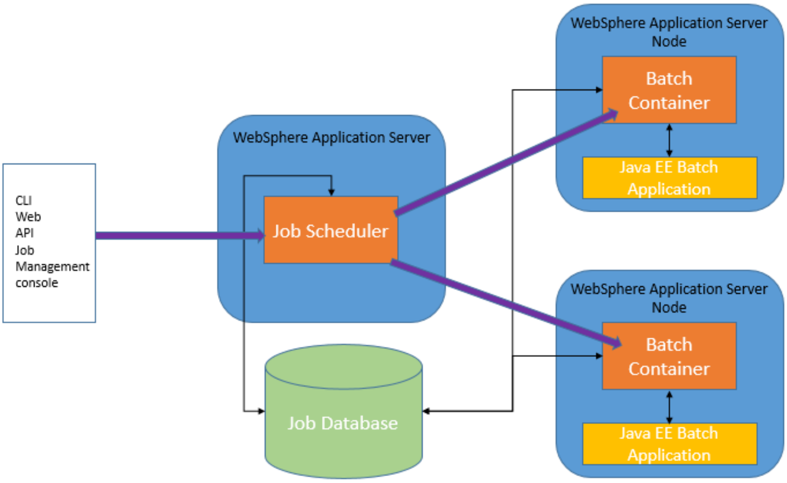
CHAPTER 13: JOB MANAGEMENT

Theory

Batch applications are used to run complex and long tasks that contain typically transactional and multi-step processes. This type of processes are more demanding for resources thank OLTP systems and they can run for hours. WebSphere Application Server uses an XML based language, xJCL, to provide consistent architecture that is optimized for Java and long running batch applications.

A batch job contains directives to run one or more batch applications. It performs a specific task in a specific and predefined order. Batch jobs are executed in a batch container. Batch jobs are packaged as EAR and they are deployed to the batch containers to run. A batch job can be

- Transactional batch, contains large number of repeating jobs
- Compute intensive batch, requires high system resources in terms of CPU and memory.



CLI
Web
API
Job
Management
console
WebSphere Application Server
Job Scheduler
Job Database
WebSphere Application Server Node
Batch Container
Java EE Batch Application
WebSphere Application Server Node
Batch Container
Java EE Batch Application

Batch applications are Java EE applications that are designed to run in a non-interactive mode to complete business critical jobs such as report generation, printing documents and etc.

Job scheduler provides all job management functions. Besides basic operations like submitting or restarting a job, they also keep the history of all jobs. In WebSphere Application Server, you can reach the job scheduler in 3 ways:

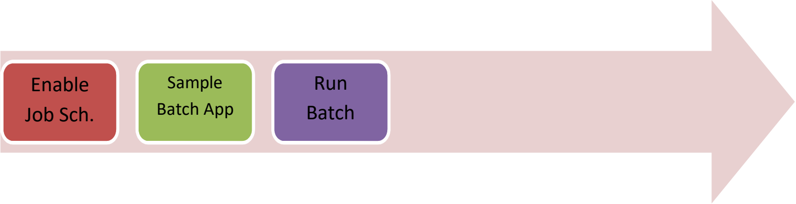
- Job Management Console, provides a web interface to perform all job management activities.
- Command Line Interface, allows you to submit and control the batch jobs with the help of “lrcmd.(bat|sh)” command.
- APIs, that are available as either web services or EJBs.

Job database contains:

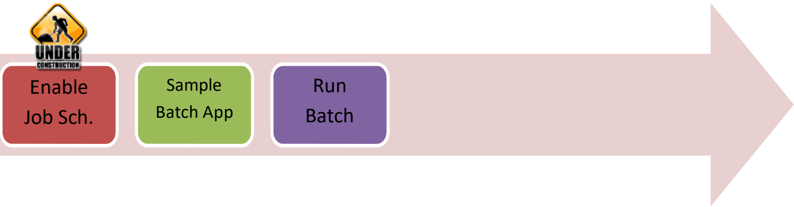
- Scheduler tables store job information in a relational database that is supported by WebSphere Application Server. In a clustered environment, you have to use a network database that is available to all members of the cluster.
- Container tables store check point information of transactional batch applications in a relational database. In a clustered environment, same rules apply to container tables as scheduler tables.

