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Image Services Resource Adapter

Installation and Deployment Guide

For IBM WebSphere Application Server Version 5

Release 3.2.1

April 2006

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About This Manual

This manual provides information about installing and configuring FileNet Image Services Resource Adapter (ISRA) 3.2.1 on IBM WebSphere Application Server 5.

Conventions Used in this 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 after installing ISRA 3.2.1. The path for FNImageViewer documentation is:

```
<ISRA-home>\ISRA321\FNImageViewer\docs
```

For all P8 System Manager related information, please refer to P8 System Manager documentation after installing ISRA 3.2.1. The path for P8 System Manager documentation is:

```
<ISRA-home>\ISRA321\SystemManager\docs
```

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ISRA Installation

This document describes how to install, deploy, and configure FileNet Image Services Resource Adapter (ISRA) version 3.2.1 on an IBM WebSphere Application Server version 5 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 necessary files and information for deployment on a supported Application Server.

ISRA is available in two different editions:

- View edition: Supports ISRA Read-only interactions.
- Enterprise edition: Supports additional interactions that include document creation, updating of document properties, inserting and retrieving of queue entries and saving annotations.

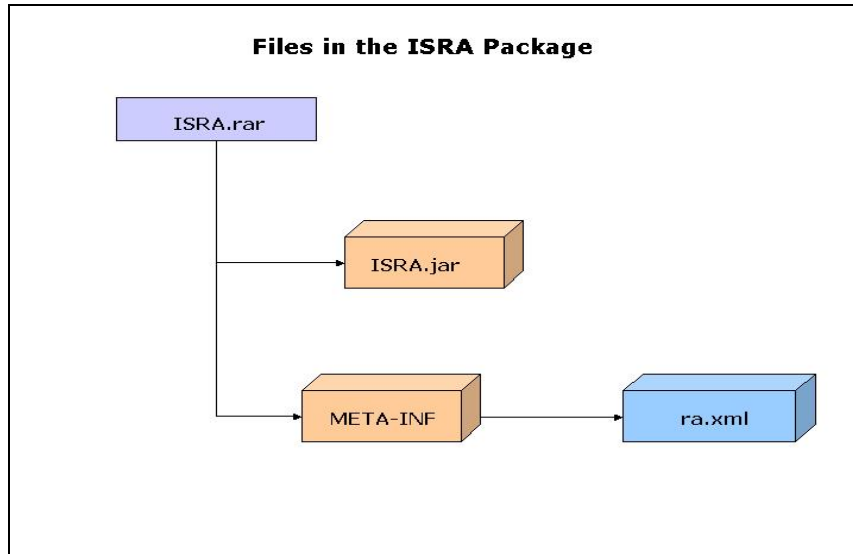
Resource Adapter Module

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

ISRA is installed from an executable installer file. To install ISRA:

Note The screenshots shown across 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.

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 HPUX:

- Using a preferred editor (for example, vi), edit the `/etc/pfsfstab` file by adding an entry similar to `/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 IBM AIX 5.1 and 5.2:

Perform this step only if CD-ROM device is not already mounted. Note that one 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 command `# mkdir /cdrom`

- 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 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.

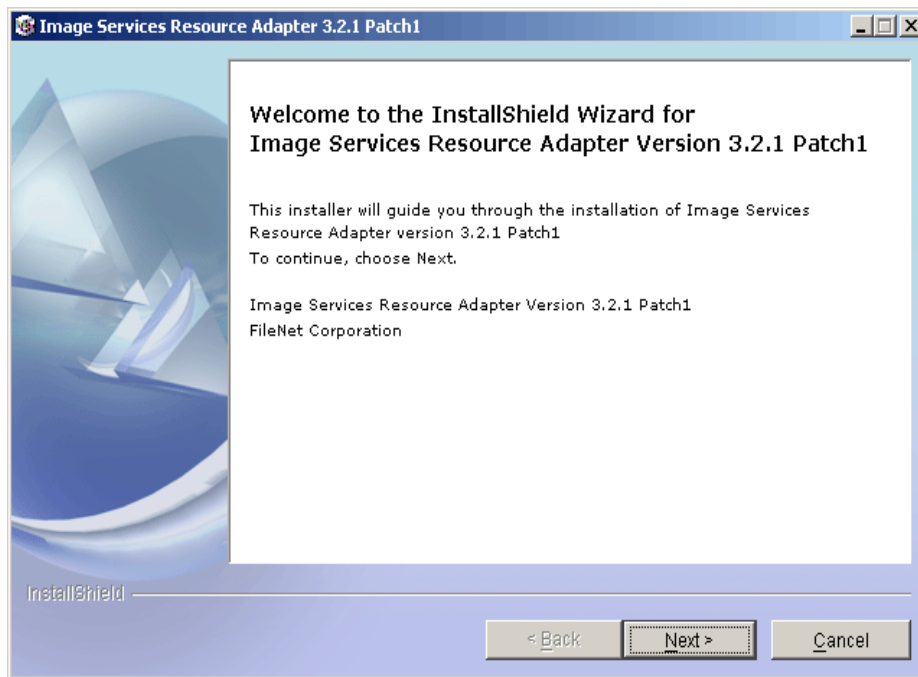
On Windows:

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

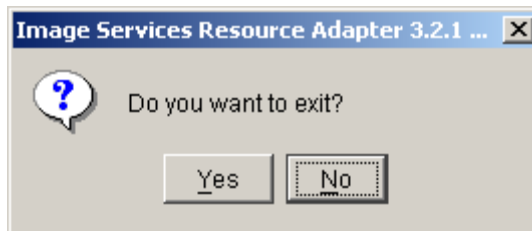
2. Launch the ISRA installer by executing `setup.bin` on HPUX and Solaris or `setup.exe` on Windows Server.
 - On HPUX, IBM AIX, Linux, or Solaris server or Linux navigate to the respective folder on the CD-ROM drive to locate `setup.bin`. To do this, type:

```
# cd cdrom/<HPUX, AIX, Solaris, Linux>
# ./setup.bin
```
 - On Windows Server, locate `setup.exe` in the Windows folder of the CD-ROM drive. Double-click to launch the ISRA installer.

The installation screen appears, as shown below:

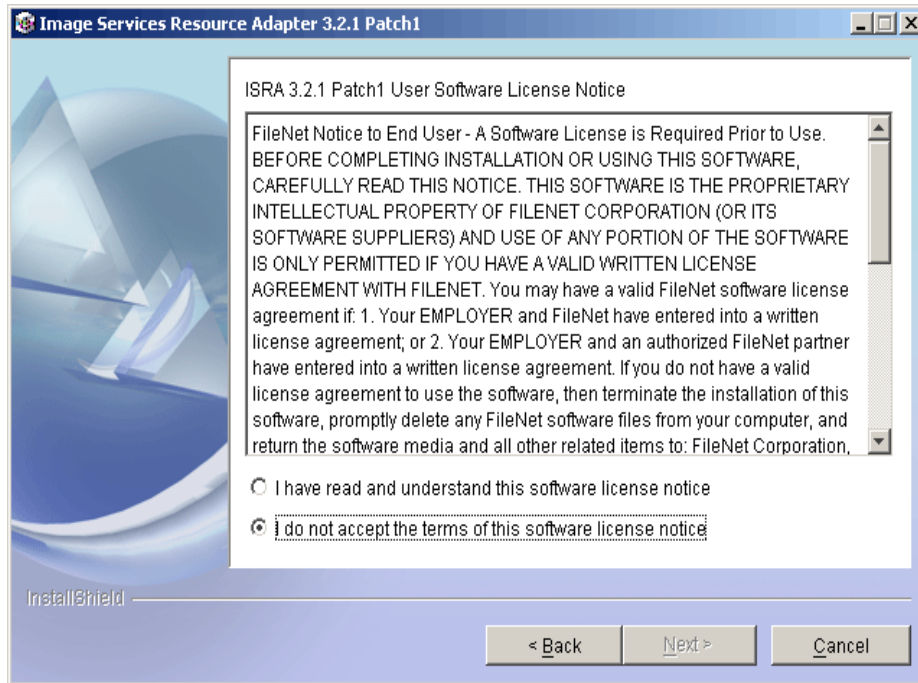


3. If user clicks **Cancel**, the following dialog box appears:

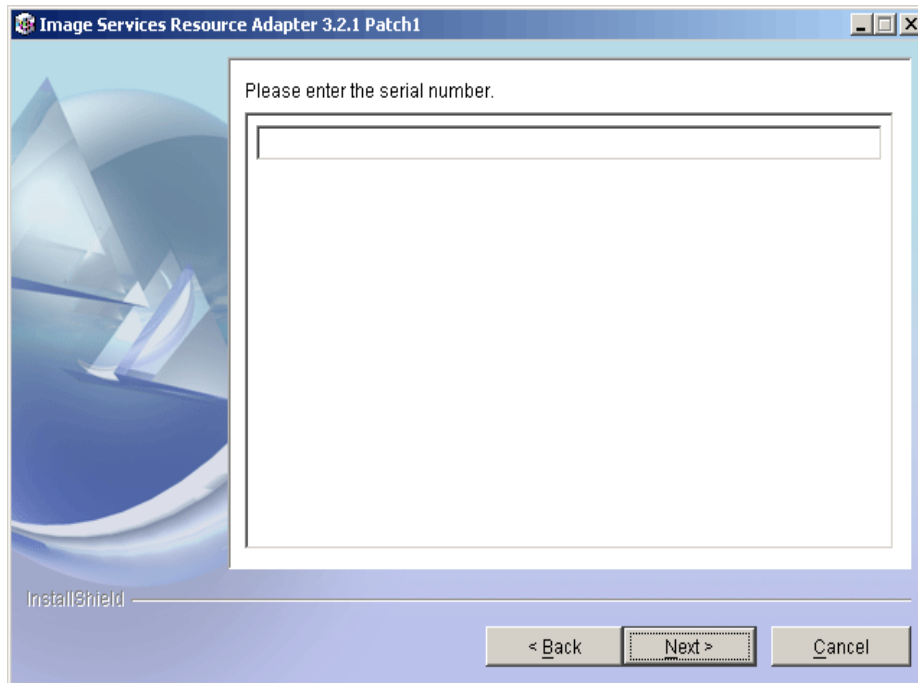


Click **No** to go back to the previous screen.

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



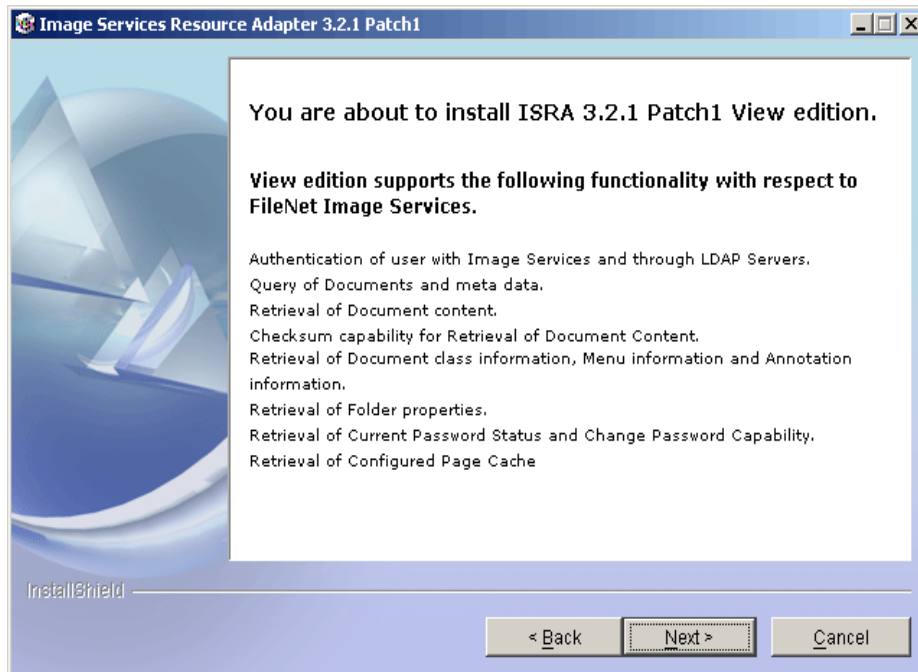
5. Accept the license agreement and click **Next** to proceed.



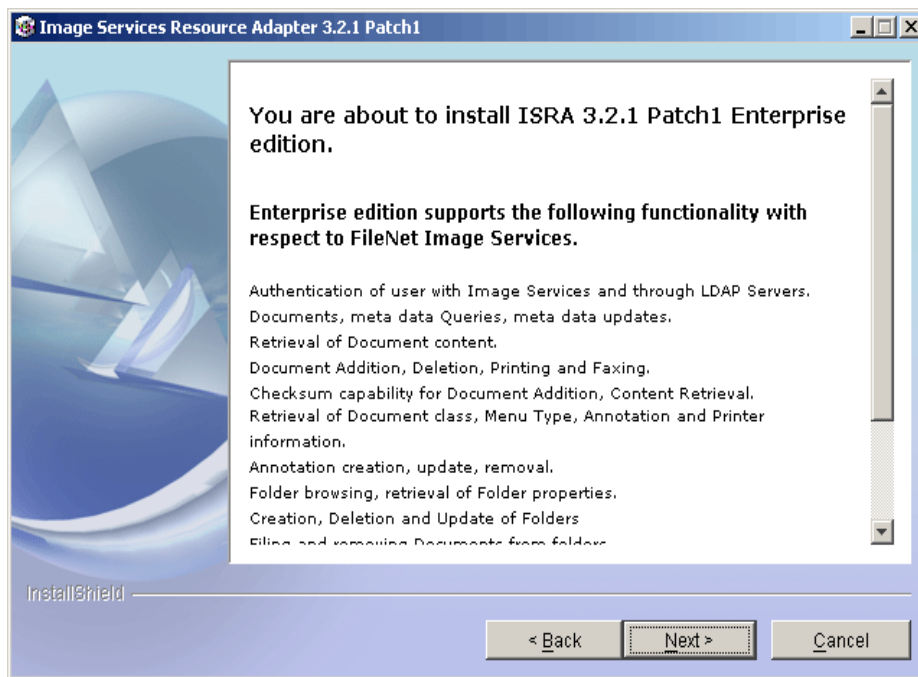
6. Enter the serial number and click **Next** to proceed.

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

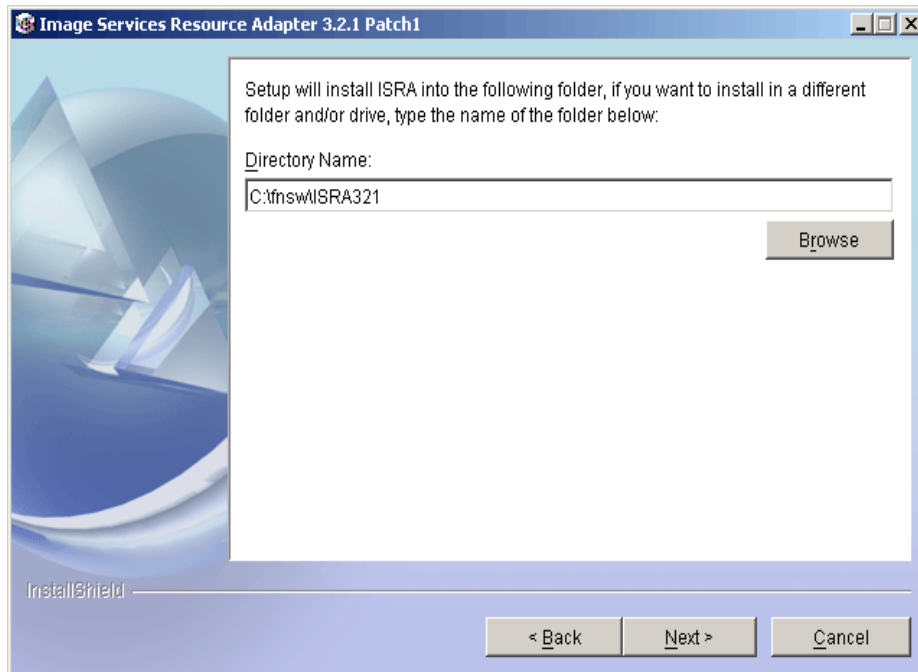
- The View edition screen appears as below:



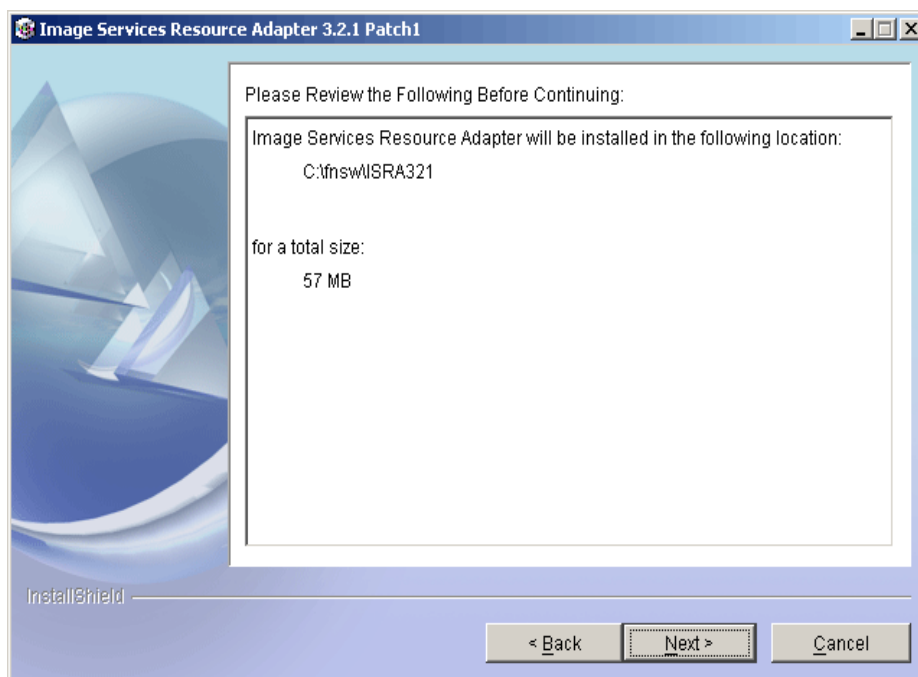
- The Enterprise edition screen appears as below:



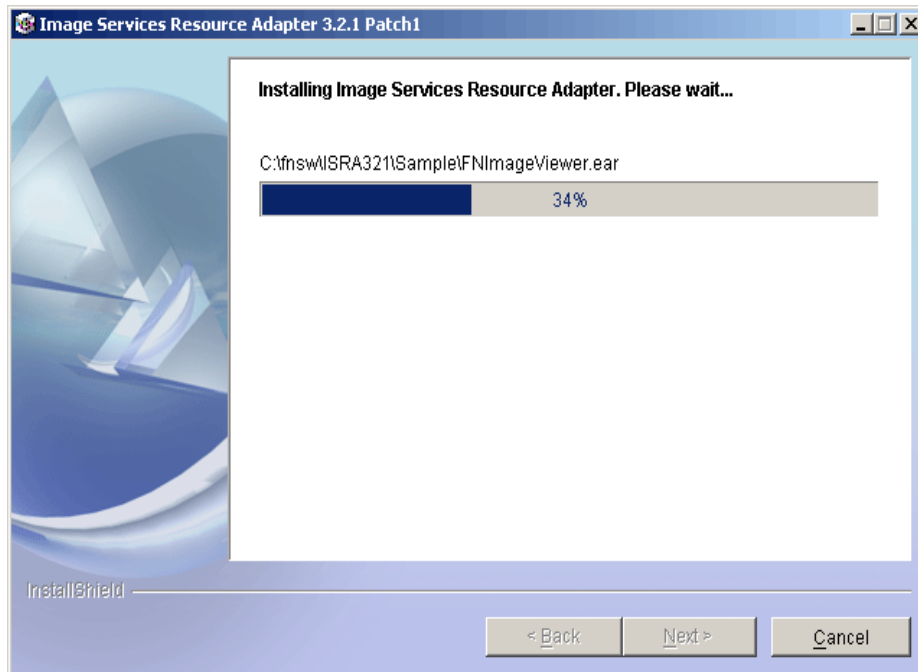
7. Click **Next** to proceed with the installation.



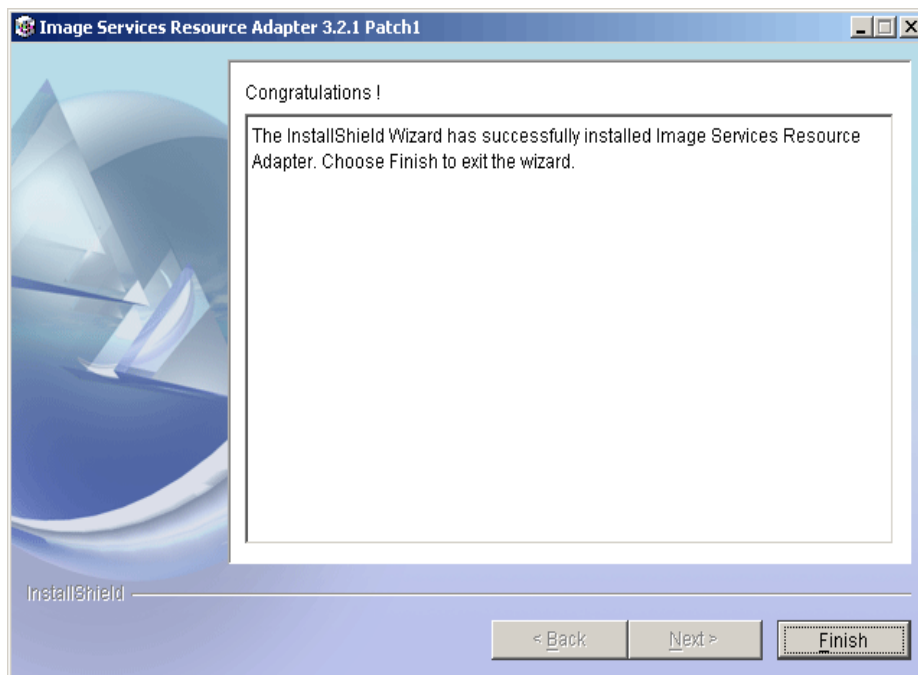
8. Choose the directory to install ISRA and click **Next** to proceed. The default path shown is `//fnsw/ISRA321`. Before copying ISRA files to the destination, the following screen appears:



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. The following screen appears, when ISRA installation completes:



11. Click **Finish**.

Login as root user and execute the following command to unmount the CD-ROM # `umount /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. fns\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 any J2EE 1.3 compliant Application Server. This manual describes the deployment of ISRA on IBM WebSphere Application Server version 5.

Note The installation procedure for IBM WebSphere Application Server v5 and configuring clustered environment on IBM WebSphere Application Server v5 is outside the scope of this document, and it is assumed that the required settings and configurations are satisfied.

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 an IBM WebSphere Application Server v5.

Hardware Requirements

- Please refer to the IBM WebSphere system requirements section at <http://www.ibm.com/software/Webservers/appserv/doc/latest/prereq.html>
- The IBM WebSphere documentation is available at <http://www.software.ibm.com/Webservers/appserv/library.html>
- ISRA installation will require at least 80MB free disk space.

Software Requirements

- IBM WebSphere Application Server 5 installed on Sun Solaris 9, HP-UX, IBM AIX 5.1 and 5.2, Linux or Windows 2000 and 2003 Server.
- IBM Websphere Network Deployment Manager.

- Fix PQ73966 or Fix Pack 2, for IBM WebSphere 5, which fixes WebSphere limitation to store open JCA connection in HttpSession object.

Please refer to

<http://www.ibm.com/Search?y=11&lang=en&cc=us&q=PQ73966&Search.x=28&Search.y=11> for details on how to apply the fix.

- FileNet IS 3.6 SP2 and above.

Deploying ISRA in a Standalone Environment

ISRA is deployed using the WebSphere Administrative Console. The steps to deploy are:

1. Start the WebSphere 'First Steps'. On an AIX system, login as the root user and execute the WebSphere `firststeps.sh` script , as follows:

```
# cd <WebSphere installation
directory>/AppServer/firststeps
# ./firststeps.sh
```

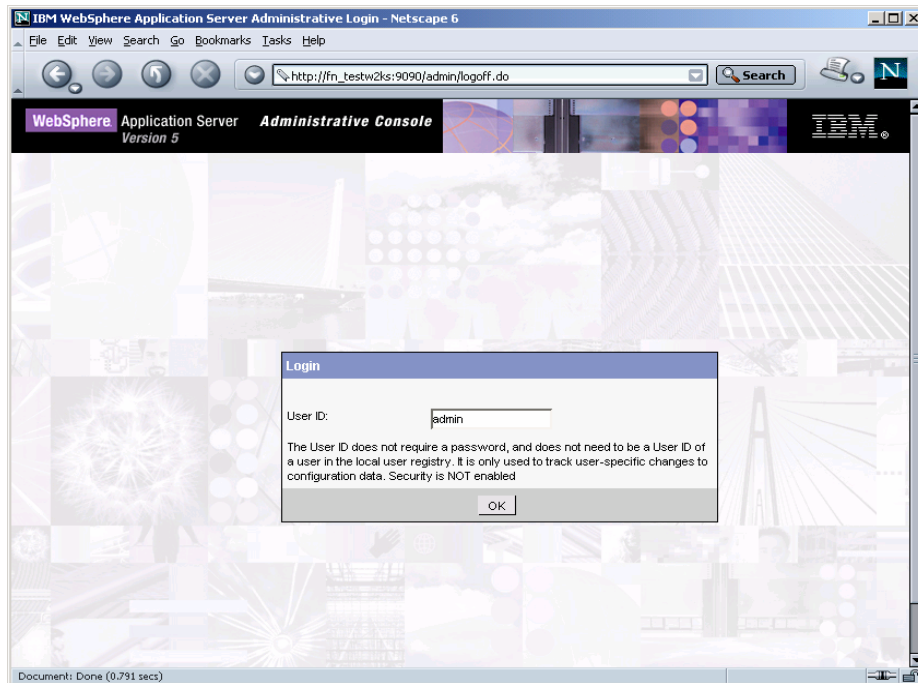


2. Click **Start the Server**.
3. Launch a web browser and enter the URL <http://server:port/admin>.

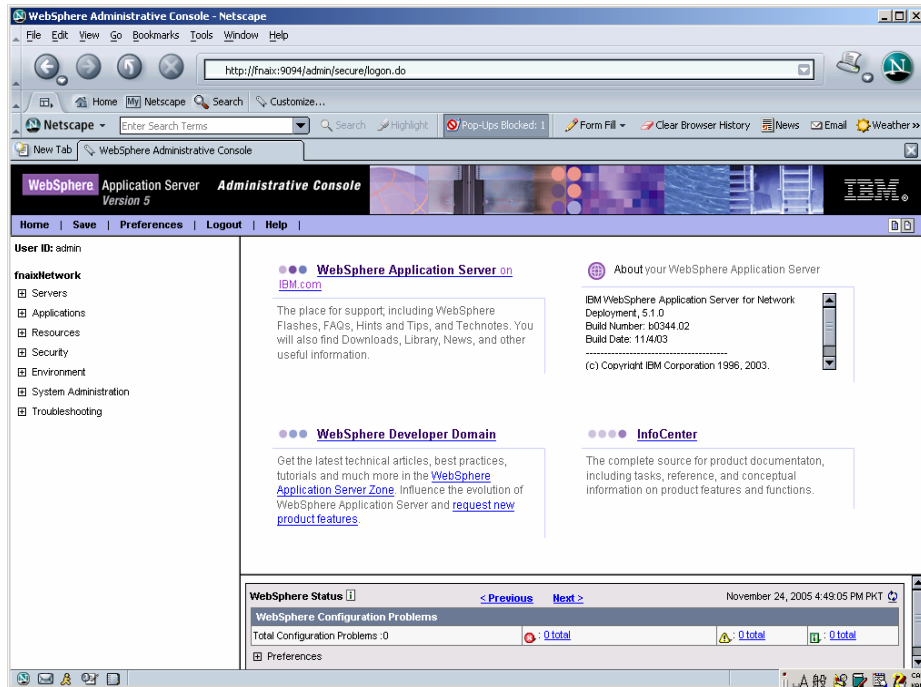
Here, 'server' is name of the host where WebSphere server is running and 'port' is the port number on which the admin server is listening. By default, this port number is 9090.

Login to the WebSphere Administrative console, which is a web based interface.

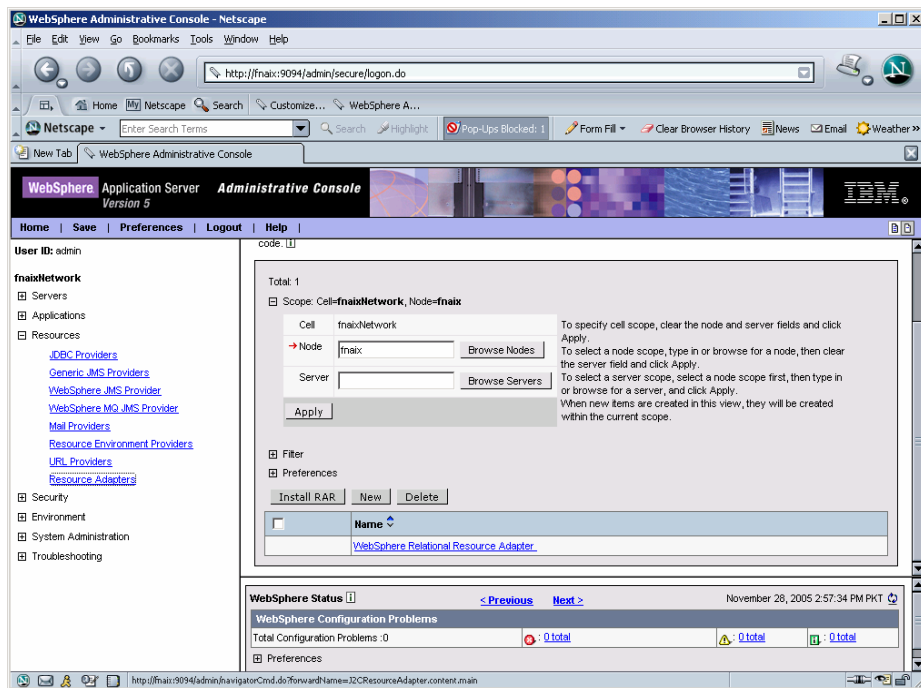
The WebSphere Administrative console screen appears:



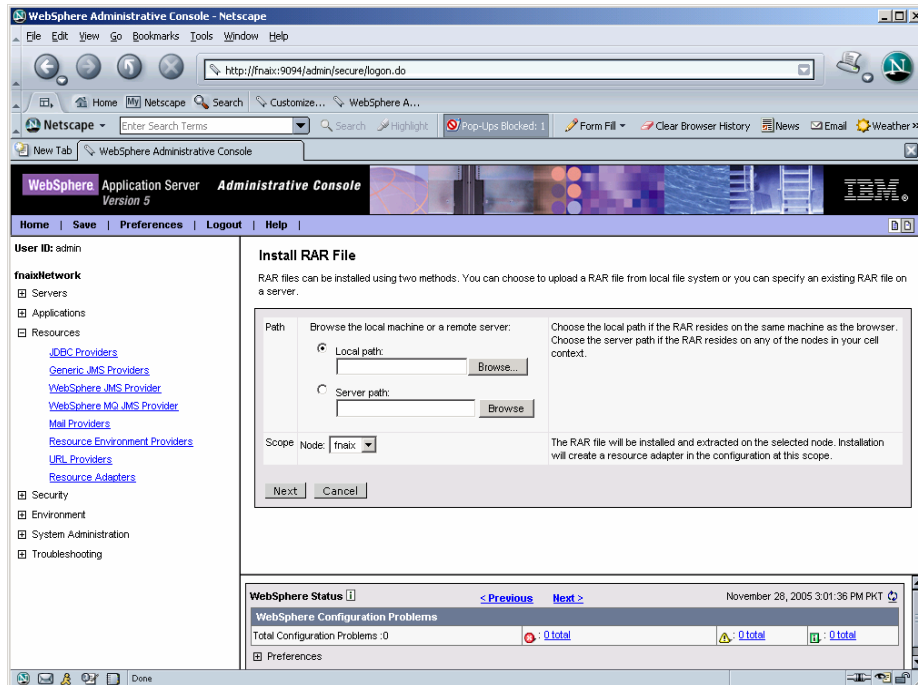
4. Enter **User ID** and click **OK**. The following screen appears:



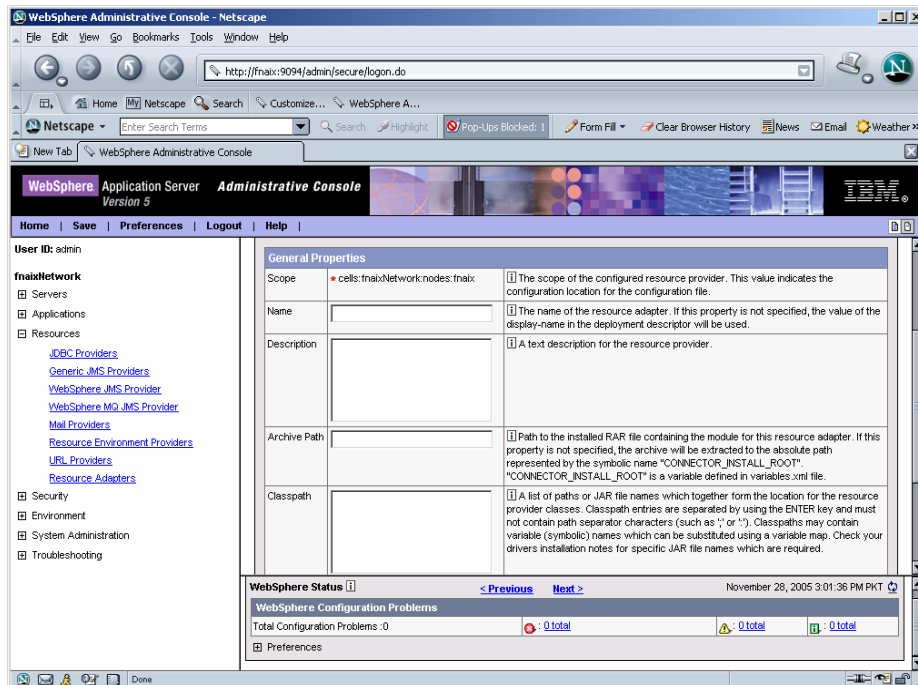
5. Navigate to **Resources > Resource Adapters**. The following screen appears:



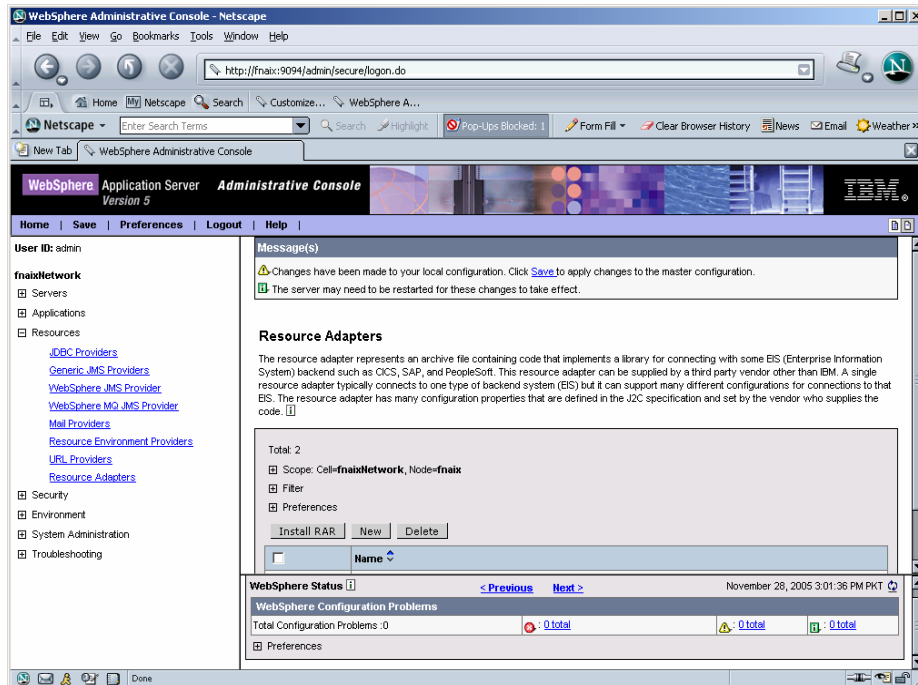
6. Click **Install RAR**. The following screen appears:



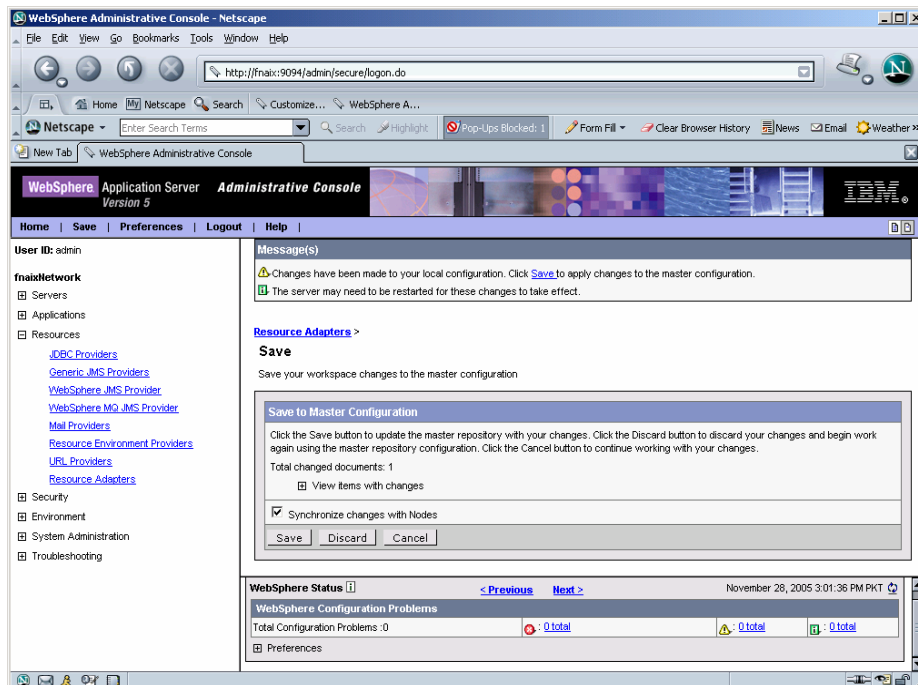
- Click **Browse** to navigate to the directory where ISRA 3.2.1 is installed. Select the **ISRA.rar** file from the jar folder of ISRA installation directory. Click **Next**. The General Properties screen appears.



