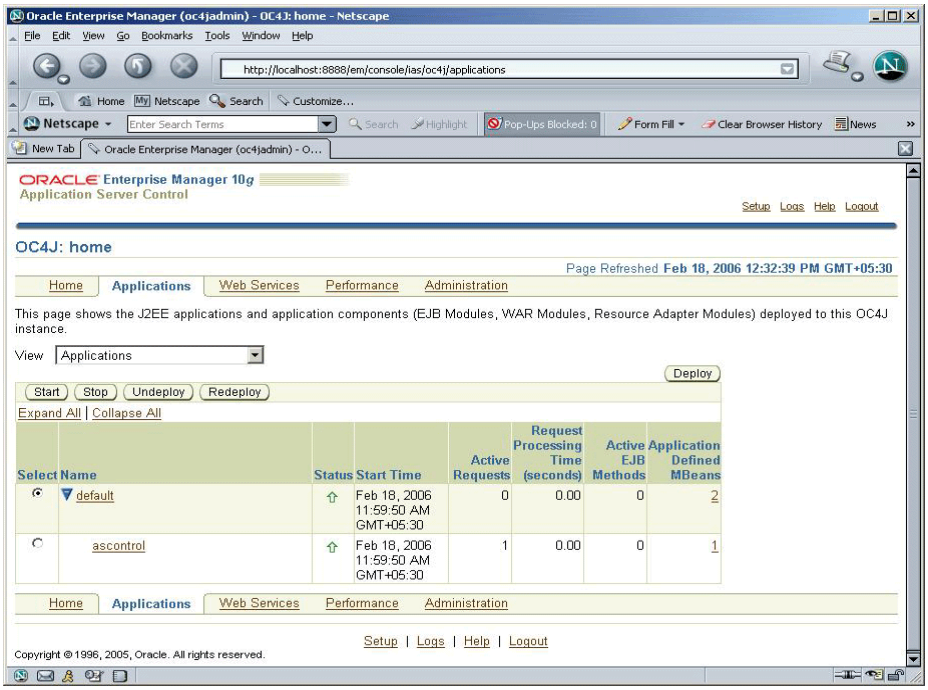
Deploying the Sample Application

Deployment of the Sample Application allows testing the connectivity and functionality of the ISRA connector. This step is optional. Developers can review the source code of the Sample Application to see how certain portions of the ISRA interface are used by the Sample Application. The source code can be found in the following location:

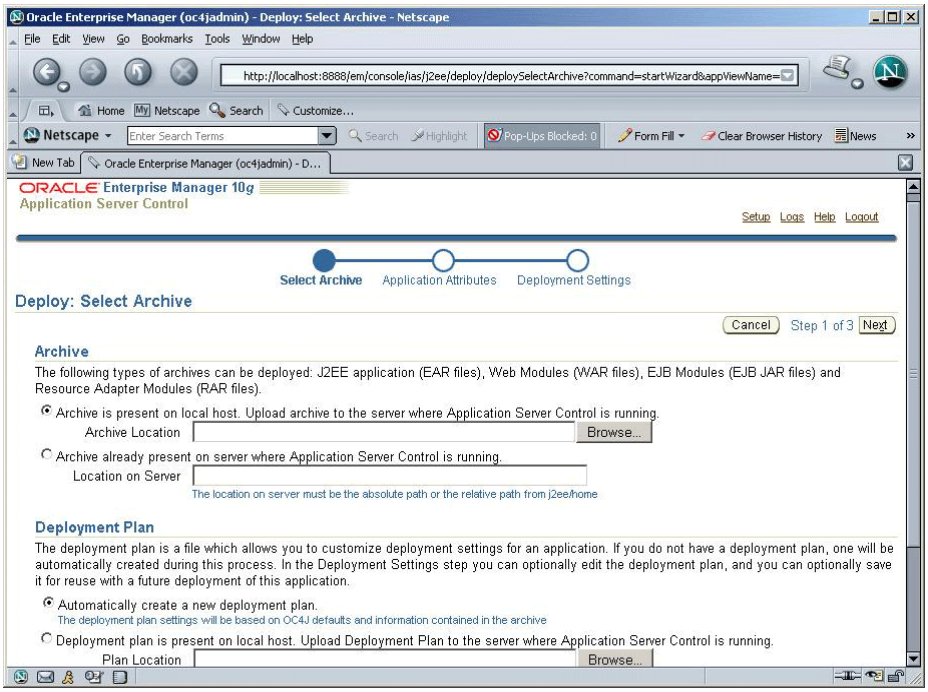
```
<Drive>:\fnsw\isra321\sample\source
```

To deploy the ISRA Sample Application, perform the following steps:

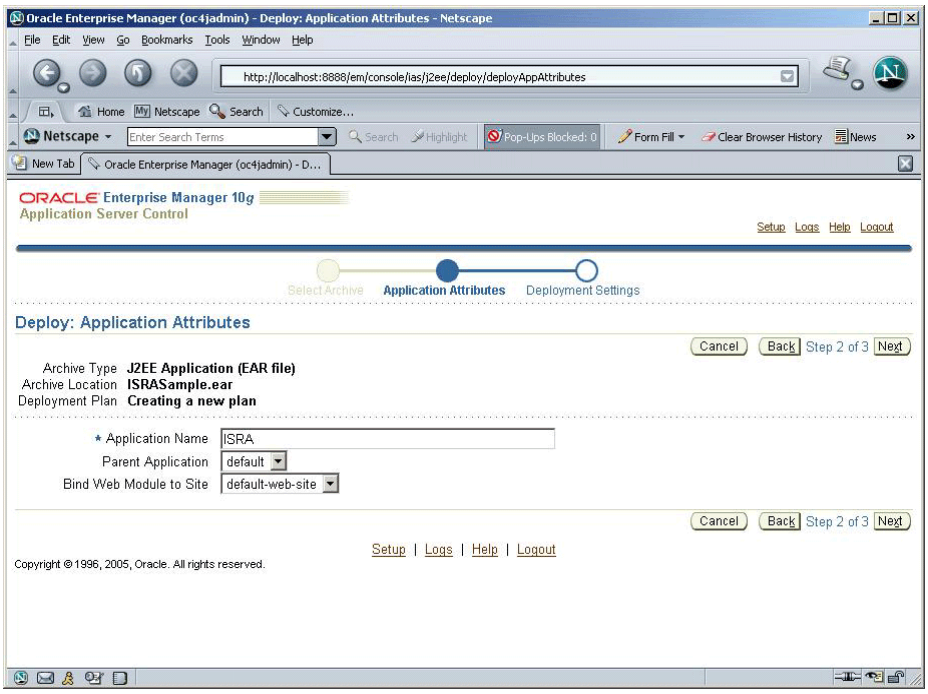
1. Launch a Web browser and enter the URL as `http://localhost:<Port number>/em` in the Address bar to start the Oracle 10g Application Server console.
2. Login to the Oracle 10g Application Server console.
3. Click **Applications** tab. The following screen appears:



