



# Image Services Resource Adapter

## Deployment Guide

For JBoss Enterprise Application Platform 7.x

Release 3.4 Fix pack 8

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# About This Manual

This manual provides information about configuring the IBM FileNet Image Services Resource Adapter (ISRA) version 3.4.0.x on JBoss Enterprise Application Platform (JBoss EAP). This manual also provides information about configuring the ISRA 3.4.0.x on JBoss EAP for the following use cases:

- **Use Case 1:** JBoss 7.X EAP configuration for multiple ISRA instances on Standalone deployment (refer [Understanding Use Case 1](#) section)
- **Use Case 2:** JBoss 7.X EAP configuration for multiple ISRA instances on domain deployment – part 1 (refer [Understanding Use Case 2](#) section)
- **Use Case 3:** JBoss 7.X EAP configuration for multiple ISRA instances on domain deployment – part 2 (refer [Understanding Use Case 3](#) section)

Refer the separate ISRA Installation Guide for Installing ISRA 3.4.0.x.

Please go to the Bookmarks (left pane in PDF) for the page navigation of this document.

## Conventions Used in the Document

The table lists the formatting conventions used in this document.

| <u>Conventions</u> | <u>Description</u>                                                                                                    |
|--------------------|-----------------------------------------------------------------------------------------------------------------------|
| Fixed Size font    | Used for commands entered at the system command prompt.                                                               |
| Arial font         | Used for important notes                                                                                              |
| <b>Bold</b>        | Occasionally used to refer to portions of user interface, such as the <b>Next</b> button or the <b>Install</b> 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

## Comments and Suggestions

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# ISRA Deployment

This chapter describes the deployment of ISRA on JBoss EAP 7.x.

The ISRA module is a set of Java interfaces/classes that implement J2EE Connector Architecture-specified contracts and the EIS specific functionality. ISRA plugs into a JBoss EAP 7.x in a modular manner.

## Deployment Requirements

This section lists the minimum software and hardware requirements for successful deployment of ISRA on JBoss EAP 7.x.

---

**Caution** Do not copy xml contents straight from the Deployment Guide. All the xml content related to the deployment of ISRA must be created manually or a valid existing file should be used.

---

## Hardware Requirements

- For additional information on JBoss system requirements, visit <https://access.redhat.com/articles/2026253>
- ISRA installation will require approximately 120 MB free disk space

## Software Requirements

- JBoss EAP 7.x on Red Hat Enterprise Linux 6.7, Microsoft Windows 2008 Server/R2, Microsoft Windows 2012 Server/R2, Oracle Solaris 10, HP-UX 11v3
- IBM FileNet 4.1 and above

## Deploying ISRA in a Standalone Environment

### Deploying ISRA.rar

The steps to deploy the **ISRA.rar** file are:

1. Extract **ra.xml** from **ISRA.rar**.
2. Change the value(s) for configurable properties in **ra.xml**. For more information, refer the [Configurable ra.xml Properties](#) section.
3. Update **ra.xml** in **ISRA.rar** with the new file.
4. Copy **ISRA.rar** to `<jboss installation directory>\standalone\deployments`.
5. Deploying ISRA is completed.

6. Next step is to complete the Mandatory steps necessary for ISRA. Refer to [Mandatory Requirements for ISRA](#) section before restarting the Application Server.

## Mandatory Requirements for ISRA

The mandatory requirements for ISRA 3.4.0 are:

1. Go to <jboss installation directory>/modules/system/layers/base. Add folders called as isra/main. Within the folder main, add listener.jar. Also create a module.xml file with the following contents:

```
<?xml version="1.0" encoding="UTF-8"?>
<module xmlns="urn:jboss:module:1.1" name="isra">
  <resources>
    <resource-root path="listener.jar"/>
  </resources>
  <dependencies>
  </dependencies>
</module>
```

2. Next, you have to modify the standalone.xml file for standalone deployment.

Location of standalone.xml=> <jboss installation directory>/standalone/configuration

The changes that you have to make in standalone.xml file are as follows:

- a. 

```
<subsystem xmlns="urn:jboss:domain:resource-
adapters:4.0">
  <resource-adapters>
    <resource-adapter id="ISRA.rar">
      <archive>
        ISRA.rar
      </archive>
      <transaction-support>NoTransaction</transaction-
support>
      <connection-definitions>
        <connection-definition class-
name="com.filenet.is.ra.spi.FN_IS_SpiManagedCo
nnectionFactory" jndi- name="java:/ISCF"
enabled="true" pool-name="java:/ISCF">
          <pool>
            <min-pool-size>0</min-pool-size>
            <max-pool-size>10</max-pool-size>
          </pool>
          <security>
            <application/>
          </security>
        </connection-definition>
      </connection-definitions>
    </resource-adapter>
  </resource-adapters>
</subsystem>
```

- b. 

```
<subsystem xmlns="urn:jboss:domain:ee:1.1">
  <global-modules>
    <module name="isra" slot="main"/>
  </global-modules>
  <ear-subdeployments-isolated>true</ear-
subdeployments-isolated>
  <spec-descriptor-property-replacement>false</spec-
descriptor-property-replacement>
  <jboss-descriptor-property-replacement>true</jboss-
descriptor-property-replacement>
</subsystem>
```
  - c. 

```
<cached-connection-manager debug="true" error="false"/>
```
3. Before deploying ISRA.rar, make sure you make the following changes to ra.xml file:

Change the credential interface parameter as given below:

```
<authentication-mechanism>
  <authentication-mechanism-
type>BasicPassword</authentication- mechanism-type>
  <credential-
interface>javax.resource.spi.security.PasswordCredent
ial</credential-interface>
</authentication-mechanism>
```

For more information on this, please refer to the following migration guide by Jboss: [https://access.redhat.com/documentation/en-us/red\\_hat\\_jboss\\_enterprise\\_application\\_platform/7.0/html/migration\\_guide/](https://access.redhat.com/documentation/en-us/red_hat_jboss_enterprise_application_platform/7.0/html/migration_guide/)

### 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** <sup>1</sup> "ISRALock.0" inside that folder. The counter "0-9 and a-z" 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 "R<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 shut down).

<sup>1</sup> 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).

See [Configurable ra.xml Properties](#) section below for “[DeploymentInstance](#)”  
[property setting](#).

## ISRA Configuration

This chapter describes how to configure ISRA on JBoss EAP 7.x, after it is deployed.

### Configuring Deployed ISRA

This section describes how to edit the ISRA deployment descriptor:

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

To edit the ISRA deployment descriptor:

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

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

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

2. Select the **ra.xml** file in the META-INF folder and edit it in a preferred text editor.

Refer [Configurable ra.xml Properties](#) section for more information on setting values for the configurable properties.

---

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

---

3. After modifying, save the **ra.xml** file in the same folder.
4. To reconstruct the **ISRA.rar** file, enter the command from ISRATemp directory `jar -cvf ISRA.rar *`

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

# Changing ISRA Specific Parameters

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

### OrganizationName

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

## 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                        |

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

## LoggingMode

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

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

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

## PageBufferSize

This is an integer value specified in kilobytes (KB). It specifies the chunk size used by ISRA 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, 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.

## SecurityCacheMode

This parameter can take two values:

| <u>Value</u> | <u>Setting</u>               |
|--------------|------------------------------|
| 1            | Caches both users and Groups |
| 2            | Caches only groups           |

## MetaDataCacheRefreshMode

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

| <u>Value</u> | <u>Setting</u>                                                            |
|--------------|---------------------------------------------------------------------------|
| 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. 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 the 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<sup>2</sup> generated at run time. This ensures a unique name of the log file for each instance of ISRA.

## 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

---

<sup>2</sup> 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.

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'.

The value of the property for LDAP implementation for Active directory is com.filenet.is.ra.fnis.FN\_IS\_ActiveDirImpl and for Novell NDS 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 single JBoss instance (installation).

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.

RXXYYYYZ@<ip-address>

Where,

XX = takes values from 1 to 100. If there is only one instance then it defaults to 1. Else the value has to be set to the Number of Deployment instances.

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.

## 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 for 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    | <b>Cp1252</b>          |
| ISO8859_2    | <b>Cp1250</b>          |
| ISO8859_5    | <b>Cp1251</b>          |
| ISO8859_6    | <b>Cp1256</b>          |
| ISO8859_7    | <b>Cp1253</b>          |
| ISO8859_8    | <b>Cp1255</b>          |
| ISO8859_9    | <b>Cp1254</b>          |
| ISO8859_13   | <b>Cp1257</b>          |

---

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

---

## GMTEnable flag<sup>3</sup>

This parameter takes two values:

1. true

---

<sup>3</sup> GMTEnable flag is available from ISRA 3.4 FP3 and above.

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 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

### 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 JBoss EAP 7.x.

---

**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. Extract **ISRASampleWEB.war** from **ISRAConsole.ear**.
2. Extract **web.xml** from **ISRASampleWEB.war**.
3. Add distributable element just before <display-name> element in web.xml.  
For example:
 

```
<web-app >
    <distributable/>
    <!-- ... -->
</web-app>
```
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. Update **web.xml** in **ISRASampleWEB.war**.
7. Update **ISRASampleWEB.war** in **ISRAConsole.ear**.

---

#### Note

**Important:** The MANIFEST.mf file present within ISRAConsole.ear has to be modified for the deployment to be successful. Add the following line into the MANIFEST.mf file.

**Dependencies:** deployment.ISRA.rar

Update ISRAConsole.ear before deployment.

---

## Deploying ISRA Console and Sample Application in Standalone Environment

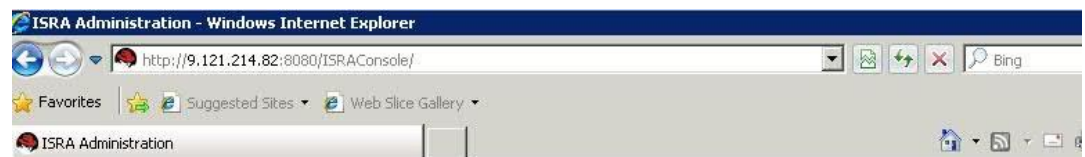
This section describes how to deploy the “ISRA console and Sample” Application on a JBoss Server to access ISRA in a managed environment. It is assumed that ISRA is deployed and configured for the target IS. To deploy the ISRA Console and Sample Application, copy **ISRAConsole.ear** to <jboss installation directory>\standalone\deployments.

### 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://localhost:8080/ISRAConsole/>



#### ISRA Administration Console

JNDI Name:

ISCF  
ISCF1

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 Console and Sample Application.

