Image Services Resource Adapter

Deployment Guide

For IBM WebSphere Application Server Version 7.x

Release 3.4 Fixpack 3

April 2009

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About This Manual

This manual provides information about configuring IBM FileNet Image Services Resource Adapter (ISRA) 3.4.0 on IBM WebSphere Application Server 7.x. Refer the separate ISRA Installation Guide for Installing ISRA 3.4.0.

Conventions Used in the Document

The table lists the formatting conventions used in this document.

Conventions	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.

Related References

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

<ISRA-home>\ISRA340\FNImageViewer\docs

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

<ISRA-home>\ISRA340\SystemManager\docs

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1

ISRA Deployment

This chapter describes the deployment of ISRA on IBM WebSphere Application Server version 7.x.

Note	The installation procedure for IBM WebSphere Application Server v6 and installing ISRA in clustered environment is outside the scope of this document, and it is assumed 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 IBM WebSphere 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 v6.

Caution	All the xml related to the deployment of ISRA must be created manually or use a pre-existing file that is valid. Do not copy xml contents straight from the Deployment Guide.

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 approximately 120 MB free disk space.

Software Requirements

- IBM WebSphere Application Server 7.x installed on HPUX 11i Patch Bundle B.11.11, IBM AIX 5.2 SP2 and 5.3 SP3, Linux AS 3.0/4.0, Sun Solaris 9/10 or Windows 2003 Server.
- IBM WebSphere Network Deployment Manager 7.x installed on HPUX 11i Patch Bundle B.11.11, IBM AIX 5.2 SP2 and 5.3 SP3, Linux AS 3.0/4.0, Sun Solaris 9/10 or Windows 2003 Server.
- IBM FileNet IS 3.6 SP2 and above.

Deploying ISRA in a Standalone Environment

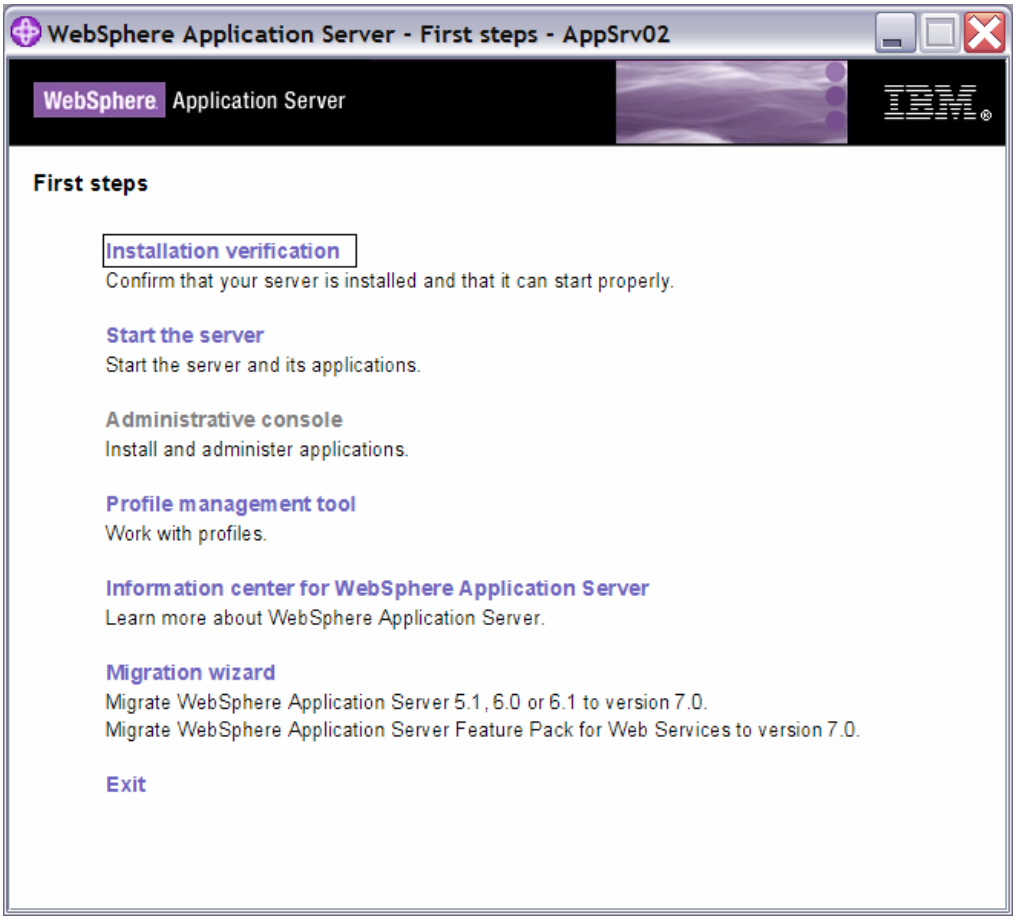
Note	The screenshots shown for deployment/Undeployment of ISRA, Sample Application or FNImageViewer (taken on IBM WebSphere Application Server 7.0 on Windows 2003 Server) may look slightly different on the user's machine, depending on the server, platform version or settings etc.

Remove/undeploy previous ISRA Versions (3.1/3.2/3.3), refer details on Undeployment. Also stop any running ISRA Sample and FNImageViewer before the undeployment is done. After the successful undeployment, please follow the below steps for new/re-deployment of ISRA.

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

1. Start the WebSphere 'First steps'. Login as the root user and execute the WebSphere `firststeps.sh` script, as follows:

```
# cd <WebSphere home>/AppServer/profiles/default/firststeps
# ./firststeps.sh
```

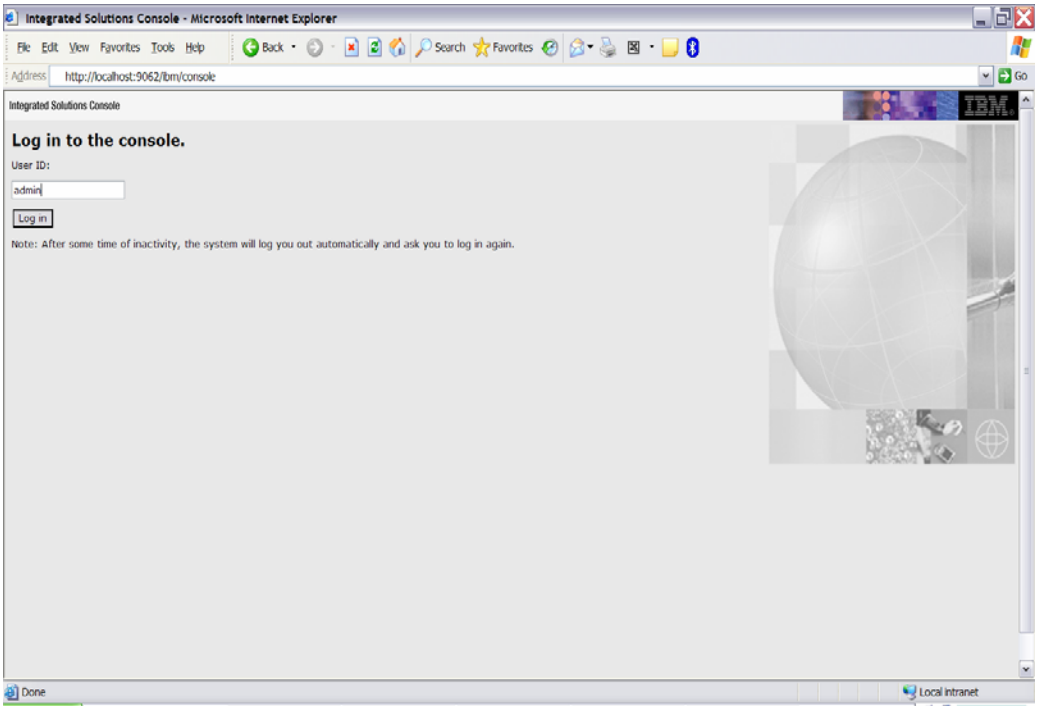


2. Click **Start the server.**
3. Launch a web browser and enter the URL http://server:port/admin.

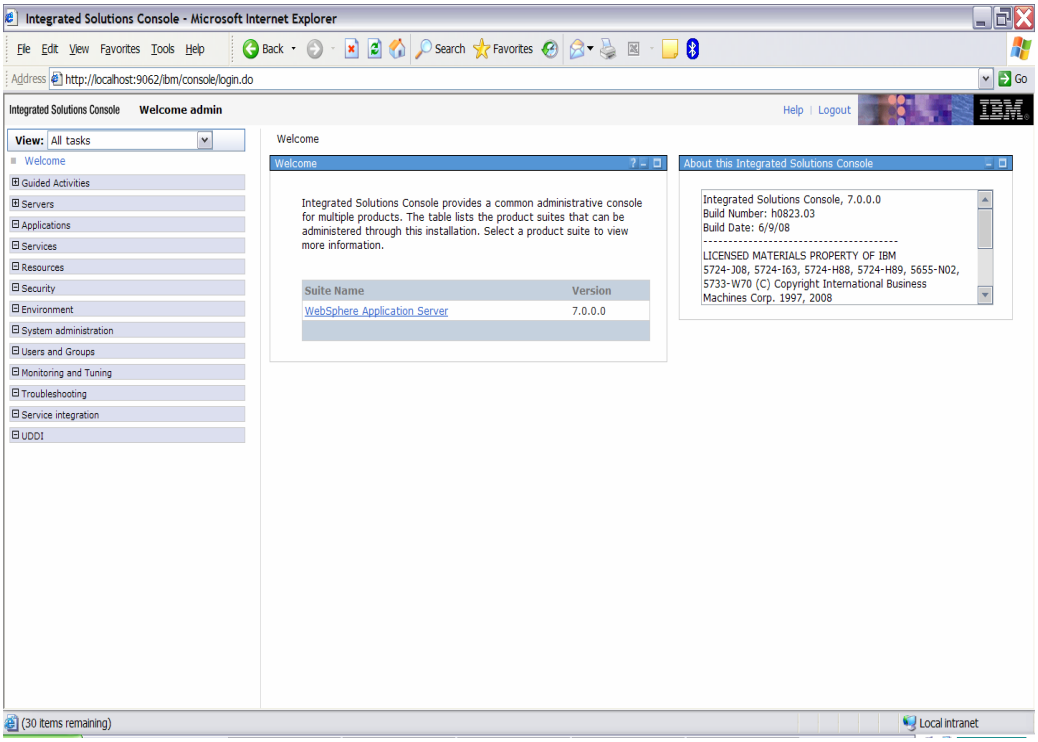
Here, ‘server’ is name of the host where WebSphere server is running and ‘port’ is the port number on which the admin server is listening. By default, this port number is 9060.

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

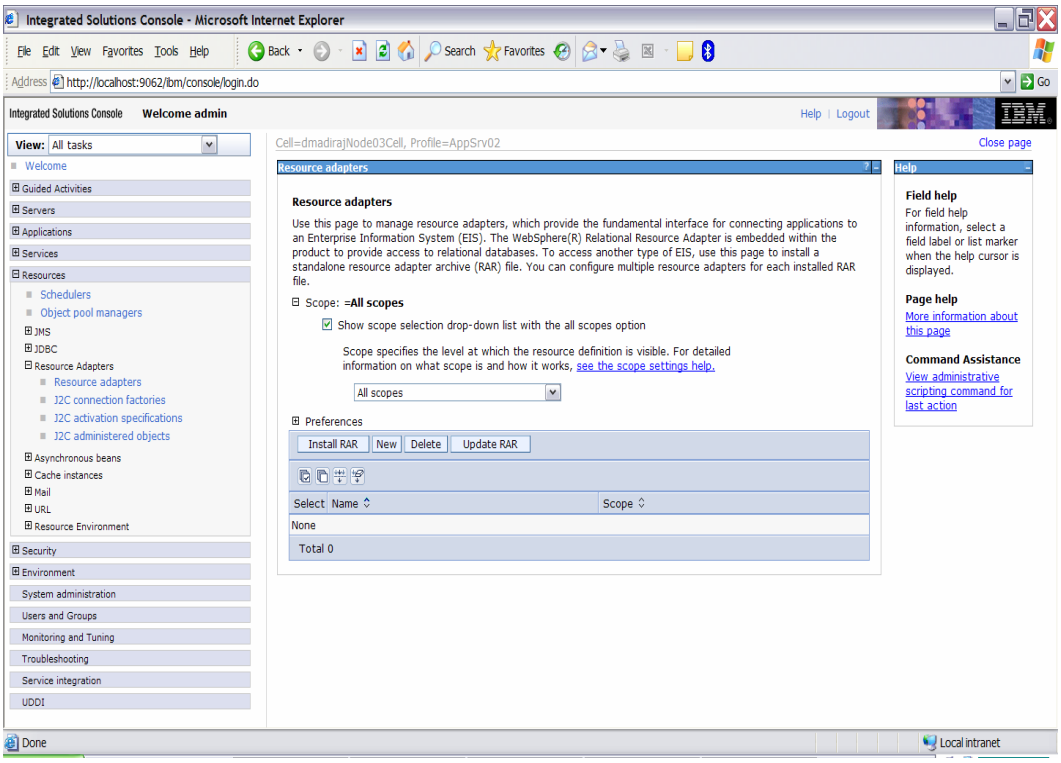
The WebSphere Administrative console screen appears:



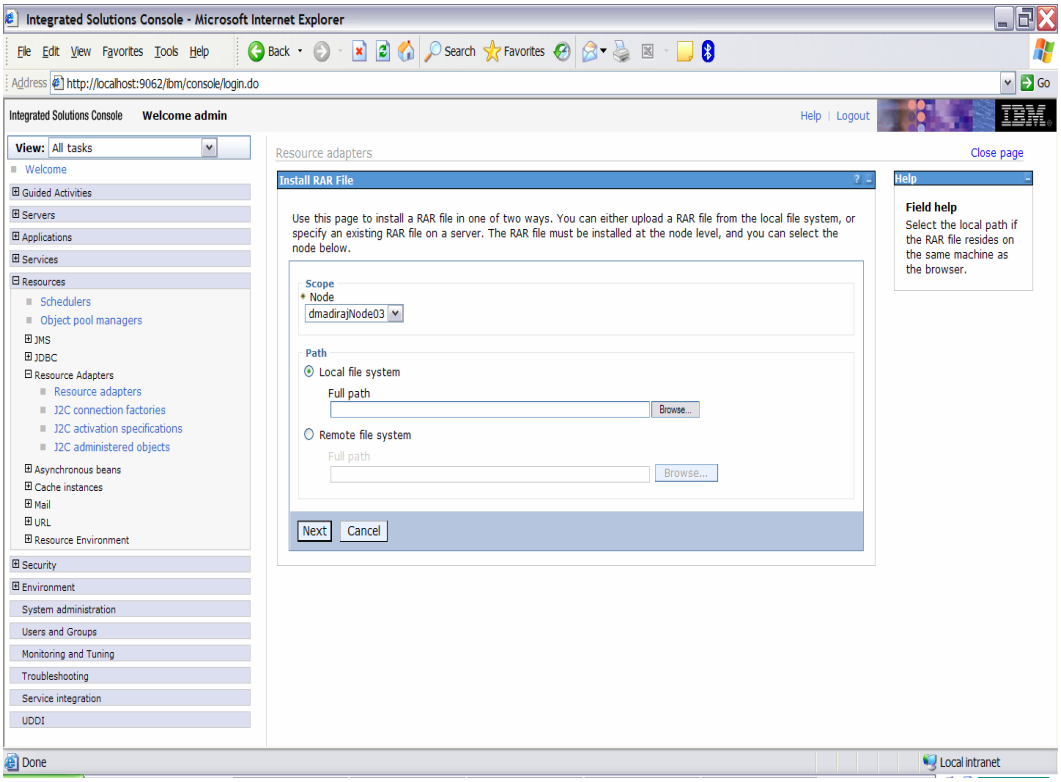
4. Enter the **User ID** and click **Log in**. The following screen appears:



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



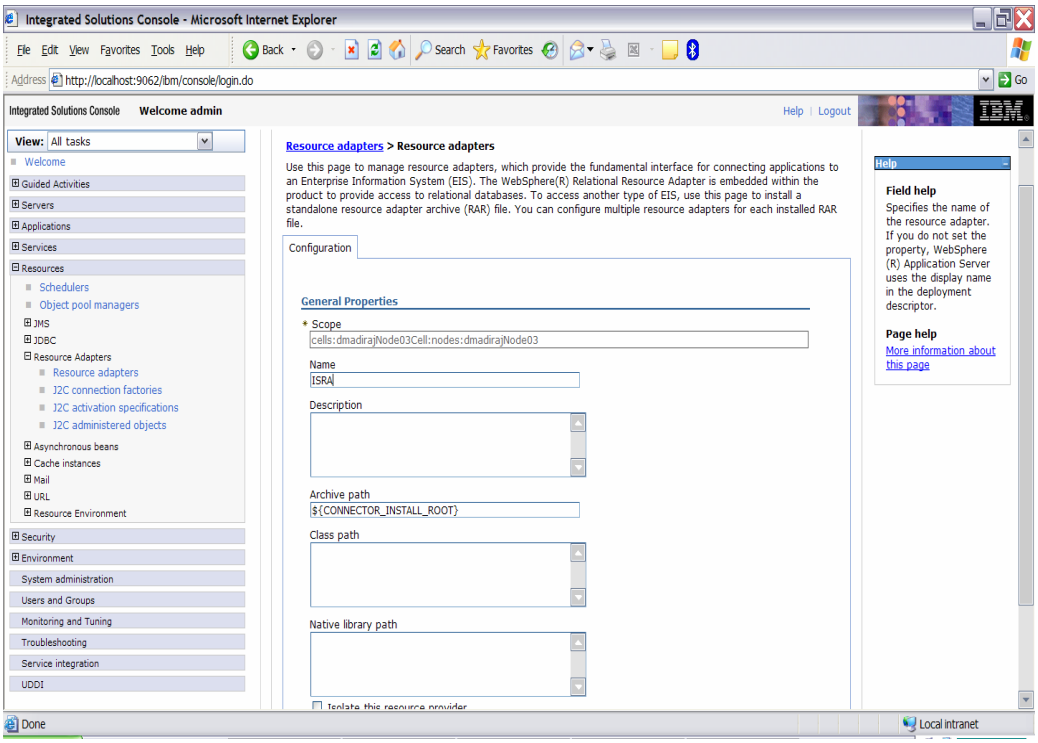
6. Click **Install RAR**. The following screen appears:



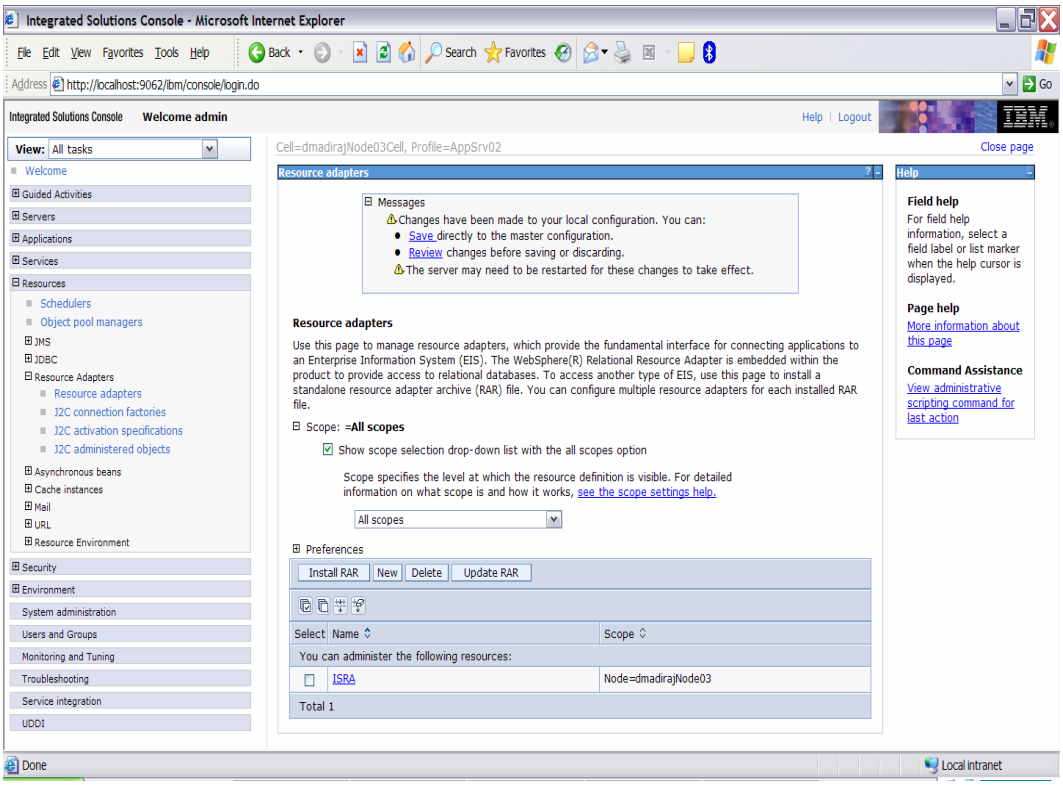
7. Click **Browse** to navigate to the directory where ISRA.rar is located.

   In the case of ISRA 3.4.0 GA version, it will be there in the “jar” folder of ISRA 3.4.0 installation dir. And in the case of an ISRA Fixpack (like 3.4 fixpack 1), it will be there in the Fixpack extracted dir.

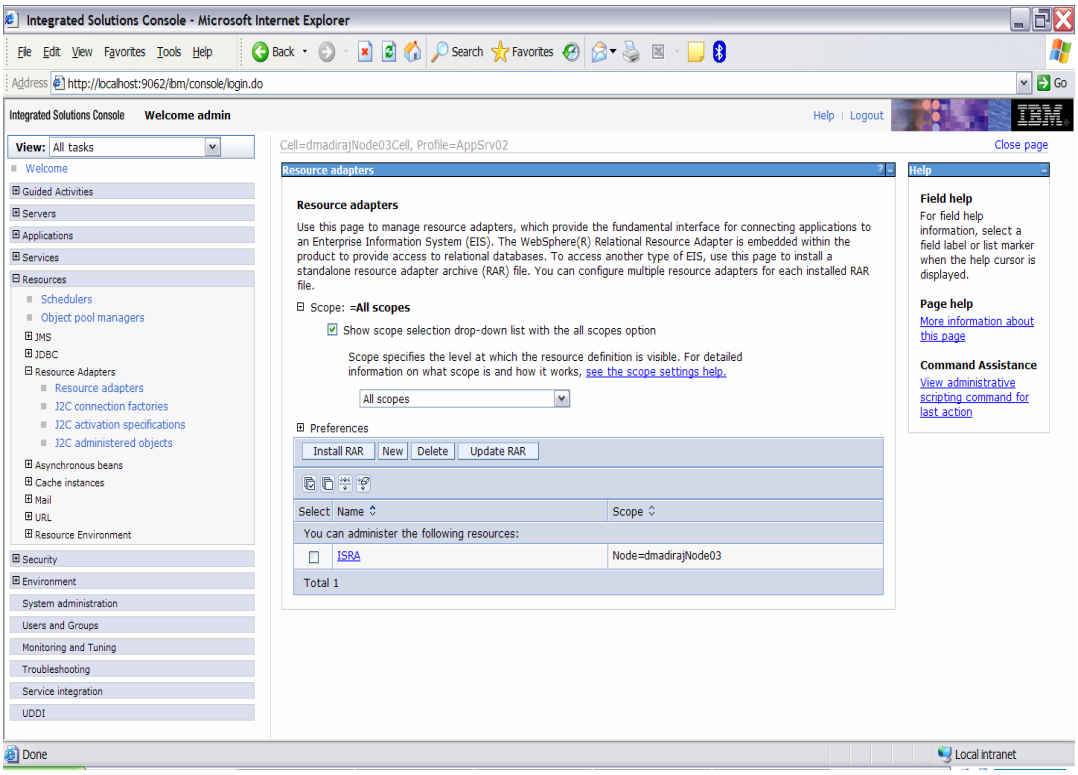
   Select the **ISRA.rar,** Click **Next**. The General Properties screen appears.



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



9. Click the **Save** link in the **Messages** box (in the right pane).



10. Deploying ISRA is completed.
11. Next step is to complete the Mandatory steps necessary for ISRA.

    Refer to Mandatory Requirements for ISRA section.
12. 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.
13. To verify the ISRA deployment, deploy the ISRA Console and 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 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'. Login as the root user and execute the WebSphere `firststeps.sh` script, as follows:

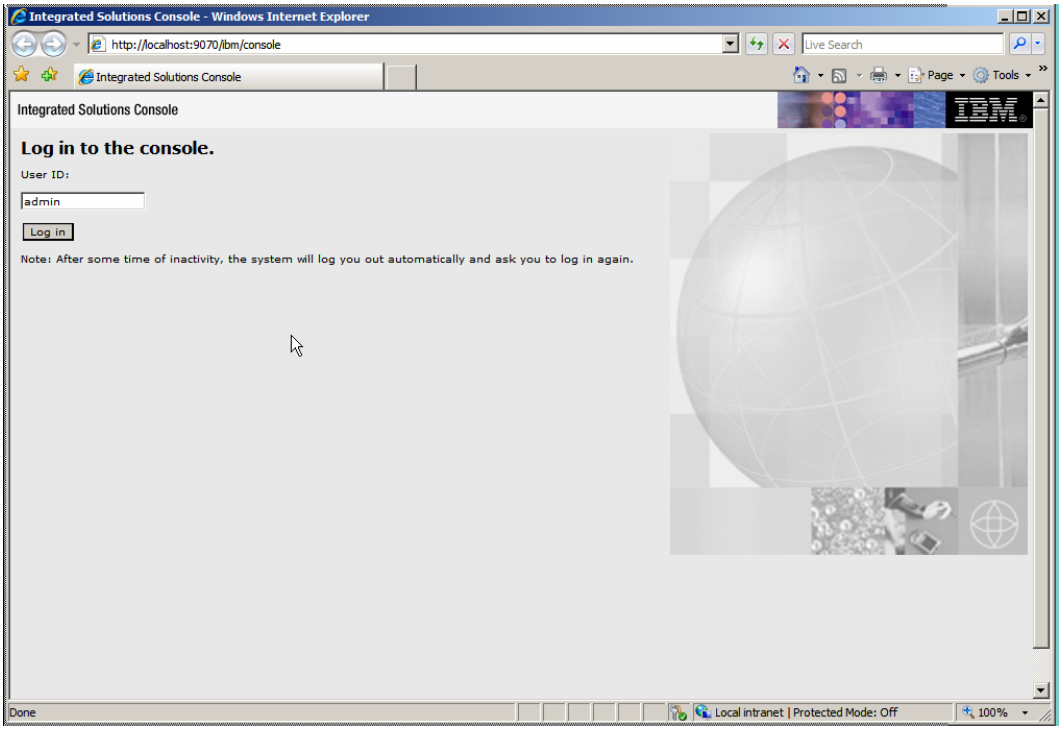
```
# cd <DeploymentManager home>/profiles/dmgr/firststeps
# ./firststeps.sh
```

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

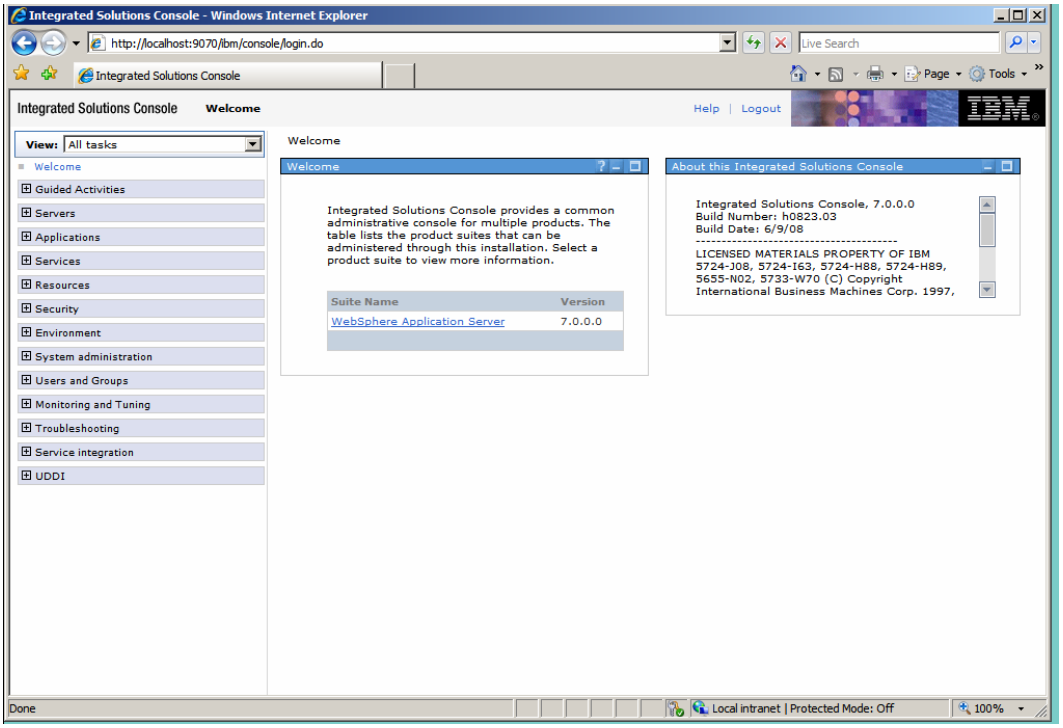
   Here, ‘server’ is name of the host where WebSphere Network Deployment Manager is running and ‘port’ is the port number on which the admin server is listening. By default, this port number is 9091.

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

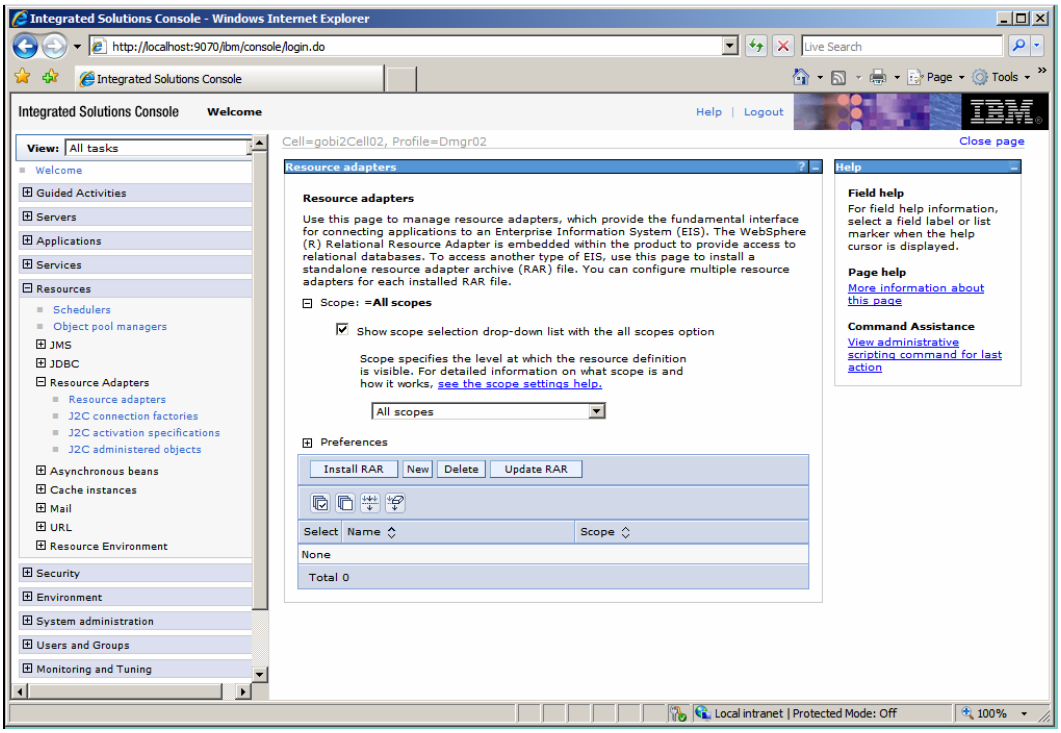
   The WebSphere Administrative console screen appears.



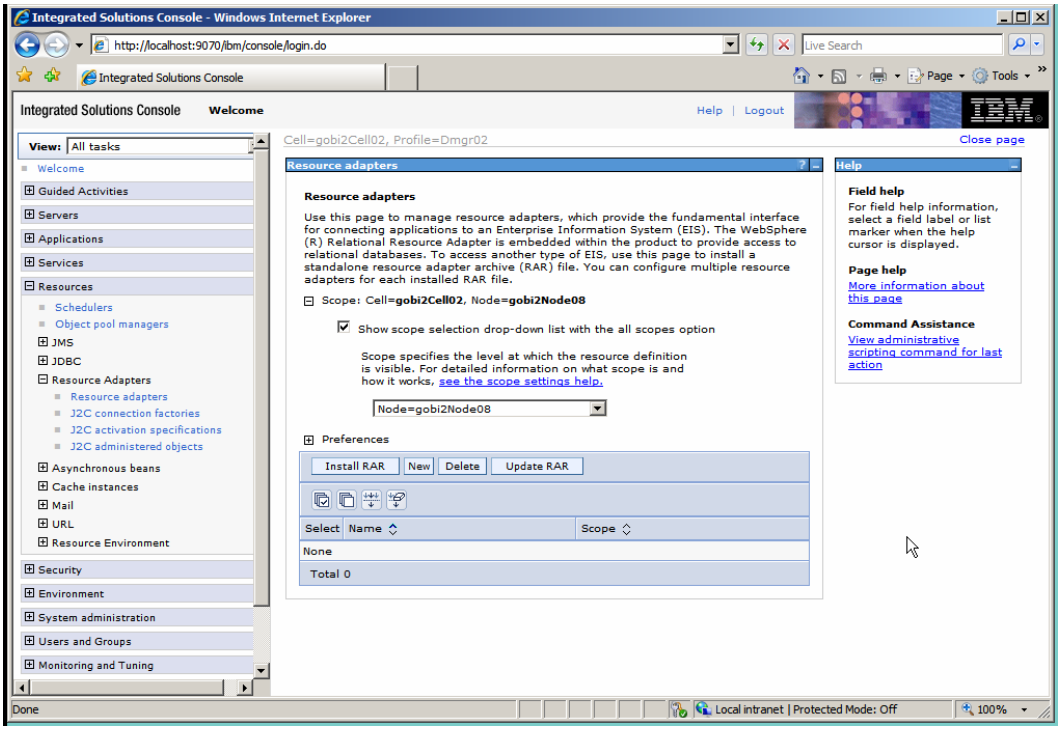
4. Enter **User ID** and click **OK**. The following screen appears:



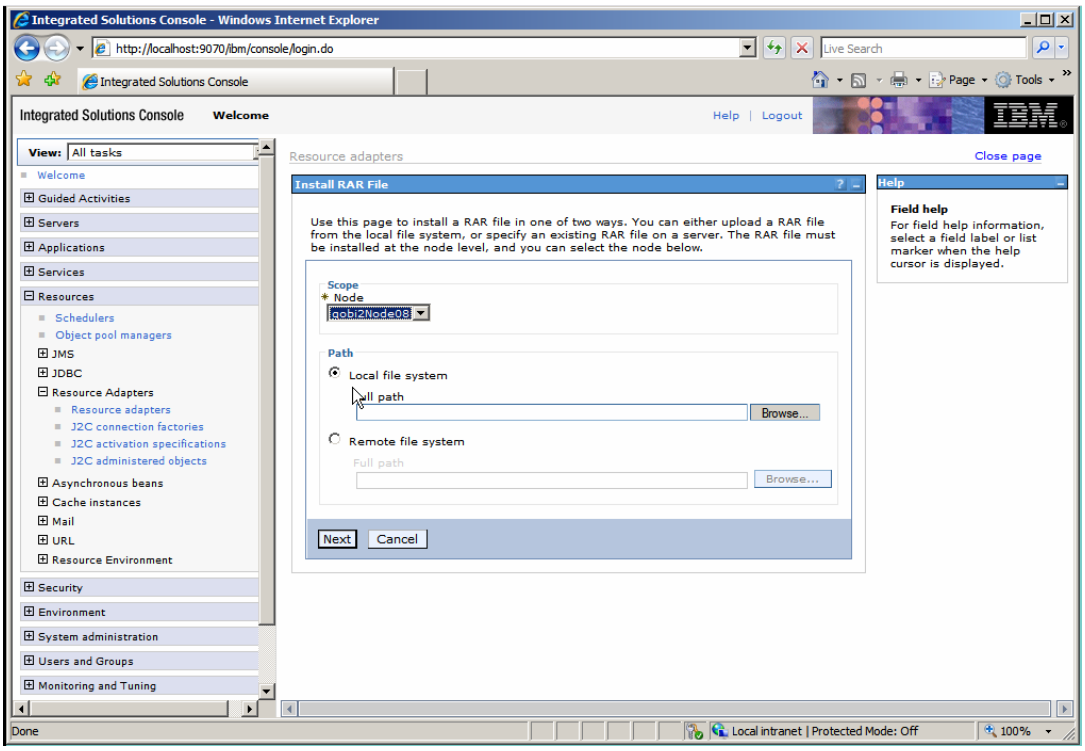
5. Navigate to **Resources >Resource Adapters >Resource Adapters**. The following screen appears:



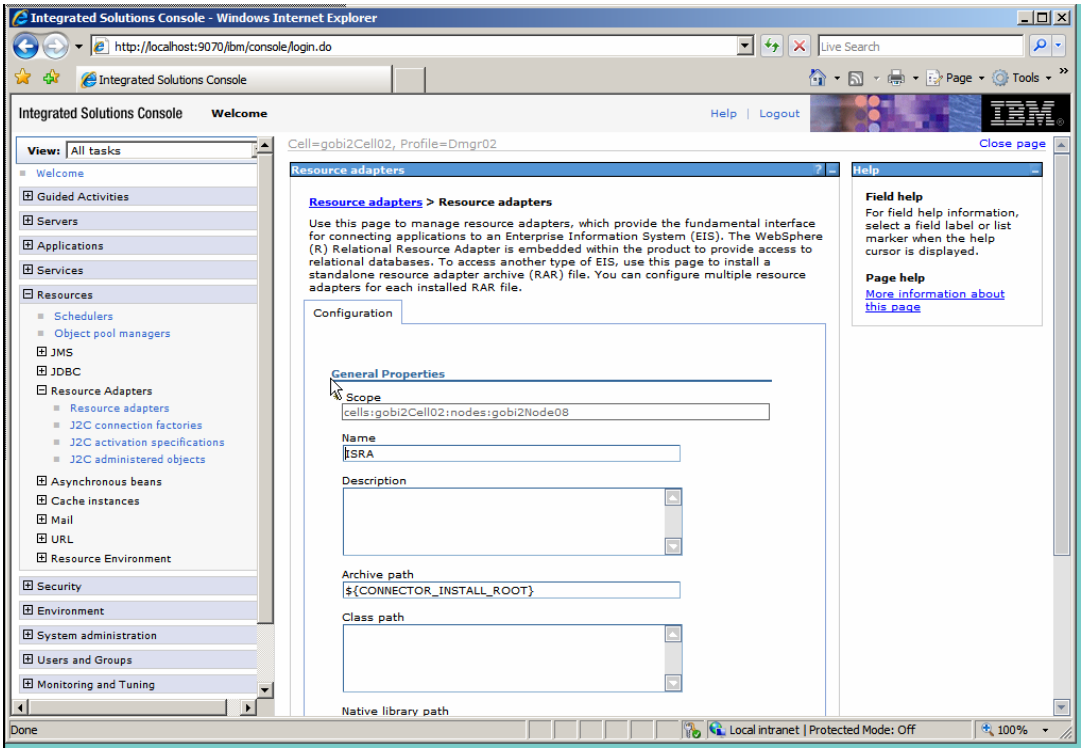
6. Click on a node where ISRA is to be deployed.