AIM

Lab Exercise 13: JOB MANAGEMENT



1. **Enable Job Scheduler**
2. **Install a sample batch application**
3. **Run a batch job**



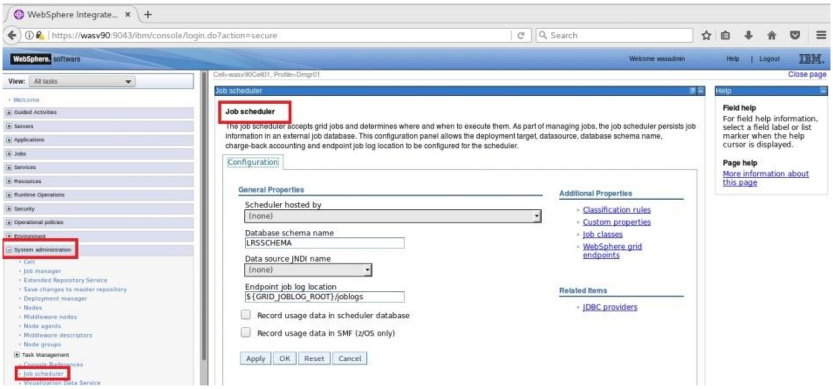
Enable Job Sch.

Sample Batch App

Run Batch

Task 1: Enable Job Scheduler

Step 1: Navigate to “System administration>Job scheduler”.



Job scheduler

The job scheduler accepts grid jobs and determines where and when to execute them. As part of managing jobs, the job scheduler persists job information in an external job database. This configuration panel allows the deployment target, datasource, database schema name, charge-back accounting and endpoint job log location to be configured for the scheduler.

For field help information, select a field label or list marker when the help cursor is displayed.

Scheduler hosted by: (none)

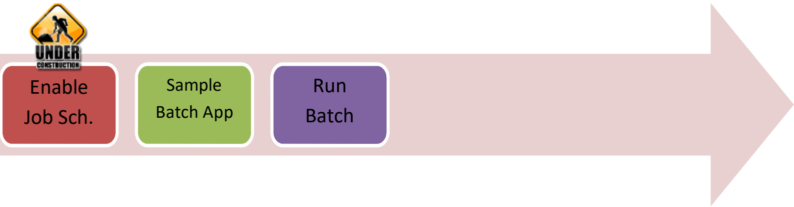
Database schema name: LRSSCHEMA

Data source JNDI name: (none)

Endpoint job log location: ${GRID_JOBLOG_ROOT}/joblogs

□ Record usage data in scheduler database

□ Record usage data in SMF (z/OS only)

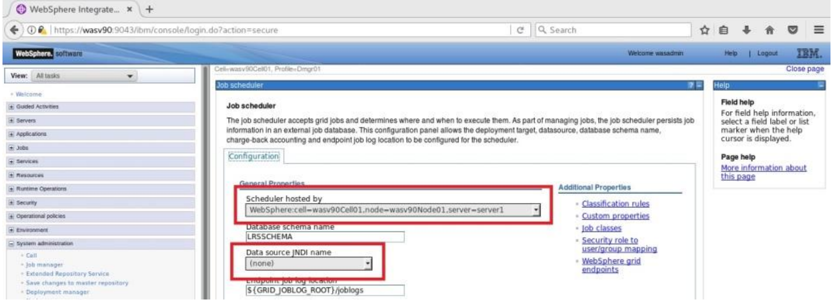


Enable Job Sch.

Sample Batch App

Run Batch

Step 2: Select the host to be used as scheduler and use “(none)” as JNDI name and click “OK”.



Job scheduler

The job scheduler accepts grid jobs and determines where and when to execute them. As part of managing jobs, the job scheduler persists job information in an external job database. This configuration panel allows the deployment target, datasource, database schema name, charge-back accounting and endpoint job log location to be configured for the scheduler.