## ISRA Administration Console

| <p><b>Set ISRA Logging</b></p> <p> <input type="radio"/> No Logging<br/> <input type="radio"/> Warning and Exceptions Logging<br/> <input checked="" type="radio"/> Information Logging<br/> <input type="radio"/> Debug Logging         </p> <p><input checked="" type="checkbox"/> Enable RPC Logging</p> <p><input type="button" value="Change Logging Level"/></p> <p><input type="button" value="View JVM Statistics"/></p> <p><a href="#">ISRA Sample Application</a></p> <p><a href="#">Main Page</a></p> | <p><b>ISRA Release Version : ISRA_3.4_FixPack_8 (Build:isr400.049.001)</b></p> <p><b>ISCF: Custom Properties defined in ra.xml</b></p> <table border="1"> <thead> <tr> <th>Custom Property</th> <th>Value</th> </tr> </thead> <tbody> <tr><td>IS Domain Name</td><td>ISRAIS42</td></tr> <tr><td>IS Organisation Name:</td><td>IBM</td></tr> <tr><td>Product Name</td><td>IBM FileNet Image Services Resource Adapter</td></tr> <tr><td>Product Version</td><td>ISRA 3.4.0 Enterprise</td></tr> <tr><td>Cache Refresh Interval (in minutes):</td><td>30</td></tr> <tr><td>Deployment Instance:</td><td>0</td></tr> <tr><td>Client Code Page:</td><td>Cp1252</td></tr> <tr><td>Char Set Encoding:</td><td>ISO8859_1</td></tr> <tr><td>Page Buffer Size (Bytes):</td><td>65536</td></tr> <tr><td>Log File Name:</td><td>C:\jboss-eap-7.0\bin\ISRA_0_0.log</td></tr> <tr><td>RPC Log File Name:</td><td>C:\jboss-eap-7.0\bin\ISRA_0_0_RPC.log</td></tr> <tr><td>RPC Logging Mode:</td><td>1</td></tr> <tr><td>Logging Level:</td><td>1</td></tr> <tr><td>Logging Mode:</td><td>3</td></tr> <tr><td>Log File Size (Bytes):</td><td>5242880</td></tr> <tr><td>Security cache mode :</td><td>1</td></tr> <tr><td>Meta Data Cache Mode:</td><td>15</td></tr> <tr><td>LDAP Implementation Class Name:</td><td>com.filenet.is.ra.fnis.FN_IS_IPlanetImpl</td></tr> <tr><td>LDAP Implementation Class String:</td><td>filenetserver;389;ou=filenet,ou=people,dc=filenetroot</td></tr> <tr><td>Inherent Login</td><td>0</td></tr> </tbody> </table> | Custom Property | Value | IS Domain Name | ISRAIS42 | IS Organisation Name: | IBM | Product Name | IBM FileNet Image Services Resource Adapter | Product Version | ISRA 3.4.0 Enterprise | Cache Refresh Interval (in minutes): | 30 | Deployment Instance: | 0 | Client Code Page: | Cp1252 | Char Set Encoding: | ISO8859_1 | Page Buffer Size (Bytes): | 65536 | Log File Name: | C:\jboss-eap-7.0\bin\ISRA_0_0.log | RPC Log File Name: | C:\jboss-eap-7.0\bin\ISRA_0_0_RPC.log | RPC Logging Mode: | 1 | Logging Level: | 1 | Logging Mode: | 3 | Log File Size (Bytes): | 5242880 | Security cache mode : | 1 | Meta Data Cache Mode: | 15 | LDAP Implementation Class Name: | com.filenet.is.ra.fnis.FN_IS_IPlanetImpl | LDAP Implementation Class String: | filenetserver;389;ou=filenet,ou=people,dc=filenetroot | Inherent Login | 0 |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-------|----------------|----------|-----------------------|-----|--------------|---------------------------------------------|-----------------|-----------------------|--------------------------------------|----|----------------------|---|-------------------|--------|--------------------|-----------|---------------------------|-------|----------------|-----------------------------------|--------------------|---------------------------------------|-------------------|---|----------------|---|---------------|---|------------------------|---------|-----------------------|---|-----------------------|----|---------------------------------|------------------------------------------|-----------------------------------|-------------------------------------------------------|----------------|---|
| Custom Property                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Value                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                 |       |                |          |                       |     |              |                                             |                 |                       |                                      |    |                      |   |                   |        |                    |           |                           |       |                |                                   |                    |                                       |                   |   |                |   |               |   |                        |         |                       |   |                       |    |                                 |                                          |                                   |                                                       |                |   |
| IS Domain Name                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | ISRAIS42                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                 |       |                |          |                       |     |              |                                             |                 |                       |                                      |    |                      |   |                   |        |                    |           |                           |       |                |                                   |                    |                                       |                   |   |                |   |               |   |                        |         |                       |   |                       |    |                                 |                                          |                                   |                                                       |                |   |
| IS Organisation Name:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | IBM                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                 |       |                |          |                       |     |              |                                             |                 |                       |                                      |    |                      |   |                   |        |                    |           |                           |       |                |                                   |                    |                                       |                   |   |                |   |               |   |                        |         |                       |   |                       |    |                                 |                                          |                                   |                                                       |                |   |
| Product Name                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | IBM FileNet Image Services Resource Adapter                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                 |       |                |          |                       |     |              |                                             |                 |                       |                                      |    |                      |   |                   |        |                    |           |                           |       |                |                                   |                    |                                       |                   |   |                |   |               |   |                        |         |                       |   |                       |    |                                 |                                          |                                   |                                                       |                |   |
| Product Version                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | ISRA 3.4.0 Enterprise                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                 |       |                |          |                       |     |              |                                             |                 |                       |                                      |    |                      |   |                   |        |                    |           |                           |       |                |                                   |                    |                                       |                   |   |                |   |               |   |                        |         |                       |   |                       |    |                                 |                                          |                                   |                                                       |                |   |
| Cache Refresh Interval (in minutes):                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 30                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                 |       |                |          |                       |     |              |                                             |                 |                       |                                      |    |                      |   |                   |        |                    |           |                           |       |                |                                   |                    |                                       |                   |   |                |   |               |   |                        |         |                       |   |                       |    |                                 |                                          |                                   |                                                       |                |   |
| Deployment Instance:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                 |       |                |          |                       |     |              |                                             |                 |                       |                                      |    |                      |   |                   |        |                    |           |                           |       |                |                                   |                    |                                       |                   |   |                |   |               |   |                        |         |                       |   |                       |    |                                 |                                          |                                   |                                                       |                |   |
| Client Code Page:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Cp1252                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                 |       |                |          |                       |     |              |                                             |                 |                       |                                      |    |                      |   |                   |        |                    |           |                           |       |                |                                   |                    |                                       |                   |   |                |   |               |   |                        |         |                       |   |                       |    |                                 |                                          |                                   |                                                       |                |   |
| Char Set Encoding:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | ISO8859_1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                 |       |                |          |                       |     |              |                                             |                 |                       |                                      |    |                      |   |                   |        |                    |           |                           |       |                |                                   |                    |                                       |                   |   |                |   |               |   |                        |         |                       |   |                       |    |                                 |                                          |                                   |                                                       |                |   |
| Page Buffer Size (Bytes):                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 65536                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                 |       |                |          |                       |     |              |                                             |                 |                       |                                      |    |                      |   |                   |        |                    |           |                           |       |                |                                   |                    |                                       |                   |   |                |   |               |   |                        |         |                       |   |                       |    |                                 |                                          |                                   |                                                       |                |   |
| Log File Name:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | C:\jboss-eap-7.0\bin\ISRA_0_0.log                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                 |       |                |          |                       |     |              |                                             |                 |                       |                                      |    |                      |   |                   |        |                    |           |                           |       |                |                                   |                    |                                       |                   |   |                |   |               |   |                        |         |                       |   |                       |    |                                 |                                          |                                   |                                                       |                |   |
| RPC Log File Name:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | C:\jboss-eap-7.0\bin\ISRA_0_0_RPC.log                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                 |       |                |          |                       |     |              |                                             |                 |                       |                                      |    |                      |   |                   |        |                    |           |                           |       |                |                                   |                    |                                       |                   |   |                |   |               |   |                        |         |                       |   |                       |    |                                 |                                          |                                   |                                                       |                |   |
| RPC Logging Mode:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                 |       |                |          |                       |     |              |                                             |                 |                       |                                      |    |                      |   |                   |        |                    |           |                           |       |                |                                   |                    |                                       |                   |   |                |   |               |   |                        |         |                       |   |                       |    |                                 |                                          |                                   |                                                       |                |   |
| Logging Level:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                 |       |                |          |                       |     |              |                                             |                 |                       |                                      |    |                      |   |                   |        |                    |           |                           |       |                |                                   |                    |                                       |                   |   |                |   |               |   |                        |         |                       |   |                       |    |                                 |                                          |                                   |                                                       |                |   |
| Logging Mode:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                 |       |                |          |                       |     |              |                                             |                 |                       |                                      |    |                      |   |                   |        |                    |           |                           |       |                |                                   |                    |                                       |                   |   |                |   |               |   |                        |         |                       |   |                       |    |                                 |                                          |                                   |                                                       |                |   |
| Log File Size (Bytes):                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 5242880                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                 |       |                |          |                       |     |              |                                             |                 |                       |                                      |    |                      |   |                   |        |                    |           |                           |       |                |                                   |                    |                                       |                   |   |                |   |               |   |                        |         |                       |   |                       |    |                                 |                                          |                                   |                                                       |                |   |
| Security cache mode :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                 |       |                |          |                       |     |              |                                             |                 |                       |                                      |    |                      |   |                   |        |                    |           |                           |       |                |                                   |                    |                                       |                   |   |                |   |               |   |                        |         |                       |   |                       |    |                                 |                                          |                                   |                                                       |                |   |
| Meta Data Cache Mode:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 15                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                 |       |                |          |                       |     |              |                                             |                 |                       |                                      |    |                      |   |                   |        |                    |           |                           |       |                |                                   |                    |                                       |                   |   |                |   |               |   |                        |         |                       |   |                       |    |                                 |                                          |                                   |                                                       |                |   |
| LDAP Implementation Class Name:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | com.filenet.is.ra.fnis.FN_IS_IPlanetImpl                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                 |       |                |          |                       |     |              |                                             |                 |                       |                                      |    |                      |   |                   |        |                    |           |                           |       |                |                                   |                    |                                       |                   |   |                |   |               |   |                        |         |                       |   |                       |    |                                 |                                          |                                   |                                                       |                |   |
| LDAP Implementation Class String:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | filenetserver;389;ou=filenet,ou=people,dc=filenetroot                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                 |       |                |          |                       |     |              |                                             |                 |                       |                                      |    |                      |   |                   |        |                    |           |                           |       |                |                                   |                    |                                       |                   |   |                |   |               |   |                        |         |                       |   |                       |    |                                 |                                          |                                   |                                                       |                |   |
| Inherent Login                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                 |       |                |          |                       |     |              |                                             |                 |                       |                                      |    |                      |   |                   |        |                    |           |                           |       |                |                                   |                    |                                       |                   |   |                |   |               |   |                        |         |                       |   |                       |    |                                 |                                          |                                   |                                                       |                |   |

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.

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



### JVM Memory Statistics

Max Memory (in MB):989  
 Total Memory (in MB):989  
 Free Memory (in MB):719  
 Used Memory (in MB):270

## Deploying IBM FileNet Image Viewer in Standalone Environment

This section describes how to deploy the IBM FileNet Image Viewer, used by the ISRA Sample Application to display documents of specific mime types (TIFF, JPEG and BMP). Skip this section, if configuring IBM FileNet Image Viewer with the ISRA Sample application is not required. To deploy IBM FileNet Image Viewer, copy **FNImageViewer.ear** to `<jboss installation directory>\standalone\deployments` directory.

## 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; it needs to be manually enabled.

### 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 on 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:
  1. Open a browser window.
  2. Select **Tools > Internet Options...**
  3. Click the **Programs** tab and deselect the check box corresponding to "Internet Explorer should check to see whether it is the default browser".
  4. Click **Apply**.
  5. 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 and access the ISRA Sample Application are:

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

For example: `http://localhost:8080/ISRA/`

The Web application context\_root is case sensitive. On a JBoss Server, the default port number is 8080. The default context\_root of the Sample Application is ISRA.

The Login screen appears:

ISRA 3.4.0 Sample Application

Search Browse Queue Maintenance Meta Data

JNDI Name : ISCF  
ISCF  
ISCF1

UserName : SysAdmin

Password :

Login

☐ LDAP Authentication

Disclaimer:  
ISRA provides sample code for the purposes of demonstrating how to use the various APIs that are part of ISRA. All of the code that is provided is being explained is not suitable for any purpose other than the sample understanding of Java and how it should be used. As such, we do not make any attempt to make the sample code "scale" or "perform" or other intent made or implied, and certainly, no warranty with regard to scalability or performance is made or implied.

ISRA Sample Version: 3.4 Fixpack 8 InterimFix 1

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

ISRA 3.4.0 Sample Application (Enterprise)

Search Browse Queue Maintenance Meta Data

User: SysAdmin JNDI Name: java:ISCF ISDomain: idmqz29b

Search for Documents:

Query: select F\_DOCUMENT, F\_DOCFORMAT, F\_PAGES  
from Fndocument where F\_DOCUMENT > 1

Folder Name:

Max Rows: 15

Search Documents

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

## 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 parameters options:

| Option               | Description                                                                                                                                |
|----------------------|--------------------------------------------------------------------------------------------------------------------------------------------|
| s <server>           | LDAP server name or IP address, required value.                                                                                            |
| p <port>             | LDAP port number, optional value, 389 is default.                                                                                          |
| d <binddn>           | LDAP administrator bind domain name (DN), required value.                                                                                  |
| w <bindpw>           | LDAP administrator bind password, required value.                                                                                          |
| t <ldap server type> | Required value for server type:<br>msft – Microsoft Active Directory<br>sun – Sun One Directory (iPlanet)<br>nov – Novell eDirectory(NDS). |

| Option                  | Description                                                |
|-------------------------|------------------------------------------------------------|
|                         | lbn – 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.                       |
| l                       | 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:

| <i>/?</i>                | 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 /hIMGSESV: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.

## Undeployment

This section describes the undeployment procedure to remove ISRA and the Sample Application from the JBoss Server.

### Undeploying ISRA in a Standalone Environment

To undeploy ISRA, delete the **ISRA.rar** file from the directory `<jboss installation directory>\standalone\deployments`.

### Undeploying ISRA Console and Sample Application in a Standalone Environment

To undeploy ISRA Console and Sample Application, delete the `ISRAConsole.ear` file from the directory `<jboss installation directory>\standalone\deployments`.

Similarly, `FNImageViewer` can also be undeployed.