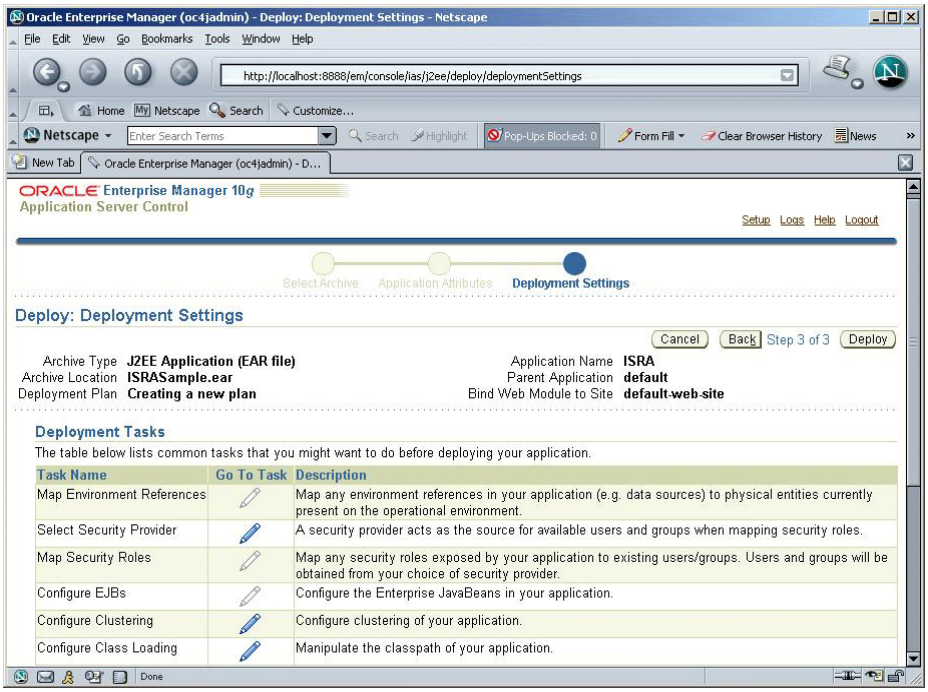
4. Click **Deploy**.



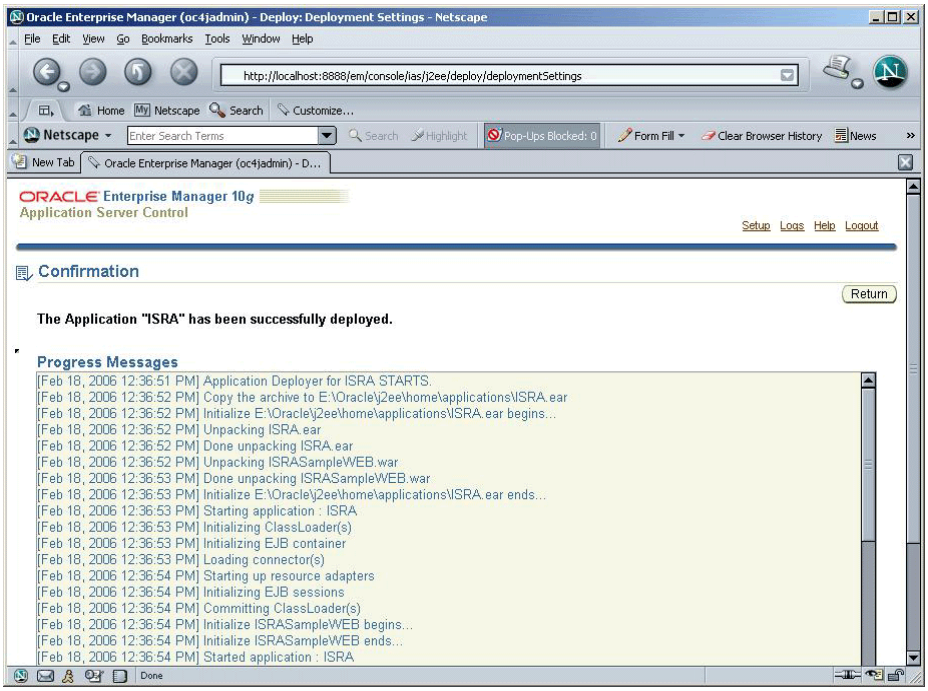
5. Click **Browse**. Navigate to the **ISRASample.ear** file under the ISRA installed directory.
6. Click **Next**. The following screen appears:



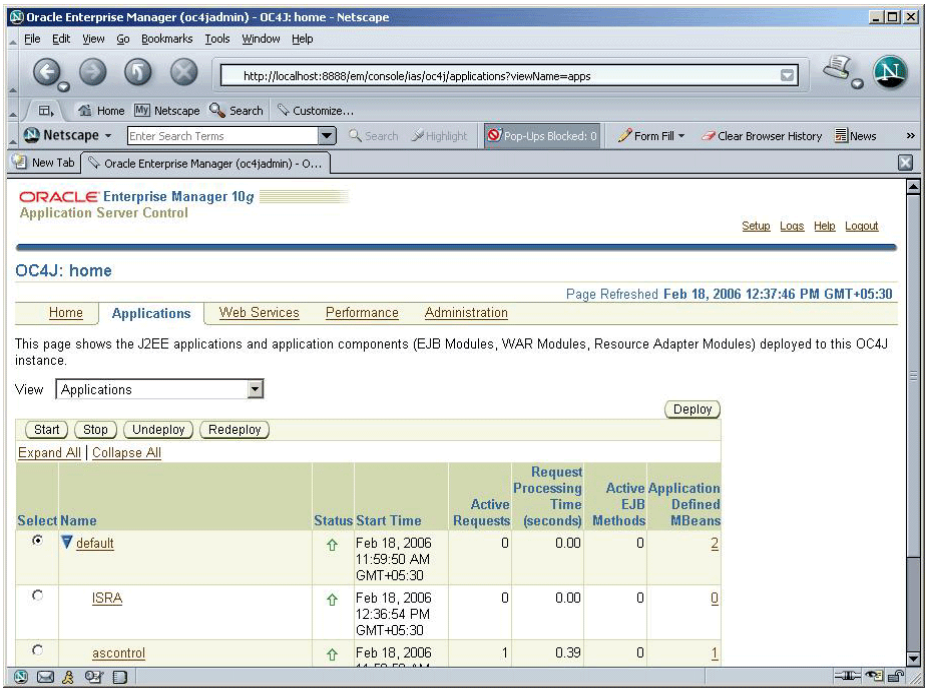
7. Enter the **Application Name** and click **Next**.



8. Click **Deploy**. The Confirmation screen appears:



9. Click **Return**. The following screen appears:



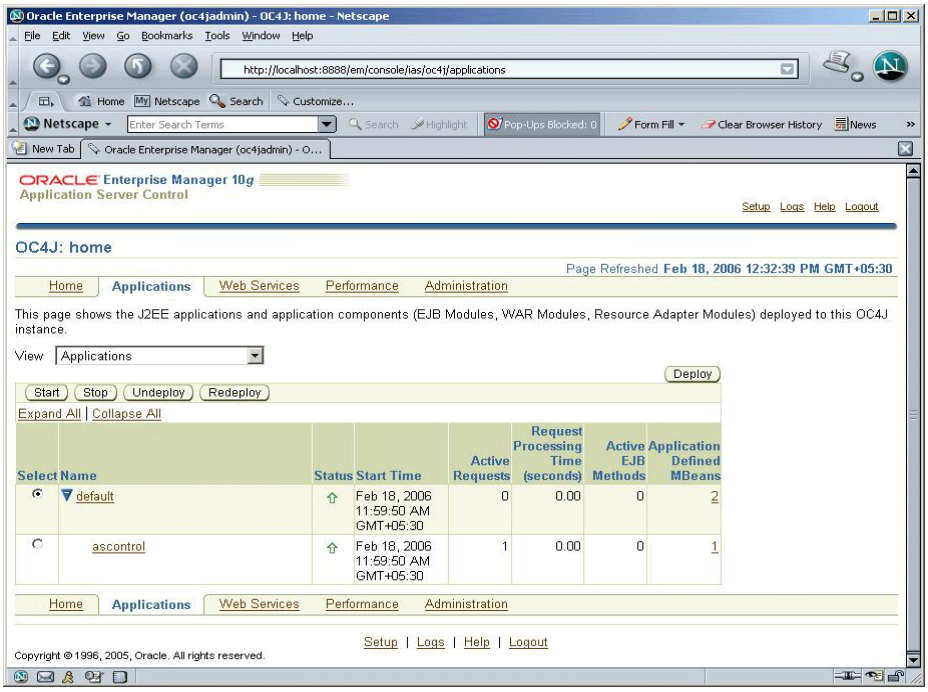
This completes the deployment of the Sample Application