Configuration

General Properties

Scheduler hosted by: WebSphere:cell=wasv90Cell01,node=wasv90Node01,server=server1

Database schema name: LRSSCHEMA

Data source JNDI name: (none)

Endpoint job log location: ${GRID_JOBLOG_ROOT}/joblogs

Additional Properties

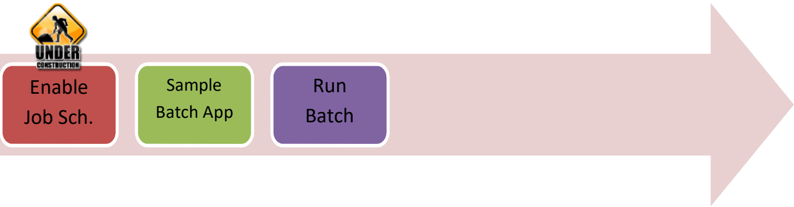
- Classification rules
- Custom properties
- Job classes
- Security role to user/group mapping
- WebSphere grid endpoints

Field help

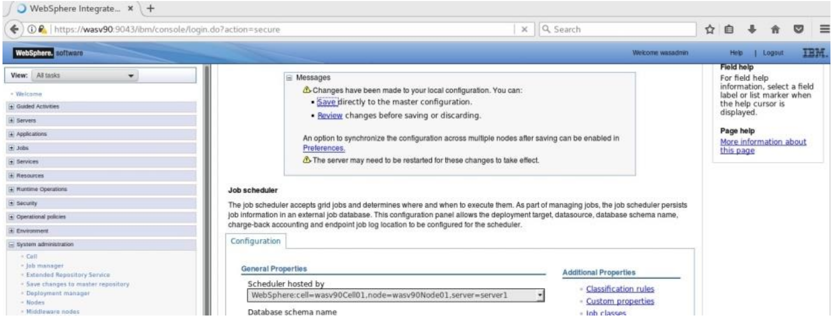
For field help information, select a field label or list marker when the help cursor is displayed.

Page help

More information about this page



Step 3: Click “Save” to write changes. Please pay attention that “jdbc/lnsched” is created and selected automatically.



Messages

⚠ Changes have been made to your local configuration. You can:

- Save directly to the master configuration.
- Review changes before saving or discarding.

An option to synchronize the configuration across multiple nodes after saving can be enabled in Preferences.

⚠ The server may need to be restarted for these changes to take effect.

Job scheduler

The job scheduler accepts grid jobs and determines where and when to execute them. As part of managing jobs, the job scheduler persists job information in an external job database. This configuration panel allows the deployment target, datasource, database schema name, charge-back accounting and endpoint job log location to be configured for the scheduler.

Configuration

General Properties

Scheduler hosted by: WebSphere:cell=wasv90Cell01,node=wasv90Node01,server=server1

Database schema name

Additional Properties

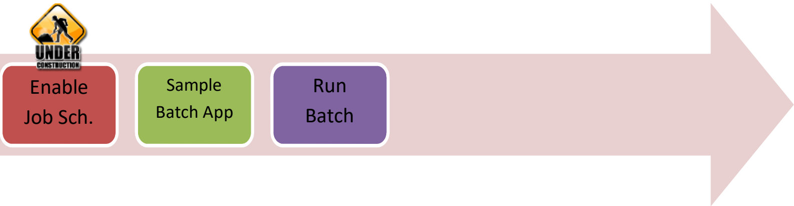
- Classification rules
- Custom properties
- Job classes

Field help

For field help information, select a field label or list marker when the help cursor is displayed.

Page help

More information about this page

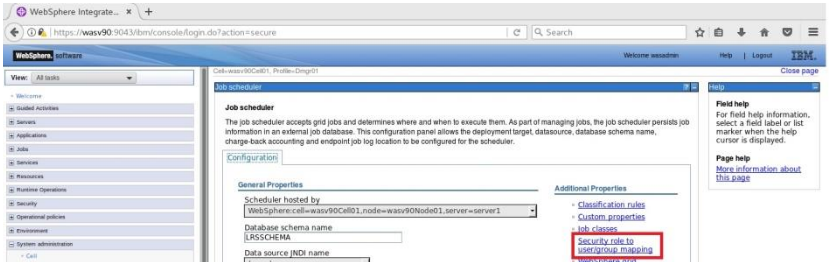


Enable Job Sch.