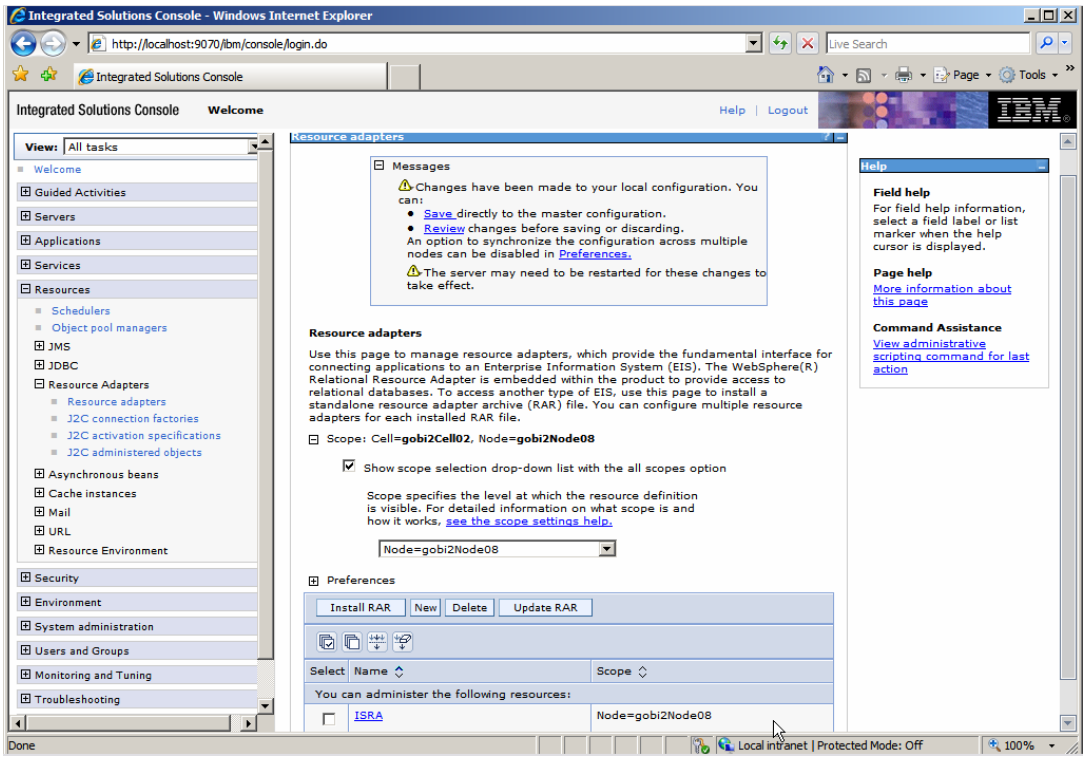
7. Click on Install RAR. The following screen appears:



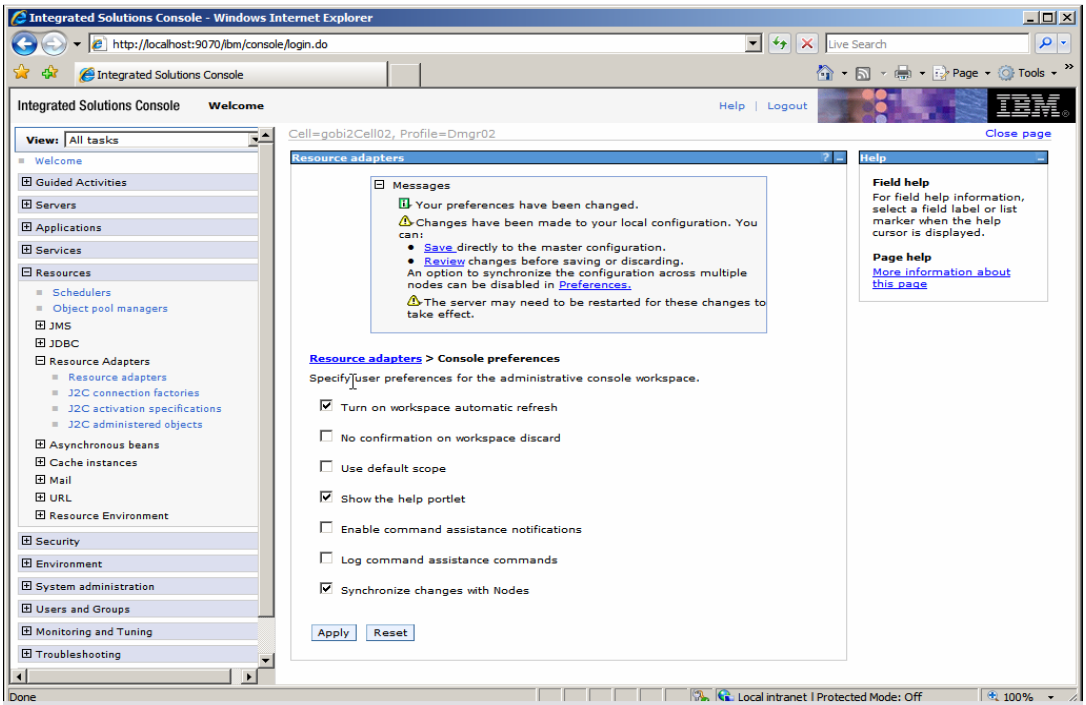
8. Click **Browse** to navigate to the directory where ISRA 3.4.3 is saved. Select the **ISRA.rar** file from the ISRA installation directory. Click **Next.** The General Properties screen appears.



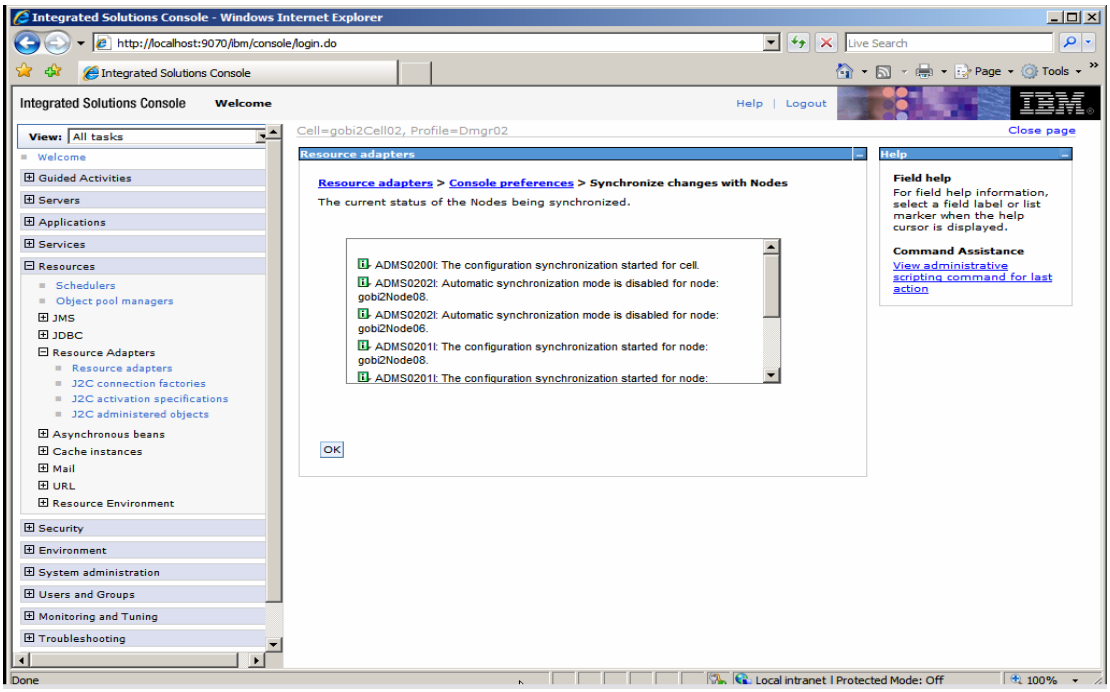
9. Mention the path for the ISRA.jar in the class path and click on **OK**. The ISRA.rar file gets uploaded. A confirmation message is displayed, as shown in the following screes:



10. Click on Preferences and enable Synchronize changes with node if it is not already enabled and apply changes.



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



12. Click on **OK**.
13. Deploying ISRA is completed.
14. Next step is to complete the Mandatory steps necessary for ISRA. Refer Mandatory Requirements for ISRA section.
15. To verify the ISRA deployment, deploy the ISRA Console and Sample Application provided with ISRA and perform a logon through the Sample Application.
16. 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 Configuring Deployed ISRA section.

Deploying ISRA in an Application Server Cell

Note	The screenshots shown for deployment/Undeployment of ISRA, Sample Application or FNImageViewer (taken on IBM WebSphere Application Server 7.0 on Windows 2003 Server) may look slightly different on the user's machine, depending on the server, platform version or settings etc.

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

1. Start the WebSphere ‘First steps’. Login as the root user and execute the WebSphere `firststeps.sh` script, as follows:

```
# cd <WebSphere home>/AppServer/profiles/default/firststeps
# ./firststeps.sh
```

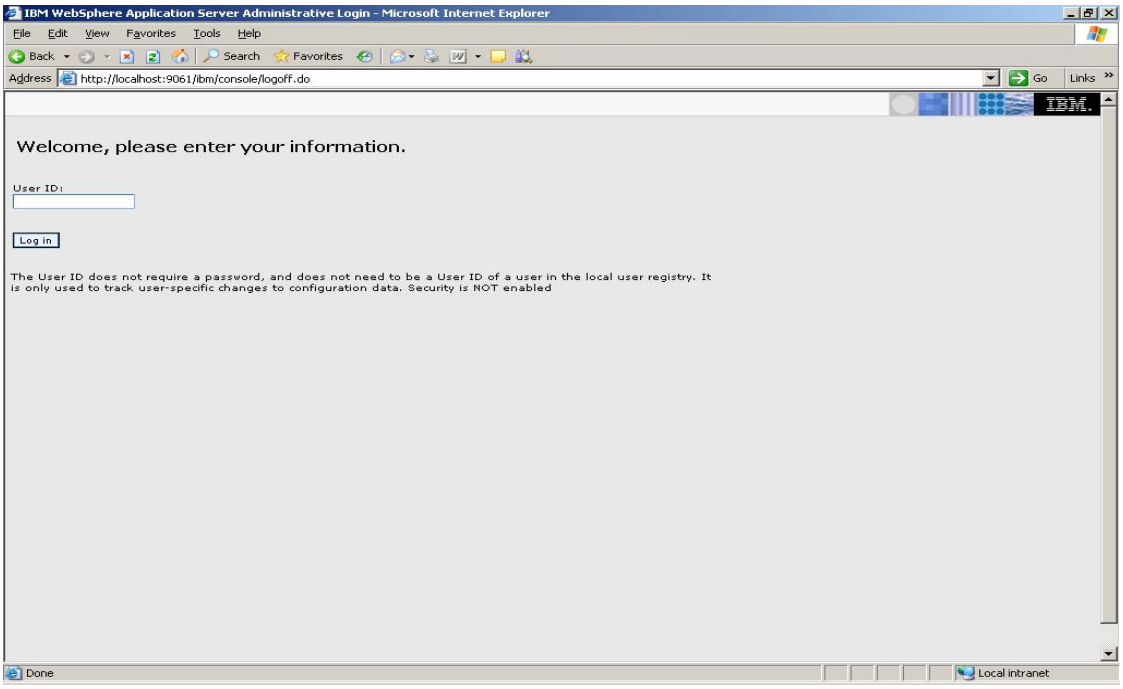
2. Click **Start the server**.

   Launch a web browser and enter the URL http://<server>:<port>/ibm/console, in the browser to open the IBM WebSphere console.

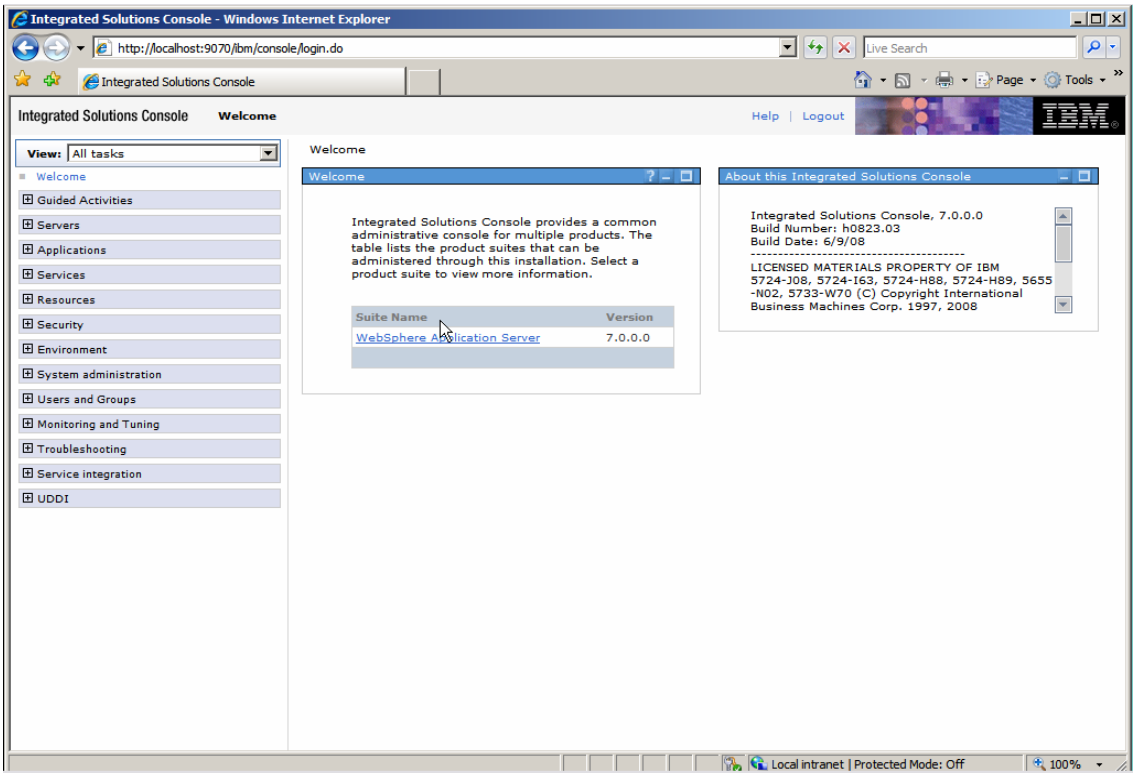
   Here, ‘server’ is name of the host where WebSphere server is running and ‘port’ is the port number on which the admin server is listening. By default, this port number is 9060.

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

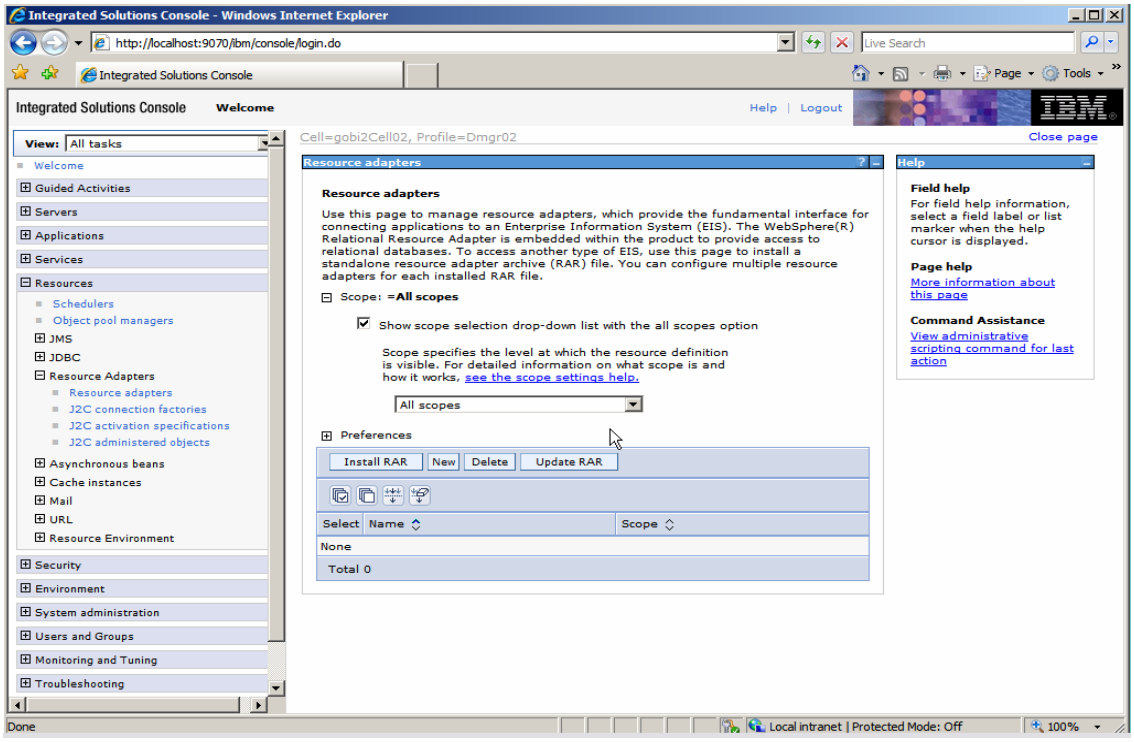
   The WebSphere Administrative console screen appears:



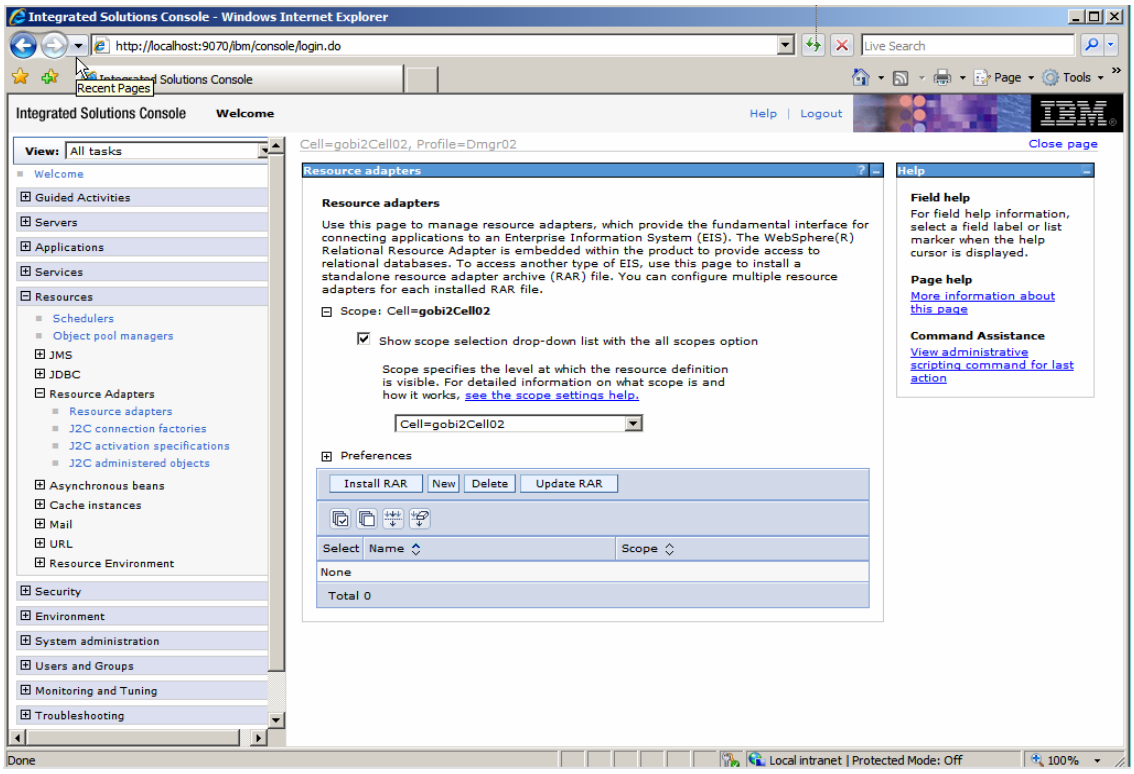
3. Enter **User ID** and click on **Login** button, the following screen appears.



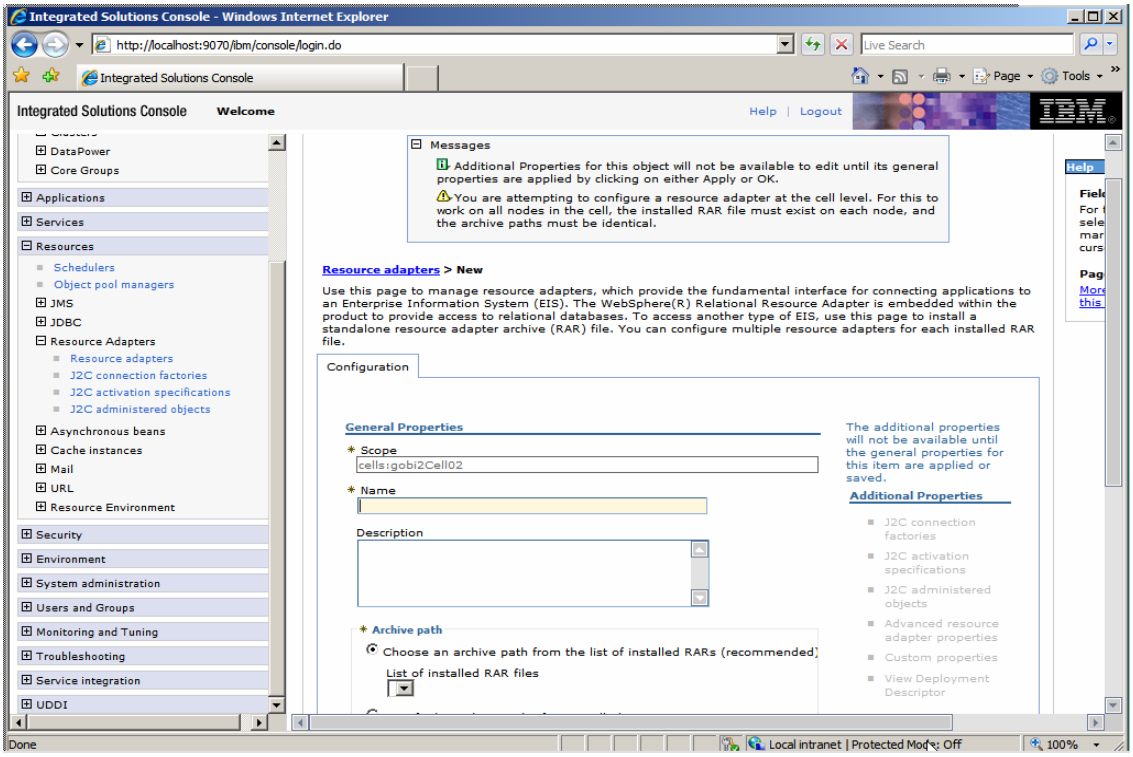
4. Navigate to **Resources > Resource Adapters > Resource Adapters.** The following screen appears:



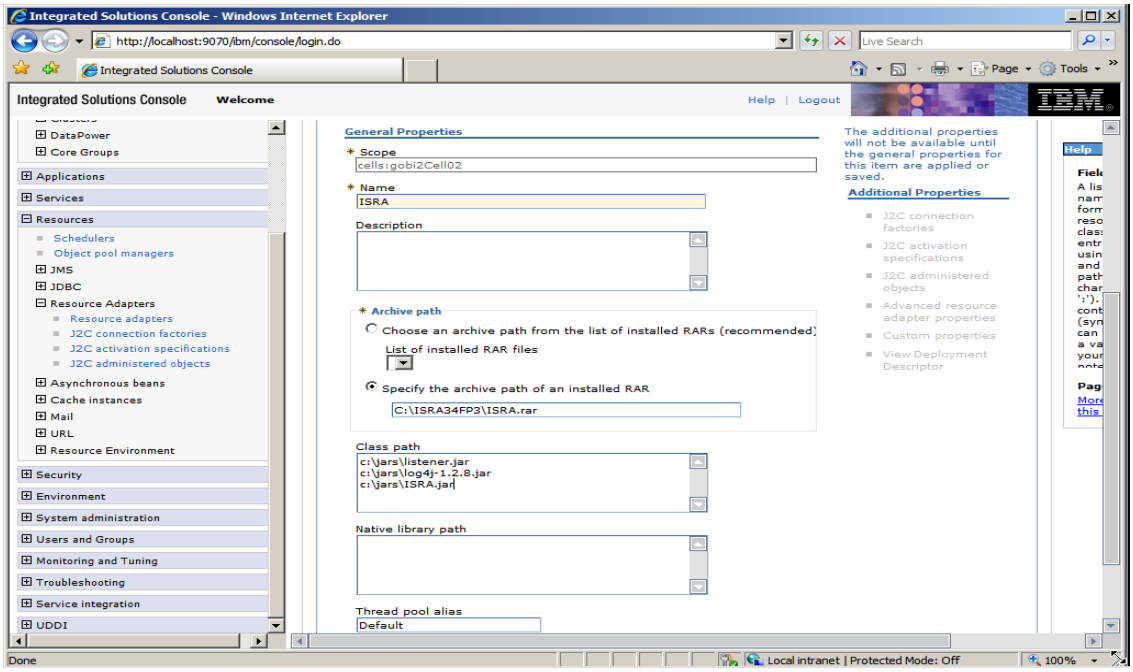
5. Select the **Cell** option where ISRA is to be deployed.



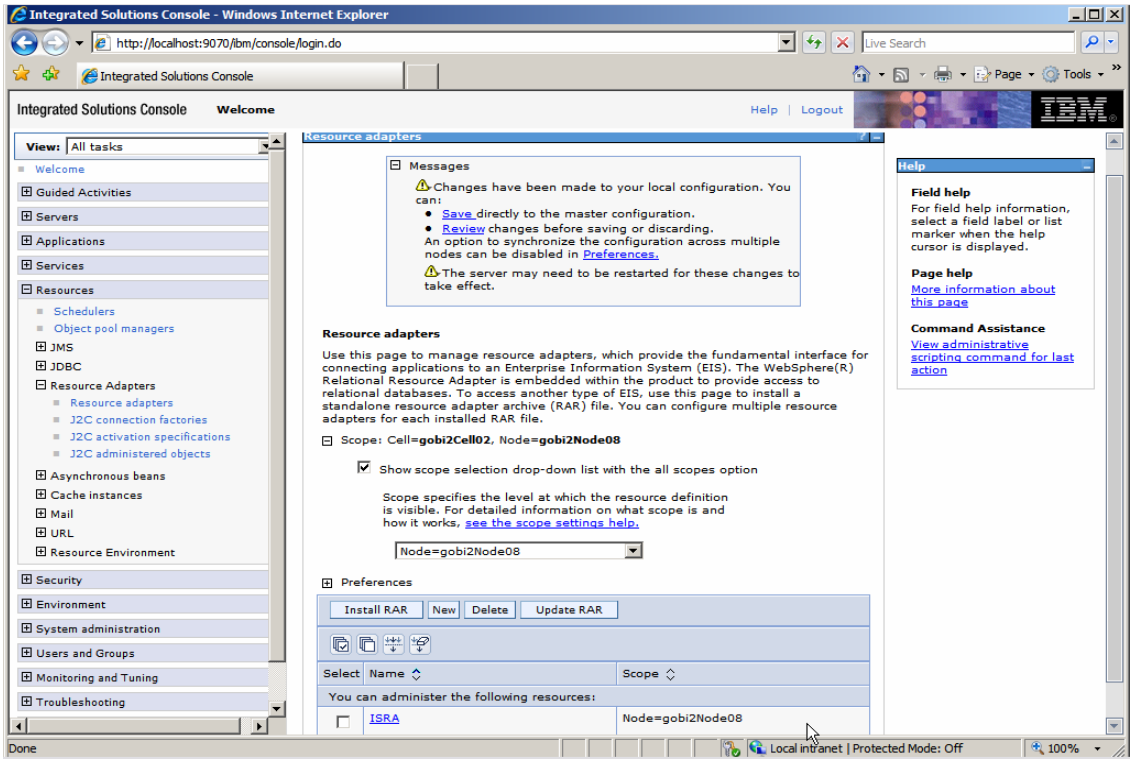
6. Click **New**.



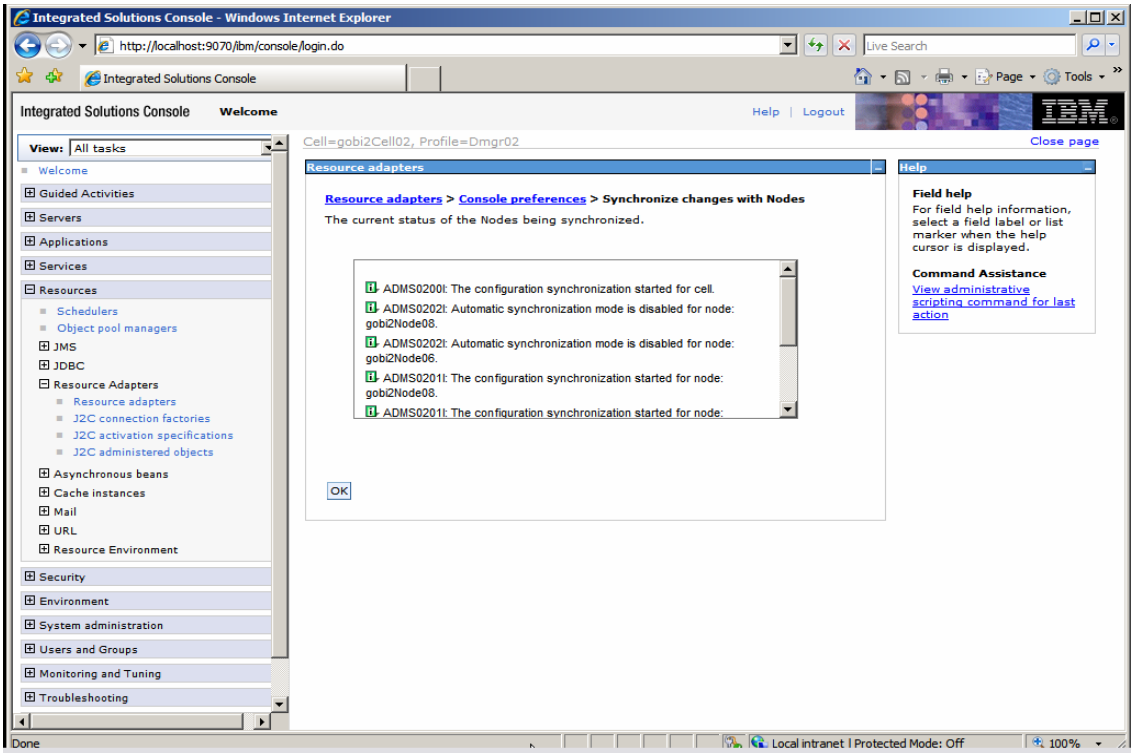
7. Enter the **Name** for the resource adapter and specify the archive path as the path of the ISRA.rar file. The RAR file needs to be manually copied to each node in the cell and the path must be identical.



8. Specify ISRA.jar, log4j-1.2.8.jar and listener.jar in the class path. The path of ISRA.jar has to be provided in the class path of the resource adapter. Click **Apply**.



9. Click the **Save** link to save the changes.



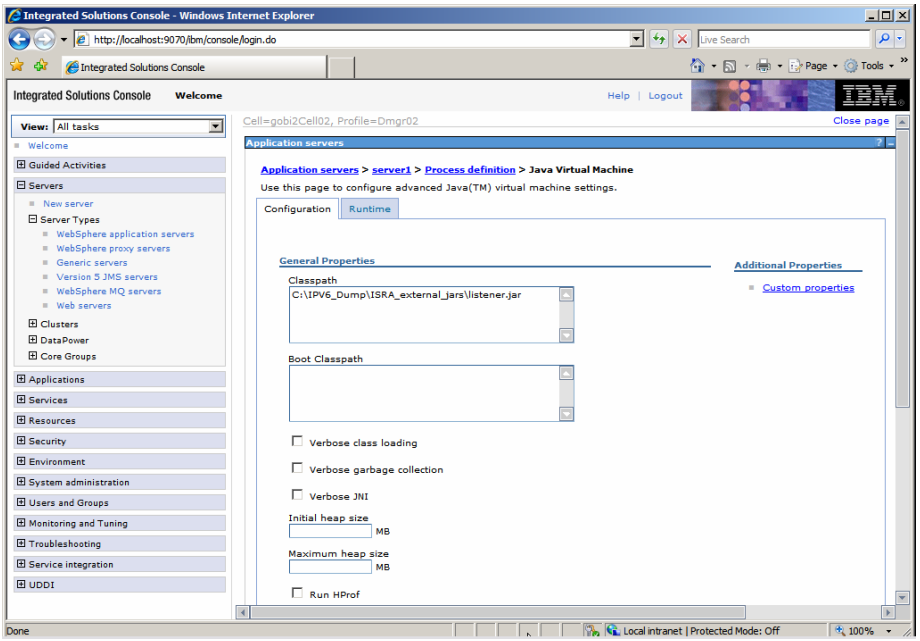
10. For configuration please refer ISRA Configuration section.

Mandatory Requirements for ISRA

The mandatory requirements for ISRA 3.4.0:

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

1. Find the listener.jar and log4j-1.2.8.jar in the path "<ISRA-home>\ISRA340\SystemManager\".
2. Login to the WebSphere Administrative console.
3. Navigate to **Servers > Server Types> WebSphere application servers** and select the server.
4. Under Server Infrastructure, expand the link **Java and Process Management**, and click the **Process Definition** link.
5. Under Additional Properties, click **Java Virtual Machine**.
6. Include **listener.jar** and **log4j-1.2.8.jar** in the **Classpath**, as shown below:



Note If the operating system is Unix/Linux then you have to use colon (:) as a separator for each jar file path appended to the classpath text field and if it is Windows you have to use semicolon (;).

7. Include the folder in which **WinPerfMon.dll** is present in the system path in case of Windows operating system. In UNIX, this file is not required.
8. Enter the initial and maximum JVM heap size as 512.

Explanation for Terminal name and ISRALock folder:

The first instance of ISRA deployed on an Application Server creates a folder named "ISRALock" and a **file named** [1] "ISRALock.0" inside that folder. The counter "0" in the file name "ISRALock.0" increments subsequently with each new deployment of ISRA and the same is appended to the terminal name generated for an ISRA instance. This folder is created in the path resolved by the system property "user.dir", which is the same path where the ISRA logs are generated. This functionality has been introduced in ISRA 3.2.1 to support vertical cluster environment.

Terminal name identifies ISRA instance with a unique id so that IS can distinguish each ISRA client uniquely for communication. Earlier, the terminal name used to be of the form "SV<instance number>.<Counter1>@IPAddress". In case of a vertical cluster, ISRA can be deployed across the cluster on a single machine. But in such a scenario, all the managed server instances in a cluster will have the same ISRA instance deployed and will generate the same terminal name, as the "IPAddress" and "instance number" will be same for all the ISRA instances. The current format of a terminal name generated by ISRA is "RA<instance number>.<Counter1>.<Counter2>@IPAddress", where Counter2 is the counter appended to the files created in the ISRALock folder as mentioned above. The files created in the ISRALock folder will be automatically removed if the managed servers are gracefully shut down (in case of proper JVM shutdown).

See Configurable ra.xml properties section below for "DeploymentInstance" property setting.

[1] ISRALock.0 (0-9 and a-z) would be created in ISRA 3.4 FP3 and above. Prior versions of ISRA would have files created as ISRALock.0000 (0000-9999).

ISRA Configuration

This chapter describes how to configure ISRA on IBM WebSphere Application Server version 7.x, after it is deployed.