Deployment of the FileNet Image Viewer

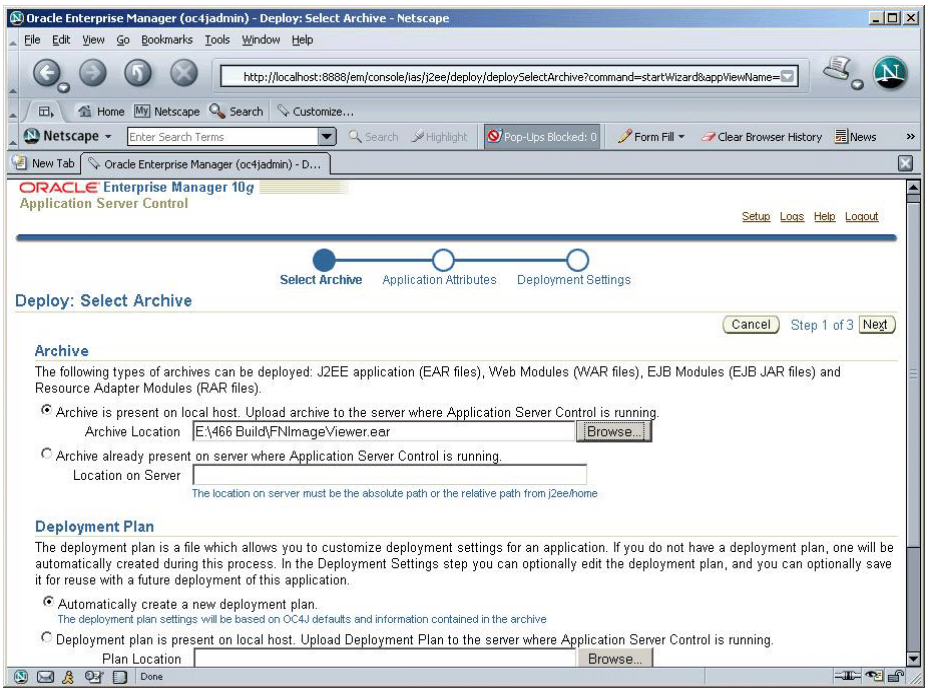
This section describes how to deploy the FileNet Image Viewer. This viewer is used by the ISRA Sample Application to display documents of specific mime types (TIFF, JPEG and BMP). Skip this section, if you do not want the FileNet Image Viewer configured with the ISRA Sample Application.

To deploy FileNet Image Viewer:

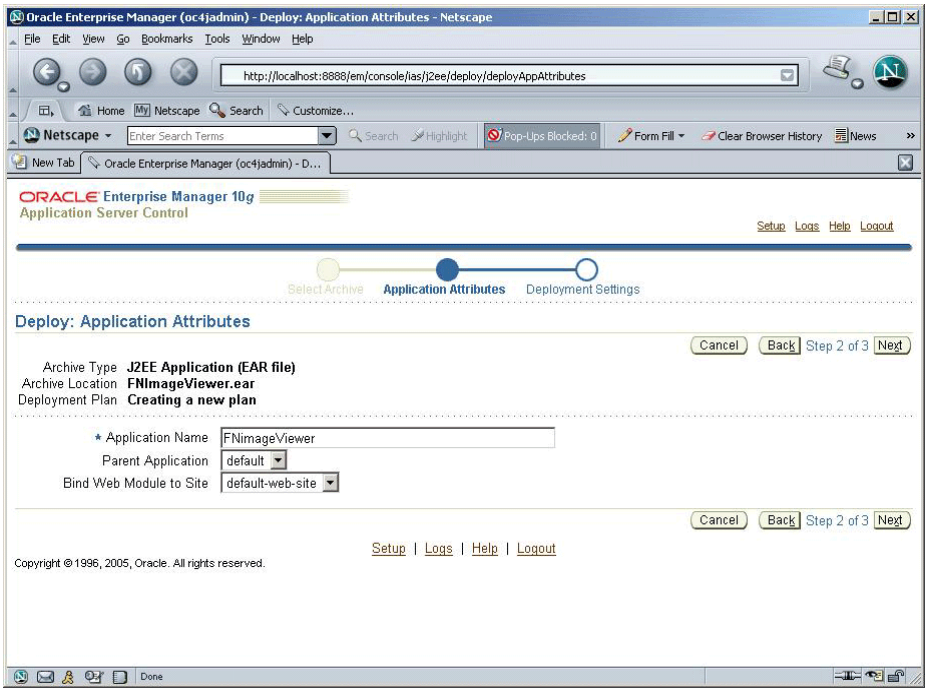
1. Launch a Web browser and enter the URL as `http://localhost:<Port number>/em` in the Address bar to start the Oracle 10g Application Server console.
2. Login to the Oracle 10g Application Server console.
3. Click **Applications** tab. The following screen appears:



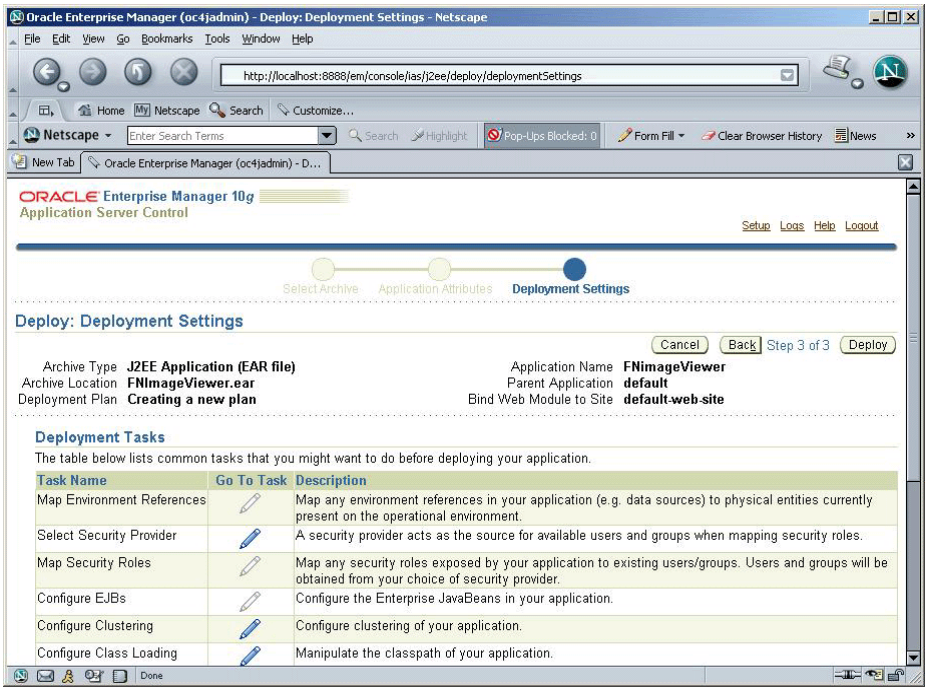
4. Click **Deploy**.