---

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

---

## Use Cases

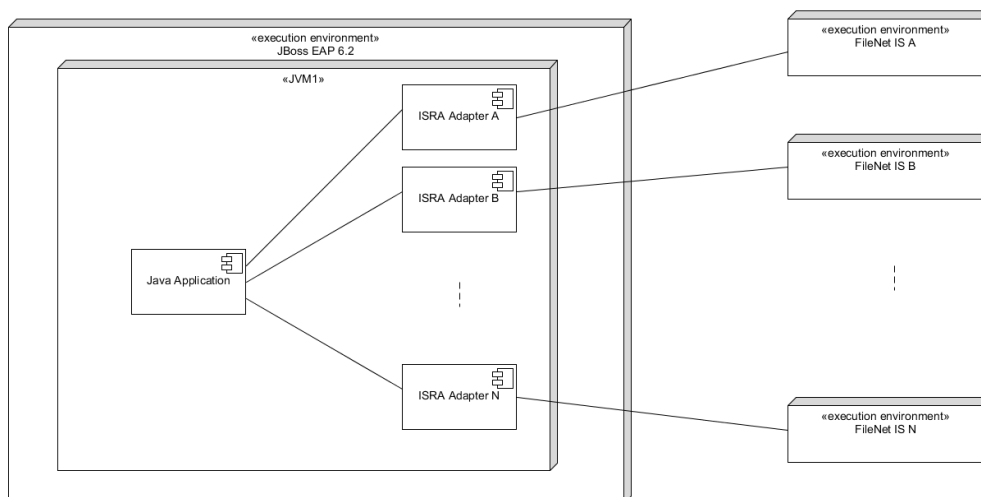
This chapter provides information about configuring the ISRA 3.4.0.x on JBoss EAP for the following use cases:

- **Use Case 1:** JBoss 7.X EAP configuration for multiple ISRA instances on Standalone deployment (refer [Understanding Use Case 1](#) section)
- **Use Case 2:** JBoss 7.X EAP configuration for multiple ISRA instances on domain deployment – part 1 (refer [Understanding Use Case 2](#) section)
- **Use Case 3:** JBoss 7.X EAP configuration for multiple ISRA instances on domain deployment – part 2 (refer [Understanding Use Case 3](#) section)

### Understanding Use Case 1

This section explains the **Use Case 1** and describes the configurations needed for **Use Case 1**.

You want to access various Image Services servers through ISRA (ISRA\_Accounts.rar, ISRA\_Finance.rar, ISRA\_Administration.rar, and ISRA\_Insurance.rar) data by using one web application WebApplication.ear on JBoss standalone deployment (only one server instance).



Example: The following are four IS servers needed to deploy on JBoss standalone deployment.

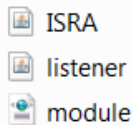
| Image Services Server | ISRA | ISRA Connection Factories |
|-----------------------|------|---------------------------|
|-----------------------|------|---------------------------|

| Image Services Server | ISRA                                | ISRA Connection Factories |
|-----------------------|-------------------------------------|---------------------------|
| IS_Accounts           | ISRA_Accounts.rar (ISRA.rar)        | ISRA_Acc (ISCF)           |
| IS_Finance            | ISRA_Finance.rar (ISRA1.rar)        | ISRA_Fin (ISCF1)          |
| IS_Administration     | ISRA_Administration.rar (ISRA2.rar) | ISRA_Adm (ISCF2)          |
| IS_Insurance          | ISRA_Insurance.rar (ISRA3.rar)      | ISRA_Ins (ISCF3)          |

## Mandatory Configuration Changes Required in JBoss 7.X EAP

The mandatory configuration changes that are required in JBoss 7.X EAP are:

1. Extract ISRA.jar from isra.rar.
2. Go to <jboss installation directory>/modules/system/layers/base. Add folders called as isra/main. Within the folder main, add listener.jar and ISRA.jar.



Also, create a module.xml file with the following contents:

```
<?xml version="1.0" encoding="UTF-8"?>
<module xmlns="urn:jboss:module:1.1" name="isra">
  <resources>
    <resource-root path="ISRA.jar"/>
    <resource-root path="listener.jar"/>
  </resources>
  <dependencies>
    <module name="javax.resource.api"/>
    <module name="javax.api"/>
    <module name="javax.jms.api"/>
  </dependencies>
</module>
```

3. Next, you have to modify the standalone.xml file for standalone deployment.  
Location of standalone.xml=> <jboss installed directory>/standalone/configuration

The changes that you have to make in standalone.xml file are as follows:

- a) 

```
<subsystem xmlns="urn:jboss:domain:resource-adapters:4.0">
  <resource-adapters>
    <resource-adapter id="isra.rar">
      <archive>
        ISRA.rar
      </archive>
      <transaction-support>NoTransaction</transaction-support>
      <connection-definitions>
```

```

        <connection-definition class-
name="com.filenet.is.ra.spi.FN_IS_SpiManagedConnectionFactory" jndi-
name="ISCF" enabled="true" pool-name="ISCF">
        <pool>
            <min-pool-size>0</min-pool-size>
            <max-pool-size>10</max-pool-size>
        </pool>
        <security>
            <application/>
        </security>
        <timeout>
            <blocking-timeout-millis>30000</blocking-timeout-millis>
            <idle-timeout-minutes>5</idle-timeout-minutes>
        </timeout>
        <validation>
            <background-validation>true</background-validation>
        </validation>
    </connection-definition>
    <connection-definition class-name="
com.filenet.is.ra.spi.FN_IS_SpiManagedConnectionFactory" jndi-
name="ISCF1" enabled="true" pool-name="ISCF1">
        <pool>
            <min-pool-size>0</min-pool-size>
            <max-pool-size>10</max-pool-size>
        </pool>
        <security>
            <application/>
        </security>
        <timeout>
            <blocking-timeout-millis>30000</blocking-timeout-millis>
            <idle-timeout-minutes>5</idle-timeout-minutes>
        </timeout>
        <validation>
            <background-validation>true</background-validation>
        </validation>
    </connection-definition>
</connection-definitions>
</resource-adapter>
<resource-adapter id="ISRA1.rar">
    <archive>
        ISRA1.rar
    </archive>
    <transaction-support>NoTransaction</transaction-support>
    <connection-definitions>
        <connection-definition class-
name="com.filenet.is.ra.spi.FN_IS_SpiManagedConnectionFactory" jndi-
name="ISCF2" enabled="true" pool-name="ISCF2">
            <pool>
                <min-pool-size>0</min-pool-size>
                <max-pool-size>10</max-pool-size>
            </pool>
            <security>
                <application/>
            </security>
            <timeout>
                <blocking-timeout-millis>30000</blocking-timeout-millis>

```

```

        <idle-timeout-minutes>5</idle-timeout-minutes>
    </timeout>
    <validation>
        <background-validation>true</background-validation>
    </validation>
</connection-definition>
</connection-definitions>
</resource-adapter>
</resource-adapters>
</subsystem>

```

- b) <subsystem xmlns="urn:jboss:domain:ee:4.0">  
 <global-modules>  
 <module name="isra" slot="main"/>  
 </global-modules>  
 <ear-subdeployments-isolated>true</ear-subdeployments-isolated>  
 <spec-descriptor-property-replacement>false</spec-descriptor-property-replacement>  
 <jboss-descriptor-property-replacement>true</jboss-descriptor-property-replacement>  
 <annotation-property-replacement>false</annotation-property-replacement>  
 </subsystem>
- c) <cached-connection-manager debug="true" error="false"/>

## Deploying ISRA.rar

The steps to deploy the **ISRA.rar** file are:

1. Extract ra.xml from ISRA.rar.
2. Change the value(s) for configurable properties in ra.xml.
3. Update **ra.xml** in **ISRA.rar** with the new file.
4. Copy **ISRA.rar** to <jboss installation directory>\standalone\deployments.
5. Deploying ISRA is completed.

---

**Note** ISRA.rar, ISRA1.rar ....ISRA<sub>n</sub>.rar should not contain ISRA.jar and have the following structure.

---

| Name                                                                                            | Size  |
|-------------------------------------------------------------------------------------------------|-------|
|  ra.xml      | 9 263 |
|  MANIFEST.MF | 103   |

## Configuring Sample Application for Use Case 1

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)

---

**Note** 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.

---

The JNDI names of connection factories mentioned in this properties file are used by sample application to display on the login page. Three JNDI names "ISCF", "ISCF1" and "ISCF2" are mentioned here, as an example.

```
jndinames=ISCF,ISCF1,ISCF2
location of jndiISRA is <jboss installation directory>/bin
```

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 these steps for extracting **web.xml** from **ISRASampleWEB.war**:

1. Extract **ISRASampleWEB.war** from **ISRAConsole.ear**.
2. Extract **web.xml** from **ISRASampleWEB.war**.
3. Add distributable element just before <display-name> element in web.xml.

For example:

```
<web-app >
    <distributable/>
    <!-- ... -->
</web-app>
```