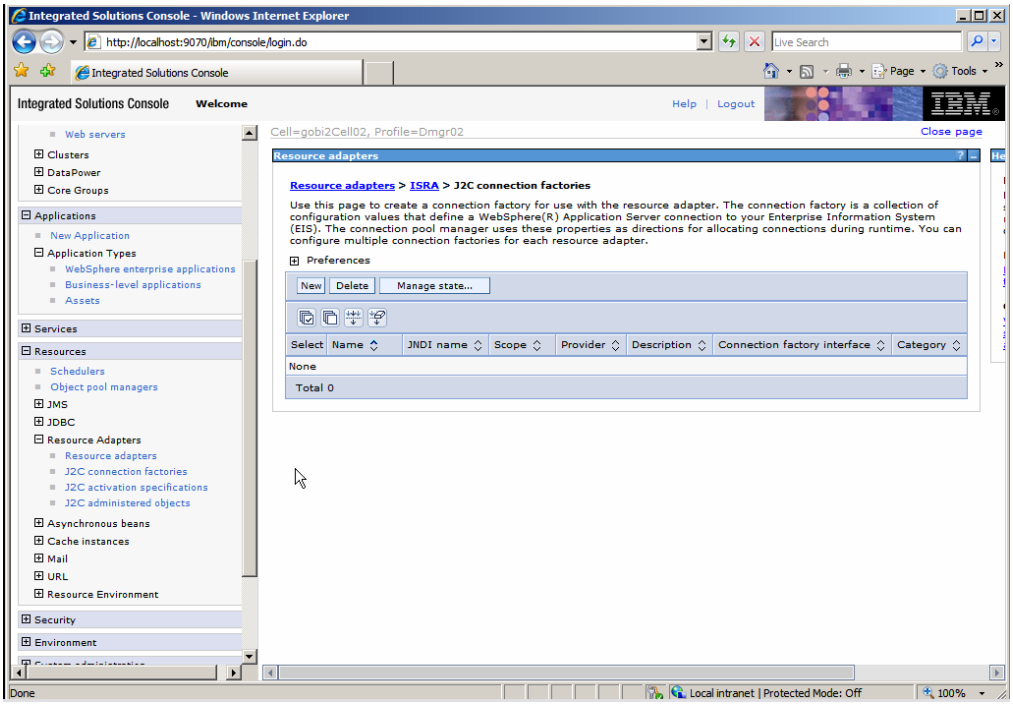
Configuring Deployed ISRA

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

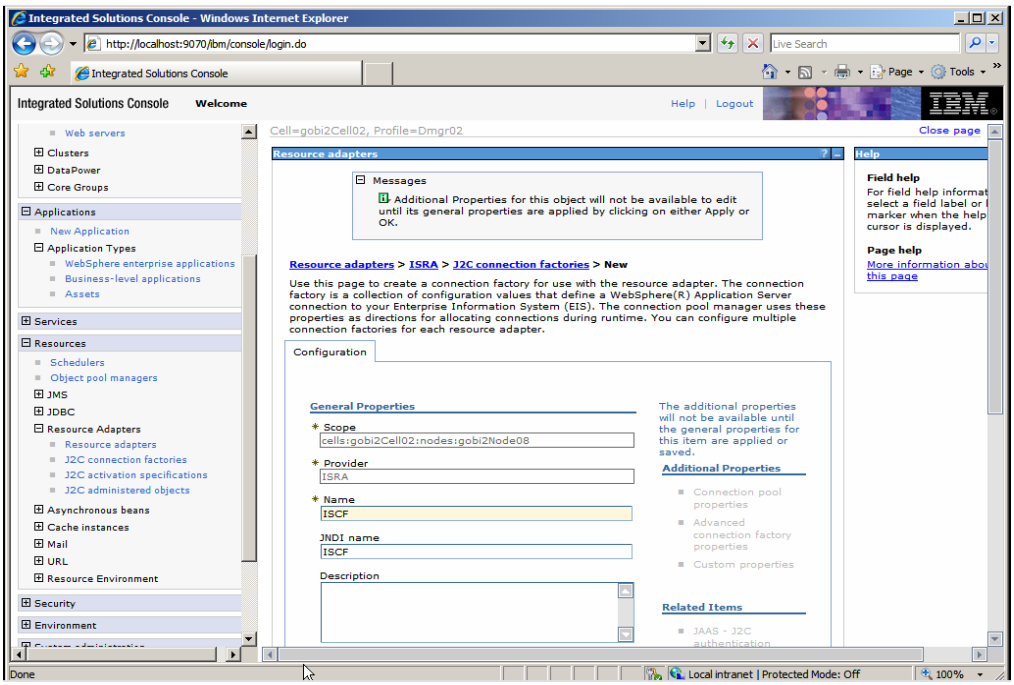
ISRA uses a deployment descriptor called **ra.xml** to define its operational parameters. The deployment descriptor is defined by Sun Microsystems in the J2EE Connector 1.0 specification. It describes the Resource Adapter related attributes, types, and its deployment properties using a standard Document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

To edit the ISRA deployment descriptor:

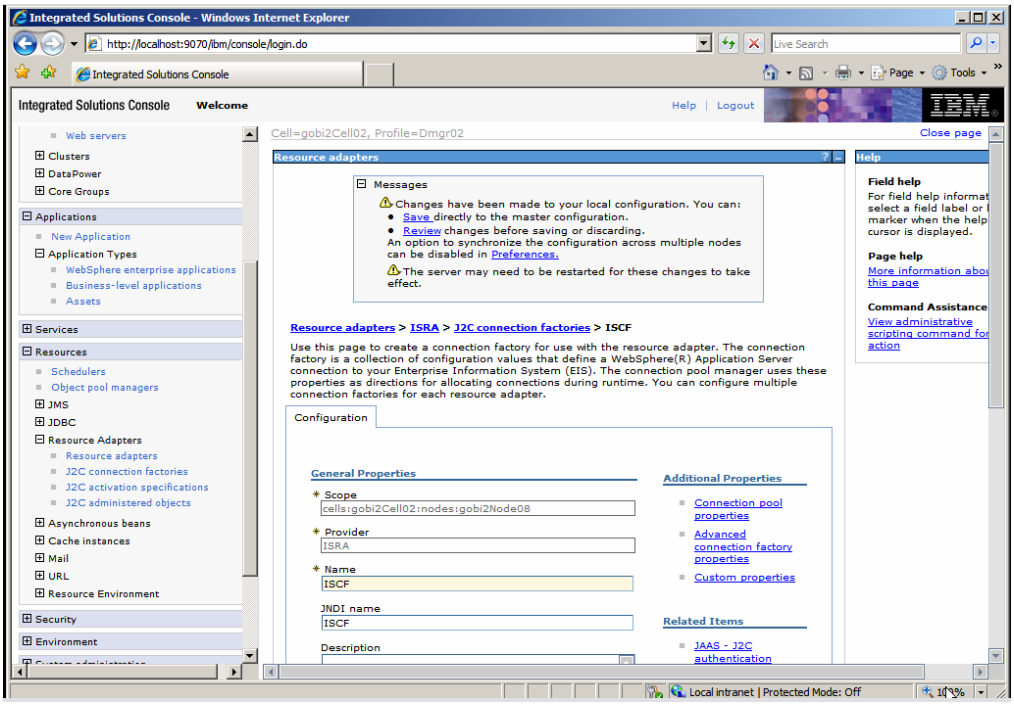
1. Launch a web browser window and login to the WebSphere Administrative Console or Network Deployment Administrative Console depending on whether ISRA is deployed in standalone or clustered environment.
2. Expand **Resources** node.
3. Click on the deployed ISRA to edit under the **Resource Adapters**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



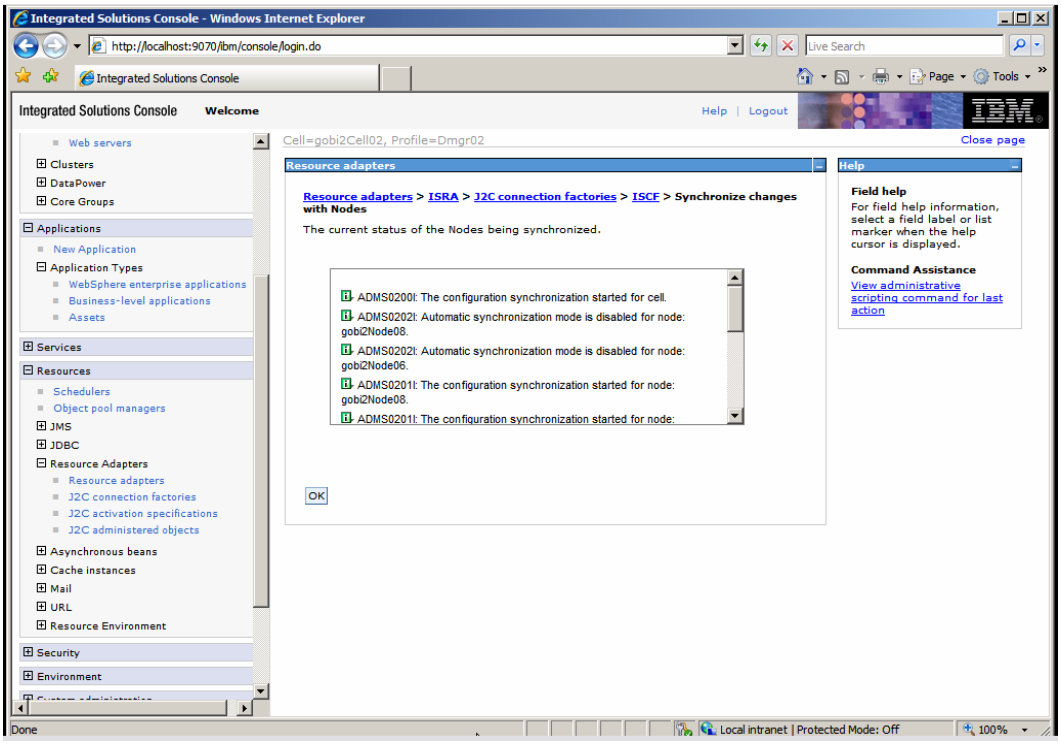
5. Click **New**. The following screen appears:



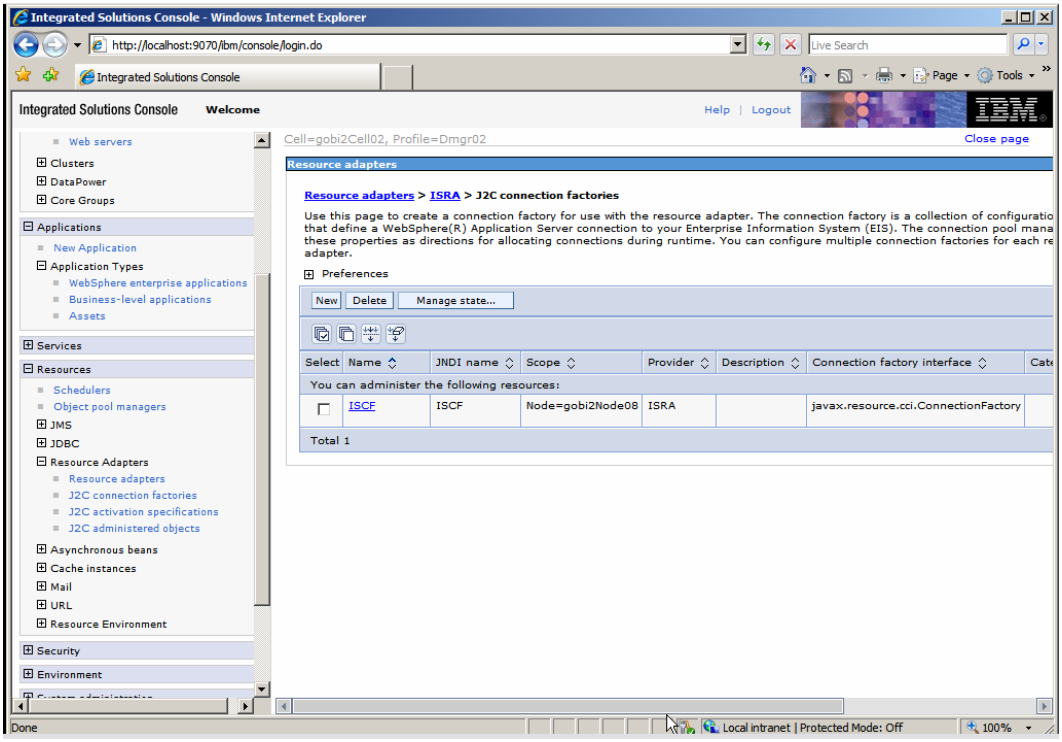
6. Provide a name for the Connection Factory. Provide the **JNDI name**, for example ISCF. Click **Apply**. A confirmation message is displayed, as shown in the screen below:



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



8. Click on **OK.** On successful creation of Connection Factory, the following screen appears:

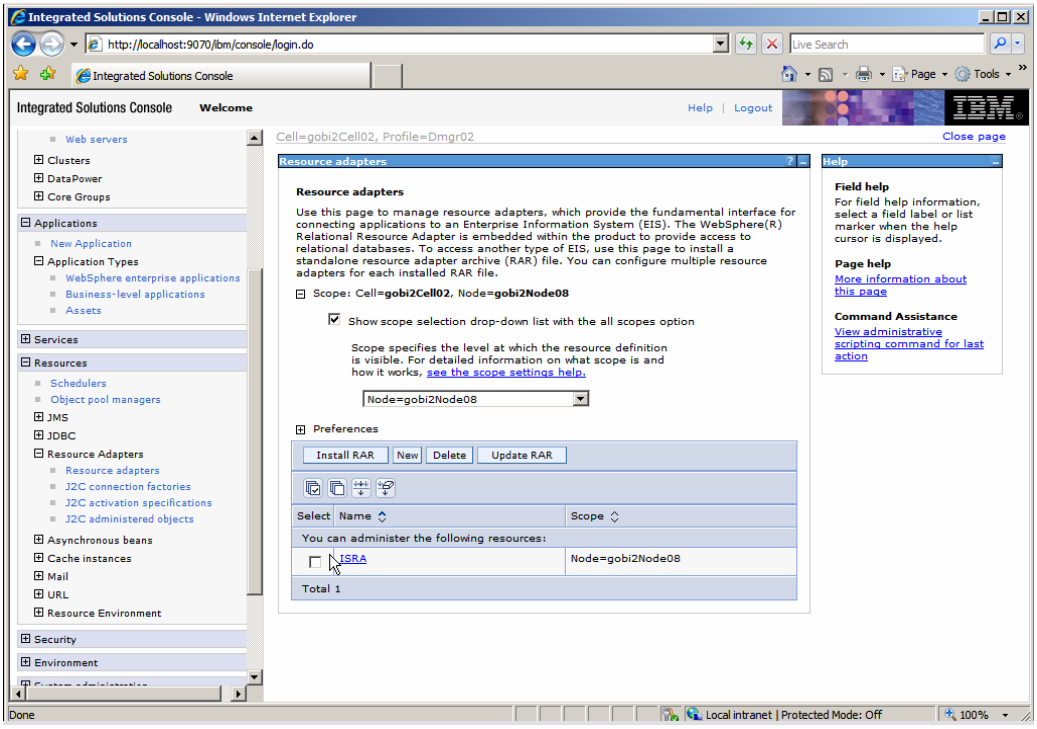


Changing ISRA Specific Parameters

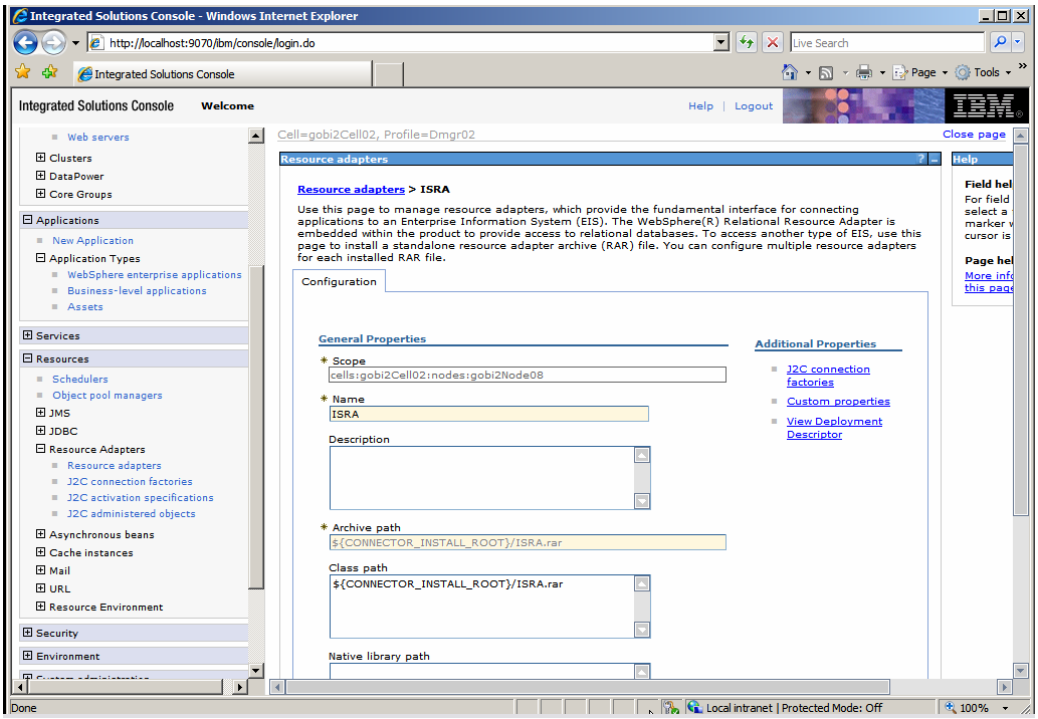
After ISRA is deployed, some parameters of the Deployment Descriptor need to be changed to configure it for the target IS server.

To change ISRA specific parameters:

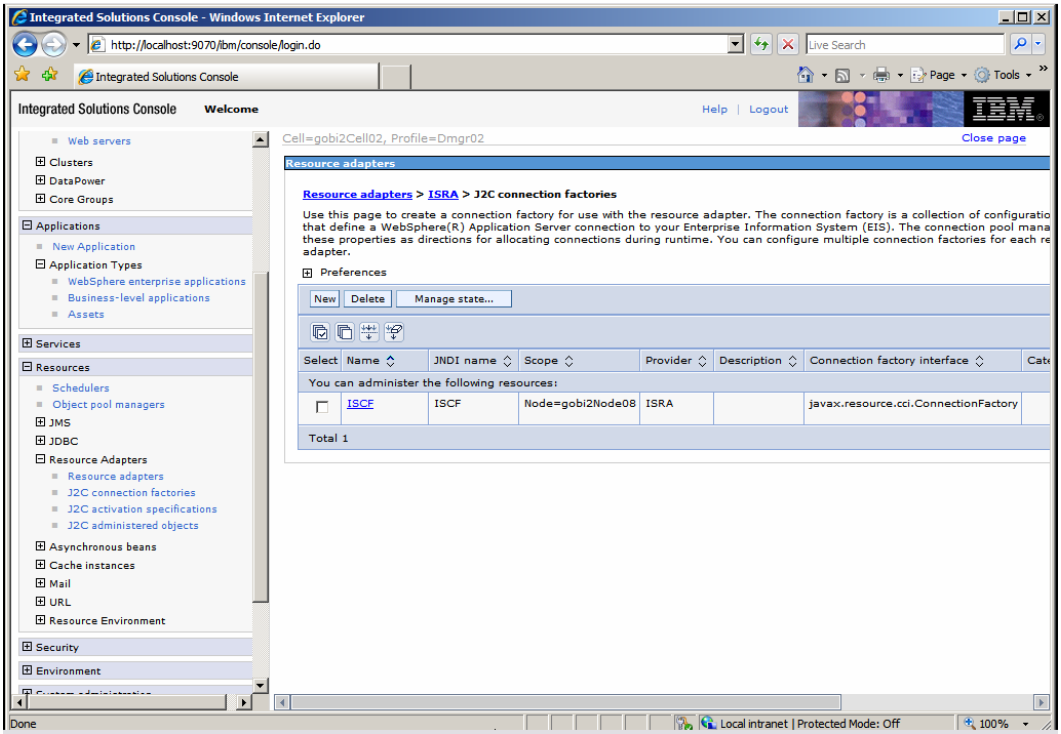
1. Navigate to **Resources> Resource Adapters> Resource Adapters**. The following screen appears:



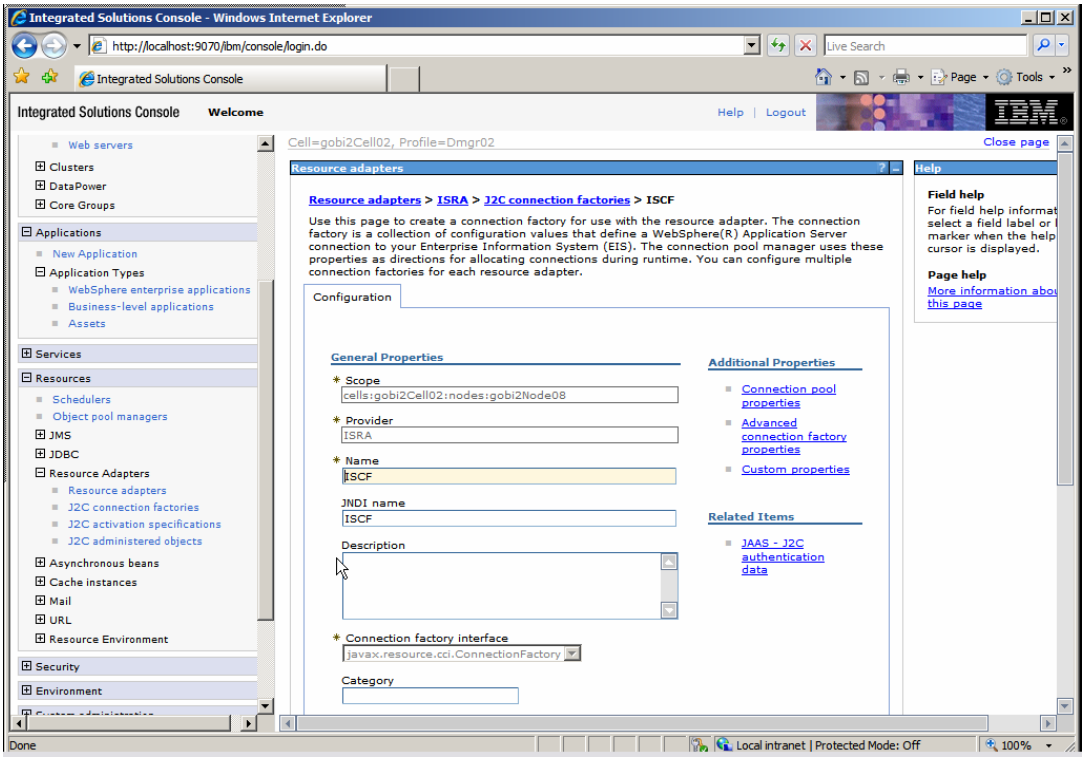
2. Under **Name** column, click **ISRA**. The following screen appears:



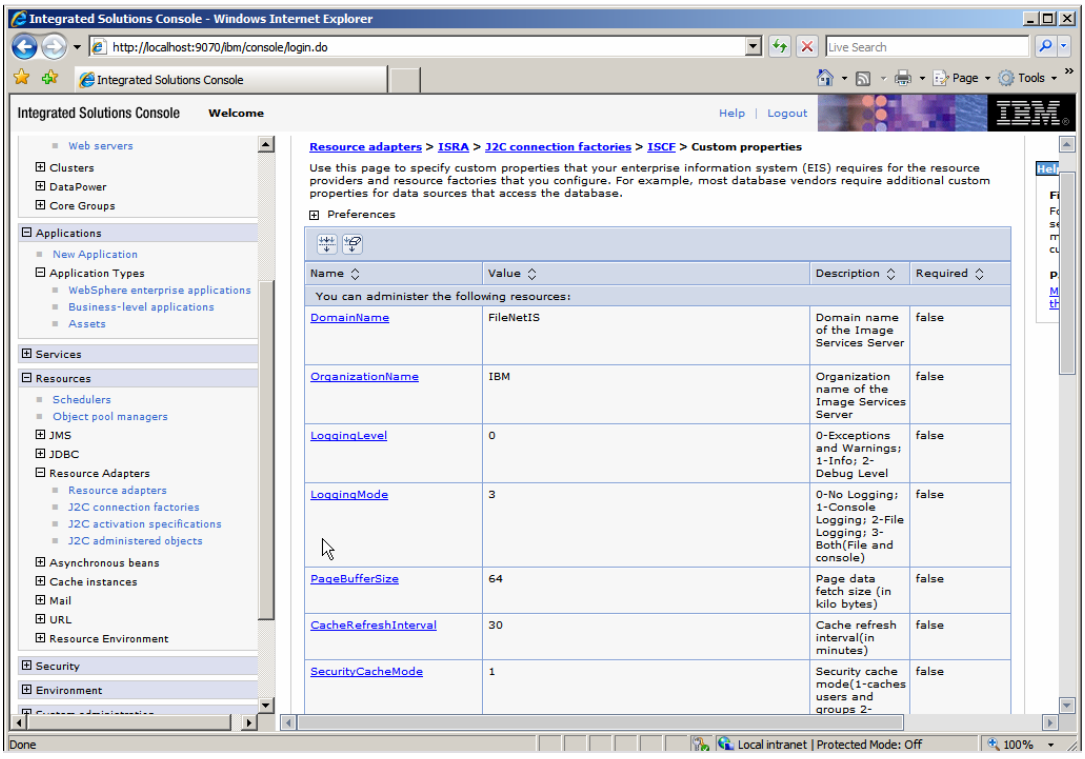
3. Under **Additional Properties**, click **J2C Connection Factories**. The following screen appears:



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



5. Under **Additional Properties,** 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 Configurable ra.xml properties section, for the details.

Configurable ra.xml properties

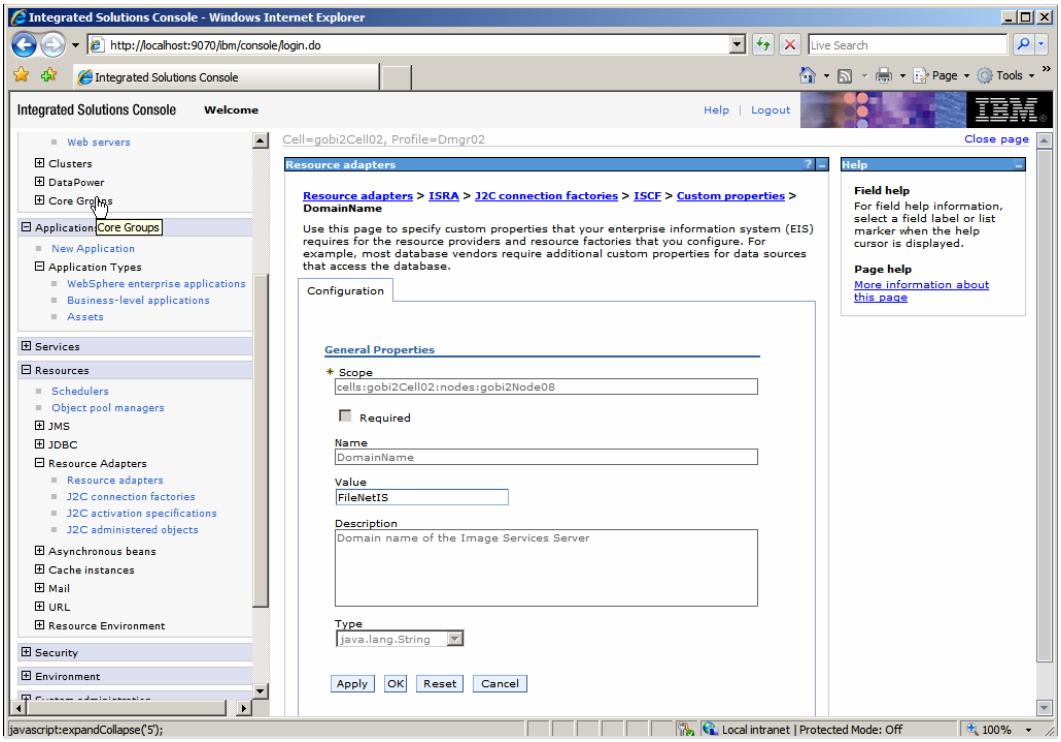
Note	Please note that all properties described in the deployment descriptor are mandatory and no property should be removed. Default values should be specified for properties that users do not want to use.

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

- DomainName
- OrganizationName
- LoggingLevel
- LoggingMode
- PageBufferSize
- CacheRefreshInterval
- SecurityCacheMode
- MetaDataCacheRefreshMode
- LogFileName
- LogFileSize
- LdapImplClassName
- LdapImplClassString
- InherentLogin
- DeploymentInstance
- PCHLogging
- AllowAnonymousUser
- RPCLogging
- ClientCodepage
- GMTEnabled flag
- ISLocale
- IgnoreObjectBusyMsgInDocMigration

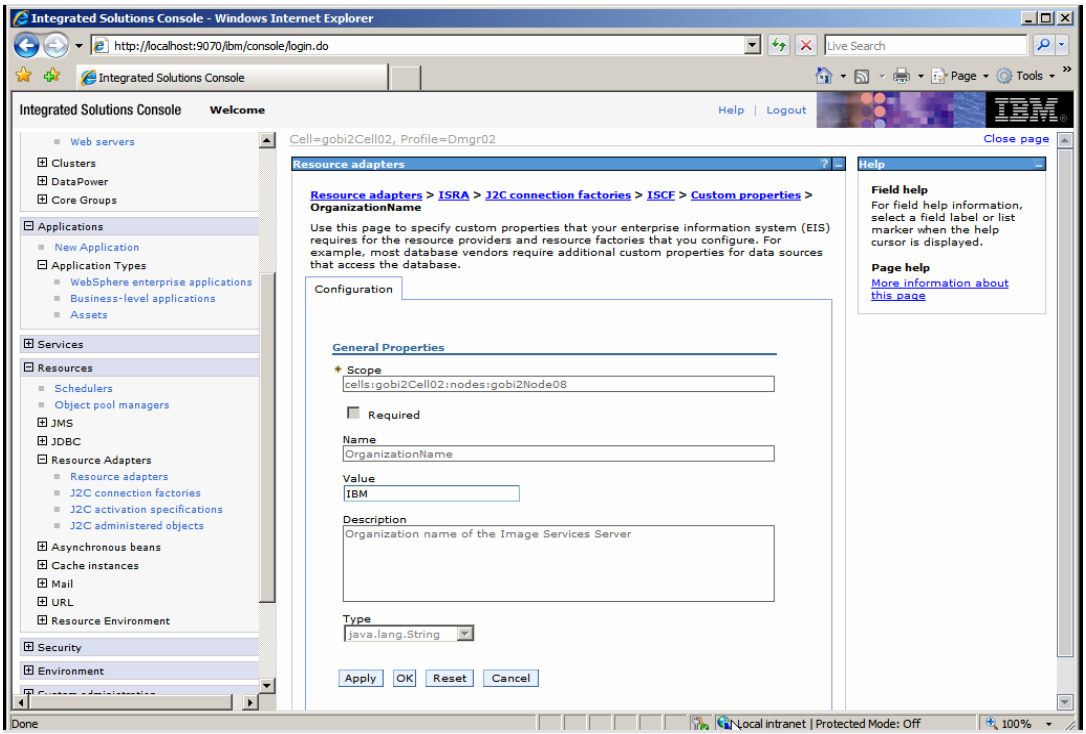
DomainName

This is the name of the domain of the IS server. Click **DomainName**. 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 IBM. Click **OrganizationName** to change the value to the target IS server.



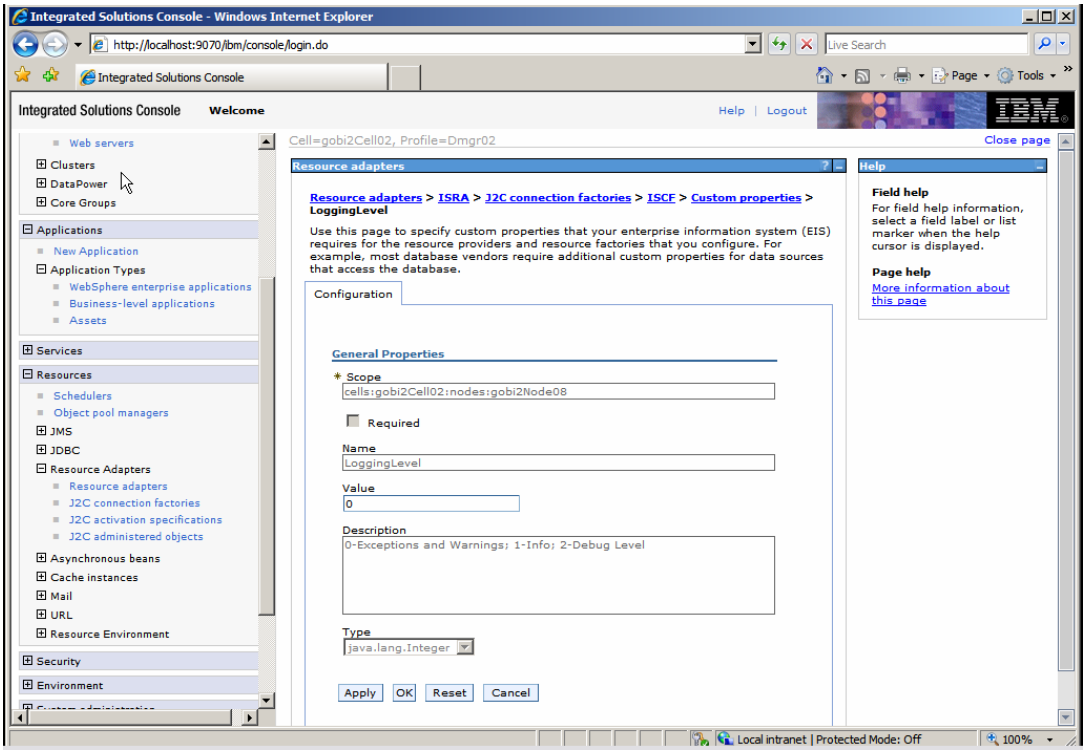
LoggingLevel

This is an integer representing the amount of log information to be generated. The values are dynamically updatable by using the ISRA Console. The valid values are:

Logging Level	Description
-1	Disables ISRA Logging
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** to change the value.

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

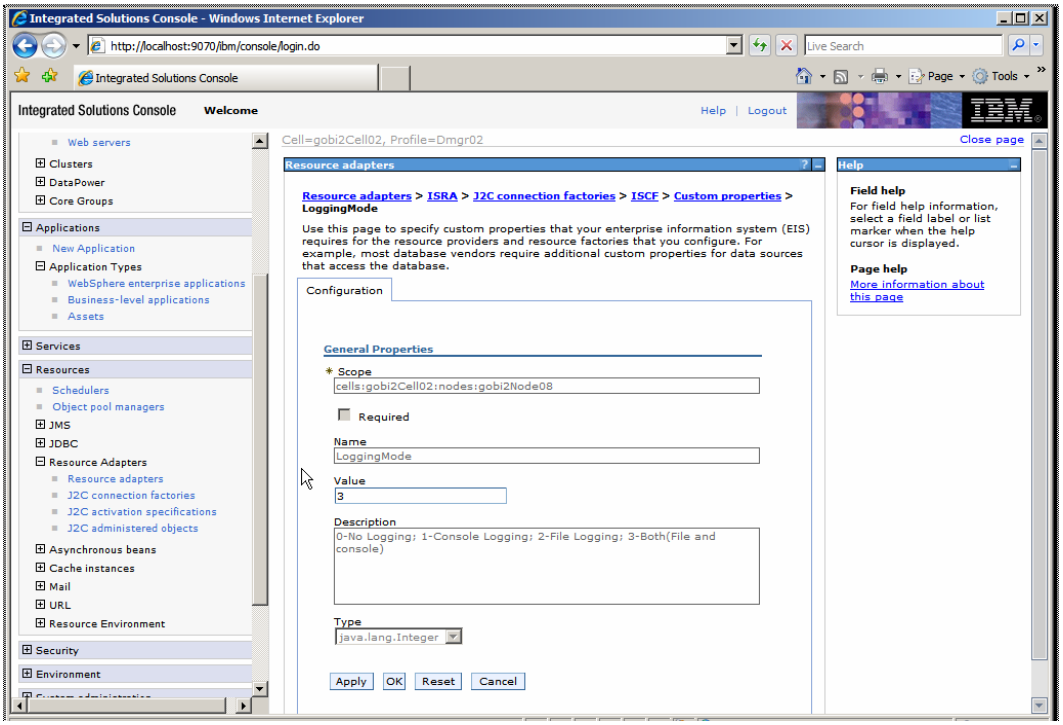
This is an integer representing the mode of logging. The valid values are:

Logging Level	Description
0	No Logging
1	Only console logging

2	Only file logging
3	Both console logging and file logging

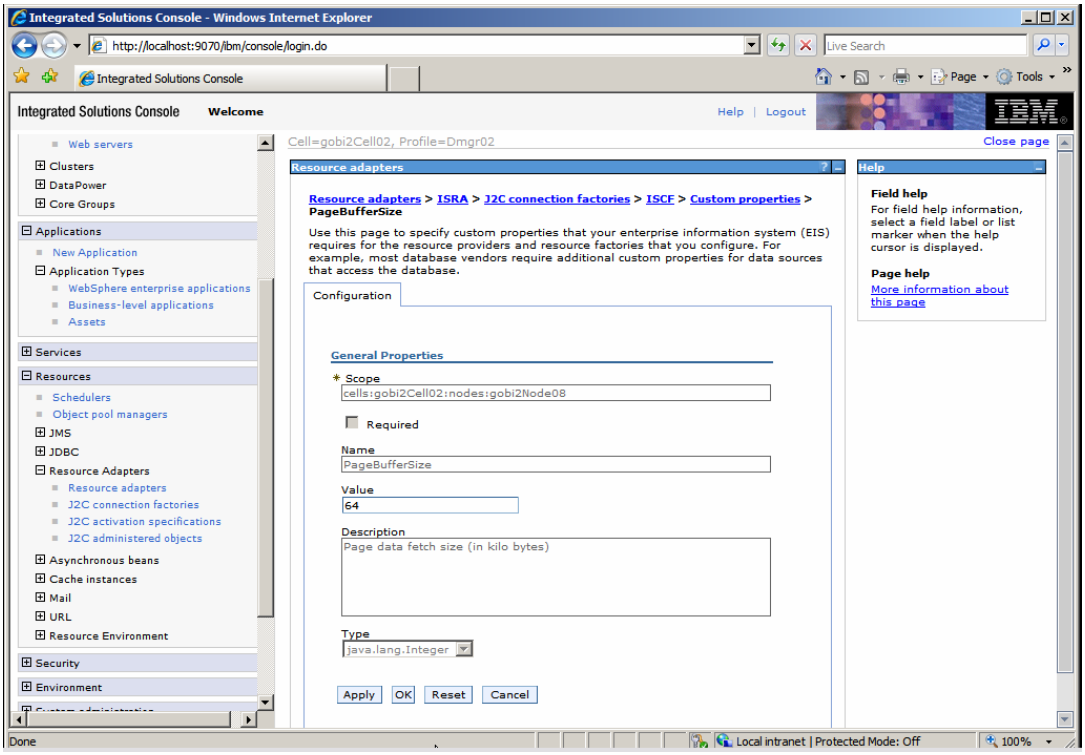
Click **LoggingMode**.