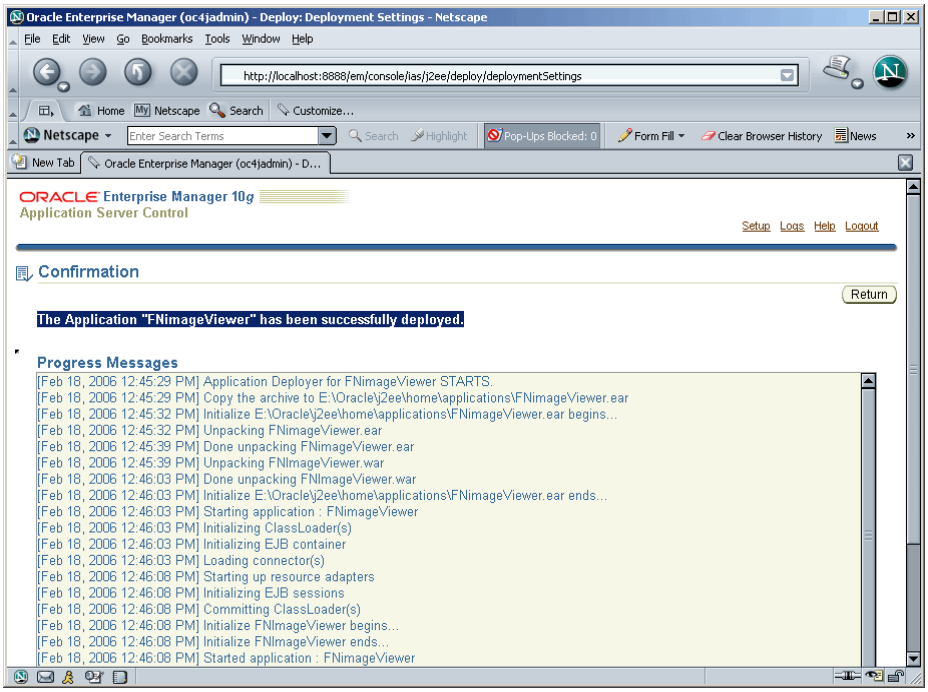
5. Click **Browse**. Navigate to the **FNImageViewer.ear** file under the ISRA installed directory.
6. Click **Next**. The following screen appears:



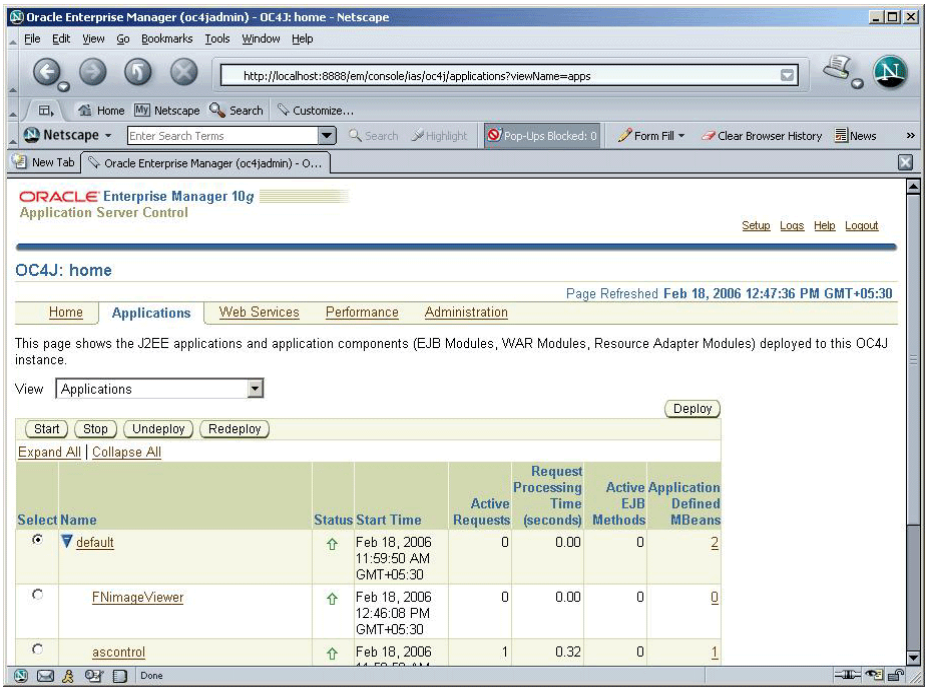
7. Enter the **Application Name** and click **Next**.



8. Click **Deploy**. The Confirmation screen appears:



9. Click **Return**. The following screen appears:



This completes the deployment of FileNet Image Viewer.

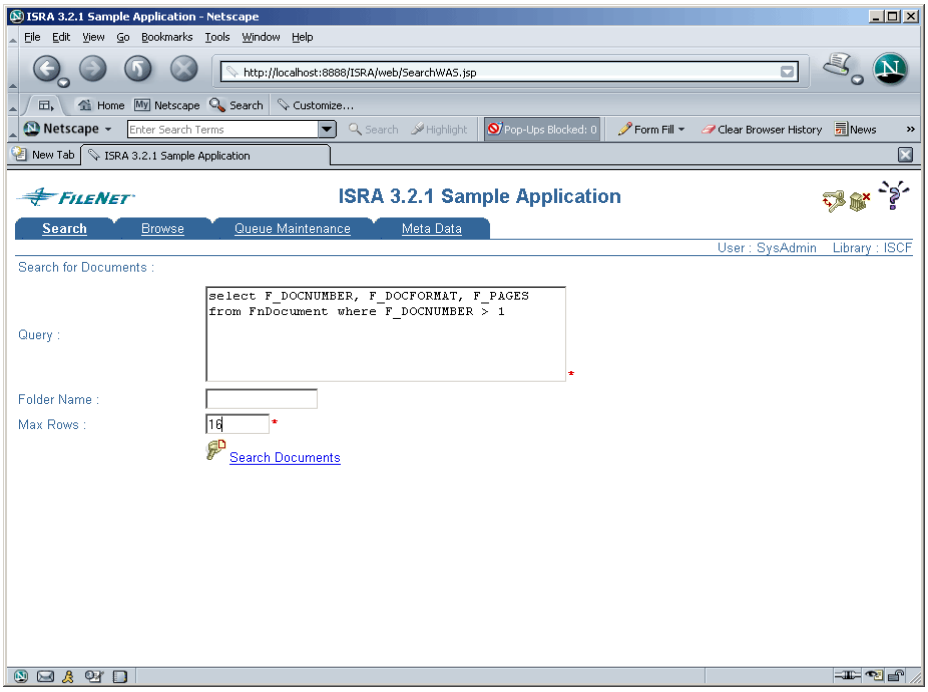
Testing Sample Application Deployment

After the ISRA Sample Application is started, the steps to verify the deployment and access the ISRA Sample Application are:

1. Open a Web browser and enter the URL `http://<server:port>/context_root`.

   The Web application context_root is case sensitive. On an Oracle 10g Server, the default port number is 8888. The default context_root of the Sample Application is ISRA.

2. Enter valid user name and password for the configured IS (check configured ConnectionFactory for IS details) and click **Logon**.



3. Click the **Help** icon on the Sample Application page for details on the interaction parameters and options.

5
LDAP Configuration

ISRA 3.2.1 supports LDAP Authentication by third party Servers in addition to direct IS logging.

It is necessary to map users present on the LDAP Server onto the IS, before using LDAP Authentication.

Note The installation of LDAP Server and creation of users on the LDAP machine are out of the scope of this document.

FileNet provides utilities for mapping users existing in the LDAP Server onto the IS. These utilities are part of the IS package and are to be executed on the machines running the LDAP Server and the IS.

FileNet provides two utilities – ldap_export and ldap_import. The ldap_export utility is used to export names of the users on the LDAP Server onto an xml file.

The ldap_import utility imports the names of the users that have been mapped onto the xml file and creates corresponding users on the IS. It is mandatory that the ldap_import algorithm as well as the xml file be present on the same machines where IS exists.

The ldap_import algorithm uses a hashing algorithm to generate the user passwords for the IS.