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 determines whether to honor the print/view preference set in the **web.xml** or to take the value returned by ViewOne. The 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>
```

6. Update **web.xml** in **ISRASampleWEB.war**.

7. Update **ISRASampleWEB.war** in **ISRAConsole.ear**.

---

**Important:** Irrespective of whether it is a standalone deployment or cluster deployment, the MANIFEST.mf file present within ISRAConsole.ear has to be modified for the deployment to be successful. Add the following line into the MANIFEST.mf file.

**Dependencies:** deployment.ISRA.rar, deployment.ISRA1.rar

Here, two instances of dependencies are used as an example.

Update ISRAConsole.ear before deployment.

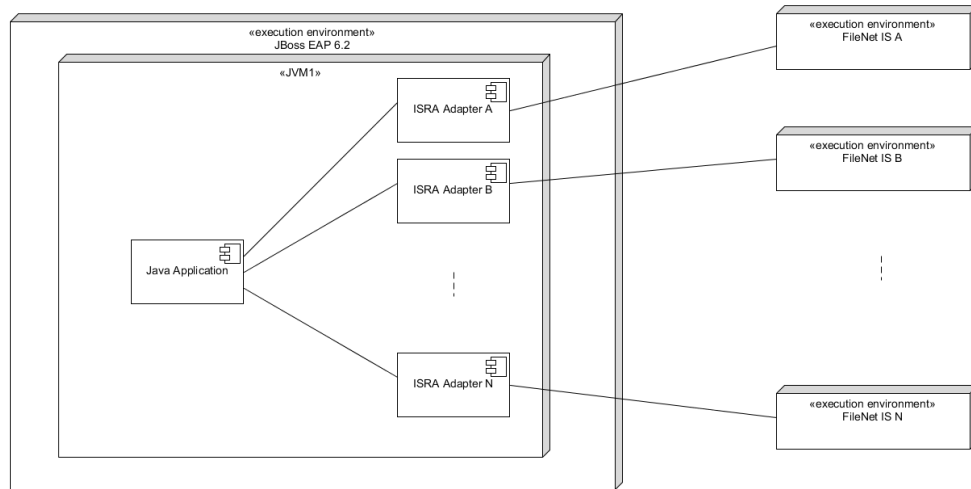
---

8. Access ISRAConsole using URL <http://localhost:8080/ISRAConsole> and ISRA sample application <http://localhost:8080/ISRA>.

## Understanding Use Case 2

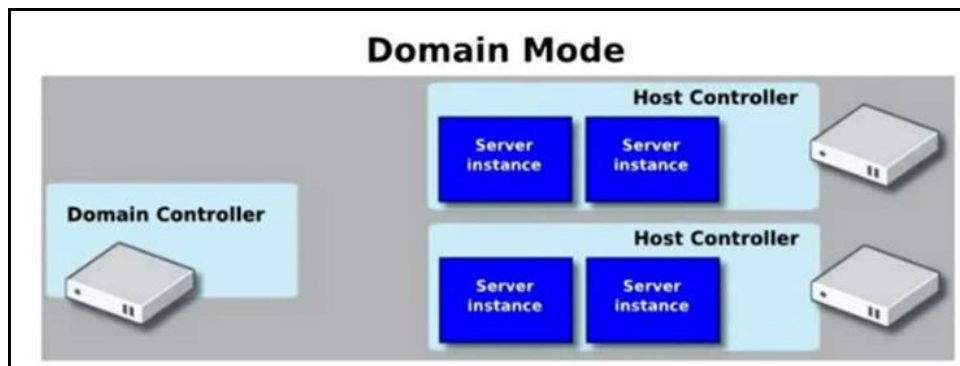
This section explains the **Use Case 2** and describes the configurations needed for **Use Case 2**.

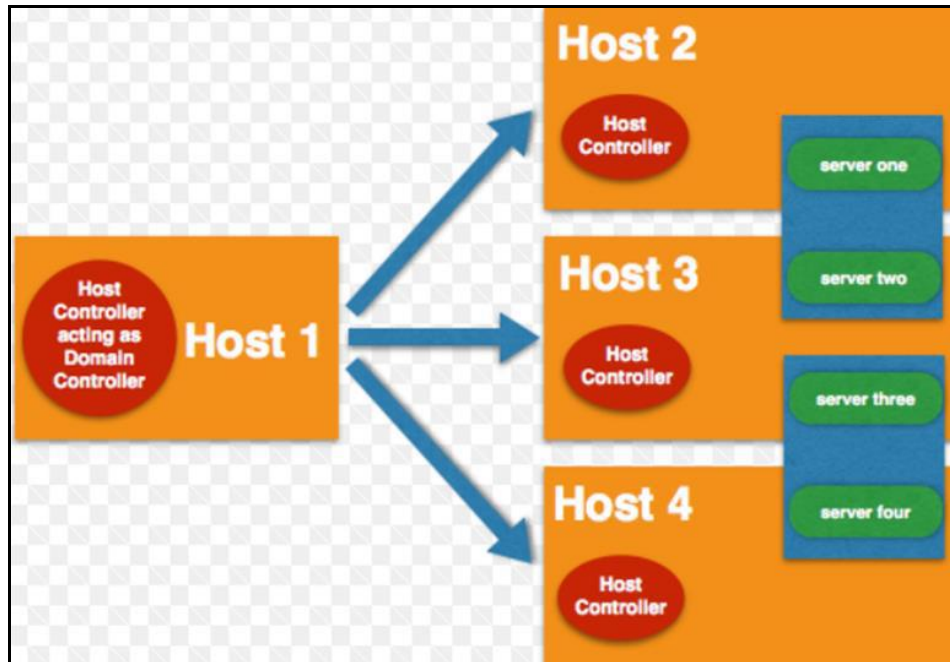
You want to access various Image Services servers through ISRA (ISRA\_Accounts.rar, ISRA\_Finance.rar, ISRA\_Administration.rar, and ISRA\_Insurance.rar) data by using one web application WebApplication.ear on JBoss domain mode deployment.



In this case, you have only one domain controller (Host 1), which acts as both domain controller as well as host controller.

The managed domain operating mode allows for management of multiple JBoss EAP 7 instances from a single control point. Centrally managed JBoss EAP 7 server collections are known as members of a domain. All JBoss EAP 7 instances in a domain share a common management policy. A domain consists of one domain controller, one or more host controller(s), and zero or more server groups per host.



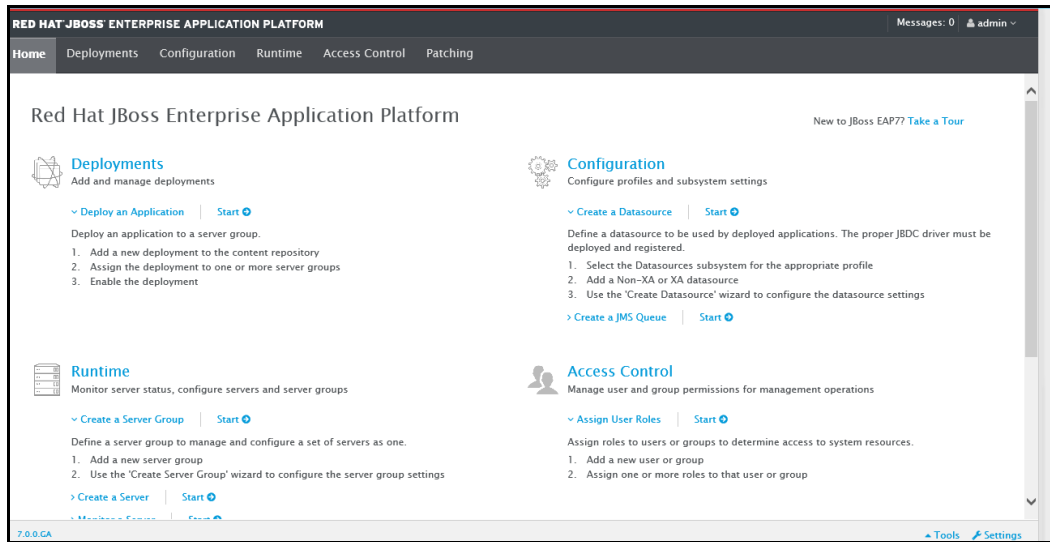


Example: The following are four IS servers needed to deploy on JBoss domain mode deployment.

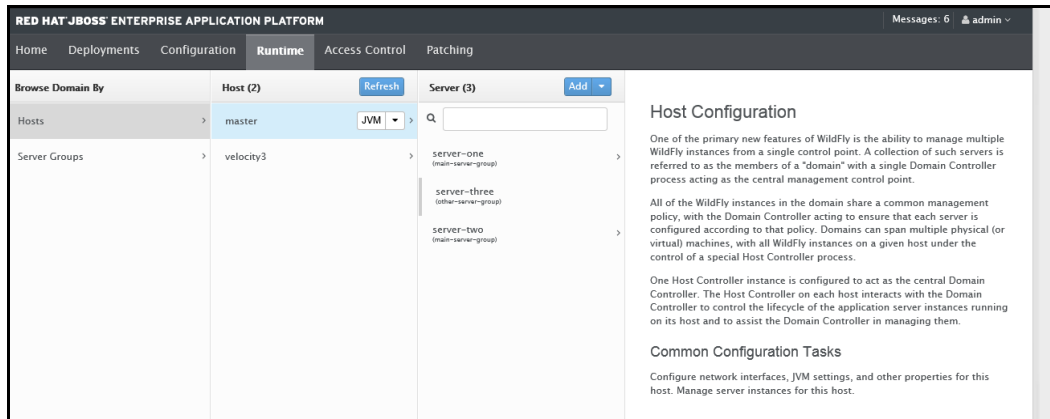
| Image Services Server | ISRA                                | ISRA Connection Factories |
|-----------------------|-------------------------------------|---------------------------|
| IS_Accounts           | ISRA_Accounts.rar (ISRA.rar)        | ISRA_Acc (ISCF)           |
| IS_Finance            | ISRA_Finance.rar (ISRA1.rar)        | ISRA_Fin (ISCF1)          |
| IS_Administration     | ISRA_Administration.rar (ISRA2.rar) | ISRA_Adm (ISCF2)          |
| IS_Insurance          | ISRA_Insurance.rar (ISRA3.rar)      | ISRA_Ins (ISCF3)          |

Perform the following steps:

1. Create JBoss management user by running **add-user.bat** / **add-user.sh**.
2. Go to <Jboss installation directory>\bin. Start **domain.bat** in Windows and **domain.sh** in Linux.
3. Give the URL <http://localhost:9990/console> in your web browser.
4. Log in to the Management Console with your JBoss credentials. The following screen appears.



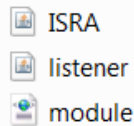
5. Select **Runtime > Hosts**, and then select **JVM** from the drop-down list as displayed in the following screen.



## Mandatory Configuration Changes Required in JBoss 7.X EAP

The mandatory configuration changes that are required in JBoss 7.X EAP are:

1. Extract ISRA.jar from isra.rar.
2. Go to < jboss installation directory>/modules/system/layers/base. Add folders called as isra/main. Within the folder main, add listener.jar and ISRA.jar.



Also, create a module.xml file with the following contents:

```
<?xml version="1.0" encoding="UTF-8"?>
<module xmlns="urn:jboss:module:1.1" name="isra">
  <resources>
    <resource-root path="ISRA.jar"/>
    <resource-root path="listener.jar"/>
  </resources>
  <dependencies>
    <module name="javax.resource.api"/>
    <module name="javax.api"/>
    <module name="javax.jms.api"/>
  </dependencies>
</module>
```

3. Next, you have to modify the domain.xml file for domain controller having <profile name="full">.

Location of domain.xml=> <jboss installed directory>/ domain\configuration

---

**Note** Here, as an example we have used the <profile name="full">. You can modify any of the JBoss profiles, such as <profile name="default">, <profile name="full">, <profile name="ha">, and <profile name="full-ha">.

---

The changes that you have to make in domain.xml file are as follows:

```
b) <profile name="full">
  <subsystem xmlns="urn:jboss:domain:resource-adapters:4.0">
    <resource-adapters>
      <resource-adapter id="isra.rar">
        <archive>
          isra.rar
        </archive>
        <transaction-support>NoTransaction</transaction-support>
        <connection-definitions>
          <connection-definition class-
name="com.filenet.is.ra.spi.FN_IS_SpiManagedConnectionFactory" jndi-
name="ISCF" enabled="true" pool-name="ISCF">
            <pool>
              <min-pool-size>0</min-pool-size>
              <max-pool-size>10</max-pool-size>
            </pool>
```

```

        <security>
            <application/>
        </security>
        <validation>
            <background-validation>true</background-validation>
        </validation>
    </connection-definition>
</connection-definitions>
</resource-adapter>
<resource-adapter id="isra1.rar">
    <archive>
        isra1.rar
    </archive>
    <transaction-support>NoTransaction</transaction-support>
    <connection-definitions>
        <connection-definition class-name="
com.filenet.is.ra.spi.FN_IS_SpiManagedConnectionFactory" jndi-
name="ISCF1" enabled="true" pool-name="ISCF1">
            <pool>
                <min-pool-size>0</min-pool-size>
                <max-pool-size>10</max-pool-size>
            </pool>
            <security>
                <application/>
            </security>
            <validation>
                <background-validation>true</background-validation>
            </validation>
        </connection-definition>
    </connection-definitions>
</resource-adapter>
</resource-adapters>
</subsystem>

```

```

b) <subsystem xmlns="urn:jboss:domain:ee:4.0">
    <global-modules>
        <module name="isra" slot="main"/>
    </global-modules>
    <ear-subdeployments-isolated>true</ear-subdeployments-isolated>
    <spec-descriptor-property-replacement>false</spec-descriptor-property-
replacement>
    <jboss-descriptor-property-replacement>true</jboss-descriptor-property-
replacement>
</subsystem>

```