Sample Batch App

Run Batch

Step 4: Click on “Security role to user/group maping”.



Cell=wasv90Cell01, Profile=Dmgr01

Job scheduler

Job scheduler

The job scheduler accepts grid jobs and determines where and when to execute them. As part of managing jobs, the job scheduler persists job information in an external job database. This configuration panel allows the deployment target, datasource, database schema name, charge-back accounting and endpoint job log location to be configured for the scheduler.

Configuration

General Properties

Scheduler hosted by
WebSphere:cell=wasv90Cell01,node=wasv90Node01,server=server1

Database schema name
LRSSCHEMA

Data source JNDI name

Additional Properties

- Classification rules
- Custom properties
- Job classes
- Security role to user/group mapping

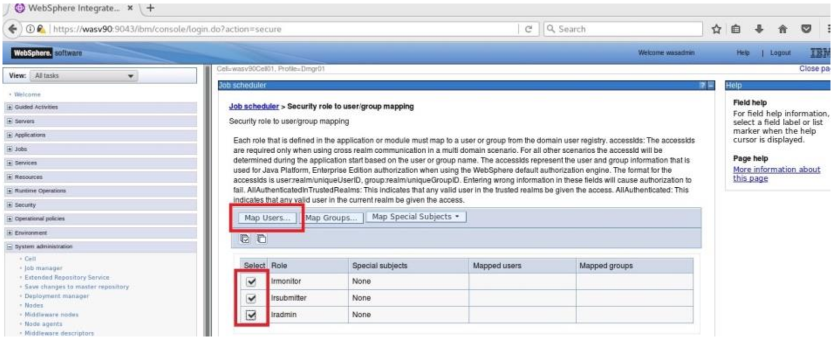
Field help

For field help information, select a field label or list marker when the help cursor is displayed.

Page help

More information about this page

Step 5: Select all the roles and click “Map users”.



Cell=wasv90Cell01, Profile=Dmgr01

Job scheduler

Job scheduler > Security role to user/group mapping

Security role to user/group mapping

Each role that is defined in the application or module must map to a user or group from the domain user registry. accessIds: The accessIds are required only when using cross realm communication in a multi domain scenario. For all other scenarios the accessId will be determined during the application start based on the user or group name. The accessIds represent the user and group information that is used for Java Platform, Enterprise Edition authorization when using the WebSphere default authorization engine. The format for the accessIds is user:realm/uniqueUserID, group:realm/uniqueGroupID. Entering wrong information in these fields will cause authorization to fail. AllAuthenticatedInTrustedRealms: This indicates that any valid user in the trusted realms be given the access. AllAuthenticated: This indicates that any valid user in the current realm be given the access.

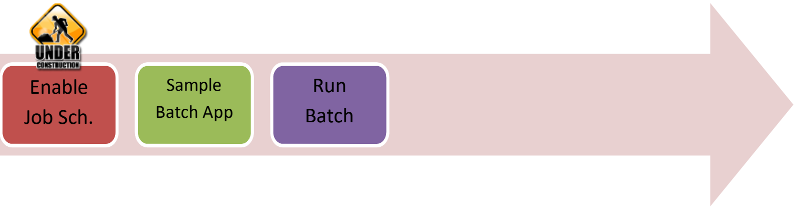
Select	Role	Special subjects	Mapped users	Mapped groups
☑	lrmonitor	None		
☑	lrsubmitter	None		
☑	lradmin	None		