- Click **OK**. The ISRA.rar file gets uploaded. A confirmation message is displayed, as shown in the screen below:



9. Click **Save** in the **Message(s)** box (in the right pane).



10. Click **Save** to save the changes to the master configuration. The following screen appears.



11. Restart the WebSphere Node (or Application Server) after deployment. This step is required to ensure that the ISRA classes are in the Application Server's CLASSPATH.
12. To verify the ISRA deployment, deploy the Sample Application provided with ISRA and logon through the Sample Application.

Note User can configure multiple Connection Factories with unique JNDI names to connect to multiple IS servers from ISRA. Configuration of multiple Connection Factories is explained in the [Configuring Deployed ISRA](#) section.

Deploying ISRA in a Clustered Environment

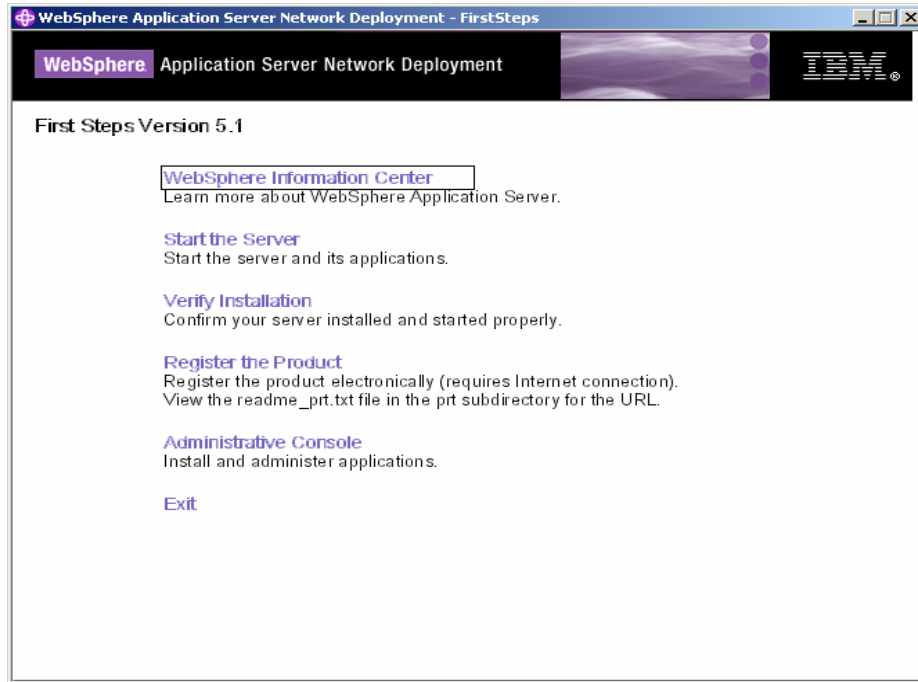
In a clustered environment, ISRA is deployed using the WebSphere Network Deployment Manager Administrative console.

Note After installing Network Deployment Manager you need to create a Deployment Manager profile using Profile Creation Wizard. For example “dmgr” profile mentioned below in the first step of ISRA deployment.

The steps to deploy ISRA are:

1. Start the WebSphere 'First Steps'. On an AIX system, login as the root user and execute the WebSphere `firststeps.sh` script , as follows:

```
# cd <DeploymentManager home>/firststeps/
```

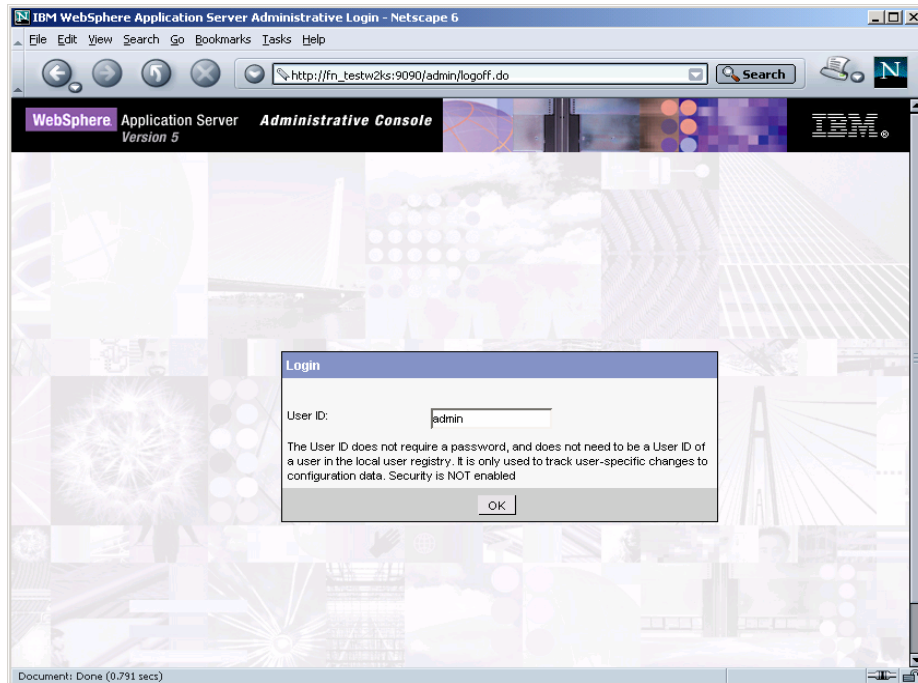


2. Click **Start the Server**.
3. Launch a web browser and enter the URL <http://server:port/admin>

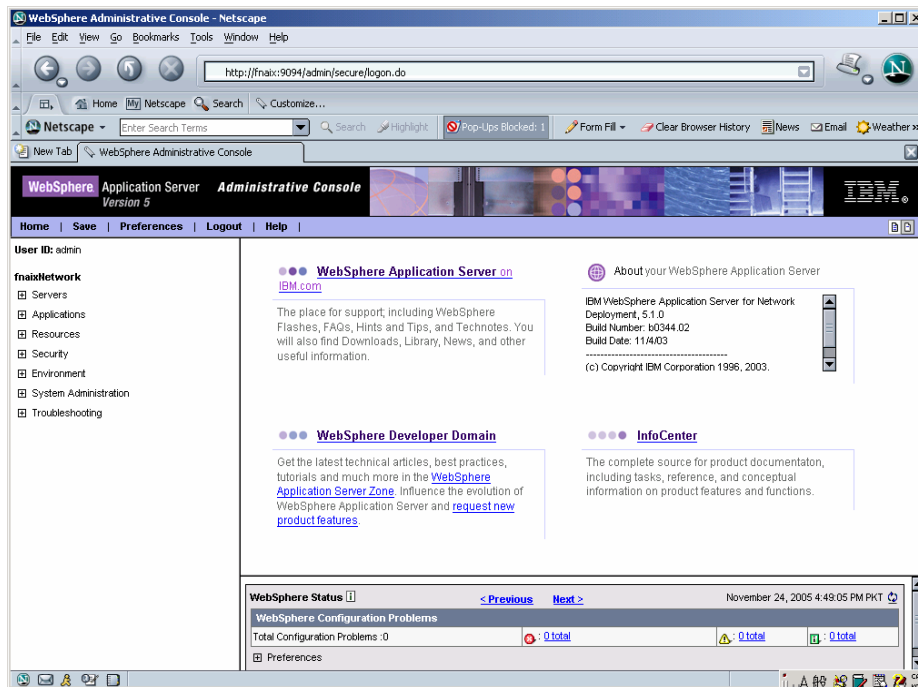
Here, 'server' is name of the host where WebSphere Network Deployment Manager is running and 'port' is the port number on which the admin server is listening. By default, this port number is 9091.

Login to the WebSphere Network Deployment Manager Administrative console, which is a web based interface.

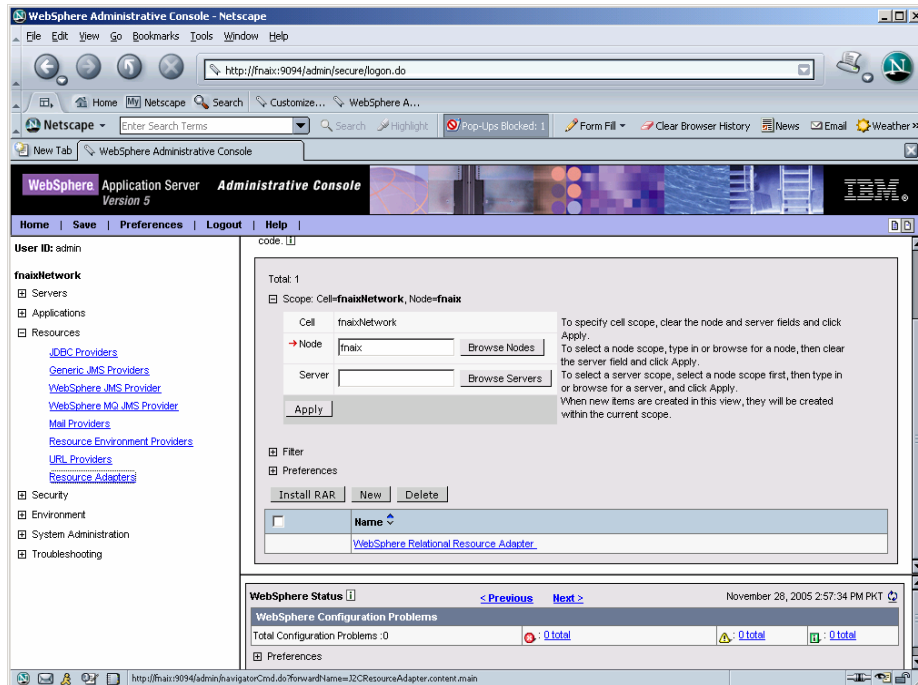
The WebSphere Administrative console screen appears.



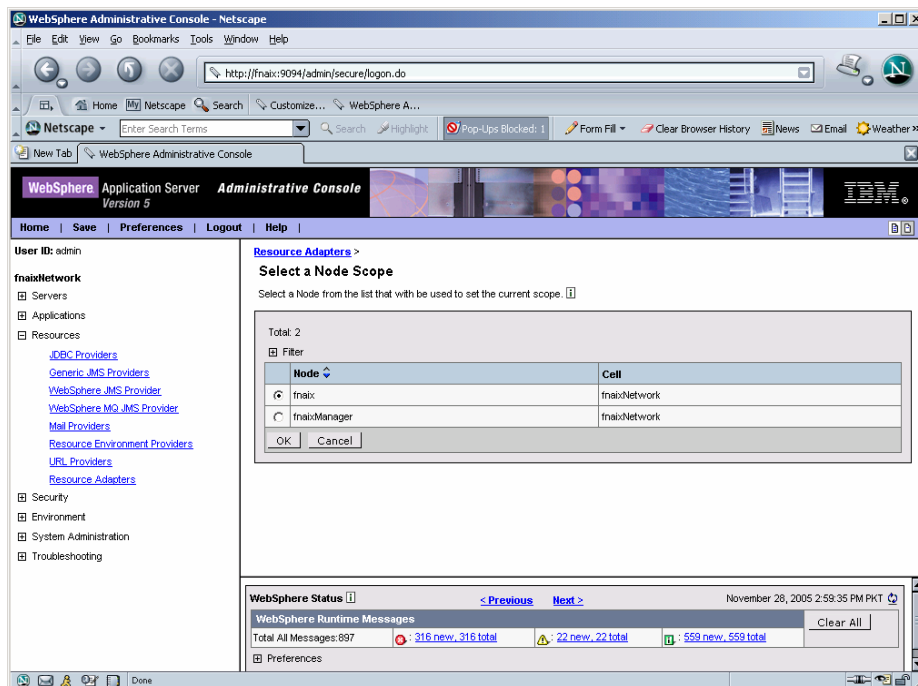
4. Enter **User ID** and click **OK**. The following screen appears:



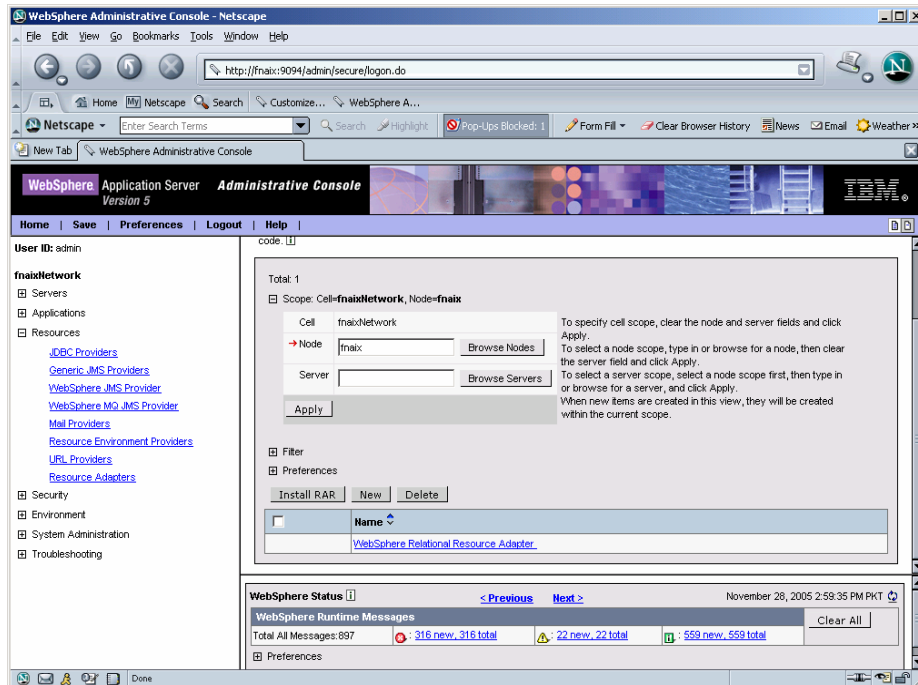
5. Navigate to **Resources >Resource Adapters**. The following screen appears:



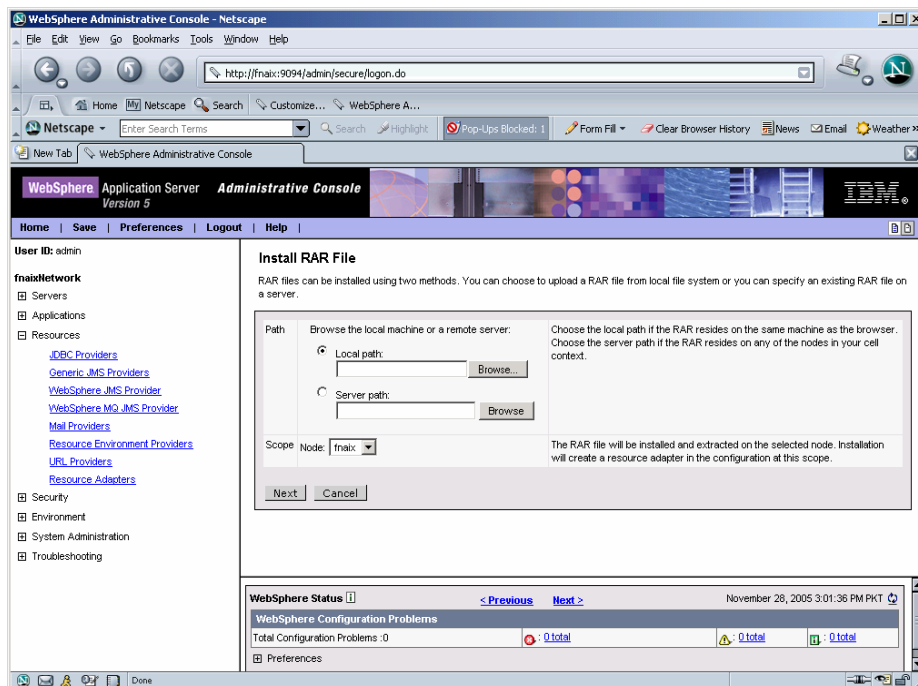
6. Click **Browse Nodes** to deploy ISRA.rar on all the servers in a node. The following screen appears:



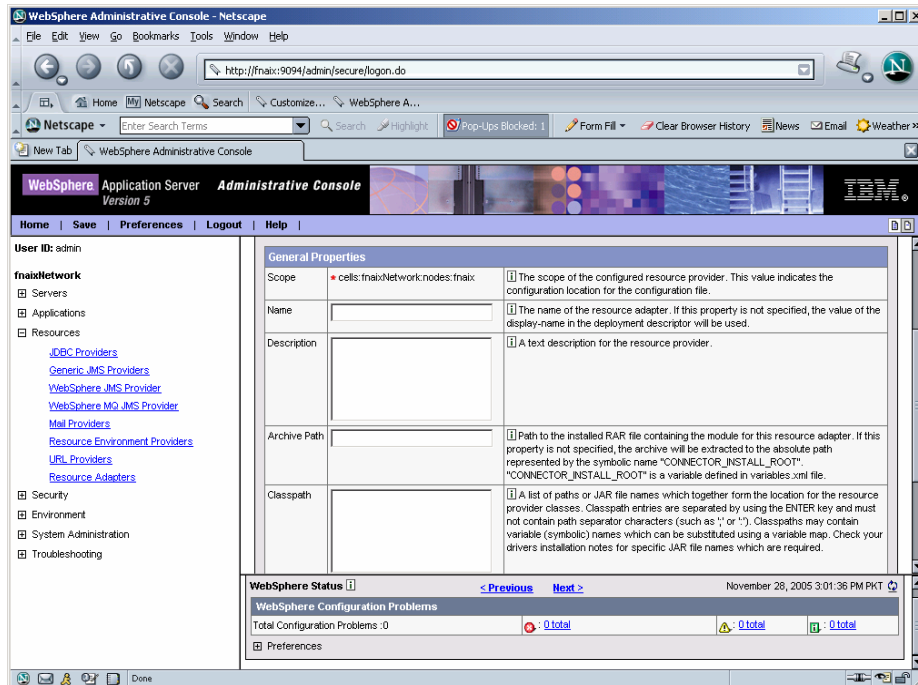
7. Select a **Node** and click **OK**. The following screen appears:



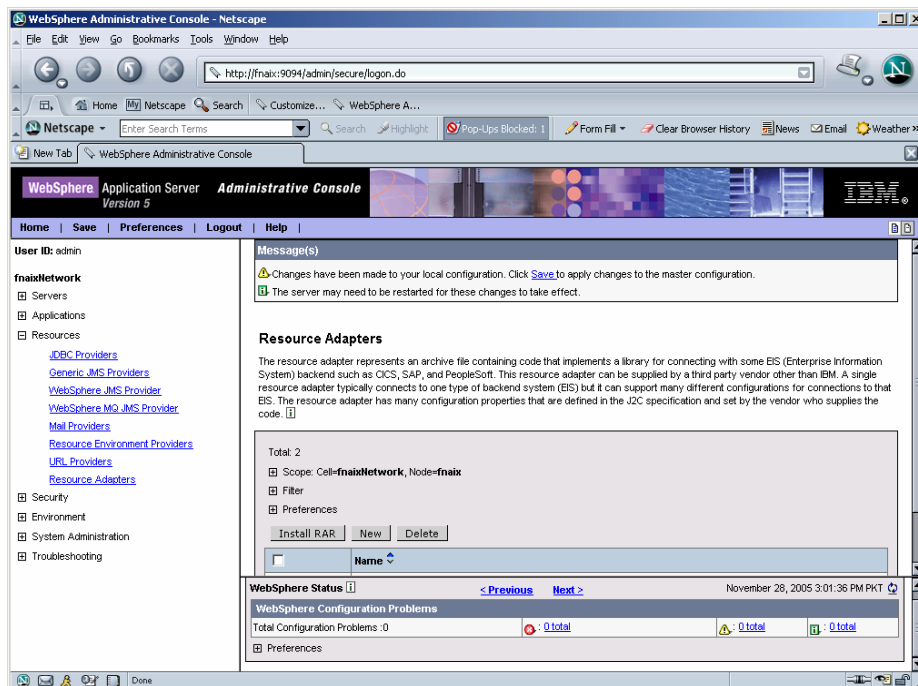
8. Click **Apply** and then click **Install RAR**. The following screen appears:



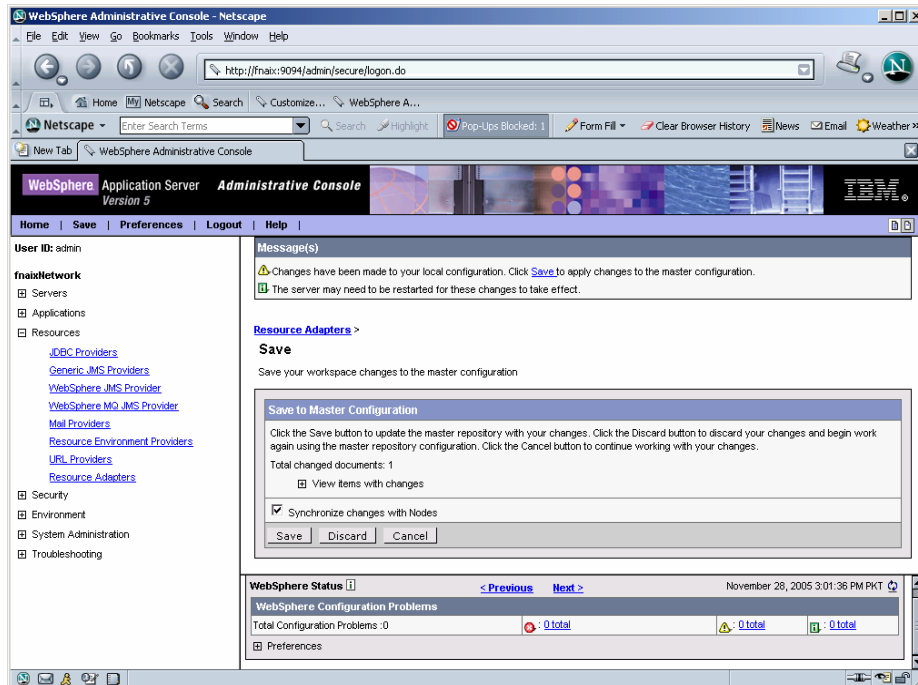
9. Click **Browse** to navigate to the directory where ISRA 3.2.1 is installed. Select the **ISRA.rar** file from the jar folder of ISRA installation directory. Click **Next**. The General Properties screen appears.



10. Click **OK**. The ISRA.rar file gets uploaded. A confirmation message is displayed, as shown in the screen below:



11. Click the **Save** link in the Message(s) box (in the right pane).



12. Enable the **Synchronize Changes with Nodes** check box, and click **Save** to save the changes to the master configuration. The following screen appears.



13. To verify the ISRA deployment, deploy the Sample Application provided with ISRA and perform a logon through the Sample Application.

14. Restart the WebSphere cluster using the Network Deployment Manager after deployment. This step is required to ensure that the ISRA is deployed properly in the cluster.

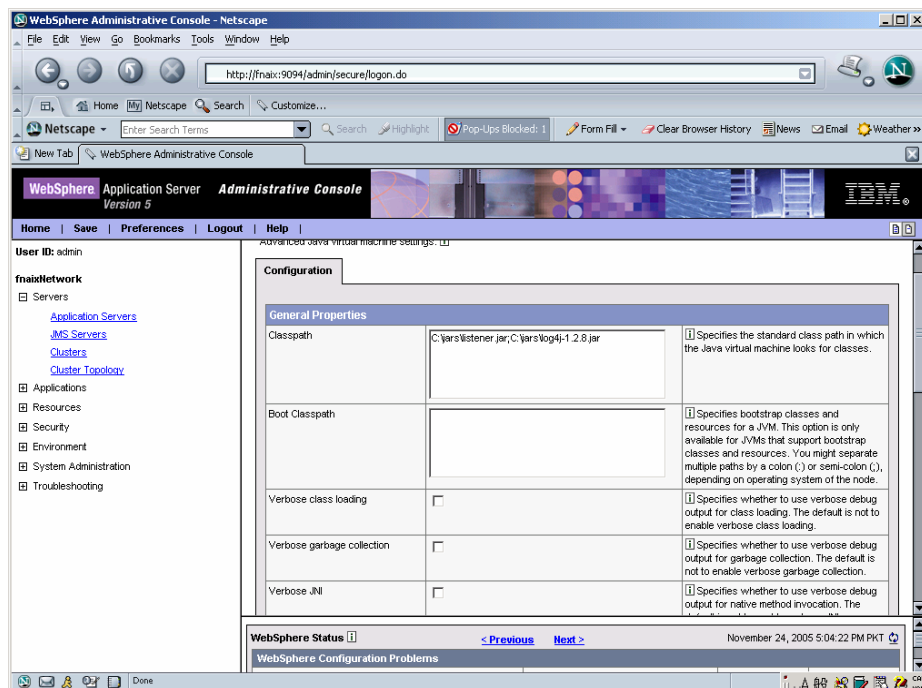
Note User can configure multiple Connection Factories with unique JNDI names to connect to multiple IS servers from ISRA. Configuration of multiple Connection Factories is explained in the [Configuring Deployed ISRA](#) section.

Mandatory Requirements for ISRA 3.2.1

The mandatory requirements for ISRA 3.2.1:

Steps to include **listener.jar** and **log4j-1.2.8.jar** in the classpath of Application Server are:

1. Login to the WebSphere Administrative console.
2. Navigate to **Servers > Application Servers**, and select the server.
3. Under **Additional Properties**, click **Process Definition**.
4. Under **Additional Properties**, click **Java Virtual Machine**.
5. Include **listener.jar** and **log4j-1.2.8.jar** in the Classpath, as shown below:



ISRA Configuration

This chapter describes how to configure ISRA on a WebSphere Application Server version 5, after it is deployed.

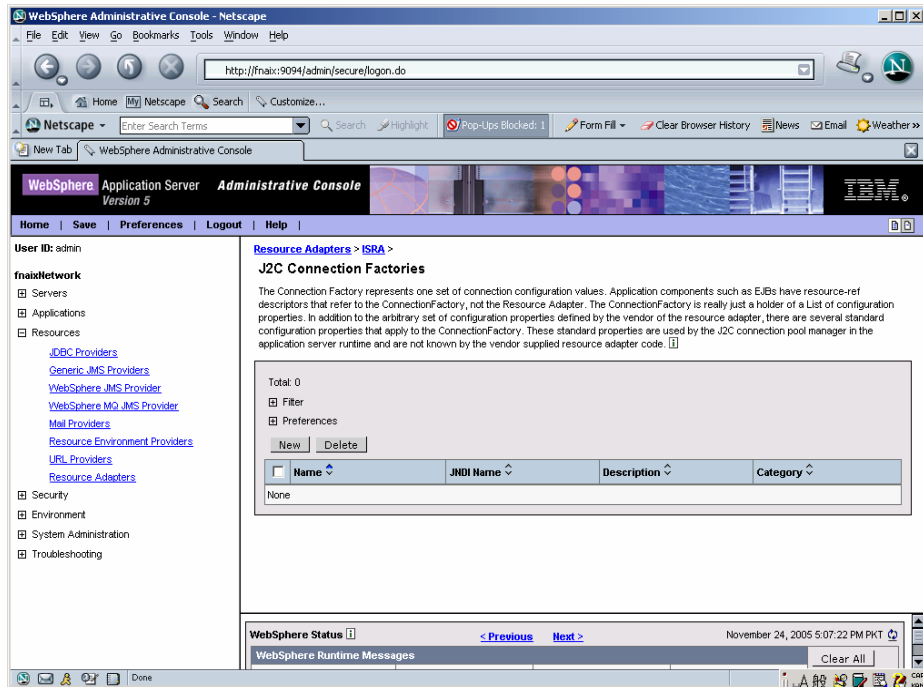
Configuring Deployed ISRA

This section describes the procedure to edit ISRA deployment properties using the WebSphere Administrative Console.