```

c) <cached-connection-manager debug="true" error="false"/>
    </profile>

```

## Deploying ISRA.rar

The steps to deploy the **ISRA.rar** file are:

1. Extract ra.xml from ISRA.rar.
2. Change the value(s) for configurable properties in ra.xml.
3. Update **ra.xml** in **ISRA.rar** with the new file.

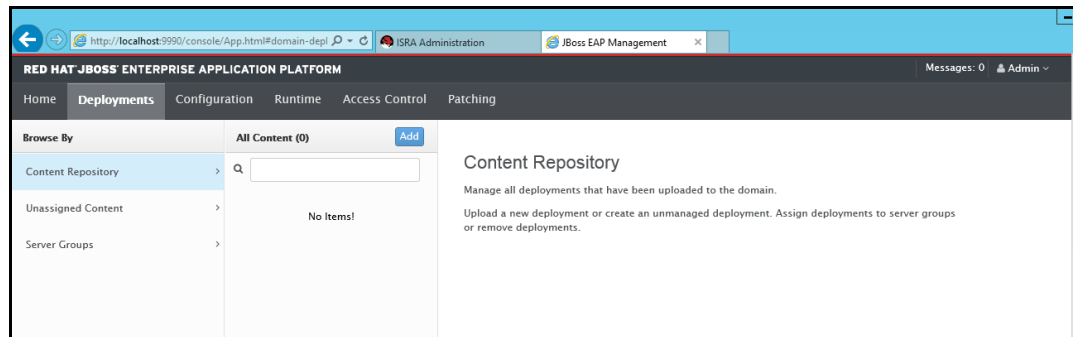
---

**Note** ISRA.rar, ISRA1.rar ....ISRA*n*.rar should not contain ISRA.jar and have the following structure.

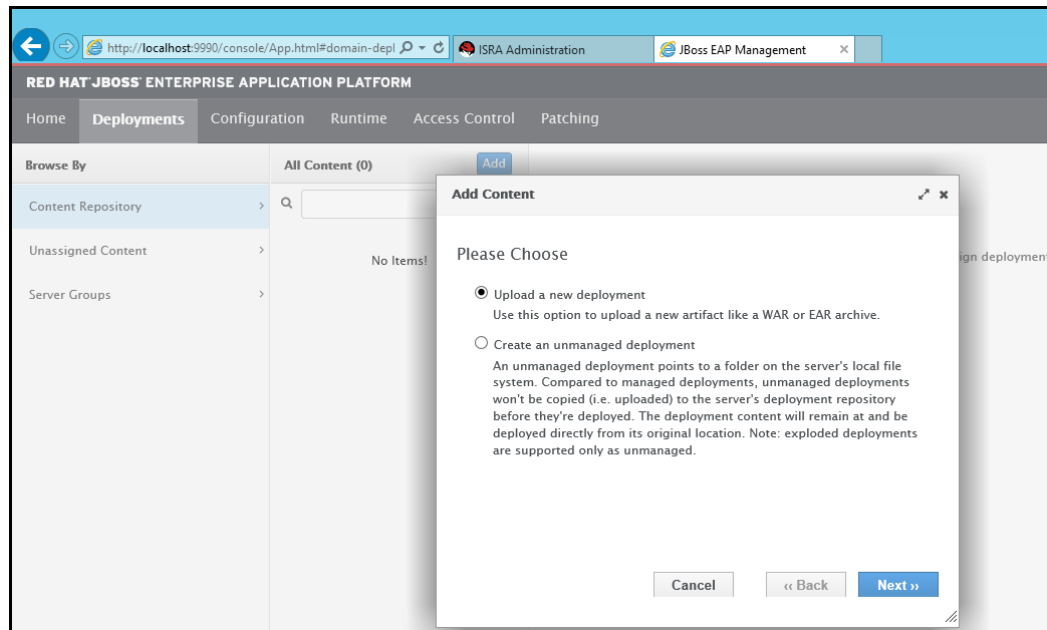
---

| Name        | Size  | Pack: |
|-------------|-------|-------|
| ra.xml      | 9 263 |       |
| MANIFEST.MF | 103   |       |

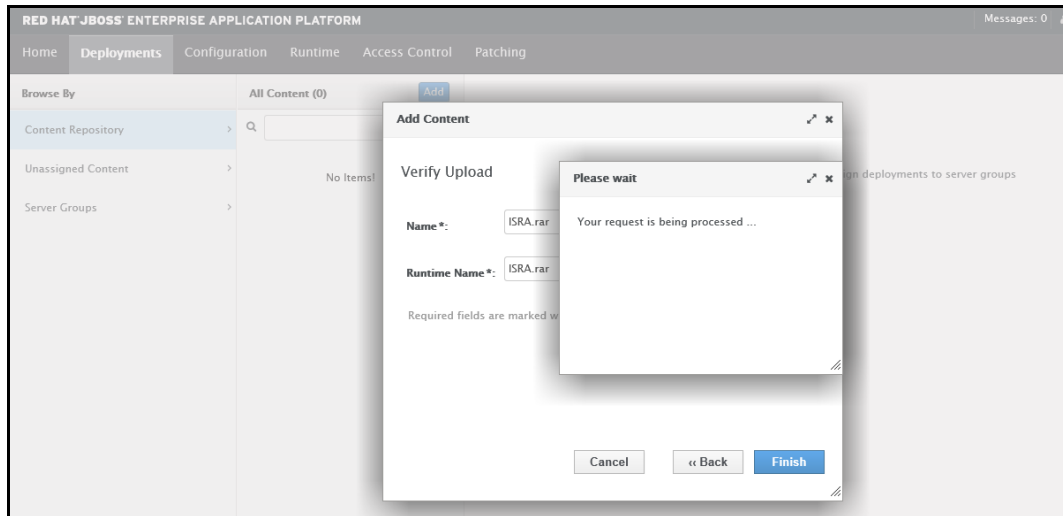
4. Go to **Deployments > Content Repository > Add**.



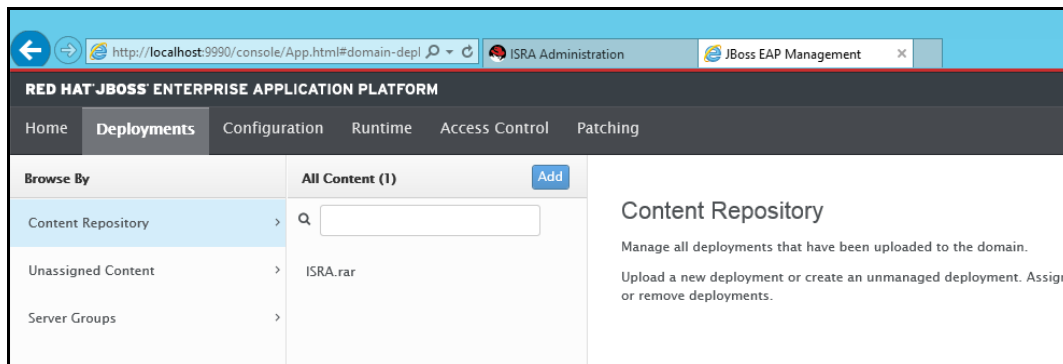
5. Select **Upload a new deployment** option and click **Next**.



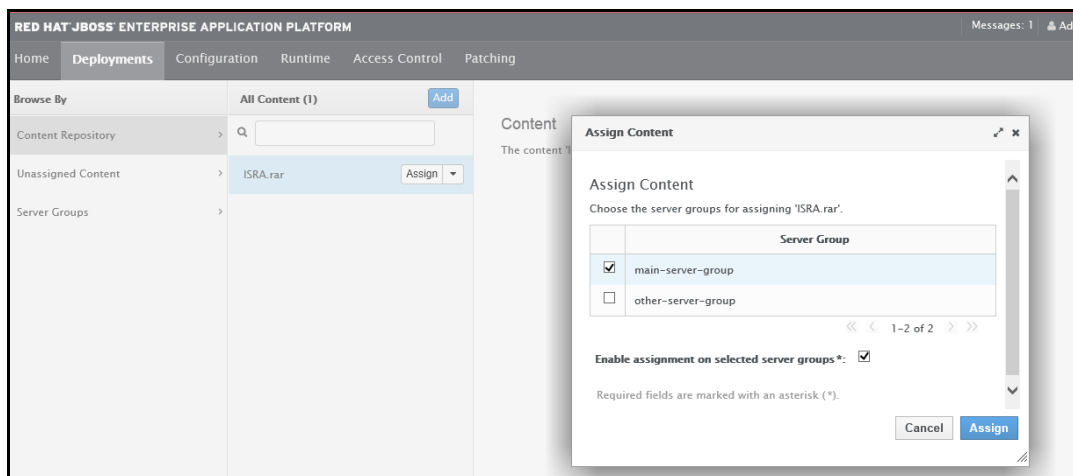
6. Upload ISRA.rar and verify deployment names.



7. After you deploy ISRA.rar, you can see the following:



8. Click **Assign** next to the deployed ISRA.



9. After the assignment is complete, you can see the following:

RED HAT JBOSS ENTERPRISE APPLICATION PLATFORM

Home
Deployments
Configuration
Runtime
Access Control
Patching

Browse By

All Content (3)
Add

Content Repository
>
Q

Unassigned Content
>
ISRA.rar
Assign

Content

The content 'ISRA.rar' is assigned to the following server groups:

main-server-group

RED HAT JBOSS ENTERPRISE APPLICATION PLATFORM

Home
Deployments
Configuration
Runtime
Access Control
Patching

Messages: 2

Browse By

Server Group (2)
Deployment (1)
Add

Content Repository
>
Q

Unassigned Content
>
main-server-group
>
ISRA.rar

Server Groups
>
other-server-group
>

Server Group

Server group main-server-group contains 1 deployment(s).

10. Deploy ISRA1.rar, ISRA2.rar .....ISRAn.rar in the same way.

## Configuring Sample Application for Use Case 2

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)

---

**Note** 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.

---

The JNDI names of connection factories mentioned in this properties file are used by sample application to display on the login page. Three JNDI names "ISCF", "ISCF1" and "ISCF2" are mentioned here, as an example.

```
jndinames=ISCF,ISCF1,ISCF2
location of jndiISRA is <jboss installation directory>/bin
```

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 these steps for extracting **web.xml** from **ISRASampleWEB.war**:

1. Extract **ISRASampleWEB.war** from **ISRAConsole.ear**.
2. Extract **web.xml** from **ISRASampleWEB.war**.
3. Add distributable element just before <display-name> element in web.xml.

For example:

```
<web-app >
    <distributable/>
    <!-- ... -->
</web-app>
```

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 determines whether to honor the print/view preference set in the **web.xml** or to take the value returned by ViewOne. The 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>
```

6. Update **web.xml** in **ISRASampleWEB.war**.

7. Update **ISRASampleWEB.war** in **ISRAConsole.ear**.

---

**Important:** Irrespective of whether it is a standalone deployment or cluster deployment, the MANIFEST.mf file present within ISRAConsole.ear has to be modified for the deployment to be successful. Add the following line into the MANIFEST.mf file.

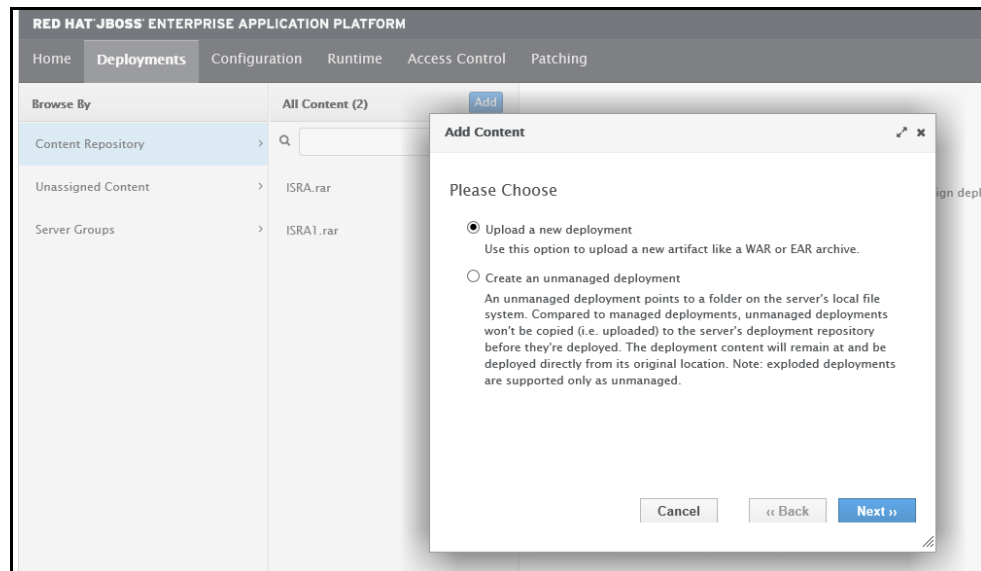
**Dependencies:** deployment.ISRA.rar, deployment.ISRA1.rar