Field help

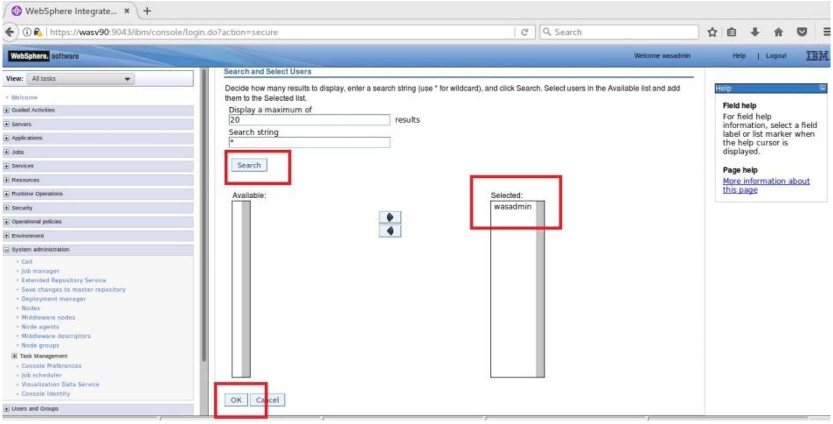
For field help information, select a field label or list marker when the help cursor is displayed.

Page help

More information about this page



Step 6: Search the administrative user and using arrows add to the selected area and click “OK”.



Search and Select Users

Decide how many results to display, enter a search string (use * for wildcard), and click Search. Select users in the Available list and add them to the Selected list.

Display a maximum of 20 results

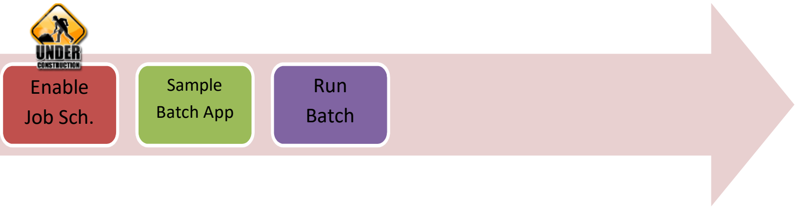
Search string *

Search

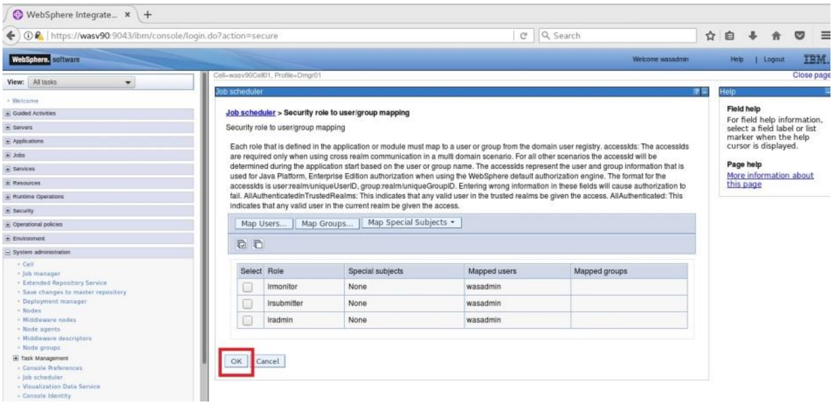
Available:

Selected: wasadmin

OK Cancel



Step 7: Click "OK".



Cell=wasv90Cell01, Profile=Dmgr01

Job scheduler

Job scheduler > Security role to user/group mapping

Security role to user/group mapping

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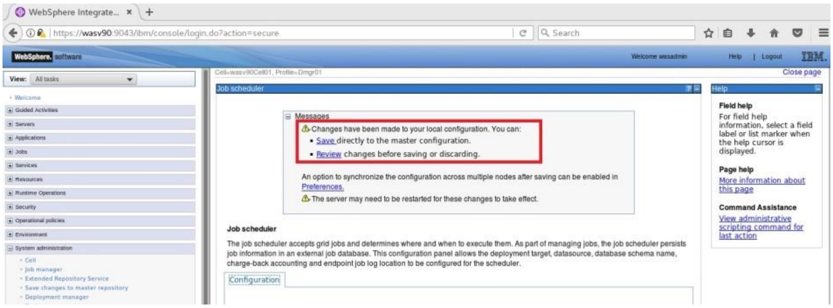
Select	Role	Special subjects	Mapped users	Mapped groups
□	lrmonitor	None	wasadmin	
□	lrsubmitter	None	wasadmin	
□	lradmin	None	wasadmin	

Step 8: Click "Save" to write changes.