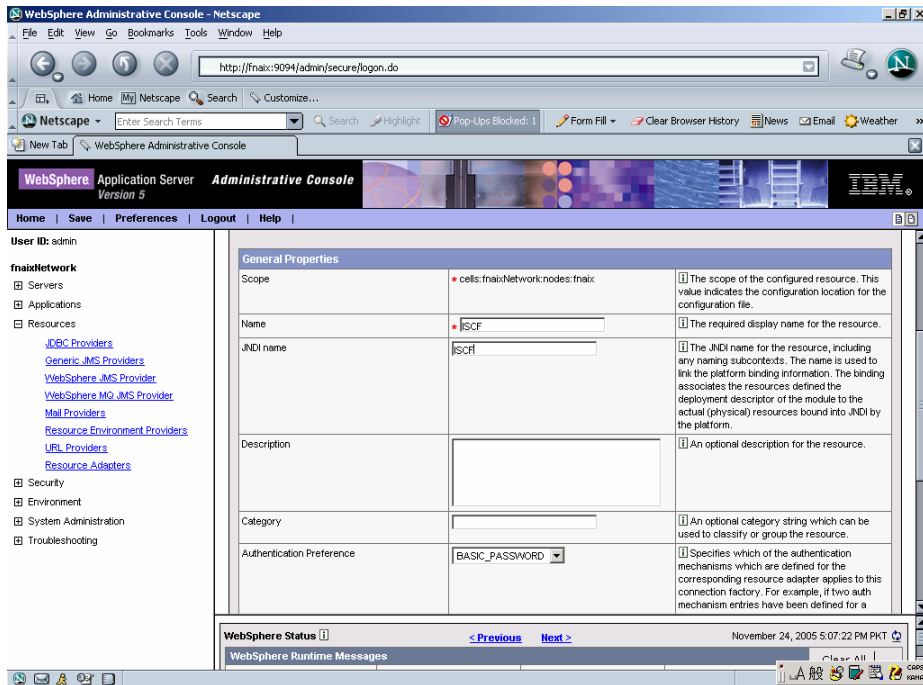
ISRA uses a deployment descriptor called **ra.xml** to define its operational parameters. The deployment descriptor is defined by Sun Microsystems in the J2EE Connector 1.0 specification. It describes the Resource Adapter related attributes, types, and its deployment properties using a standard Document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

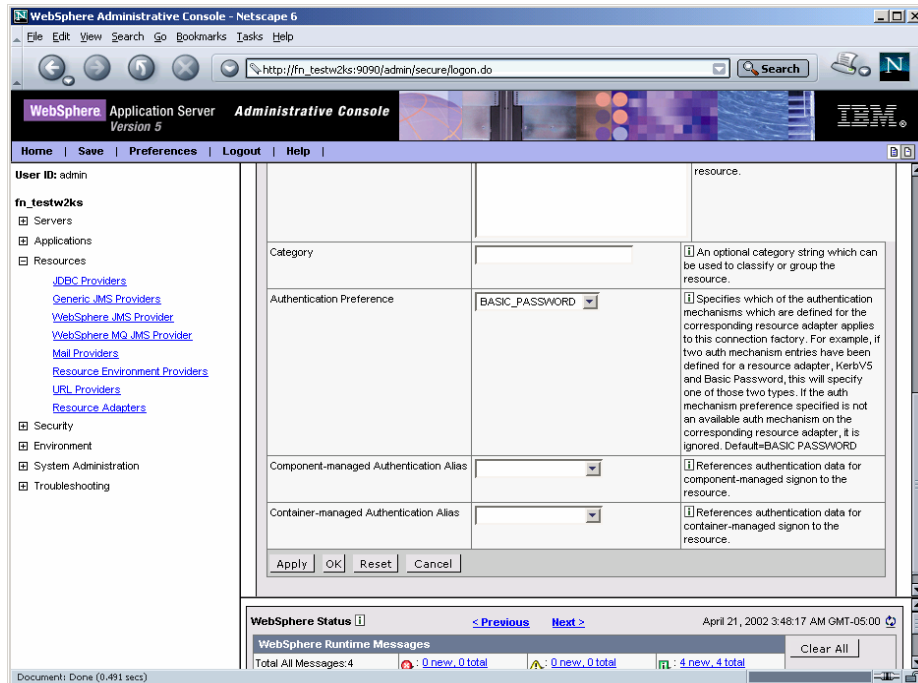
To edit the ISRA deployment descriptor:

1. Launch a Web browser window and login to the WebSphere Administrative Console or Network deployment Administrative Console depending on whether ISRA is deployed in standalone or clustered environment.
2. Expand the **Resources** node.
3. Click on the deployed ISRA to edit under the **Resource Adapters** node.
4. Click **J2C Connection Factories**. The following screen appears:

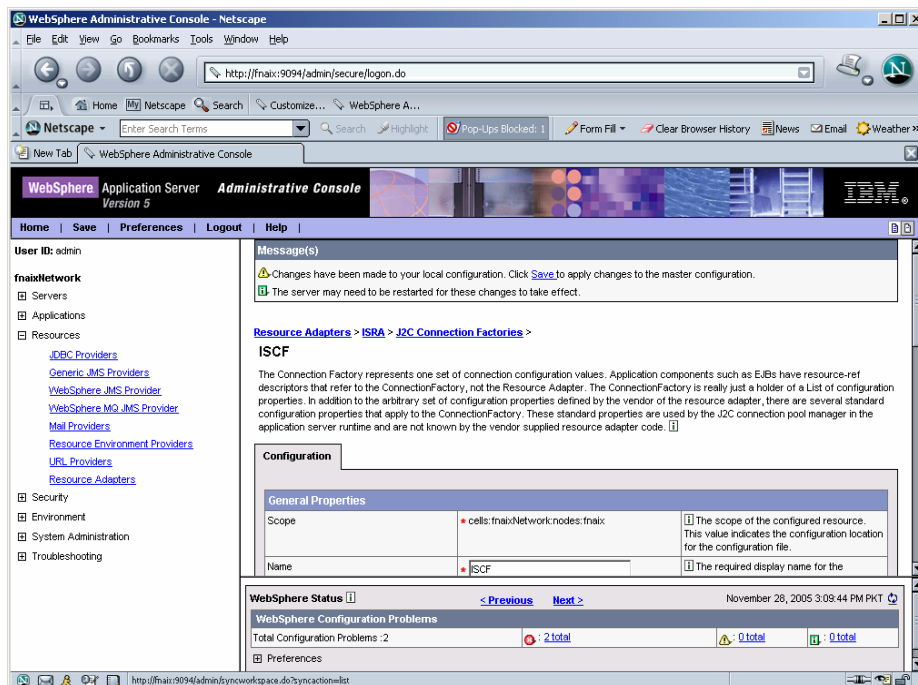


5. Click **New**. The following screen appears:

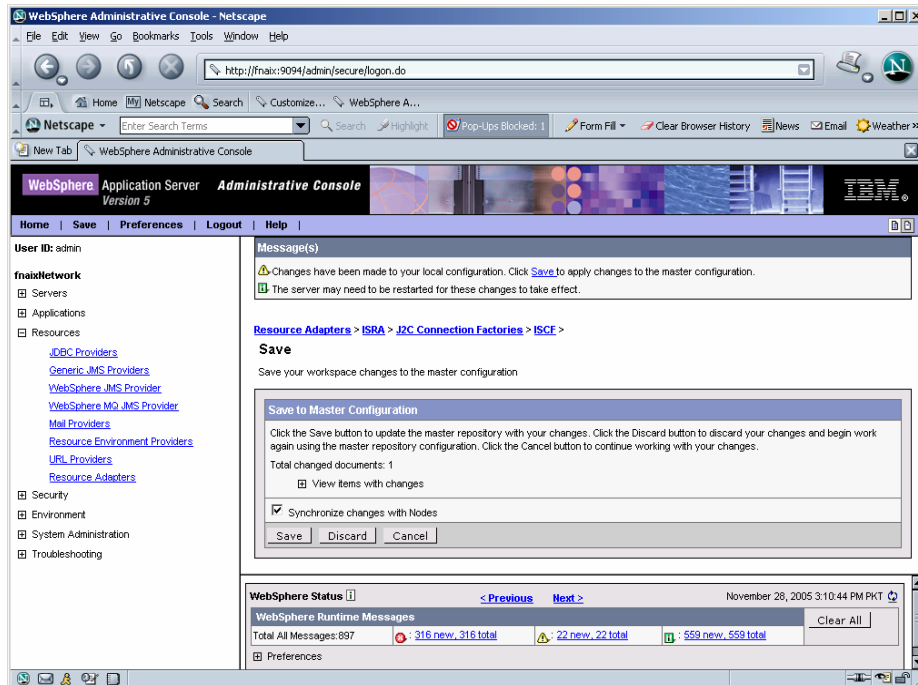




6. Provide a name for the Connection Factory. Provide the **JNDI name**, for example ISCF. Click **Apply**. A confirmation message is displayed, as shown in the screen below:



7. Click the **Save** link in the **Messages** box. The following screen appears:



8. Enable **Synchronize changes with Nodes**, and click **Save** to save the changes in the master configuration. On successful creation of Connection Factory, the following screen appears.

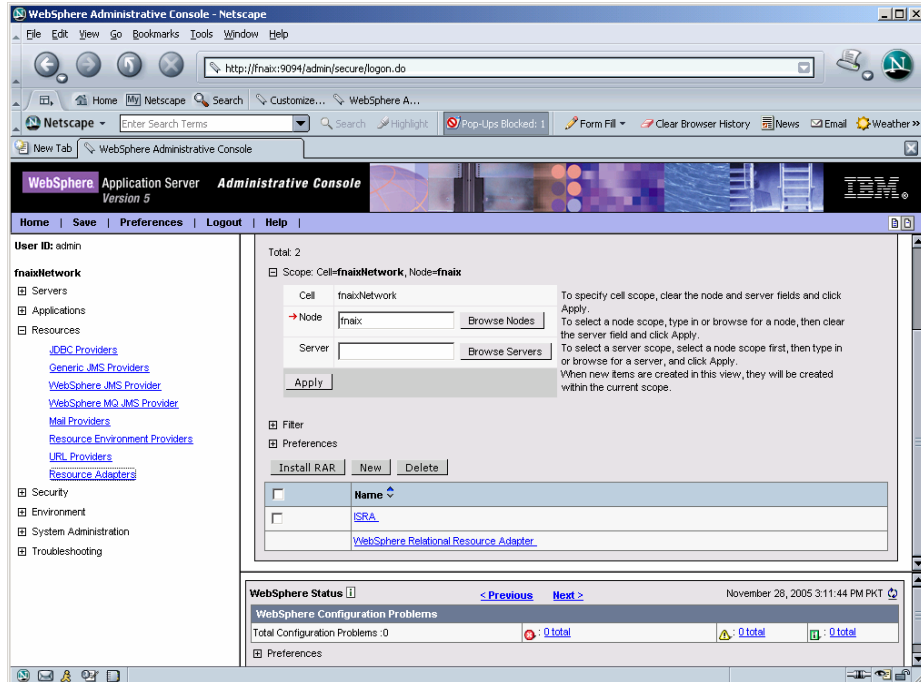


Changing Parameters Specific to ISRA

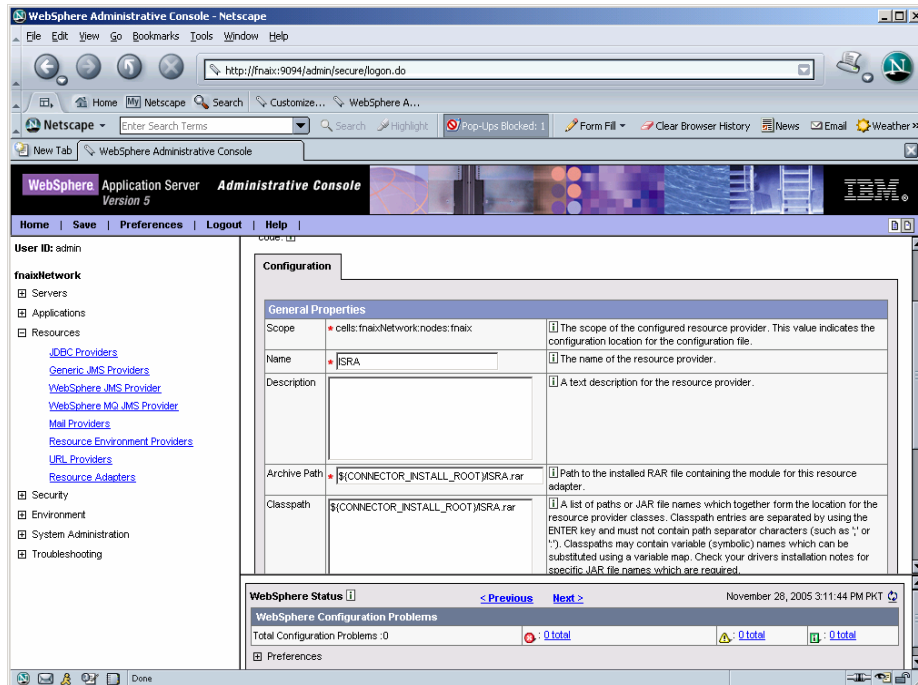
After ISRA is deployed, some parameters of the Deployment Descriptor need to be changed to configure it for the target IS server.

To change these parameters:

1. Navigate to **Resources > Resource Adapters**. The following screen appears:



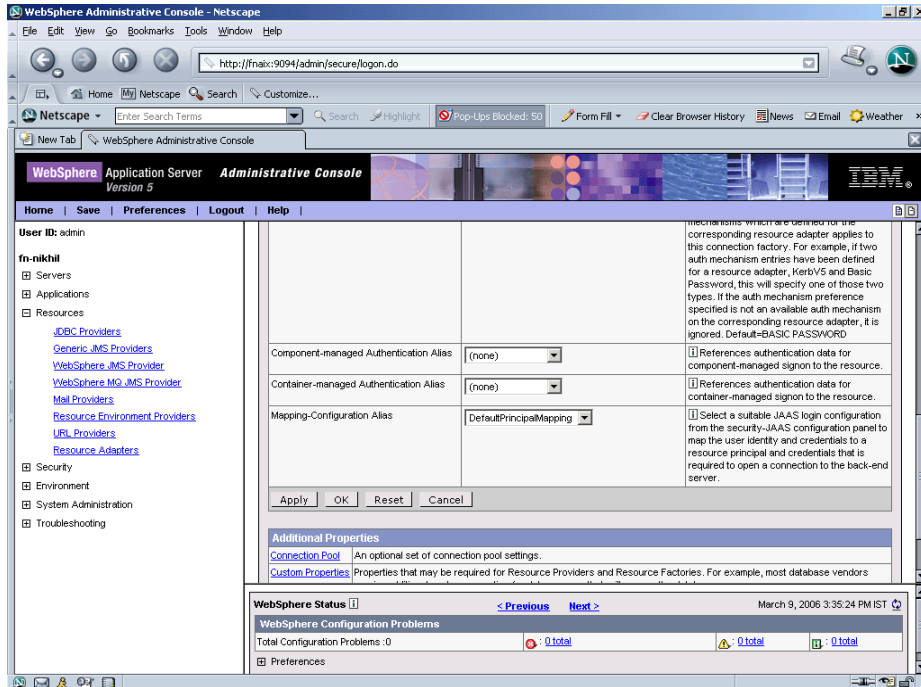
2. Under **Name** column, click **ISRA**. The following screen appears:



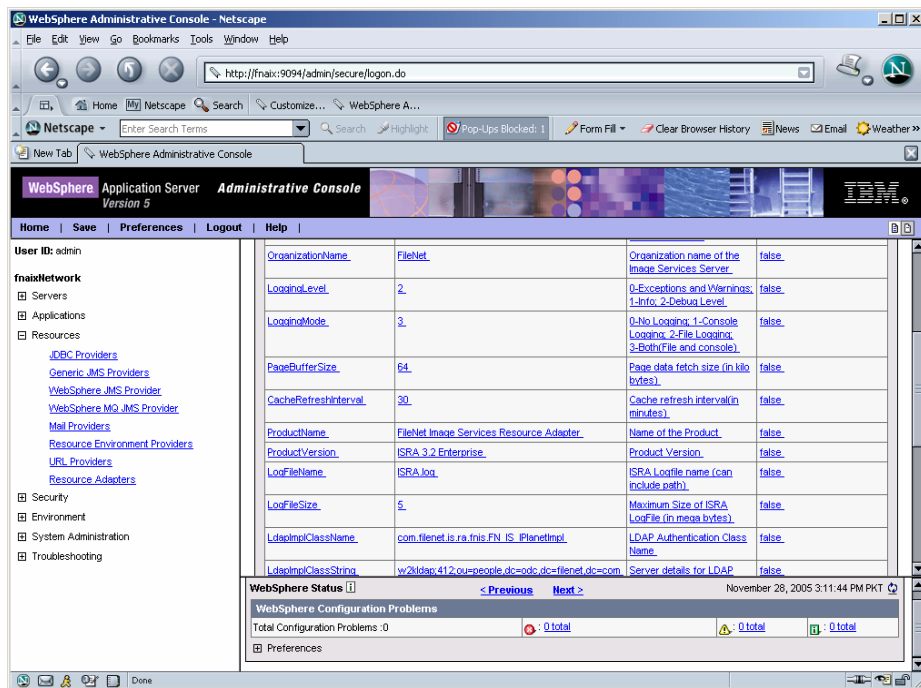
3. Under **Additional Properties**, click **J2C Connection Factories**. The following screen appears:



4. Click on the already created ISRA Connection Factory, or **ISCF** link. The following screen appears:



5. Click **Custom Properties**. The different parameters, which may be customized, are displayed.



6. To customize each parameter, click on the parameter name, modify and then save the changes. Refer to the [Configurable ra.xml entities](#) section, for the details.

Configurable ra.xml Entities

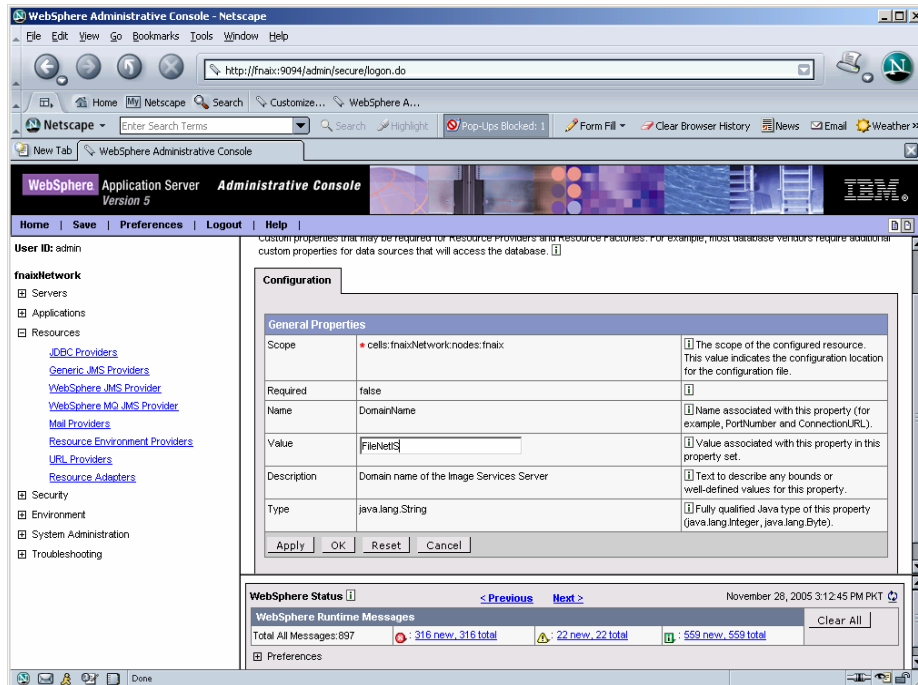
The configurable properties to be set (modified) in **ra.xml** are:

- [DomainName](#)
- [OrganizationName](#)
- [LogFileNames](#)
- [LoggingLevel](#)
- [LoggingMode](#)
- [LogFileSize](#)
- [PageBufferSize](#)
- [CacheRefreshInterval](#)
- [CacheUser/CacheUserPassword](#)
- [DeploymentInstance](#)
- [PCHLogging](#)
- [AllowAnonymousUser](#)
- [RPCLogging](#)

Note It is mandatory to configure DomainName and OrganizationName properties, as the ISRA needs these properties to access 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).

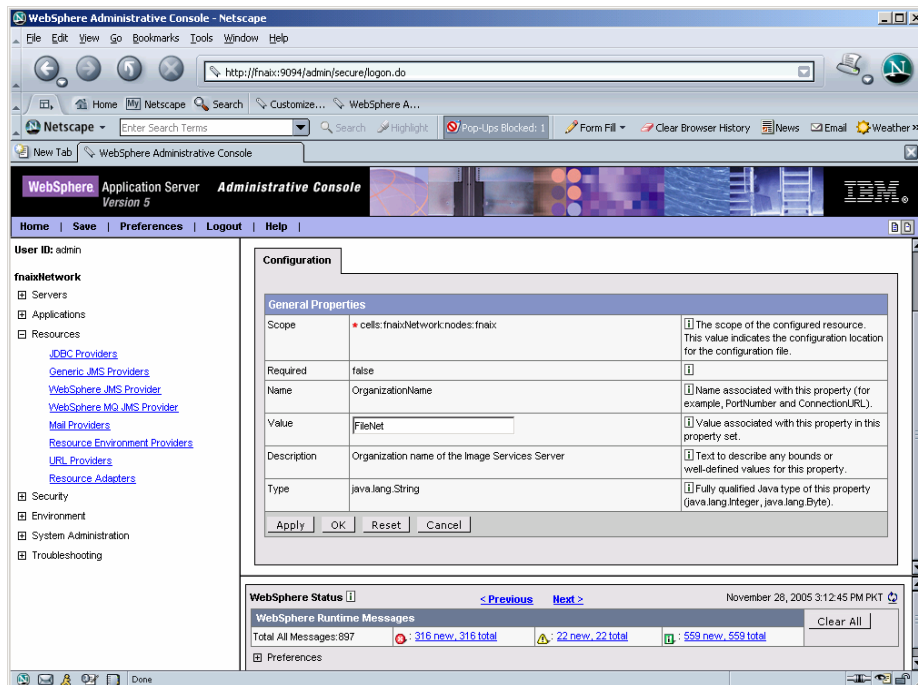
DomainName

This is the name of the domain of the IS server. Click **DomainName** in the right pane. The default value for DomainName is FileNetIS. It should be set according to the operational environment.



OrganizationName

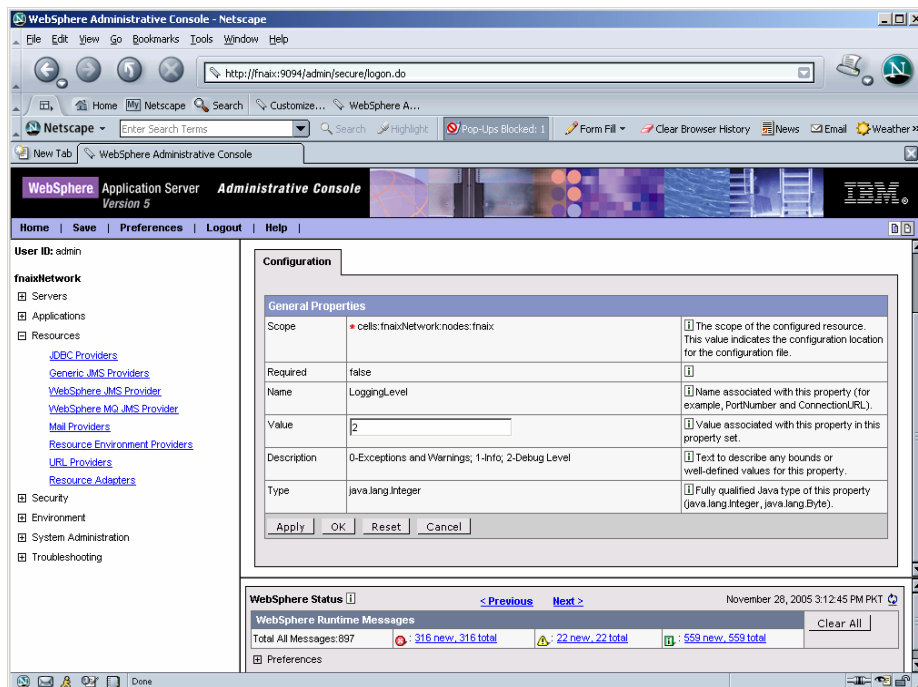
This is the FileNet IS organization name. The default value for OrganizationName is FileNet. Click **OrganizationName** to change the value to the target IS server.



LogFileName

The LogFileName is a string containing the name and path of the log file. Click **LogFileName** to change the value. 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.

Note If there are multiple connection factories then ISRA will maintain all logs in a single ISRA logfile, even if a separate logfile name is specified for each connection factory. WebSphere will use the name of the configured logfile for the first connection factory that is used to login after WebSphere starts up. If separate logging is desired, ISRA cannot be deployed as a resource. For every logfile (connection factories), a separate web application (ear file) with the ISRA connector bundled must be deployed. Refer to the [Configuring Multiple ISRA Instances with Separate Logging](#) section.

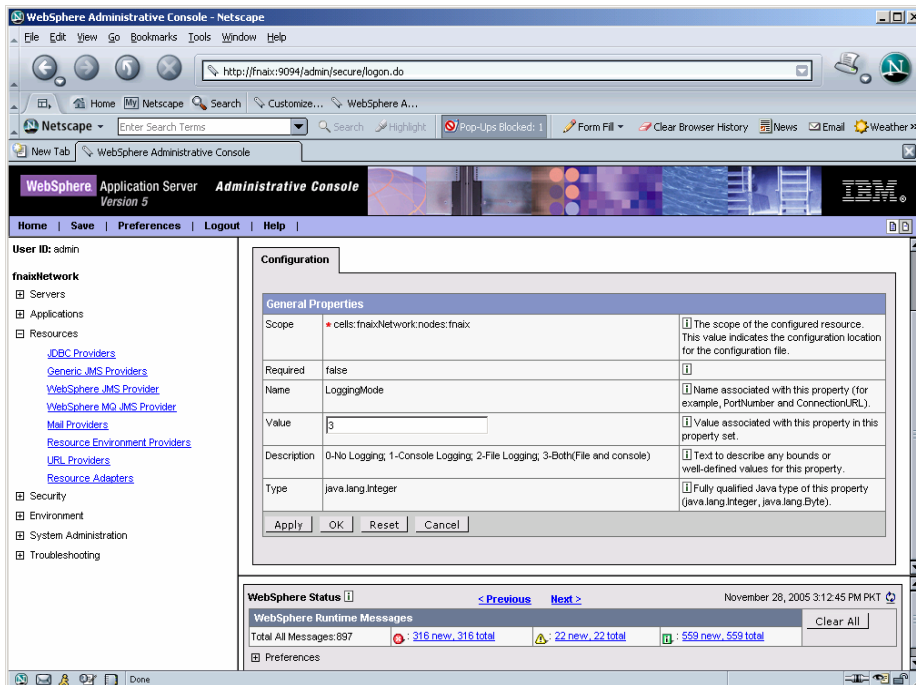


LoggingLevel

This is an integer representing the level 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 message in the log

Click **LoggingLevel**. 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.

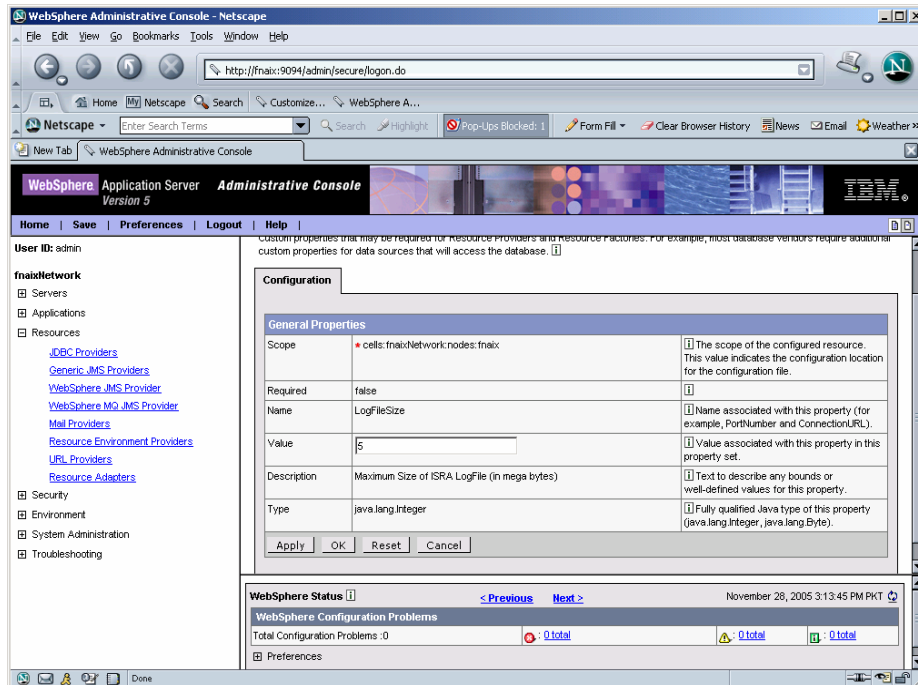


LoggingMode

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

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

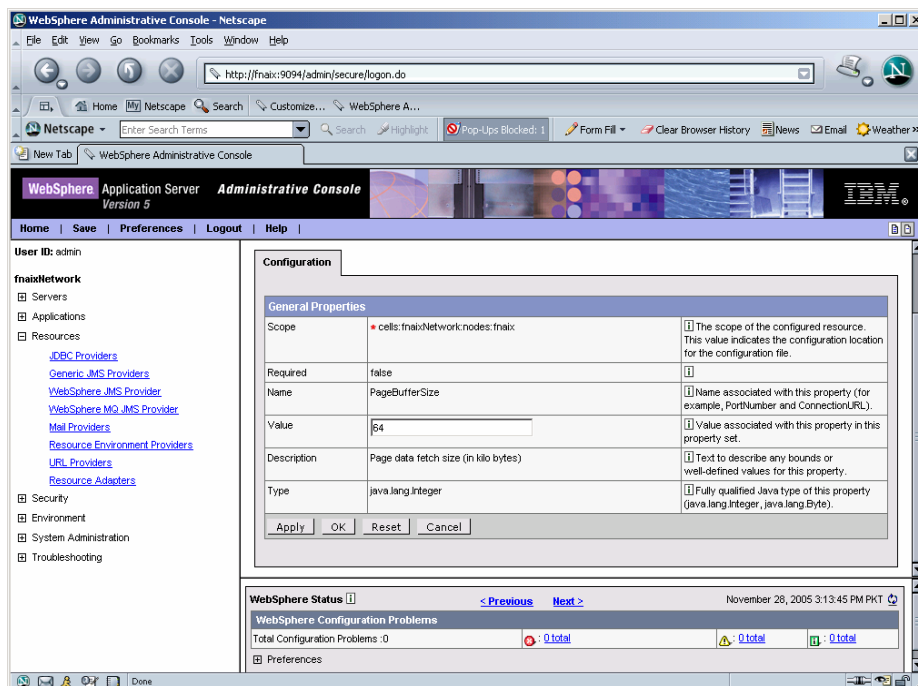
Click **LoggingMode**. The default Value of LoggingMode is 3. It can be changed to other valid values according to the operational environment.



LogFileSize

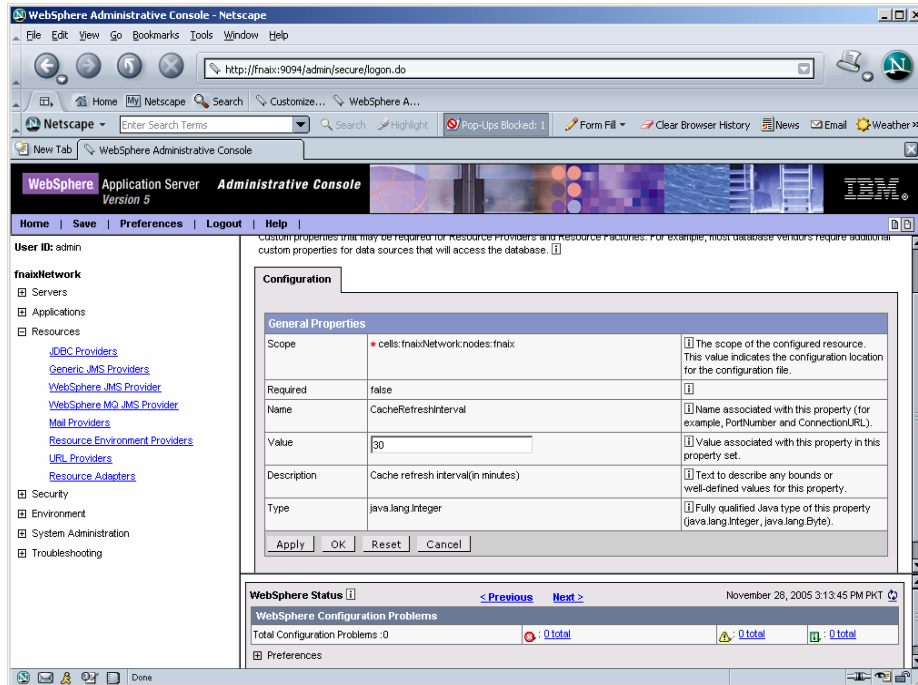
This is an integer representing the maximum size of the log file in megabytes (MB). When the size of the file reaches this maximum limit, the log file is renamed, and a new file is created with the same name. For example, **ISRA.log** is renamed to **ISRA.log_1**, and a new file **ISRA.log** is created.

Click **LogFileSize**. The default value of LogFileSize is 5MB.



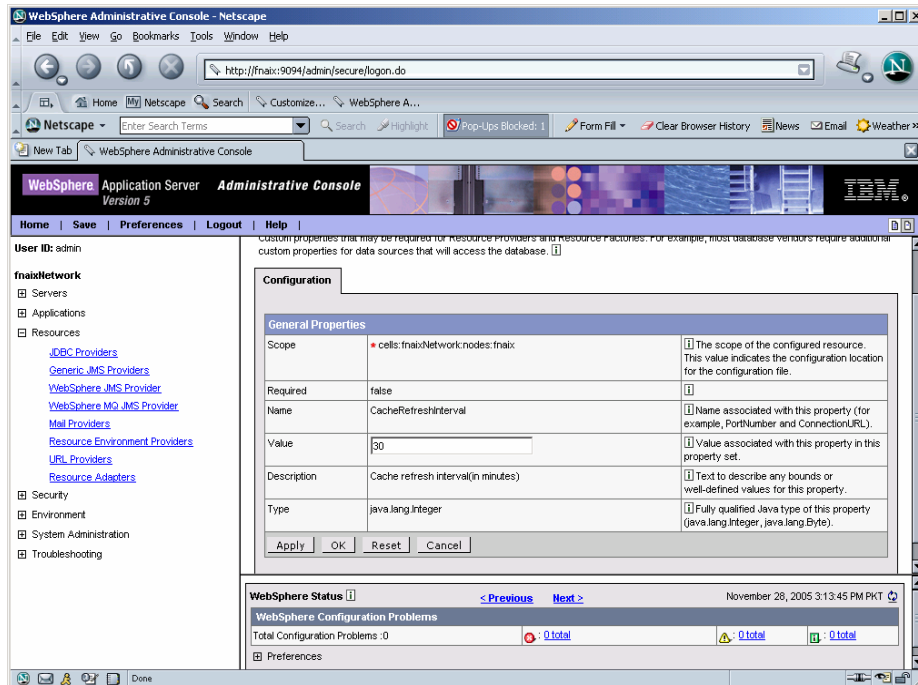
PageBufferSize

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 like Document class, Indices and menu details etc. in a local cache for faster retrieval. ISRA refreshes the cache information based on the CacheRefreshInterval value. The default value is 30 minutes. Click **Apply** after modifying the property.