Mapping Users Existing on LDAP Server onto IS

To configure user IDs in a FileNet IS library:

1. Create user entries on the LDAP server. The user attribute “uid” will be used to create a user on IS. The rest of the attributes (including “password”) can be assigned any value.
2. Use the LDAP_EXP.exe utility to export the user entries created into an XML file.
3. LDAP_EXP program has the following parameters options:

Option	Description
s <server>	LDAP server name or IP address, required value.
p <port>	LDAP port number, optional value, 389 is default.
d <binddn>	LDAP administrator bind domain name (DN), required value.
w <bindpw>	LDAP administrator bind password, required value.
b <basedn>	LDAP Base DN, optional value.
g <grouplist filename>	Group list file for input, optional value.
o <XML output filename>	XML output filename, optional value.
l <log filename>	Log Filename to use, optional value.
x <grouplist filename>	Group list file name for output, optional value.
v	Verbose log output.
c1 <user object class>	Class type for User, default is 'person'.
c2 <group object class>	Class type for Group, default is 'groupofuniquenames'.
a1 <user attribute>	Attribute to be used for user; default is 'dn'.
a2 <group attribute>	Attribute to be used for group; default is 'dn'
a3 <member attribute>	Attribute to be used for member; default is 'uniqueMember'.

Note User may use /?, -?, /h or -h to generate help.

Usage of exporting users from LDAP server into the XML file:

```
C:\>ldap_exp.exe -s filenetsrv -b "dc=cm, dc=filenet,
dc=com" -d "admin" -w ""
```

4. Use the LDAP_IMPORT.exe for IS libraries to import the user entries from XML file into the specified FileNet IS library.

   Parameters:

/?	Help screen.
/h<host>[:organization]	IS host or domain name, organization.
/u<id> (used with /p)	Authorized IS user name
/p"<pwd>" (used with /u)	Encrypted IS user password.
/i<file>	XML input file.

Example Usage

```
C:\>ldap_import/hIMGSERV:FileNet/ildap_exp.xml
```

Note Options are not case sensitive. All the information or error messages are logged to the system log or the file 'ldap_importyyyymmddlog.txt'. If Username and password are not specified in the command, it prompts for username and password.

5. The FileNet users thus created will have a password that is generated from the corresponding user IDs.

Changing ISRA Specific Parameters for LDAP

Configurable ra.xml Entities

The configurable properties to be set (modified) in **ra.xml** are:

- LdapImplClassName
- LdapImplClassString

LdapImplClassName

It is the name of the Implementation class for LDAP Authentication. This parameter contains the complete path of the LDAP Implementation class to be entered along with the LDAP Implementation Class Name.

The default value is '`com.filenet.is.ra.fnis.FN_IS_IPlanetImpl`'

In addition, LDAP implementation has been provided for Microsoft Active Directory Server. The value of the property for this LDAP Server is - `com.filenet.is.ra.fnis.FN_IS_ActiveDirImpl`.

LdapImplClassString

This parameter is a general string that accepts all the LDAP Server-specific parameters required for authentication. It takes the following inputs:

- Server Name – Name of the Server/ Machine on which LDAP Server exists.
- Port Number – LDAP Server's port number being used for transactions.
- User Path – Directory under which the users have been filed in the LDAP Directory Server

The three parameters have to be semicolon separated and in the order - server name followed by port number followed by user path. An example of LDAPImplClassString is:

- **For Active Directory**

  filenetserver;389;isra.odc.filenet.com

- **For IPlanet**

  filenetserver;389;uid= user1, ou=ISRA, dc=odc,dc=filenet,dc=com

- **For Novell NDS**

  filenetserver;389;cn=user1, ou= ISRA, o=FileNet

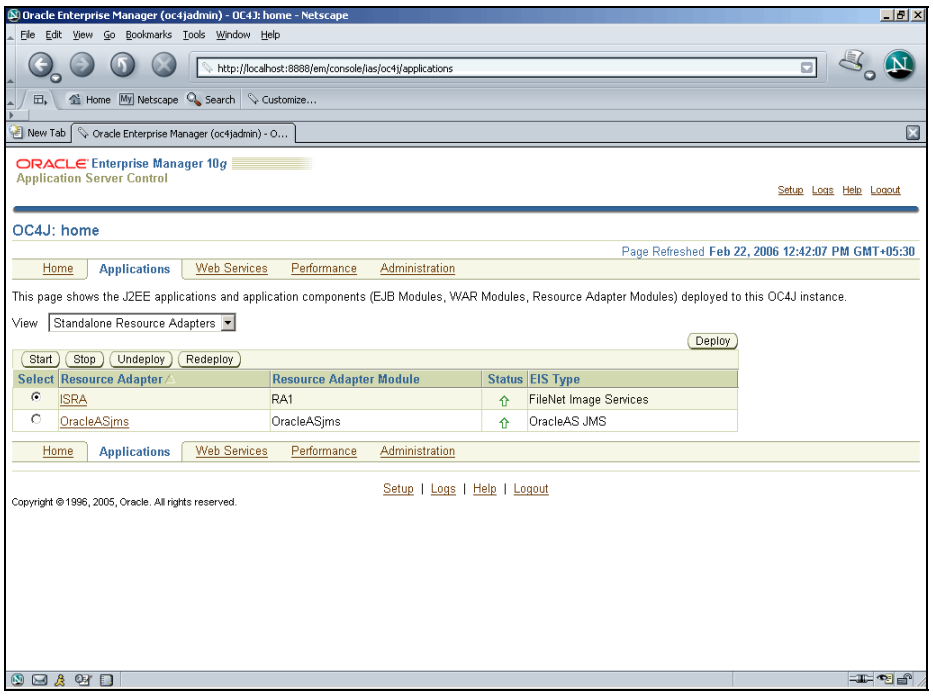
6
UnDeployment

This section describes the undeployment procedure to remove the ISRA and the Sample Application from the Oracle 10g Application Server.

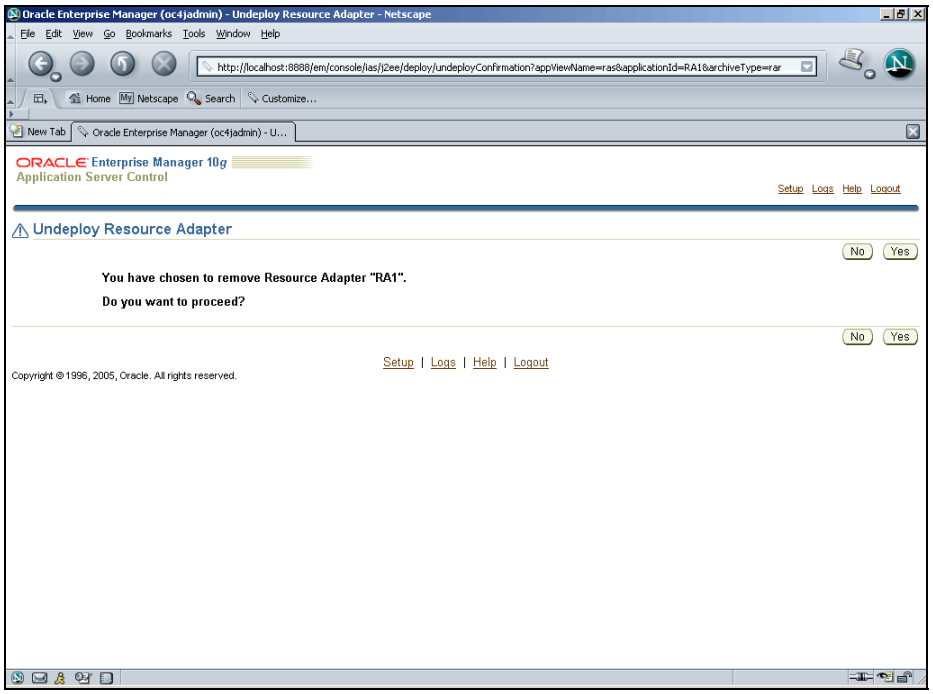
UnDeployment of ISRA

To undeploy ISRA using the Oracle 10g Application Server Console:

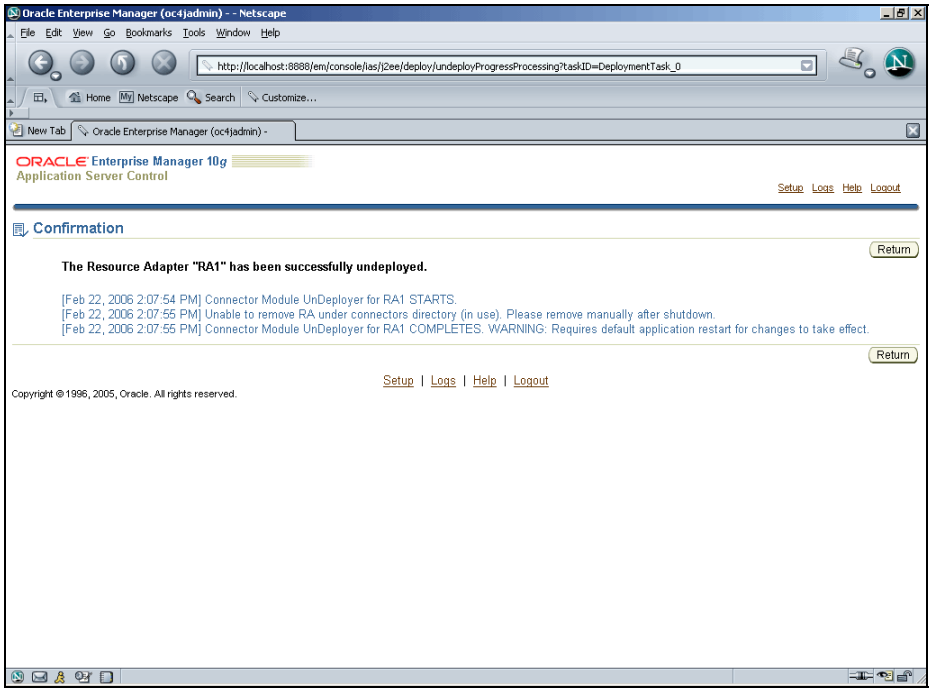
1. Click **Applications** tab.
2. Select **Standalone Resource Adapters** value from the **View** drop down box. The following screen appears:



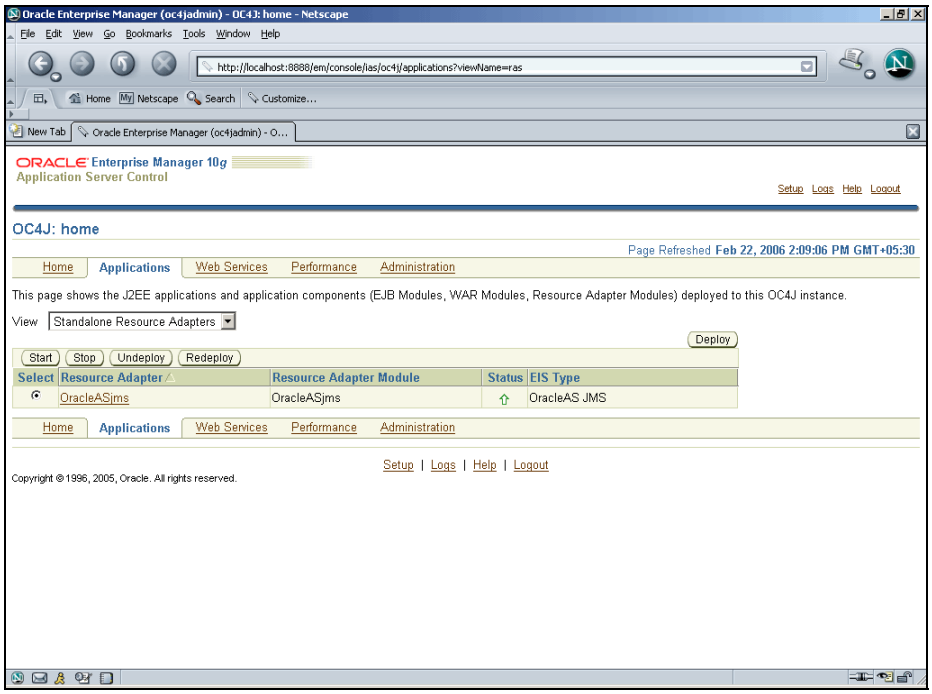
3. Select I**SRA** and click **Stop** to stop the ISRA resource adapter.
4. Click **Undeploy**. The following message appears



5. Click **Yes**. The Confirmation screen appears:



6. Click **Return** to verify that the selected ISRA application is undeployed.

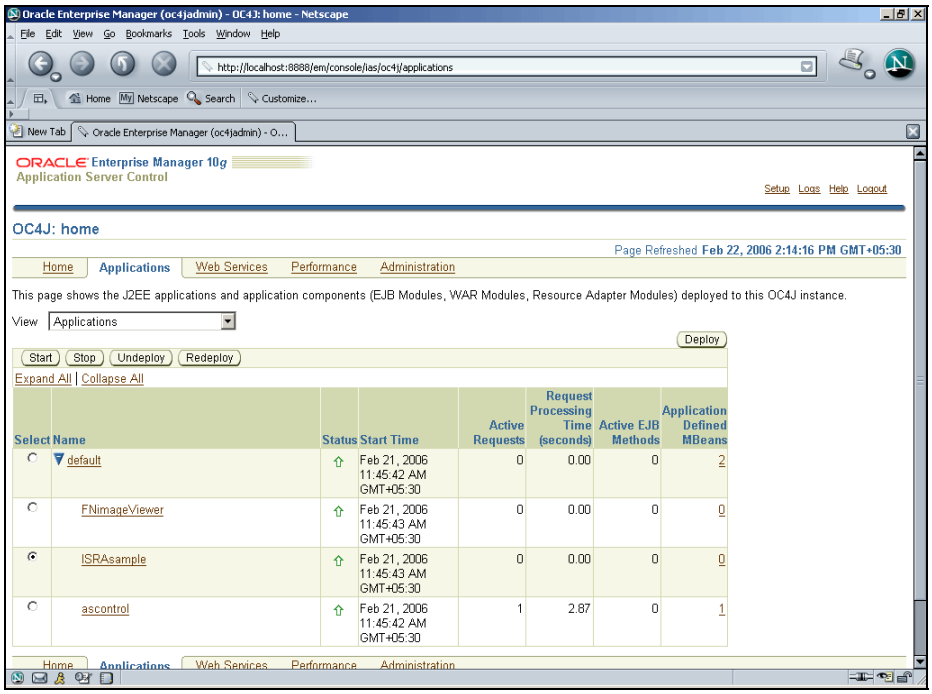


This completes the undeployment of ISRA resource adapter.