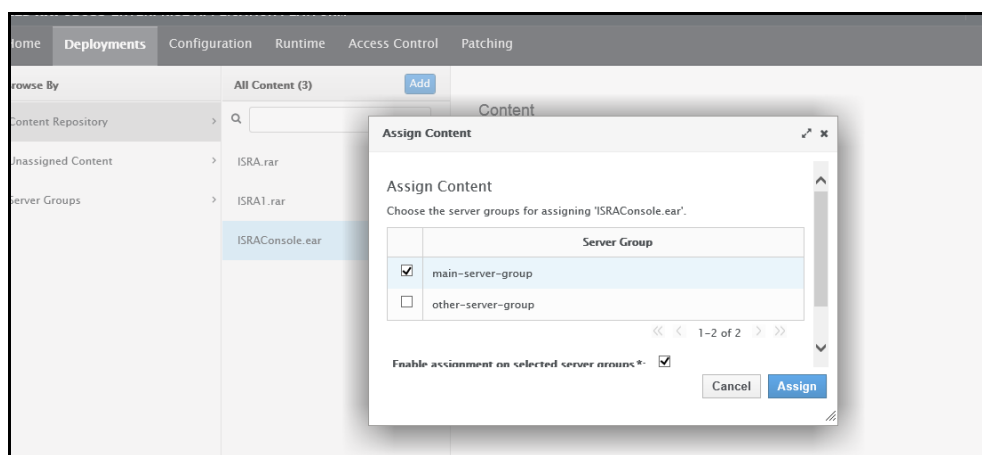
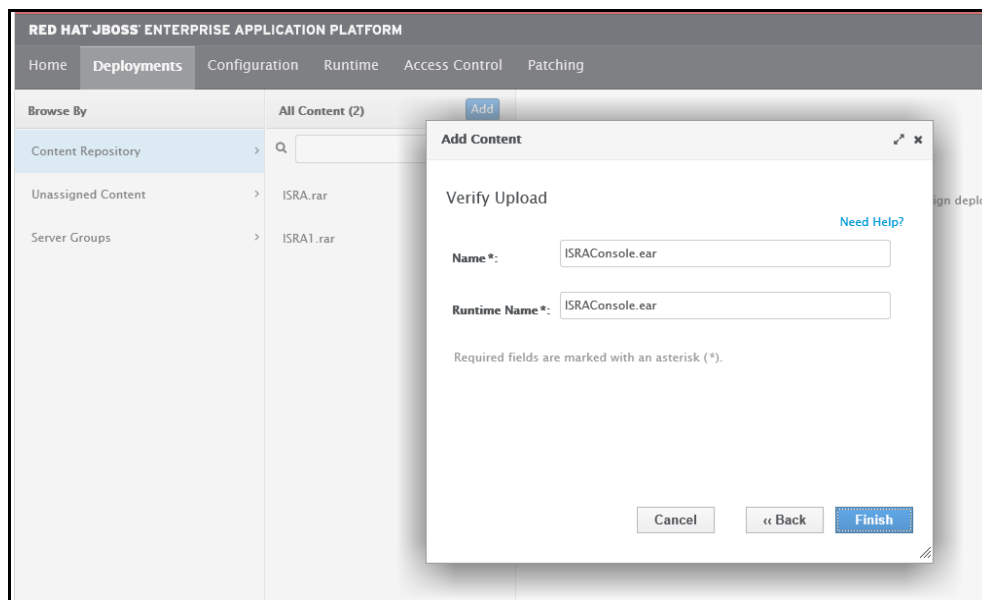
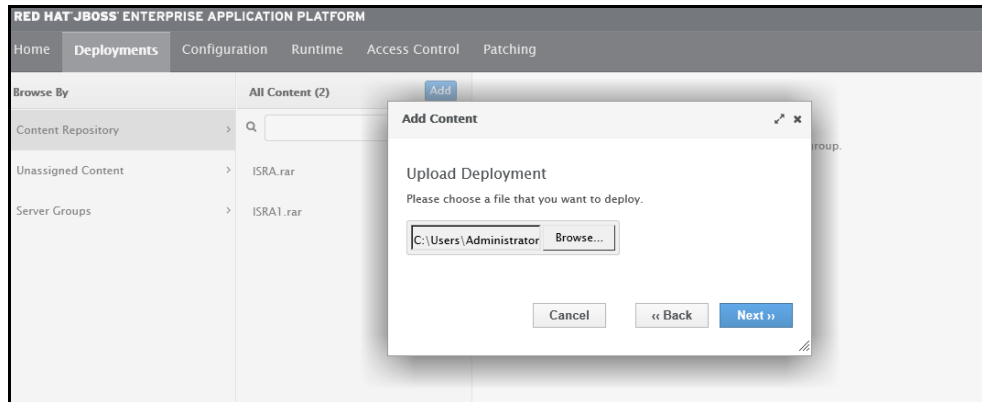
Here, two instances of dependencies are used as an example.

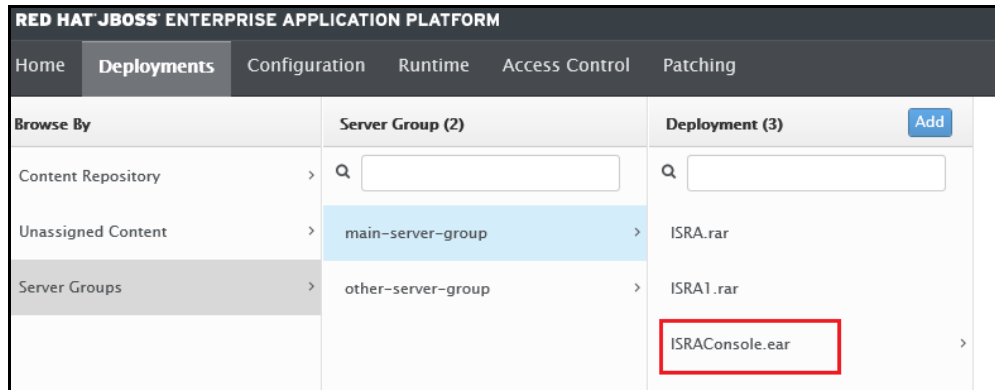
Update ISRAConsole.ear before deployment.

---

8. Go to **Deployments > Content Repository > Add**.





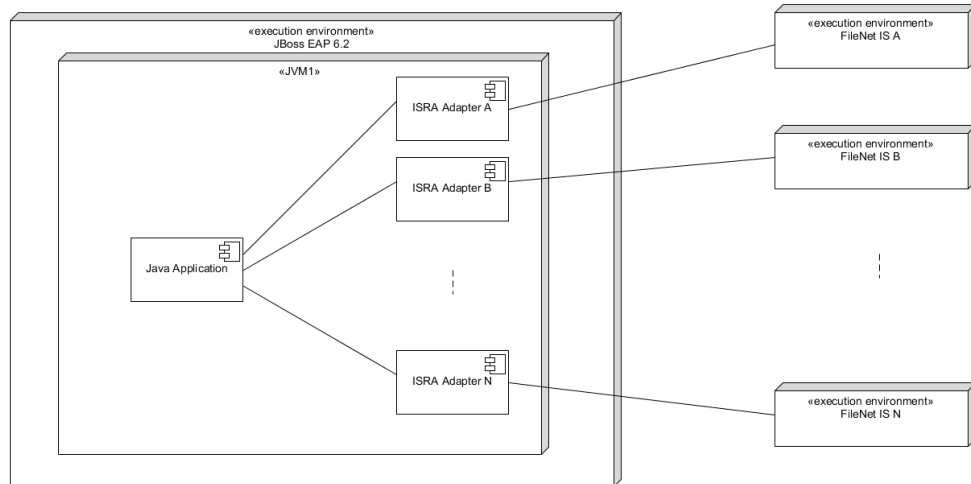


9. Access ISRAConsole using URL <http://localhost:8080/ISRAConsole> and ISRA sample application <http://localhost:8080/ISRA>.

## Understanding Use Case 3

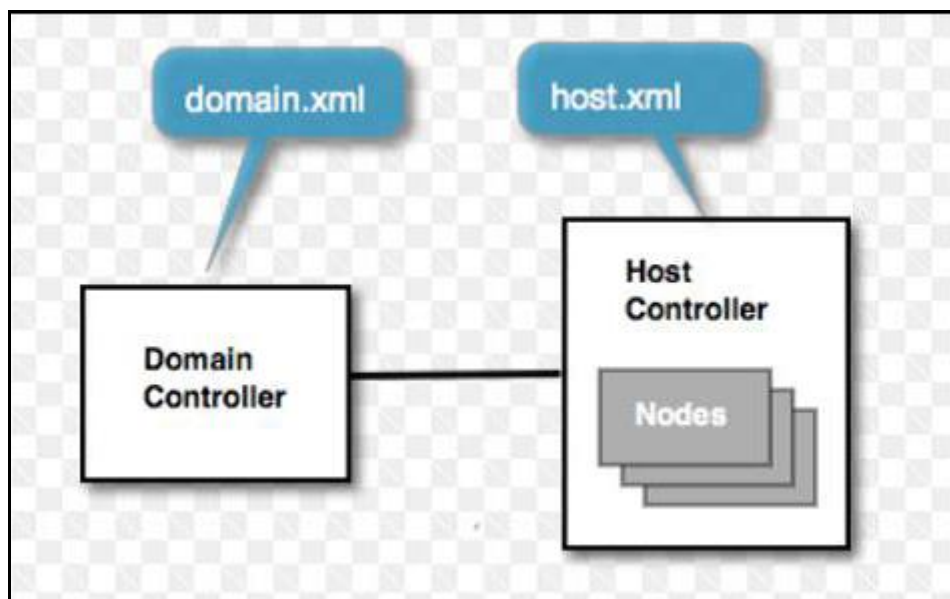
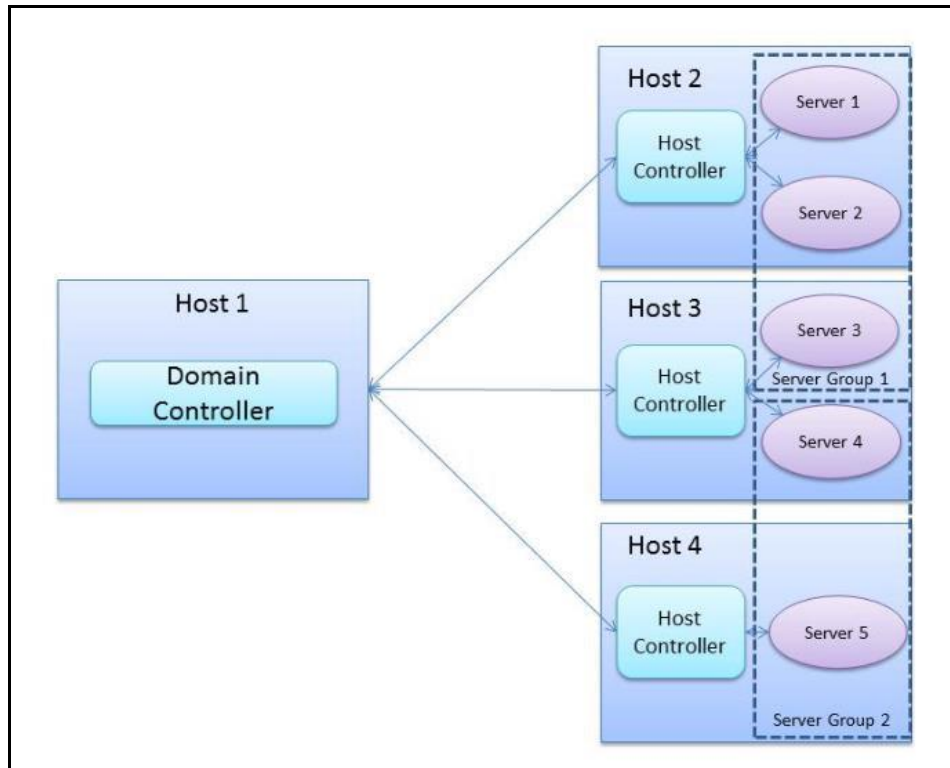
This section explains the **Use Case 3** and describes the configurations needed for **Use Case 3**.

You want to access various Image Services servers through ISRA (ISRA\_Accounts.rar, ISRA\_Finance.rar, ISRA\_Administration.rar, and ISRA\_Insurance.rar) data by using one web application WebApplication.ear on JBoss domain mode deployment.



In this case, you have both domain controller (Host 1) as well as host controller (Host 2, Host 3, and so on).

The managed domain operating mode allows for management of multiple JBoss EAP 7 instances from a single control point. Centrally managed JBoss EAP 7 server collections are known as members of a domain. All JBoss EAP 7 instances in a domain share a common management policy. A domain consists of one domain controller, one or more host controller(s), and zero or more server groups per host.



Example: The following are four IS servers needed to deploy on JBoss domain mode deployment.

| Image Services Server | ISRA                                | ISRA Connection Factories |
|-----------------------|-------------------------------------|---------------------------|
| IS_Accounts           | ISRA_Accounts.rar (ISRA.rar)        | ISRA_Acc (ISCF)           |
| IS_Finance            | ISRA_Finance.rar (ISRA1.rar)        | ISRA_Fin (ISCF1)          |
| IS_Administration     | ISRA_Administration.rar (ISRA2.rar) | ISRA_Adm (ISCF2)          |
| IS_Insurance          | ISRA_Insurance.rar (ISRA3.rar)      | ISRA_Ins (ISCF3)          |

## Configuring Domain Controller

The steps to configure the domain controller are:

1. Download JBoss EAP 7 (Zip Installation).
2. Move the ZIP file to the server and directory where you plan to install JBoss EAP 7, which is JBoss\_DC now.
3. Create JBoss management user by running **add-user.bat** / **add-user.sh**.
4. Go to <Jboss installation directory>\bin. Start **domain.bat** in Windows and **domain.sh** in Linux.
5. Give the URL <http://localhost:9990/console> in your web browser.
6. Log in to the Management Console with your JBoss credentials.

## Mandatory Configuration Changes Required in Domain Controller

The mandatory configuration changes that are required in domain controller are:

1. You need to modify the domain.xml file for domain controller having <profile name="full">.

Location of domain.xml=> <jboss installed directory>/ domain\configuration

---

**Note** Here, as an example we have used the <profile name="full">. You can modify any of the JBoss profiles, such as <profile name="default">, <profile name="full">, <profile name="ha">, and <profile name="full-ha">.