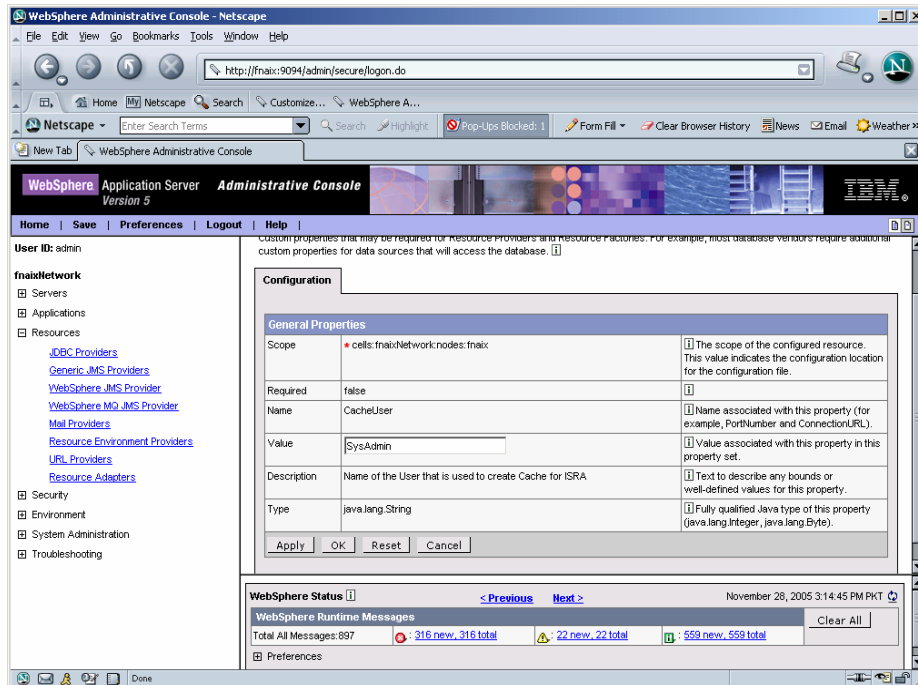


Note To configure ISRA for multiple IS servers; create a Connection Factory for each IS that you want to connect. DomainName and OrganizationName pair has to be distinct among the configured Connection Factories.

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.

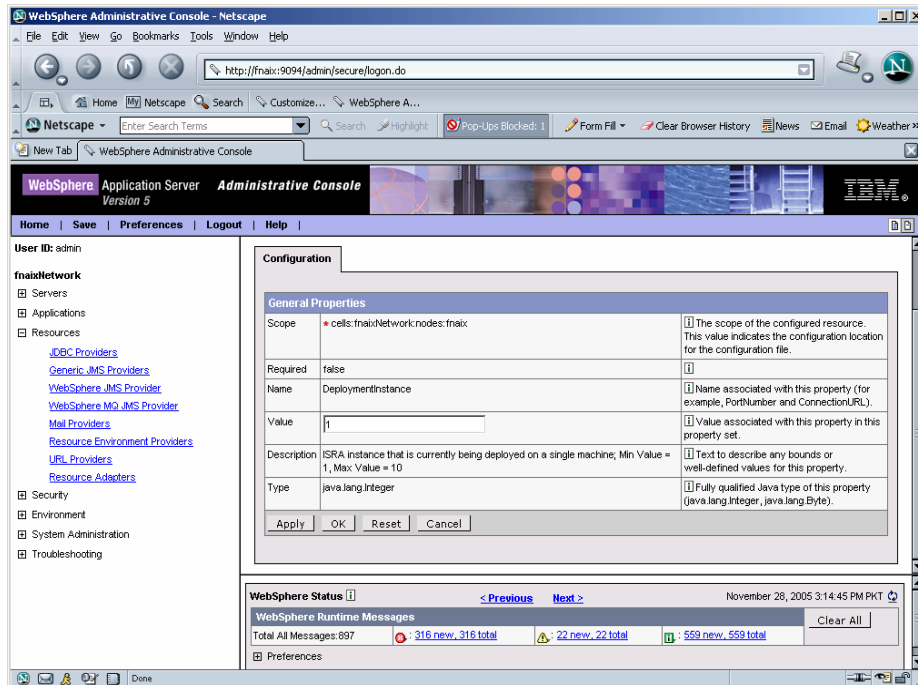
Note The CacheUser name has to be either empty or a valid IS user name otherwise access to the IS via ISRA will fail.



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.



Configuring Multiple ISRA Instances with Separate Logging

This section explains how to deploy 2 instances of ISRA (with 2 instances of the Sample application) with separate ISRA log files for each instance.

1. Create two duplicates of ISRA.rar file and ISRASample.ear file each (one for each deployment).

Note Any naming convention may be used to name the duplicate files. For instance, the two duplicate files of ISRA.rar may be named as ISRA1.rar, and ISRA2.rar.

2. To bundle ISRA with the Sample Application:

- i. Modify META-INF/application.xml in each ear file

(The contents of this file are provided below. The red text denotes text to be added or modified.)

```
<?xml version="1.0" encoding="UTF-8"?>
<!DOCTYPE application PUBLIC "-//Sun
Microsystems, Inc.//DTD J2EE Application
1.3//EN"
"http://java.sun.com/dtd/application_1_3.dtd">
<application>
  <display-name>ISRA_Sample1</display-name>
```

```

    <description>FileNet ISRA 3.2.1, Sample
    Application</description>
    <module>
        <web>
            <web-uri>ISRASampleWEB1.war</web-uri>
            <context-root>ISRA1</context-root>
        </web>
    </module>
    <module>
        <connector>ISRA1.rar</connector>
    </module>
</application>

```

The value in the `<context-root>` tag in application.xml file specifies the name with which the application is accessed in the web browser. This must be different for each deployment. Here, for instance, ISRA1 and ISRA2 have been used. Therefore, the URL for each instance would be.

<http://server:9080/ISRA1>

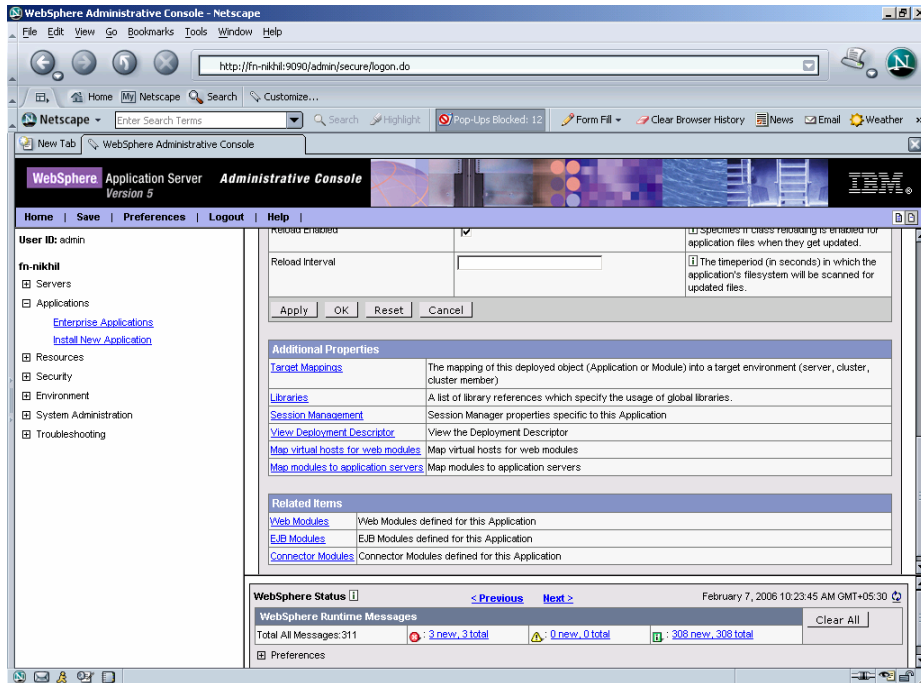
<http://server:9080/ISRA2>

The value in the `<connector>` tag specifies the name of the ISRA.rar file. In this case, enter "ISRA1.rar" in the application.xml file within ISRASample1.ear and "ISRA2.rar" in the application.xml file within ISRASample2.ear.

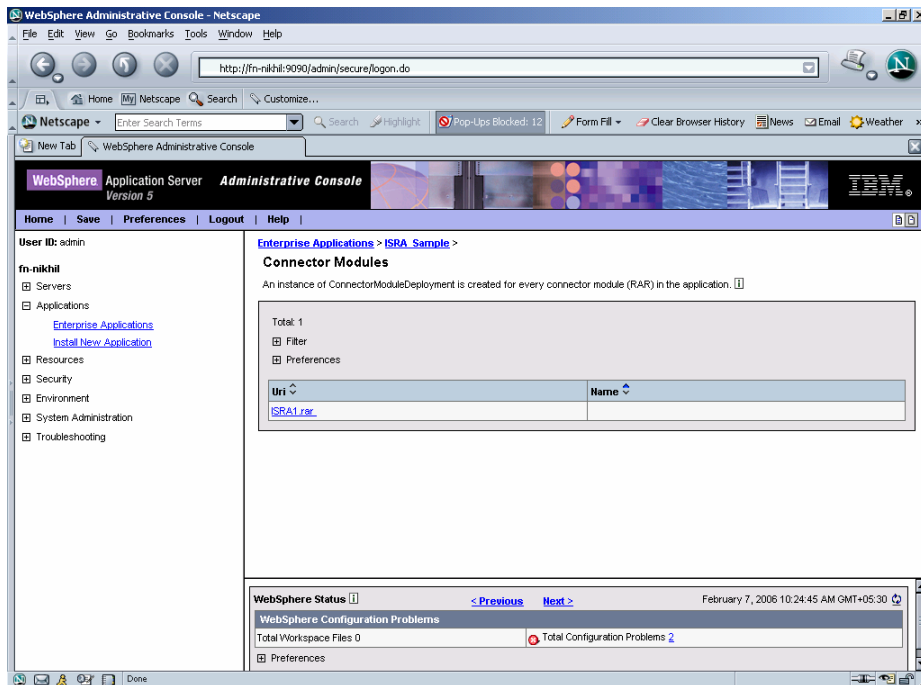
- ii. Put ISRA1.rar in the top most directory of the ISRASample1.ear directory structure (it will be the same place where you will find ISRASampleWEB.war). Do the same for ISRA2.rar with ISRASample2.ear.
3. To install ISRASample1.ear and ISRASample2.ear, refer the section [Deploying the Sample Application in a Standalone Environment](#).

Note: Name the first instance as ISRA_Sample1, and the second instance as ISRA_Sample2.

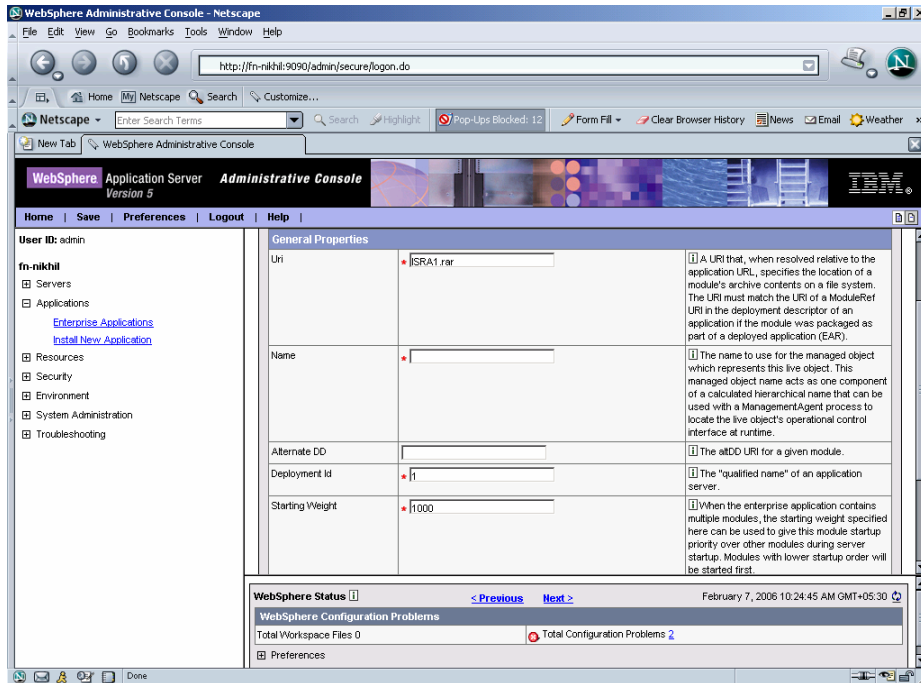
4. Perform the following steps to create the connection factories for each ISRA instance within each sample application installation:
 - i. Navigate to **Applications -> Enterprise Applications**.
 - ii. Click the sample application for which connection factory is to be configured (for example: ISRA_Sample1). The following screen appears:



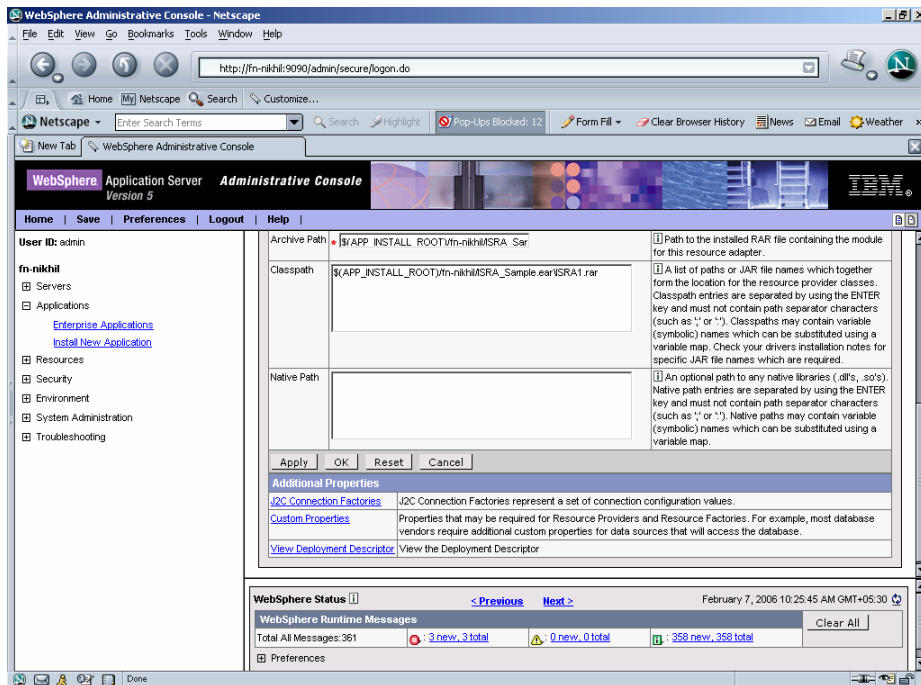
iii. Under Related Items, click the **Connector Modules** link. The following screen appears:



iv. Click the rar file link. The following screen appears:

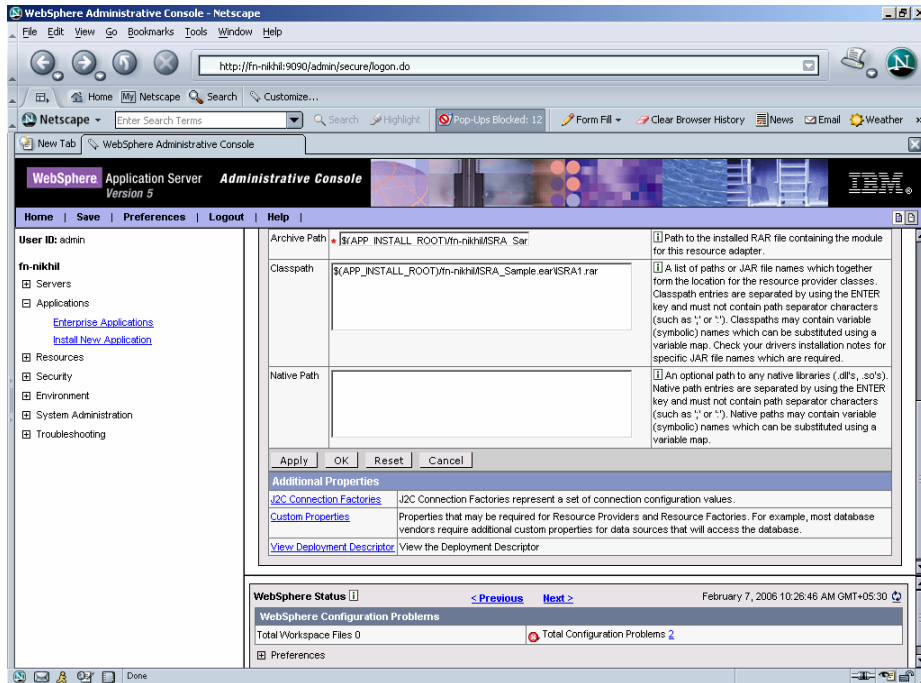


v. Under Additional Properties, click **Resource Adapter** link. The following screen appears:

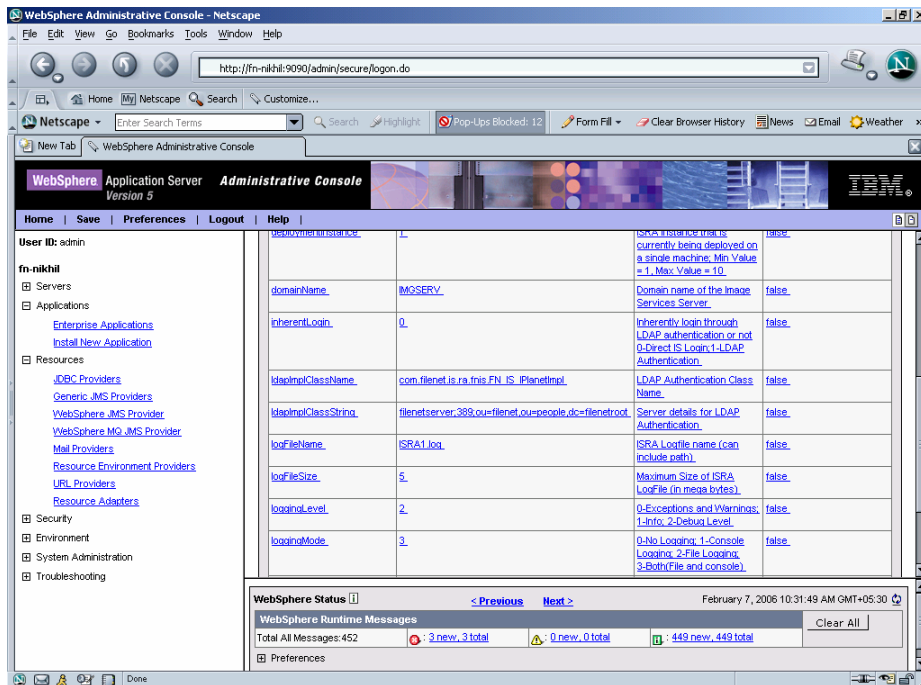


vi. Under Additional Properties, click **J2C Connection Factories** link and create a new connection factory. Refer to [Configuring Deployed ISRA](#) section for details.

vii. After creating the connection factory, click the **Connection Factory** link. The following screen appears:



viii. Under Additional Properties, click on the **Custom Properties** link. The following screen appears:



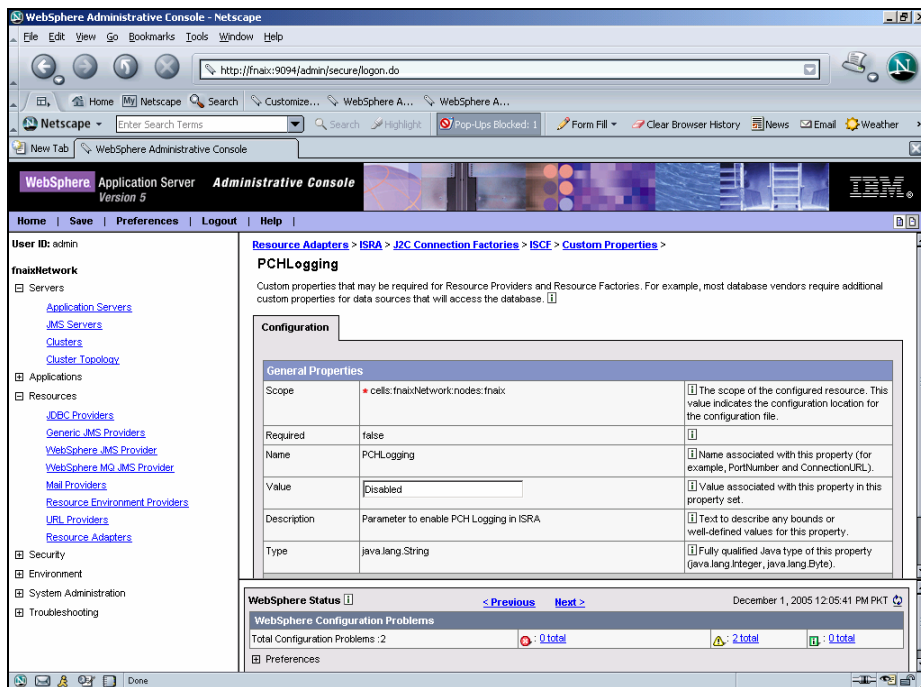
ix. Modify the value for LogFileName. This is the log file that will be written to for this instance. For example: enter ISRA1.log for the connection factory created for the first deployment, and ISRA2.log for the second.

x. Modify other custom properties, if required. Refer to [Changing Parameters Specific to ISRA](#) section for details.

- xii. In web.xml, under the “LIBRARY_NAMES” parameter, add the created connection factory name of the respective sample application.
 - xii. Repeat the above steps for the other instance.
5. Save all of the changes, and restart the server.
 6. Login to each sample application and verify that there is a separate log file for each deployment.

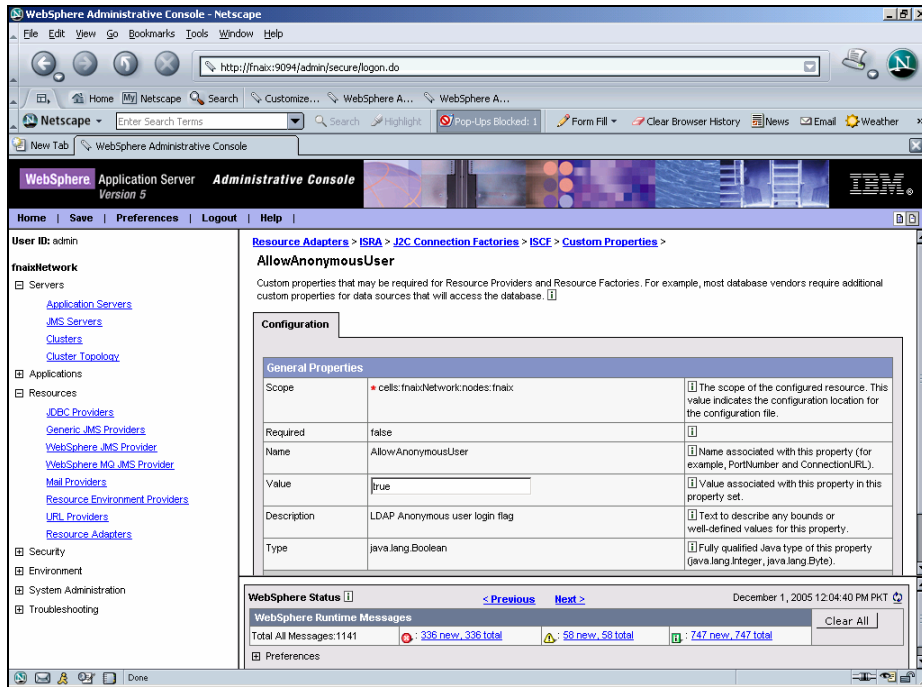
PCHLogging

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.

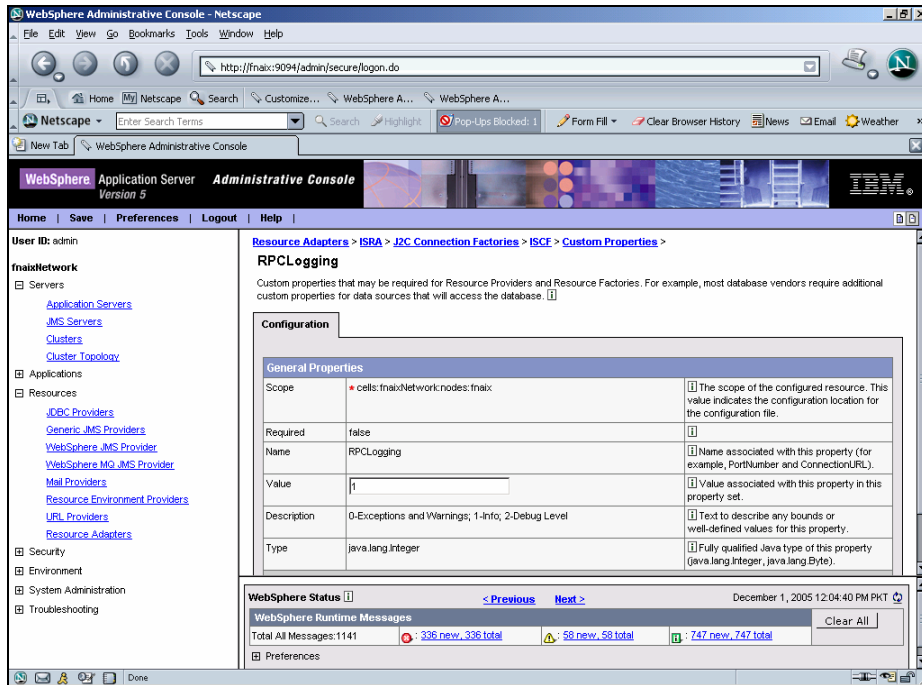


RPCLogging

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.



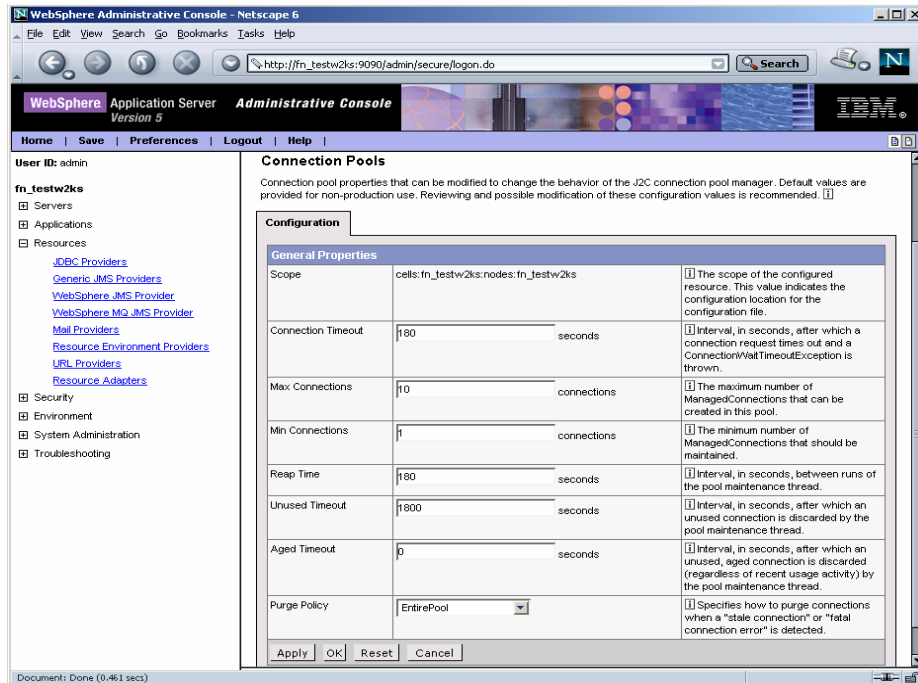
Configuring WebSphere-Specific Parameters

Once the configurable properties are set for ISRA, the Application Server-specific parameters need to be configured. In case of WebSphere server, the properties that need to be specified are:

- Connection Timeout
- Maximum Connections
- Minimum Connections
- Reap Time
- Unused Timeout
- Aged Timeout
- Purge Policy
- DisableMultiThreadedServletConnectionMgmt

The steps to configure these properties are:

1. Click **Resources > Resource Adapters > ISRA > J2C Connection Factories > ConnectionFactoryName (ISCF) > Connection Pool.**
2. Set the **Connection timeout, Maximum connections, Minimum connections, Reap time, Unused timeout, Aged Timeout and Purge Policy.**



A description of each attribute is given below:

- Connection Timeout:** Defines the time (in milliseconds) that the Pool Manager waits after reaching the maximum number of connections to abort and throw a ResourceAllocationException. If the maximum number of connections is not reached or is set to zero (0), the Connection Timeout will not be used.

If the Connection Timeout is zero (0), the Pool Manager will wait indefinitely.

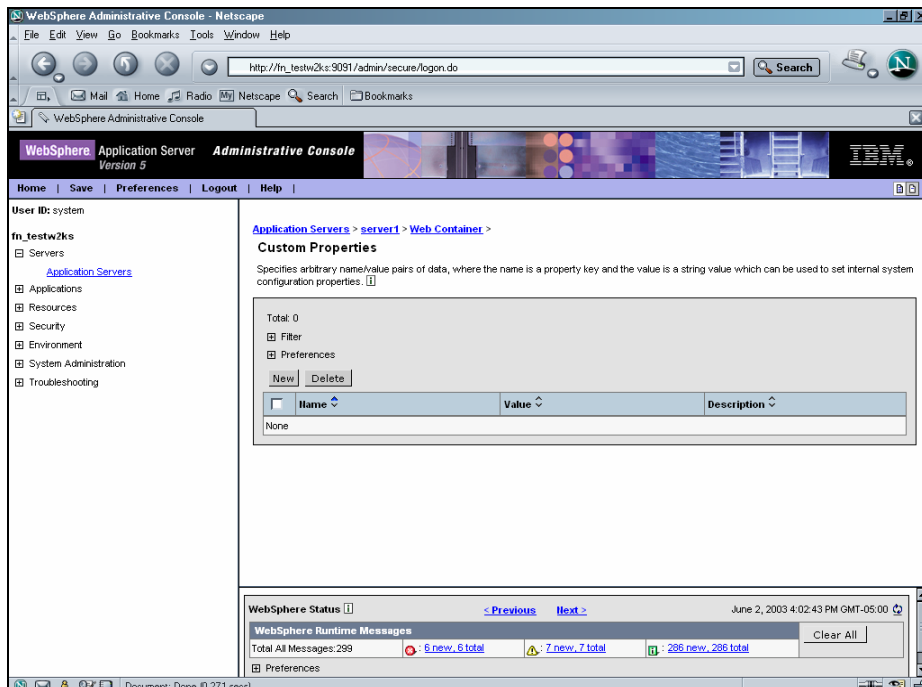
- Maximum Connections:** Represents maximum number of Managed Connections that can be created by the ManagedConnectionFactory. After this number is reached, no new connections are created, and the requester waits for the Connection Timeout or a ResourceAllocationException to be thrown. If Maximum Connections is set to zero (0), then the number of connections can grow indefinitely. Maximum Connections must be greater than or equal to Minimum Connections.
- Minimum Connections:** Represents minimum number of Managed Connections maintained by the Application Server. If this number is reached, the garbage collector will not discard any Managed Connections. If the actual number of connections is lower than the value specified by the minimum connections settings, no attempt will be made to increase the number of connections to the minimum. Minimum Connections must be less than or equal to Maximum Connections. Set this value to 0 for ISRA.
- Reap Time:** Represents the time (in seconds) after which the garbage collector runs. The garbage collector discards all unused connections for the value specified by the Unused timeout.

- **Unused timeout:** Represents the time (in milliseconds) after which an unused connection is discarded. If this value is set to 0 the garbage collector is disabled.
- **Aged timeout:** Specifies the interval (in seconds) after which an unused, aged connection is discarded. Set the Aged Timeout value higher than the Reap Timeout value for optimal performance
- **Purge Policy:** Specifies how to purge connections when a stale connection or fatal connection error is detected. If user sets the purge policy for this data source object to EntirePool, all connections in the pool are marked stale. Any connection not in use is immediately closed. If user sets the purge policy for this data source object to FailingConnectionOnly, only the connection that caused the StaleConnectionException is closed.
- **DisableMultiThreadedServletConnectionMgmt:** In WAS 5, Web container closes JCA connection, immediately after exiting from doGet() or doPost() method of JSP/Servlet. According to the JCA specification, CCI Connection should remain open after a JSP/servlet completes a doPost() or doGet() method and should be terminated via a destroy () method invocation.

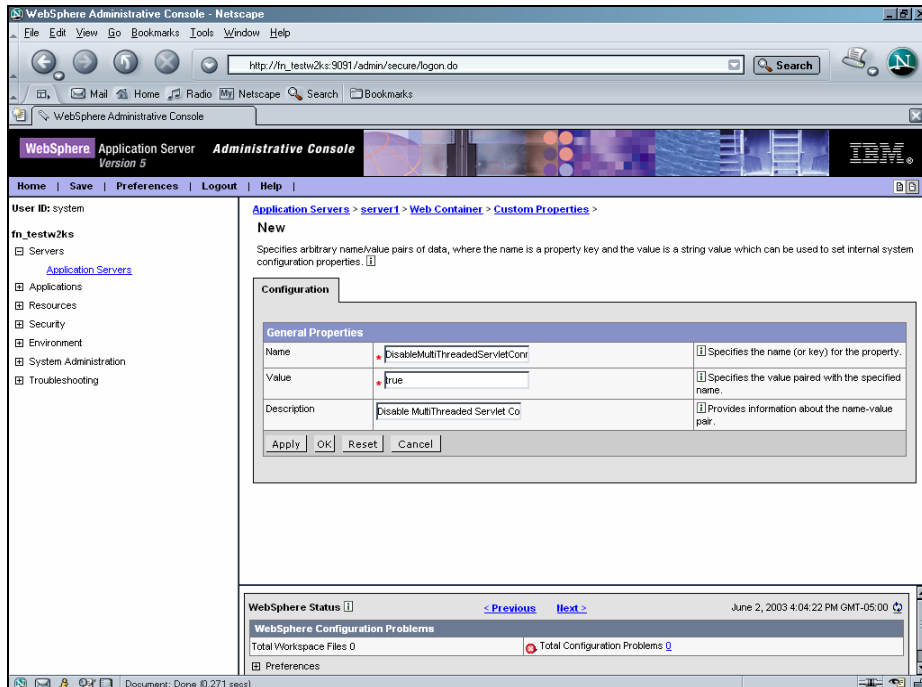
To overcome this limitation, user should download/install fix PQ73966 or Fix Pack 2 and set

DisableMultiThreadedServletConnectionMgmt property to true by taking following steps.