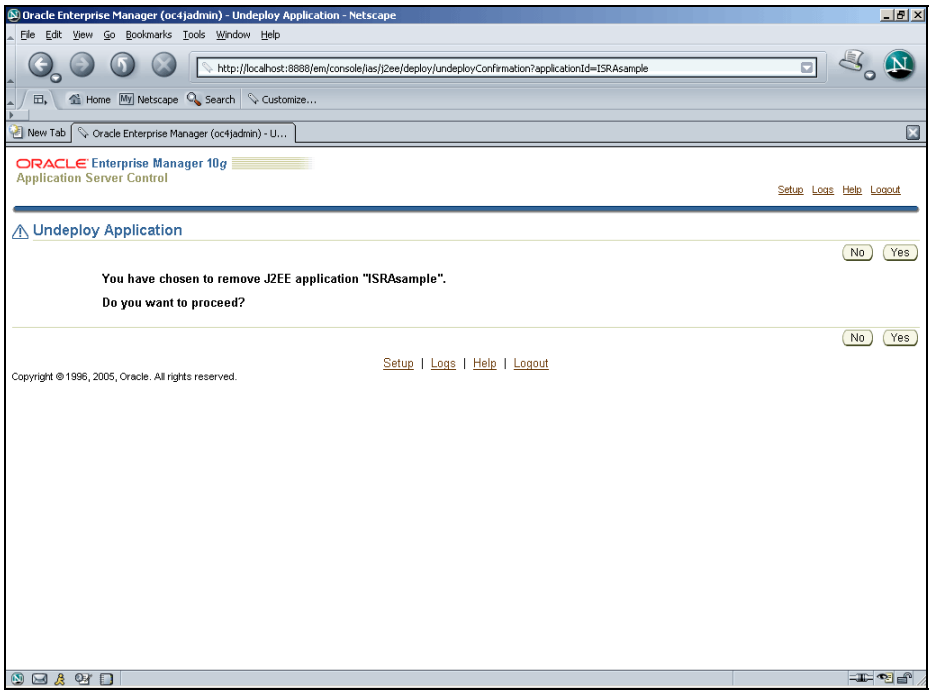
UnDeployment of ISRA Sample Application

To undeploy ISRA Sample application using the Oracle 10g Application Server Console:

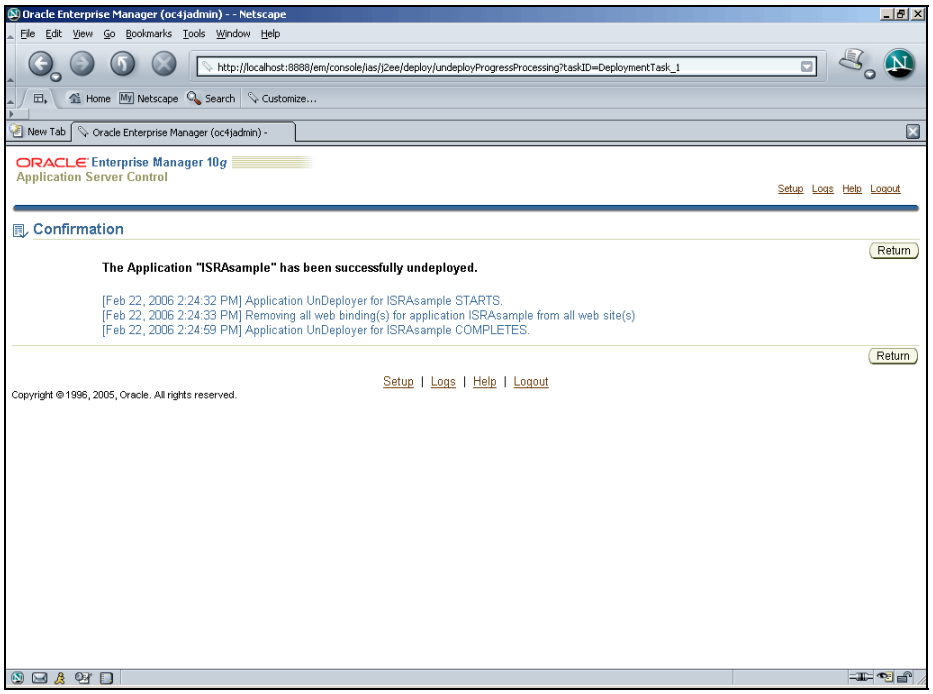
1. Click **Applications** tab.
2. Select **Application** value from the **View** dropdown box. The following screen appears:



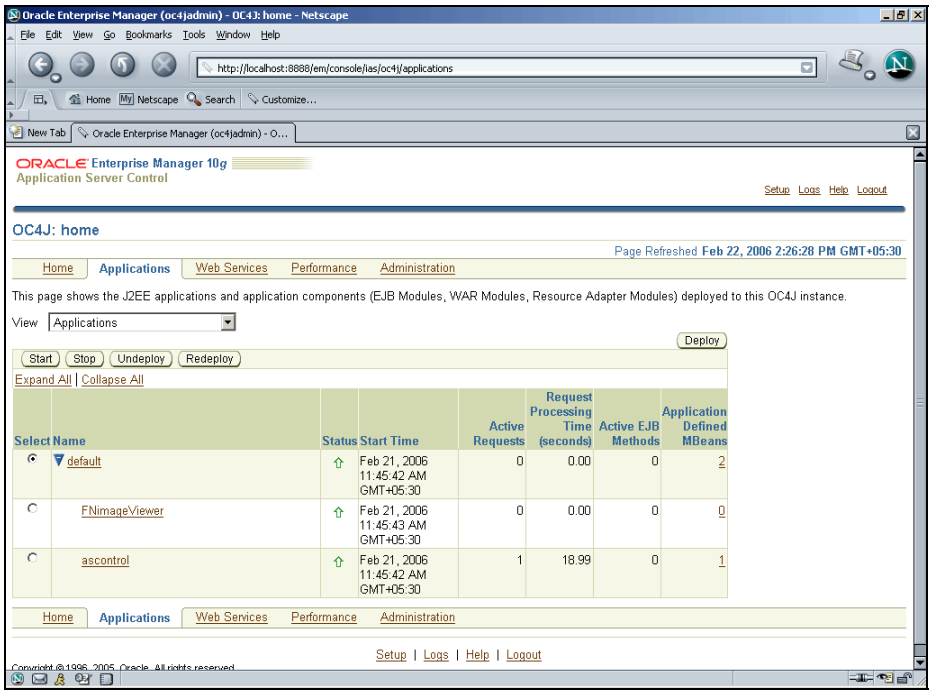
3. Select the ISRA Sample application and click **Stop** to stop the selected application.
4. Click **Undeploy**. The following message appears



5. Click **Yes**. The Confirmation screen appears:



6. Click **Return** to verify that the selected ISRA Sample application is undeployed.



This completes the undeployment of ISRA Sample application. The steps to undeploy FileNet Image Viewer are similar to the steps specified above for ISRA Sample Application.

7
Troubleshooting

This section describes how to troubleshoot ISRA.

Disabling NCH Broadcasts

ISRA users (application client) need to access IS libraries across routers on networks where broadcasts are disabled. This is done by creating alias entries for the IS libraries in the hosts file, where ISRA is deployed. ISRA must locate the IP address of the NCH server to find other IS services for an IS setup.

ISRA attempts to find the NCH server by generating broadcast packets, even if the NCH server was not reachable using broadcasts. User can disable NCH server location broadcasts to reduce broadcast traffic on the network.

User may want to disable NCH broadcasts, if:

- Routers are present in between servers,
- Want no broadcast activity on the networks,
- Want to force a multi-homed server to use a specific IP address configured by the operating system network directory search facility.

To specify the alias in the hosts file:

1. Locate **hosts file** on the server. It is located in the `/etc` folder on UNIX/Linux systems. On a Microsoft Windows Server, it is located in the `\system32\drivers\etc` under the Windows installation directory.
2. Open the hosts file with a preferred text editor. If a hosts file does not exist, create a new file using a preferred text editor.
3. For each FileNet library that user needs to connect through ISRA, entries should be made in the hosts file as `<IP address of domain:organization> <domain-organization>-nch-server`, where:
    - `<IP address of domain:organization>` is IP address of a FileNet domain and organization identifying the target FileNet library system (NCH Server).
    - `<domain-organization>` is domain and organization name. The rules to follow while specifying the domain-organization name are:
        - Delete all characters except ASCII alphanumeric characters and hyphens.