---

The changes that you have to make in domain.xml file are as follows:

```
a) <profile name="full">
    <subsystem xmlns="urn:jboss:domain:resource-adapters:4.0">
      <resource-adapters>
        <resource-adapter id="isra.rar">
          <archive>
            isra.rar
          </archive>
          <transaction-support>NoTransaction</transaction-support>
          <connection-definitions>
```

```

        <connection-definition class-
name="com.filenet.is.ra.spi.FN_IS_SpiManagedConnectionFactory" jndi-
name="ISCF" enabled="true" pool-name="ISCF">
        <pool>
            <min-pool-size>0</min-pool-size>
            <max-pool-size>10</max-pool-size>
        </pool>
        <security>
            <application/>
        </security>
        <validation>
            <background-validation>true</background-validation>
        </validation>
        </connection-definition>
    </connection-definitions>
</resource-adapter>
<resource-adapter id="isra1.rar">
    <archive>
        isra1.rar
    </archive>
    <transaction-support>NoTransaction</transaction-support>
    <connection-definitions>
        <connection-definition class-name="
com.filenet.is.ra.spi.FN_IS_SpiManagedConnectionFactory" jndi-
name="ISCF1" enabled="true" pool-name="ISCF1">
        <pool>
            <min-pool-size>0</min-pool-size>
            <max-pool-size>10</max-pool-size>
        </pool>
        <security>
            <application/>
        </security>
        <validation>
            <background-validation>true</background-validation>
        </validation>
        </connection-definition>
    </connection-definitions>
</resource-adapter>
</resource-adapters>
</subsystem>

b) <subsystem xmlns="urn:jboss:domain:ee:4.0">
    <global-modules>
        <module name="isra" slot="main"/>
    </global-modules>
    <ear-subdeployments-isolated>true</ear-subdeployments-isolated>
    <spec-descriptor-property-replacement>false</spec-descriptor-property-
replacement>
    <jboss-descriptor-property-replacement>true</jboss-descriptor-property-
replacement>
</subsystem>

c) <cached-connection-manager debug="true" error="false"/>
    </profile>

```

2. Make the following changes in host.xml which is located at <jboss installation directory>\domain\configuration.

- a) Remove name="master" from <host name="master" xmlns="urn:jboss:domain:4.1">.

The host element should now look like the following example.

```
<host xmlns="urn:jboss:domain:4.1">
```

- b) Make sure tag <local/> should not be commented under domain-controller like the following example:

```
<domain-controller>
  <local/>
  <!-- Alternative remote domain controller configuration with a host and port -->
  <!-- <remote host="${jboss.domain.master.address}" port="${jboss.domain.master.port:9999}" security-realm="ManagementRealm"/> -->
</domain-controller>
```

- c) Remove <Servers> tag configurations completely.

## Configuring Host Controller

The steps to configure the host controller are:

1. Download JBoss EAP 7 (Zip Installation).
2. Move the ZIP file to the server and directory where you plan to install JBoss EAP 7, which is JBoss\_HC now.
3. Update the following in host.xml located at <jboss installed directory>\domain\configuration.

- i) Update < domain-controller> tag like the following:

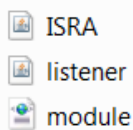
```
<domain-controller>
  <!--local/-->
  <!-- Alternative remote domain controller configuration with a host and port -->
  <<remote host="${jboss.domain.master.address:127.0.0.1}" port="${jboss.domain.master.port:9999}" security-realm="ManagementRealm"/>
</domain-controller>
```

- ii) Change the preferred port number in management-interfaces tag as follows.  
Here, ports 29999 and 29990 are management ports used as an example:

```
<management-interfaces>
  <native-interface security-realm="ManagementRealm">
    <socket interface="management" port="${jboss.management.native.port:29999}"/>
  </native-interface>
  <http-interface security-realm="ManagementRealm">
    <socket interface="management" port="${jboss.management.http.port:29990}"/>
  </http-interface>
</management-interfaces>
```

4. Create a module for isra:

1. Extract ISRA.jar from isra.rar.
2. Go to <<JBoss\_HC>/modules/system/layers/base. Add folders called as isra/main. Within the folder main, add listener.jar and ISRA.jar.



Also, create a module.xml file with the following contents:

```
<?xml version="1.0" encoding="UTF-8"?>
<module xmlns="urn:jboss:module:1.1" name="isra">
  <resources>
    <resource-root path="ISRA.jar"/>
    <resource-root path="listener.jar"/>
  </resources>
  <dependencies>
    <module name="javax.resource.api"/>
    <module name="javax.api"/>
    <module name="javax.jms.api"/>
  </dependencies>
</module>
```

## Deploying ISRA.rar

The steps to deploy the **ISRA.rar** file are:

1. Extract ra.xml from ISRA.rar.
2. Change the value(s) for configurable properties in ra.xml.
3. Update **ra.xml** in **ISRA.rar** with the new file.

---

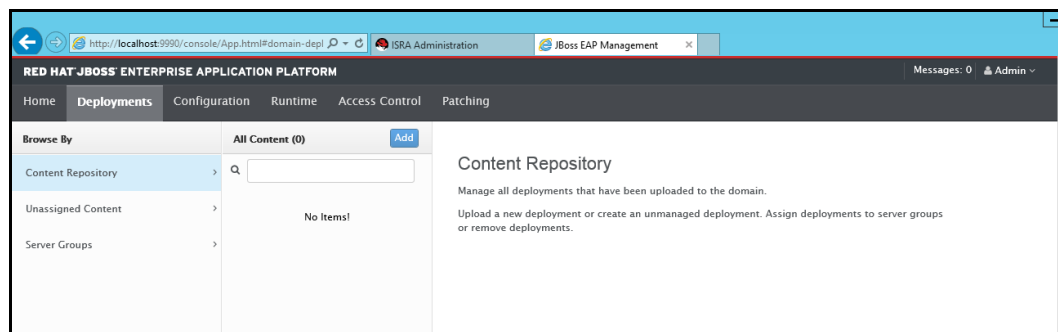
**Note** ISRA.rar, ISRA1.rar ....ISRA<sub>n</sub>.rar should not contain ISRA.jar and have the following structure.

---

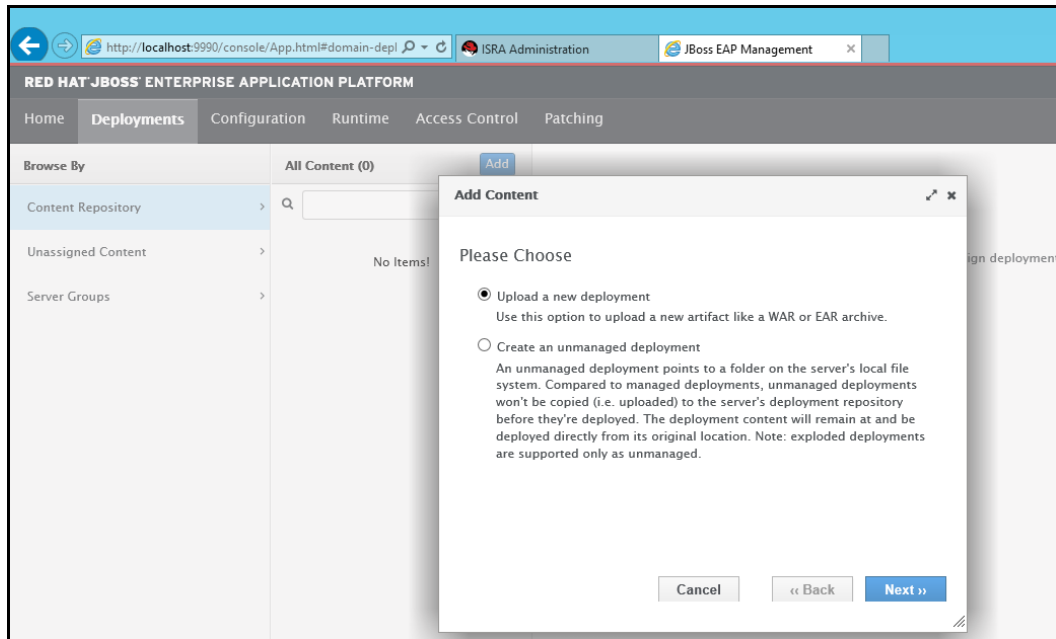
| Name        | Size  | Pack |
|-------------|-------|------|
| ra.xml      | 9 263 |      |
| MANIFEST.MF | 103   |      |

4. Start both domain controller and host controller.
  - i) Start JBoss\_DC server. Go to <JBoss\_DC\_Home>/bin folder.
  - ii) Execute domain.bat.
  - iii) Start JBoss\_HC server. Go to <JBoss\_HC\_Home>/bin folder.
  - iv) Execute domain.bat.
  - v) On browser, go to URL <http://localhost:9990/console/>.

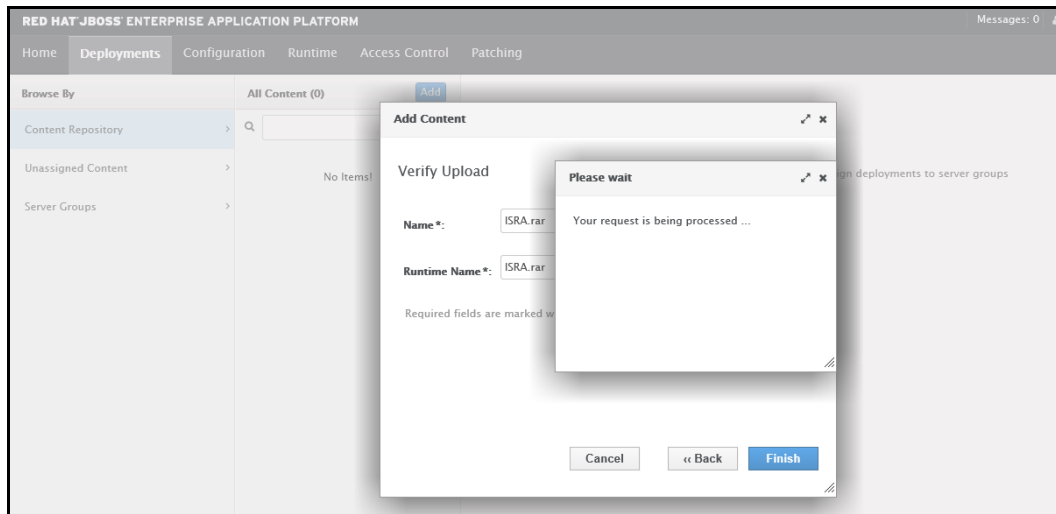
5. Go to **Deployments > Content Repository > Add**.



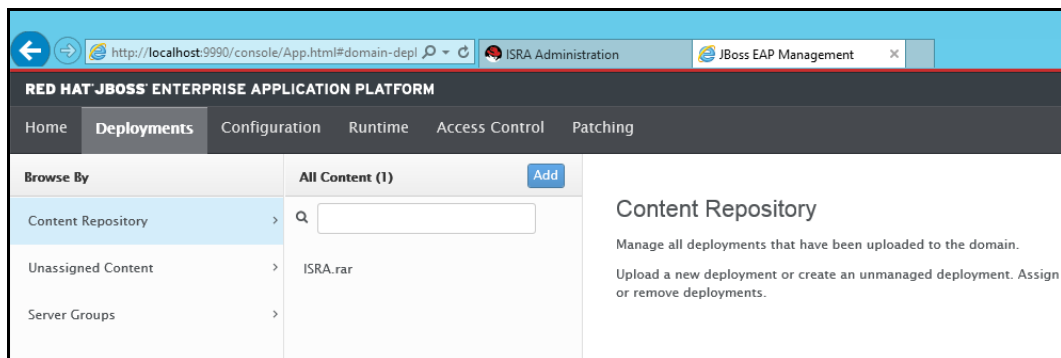
6. Select **Upload a new deployment** option and click **Next**.



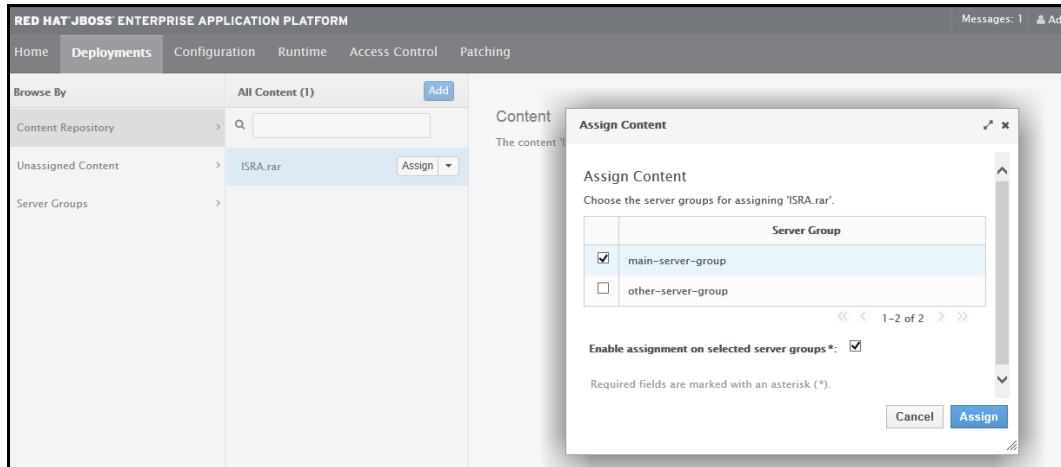
## 7. Upload ISRA.rar and verify deployment names.