- Click **Application Servers > {server name} > Web Container > Custom Properties**. The following screen appears:



- Click **New**.



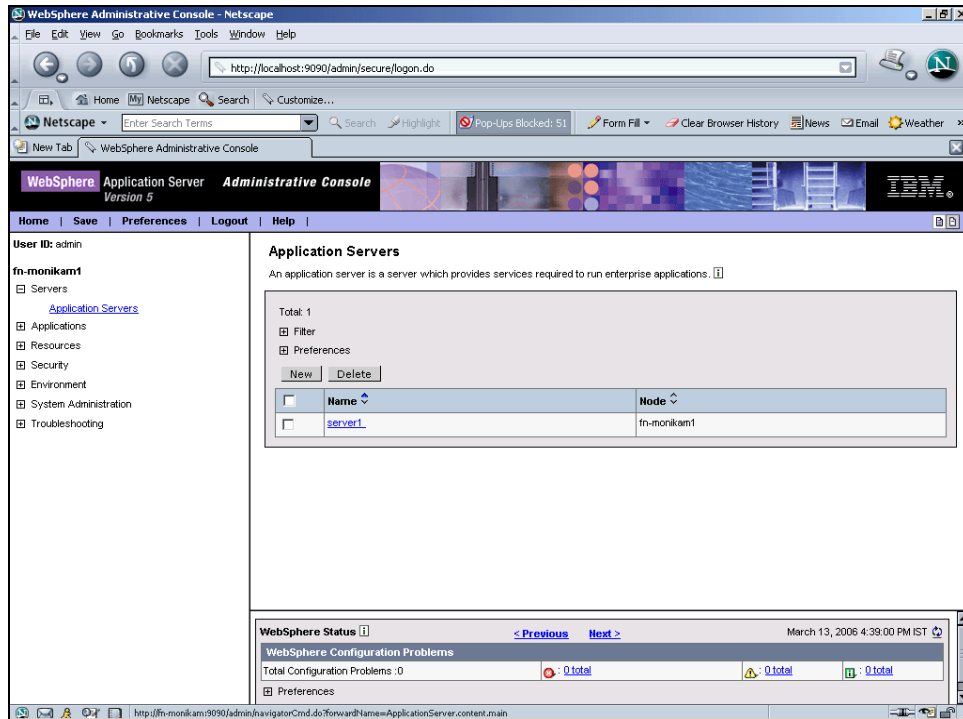
- iii. Enter "**DisableMultiThreadedServletConnectionMgmt**" into the **Name** field and enter "**true**" into the **Value** field
- iv. Save the configuration and restart the Application Server.

Note It is recommended that user should set the values of the Reap Time and Unused timeout to ensure that WebSphere and ISRA free the unused IS server resources. The actual values of these parameters depend on the application scenario, but in general, they should be set to a low value to free the IS resources. For Example, set **Unused timeout** to 30000 milliseconds (30 Seconds) and **Reap time** to 120 Seconds (2 minutes).

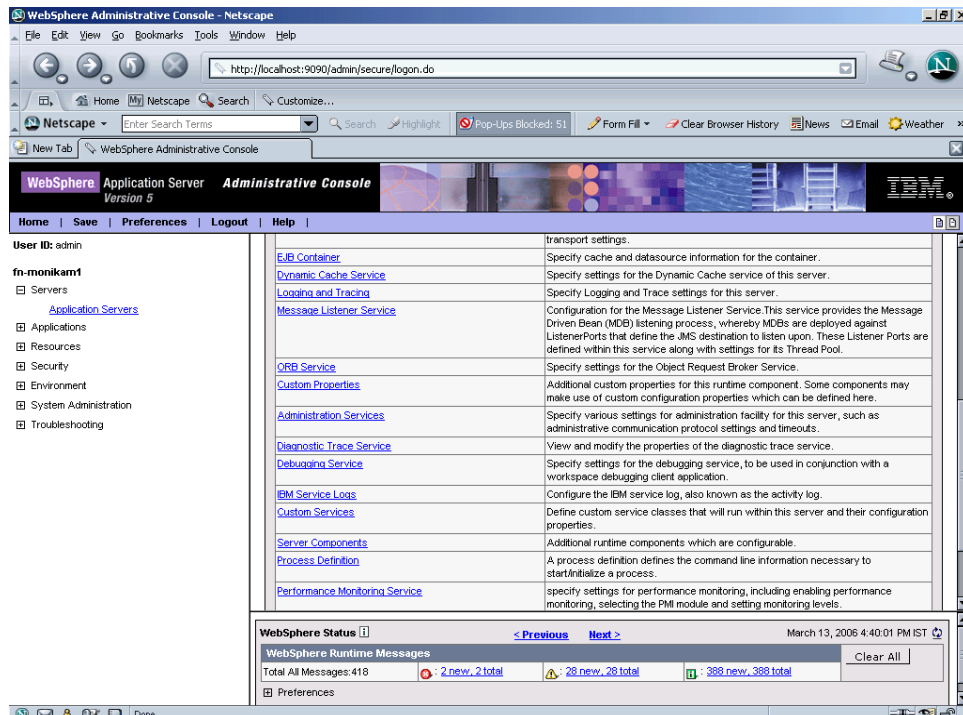
Configuring WebSphere-Specific Parameter for Globalization Support

To configure the WebSphere specific parameters for globalization support:

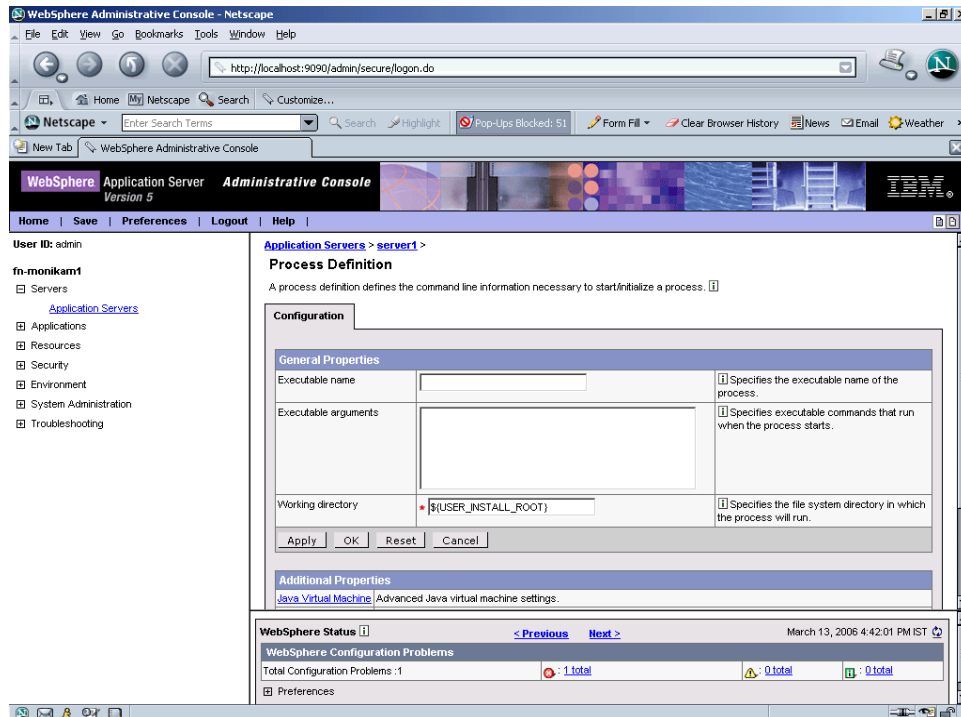
1. Navigate to **Server > Application Server**. A list of application server instances is displayed.



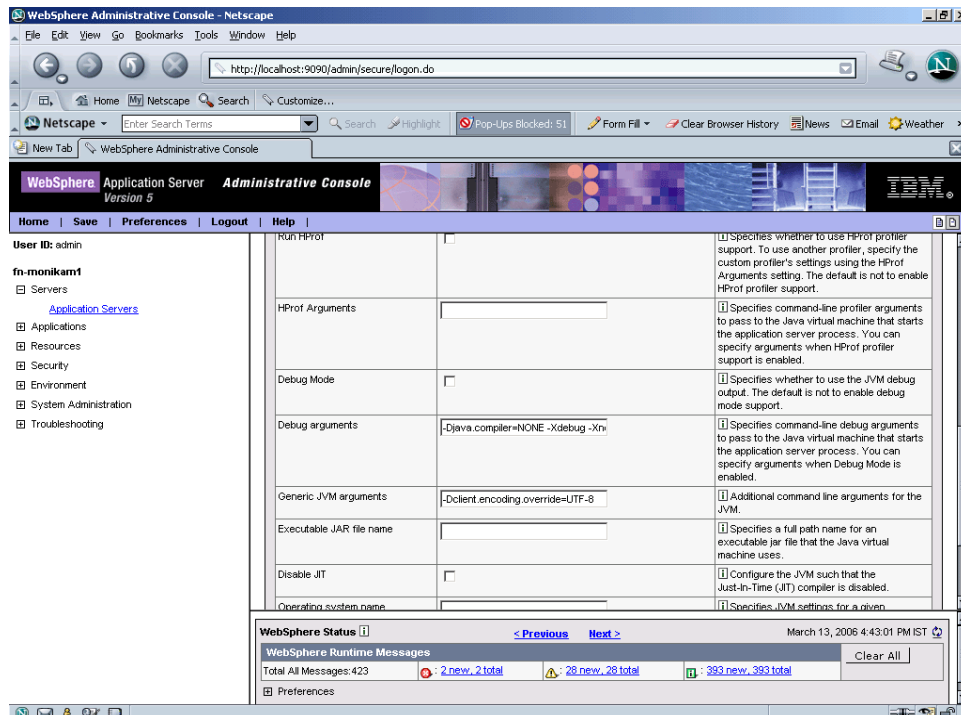
2. Click the server instance, here **server1**. The following screen appears:



3. Under Server Additional Properties, click **Process Definition** link. The following screen appears:



4. Under Additional Properties, click **Java Virtual Machine** link. The following screen appears:



5. Include **-Dclient.encoding.override=UTF-8** in the **General JVM** argument list.

Configuring Multiple IS Servers with ISRA

To configure ISRA for accessing multiple IS servers, create a Connection Factory for each IS that user wants to connect.

The following screen shows Connection Factories configured for multiple IS servers:

The screenshot displays the WebSphere Administrative Console interface. The browser window title is "WebSphere Administrative Console - Netscape 6". The address bar shows "http://fn_testw2ks:9090/admin/secure/login.do". The console header includes "WebSphere Application Server Version 5" and "Administrative Console". The left sidebar shows a navigation tree with "Resources" expanded to "Resource Adapters". The main content area shows a message box with a warning icon and text: "Changes have been made to your local configuration. Click Save to apply changes to the master configuration. The server may need to be restarted for these changes to take effect." Below the message, the breadcrumb "Resource Adapters > ISRA >" is visible, followed by the section title "J2C Connection Factories". A descriptive paragraph explains that the Connection Factory represents one set of connection configuration values. Below the text, there are "New" and "Delete" buttons. A table lists two connection factories:

Name	JNDI Name	Description	Category
ISRA3CF	ISCF		
ISRA3CF1	ISCF1		

The status bar at the bottom indicates "Document: Done (1.212 secs)".

4

Configuring and Deploying ISRA Sample Application

The 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 IBM WebSphere Server 5.

Note ISRA product media comes with a 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 WebSphere Application Server to access ISRA in a standalone or clustered 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 and 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>
```

3. 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.

4. Bundle **crimson.jar** within "WEB-INF\lib" directory of **ISRASampleWEB.war**.

IBM WebSphere Application Server does not provide the crimson implementation of DocumentBuilderFactory class.

The Sample Application uses crimson implementation of DocumentBuilderFactory class to implement the Remote printing functionality.

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

Deploying the Sample Application in a Standalone Environment

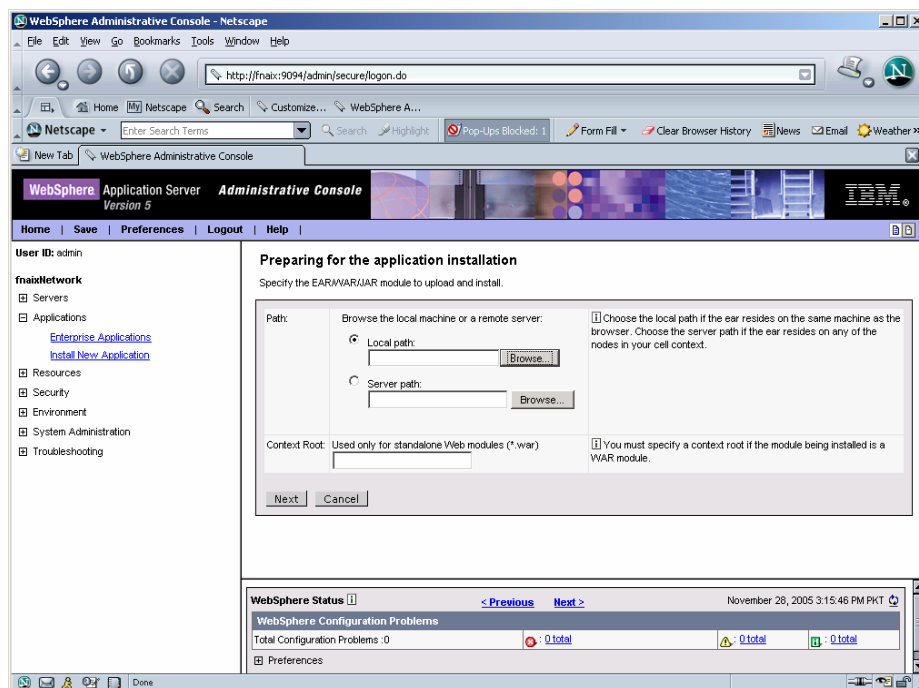
This section describes how to deploy the Sample Application on a WebSphere Server to access ISRA in a standalone environment.

ISRA Sample Application is deployed through the WebSphere Network Manager Administrative console. The steps to deploy are:

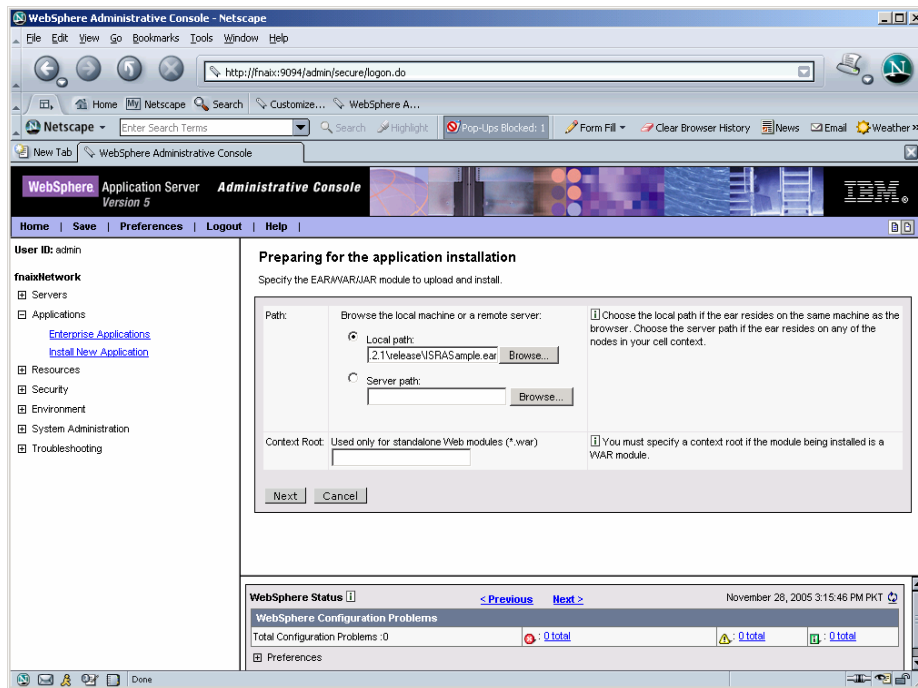
1. Start the WebSphere First Steps. Login as the root user, change directory to `<Websphere home>/AppServer/firststeps` and execute the `firststeps.sh` script, as follows:

```
# cd <Websphere home>/AppServer/firststeps
# ./firststeps.sh
```

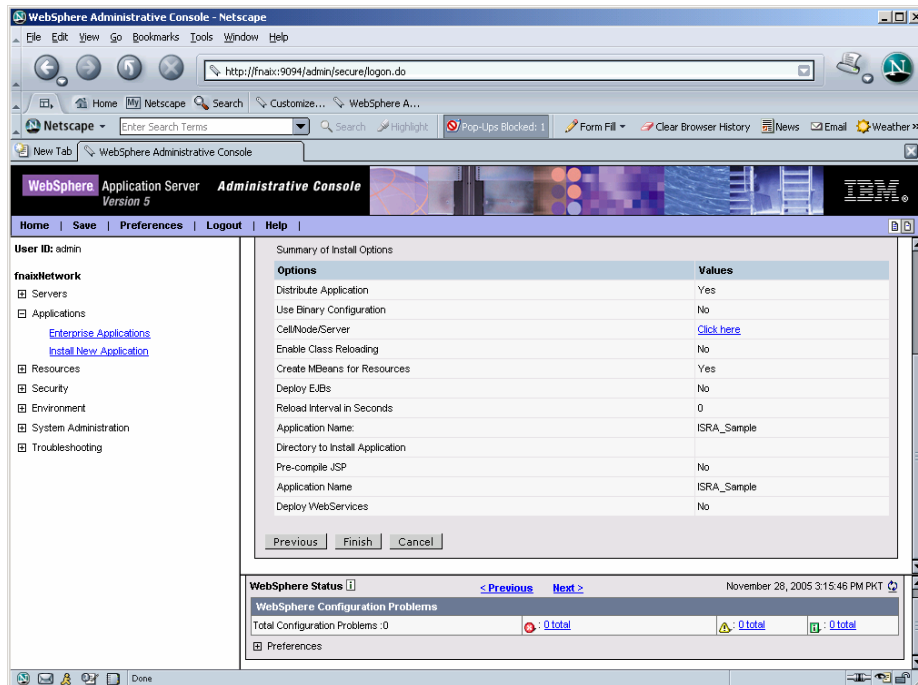
2. Login to the WebSphere Administrative console
3. Click **Applications > Install New Application**. The following screen appears:



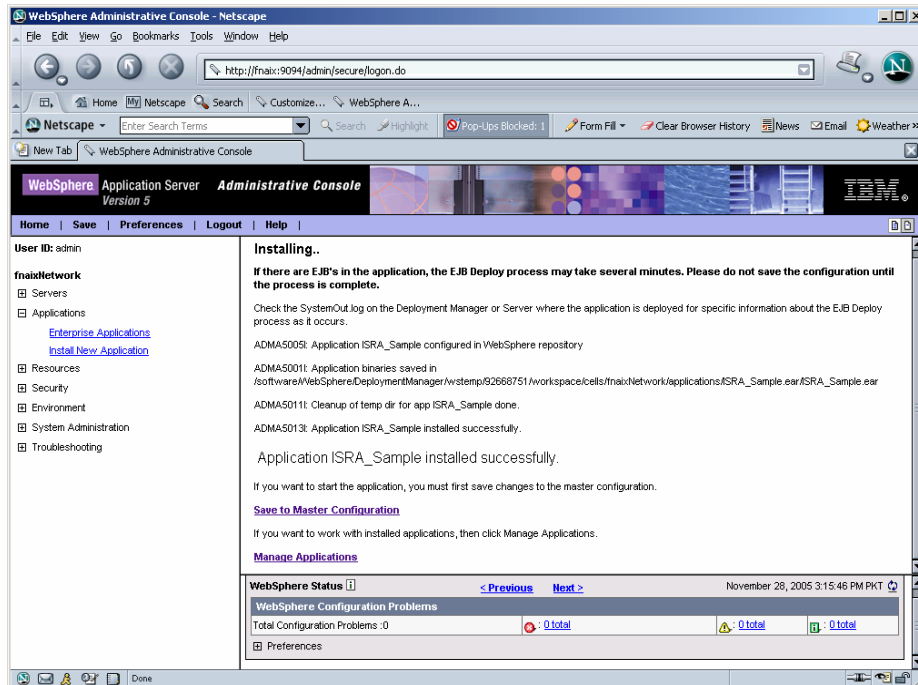
- Click **Browse** to locate the **ISRASample.ear** and deploy the Sample Application in the target environment. Also, specify a name for the Sample Application.



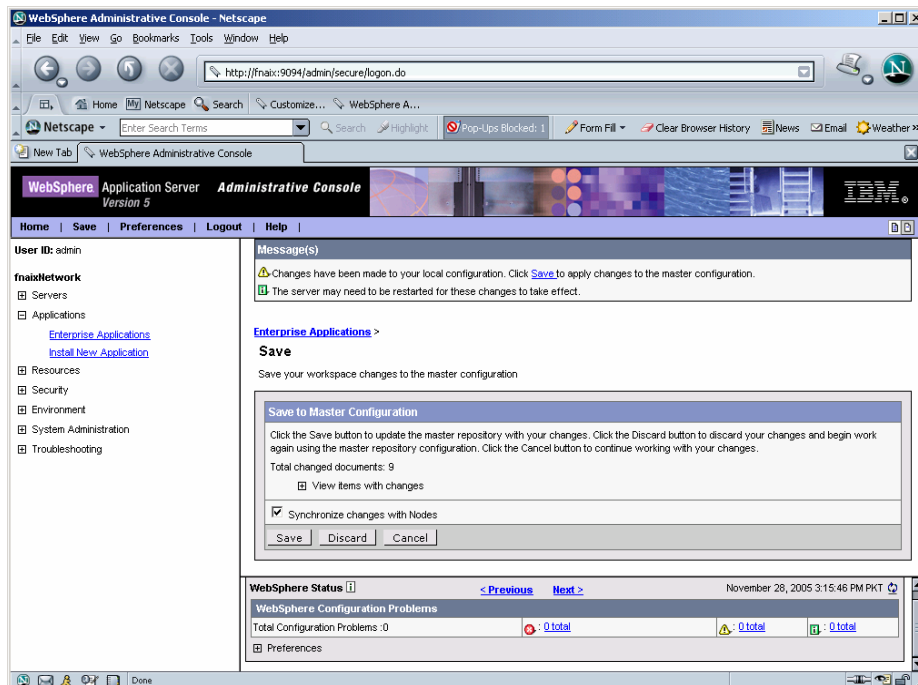
- Click **Next** until the **Summary** screen appears.



- Click **Finish**. The following screen appears:



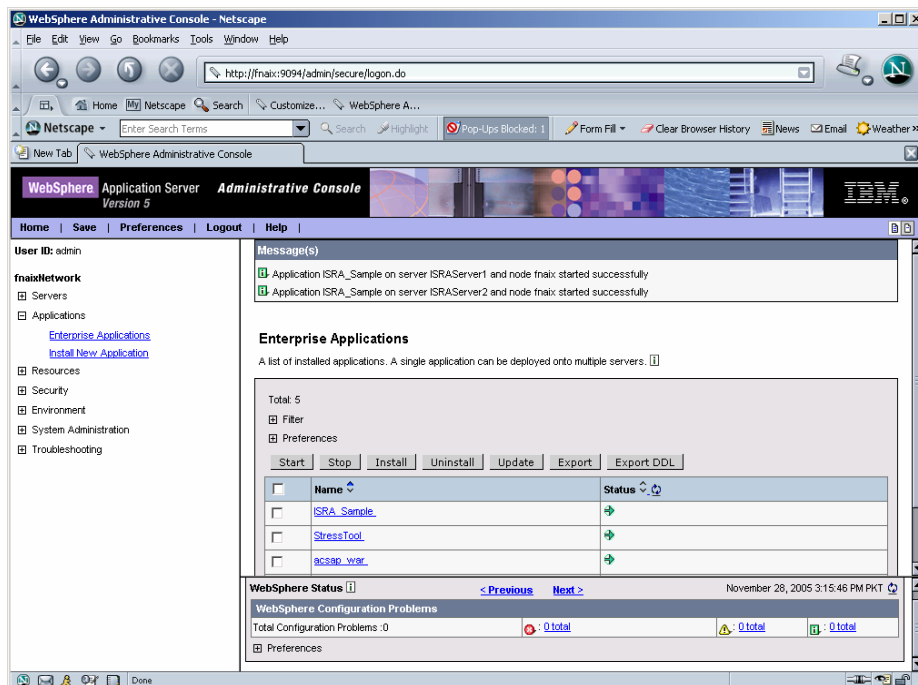
7. Click **Save to Master Configuration**. The following screen appears:



8. Click **Save** to complete the Sample Application deployment. The following screen appears:



9. Click **Applications > Enterprise Applications**. Check against **ISRA_Sample** and click **Start**. A message, as shown in the screen below, is displayed:



Deploying the Sample Application in a Clustered Environment

This section describes how to deploy the Sample Application on a WebSphere Server to access ISRA in a clustered environment.

Note Sample Application must be deployed on an environment where session affinity is enabled.

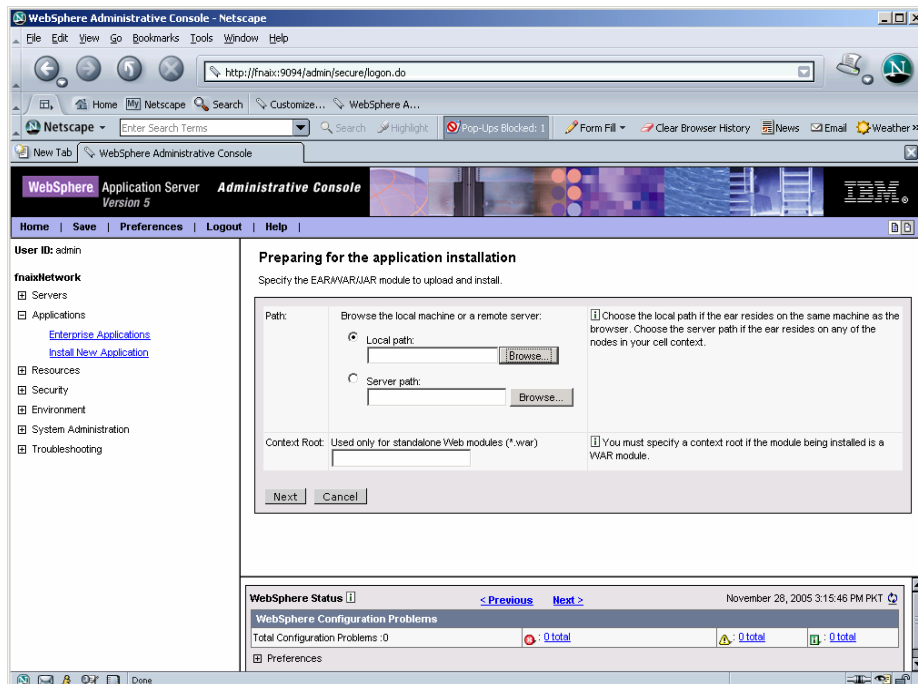
ISRA Sample Application is deployed through the WebSphere Network Manager Administrative console. The steps to deploy are:

1. Start the WebSphere First Steps. Login as the root user, change directory to `<DeploymentManager home>/firststeps` and execute the `firststeps.sh` script, as follows:

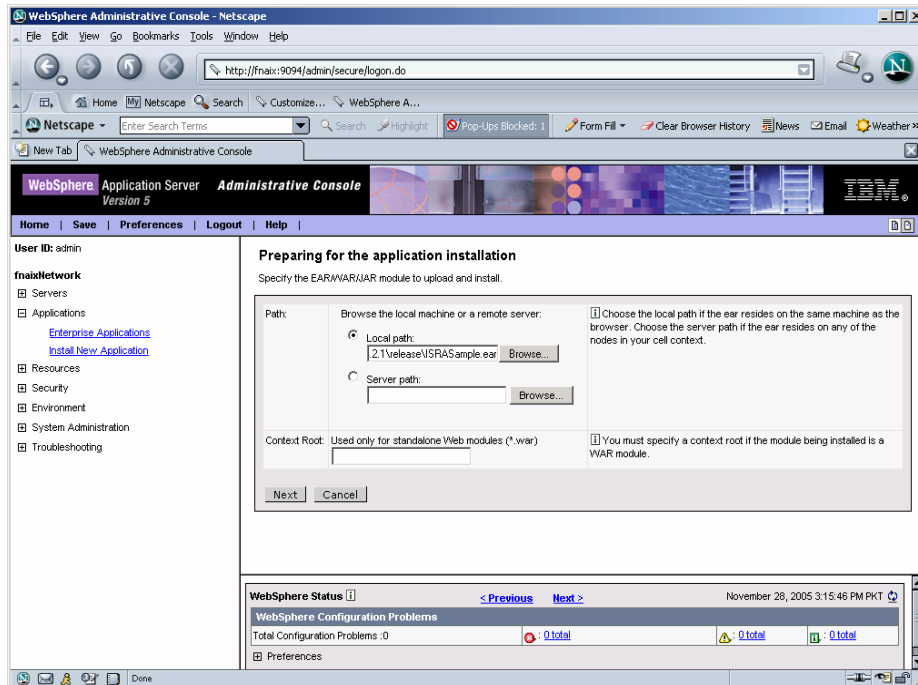
```
# cd <DeploymentManager home>/firststeps
# ./firststeps.sh
```

2. Login to the WebSphere Network Manager admin console.

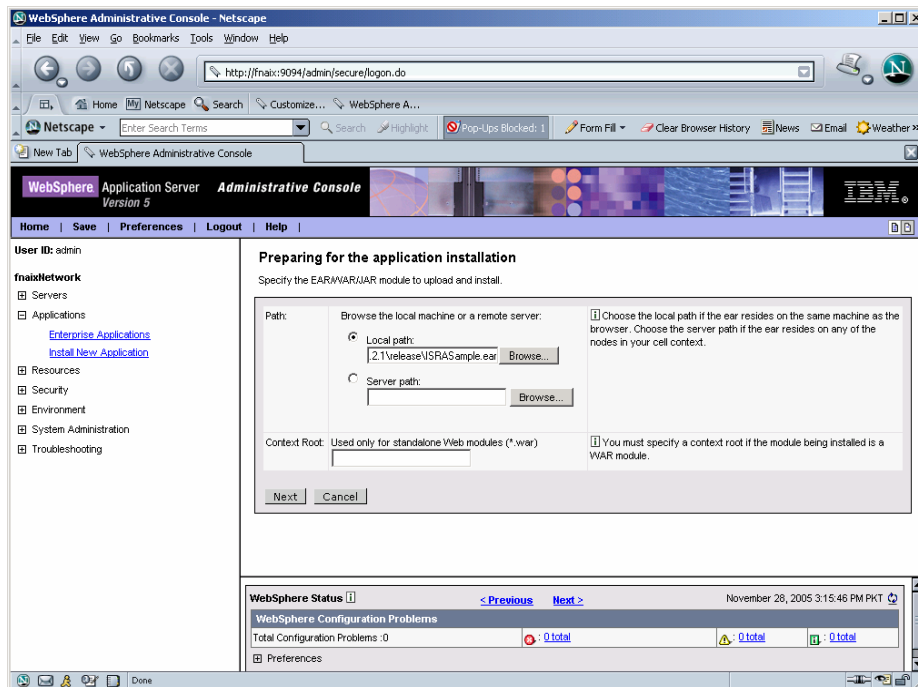
3. Click **Applications > Install New Application**. The following screen appears:



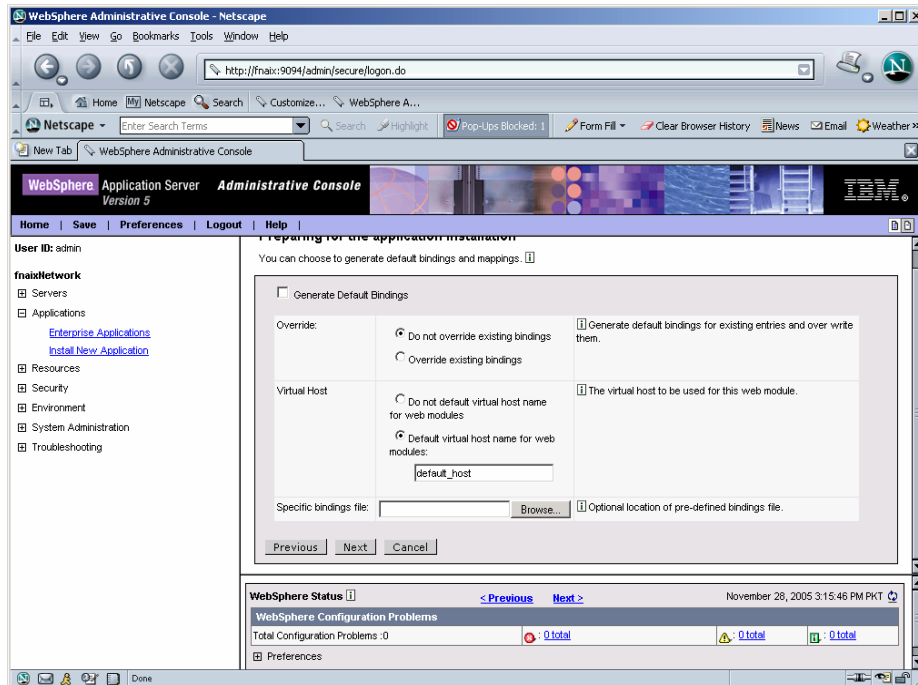
4. Click **Browse** to locate the **ISRASample.ear** and deploy the Sample Application in the target environment. Also, specify a name for the Sample Application in Context Root text box.



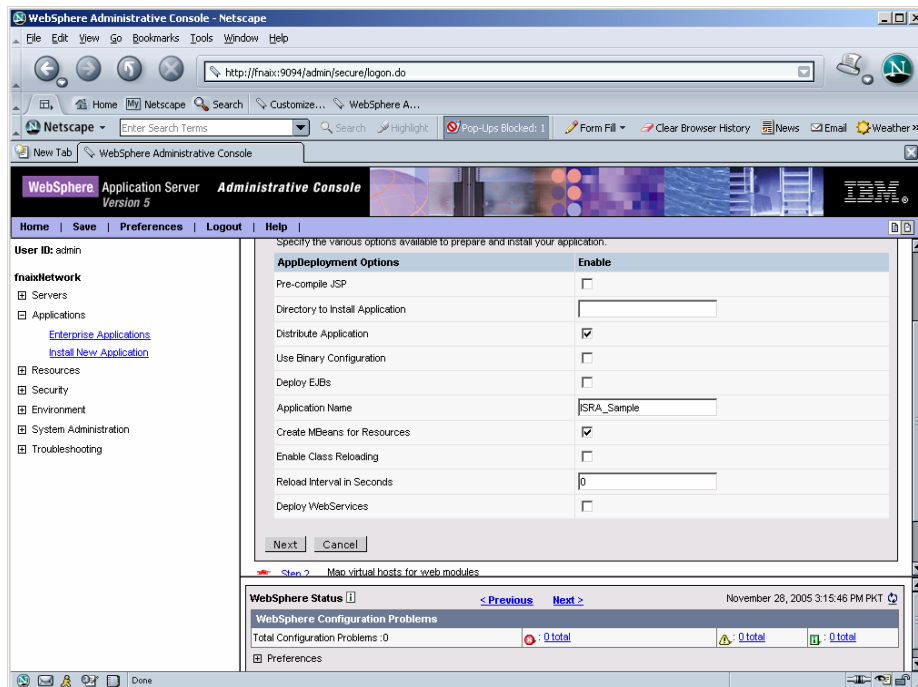
5. Click **Next**. The following screen appears:



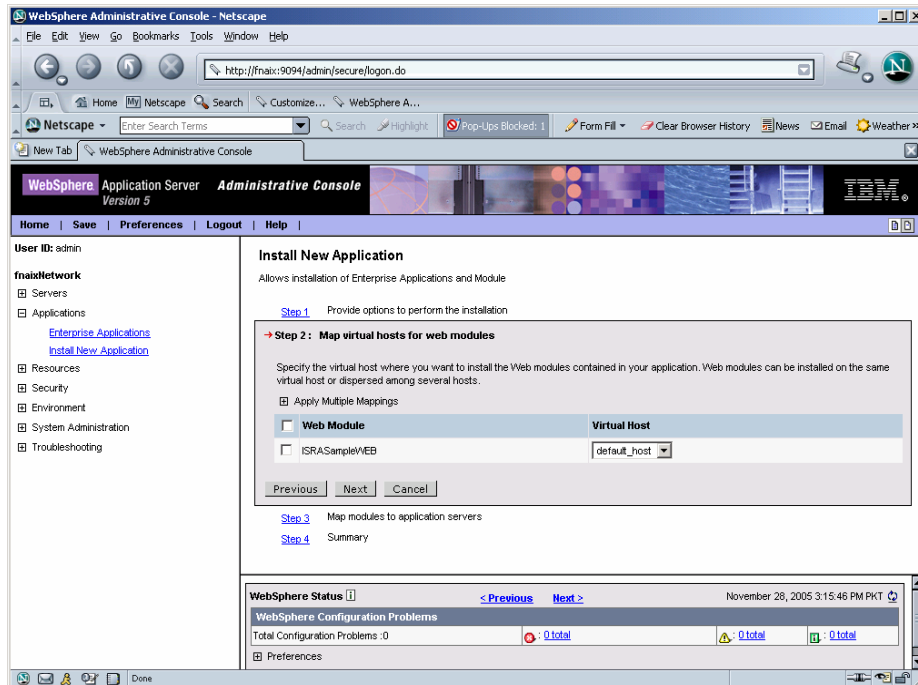
6. Click **Next**. The following screen appears:



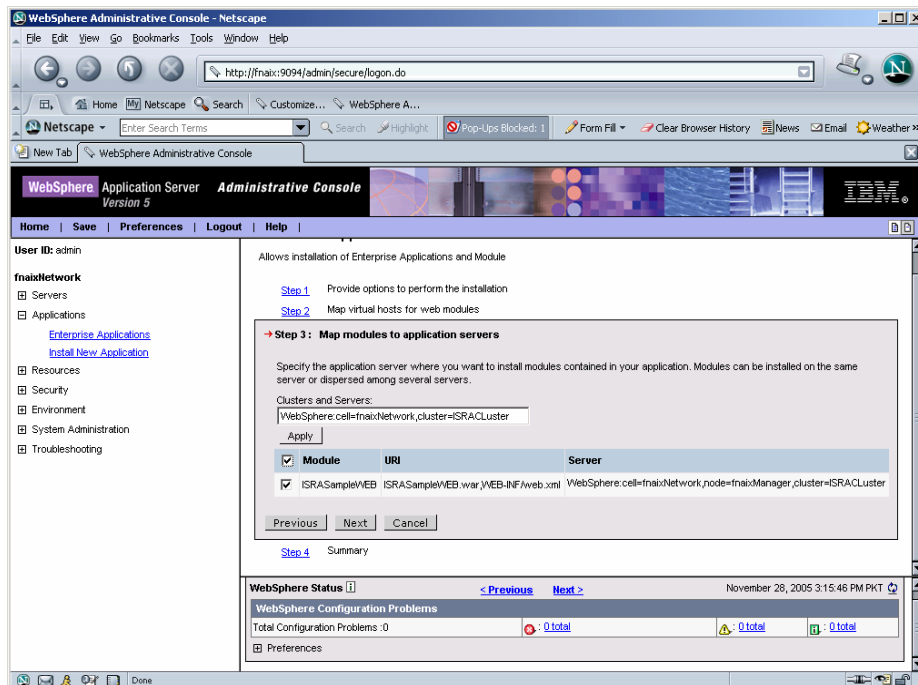
7. Click **Next**. The following screen appears:



8. Click **Next**. The following screen appears:

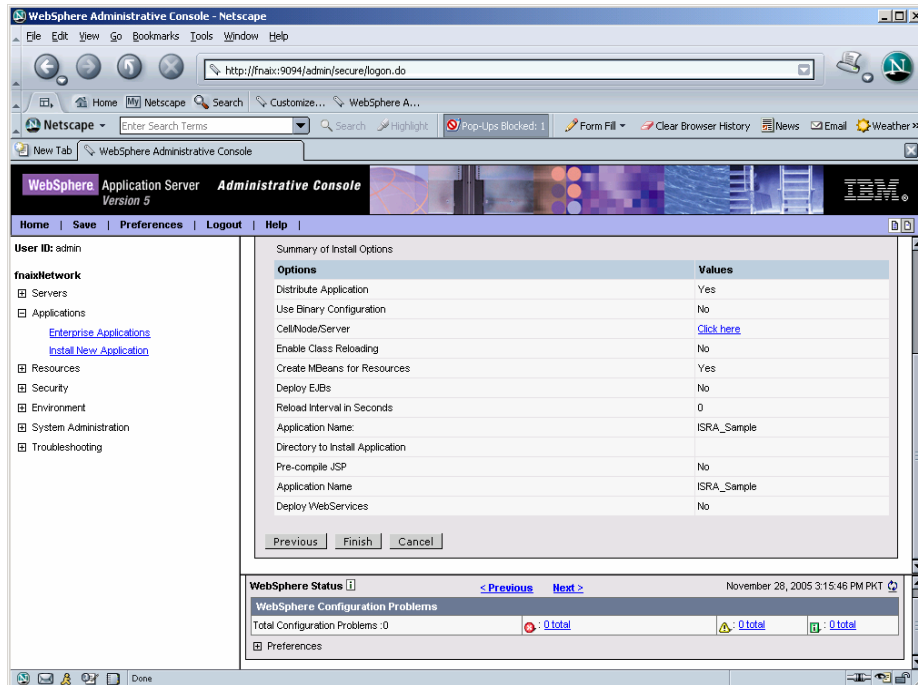


9. Click **Next**. The following screen appears:

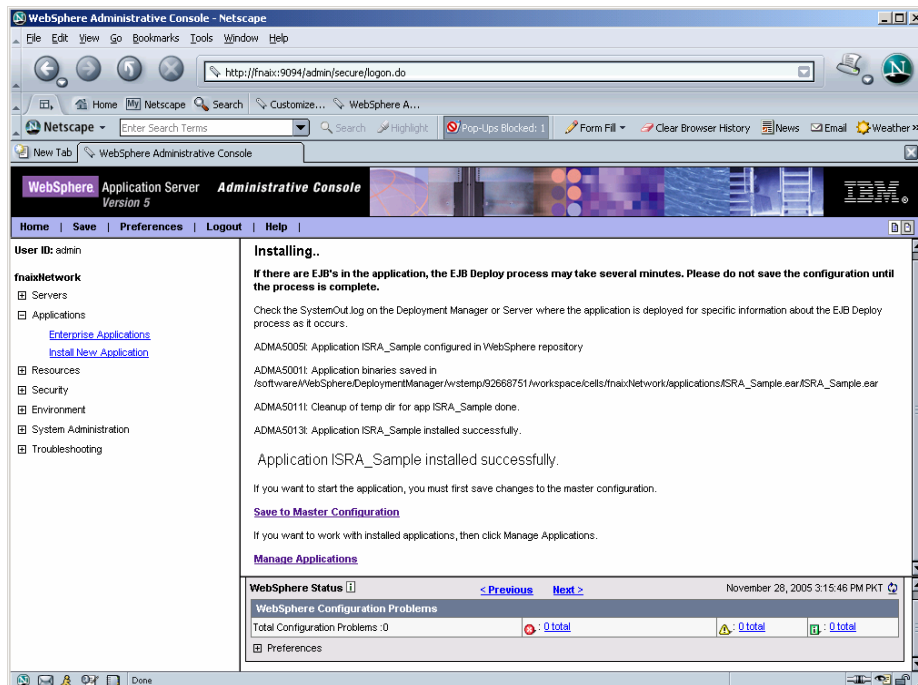


10. Select the Cluster/Server from **Clusters and Servers** list and check the module. Click **Apply**.

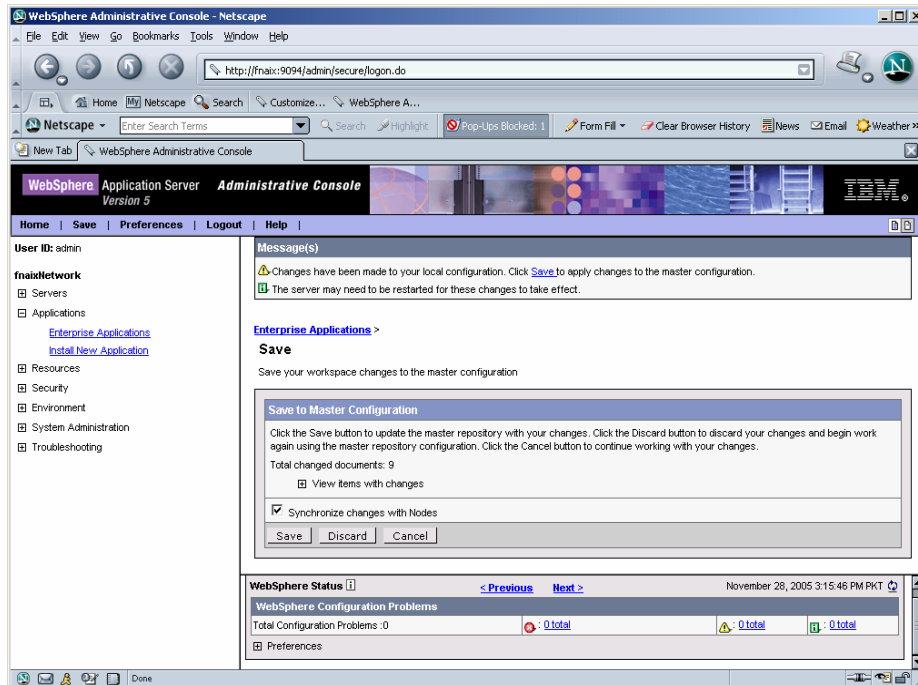
11. Click **Next**, the Summary screen appears.



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



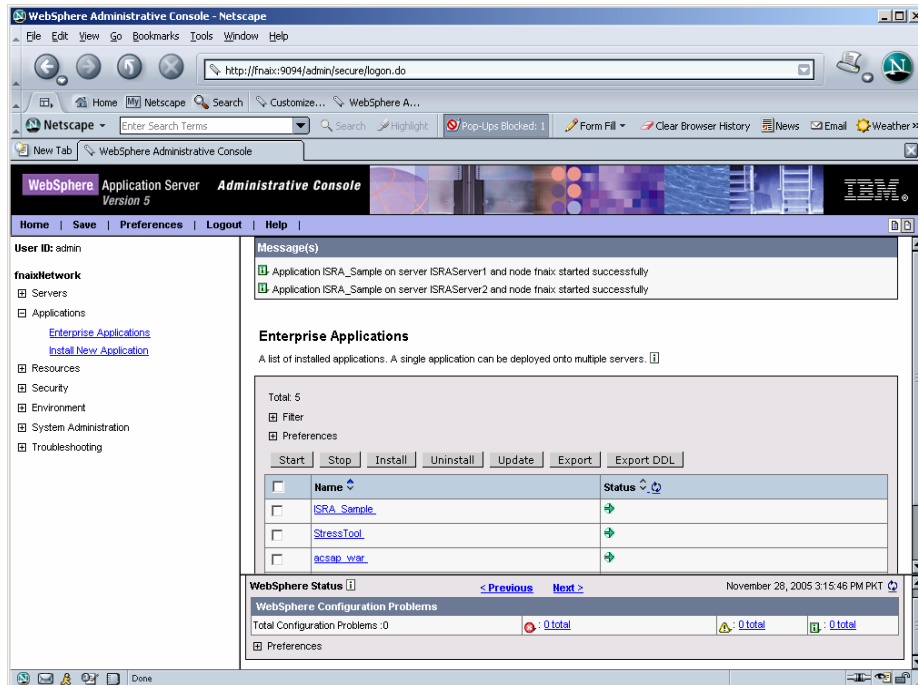
13. Click **Save to Master Configuration**. The following screen appears:



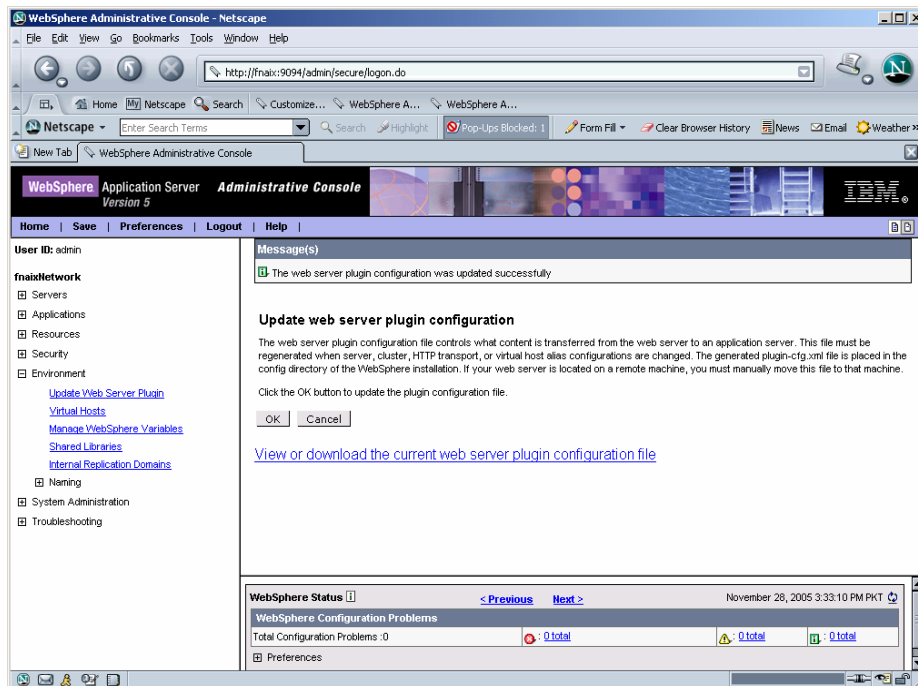
14. Enable the **Synchronize Changes with Nodes** check box. Click **Save** to complete the deployment of Sample Application. The following screen appears:



15. Click **Applications > Enterprise Applications**. Check against **ISRA_Sample** and click **Start**. A message, as shown in the screen below, is displayed:



16. Click **Environment -> Update Web Server Plugin**. The following screen appears:



17. Click **OK**.

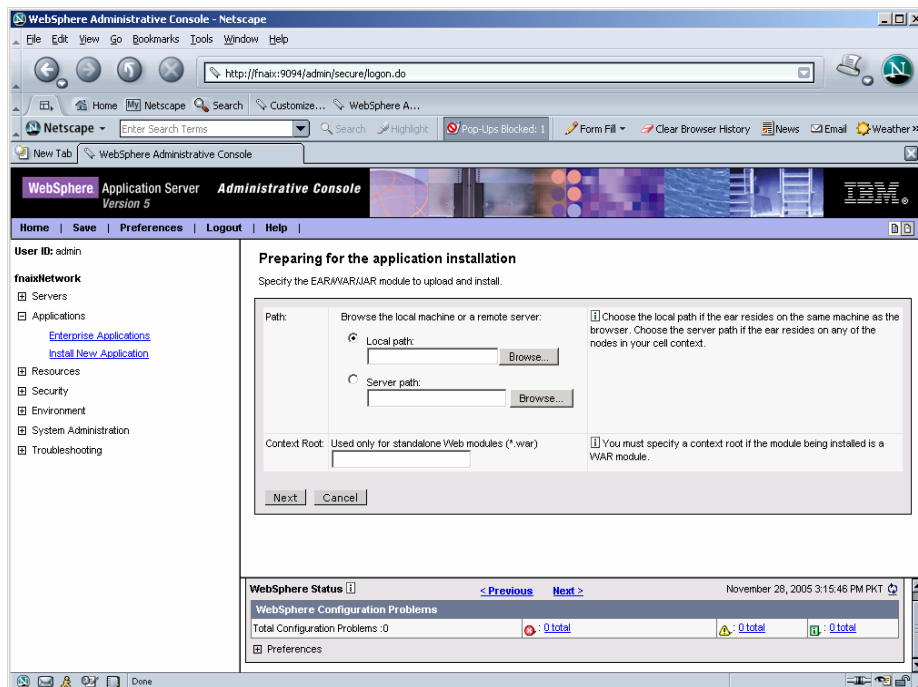
Note The user should update Web Server Plugin after deploying Web/Enterprise applications.

Deployment of the FileNet Image Viewer in the Standalone Environment

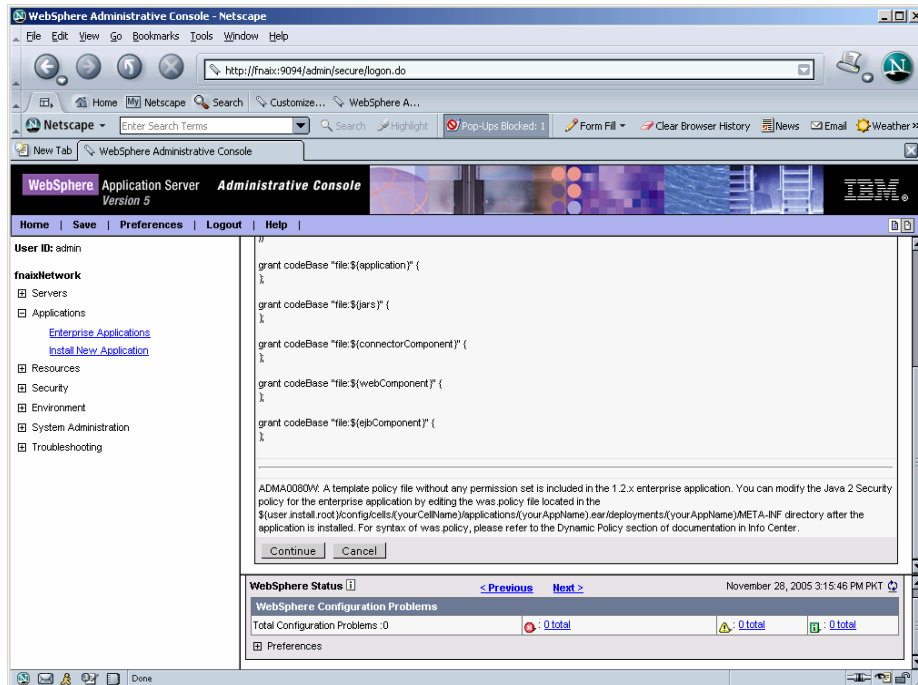
The FileNet Image viewer is used by the ISRA Sample Application to display documents of specific mime types (TIFF, JPEG and BMP). Skip this section and move to the next, if you do not want the FileNet Image Viewer configured with the ISRA Sample Application.

The steps to deploy the FileNet Image Viewer are:

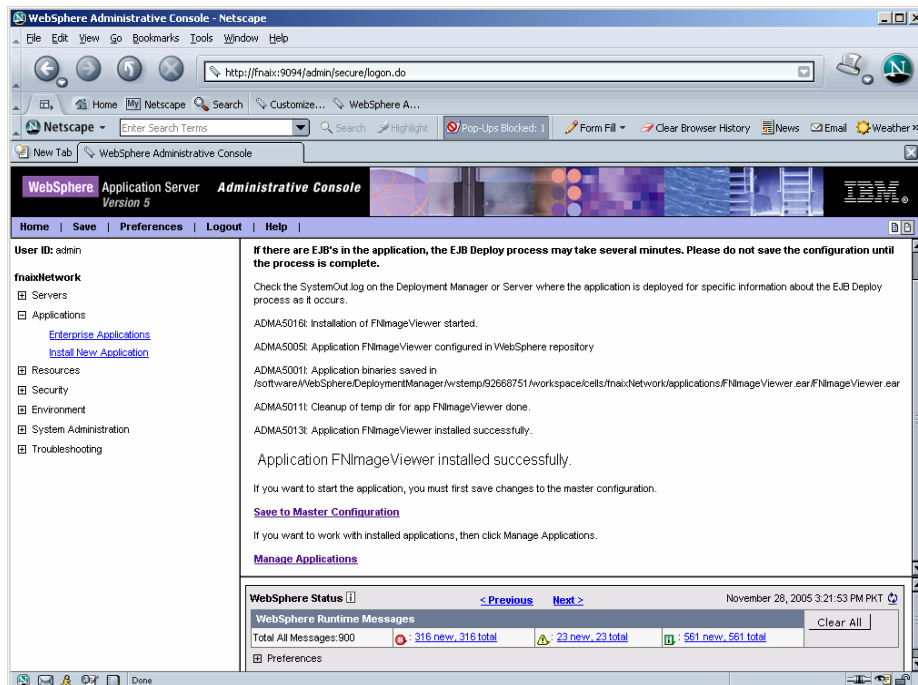
1. Launch the WebSphere Administrative Console. Click **Applications > Install New Application**.



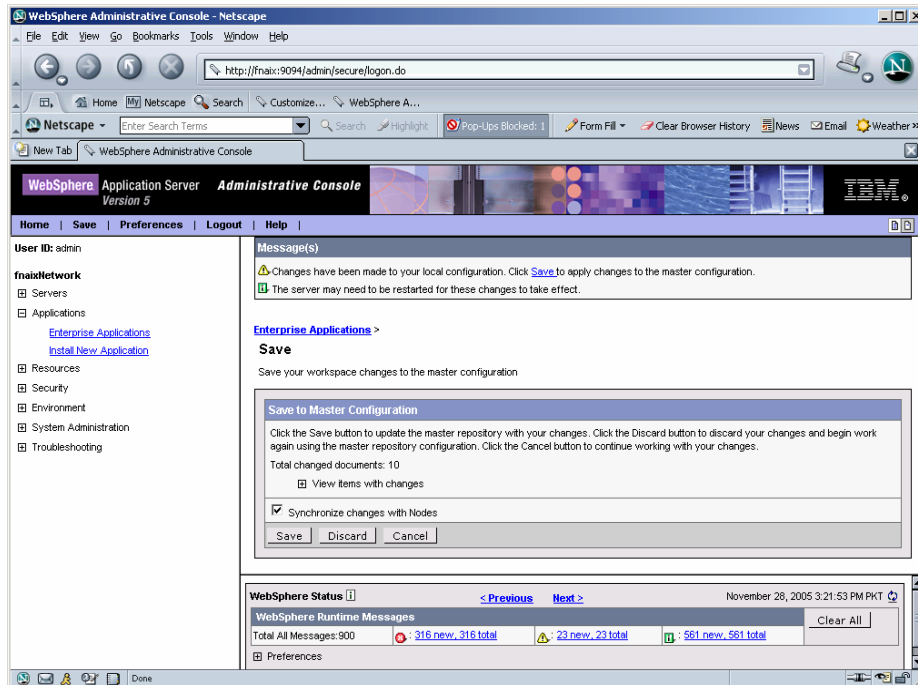
2. Click **Browse**. Navigate through the ISRA installation directory and choose FNImageViewer.ear. Click **Next**, until the **Summary** page appears.



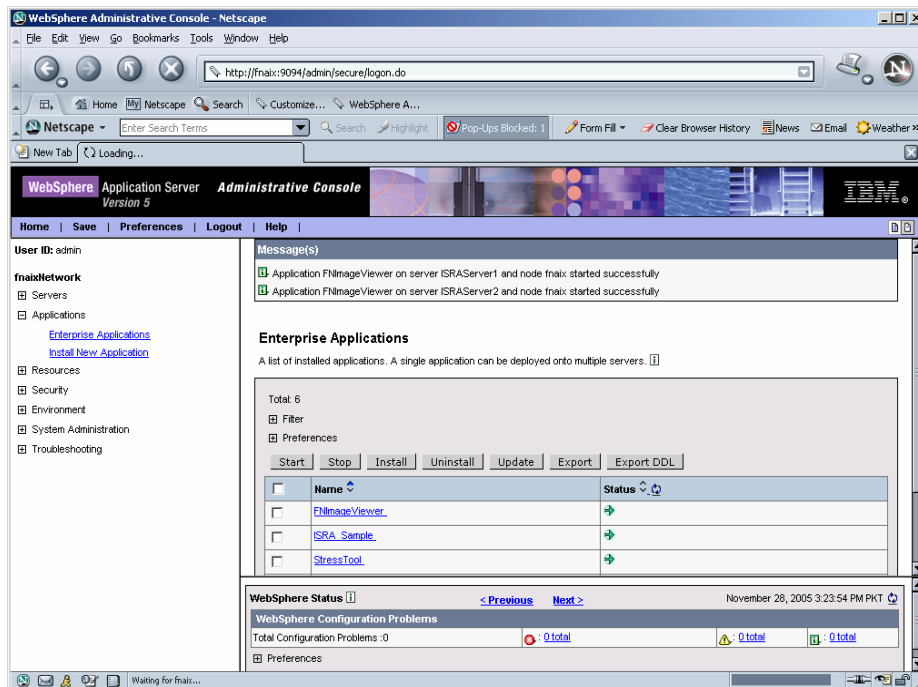
3. Click **Finish**. The following screen appears:



4. Click **Save to Master Configuration**. The following screen appears:



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



6. Click **Applications > Enterprise Applications**. Enable the **FNImageViewer** check box and click **Start**.

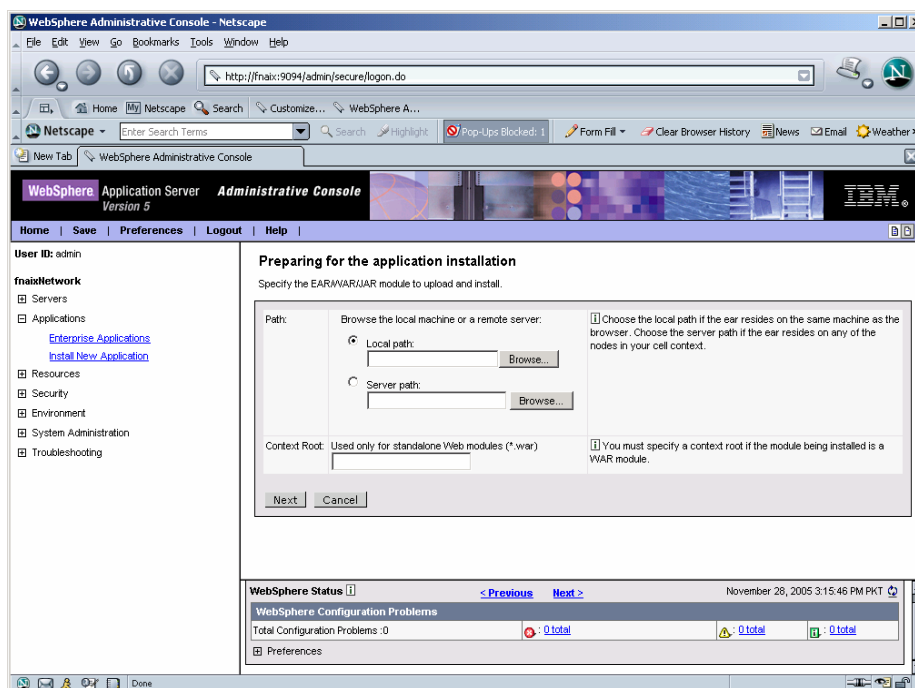
Note FNImageViewer.ear is located under the sample subfolder in the ISRA installation directory. FileNet Image Viewer files (FNImageViewer.jar) and FileNet Image Viewer documentation is located in the FNImageViewer\docs subfolder in the ISRA installation directory.

Deployment of the FileNet Image Viewer in a Clustered Environment

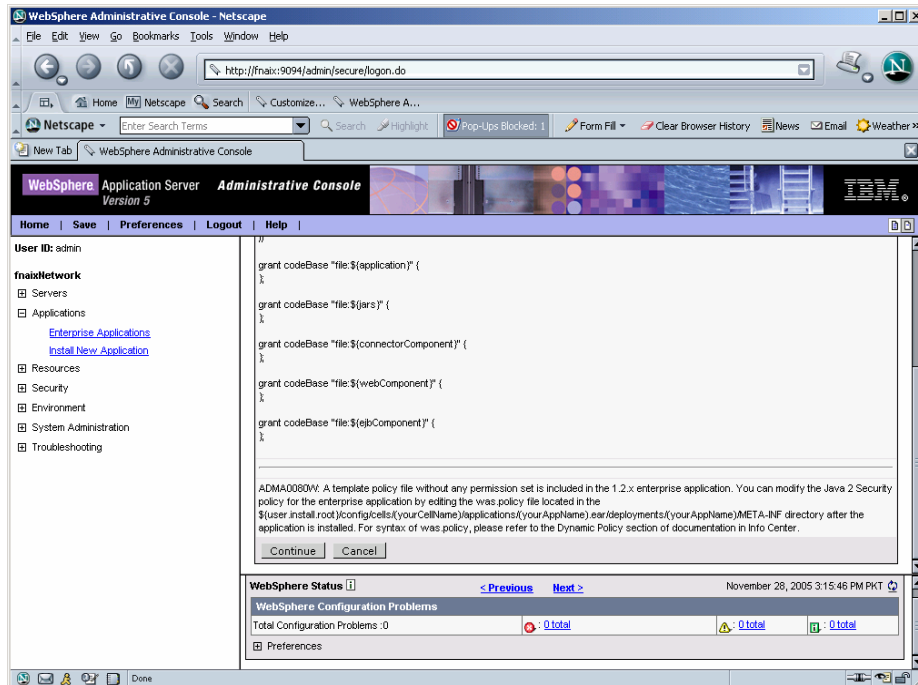
The FileNet Image viewer is used by the ISRA Sample Application to display documents of specific mime types (TIFF, JPEG and BMP). Skip this section and move to the next, if you do not want the FileNet Image Viewer configured with the ISRA Sample Application.

The steps to deploy the FileNet Image Viewer are:

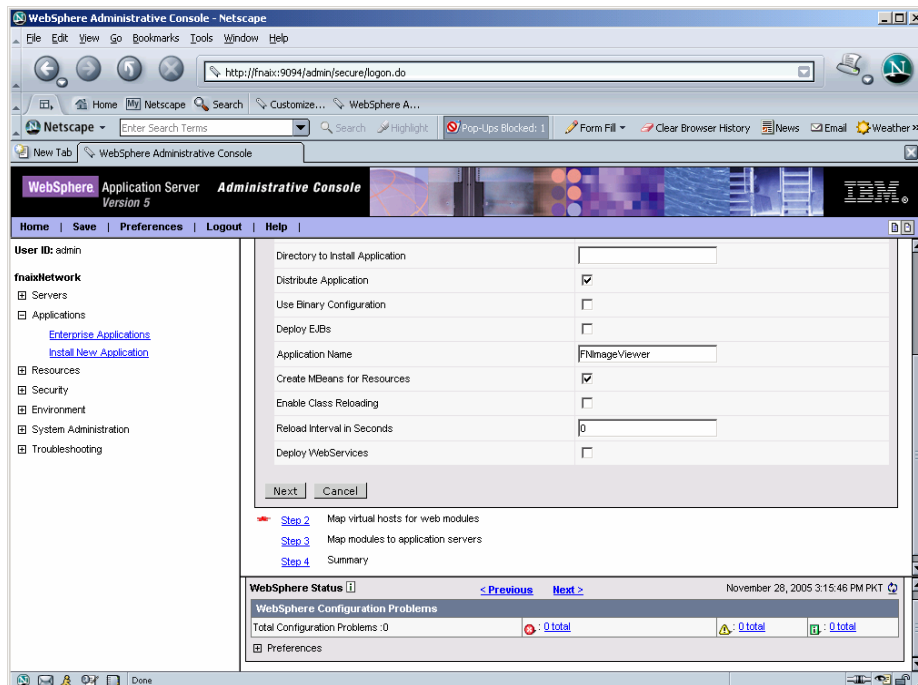
1. Launch the WebSphere Network Manager Administrative Console. Click **Applications > Install New Application**. The following screen appears:



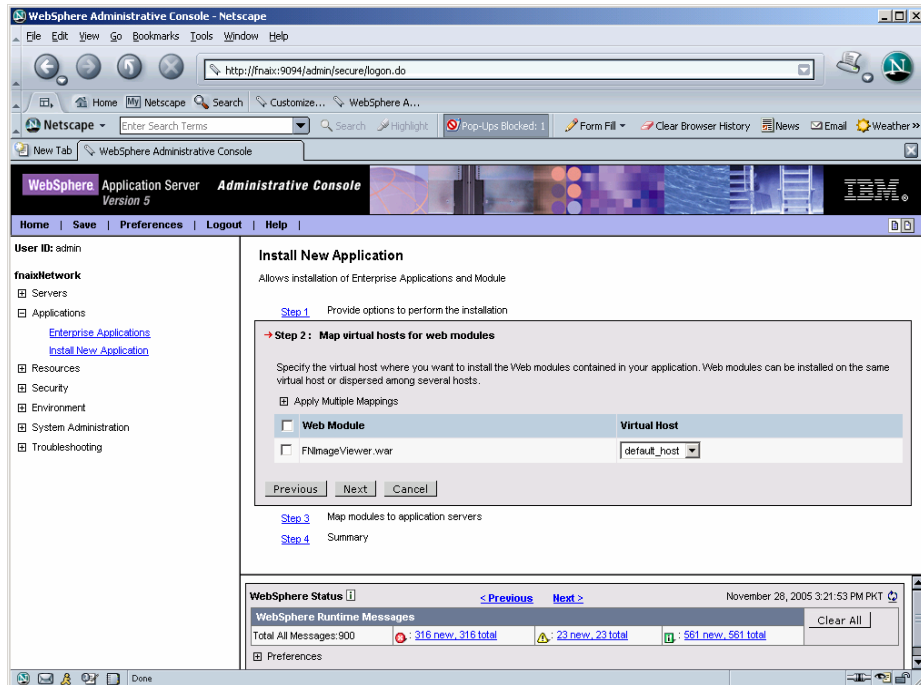
2. Click **Browse**. Navigate through the ISRA installation directory and choose FNImageViewer.ear. Click **Next**, until the **Summary** page appears.



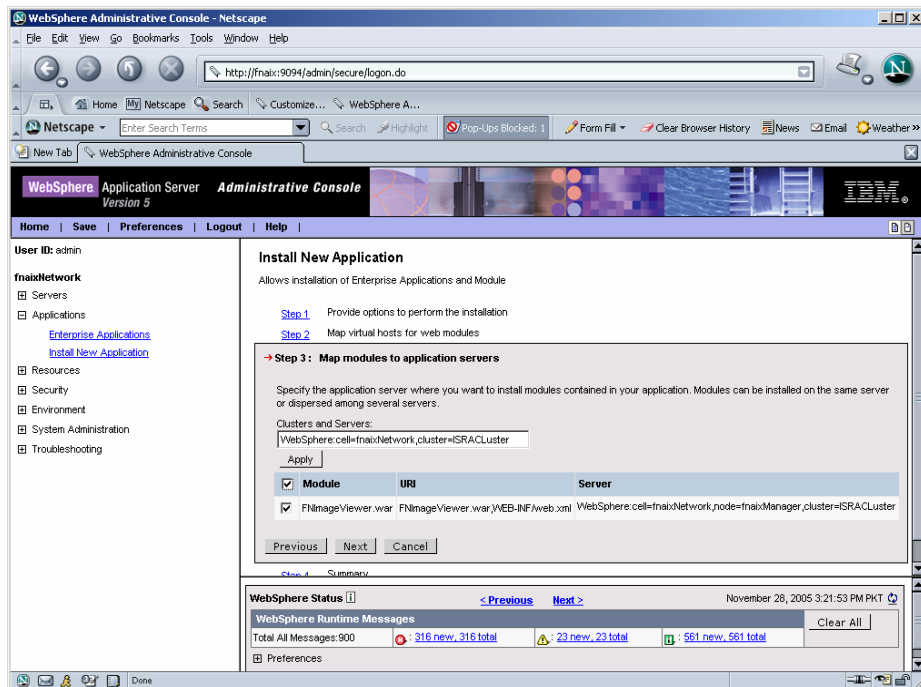
3. Click **Continue**. The following screen appears:



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

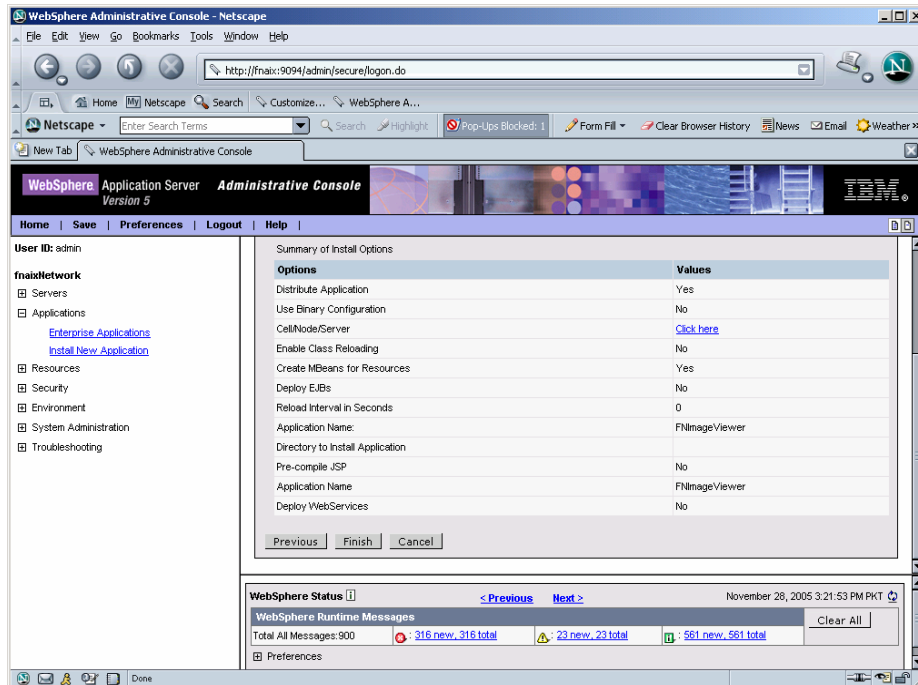


5. Click **Next**. The following screen appears:

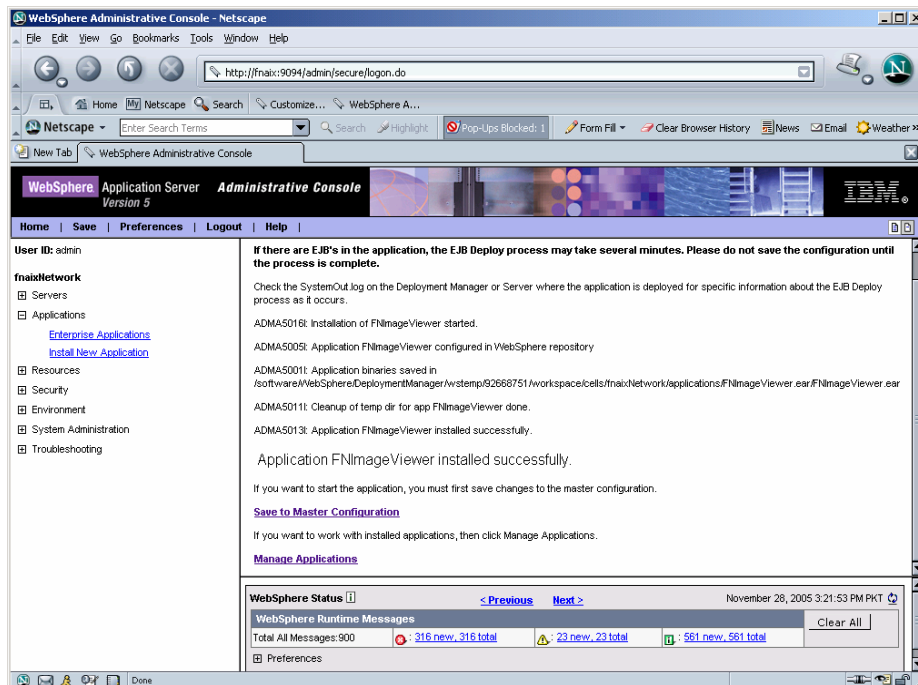


6. Select the Cluster/Server from **Clusters and Servers** list and check the module and click **Apply**.

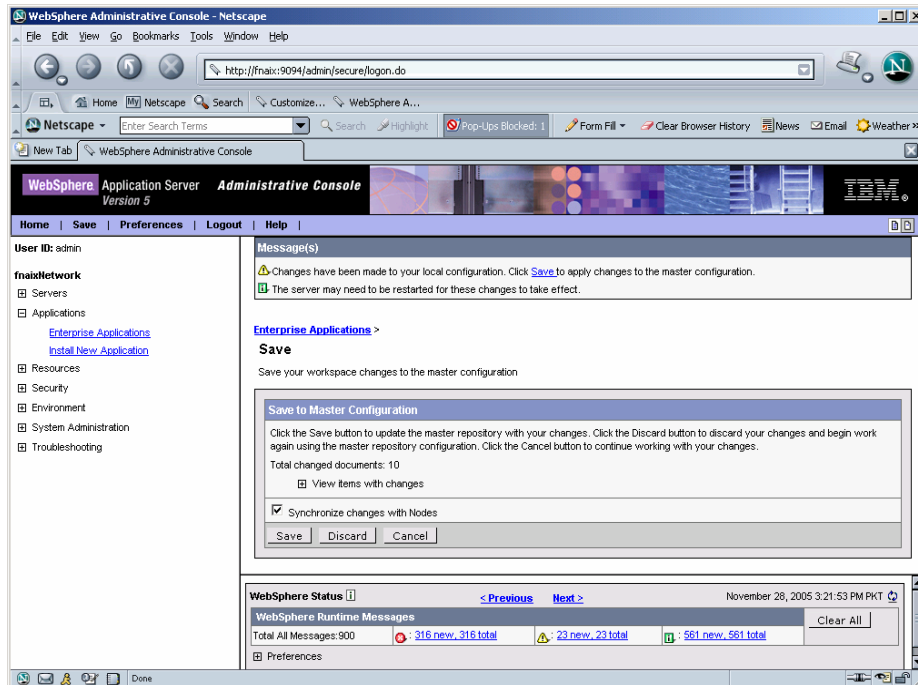
7. Click **Next**. The following screen appears:



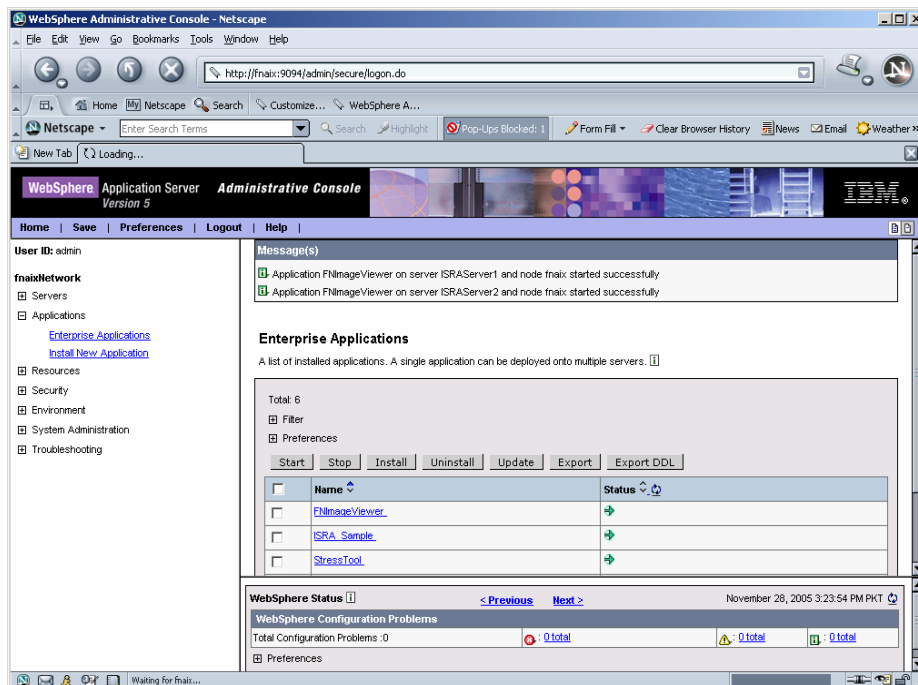
8. Click **Finish**. The following screen appears:



9. Click **Save to Master Configuration**. The following screen appears:



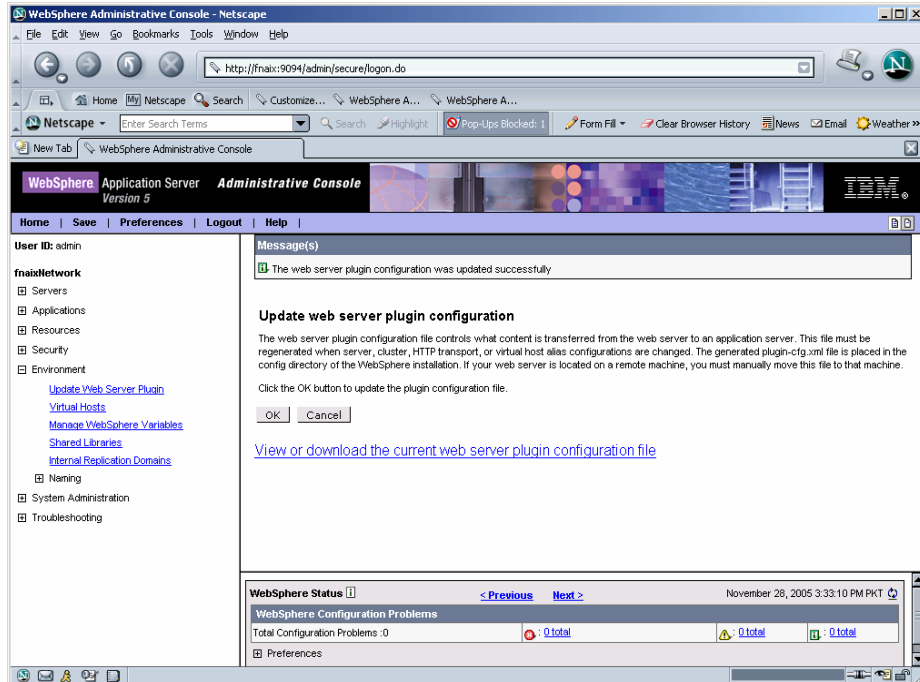
10. Enable the **Synchronize Changes with Nodes** check box. Click **Save** to complete the deployment of FileNet Image Viewer. The following screen appears:



11. Click **Applications > Enterprise Applications**. Check the **FNImageViewer** check box and click **Start** to complete the deployment of FileNet Image Viewer.

Note **FNImageViewer.ear** is located under the `sample` subfolder in the ISRA installation directory. FileNet Image Viewer files (`FNImageViewer.jar`) and FileNet Image Viewer documentation is located in the `FNImageViewer` subfolder in the ISRA installation directory.

12. Click Environment -> Update Web Server Plugin. The following screen appears:



13. Click OK.

Session Affinity

Session Affinity is a mechanism, which allows a user to connect directly to the same Application Server unless and until the current session is invalidated or the application server instance, where the session started first is failed.

If this option is not enabled in an application server then, browser requests would be distributed across all application server instances in a cluster. The impact of requests being distributed in this fashion would depend on whether distributed or local sessions were in use.

In an environment using distributed sessions, the application server would make an out-of-process request to retrieve the session object from the copy of the session object stored either in memory in another application server or in a database. In an environment employing local sessions, the

getSession () method call in the application code would result in the creation of a new session object, with the loss of any data previously stored in session for that client.

Session Affinity in WAS

Session affinity is enabled by default in WebSphere V5. In a clustered environment, WAS provides affinity to a server by appending the server ID to the session ID that is contained in the JSESSIONID cookie or URL rewrite. This information is used by the HTTP server plug-in to dispatch the request to the correct server.

The default plug-in generated by WAS