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



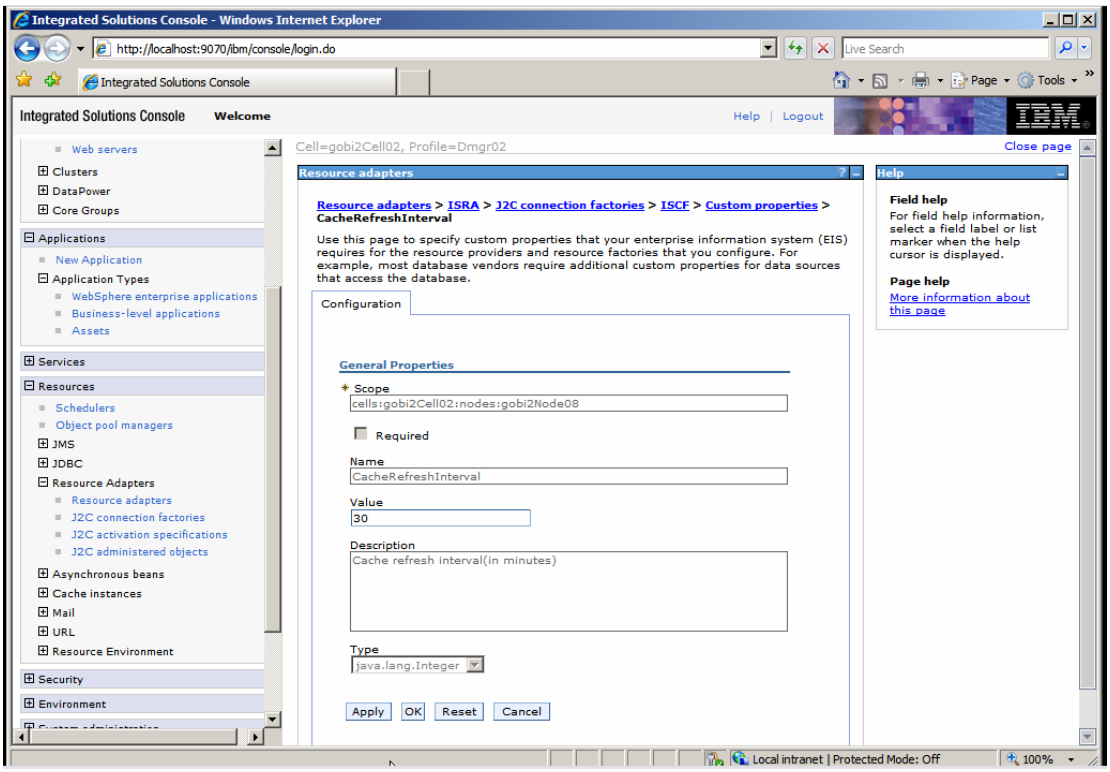
PageBufferSize

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. The document buffer size on IS and ISRA should match to optimize image transfer performance.



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.

SecurityCacheMode

This parameter can take two values:

Value	Setting
1	Caches both users and Groups
2	Caches only groups

MetaDataCacheRefreshMode

This parameter can have a value in the range of (0-15).

Value	Setting
0	No Metadata cache refresh
1	Printer cache refresh only
2	Document class cache refresh only
4	Key Fields cache refresh only
8	Menu Value cache refresh only
15	is the default value for this parameter, which will refresh all metadata.

Add corresponding values to get a combination of data.

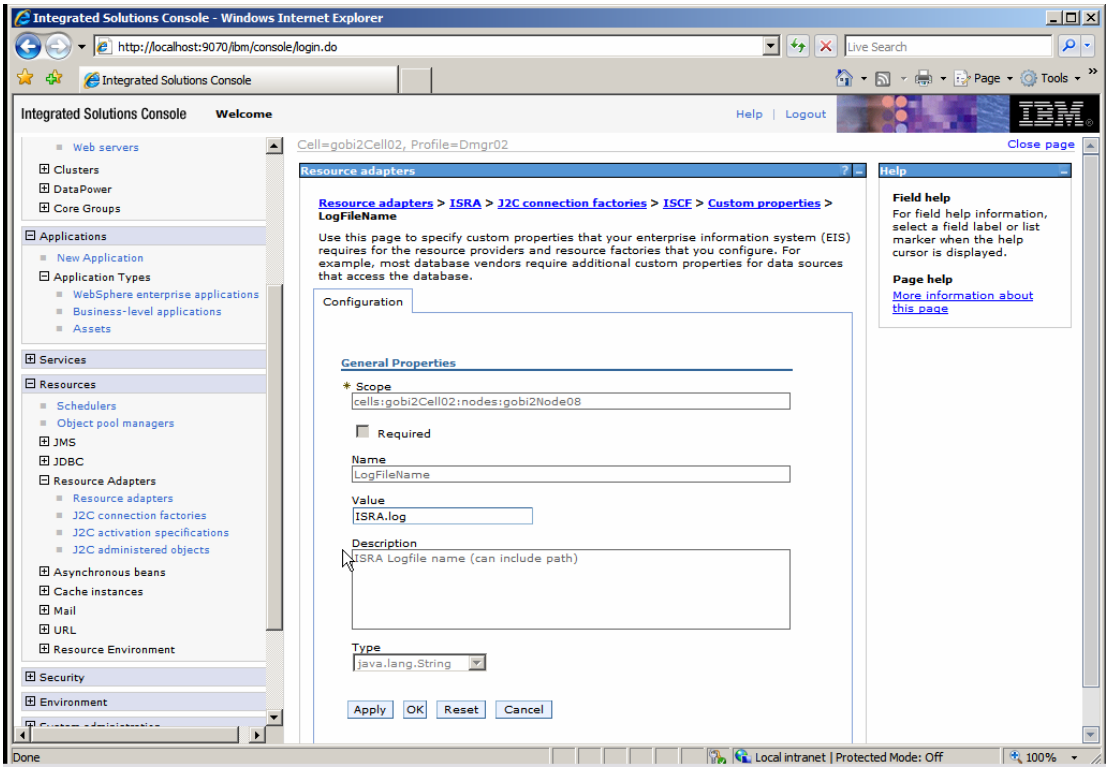
For example, 1+2 = 3 Printer and Document class data

1+2+4 = 7 Printer, Document class, Key Fields data

0+1+2+4+8 = 15 all data

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.



To ensure that each ISRA instance has a unique log file, the following steps will be followed:

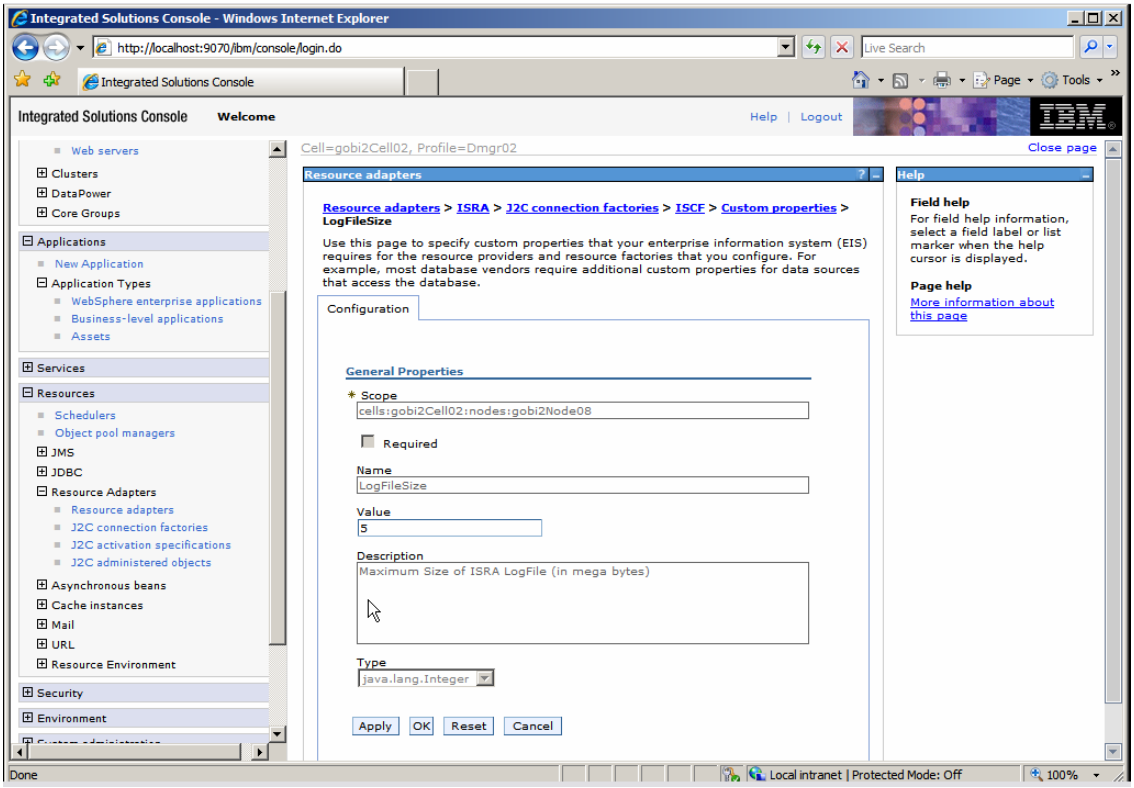
- Configurable property “DeploymentInstance” will be read from ra.xml and appended to the log file name. If not specified, the default value “1” will be used as the deployment instance of ISRA.
- The unique ID used for terminal ID generation in ISRA will be appended to the log file name.

For instance, if the log file name configured in ra.xml is **ISRA.log** and the deployment instance is 1, the modified log file name would be **ISRA_1_0.log**. Here, “0-9 and a-z” is the unique ID [2] generated at run time. This ensures a unique name of the log file for each instance of ISRA.

[2] The modified log file name would be ISRA_1_<unique-ID>.log. The value for unique ID is 0-9, a-z in ISRA 3.4 FP3 and above. Older versions of ISRA use the unique ID value between 0000-9999.

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_1_0.log** is renamed to **ISRA_1_0_1.log**, and a new file **ISRA_1_0.log** is created. The default value of LogFileSize is 5MB. Automatic purging of old ISRA log files has been implemented leaving behind only 5 latest versions.



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 2003 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.

Note In case that the LDAP server is located on a different subnet, it may be necessary to enter IP address or a full domain name.

- Port Number – LDAP Server's port number used for transactions.
- User Path – Organization unit 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;ADS.com

- **For IPlanet**

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

- **For Novell NDS**

  filenetserver;389;ou= ISRA, ou=odc,ou=filenet,o=com

InherentLogin

To use LDAP security, the value will be set to 1 from the default value 0.

DeploymentInstance

This is the instance number of ISRA that is being deployed. It is a user defined number between 1 and 100. The default value for this parameter is 1 when none is specified. The maximum is 100, which means that 100 different instances of ISRA can be deployed in a WebSphere Application Server node.

Each deployment/JNDI of ISRA on the same Web/Application server requires its own instance number. For example, there can be 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.

IS always expects unique IDs from ISRA clients, and when it receives duplicate IDs from ISRA, it will reject communication.

So it is always advised to increment the deployment instance number when another instance of ISRA is deployed to achieve its unique id.

Format of the terminal ID is used by ISRA and IS in distinguishing a Unique ISRA instance.

RXXYYYZ@<ip-address>

Where,

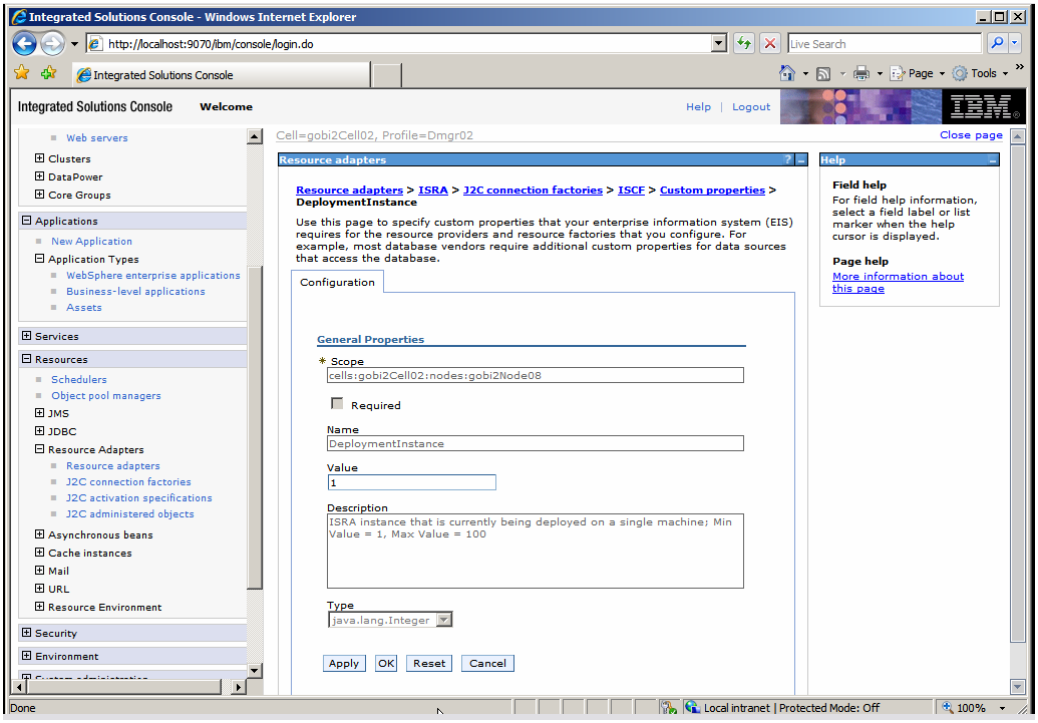
XX = 899 + DeploymentInstance(ra.xml) (Converted to Base 36 and used by ISRA)

YYY = Counter that increments with the creation of a new LogonSession object (Values in base 36)

Z = Unique ID generated per ISRA instance. Introduced to support ISRA in clustered environment (Unique ID is a number in Base 36)

<ip-address> = IP Address of the machine where ISRA is deployed.

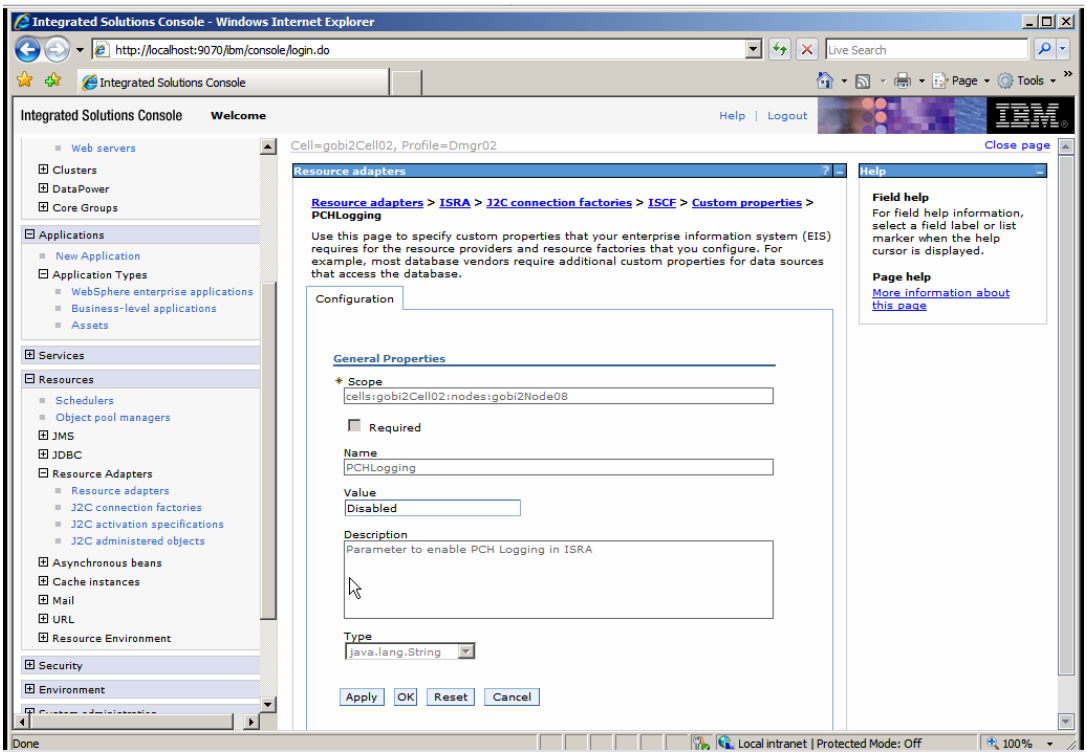
The Unique ID is obtained from the place holder file ISRALock.z (where Z=Unique ID) that is created in the ISRALock folder.Each cluster member creates its own place holder file (like ISRALock.0, ISRALock.1 and so on) within the common ISRALock folder.



PCHLogging

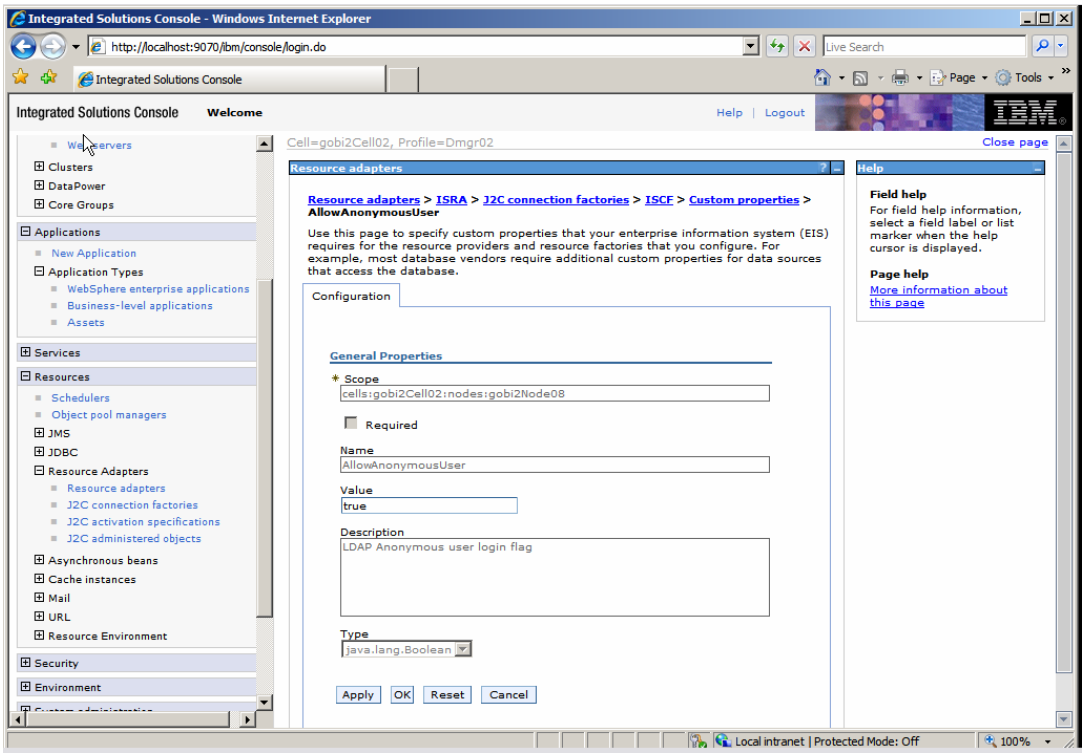
This is a String parameter to enable/disable PCH logging in ISRA. The default value for this is “Disabled”. PCHLogging enables user to log performance monitoring data of IS.

PCHLogging	Description
Enabled	Enables the PCHLogging
Disabled	Disables the PCHLogging, this is the default value.



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".



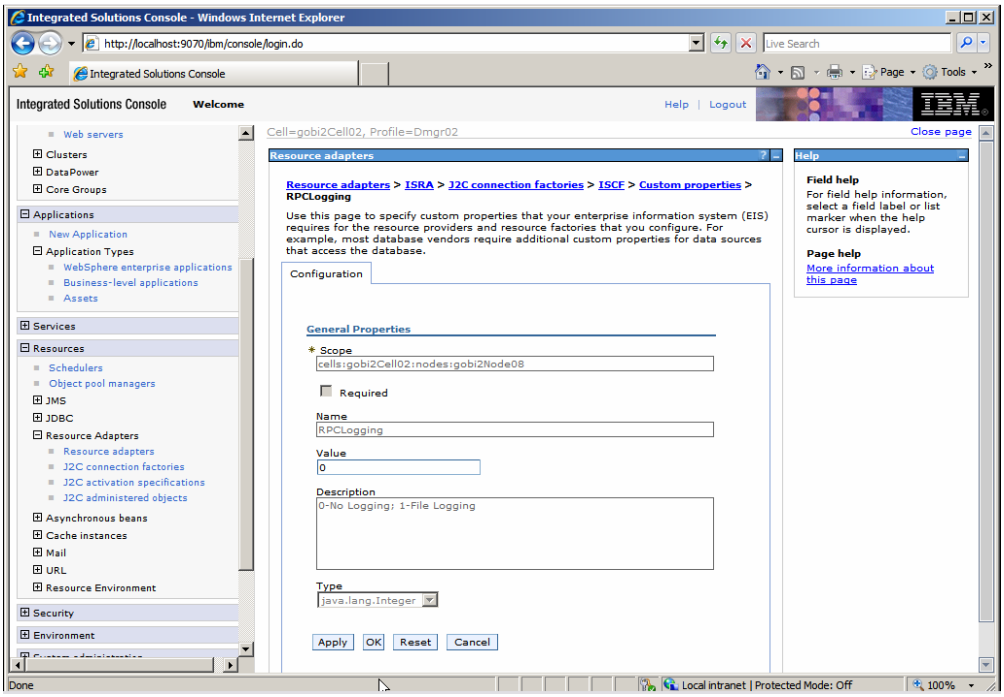
RPCLogging

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

RPCLogging	Description
0	No Logging
1	File Logging

The default Value of RPCLogging parameter is 0. It can be changed to 1 if RPC Logging is required.

The RPC LogFileSize is taken as double the size of that of ISRA LogFileSize. So, when the size of the RPC log file reaches its maximum limit (10mb), the log file is renamed, and a new file is created with the same name. For example, ISRA_1_0_RPC.log is renamed to ISRA_1_0_RPC_1.log, and a new file ISRA_1_0_RPC.log is created. Automatic purging of old ISRA RPC log files has been implemented leaving behind only 5 latest versions.



ClientCodepage

This is the code page for encoding Text and Sticky Note annotations. The default value of this property is Cp1252.

On Microsoft Windows platform, the Locale character set is the Windows Code Page (1252 for US English and Western Europe) whereas on a UNIX platform, it is an ISO 8859-X character set (ISO 8859-1 for US English and Western Europe).

Thus, if the client locale character set, is Windows Code Page based (for example: Cp1252 for US English and Western Europe), and the server is UNIX based, then Windows Code Page should be used for encoding the annotations data before committing to the server. This is because; there is an inconsistency

in characters mapping between Microsoft Windows Code Pages and the equivalent ISO 8859-X series. For instance, Code page 1252 is built on ISO 8859-1 but uses the range 0x80-0x9F for extra printable characters rather than the C1 control codes used in ISO8859-1.

For Annotations data, ISRA internally retrieves the IS character set and uses the equivalent Windows Code Pages for the following ISO encodings:

ISO Encoding	MS Windows counterpart
ISO8859_1	**Cp1252**
ISO8859_2	**Cp1250**
ISO8859_5	**Cp1251**
ISO8859_6	**Cp1256**
ISO8859_7	**Cp1253**
ISO8859_8	**Cp1255**
ISO8859_9	**Cp1254**
ISO8859_13	**Cp1257**

Note Specifying an incorrect code page may lead to inconsistency and/or corruption of Annotations data.

GMTEnabled flag

This parameter takes two values:

1. true

2. false

The default value of this parameter is false.

Setting "GMTEnabled" to false: When the flag is set to false, it is assumed that the ISRA client application is not "GMT Enabled" i.e. client applications will not do any timezone conversion. ISRA returns the date committed on the IS to client applications after adjusting the difference between the Application Server timezone and the GMT Timezone. As a result, the dates displayed in applications will be in accordance with the dates committed on the IS.

Setting "GMTEnabled" to true: When the flag is set to true, it is assumed that the client application is "GMT Enabled" i.e. client applications will display the dates in GMT. In this case, ISRA returns the date committed on the IS in the GMT timezone, without any adjustment. Set this value to true only if you have made changes to your application after of an upgrade to ISRA 3.3 FP6 or ISRA 3.4 FP2.

ISLocale

This is a String parameter which represents the ISRA Locale. The administrator can set the value of this configurable property as that of the IS locale. It is a lower-case two-letter code as defined by ISO-639. The default value of this

parameter is “en” (English locale). The ResourceBundle used in ISRA will depend on the value set by the user for this property.

IgnoreObjectBusyMsgInDocMigration

This is a Boolean parameter which can be set to true to ignore the [77,0,11 The object is busy] error, incase of DocMigration. The default value for this parameter is false.

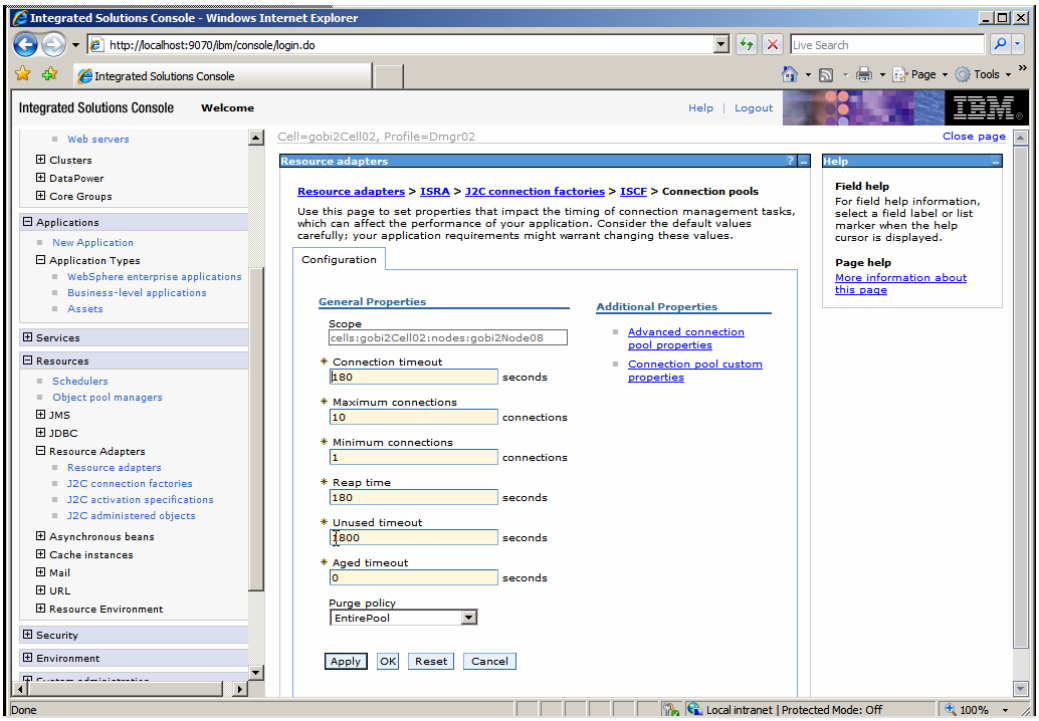
Configuring WebSphere-Specific Parameters

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

The steps to configure these properties are:

1. Navigate to Resources > Resource Adapters > ISRA > J2C Connection Factories > ConnectionFactoryName (ISCF) > Connection Pool Properties.
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 seconds) 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.

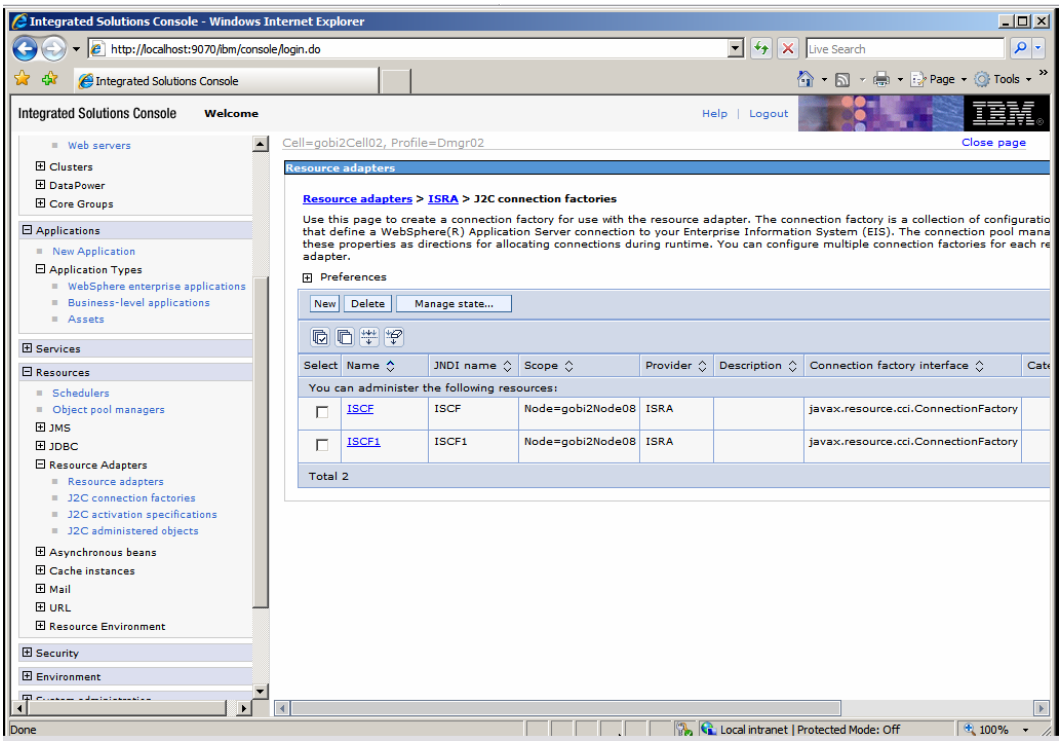
- **Maximum Connections:** Represents maximum number of Managed Connections that can be created by the ManagedConnectionFactory. After this number is reached, no new connections are created, and the requester waits for the Connection Timeout or a ResourceAllocationException to be thrown. If Maximum Connections 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 value. 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 seconds) 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.

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 1800 seconds (30 minutes) and **Reap time** to 120 Seconds (2 minutes).

Configuring Multiple IS Server 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:



2

Configuring and Deploying ISRA Console and Sample Application

ISRA Console

The LoadISRA utility from ISRA 3.4.0 has now been replaced with the ISRA Console (in ISRA 3.4 fixpack 1 and above). This ISRA console has been developed to show the ra.xml properties in a well formatted table and also features buttons to enable/disable/edit logging levels dynamically.

The dynamic update of logging allows the user to enable and change logging levels while the ISRA is running and without needing to restart the appserver. The console also features links to launch Sample Application and to view JVM statistics.

This console is available as a Web Module (ISRAConsole.war) within ISRAConsole.ear and gets deployed automatically during the deployment of ISRAConsole.ear

Resource Adapter class loading in Websphere Application Server and jndiISRA.properties:

WebSphere Application Server by design does not load the adapter classes immediately on application server restart. The classes are loaded only after a user logs in using ISRA the first time after restart.

Upon loading of the classes, ISRA Security cache gets created, to load IS users into ISRA memory.

In ISRA 3.4 fixpack 1, new properties file - jndiISRA.properties has been introduced, where the user can mention the JNDI names of the ISRA Connection Factories. Those mentioned in the properties file will get loaded automatically upon WAS application server restart.

Configuring Sample Application

The ISRA console and Sample Application are packaged within a single Enterprise Application Archive File (**ISRAConsole.ear**).

ISRAConsole.ear consists of:

- Two Web modules:
    - ISRASampleWEB.war (ISRA Sample Application)
    - ISRAConsole.war (ISRA Console)
- Deployment Descriptor (application.xml)

This chapter illustrates the deployment and configuration of the ISRA Console and Sample Application on IBM WebSphere Server 7.x in a managed environment.

Note ISRA product media comes with an IBM 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.

It is assumed that ISRA is deployed and configured for the target IS.

In ISRA 3.4 fixpack 1, a new properties file "jndiISRA.properties" has been introduced and it gets created in Application Server home directory. The JNDI names of connection factories mentioned in this properties file, which will be used by Sample application to display on the login page. Two JNDI names "ISCF" and "ISCF1" are mentioned in the file by default. Additional library names can be included by providing comma separated entries. The property file is mandatory and it should contain the same names as the JNDI Binding Paths specified for the configured ISRA ConnectionFactories.

For configuring Sample application, certain properties need to be updated in the web.xml of the **ISRASampleWEB.war.**

Follow the below steps for extracting **web.xml** from **ISRASampleWEB.war**.

1. Use the jar binary from <WAS_HOME>\java\bin to extract the ISRAConsole.ear and the ISRASampleWEB.war.
2. Open a Command window/Commandline Console/Terminal Window and cd to <ISRA-home>\ISRA340\Sample and run:
   a. mkdir tmp1
   b. copy ISRAConsole.ear tmp1
   c. cd tmp1
   d. "<WAS_HOME>\java\bin\jar" -xvf ISRAConsole.ear
   e. mkdir tmp2
   f. copy ISRASampleWEB.war tmp2
   g. cd tmp2
   h. "<WAS_HOME>\java\bin\jar" -xvf ISRASampleWEB.war
3. Open the file <ISRA-home>\ISRA340\Sample\tmp1\tmp2\WEB-INF\web.xml in an editor.
4. To enable extended annotation functionality modify the following parameters in **web.xml**:
   a. Change env-entry-value for "DOCCLASSNAME" to the document class configured in the IS for digital signatures.
      ```
      <env-entry-value>digDocClass</env-entry-value>
      ```
   b. 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**:

a. 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>
```

b. 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. The Sample Application uses the crimson implementation of DocumentBuilderFactory class to implement the Remote Printing functionality. IBM WebSphere Application Server does not provide the crimson implementation of DocumentBuilderFactory class.

   Hence, if Remote Printing functionality is desired, do the following steps to bundle crimson.jar with the Sample Application:

   a. Open the link http://xml.apache.org/dist/crimson/ in a web browser.
   b. Download the file crimson-1.1.3-bin.zip.
   c. Extract all the files from crimson-1.1.3-bin.zip in C:\ (or any local drive). Crimson.jar can be located under the “C:\crimson-1.1.3\” folder.
   d. Bundle crimson.jar within "WEB-INF\lib" directory of ISRASampleWEB.war.
7. Use the jar binary from <WAS_HOME>\java\bin to rebuild the ISRAConsole.ear and the ISRASampleWEB.war.
8. If not already open, open a Command window/Commandline Console/Terminal Window and cd to <ISRAhome>\ISRA340\Sample\tmp1\tmp2 and run:
   a. del ISRASampleWEB.war
   b. "<WAS_HOME>\java\bin\jar" -cvf ISRASampleWEB.war *
   c. copy ISRASampleWEB.war ..
   d. Enter y to overwrite the old ISRASampleWEB.war
   e. cd ..
   f. del ISRAConsole.ear
   g. rmdir /S /Q tmp2
   h. "<WAS_HOME>\java\bin\jar" -cvf ISRAConsole.ear *

i. copy ISRAConsole.ear ..
j. Enter y to overwrite the old ISRAConsole.ear
k. cd ..
l. rmdir /S /Q tmp1

Deploying ISRA Console and Sample Application in Standalone Environment

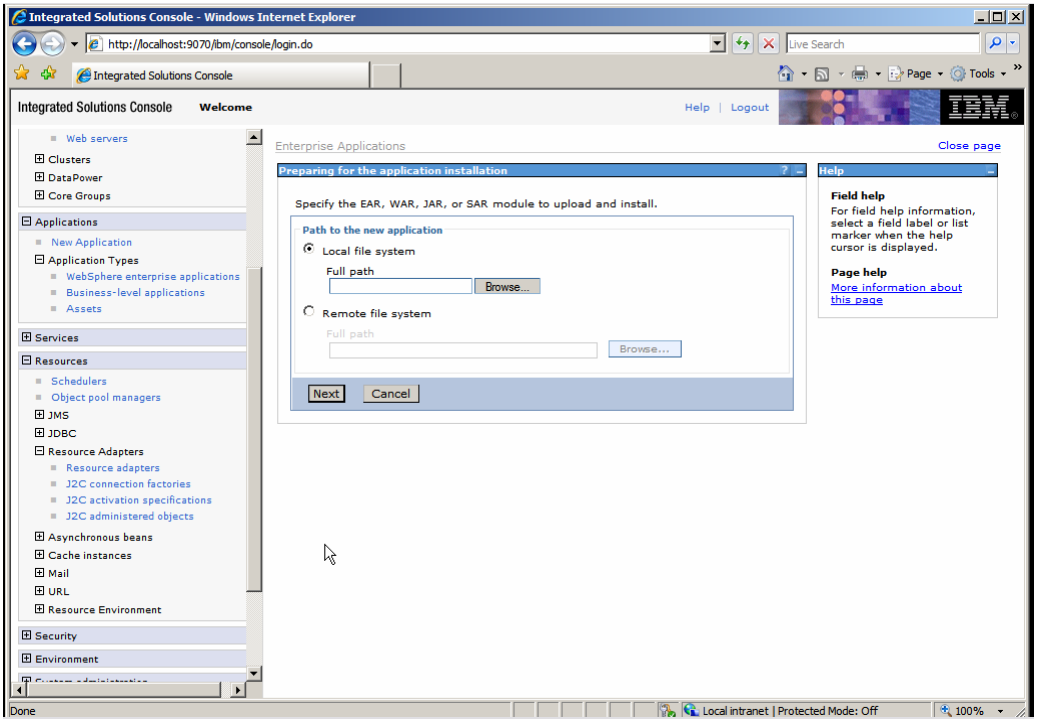
This section describes how to deploy the ISRA Console and Sample Application on a WebSphere Server to access ISRA in a Standalone environment.

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

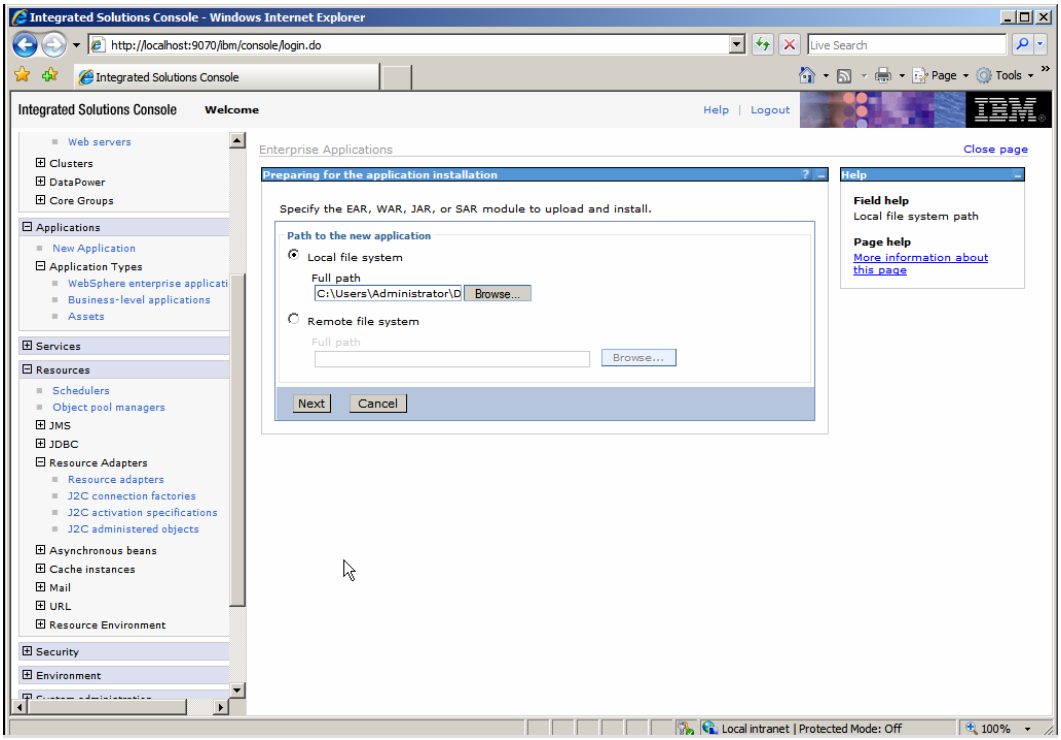
1. Start the WebSphere First Steps. Login as the root user, change directory to `/<Webpshere home>/AppServer/profiles/default/firststeps` and execute the `firststeps.sh` script, as follows:

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

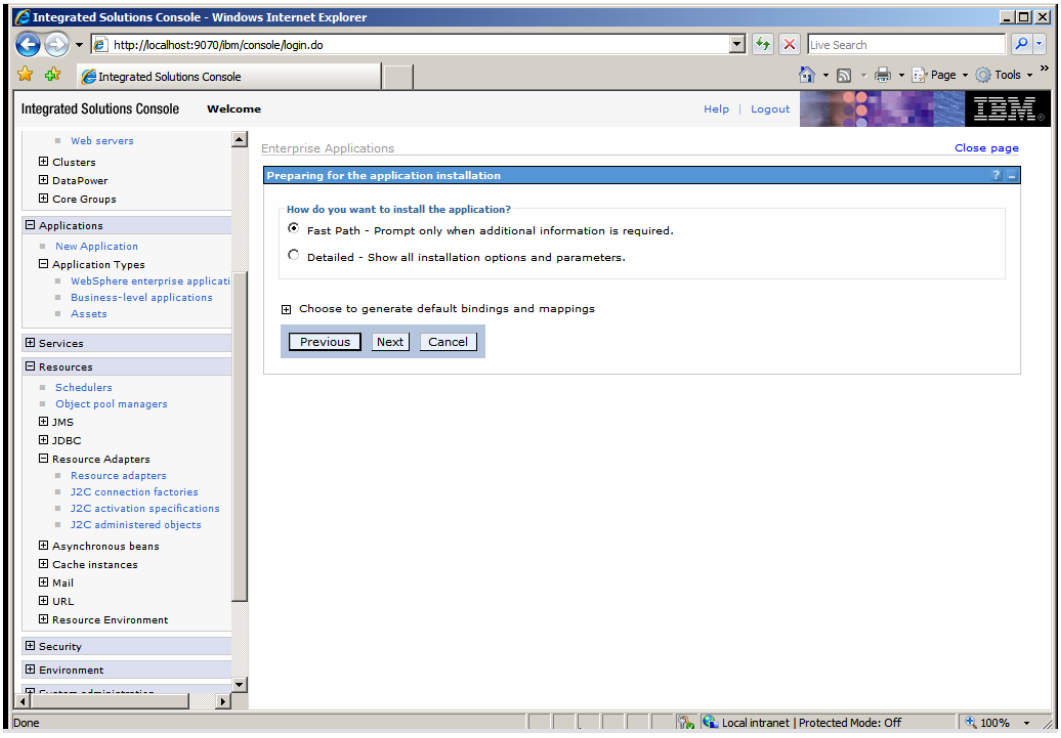
2. Login to the WebSphere Administrative console
3. Click **Applications > Application Types> WebSphere Enterprise Applications> Install**. The following screen appears:



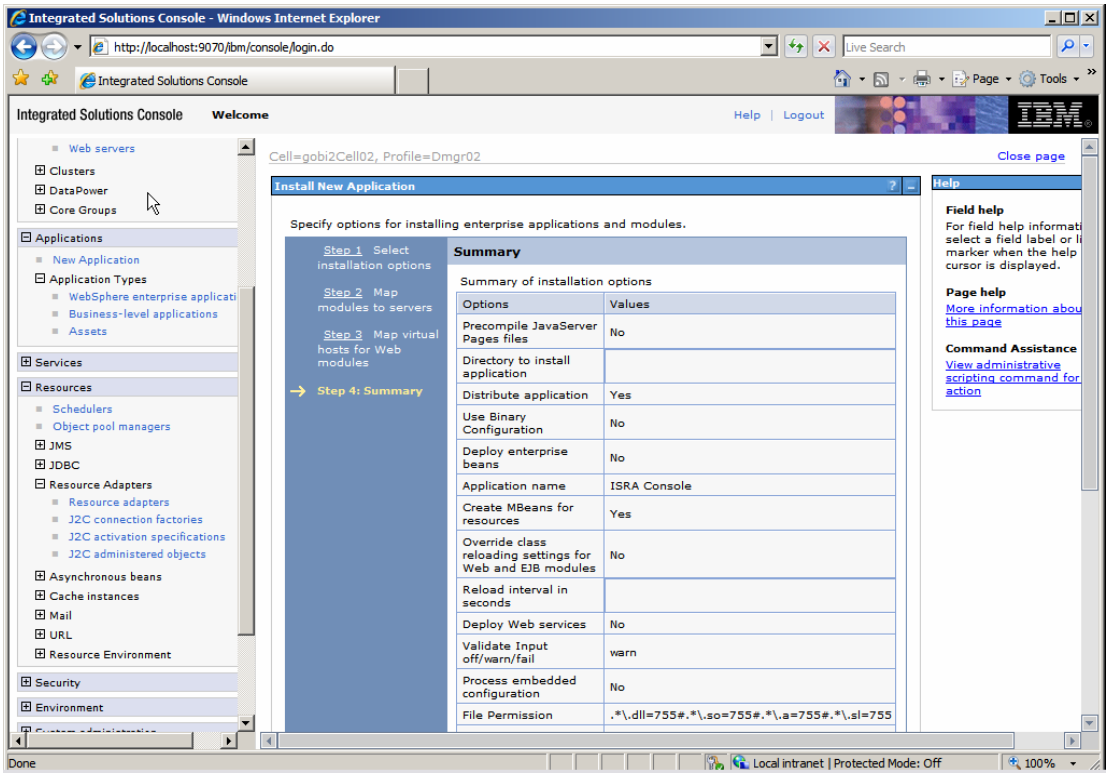
4. Click **Browse** to locate the **ISRAConsole.ear** and deploy the Console and Sample Application in the target environment. Also, specify a name for the Application, the default name is ISRA Console.



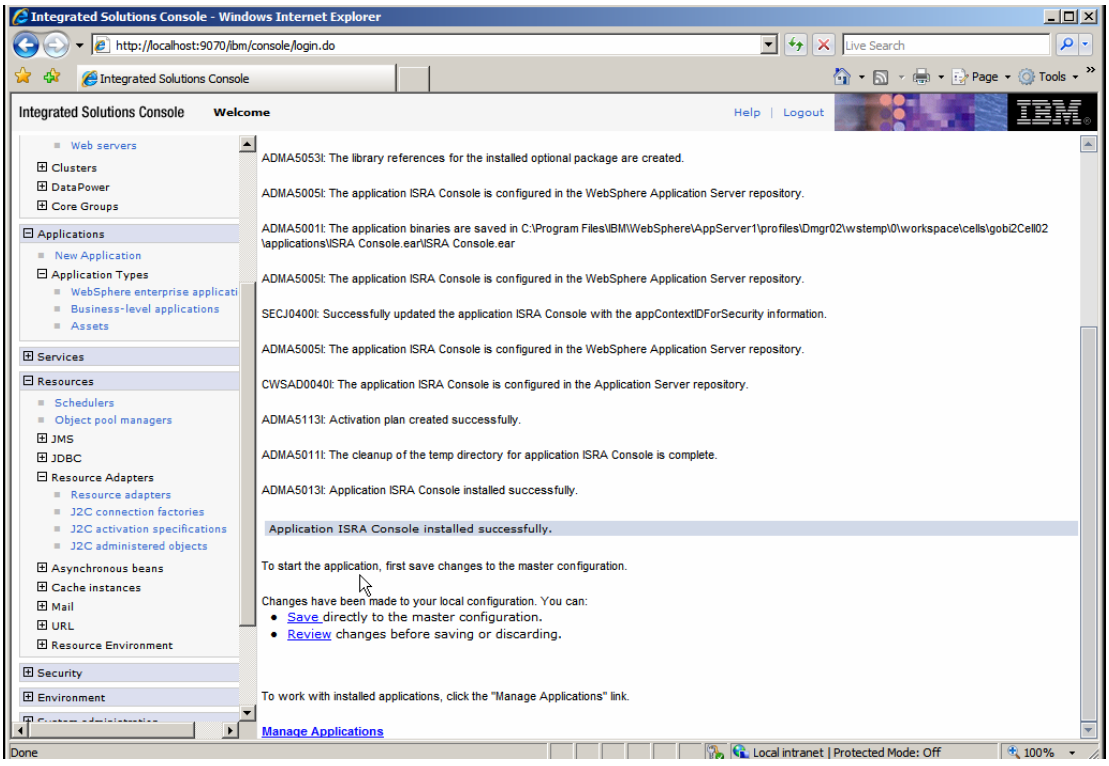
5. Click **Next**. The following screen appears.



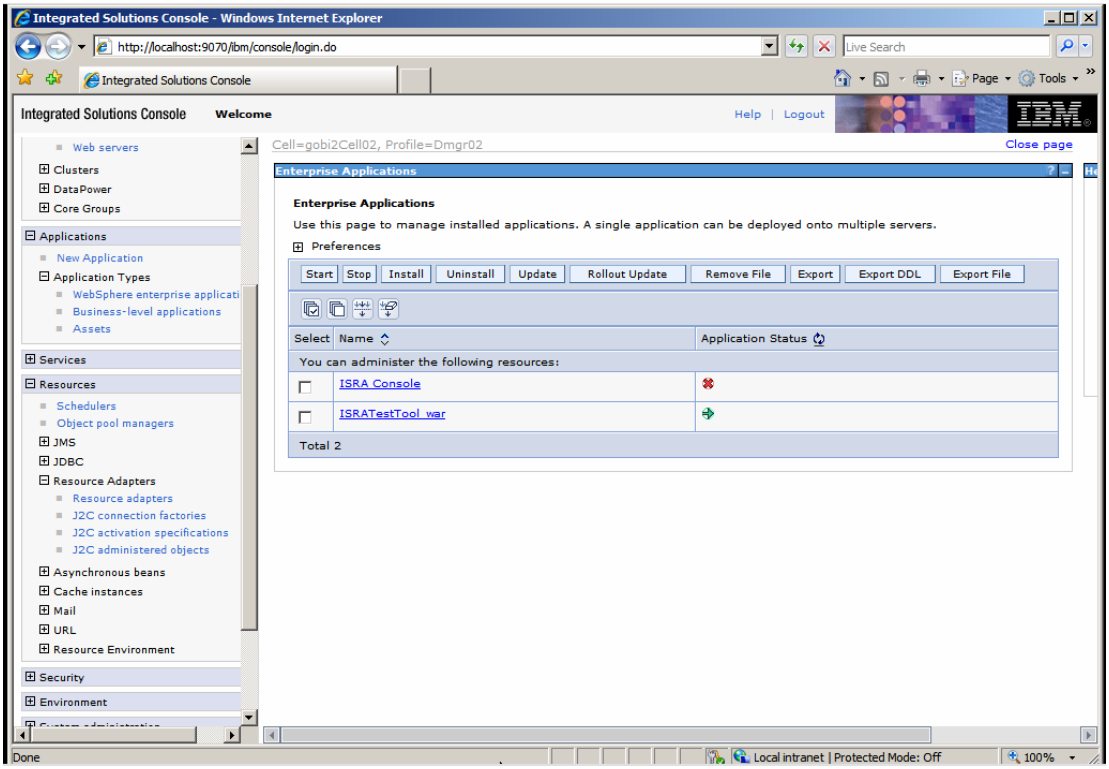
6. Click **Next** until the **Summary** screen appears.



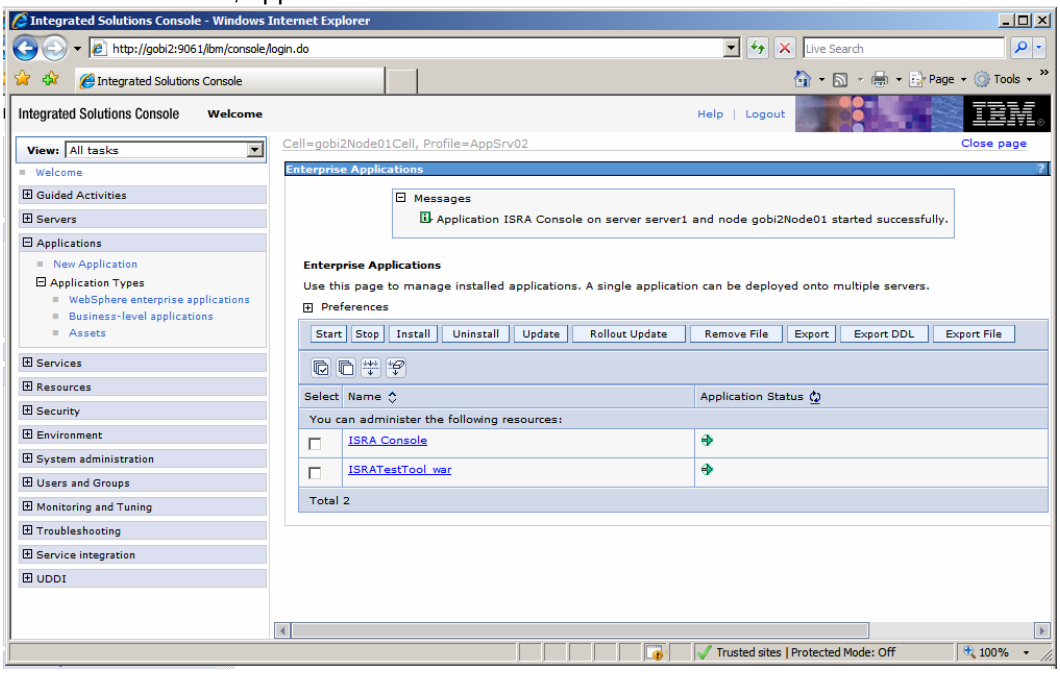
7. Click **Finish.** The following screen appears:



8. Click on the **Save** (directly to the master configuration) link. The following screen appears:



9. Click **Applications> Application Types> WebSphere Enterprise Applications.** Check the ISRA console and click **Start.** A message as shown in the screen below, appears:



Deploying ISRA Console and Sample Application in a Clustered Environment

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

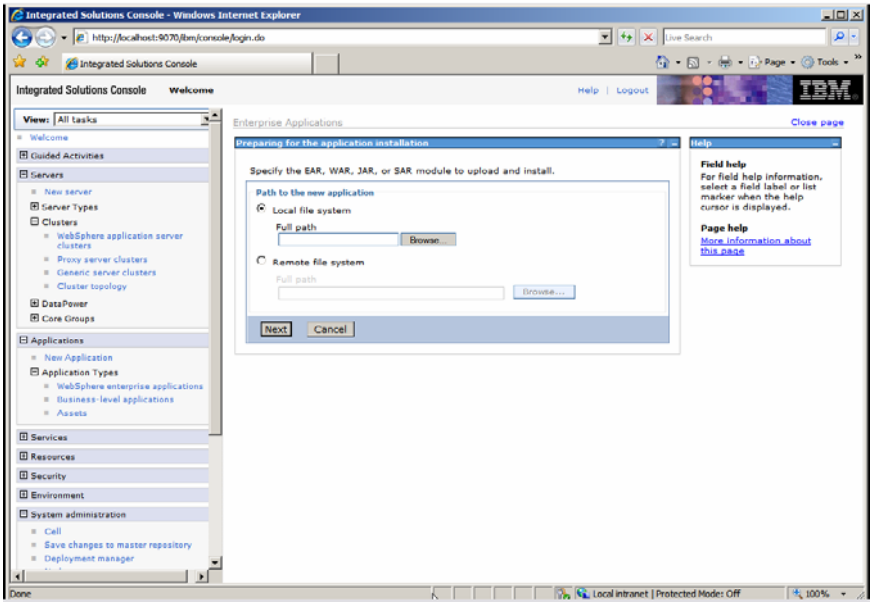
Note	The Console and sample Application must be deployed on an environment where session affinity is enabled.

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

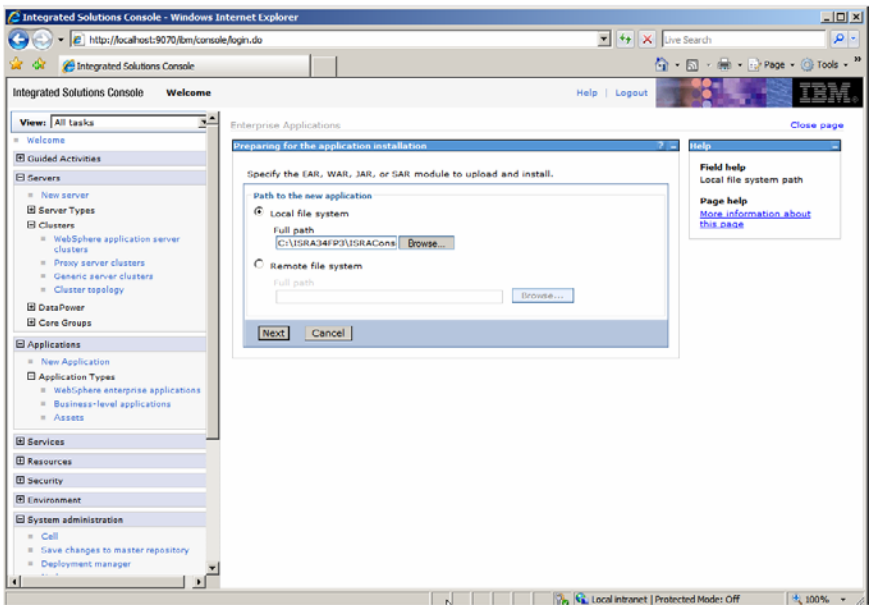
1. Start the WebSphere First Steps. Login as the root user, change directory to `<DeploymentManager home>/profiles/dmgr/firststeps` and execute the `firststeps.sh` script, as follows:

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

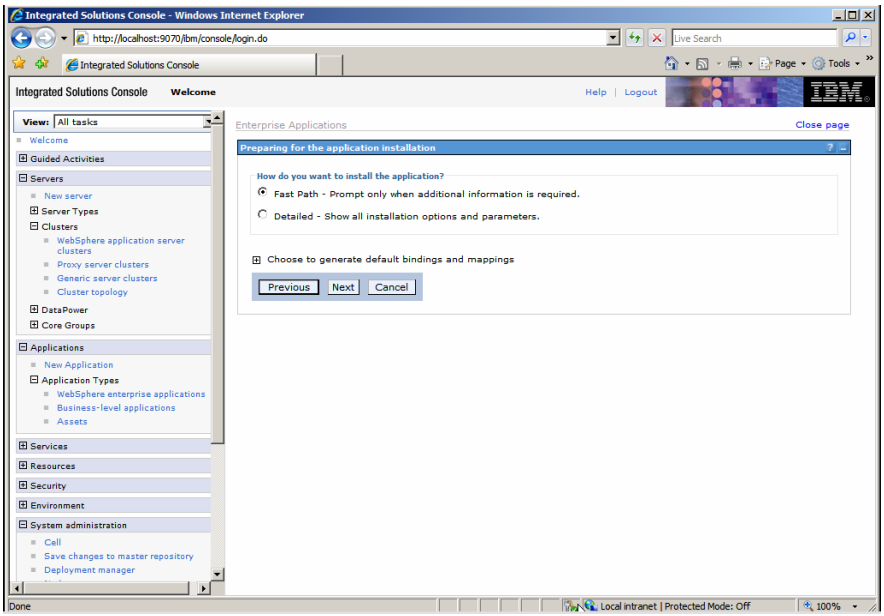
2. Login to the WebSphere Network Manager admin console.
3. Click **Applications> Application Types> WebSphere Enterprise Applications> Install.** The following screen appears:



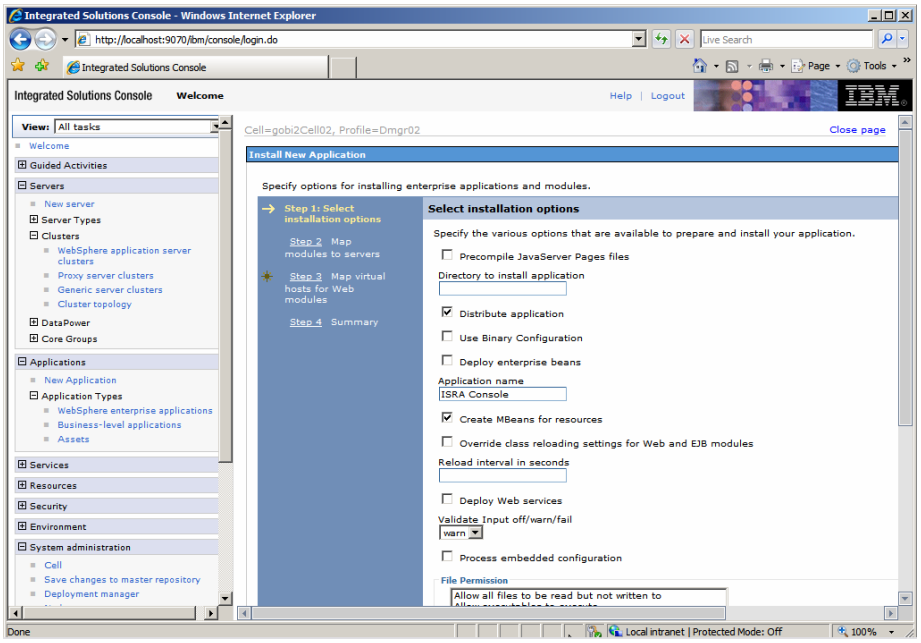
4. Click **Browse** to locate the **ISRAConsole.ear** and deploy the Console and Sample Application in the target environment.



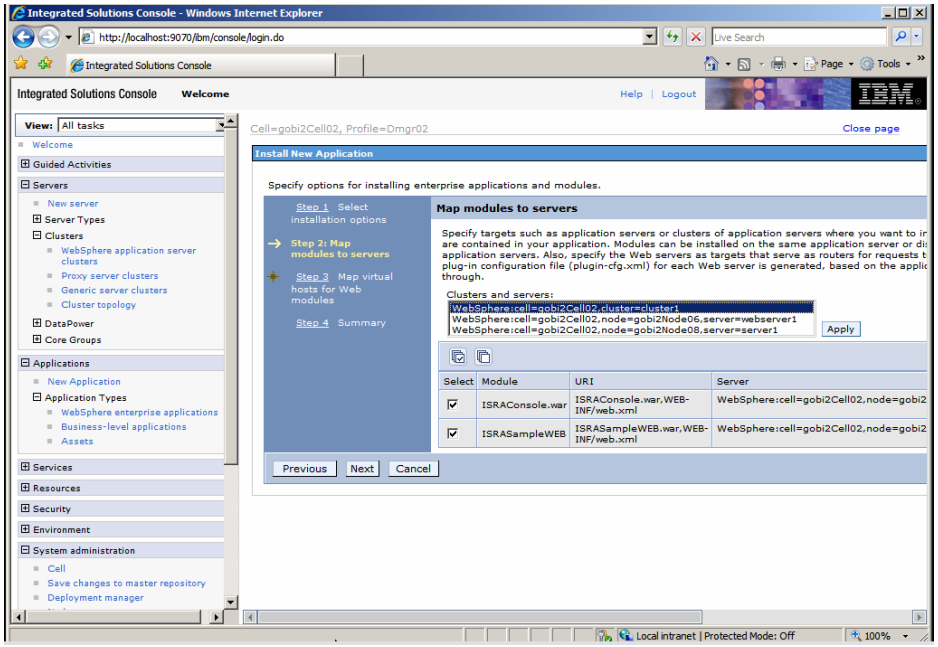
5. Click **Next**. The following screen appears:



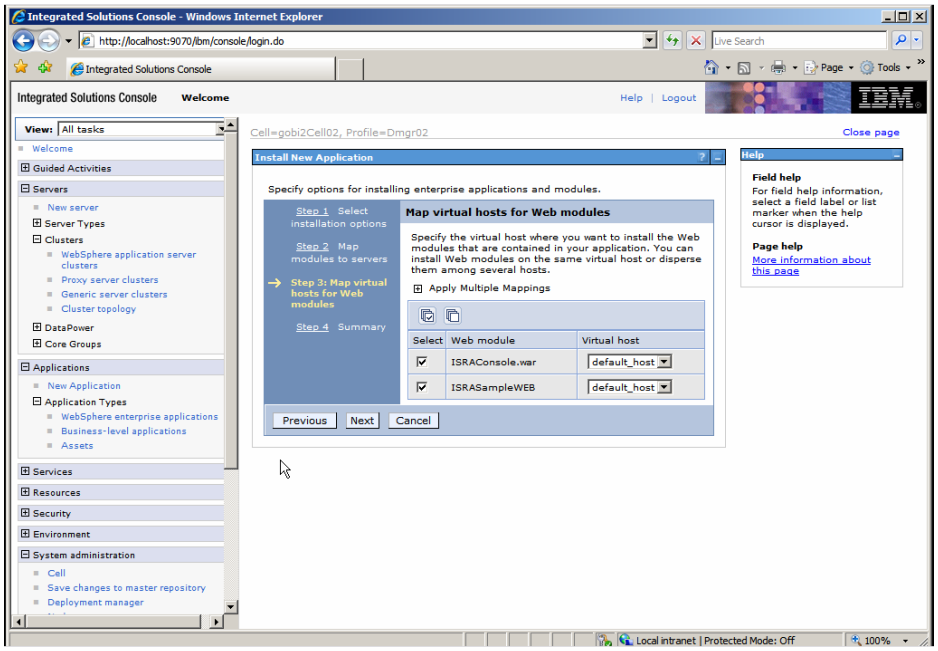
6. Click **Next.** The following screen appears:



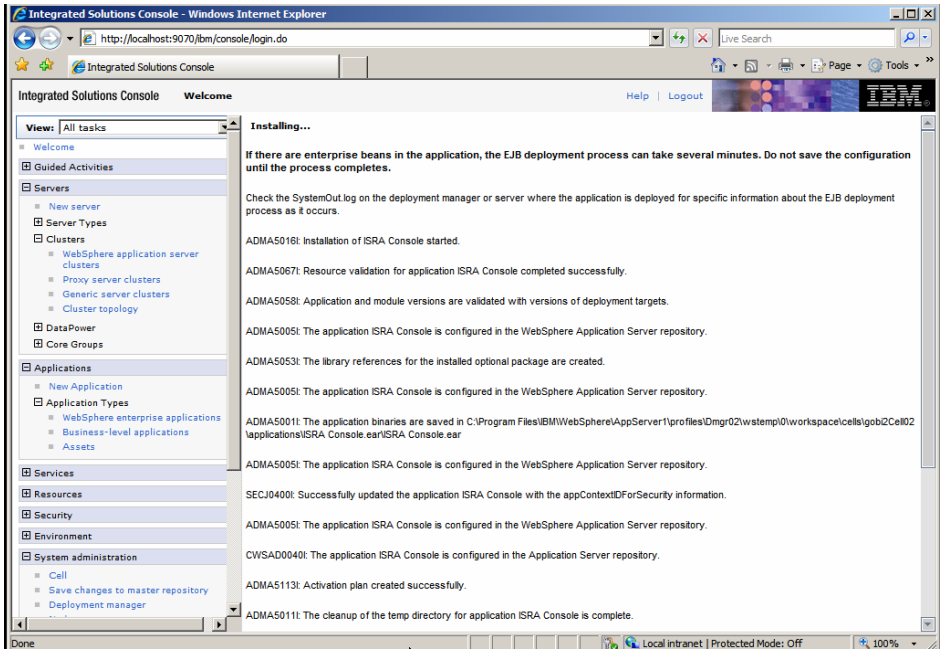
7. Check correct boxes and Click **Next**. The following screen appears:



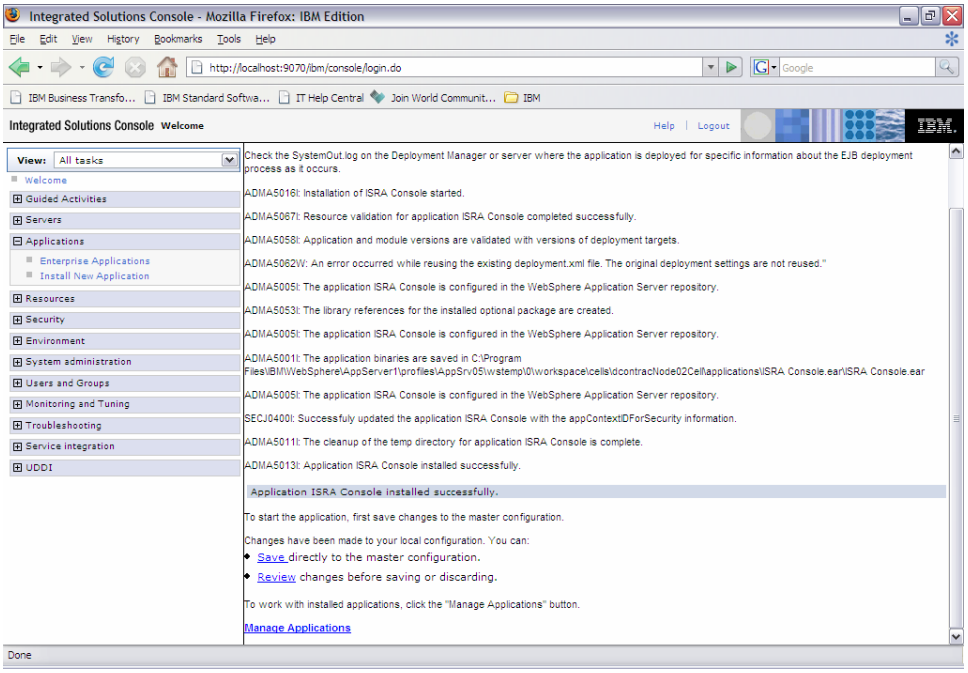
8. Select the Cluster/Server from “Clusters and Servers” list and check the module. Click **Next.** The following screen appears:



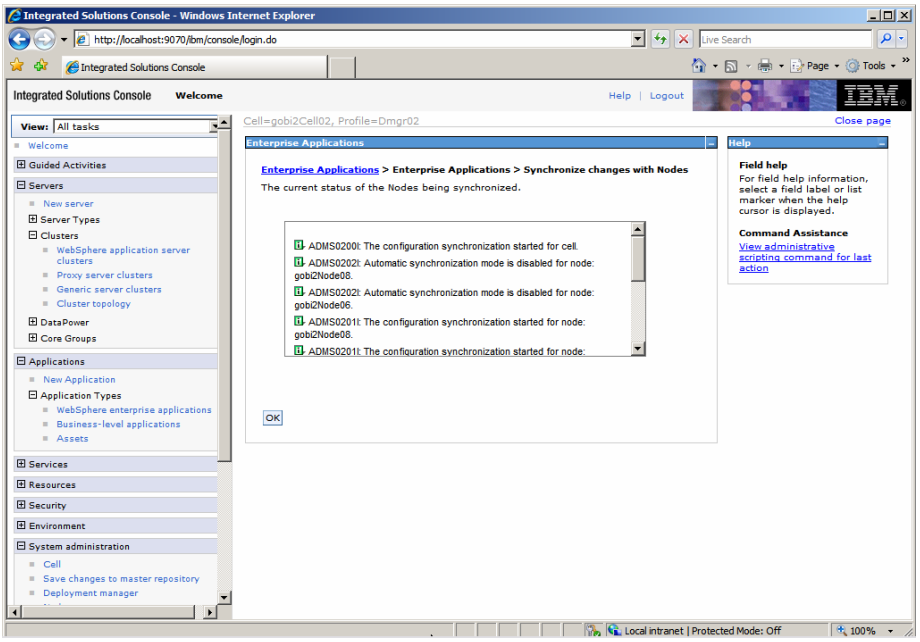
9. Click **Next.** The Summary screen appears.



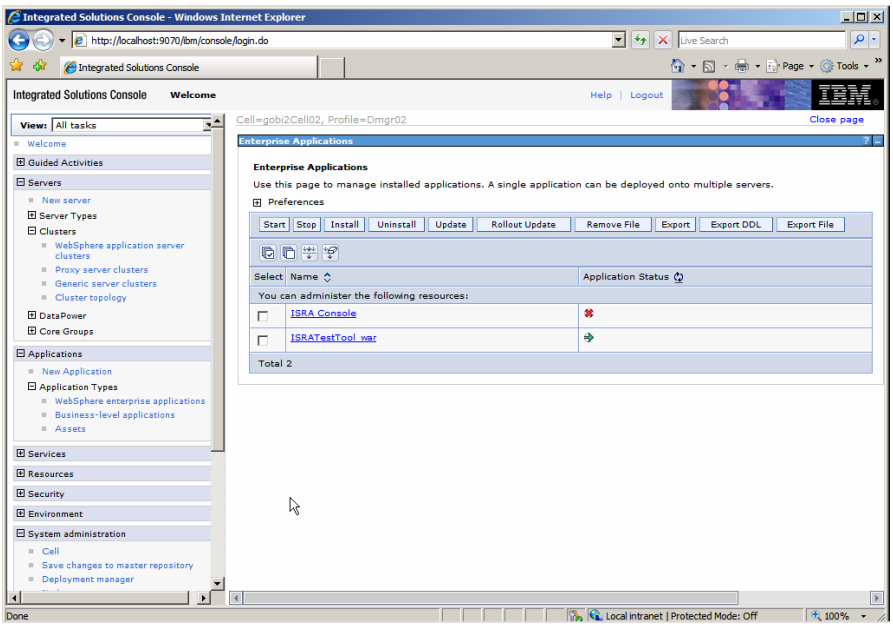
10. Click **Finish.** The following screen appears:



11. Click on the **Save** (directly to the master configuration) link. The following screen appears: (The changes are synchronized with the Nodes if the option is enabled. Otherwise, enable the **Synchronize changes with node** check box in the preferences link and then save.)

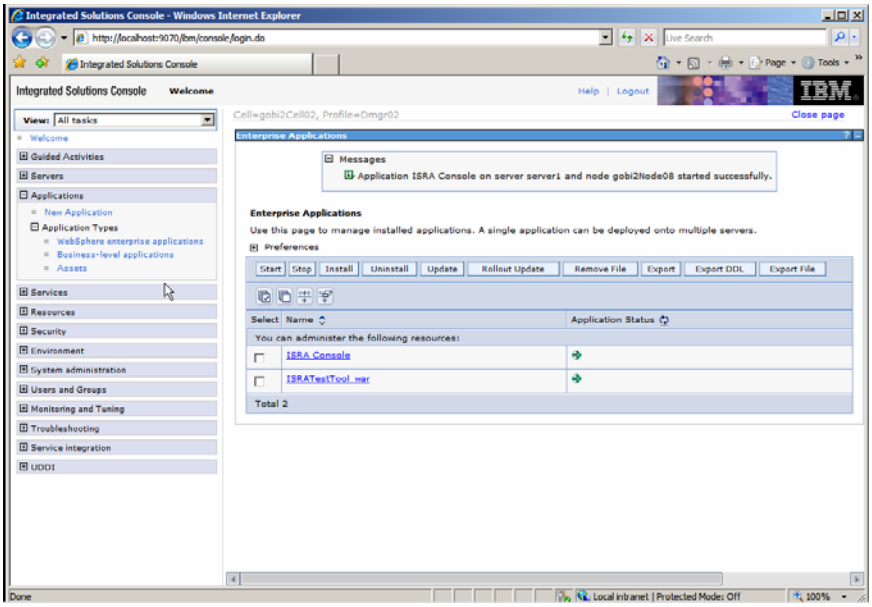


12. After the synchronization is done, click **OK.** The following screen appears:



13. Click **Applications> Application Types> WebSphere Enterprise Applications**. Select **ISRA Console** and click **Start**, ISRA Console and Sample application will get started.

    A message, as shown in the screen below, is displayed:



14. To Update Web Server Plug-in run the following command:

```
<DeploymentManager home>/profiles/dmgr/bin/GenPluginCfg.sh
```

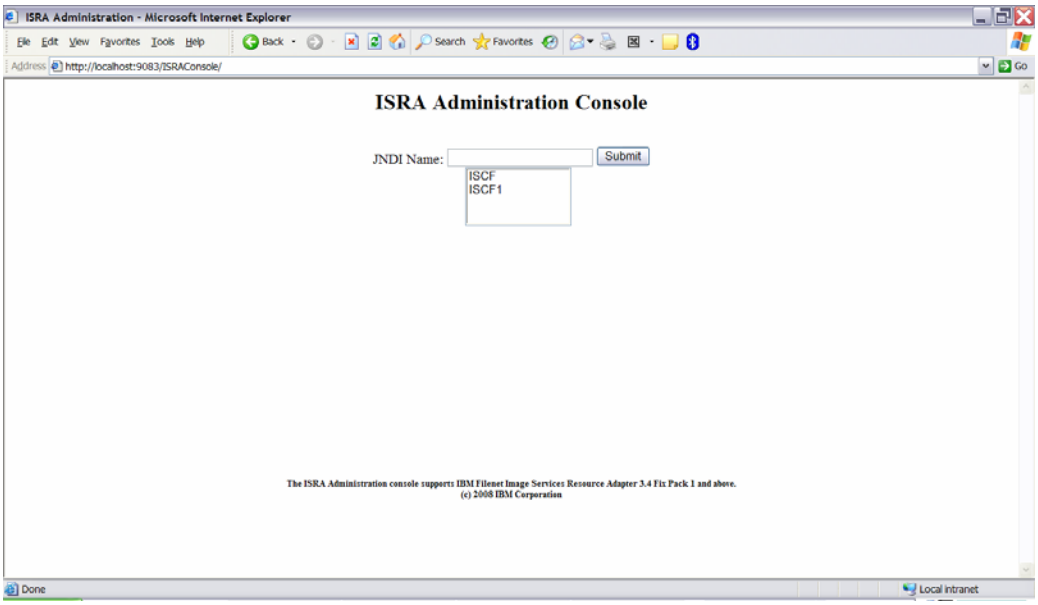
Note	The user should update Web Server Plug-in after deploying Web/Enterprise applications.

Using the ISRA Console

To access the ISRA Console, follow the steps below:

1. Go to the location where the application is available (http://<AppServerName>:<AppServerPort>/<ApplicationContextRoot>)ApplicationContextRoot is **ISRAConsole.**

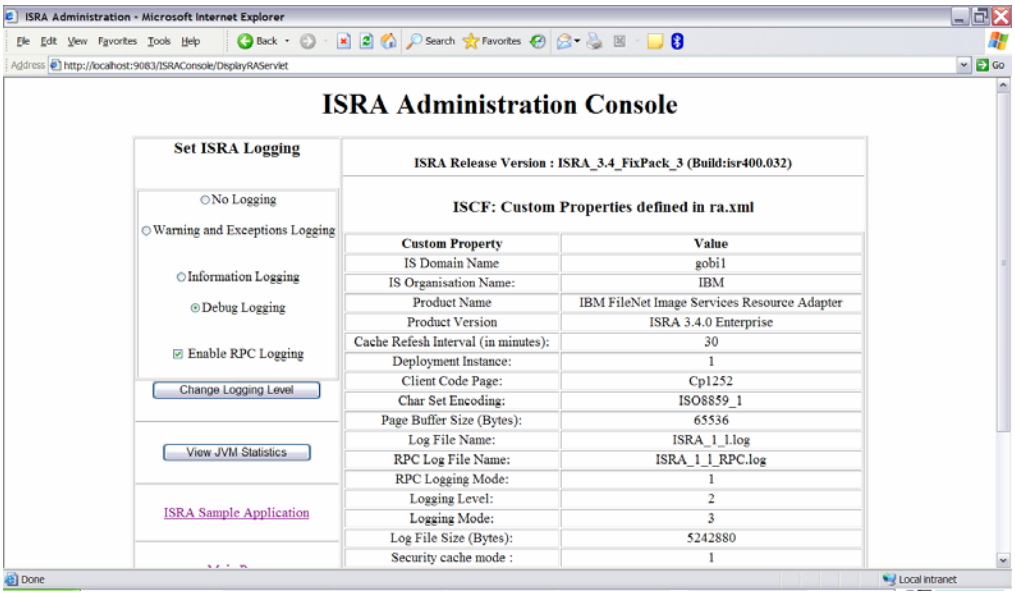
   For example : http://9.126.94.39:9088/ISRAConsole/



2. Enter the JNDI name of the library and click **Submit**.

A page showing the current values configured in the ra.xml is shown along with controls to edit the ISRA logging levels.

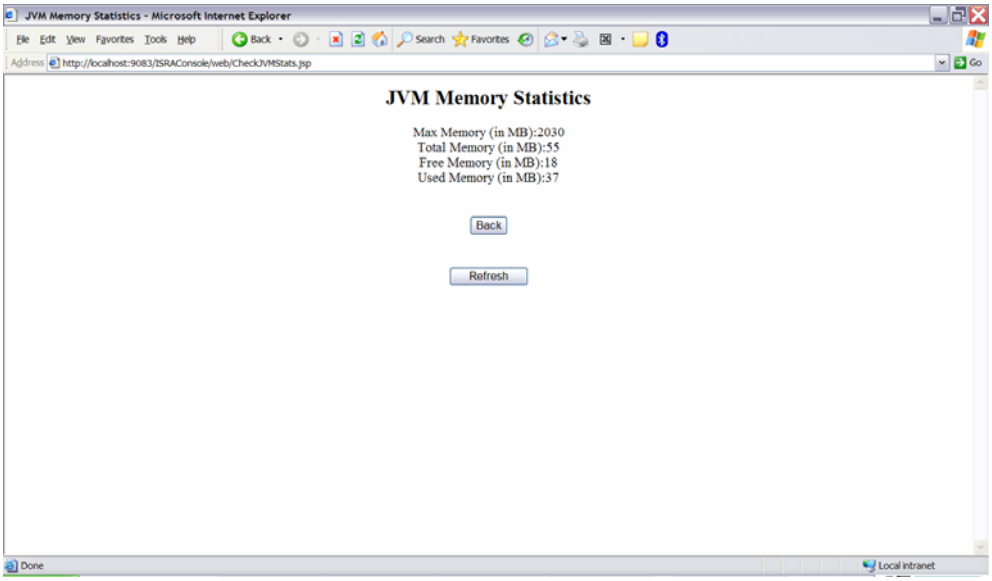
A link has been provided on the page, to access the ISRA Sample Application.



Changes to the logging level settings are applied to ISRA with immediate effect. The changes to logging levels are updated in the properties displayed on the screen.

The changes are valid till the application server is recycled. When the application server is restarted the log level settings specified in the ra.xml are used.

3. The JVM statistics can be used to study the memory usage in the Application Server JVM.

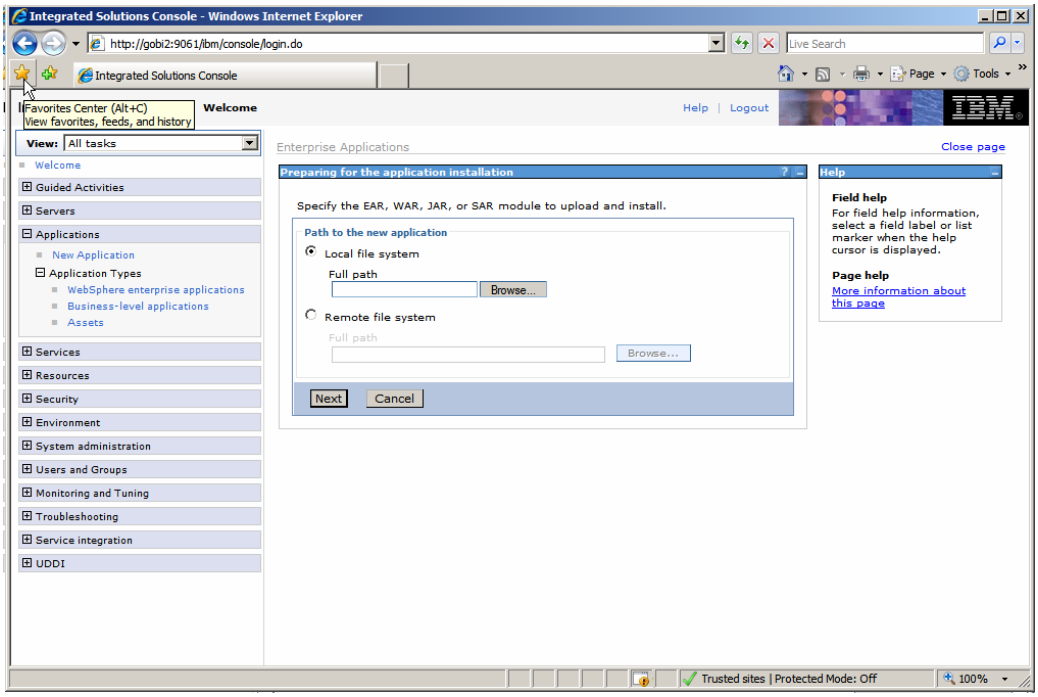


Deploying IBM FileNet Image Viewer in Standalone Environment

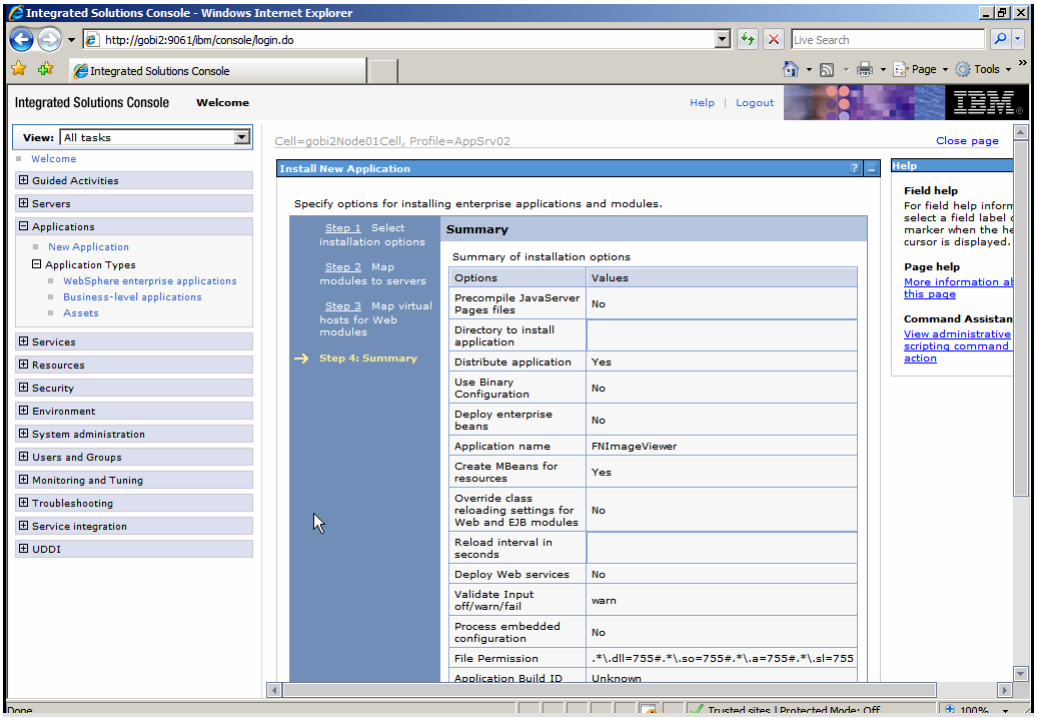
The IBM FileNet Image Viewer is used by the ISRA Sample Application to display documents of specific mime types (TIFF, JPEG and BMP). Skip this section and move to the next, if you do not want the IBM FileNet Image Viewer configured with the ISRA Sample Application.

The steps to deploy the IBM FileNet Image Viewer in a Standalone environment are:

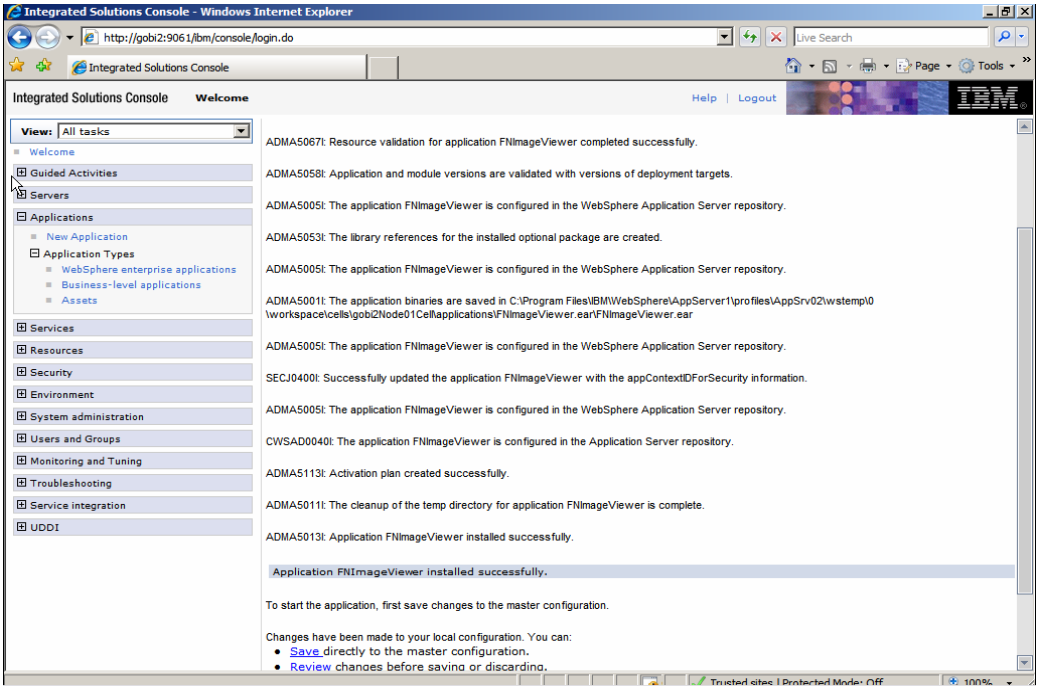
1. Launch the WebSphere Administrative Console. Click **Applications > Application Types > WebSphere Enterprise applications.** The following screen appears:



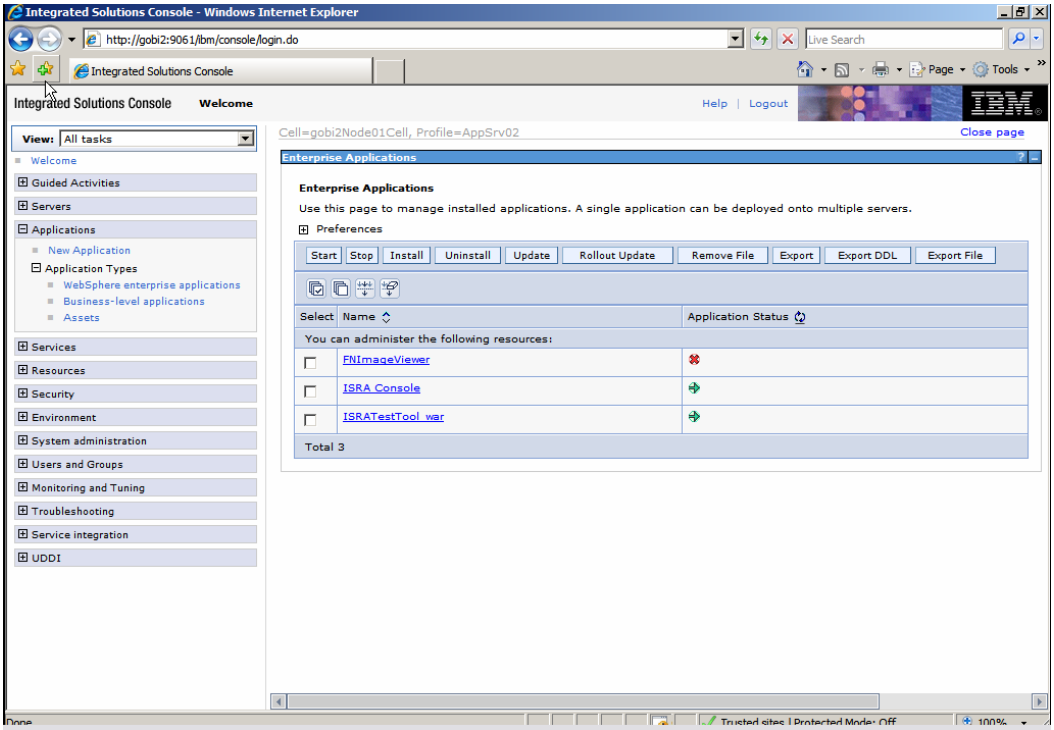
2. Click **Browse.** Navigate through the ISRA installation directory and choose FNImageViewer.ear. Click **Next**, until the **Summary** page appears.



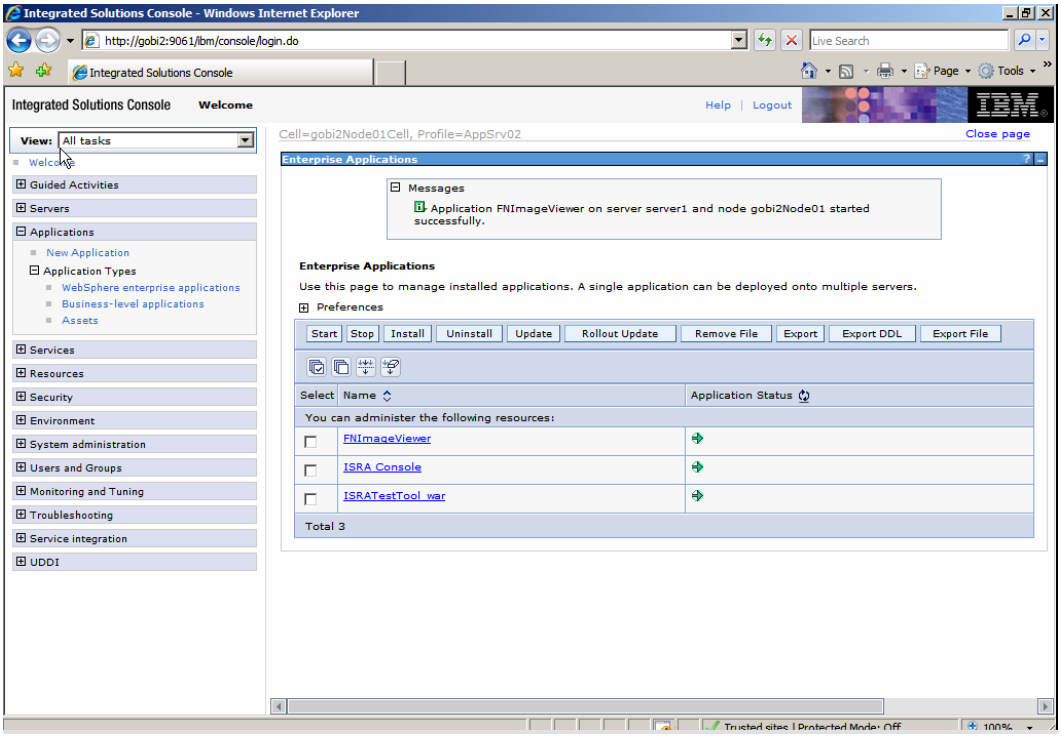
3. Click **Finish**. The following screen appears:



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



5. Click **Applications > Application Types> WebSphere Enterprise Applications**. Enable the **FNImageViewer** check box and click **Start**. A message, as shown in the screen below, is displayed:



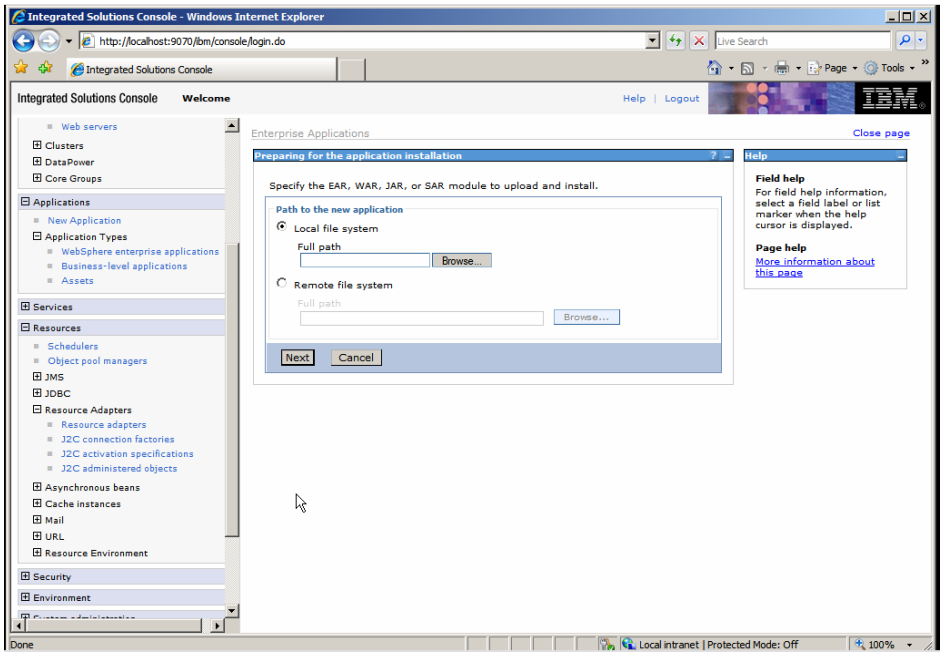
Note	FNImageViewer.ear is located under the Sample subfolder in the ISRA installation directory. IBM FileNet Image Viewer files (FNImageViewer.jar) and IBM FileNet Image Viewer documentation are located in the FNImageViewer\docs subfolder in the ISRA installation directory.

Deploying IBM FileNet Image Viewer in Clustered Environment

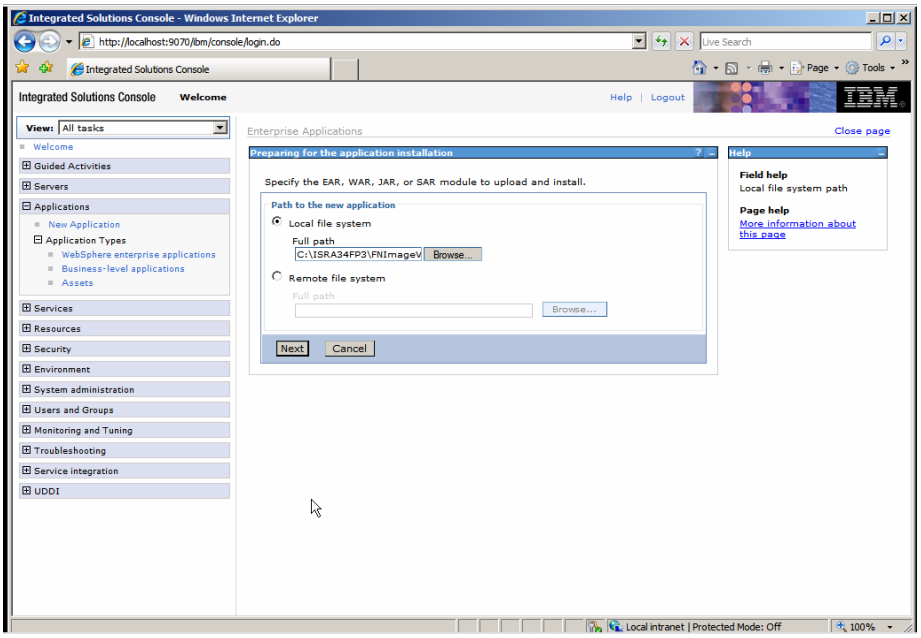
The IBM FileNet Image viewer is used by the ISRA Sample Application to display documents of specific mime types (TIFF, JPEG and BMP). Skip this section and move to the next, if you do not want the IBM FileNet Image Viewer configured with the ISRA Sample Application.

The steps to deploy the IBM FileNet Image Viewer in a Clustered Environment are:

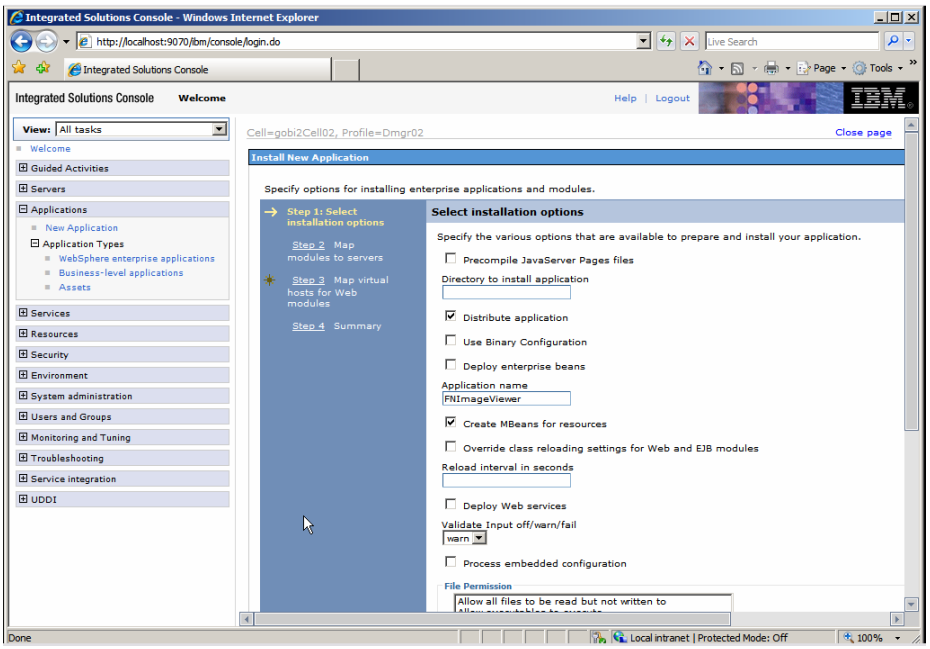
1. Launch the WebSphere Network Manager Admin console. Click **Applications > Application Types > WebSphere Enterprise Applications**. The following screen appears:



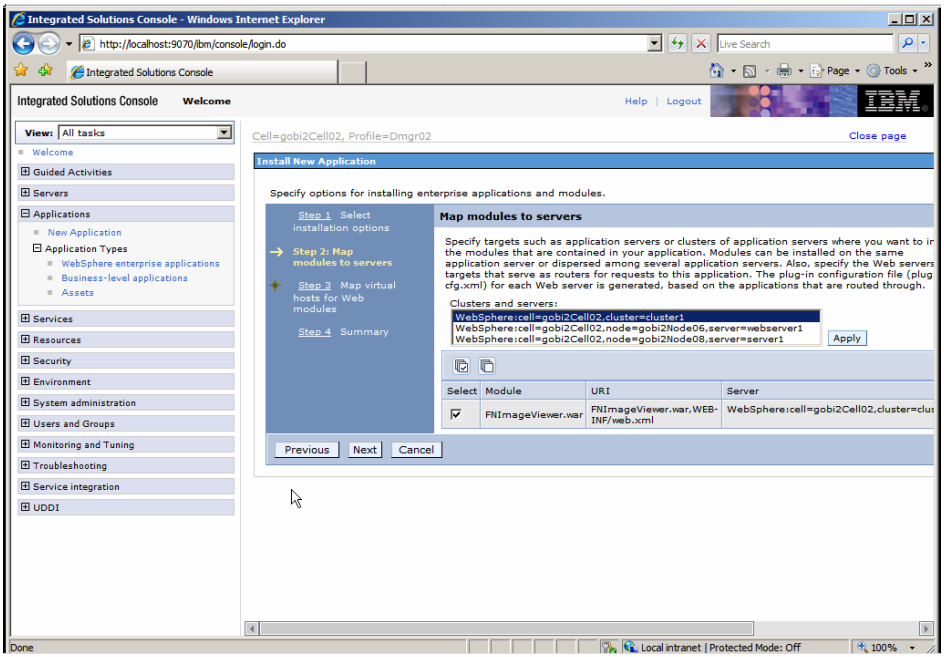
2. Click **Browse.** Navigate through the ISRA installation directory and choose FNImageViewer.ear. Click **OK.**



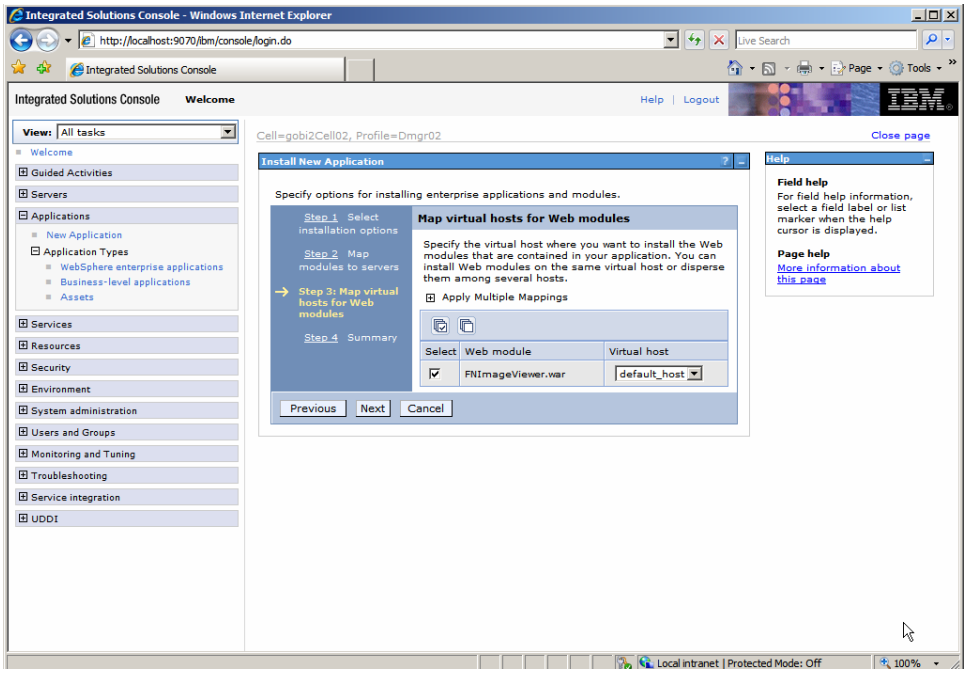
3. Click **Continue.** The following screen appears:



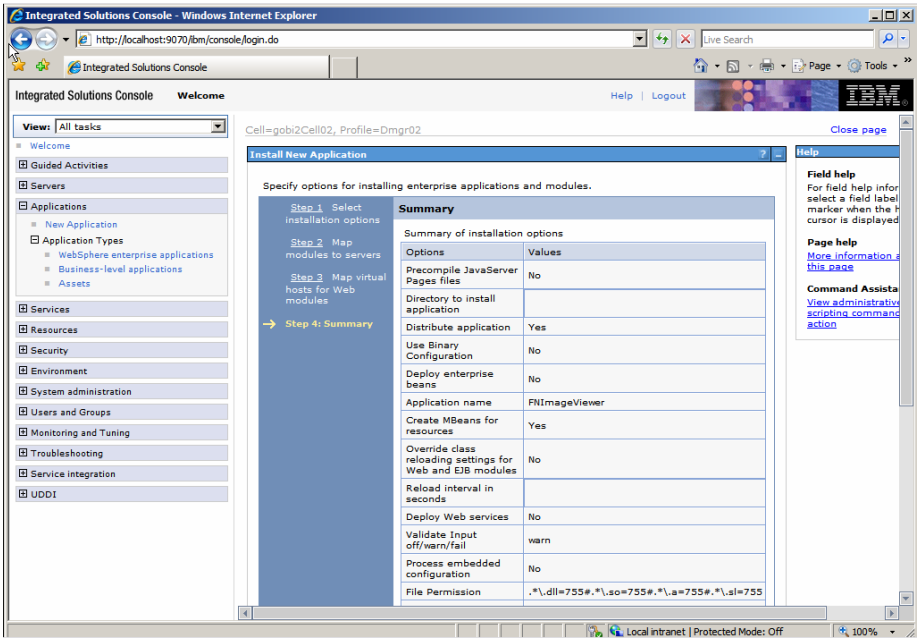
4. Click **Next**. The following screen appears:



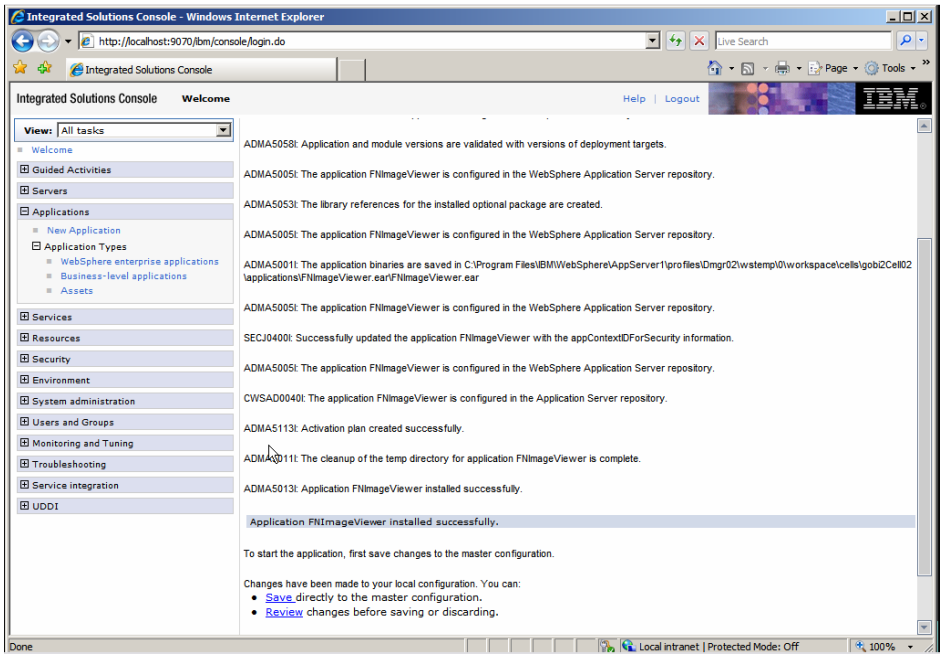
5. Click **Next**. The following screen appears:



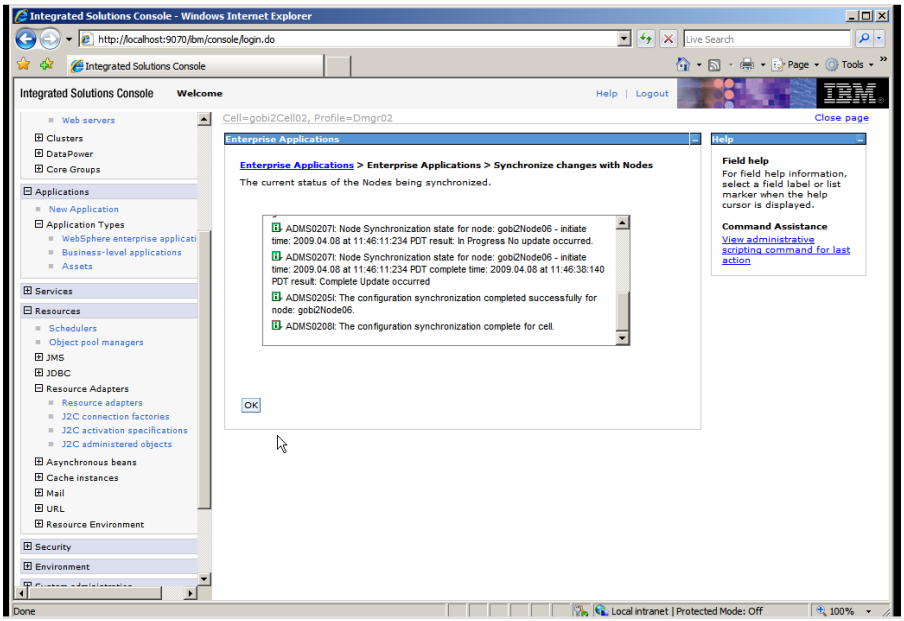
6. Click **Next**. The following screen appears:



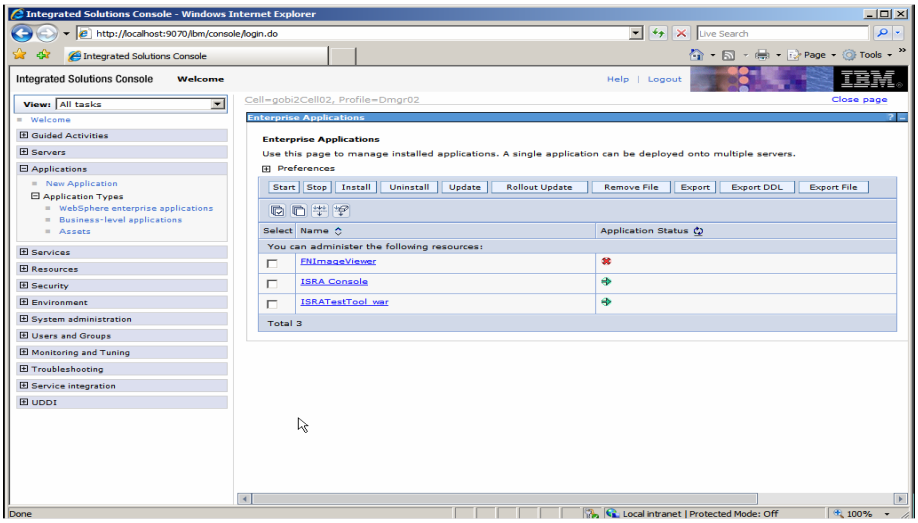
7. Click **Finish**. The following screen appears:



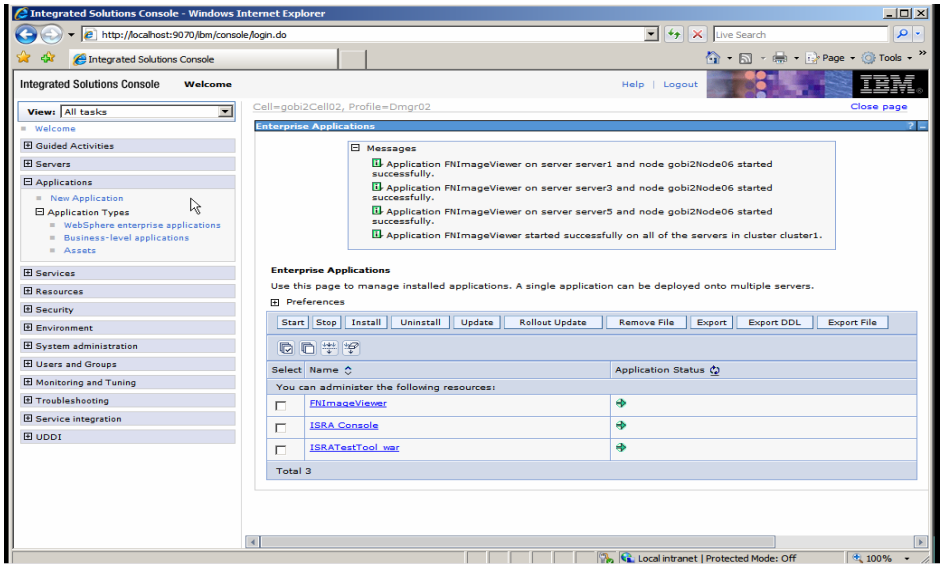
8. Click **Save to Master Configuration**. The following screen appears:



9. Click **Save** to complete the deployment of IBM FileNet Image Viewer. The following screen appears:



10. Enable the **FNImageViewer** check box and click **Start**. A message, as shown in the screen below, is displayed:



11. To Update Web Server Plug-in run the following command:

`<DeploymentManager home>/profiles/dmgr/bin/GenPluginCfg.sh`

> **Note** **FNImageViewer.ear** is located under the `Sample` subfolder in the ISRA installation directory. IBM FileNet Image Viewer files (`FNImageViewer.jar`) and IBM FileNet Image Viewer documentation are located in the FNImageViewer\docs subfolder in the ISRA installation directory.

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 V6. 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="10uc1gec5" 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="10uc1gf3l" 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 server entry in pug-in as follows.

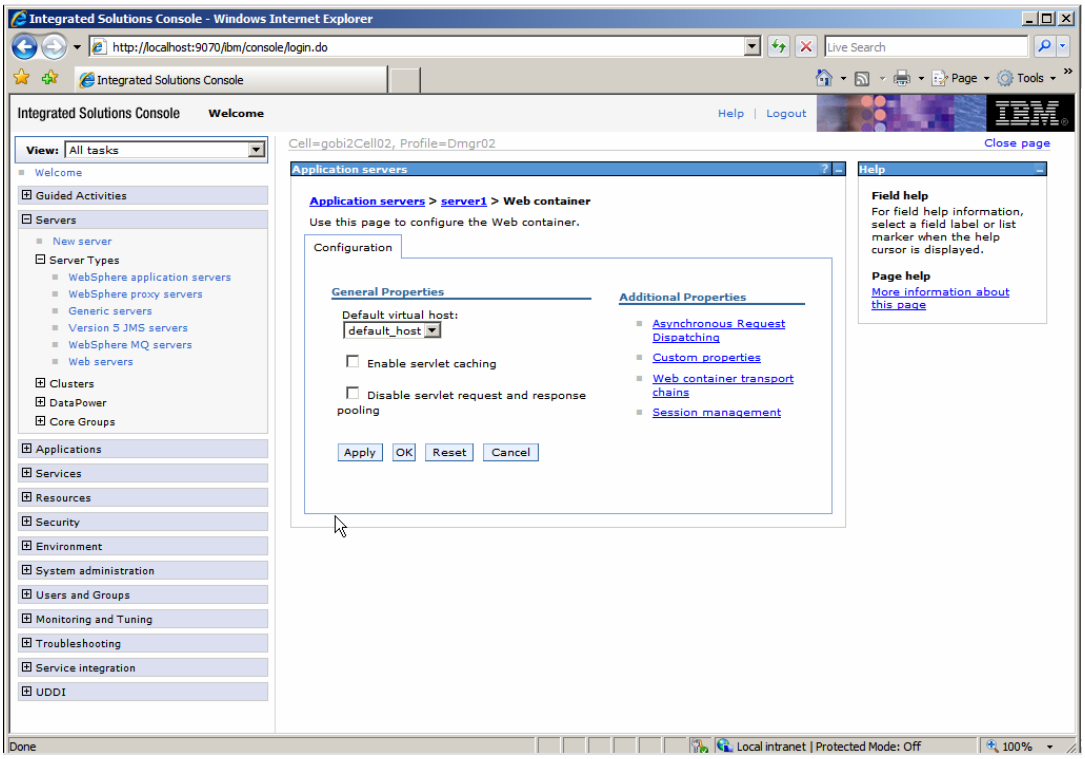
```
<ServerCluster CloneSeparatorChange="false" LoadBalance="Round
Robin" Name="ISRACLuster" PostSizeLimit="-1"
RemoveSpecialHeaders="true" RetryInterval="60">
      <Server CloneID="10uc1gec5" ConnectTimeout="0"
ExtendedHandshake="false" LoadBalanceWeight="2" MaxConnections="-
1" Name="fnaix_ISRAServer1" 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="10uc1gf3l" 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

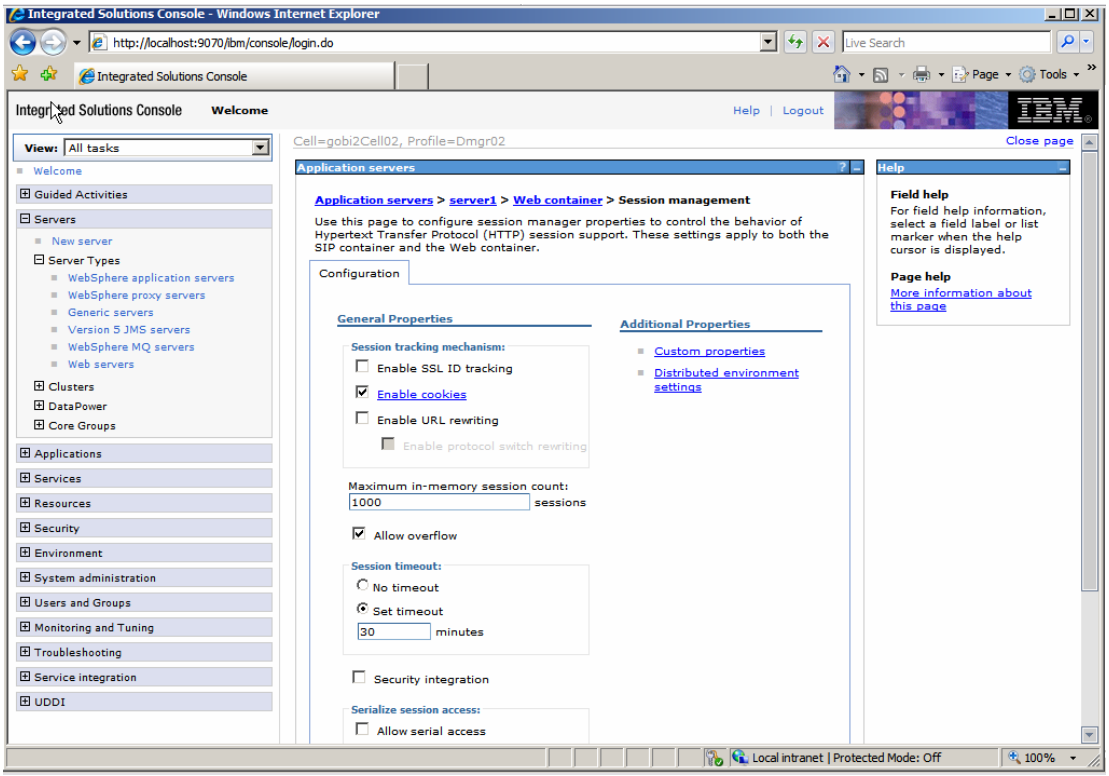
- Database
- Memory to memory.