- Convert all upper case characters to lower case.
- Insert a hyphen between the domain and organization names.
- Append nch-server as a literal.

For example, if a FileNet library has a domain, fn_is, and organization, FileNet, and its IP address is 123.45.6.78, the hosts file entry will be:

```
123.45.6.78 fnis-filenet-nch-server
```

Note The underscore character is removed from the fn_is domain name and the F and Net in the FileNet organization name are converted to lower case.

Appendix A

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Appendix B

ra.xml

```
<?xml version="1.0" encoding="UTF-8"?>

<!DOCTYPE connector PUBLIC '-//Sun Microsystems, Inc.//DTD Connector
1.0//EN' 'http://java.sun.com/dtd/connector_1_0.dtd'>

<connector>
  <display-name>ISRA</display-name>
  <vendor-name>FileNet</vendor-name>
  <spec-version>1.0</spec-version>
  <eis-type>FileNet Image Services</eis-type>
  <version>3.2.1</version>
  <license>
    <license-required>false</license-required>
  </license>
  <resourceadapter>
    <managedconnectionfactory-
class>com.filenet.is.ra.spi.FN_IS_SpiManagedConnectionFactory</managedco
nnectionfactory-class>
    <connectionfactory-
interface>javax.resource.cci.ConnectionFactory</connectionfactory-
interface>
    <connectionfactory-impl-
class>com.filenet.is.ra.cci.FN_IS_CciConnectionFactory</connectionfactor
y-impl-class>
    <connection-interface>javax.resource.cci.Connection</connection-
interface>
    <connection-impl-
class>com.filenet.is.ra.cci.FN_IS_CciConnection</connection-impl-class>
    <transaction-support>NoTransaction</transaction-support>
    <config-property>
      <description>Domain name of the Image Services
Server</description>
      <config-property-name>domainName</config-property-name>
      <config-property-type>java.lang.String</config-property-type>
      <config-property-value>FileNetIS</config-property-value>
    </config-property>
    <config-property>
      <description>Organization name of the Image Services
Server</description>
      <config-property-name>organizationName</config-property-name>
      <config-property-type>java.lang.String</config-property-type>
      <config-property-value>FileNet</config-property-value>
    </config-property>
    <config-property>
      <description>0-Exceptions and Warnings; 1-Info; 2-
Debug_Level</description>
```

```
      <config-property-name>loggingLevel</config-property-name>
      <config-property-type>java.lang.Integer</config-property-type>
      <config-property-value>0</config-property-value>
    </config-property>
    <config-property>
      <description>0-No Logging; 1-Console Logging; 2-File Logging; 3-
Both(File and console)</description>
      <config-property-name>loggingMode</config-property-name>
      <config-property-type>java.lang.Integer</config-property-type>
      <config-property-value>3</config-property-value>
    </config-property>
    <config-property>
      <description>Page data fetch size (in kilo bytes)</description>
      <config-property-name>pageBufferSize</config-property-name>
      <config-property-type>java.lang.Integer</config-property-type>
      <config-property-value>64</config-property-value>
    </config-property>
    <config-property>
      <description>Cache refresh interval(in minutes)</description>
      <config-property-name>cacheRefreshInterval</config-property-name>
      <config-property-type>java.lang.Integer</config-property-type>
      <config-property-value>30</config-property-value>
    </config-property>
    <config-property>
      <description>Name of the Product</description>
      <config-property-name>productName</config-property-name>
      <config-property-type>java.lang.String</config-property-type>
      <config-property-value>FileNet Image Services Resource
Adapter</config-property-value>
    </config-property>
    <config-property>
      <description>Product Version</description>
      <config-property-name>productVersion</config-property-name>
      <config-property-type>java.lang.String</config-property-type>
      <config-property-value>ISRA 3.2.1 Enterprise</config-property-
value>
    </config-property>
    <config-property>
      <description>ISRA Logfile name (can include path) </description>
      <config-property-name>logFileName</config-property-name>
      <config-property-type>java.lang.String</config-property-type>
      <config-property-value>ISRA.log</config-property-value>
    </config-property>
    <config-property>
       <description>Maximum Size of ISRA LogFile (in mega
bytes)</description>
        <config-property-name>logFileSize</config-property-name>
        <config-property-type>java.lang.Integer</config-property-type>
        <config-property-value>5</config-property-value>
    </config-property>
      <config-property>
               <description>LDAP Authentication Class Name</description>
          <config-property-name>ldapImplClassName</config-property-
name>
          <config-property-type>java.lang.String</config-property-type>
          <config-property-
value>com.filenet.is.ra.fnis.FN_IS_IPlanetImpl</config-property-value>
```

```
    </config-property>
    <config-property>
                <description>Server details for LDAP Authentication
</description>
           <config-property-name>ldapImplClassString</config-property-
name>
           <config-property-type>java.lang.String</config-property-type>
           <config-property-
value>filenetserver;389;ou=filenet,ou=people,dc=filenetroot</config-
property-value>
    </config-property>
    <config-property>
              <description>Inherently login through LDAP authentication
or not 0-Direct IS Login;1-LDAP Authentication</description>
         <config-property-name>inherentLogin</config-property-name>
         <config-property-type>java.lang.Integer</config-property-type>
         <config-property-value>0</config-property-value>
    </config-property>
    <config-property>
       <description>Name of the User that is used to create Cache for
ISRA</description>
        <config-property-name>cacheUser</config-property-name>
        <config-property-type>java.lang.String</config-property-type>
        <config-property-value>SysAdmin</config-property-value>
    </config-property>
    <config-property>
       <description>Password of the User that is used to create Cache
for ISRA</description>
        <config-property-name>cacheUserPassword</config-property-name>
        <config-property-type>java.lang.String</config-property-type>
        <config-property-value>SysAdmin</config-property-value>
    </config-property>
    <config-property>
       <description>ISRA instance that is currently being deployed on a
single machine; Min Value = 1, Max Value = 10</description>
        <config-property-name>deploymentInstance</config-property-name>
        <config-property-type>java.lang.Integer</config-property-type>
        <config-property-value>1</config-property-value>
    </config-property>
    <authentication-mechanism>
      <authentication-mechanism-type>BasicPassword</authentication-
mechanism-type>
      <credential-
interface>javax.resource.security.PasswordCredential</credential-
interface>
    </authentication-mechanism>
    <reauthentication-support>false</reauthentication-support>
  </resourceadapter>
</connector>
```

oc4j-ra.xml

```
<?xml version="1.0"?>
<!DOCTYPE oc4j-connector-factories PUBLIC "-//Oracle//DTD Oracle
Connector 9.04//EN" "http://xmlns.oracle.com/ias/dtds/oc4j-connector-
factories-9_04.dtd">

<oc4j-connector-factories>
      <connector-factory location="ISCF" connector-name="ISRA">
            <config-property name="domainName" value="DemoIS"/>
            <config-property name="organizationName" value="FileNet"/>
            <config-property name="loggingLevel" value="0"/>
            <config-property name="loggingMode" value="3"/>
            <config-property name="pageBufferSize" value="64"/>
            <config-property name="cacheRefreshInterval" value="30"/>
            <config-property name="productName" value="FileNet Image
            Services Resource Adapter"/>
            <config-property name="productVersion" value="ISRA3.2.1
            Enterprise"/>
            <config-property name="logFileName" value="ISRA.log"/>
            <config-property name="logFileSize" value="5"/>
      </connector-factory>
</oc4j-connector-factories>
```

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