Cell=wasv90Cell01, Profile=Dmgr01

Job scheduler

Messages

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Job scheduler

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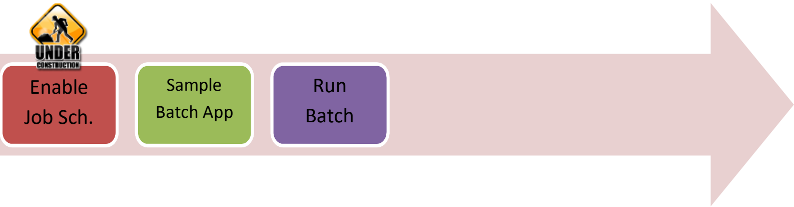
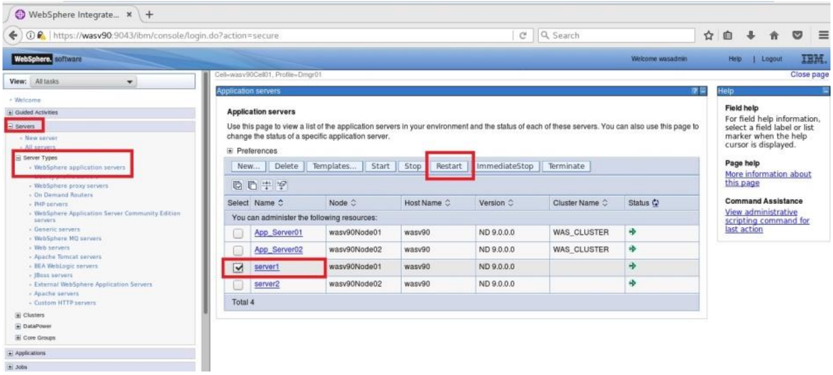


Enable Job Sch.

Sample Batch App

Run Batch

Step 9: Navigate to “Servers>Server Types>WebSphere application servers” and select the job scheduler host and click “Restart”.



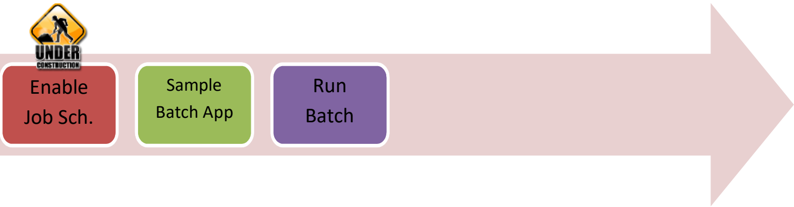
Application servers

Use this page to view a list of the application servers in your environment and the status of each of these servers. You can also use this page to change the status of a specific application server.

For field help information, select a field label or list marker when the help cursor is displayed.

Select	Name	Node	Host Name	Version	Cluster Name	Status
You can administer the following resources:						
□	App_Server01	wasv90Node01	wasv90	ND 9.0.0.0	WAS_CLUSTER	➜
□	App_Server02	wasv90Node02	wasv90	ND 9.0.0.0	WAS_CLUSTER	➜
☑	server1	wasv90Node01	wasv90	ND 9.0.0.0		➜
□	server2	wasv90Node02	wasv90	ND 9.0.0.0		➜
Total 4						

Application server must be restarted successfully.

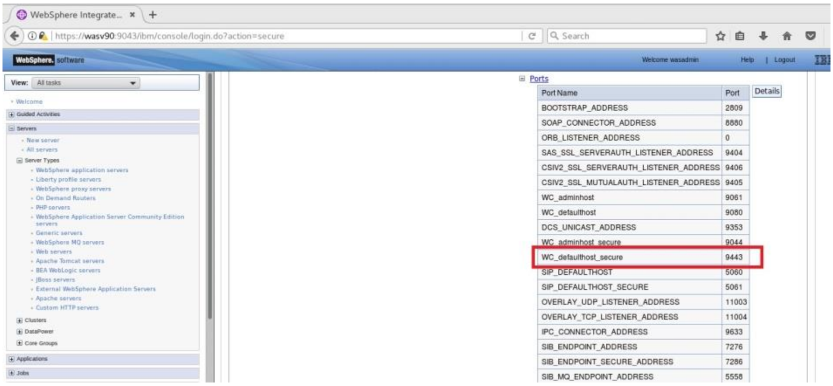


Enable Job Sch.