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

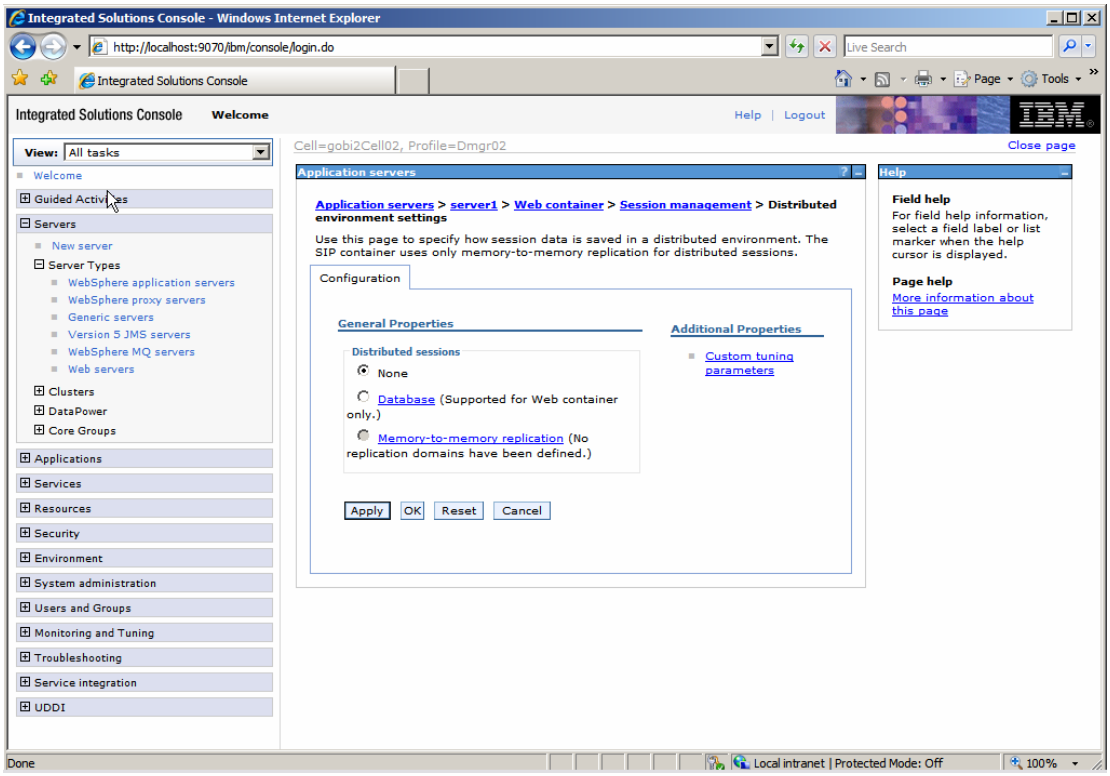
1. Click **Servers> Server Types> <server instance> >Web Container Settings > Web Container**. The following screen appears:



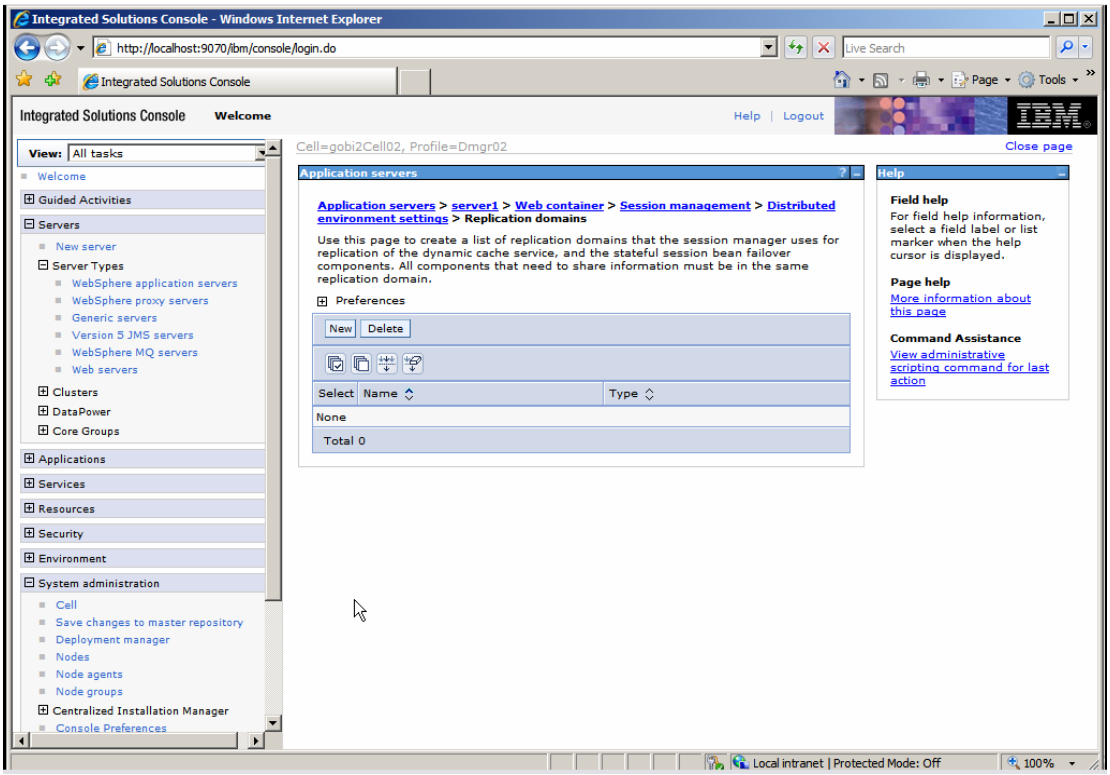
2. Under Additional Properties, click **Session Management** link. The following screen appears:



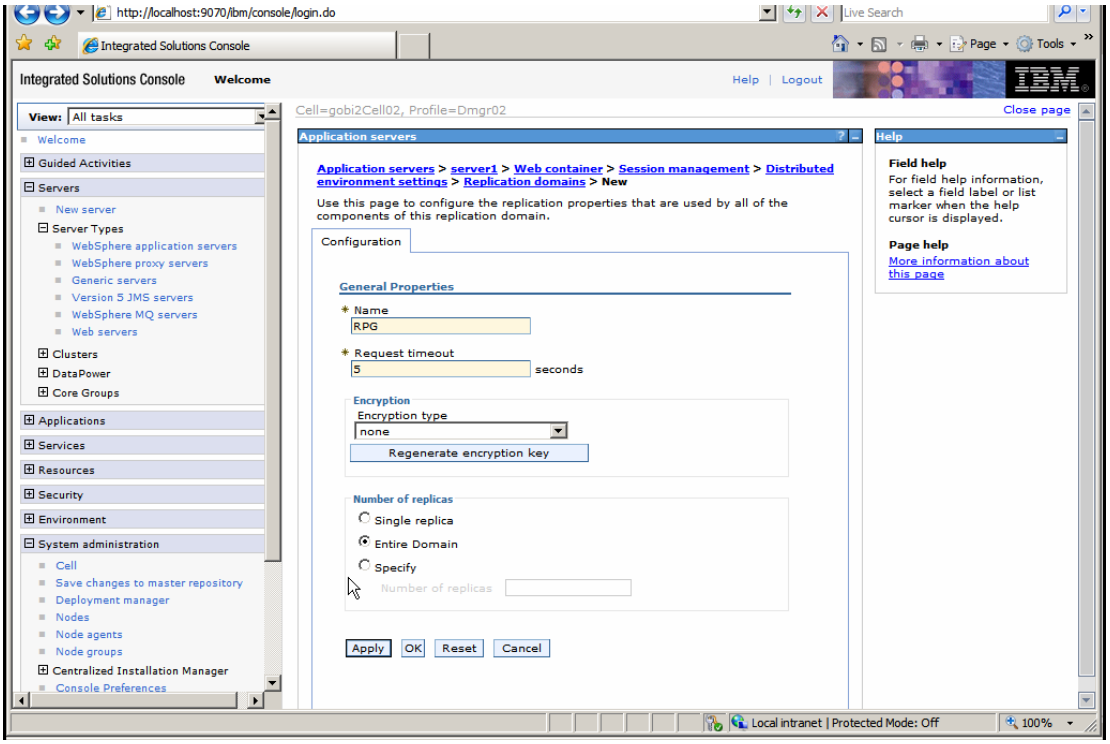
3. Under Additional Properties, click **Distributed Environment Settings** link. The following screen appears:



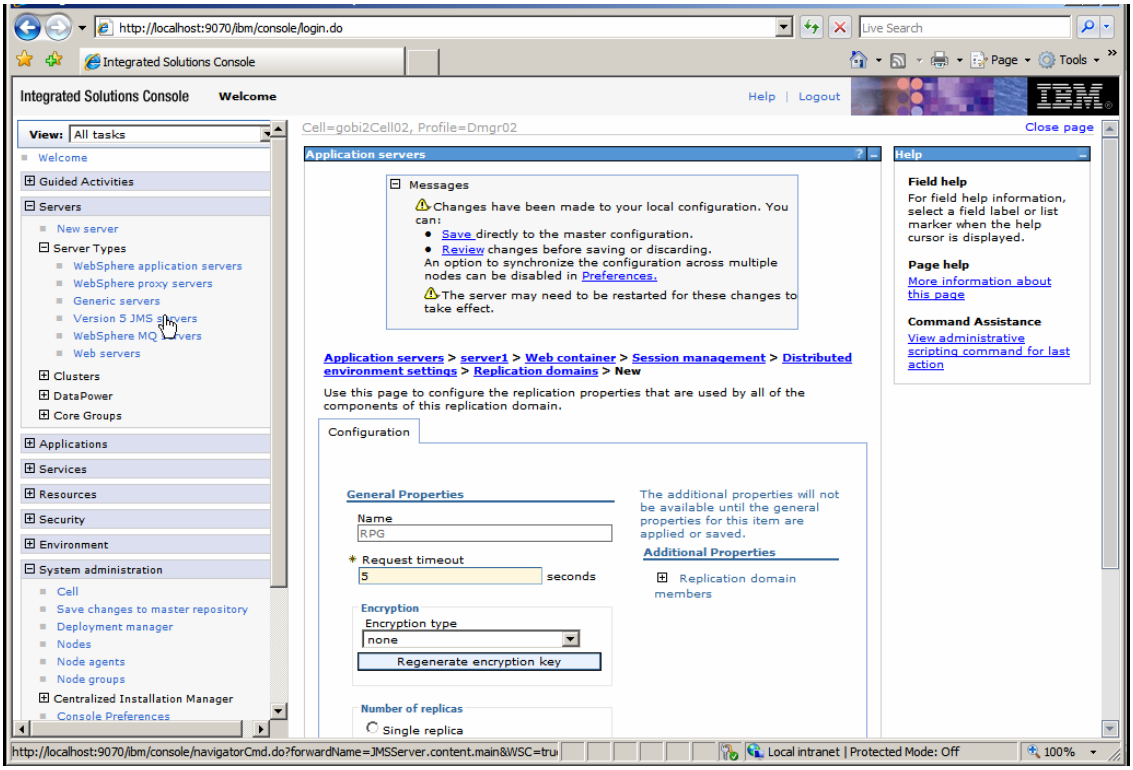
4. If a replication domain is already created, go to Step 12. If not click on the link **Memory to Memory Replication** to create a new replication domain.
5. The following screen appears when **Memory to Memory Replication** is clicked:



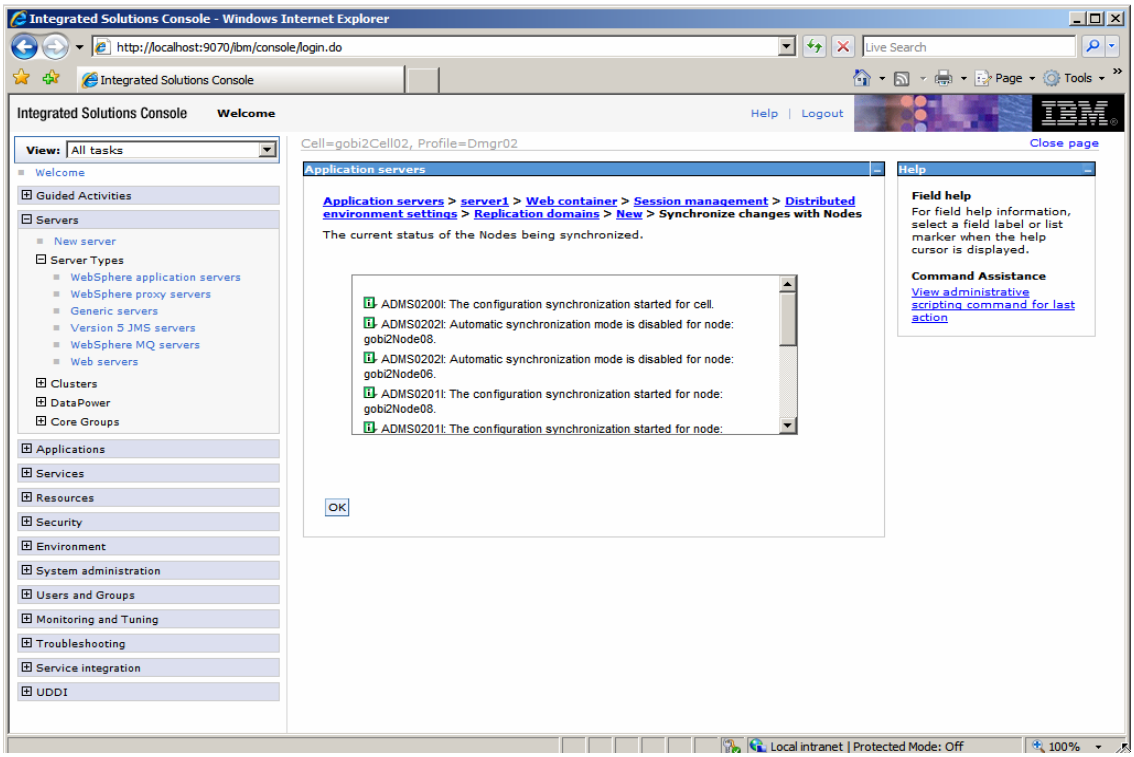
6. Click **New** and the following screen appears:



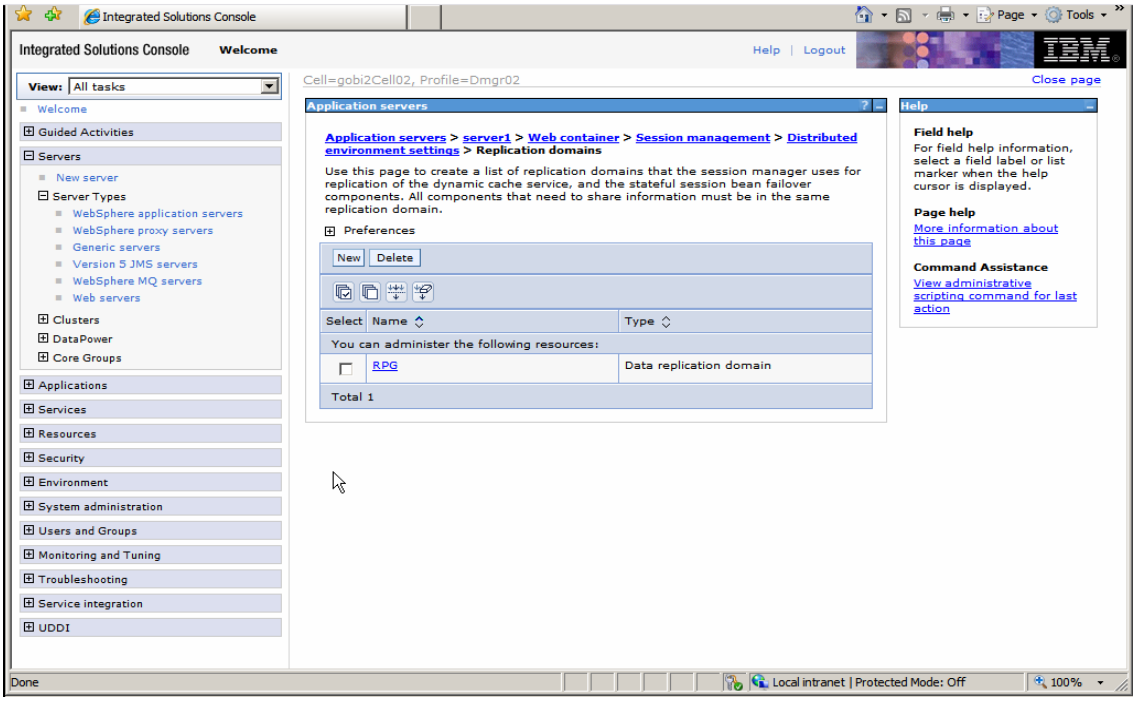
7. Provide a Replication Domain name and choose the Entire domain option and click **Apply.** The following screen appears:



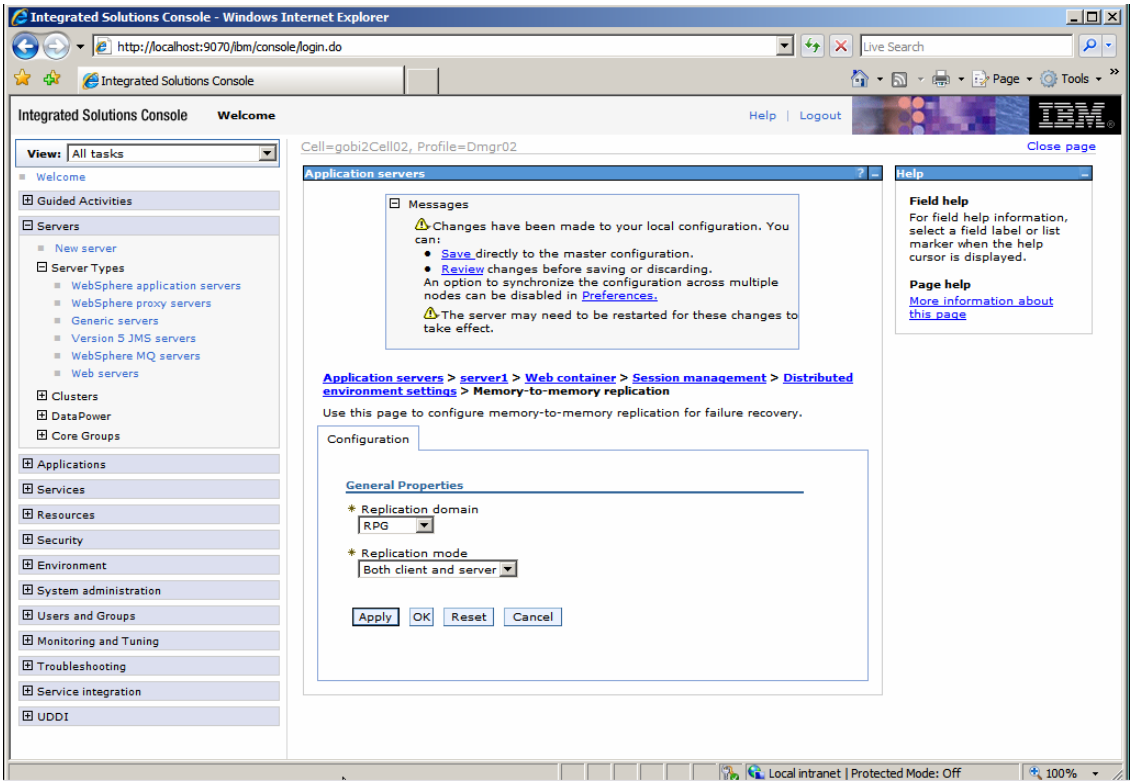
8. Click **Save** and also choose the **Synchronize** option in preferences if it has not been chosen. The following screen appears:



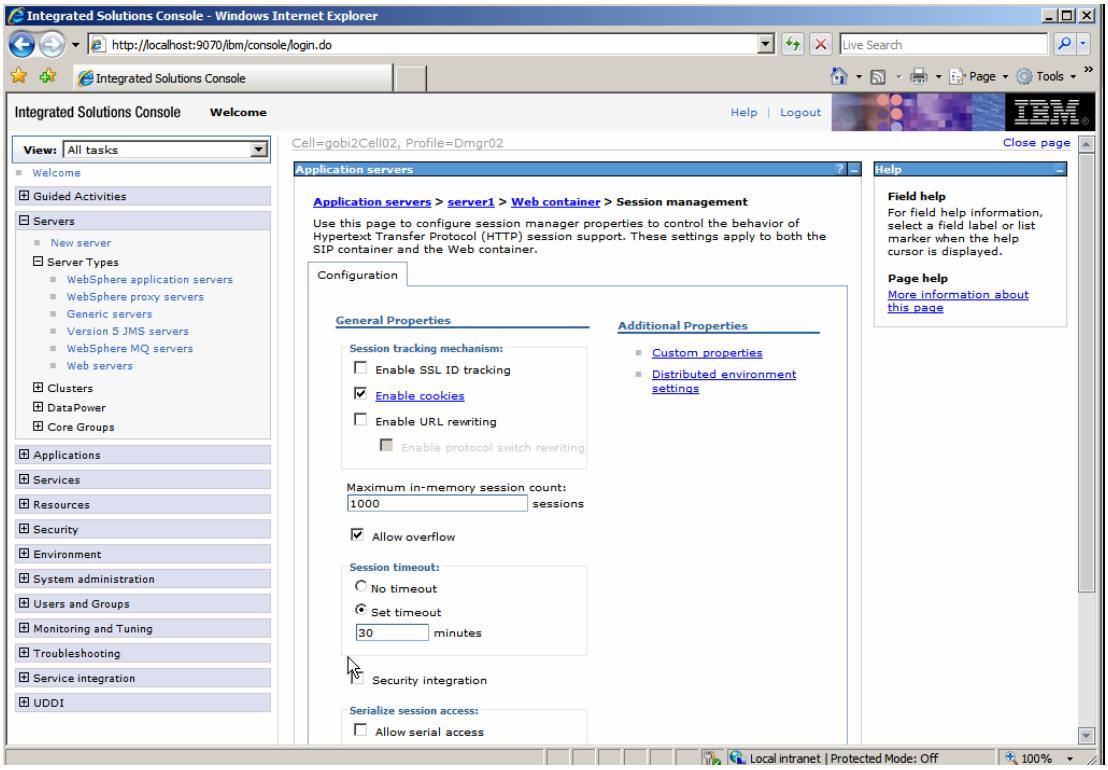
9. Click **OK.** The following screen appears:



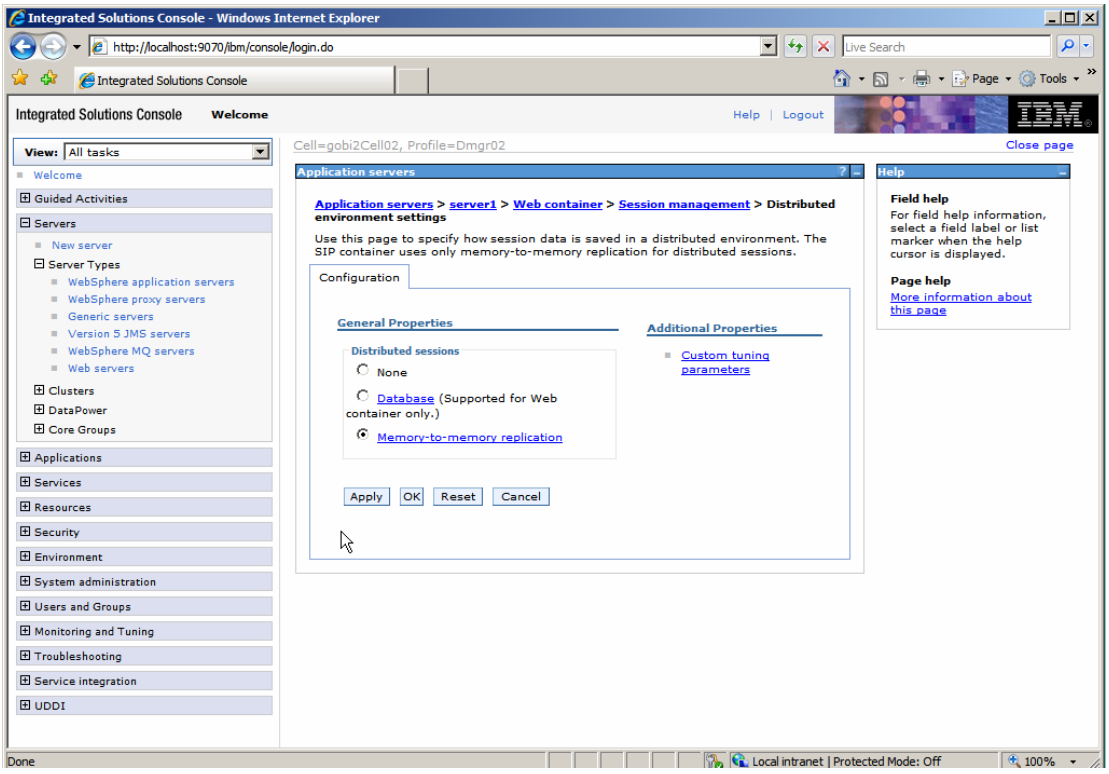
10. Go to the Distributed Environment settings page and click Memory to Memory replication. Click on the Replication domain just created from the drop down menu. Click Apply. The following screen appears:



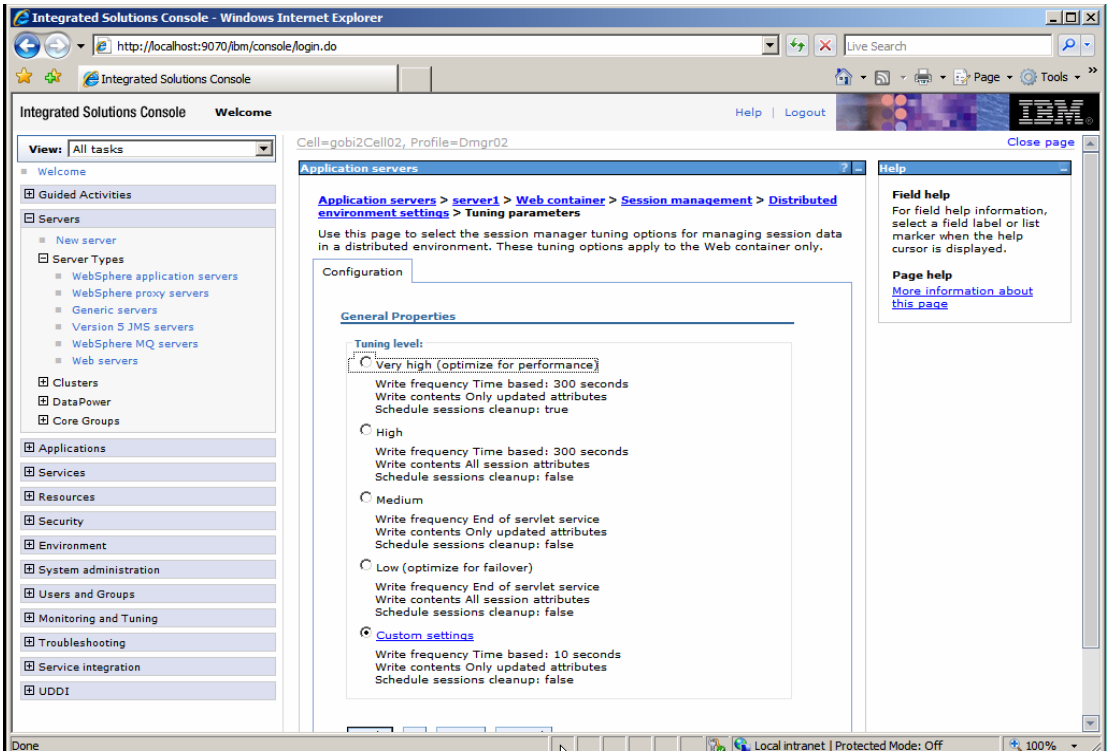
11. Click **Save.** After the synchronize changes with node is done, click **OK**. The following screen appears:



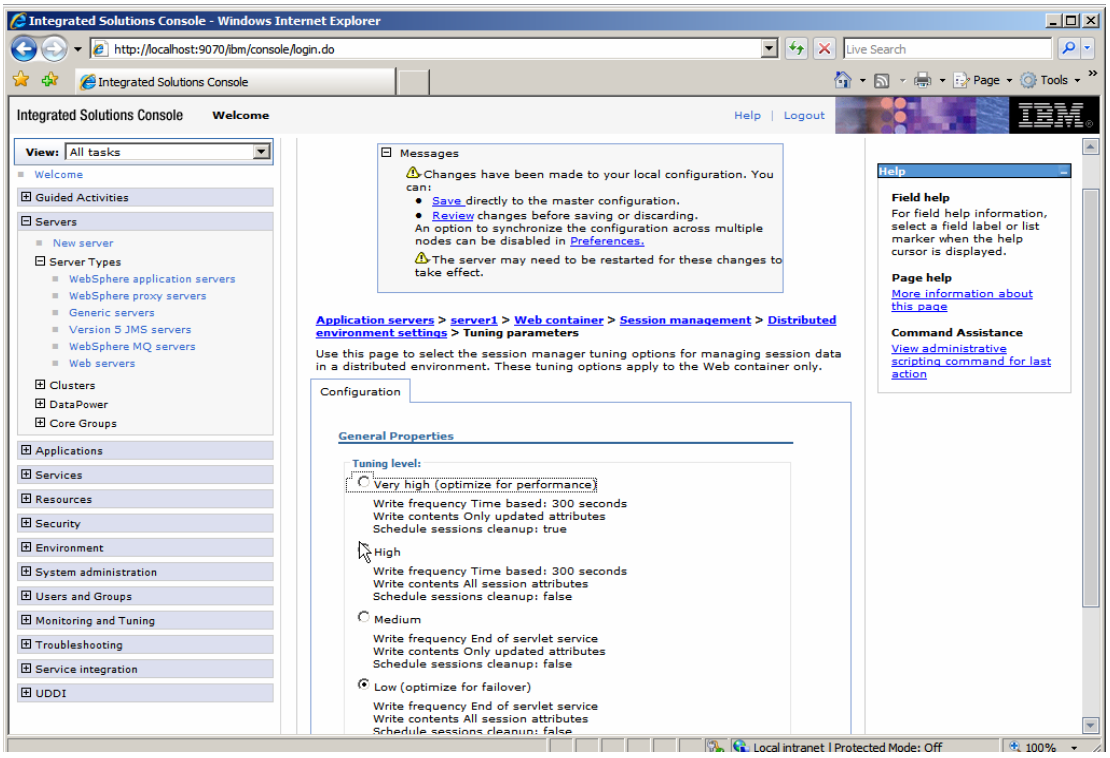
12. Click **Distributed Environment Settings**. The following screen appears:



13. Click **Memory to Memory replication.** Under **Additional Properties,** click **custom tuning parameters.** The following screen appears:



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



15. Click **Save.**
16. Click **OK** after the synchronize changes with nodes is done**.**

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

IBM FileNet Image Viewer Quick Start Feature

The Quick Start feature provides a mechanism for initializing a Web browser, Java, and Image Viewer session. The background task required to initialize an Image Viewer session is done at the time when the Web browser is initialized, prior to the time when Image Viewer is actually required. This reduces the startup time of Image Viewer. This feature is supported on various Operating Systems, such as Microsoft Windows 98, NT, 2000 Professional, and XP. The only Web browser supported for this feature is Internet Explorer. The Quick Start feature is not enabled by default; you need to manually enable it.

Enabling Quick Start Feature

To enable quick start feature:

1. Extract FNImageViewer.ear from the patch.
2. Check the availability of "quickstart.htm" file in the FNImageViewer.war extracted from FNImageViewer.ear
3. Extract ISRAConsole.ear from the patch.
4. Extract ISRASampleWEB.war file from ISRAConsole.ear.
5. Extract 'DisplayDocument.jsp' file from ISRASampleWEB.war.
6. Add the highlighted tag to the file as shown in the code segment below:

```
<APPLET CODEBASE = "/FNImageViewer/FNJavaV1Files" ARCHIVE
="ji.jar"
CODE = "ji.applet.jiApplet.class" NAME = " viewONE" WIDTH =
"100%"
HEIGHT = "97%" HSPACE = 0 VSPACE = 0 ALIGN = middle
MAYSCRIPT="true">

-- -- --

<%if(RAVersion2.equalsIgnoreCase("Enterprise")){%>

-- -- --

<param name="UserId" value="<%=userId%>">
<param name="quickstartURL" value="quickstart.htm">
<%}/*End of if condition where
RAVersion2.equalsIgnoreCase("Enterprise")*/%>
</Applet>
```

7. Save and close the file.
8. Bundle the new file into ISRASampleWEB.war
9. Bundle the WAR file into ISRAConsole.ear.
10. Undeploy the old ISRAConsole.ear
11. Deploy the new ISRAConsole.ear.
12. Open a document in IBM FileNet Image Viewer.
13. Right-click the document to open the context menu.

14. From the context menu, click **Preferences > QuickStart** to enable the Quick Start feature. A 'tick' icon appears on the left-hand side of the Quick Start menu indicating that the feature is enabled.