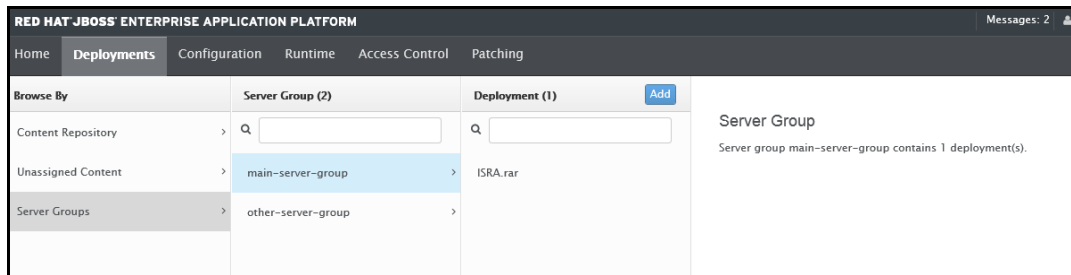
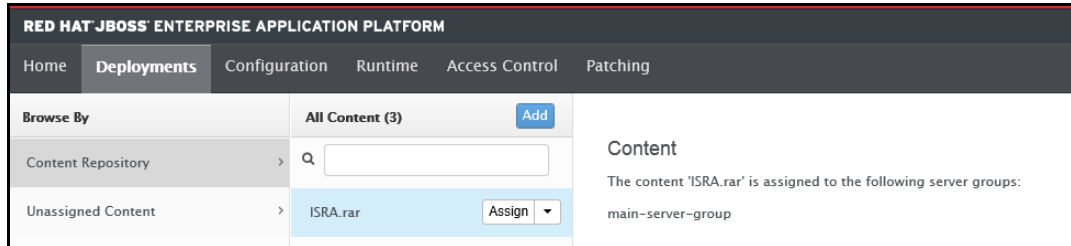
## 8. After you deploy ISRA.rar, you can see the following:



9. Click **Assign** and assign to a Specified Server group.



10. After the assignment is complete, you can see the following:



11. Deploy ISRA1.rar, ISRA2.rar .....ISRAN.rar in the same way.

## Configuring Sample Application for Use Case 3

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)

---

**Note** 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.

---

The JNDI names of connection factories mentioned in this properties file are used by sample application to display on the login page. Three JNDI names "ISCF", "ISCF1" and "ISCF2" are mentioned here, as an example.

```
jndinames=ISCF,ISCF1,ISCF2
location of jndiISRA is <jboss installation directory>/bin
```

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 these steps for extracting **web.xml** from **ISRASampleWEB.war**:

1. Extract **ISRASampleWEB.war** from **ISRAConsole.ear**.
2. Extract **web.xml** from **ISRASampleWEB.war**.
3. Add distributable element just before <display-name> element in web.xml.

For example:

```
<web-app >
    <distributable/>
    <!-- ... -->
</web-app>
```

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 determines whether to honor the print/view preference set in the **web.xml** or to take the value returned by ViewOne. The 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>
```

6. Update **web.xml** in **ISRASampleWEB.war**.

7. Update **ISRASampleWEB.war** in **ISRAConsole.ear**.

---

**Important:** Irrespective of whether it is a standalone deployment or cluster deployment, the MANIFEST.mf file present within ISRAConsole.ear has to be modified for the deployment to be successful. Add the following line into the MANIFEST.mf file.

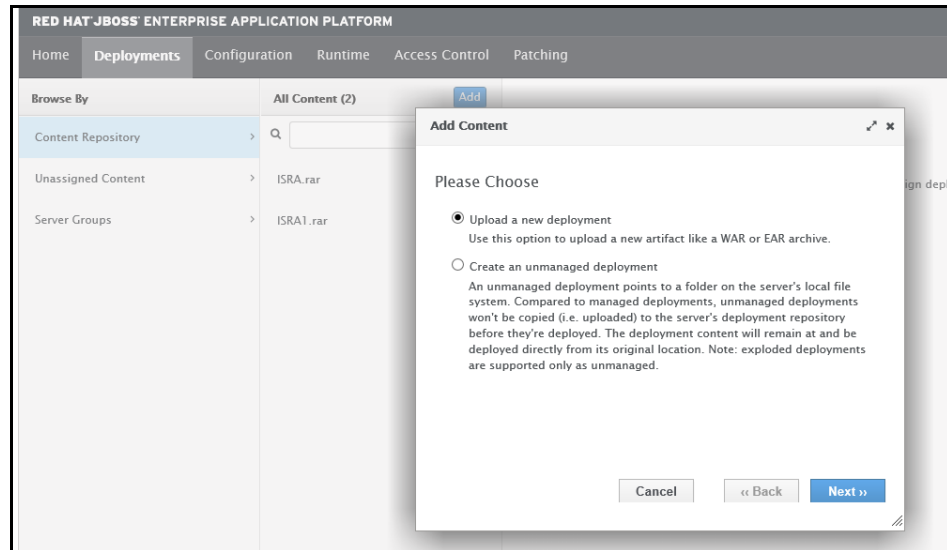
**Dependencies:** deployment.ISRA.rar, deployment.ISRA1.rar

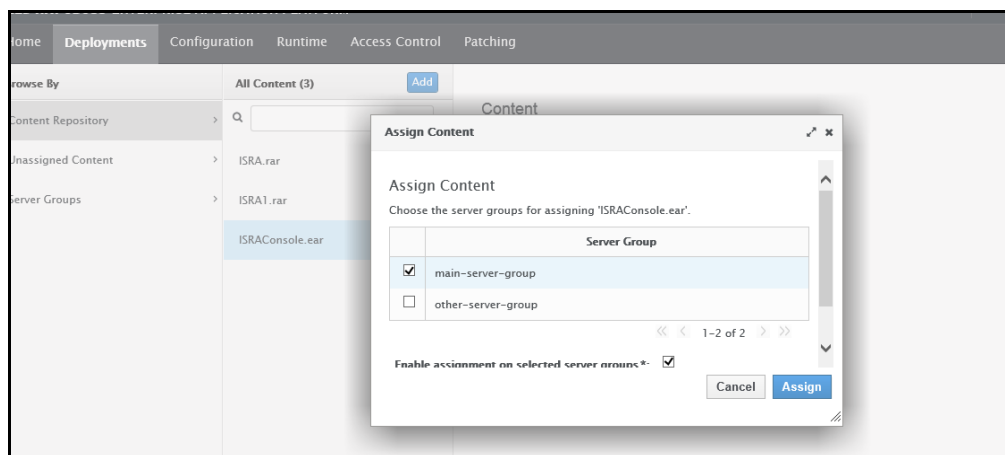
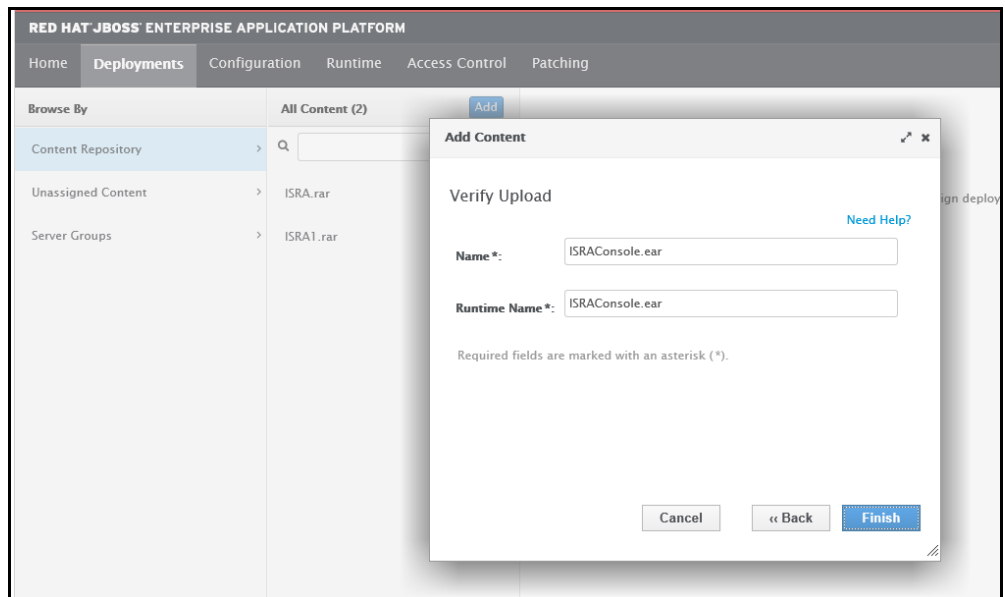
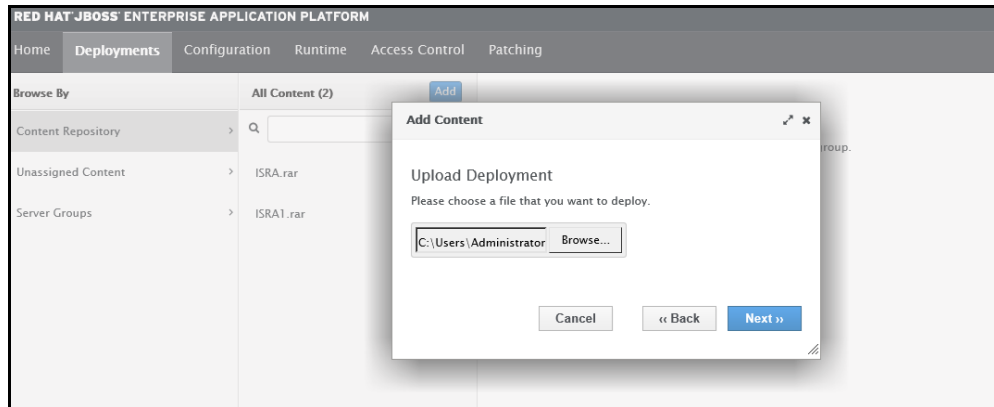
Here, two instances of dependencies are used as an example.

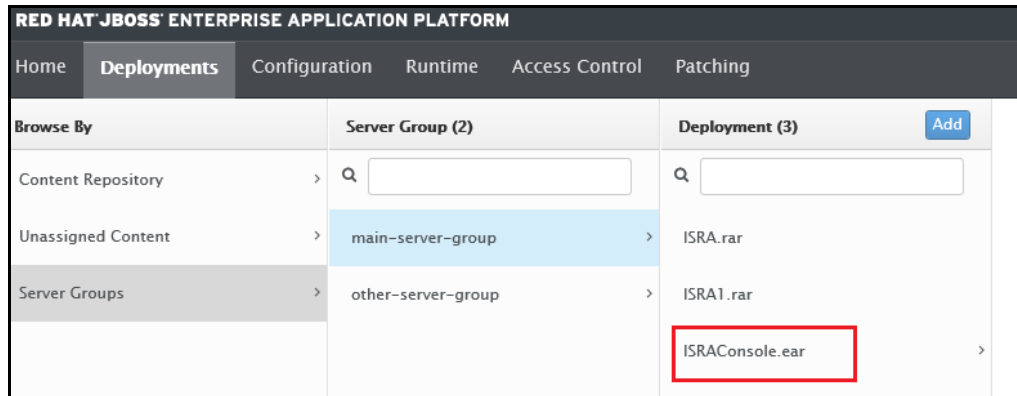
Update ISRAConsole.ear before deployment.

---

8. Go to **Deployments > Content Repository > Add**.







9. Access ISRAConsole using URL <http://localhost:8080/ISRAConsole> and ISRA sample application <http://localhost:8080/ISRA>.

## 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.

To specify the alias in the hosts file:

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 installation directory.
2. Open the hosts file with a preferred text editor. If a host file does not exist, create a new file using the 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. The rules to follow while specifying the domain-organization name are:
    - Delete all characters except ASCII alphanumeric characters and hyphens.
    - Convert all upper case characters to lower case.
    - Insert a hyphen between the domain and organization names.
    - Append `nch-server` as a literal.

For example, if an IBM FileNet library has a domain, `fn_is`, and organization, `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>

```

## Revision Table

| Date        | Description                                                     |
|-------------|-----------------------------------------------------------------|
| 09 Nov 2017 | Added information about Use Case 1, Use Case 2, and Use Case 3. |

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