```
<ServerCluster CloneSeparatorChange="false"
LoadBalance="Round Robin" Name="ISRACLuster"
PostSizeLimit="-1" RemoveSpecialHeaders="true"
RetryInterval="60">
    <Server CloneID="10uclg5" ConnectTimeout="0"
ExtendedHandshake="false" LoadBalanceWeight="2"
MaxConnections="-1" Name="fnaix_ISRAServer1"
WaitForContinue="false">
        <Transport Hostname="fnaix" Port="9081"
Protocol="http"/>
        <Transport Hostname="fnaix" Port="9444"
Protocol="https">
            <Property Name="keyring"
Value="/software/WebSphere/DeploymentManager/etc/plugin-
key.kdb"/>
            <Property Name="stashfile"
Value="/software/WebSphere/DeploymentManager/etc/plugin-
key.sth"/>
        </Transport>
    </Server>
    <Server CloneID="10uclgf31" ConnectTimeout="0"
ExtendedHandshake="false" LoadBalanceWeight="2"
MaxConnections="-1" Name="fnaix_ISRAServer2"
WaitForContinue="false">
        <Transport Hostname="fnaix" Port="9082"
Protocol="http"/>
        <Transport Hostname="fnaix" Port="9445"
Protocol="https">
            <Property Name="keyring"
Value="/software/WebSphere/DeploymentManager/etc/plugin-
key.kdb"/>
            <Property Name="stashfile"
Value="/software/WebSphere/DeploymentManager/etc/plugin-
key.sth"/>
        </Transport>
    </Server>
    <PrimaryServers>
        <Server Name="fnaix_ISRAServer1"/>
        <Server Name="fnaix_ISRAServer2"/>
    </PrimaryServers>
</ServerCluster>
```

Disabling Session Affinity on WAS:

In order to disable the session affinity CloneID should be removed from each sever entry in pug-in as follows.

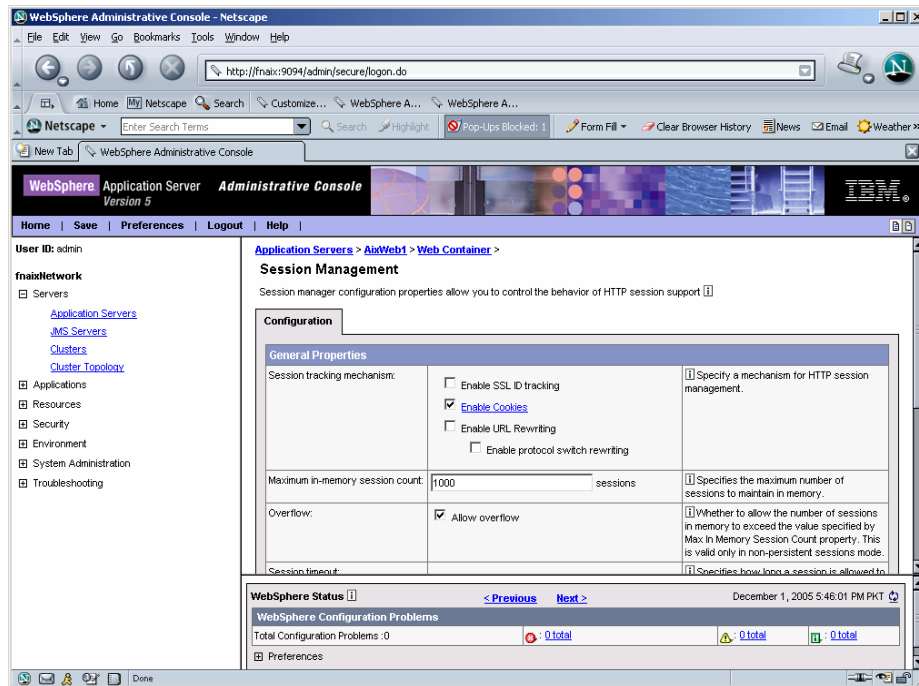
```
<ServerCluster CloneSeparatorChange="false"
LoadBalance="Round Robin" Name="ISRACLuster"
PostSizeLimit="-1" RemoveSpecialHeaders="true"
RetryInterval="60">
  <Server CloneID="10uc1gce5" ConnectTimeout="0"
ExtendedHandshake="false" LoadBalanceWeight="2"
MaxConnections="-1" Name="fnaix_ISRAServer1"
WaitForContinue="false">
    <Transport Hostname="fnaix" Port="9081"
Protocol="http"/>
    <Transport Hostname="fnaix" Port="9444"
Protocol="https">
        <Property Name="keyring"
Value="/software/WebSphere/DeploymentManager/etc/plugin-
key.kdb"/>
        <Property Name="stashfile"
Value="/software/WebSphere/DeploymentManager/etc/plugin-
key.sth"/>
    </Transport>
  </Server>
  <Server CloneID="10uc1gf31" ConnectTimeout="0"
ExtendedHandshake="false" LoadBalanceWeight="2"
MaxConnections="-1" Name="fnaix_ISRAServer2"
WaitForContinue="false">
    <Transport Hostname="fnaix" Port="9082"
Protocol="http"/>
    <Transport Hostname="fnaix" Port="9445"
Protocol="https">
        <Property Name="keyring"
Value="/software/WebSphere/DeploymentManager/etc/plugin-
key.kdb"/>
        <Property Name="stashfile"
Value="/software/WebSphere/DeploymentManager/etc/plugin-
key.sth"/>
    </Transport>
  </Server>
</PrimaryServers>
  <Server Name="fnaix_ISRAServer1"/>
  <Server Name="fnaix_ISRAServer2"/>
</PrimaryServers>
</ServerCluster>
```

WAS provides two persistence mechanisms for maintaining session state

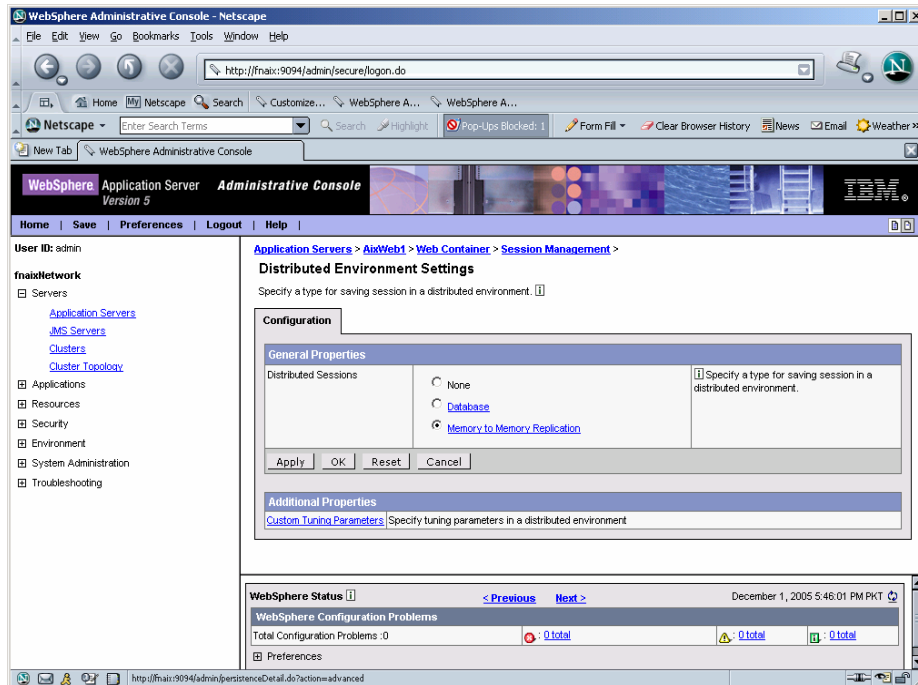
- Database
- Memory to memory.

For replicating the session (memory to memory) across multiple application server instances following setup will be done on WAS.

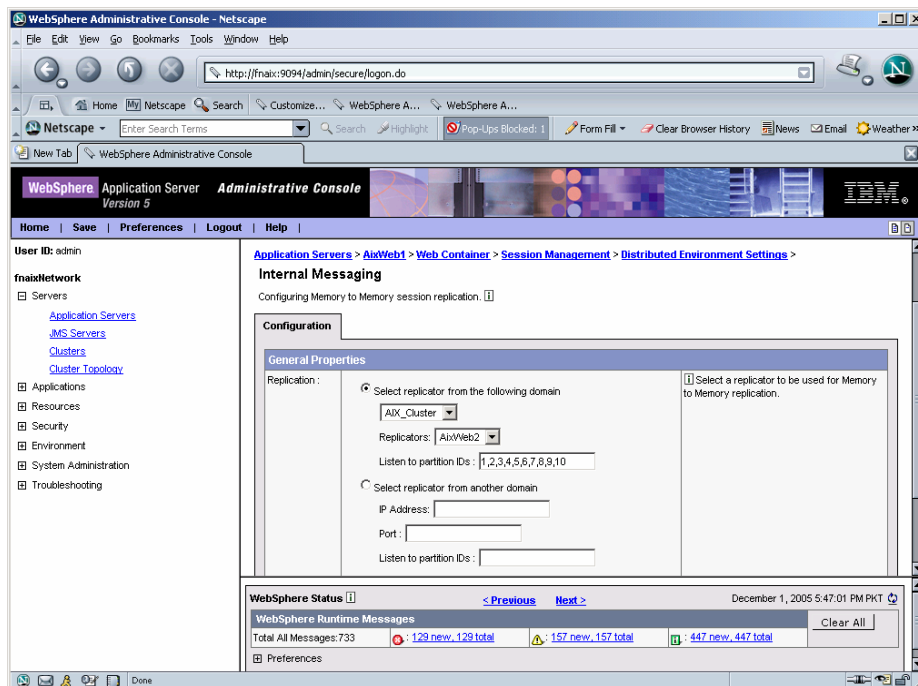
1. Click **Application servers** -> **<Server instance>** -> **Web container**.
The following screen appears:



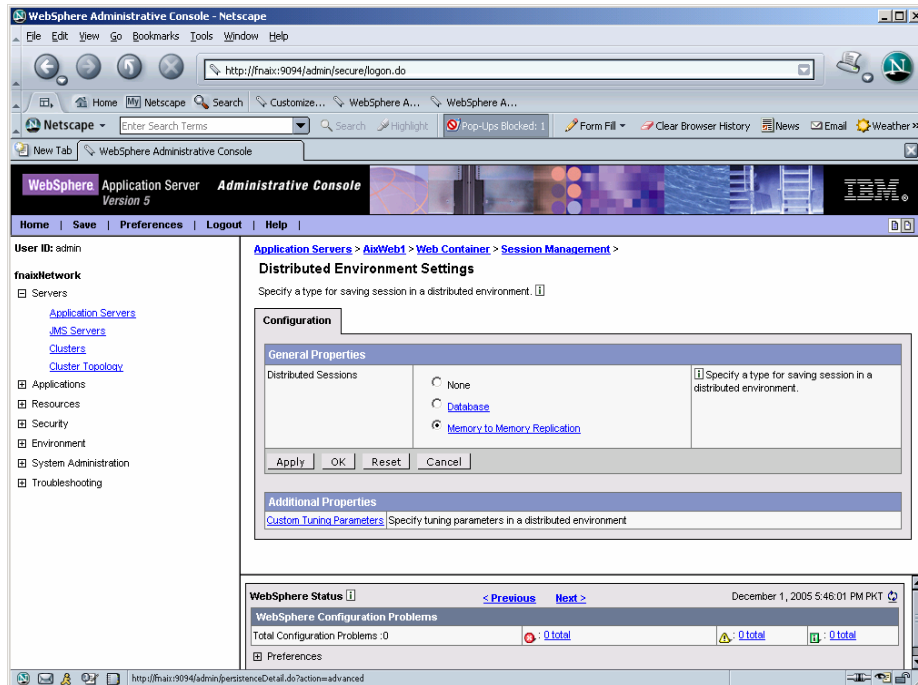
2. Click **Distributed Environment Settings**.



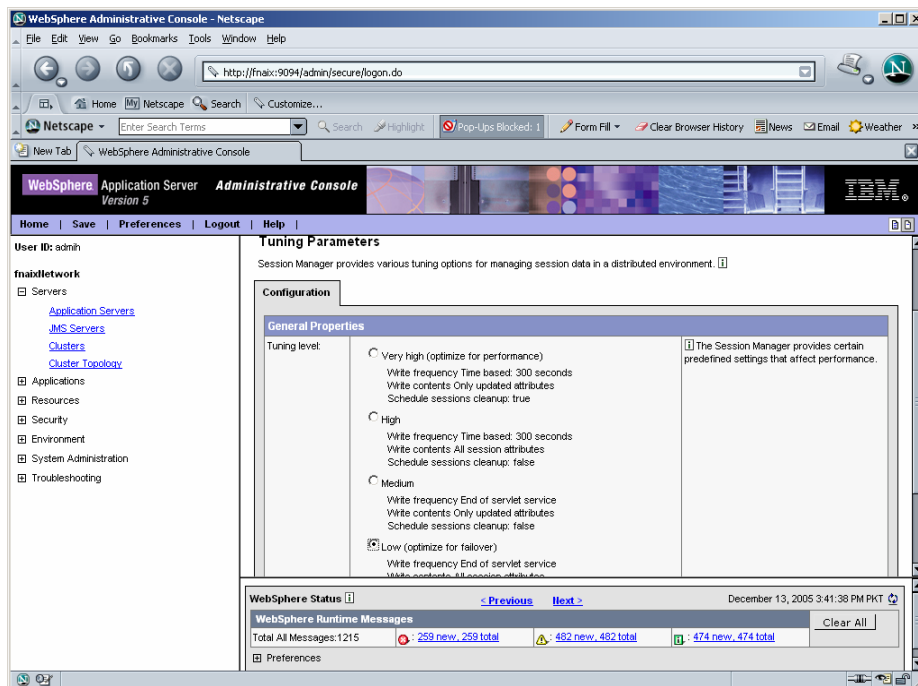
3. Enable **Memory to Memory Replication** radio button and click on the same link. The following screen appears:



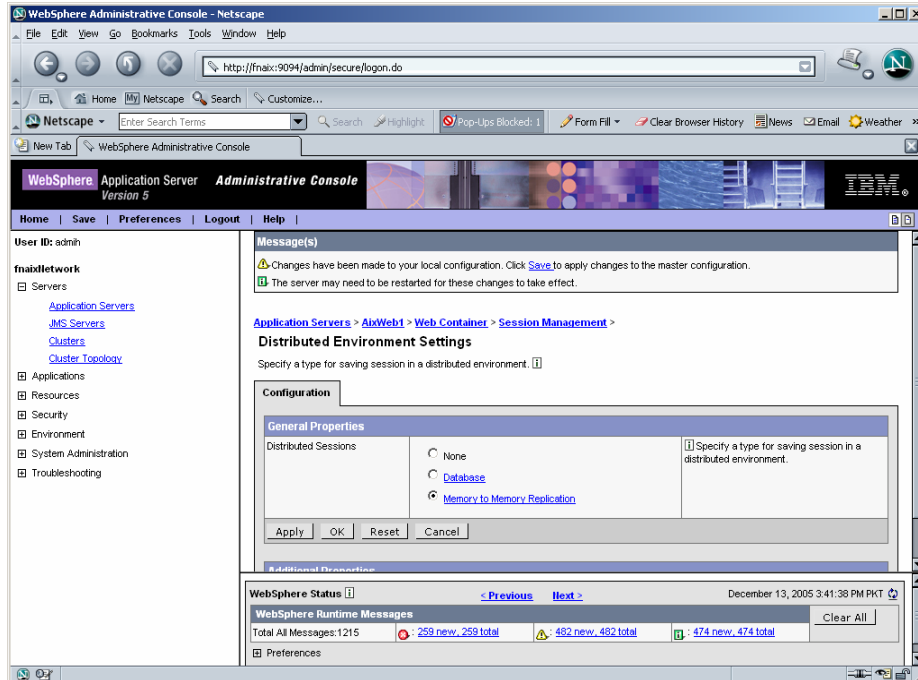
4. Select the replicator and click **Apply** and then click **OK**.



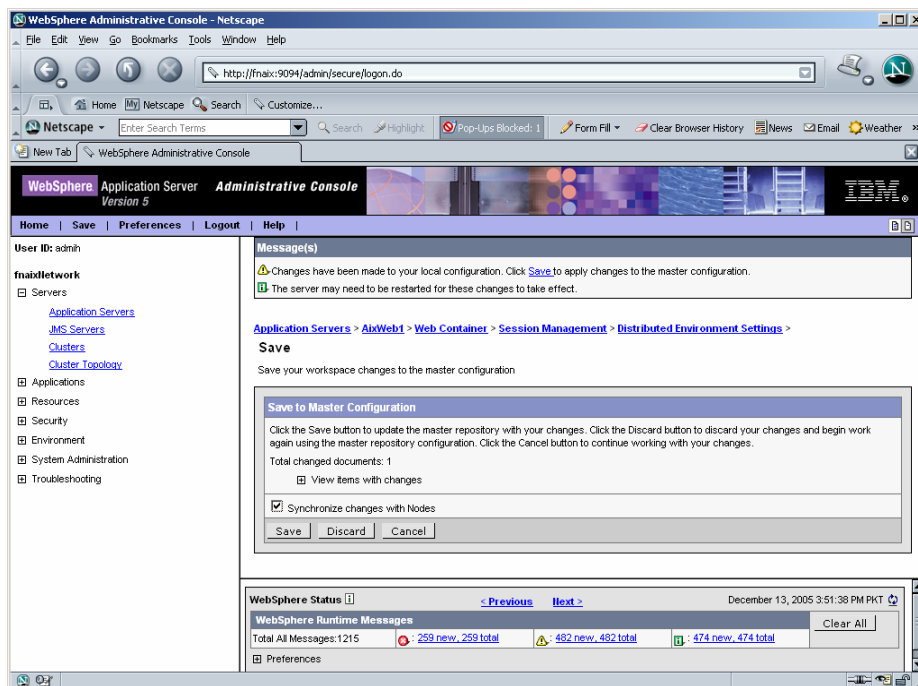
5. Click **Custom Tuning Parameters** link. The following screen appears:



6. Select **Low (optimize for failover)** radio button and click **Apply** and then click **OK**. A message, as shown in the screen below, is displayed:



7. Click the **Save** link in the **Messages** box. The following screen appears:



8. Enable the **Synchronize Changes with Nodes** check box and click **Save** button.

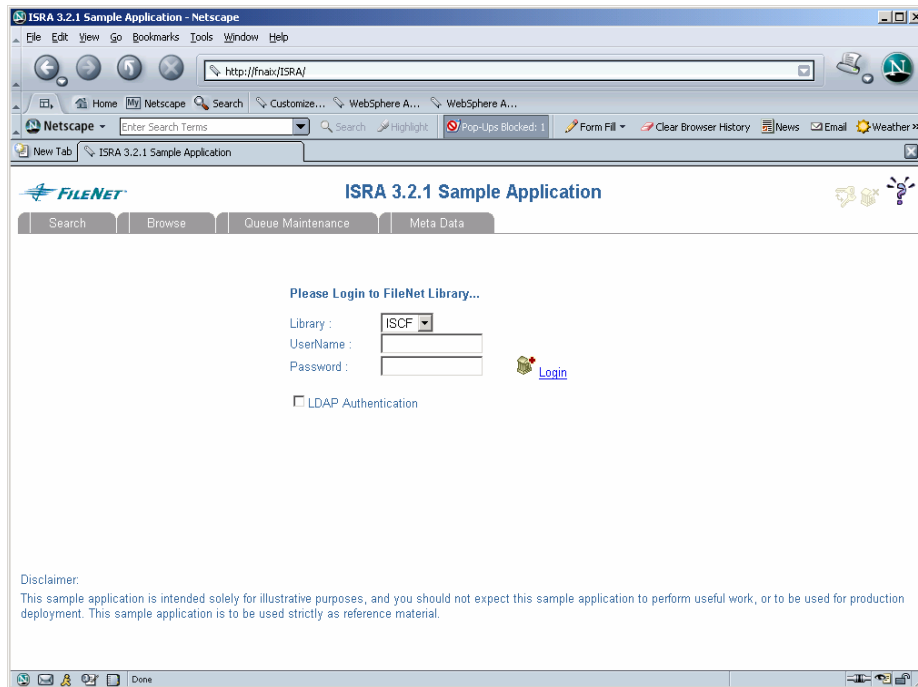
Note The process should be repeated for all the cluster members to maintain the session state.

Testing the Sample Application

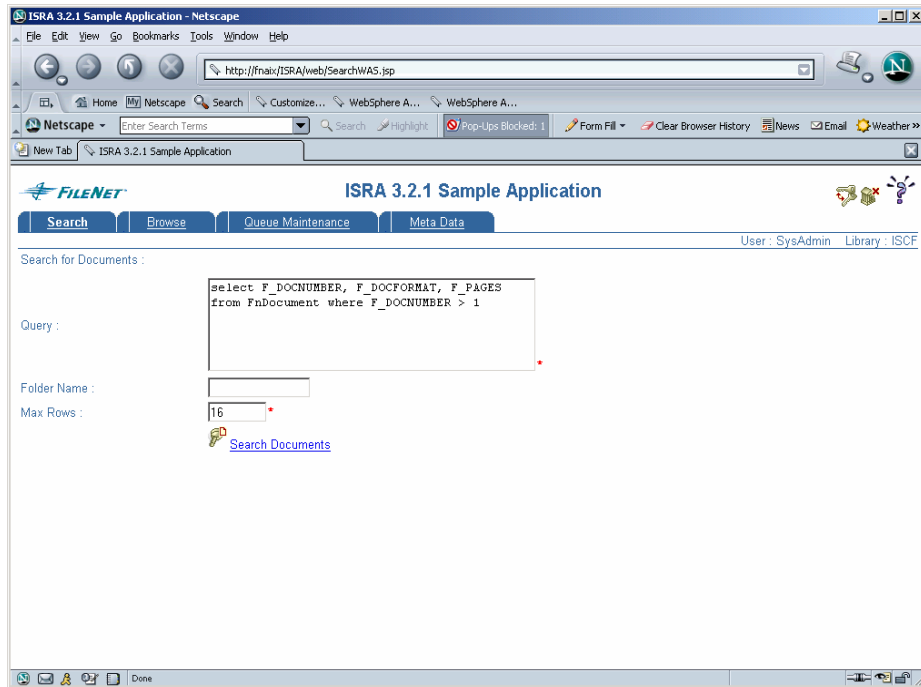
After the ISRA Sample Application is started, the steps to verify the deployment or to access the ISRA Sample Application are:

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

The Web application context_root is case sensitive. On a WebSphere server, the default port number is 9080. The default context_root of the Sample Application is ISRA.



2. Enter a valid **Username** and **Password** for the configured IS (check configured ConnectionFactory for IS details) and click **Login**.



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

5

LDAP Configuration

In addition to direct IS logging, ISRA 3.2.1 also supports LDAP Authentication by third party Servers.

It is necessary to map users present on the LDAP Server to 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 two utilities - ldap_export and ldap_import to map existing users on the LDAP Server to the IS. These utilities are part of the IS package and must be executed on the machines running the LDAP Server and the IS.

The ldap_export utility is used to export usernames on the LDAP Server to an xml file. While the ldap_import utility imports usernames that have been mapped to the xml file and creates corresponding users on the IS.

It is mandatory that the ldap_import algorithm and the xml file be present on the same machines, where IS exists. The ldap_import algorithm uses a hashing algorithm to generate user passwords for the IS.

Mapping Existing LDAP Server Users to 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 remaining 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 parameter 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.
t <ldap server type>	Required value for server type: msft – Microsoft Active Directory sun – Sun One Directory (iPlanet) nov – Novell eDirectory(NDS). ibm – IBM Directory.
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.
i	Check for special characters on <id> tags only
e	Remove all escape characters – '\ ' .
k	Use paged results. Windows to AD only
z	Use secure socket connection
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.

Example command lines:

- **Sun One directory(iPlanet) server:**