Enabling the Quick Start feature will add an icon within the System tray (bottom right of the Windows Desktop) and a menu item “IBM FileNet JavaView QuickStart for Internet Explorer” under Start > Programs > Startup menu. After enabling Quick Start, if the machine is rebooted, the Quick Start feature remains enabled. Disabling the Quick Start feature will remove the Quick Start icon from the System tray and the menu item “IBM FileNet JavaView QuickStart for Internet Explorer” from the Start > Programs > Startup menu. The 'tick' icon on the left-hand side of the Quick Start menu (right click **document > Preferences > QuickStart**) indicating that the feature is enabled will disappear.

Known Issues in the Quick Start Feature

Following are the known issues in IBM FileNet Image Viewer:

- Web session will not end until Quick Start feature is disabled or the user explicitly logs out of the session with the Web server. If the Quick Start feature is enabled, closing the browser window(s) will not terminate the session with the Web server.
- If Quick Start is enabled and Internet Explorer is not the default browser, then on machine re-login or reboot, a message will display asking whether to make Internet Explorer the default browser. To avoid the message:
- Open a browser window.
  1. **Select Tools > Internet Options.**
  2. Click on the **Programs** tab and deselect the check box corresponding to "Internet Explorer should check to see whether it is the default browser".
  3. Click **Apply**.
  4. Click **OK**.

- If Always button is not selected on the security dialog box of the security certificate associated with the Image Viewer, then on machine re-login or reboot, a security dialog box is displayed.
- QuickStart feature is not available in Image Viewer if web server is accessed using IP address instead of host name in the URL.

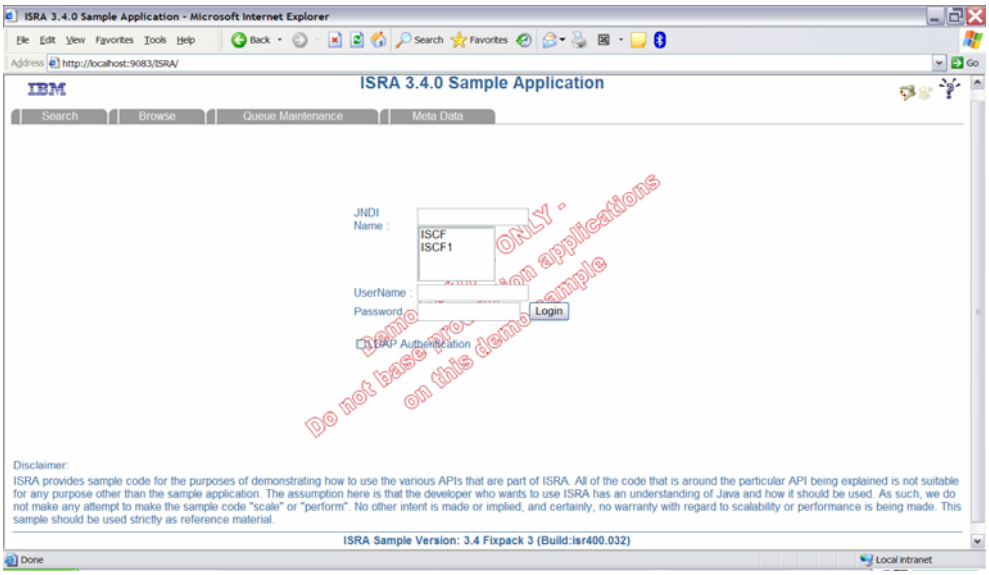
Testing Sample Application

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

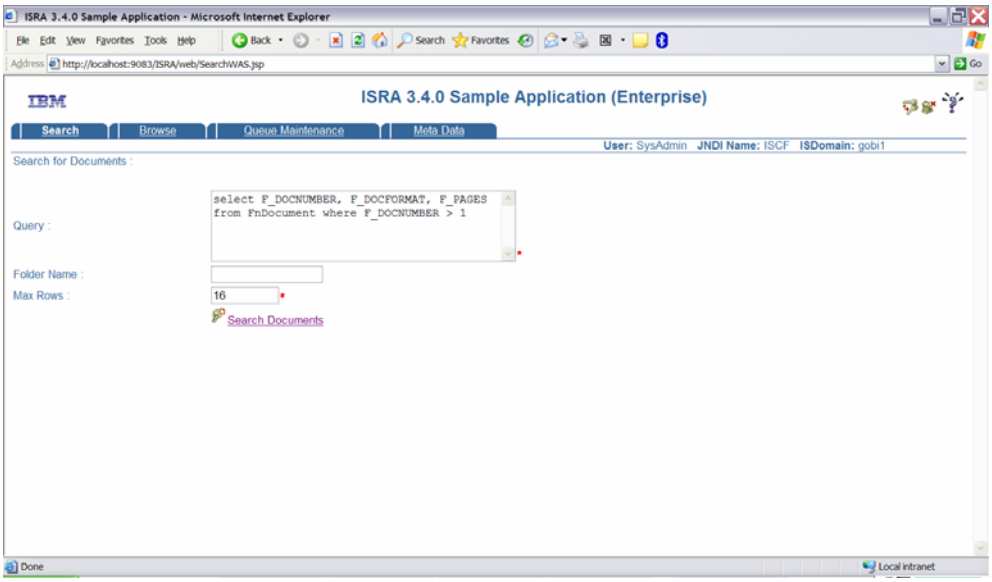
1. Open a Web browser and enter the URL:

   ```
   http://<server:port>/context_root.
   For example: http://9.126.94.39:9088/ISRA/
   ```

   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.

3

LDAP Configuration

In addition to direct IS logging, ISRA 3.4.0 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.

IBM 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. Whereas, 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 an IBM 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).

Option	Description
	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 IBM 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.

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 IBM FileNet users created will have a password generated from the corresponding user IDs.

Changing ISRA Specific Parameters for LDAP

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

- LdapImplClassName
- LdapImplClassString
- InherentLogin

Refer to LdapImplClassName, LdapImplClassString, and InherentLogin, in section Configurable ra.xml Properties for details on the configuration of the respective entities.

4

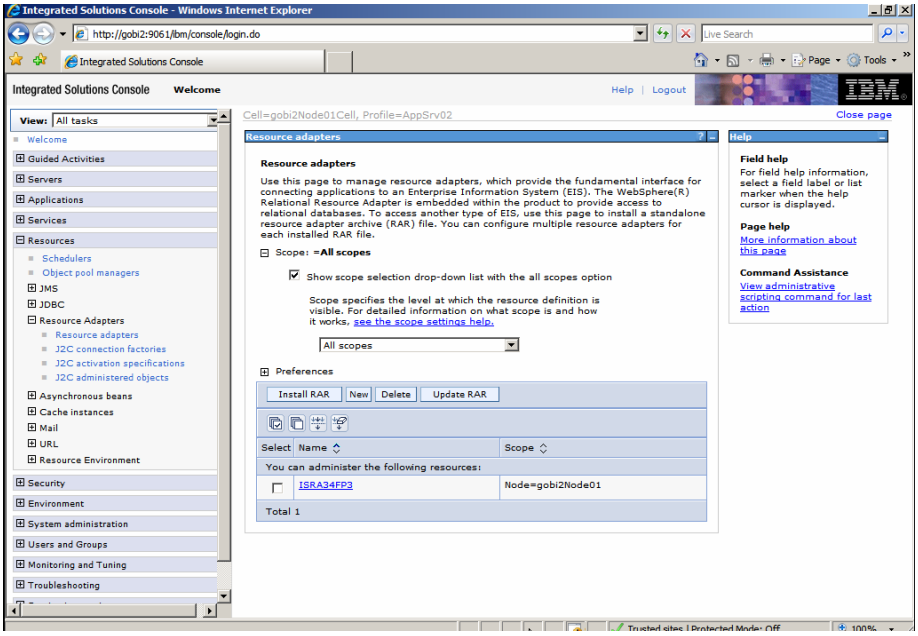
Undeployment

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

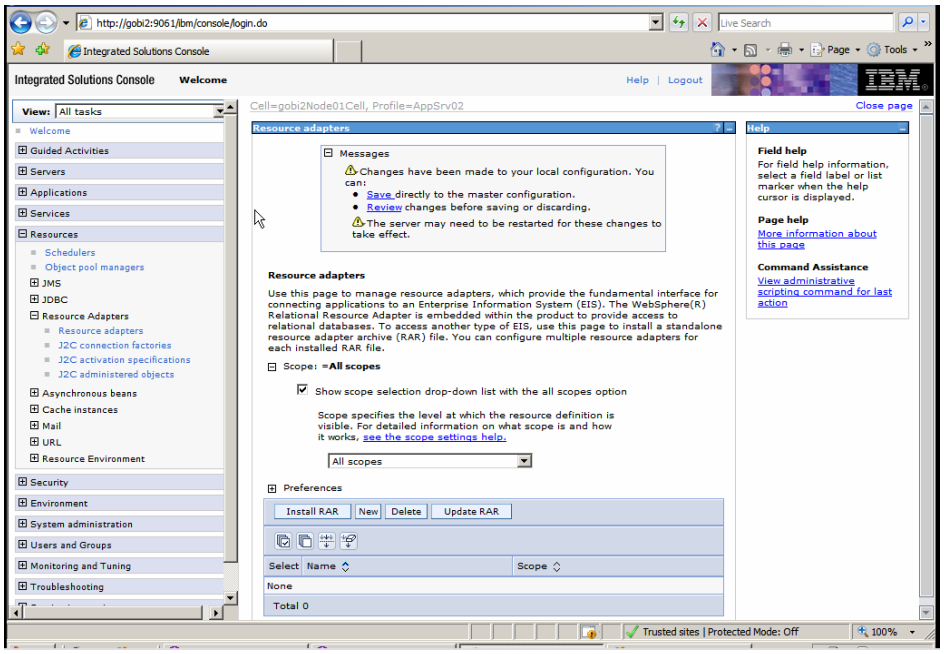
Undeploying ISRA in a Standalone Environment

To undeploy ISRA using the Administrative Console:

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



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

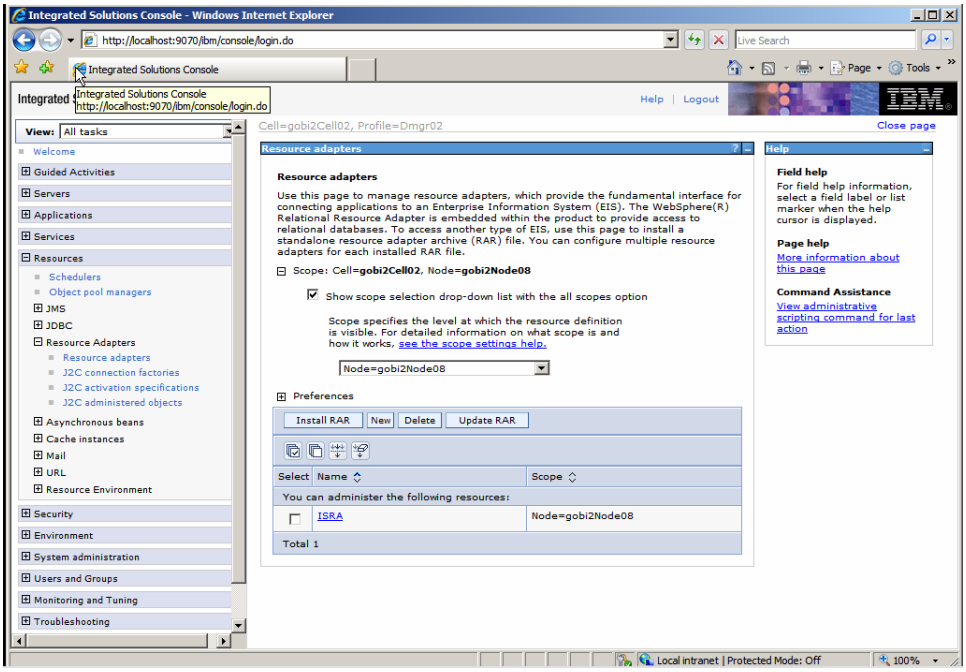


3. Click the **Save** link in the **Messages** box.

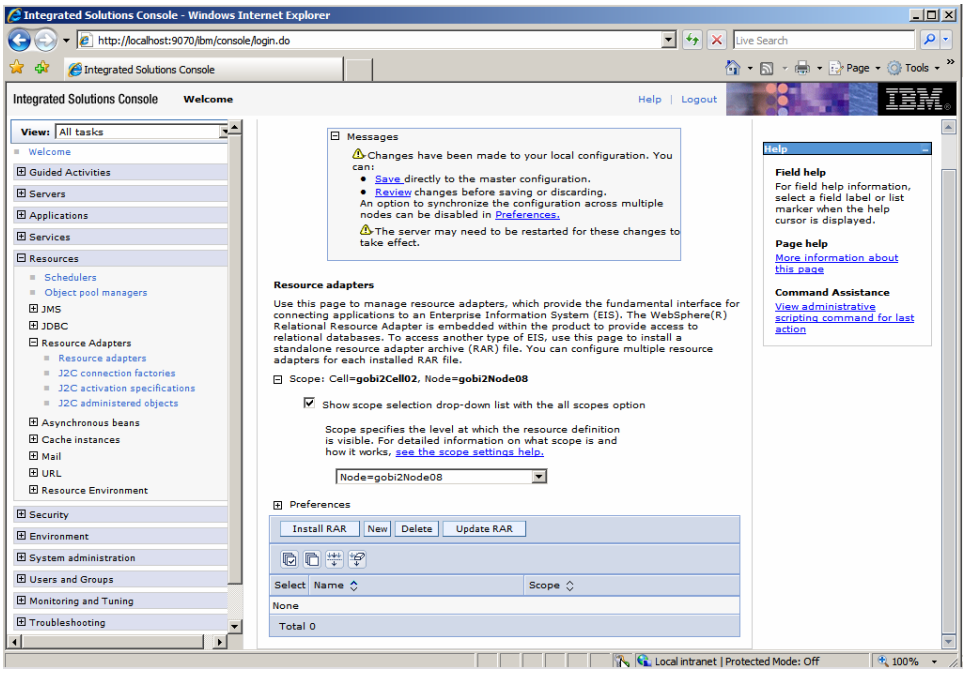
Undeploying ISRA in a Clustered Environment

To undeploy ISRA using the Administrative Console:

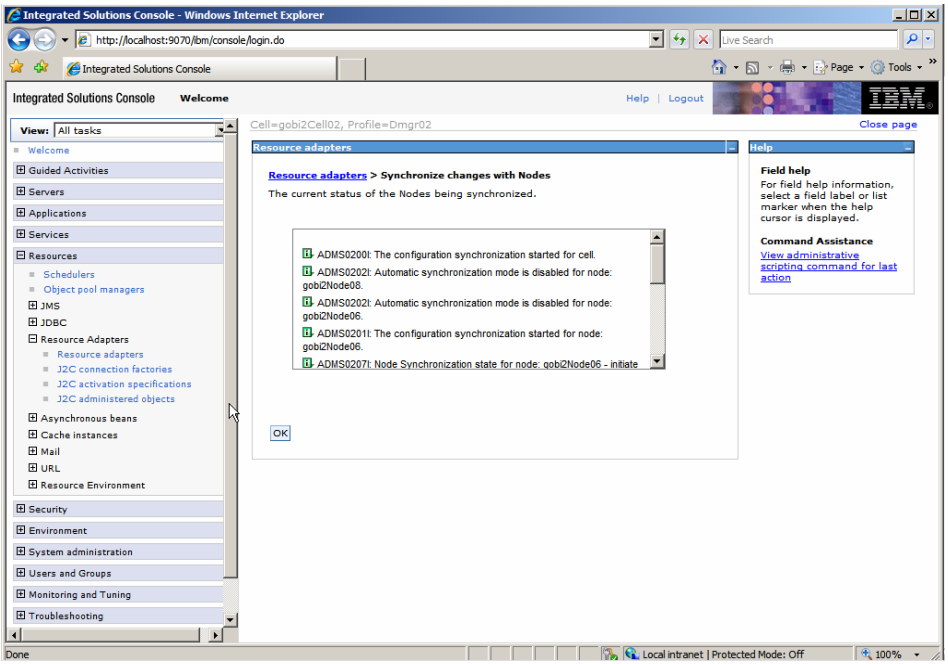
1. Click **Resources** > **Resource Adapters > Resource Adapters**. The following screen appears:



2. Select 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. (Enable **Synchronize changes** with node in preferences link.)

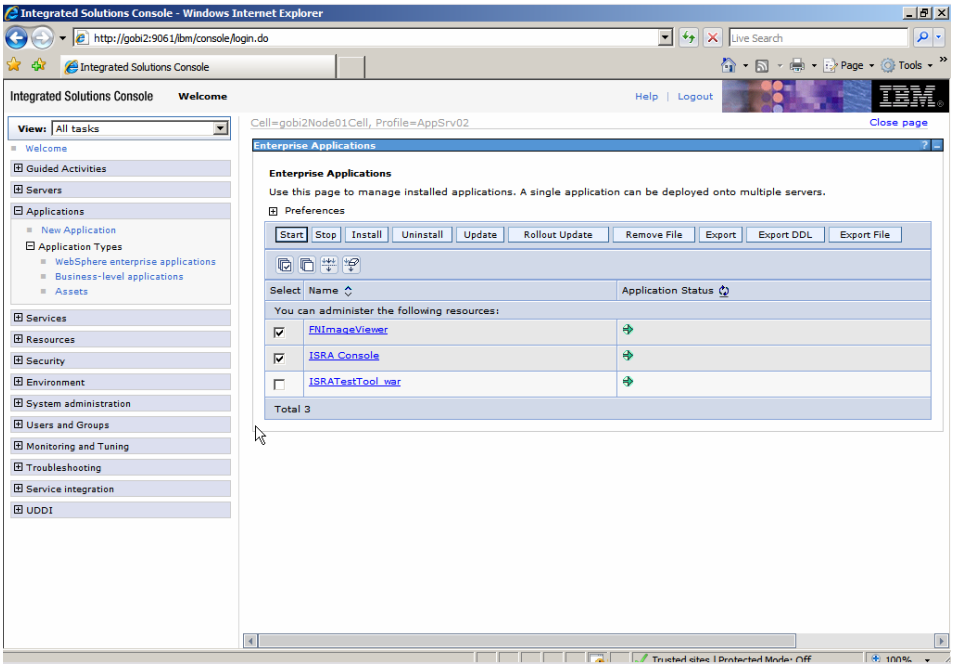


4. Click **OK.**

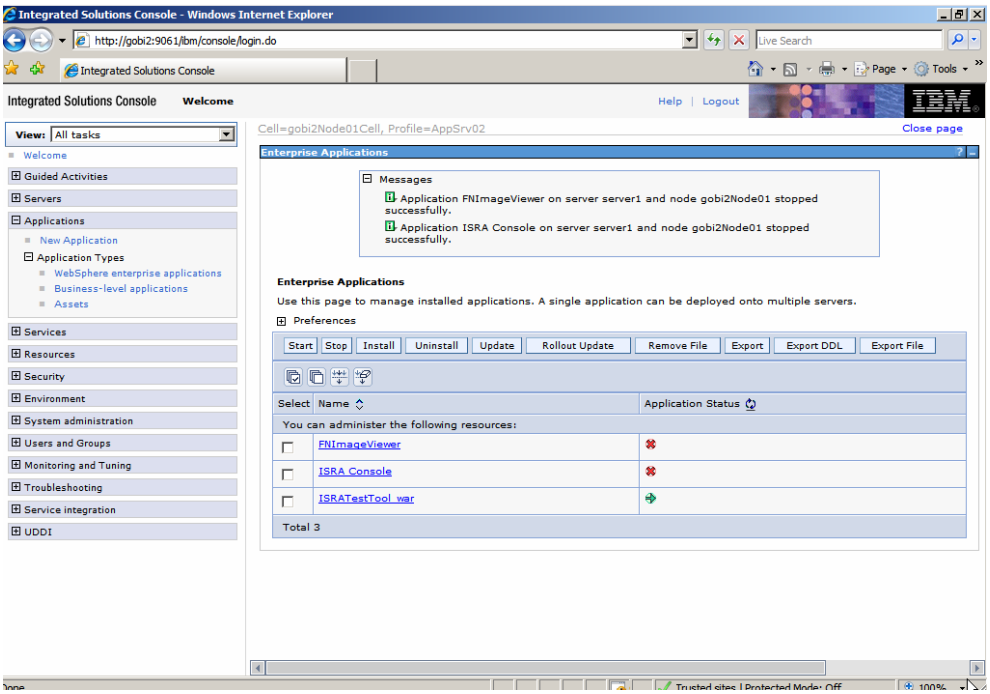
Undeploying ISRA Console and Sample Application/FNImageViewer Application in a Standalone Environment

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

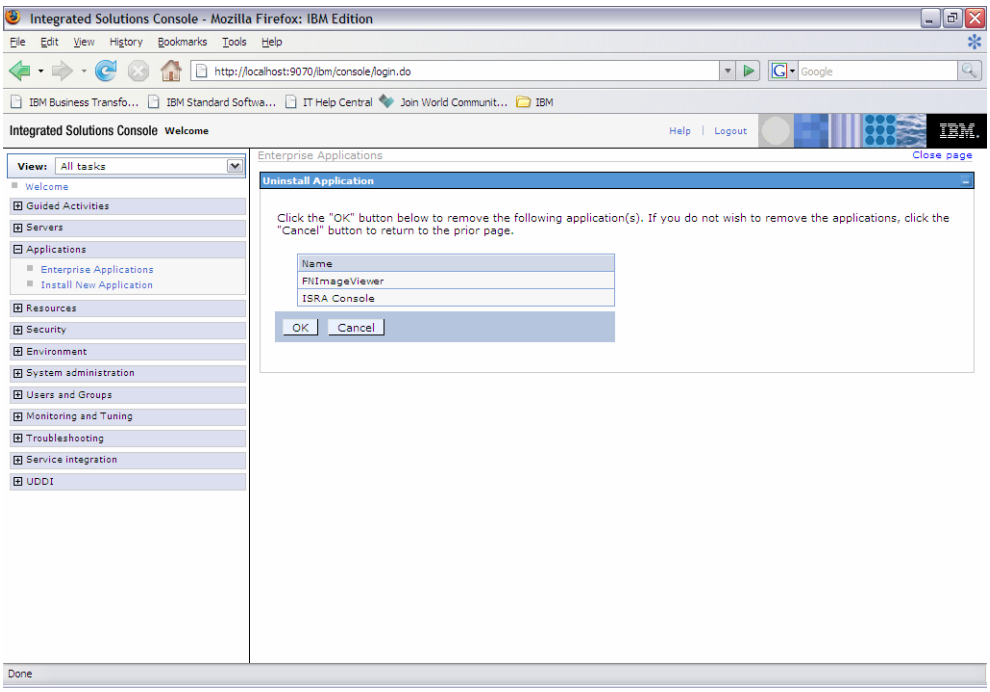
1. Click **Applications > Application Types > WebSphere Enterprise Applications**. The following screen appears:



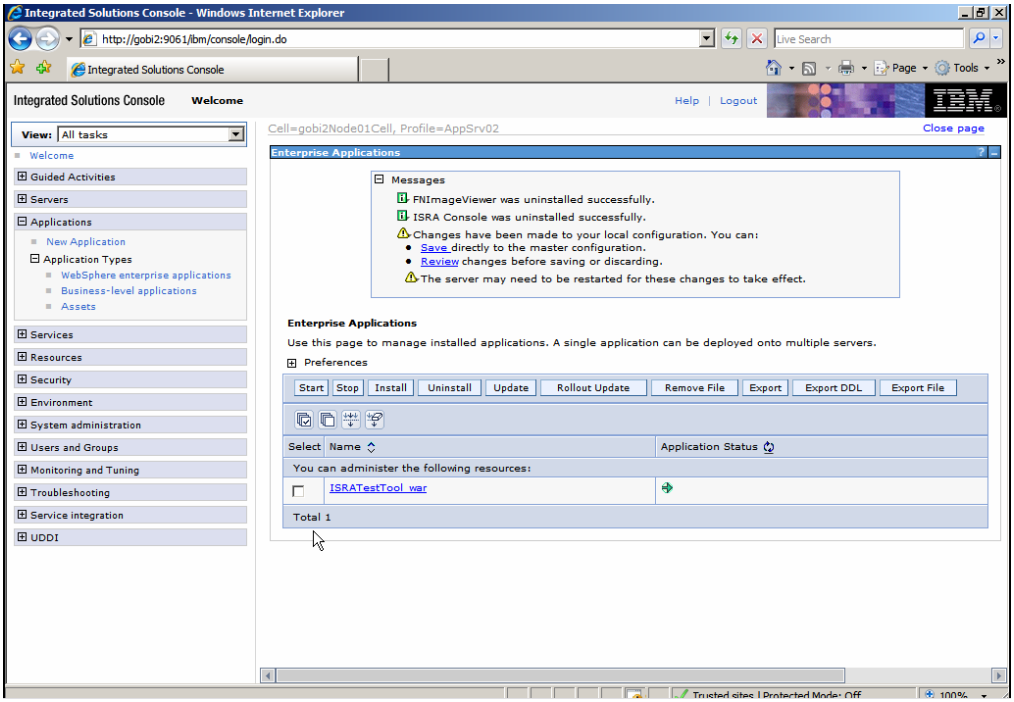
2. Select the **FnImageViewer** and **ISRA Console** check box. Click **Stop**. A message, as shown in the screen below, is displayed:



3. Select the **FnImageViewer** and **ISRA Console** check boxes. Click **Uninstall**. A message, as shown in the screen below, is displayed:



4. Click **OK**.



5. Click **Save** to link in the **Messages** box.

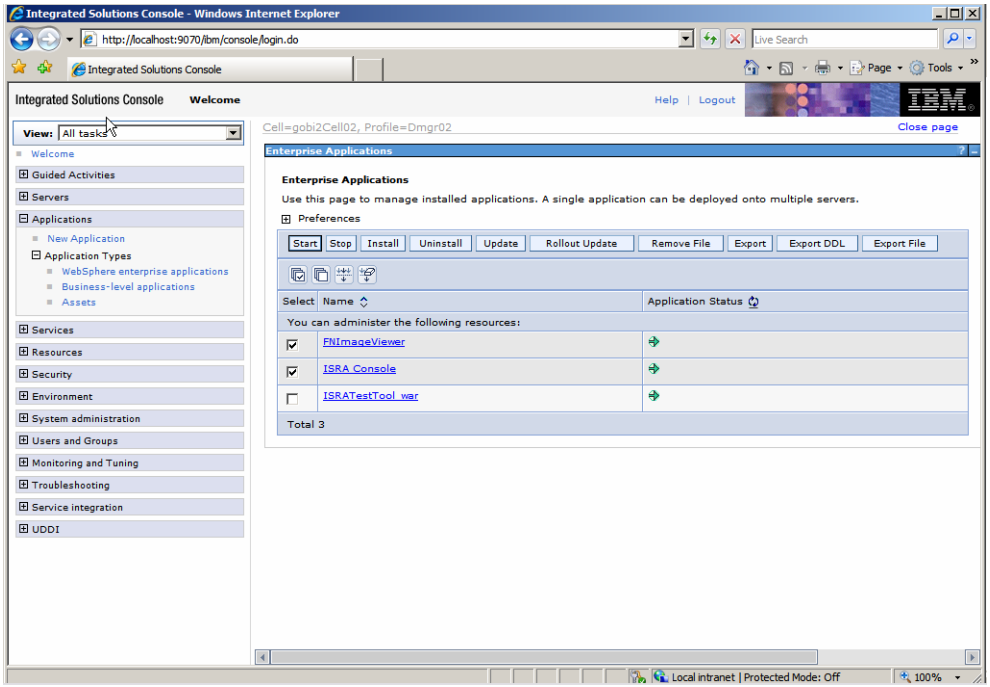
Note 1. By selecting the appropriate checkboxes all or one of the applications can be uininstalled.

2. The user must undeploy the previous version of ISRA Sample Application before deploying the latest version.

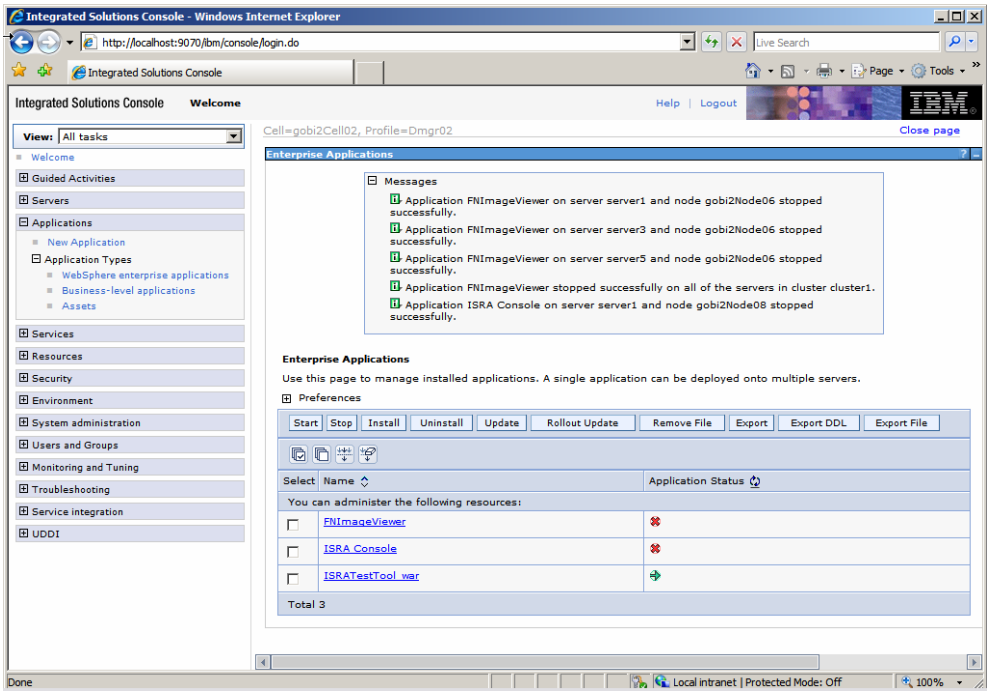
Undeploying ISRA Console and Sample Application/FNImageViewer Application in a Clustered Environment

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

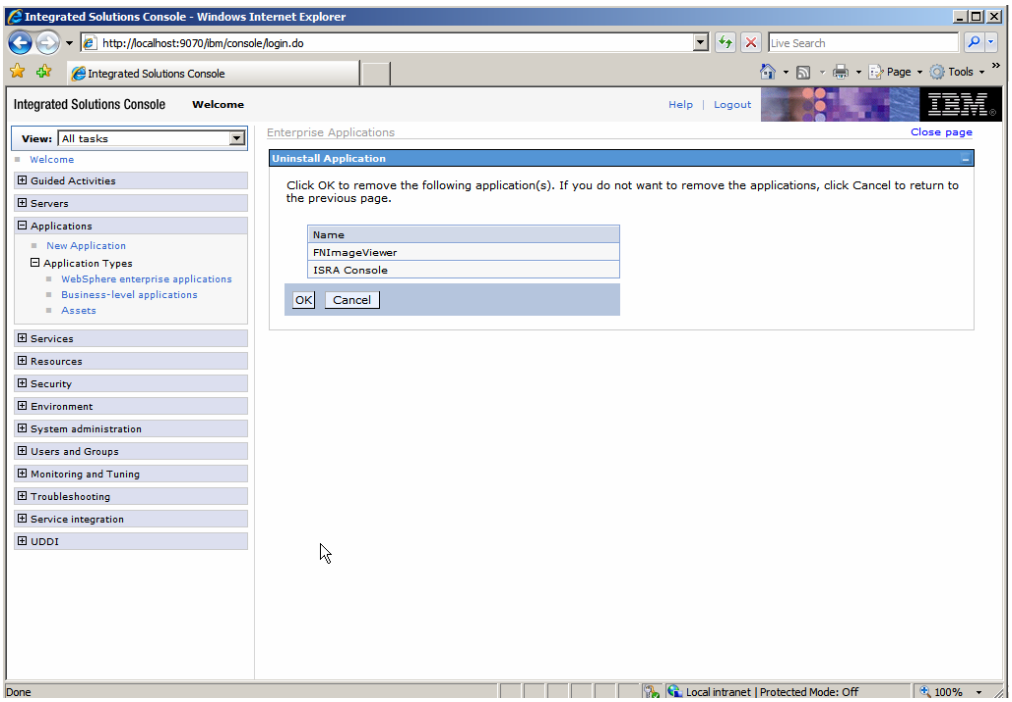
1. Click **Applications > Application Types > WebSphere Enterprise Applications**. The following screen appears:



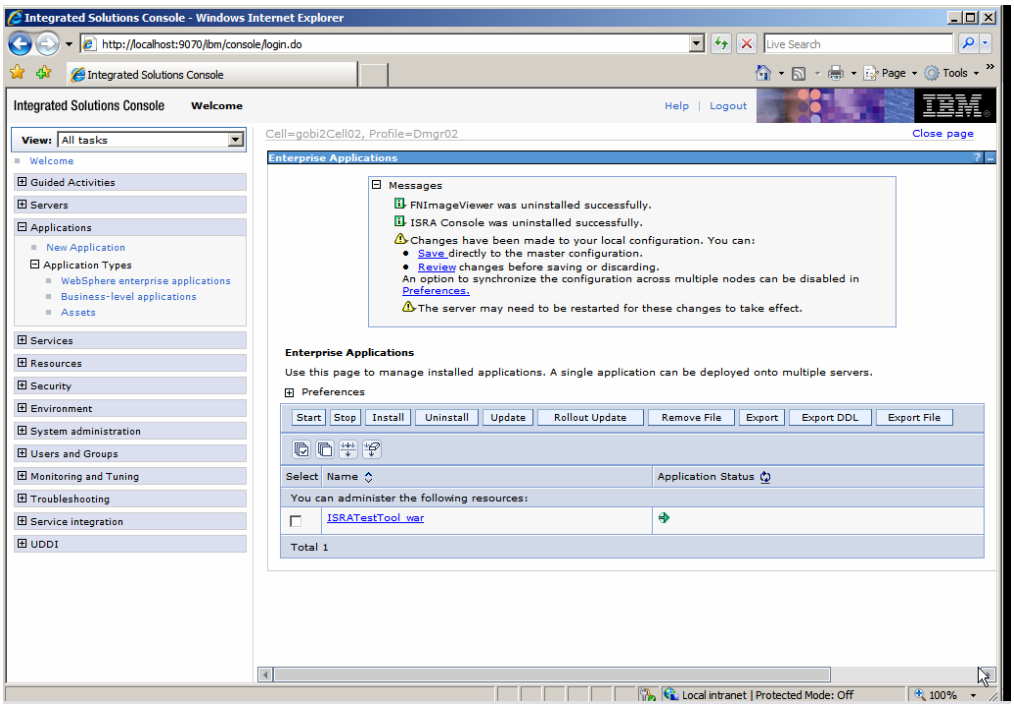
2. Select the **FnImageViewer** and **ISRA Console** check box. Click **Stop** to stop the ISRA Console and Sample Application. A message, as shown in the screen below, is displayed:



3. Select the **FnImageViewer** and **ISRA Console** check box and click **Uninstall**. A message, as shown in the screen below, is displayed:



4. Click **OK** to remove the application(s). The following screen appears:



5. Click **Save.** The application gets uninstalled.

Note	The user must undeploy the previous version of ISRA Console and Sample Application before deploying the latest version.

5

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 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 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 host file does not exist, create a new file using a preferred text editor.
3. For each IBM 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 an IBM FileNet domain and organization identifying the target IBM 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 an IBM FileNet library has a domain, fn_is, the organization is ibm, and its IP address is 123.45.6.78, the hosts file entry will be:

```
123.45.6.78  fnis-ibm-nch-server
```

Appendix A: ra.xml

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>IBM</vendor-name>
  <spec-version>1.0</spec-version>
  <eis-type>IBM FileNet Image Services</eis-type>
  <version>3.4.0</version>
  <license>
    <license-required>false</license-required>
  </license>
<resourceadapter>
    <managedconnectionfactory-
class>com.filenet.is.ra.spi.FN_IS_SpiManagedConnectionFactory</managedc
onnectionfactory-class>
    <connectionfactory-
interface>javax.resource.cci.ConnectionFactory</connectionfactory-
interface>
    <connectionfactory-impl-
class>com.filenet.is.ra.cci.FN_IS_CciConnectionFactory</connectionfacto
ry-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>IBM</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>
<!-- Added by IBM for caching of groups only-->
    <config-property>
      <description>Security cache mode(1-caches users and groups  2-
caches groups only)</description>
      <config-property-name>SecurityCacheMode</config-property-name>
      <config-property-type>java.lang.Integer</config-property-type>
      <config-property-value>1</config-property-value>
    </config-property>

   <!-- Added by IBM for selective metadata cache refresh-->
    <config-property>
      <description>Selective metadata refresh(0-No refresh  1-printer
cache 2-doc class cache 4-key fields cache 8-menu values cache
)</description>
      <config-property-name>MetaDataCacheRefreshMode</config-property-
name>
      <config-property-type>java.lang.Integer</config-property-type>
      <config-property-value>15</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>IBM 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 3.4.0 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>ISRA instance that is currently being deployed on a
single machine; Min Value = 1, Max Value = 100</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-No Logging; 1-File Logging</description>
      <config-property-name>RPCLogging</config-property-name>
      <config-property-type>java.lang.Integer</config-property-type>
      <config-property-value>0</config-property-value>
    </config-property>
 <config-property>
      <description>Codepage for ISRA</description>
      <config-property-name>ClientCodepage</config-property-name>
      <config-property-type>java.lang.String</config-property-type>
      <config-property-value>cp1250</config-property-value>
   </config-property>
<config-property>
      <description>Set this flag to true if your application displays
the dates returned from ISRA in GMT Timezone</description>
      <config-property-name>GMTEnabled</config-property-name>
      <config-property-type>java.lang.Boolean</config-property-type>
      <config-property-value>false</config-property-value>
 </config-property>
   <config-property>
      <description>Locale of the Image Services Server (two letter ISO
language code, for example en, de, ar, ja)</description>
      <config-property-name>ISLocale</config-property-name>
      <config-property-type>java.lang.String</config-property-type>
      <config-property-value>en</config-property-value>
 </config-property>
 <config-property>
   <description>It is a configurable parameter to Ignore [77,0,11 The
object is busy] error, incase of DocMigration</description>
   <config-property-name>IgnoreObjectBusyMsgInDocMigration</config-
property-name>
   <config-property-type>java.lang.Boolean</config-property-type>
   <config-property-value>false</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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