```
ldap_exp -s SunSrvr1 -d "cn=Directory Manager" -w ":/, .++=" -t sun -b "dc=iPlanet , dc=com"
```

- **Microsoft Active Directory(AD) server:**

```
ldap_exp -s Win2KSrvr1 -d "CN=Administrator,CN=Users ,DC=win2ksrvr1 ,DC=com" -w ":/, .++=" -t msft -b "dc=win2ksrvr1,dc=com"
```

- **Novell eDirectory(NDS) server:**

```
ldap_exp.exe -s NovSrvr1 -d "cn=Admin ,o=server" -w ":/, .++=" -t nov -b "o=wa"
```

- **IBM Directory server:**

```
ldap_exp -s IBMSrvr1 -d "Cn=Administrator" -w ":/, .++=" -t ibm -b "dc=ibmsrvr1, dc=com"
```

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

Parameters:

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

For example, to import user entries from XML file:

```
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 created will have a password 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 for Windows Server and Novell NDS 8.7.3. The value of the property for LDAP implementation for Active Directory is com.filenet.is.ra.fnis.FN_IS_ActiveDirImpl and for Novell NDS 8.7.3 is com.filenet.is.ra.fnis.FN_IS_NovellNDSImpl.

LdapImplClassString

This parameter is a general string that takes in 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 used for transactions.
- User Path – Directory under which the users are filed in the LDAP Directory Server.

The three parameters must be separated by semicolon and must appear in the order - server name, port number and 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

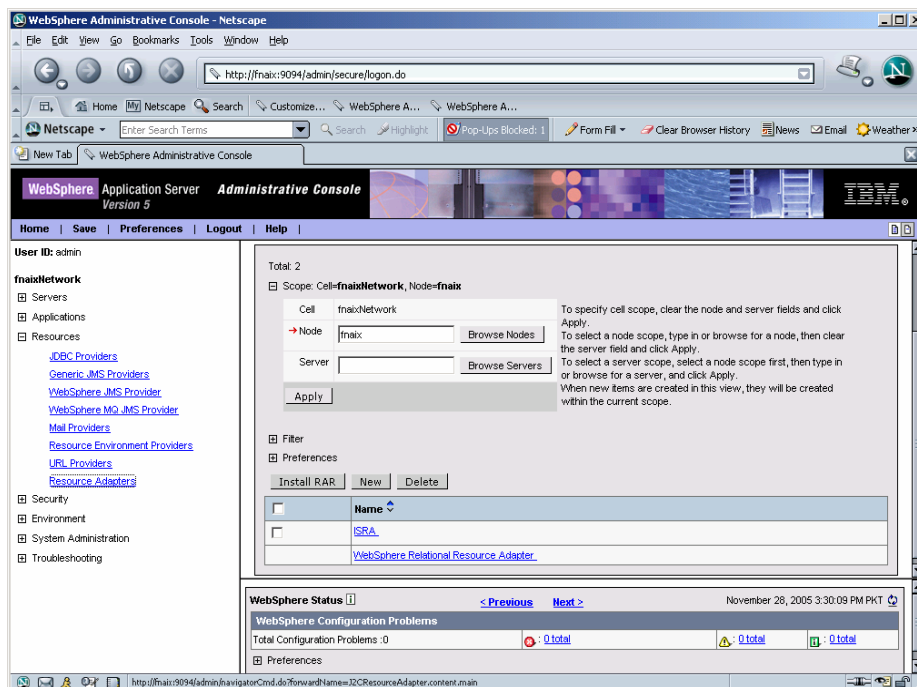
6 Undeployment

This section describes the undeployment procedure for ISRA and the Sample Application from the WebSphere Server.

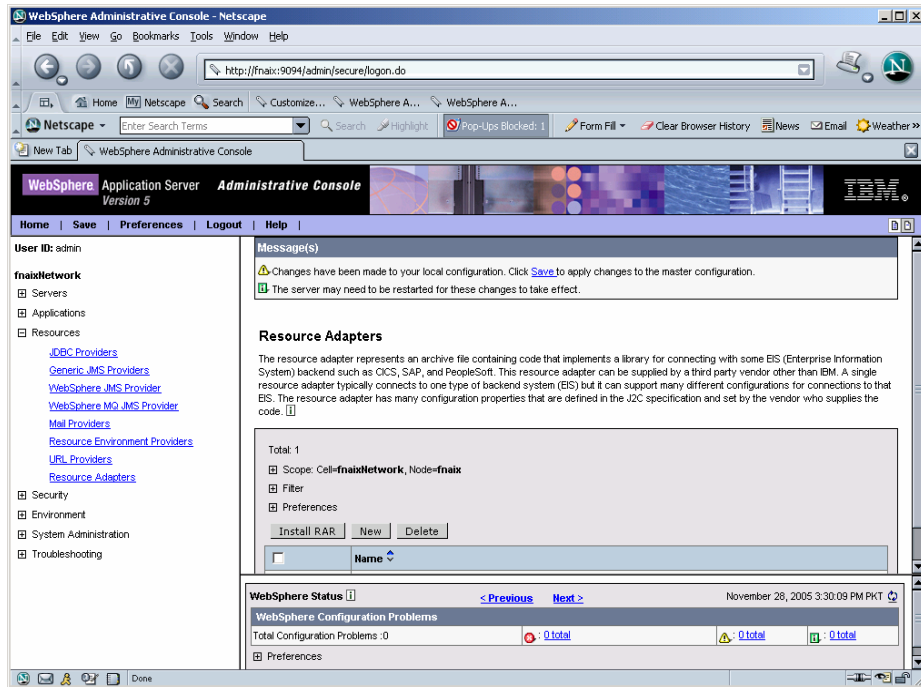
Undeployment of ISRA in a Standalone Environment

To undeploy ISRA using the Administrative Console:

1. Click **Resources > Resource Adapters**. The following screen appears:



2. Enable the ISRA check box. Click **Delete**. A message, as shown in the screen below, is displayed:

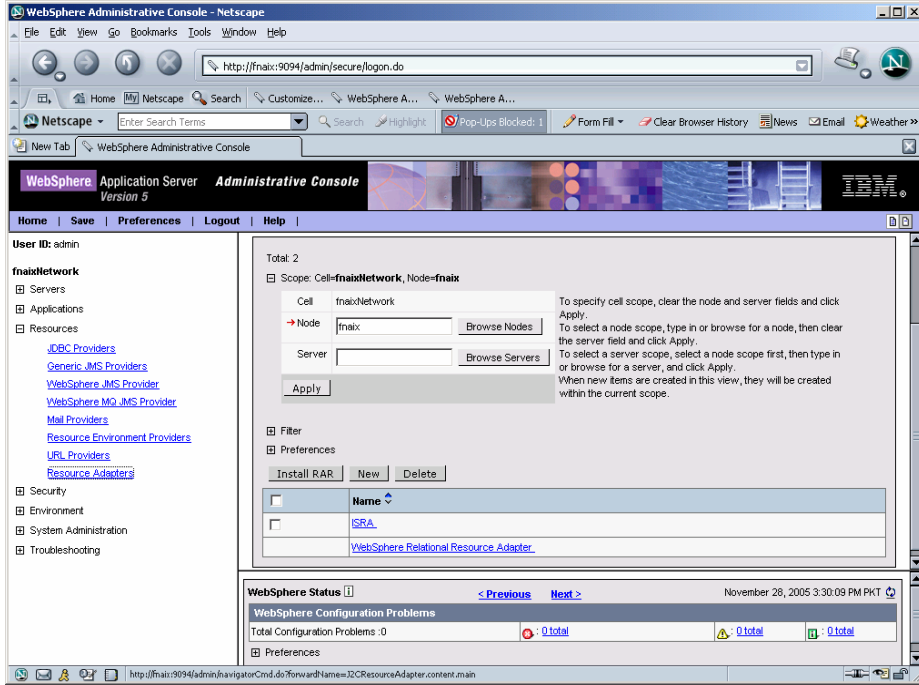


3. Click the **Save** link in the **Messages** box.

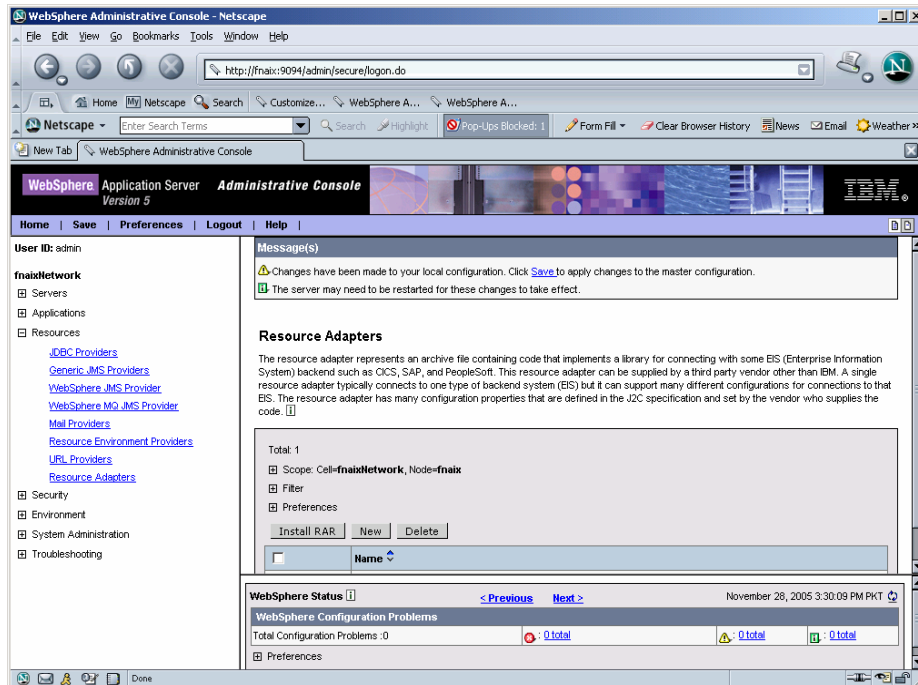
Undeployment of ISRA in a Clustered Environment

To undeploy ISRA using the Administrative Console:

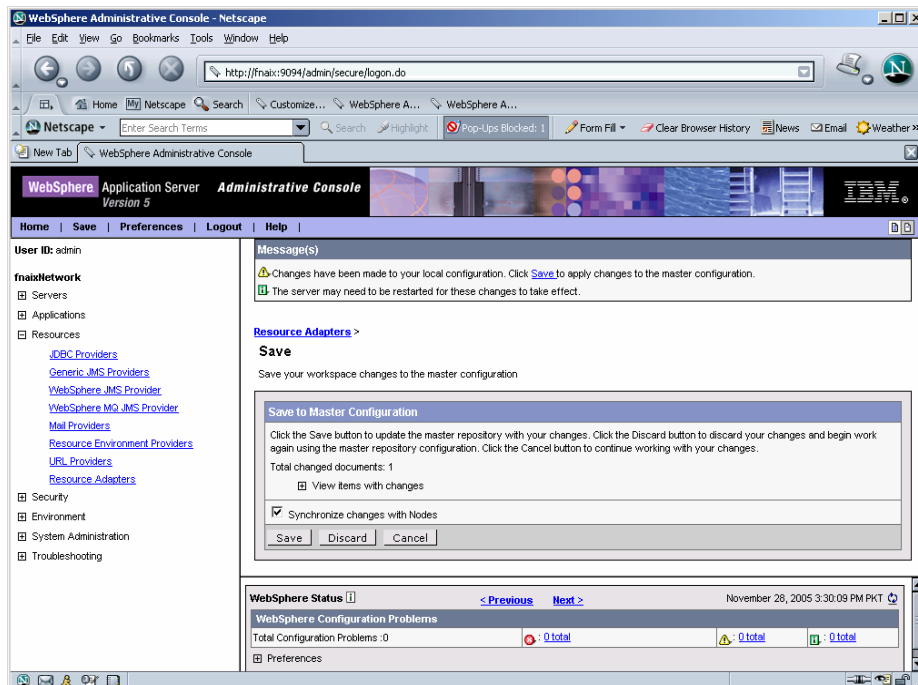
1. Click **Resources > Resource Adapters**. The following screen appears:



2. Enable the **ISRA** check box. Click **Delete**. A message, as shown in the screen below, is displayed:



3. Click the **Save** link in the **Messages** box.

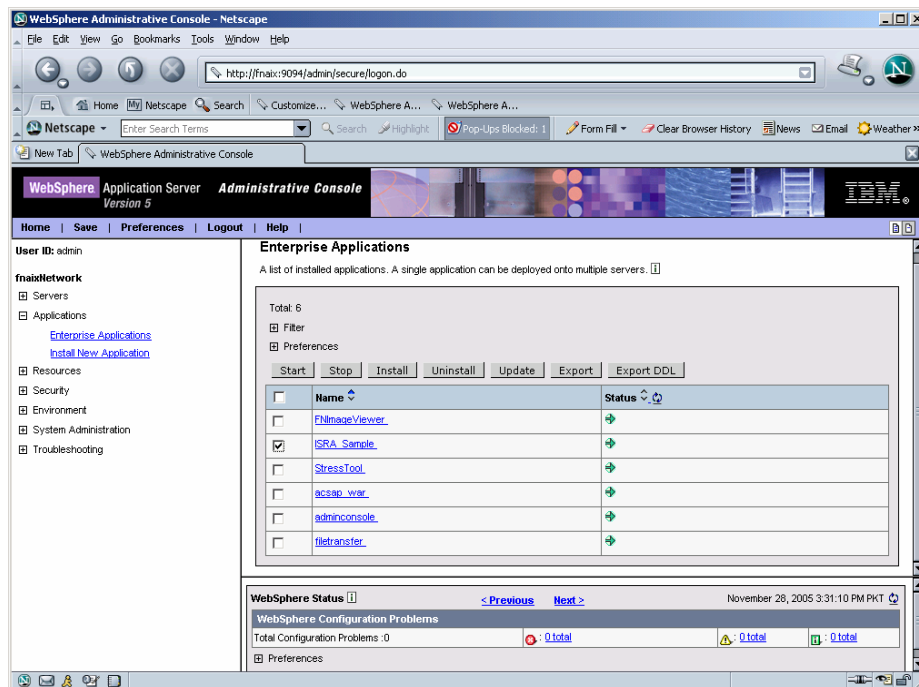


4. Enable **Synchronize Changes with Nodes** check box and click **Save**.

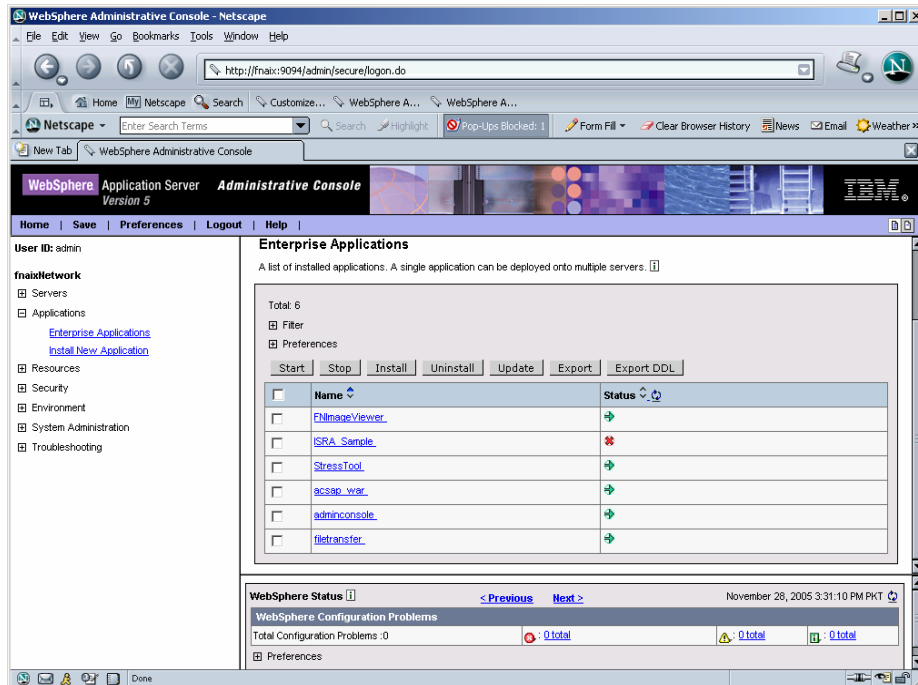
Undeployment of the Sample Application in a Standalone Environment

Undeploying the ISRA Sample Application in a standalone environment on a WebSphere server will physically remove the Sample Application files.

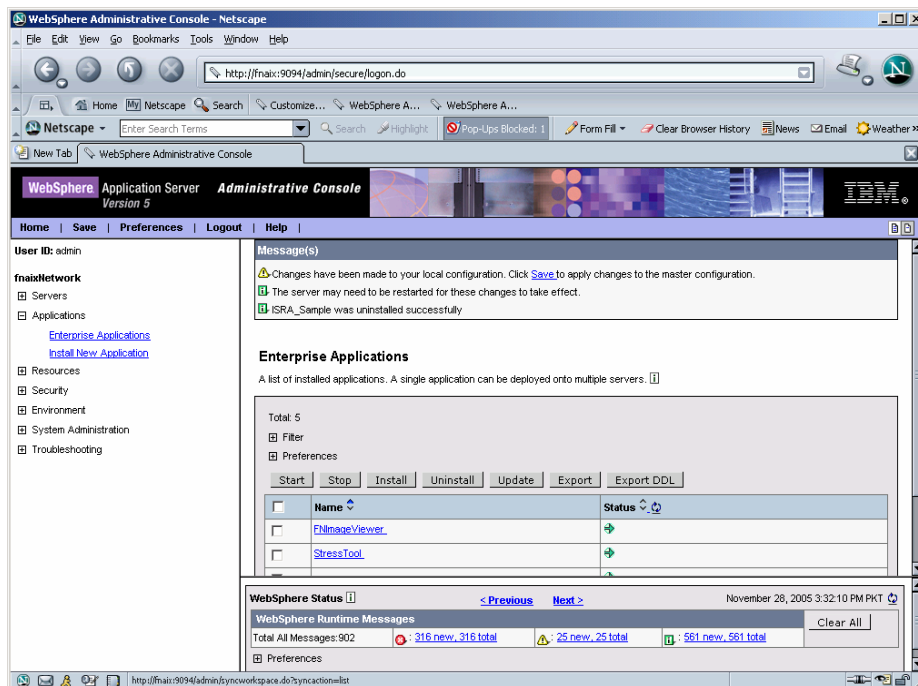
1. Click **Applications > Enterprise Applications**. The following screen appears:



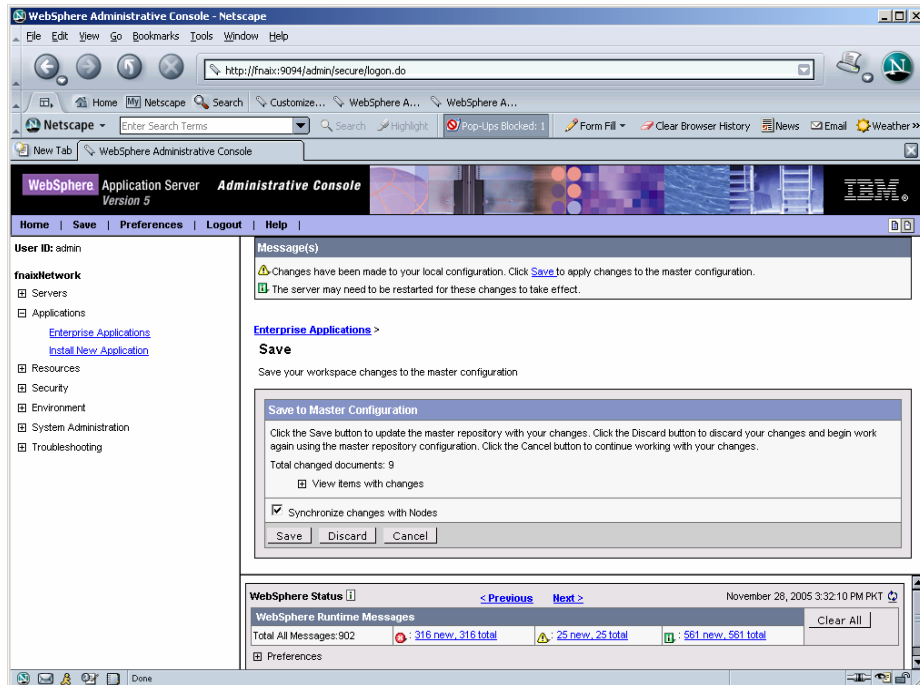
2. Enable the **ISRA_Sample** check box. Click **Stop**. The following screen appears:



3. Enable the **ISRA_Sample** check box once again, and click **Uninstall**. A message, as shown in the screen below, is displayed:



4. Click the **Save** link in the **Message(s)** box. The following screen appears:



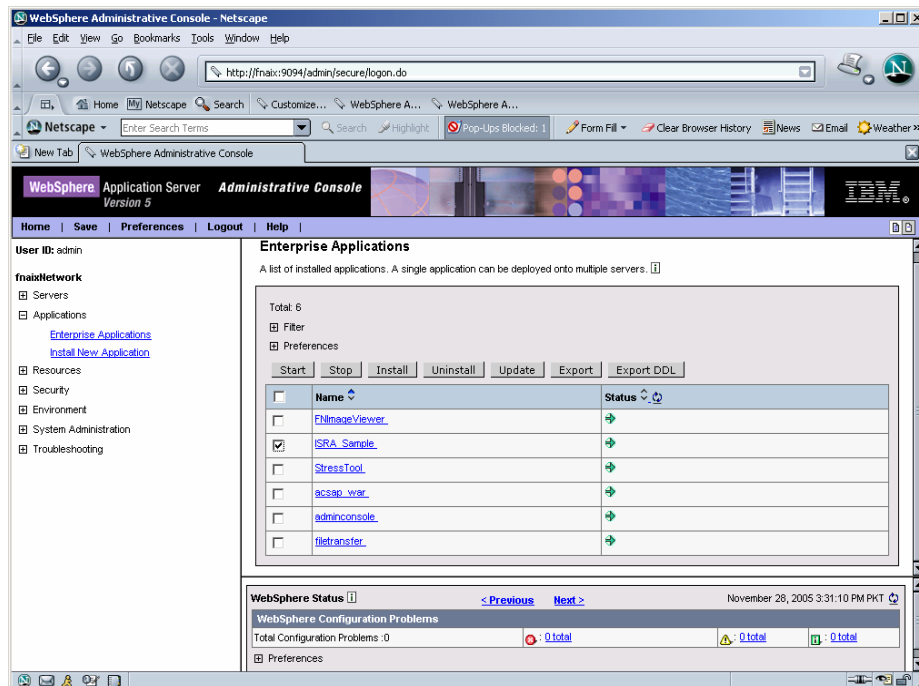
5. Enable **Synchronize Changes with Nodes** check box and click **Save**.

Note The user must undeploy the previous version of FileNet Image Viewer before deploying the latest version.

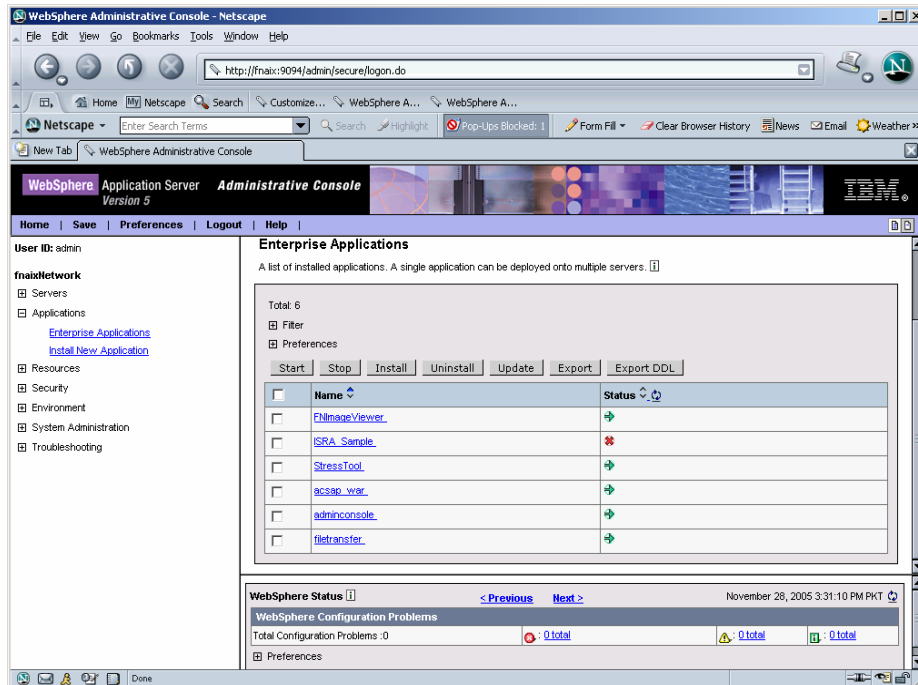
Undeployment of the Sample Application in a Clustered Environment

Undeploying the ISRA Sample Application in a clustered environment on a WebSphere server will physically remove the Sample Application files.

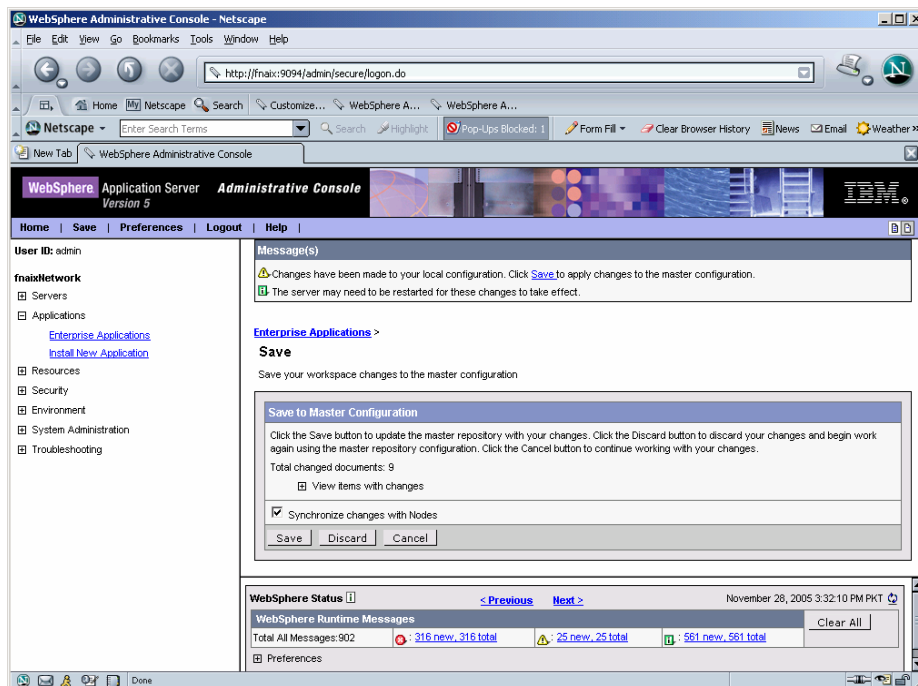
1. Click **Applications > Enterprise Applications**. The following screen appears:



2. Enable the **ISRA_Sample** check box, and click **Stop**. The following screen appears:



3. Enable the **ISRA_Sample** check box once again, and click **Uninstall**. The following screen appears.



4. Click **Save** button.

Note The user must undeploy the previous version of FileNet Image Viewer before deploying the latest version.

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 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.

The steps to specify the alias in the hosts file are:

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 system 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. When specifying the domain-organization name, follow these rules:
 - 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 is 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>
        <config-property>
            <description>Parameter to enable PCH Logging in ISRA</description>
            <config-property-name>PCHLogging</config-property-name>
            <config-property-type>java.lang.String</config-property-type>
            <config-property-value>Disabled</config-property-value>
        </config-property>
        <config-property>
            <description>LDAP Anonymous user login flag</description>
            <config-property-name>AllowAnonymousUser</config-property-name>
            <config-property-type>java.lang.Boolean</config-property-type>
            <config-property-value>true</config-property-value>
        </config-property>
        <config-property>
            <description>0-Exceptions and Warnings; 1-Info; 2-Debug
Level</description>
            <config-property-name>RPCLogging</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>
```

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