Sample Batch App

Run Batch

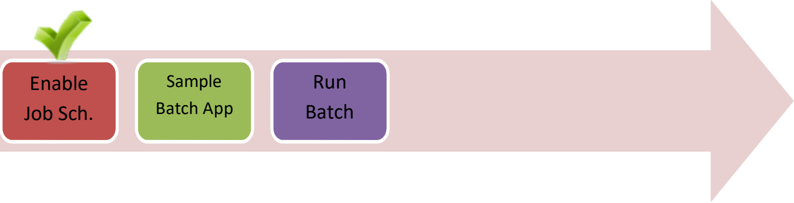
Step 10: Check “WC_defaulthost_secure” port under “Ports” for the job scheduler hosting application server.



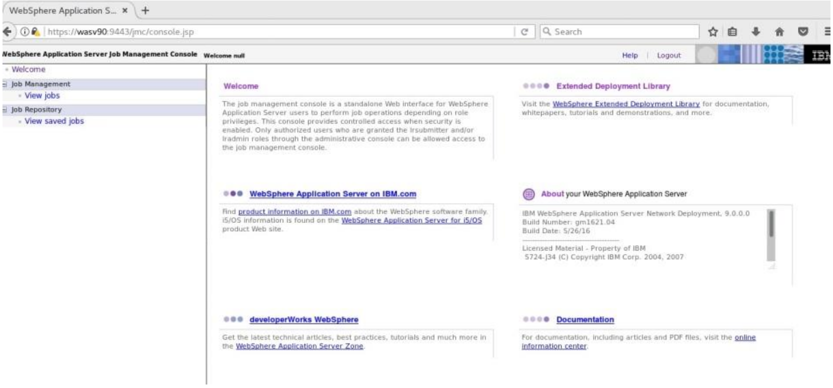
https://wasv90:9043/ibm/console/login.do?action=secure

Ports

Port Name	Port
BOOTSTRAP_ADDRESS	2809
SOAP_CONNECTOR_ADDRESS	8880
ORB_LISTENER_ADDRESS	0
SAS_SSL_SERVERAUTH_LISTENER_ADDRESS	9404
CSIV2_SSL_SERVERAUTH_LISTENER_ADDRESS	9406
CSIV2_SSL_MUTUALAUTH_LISTENER_ADDRESS	9405
WC_adminhost	9061
WC_defaulthost	9080
DCS_UNICAST_ADDRESS	9353
WC_adminhost_secure	9044
WC_defaulthost_secure	9443
SIP_DEFAULTHOST	5060
SIP_DEFAULTHOST_SECURE	5061
OVERLAY_UDP_LISTENER_ADDRESS	11003
OVERLAY_TCP_LISTENER_ADDRESS	11004
IPC_CONNECTOR_ADDRESS	9633
SIB_ENDPOINT_ADDRESS	7276
SIB_ENDPOINT_SECURE_ADDRESS	7286
SIB_MQ_ENDPOINT_ADDRESS	5558



Step 11: Navigate to “https://wasv90:9443/jmc”.



https://wasv90:9443/jmc/console.jsp

WebSphere Application Server Job Management Console Welcome null

- Welcome
- Job Management
  - View jobs
- Job Repository
  - View saved jobs

Welcome

The job management console is a standalone Web interface for WebSphere Application Server users to perform job operations depending on role privileges. This console provides controlled access when security is enabled. Only authorized users who are granted the lrsubmitter and/or lradmin roles through the administrative console can be allowed access to the job management console.

Extended Deployment Library

Visit the WebSphere Extended Deployment Library for documentation, whitepapers, tutorials and demonstrations, and more.

WebSphere Application Server on IBM.com

Find product information on IBM.com about the WebSphere software family. i5/OS information is found on the WebSphere Application Server for i5/OS product Web site.

About your WebSphere Application Server

IBM WebSphere Application Server Network Deployment, 9.0.0.0
Build Number: gm1621.04
Build Date: 5/26/16

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developerWorks WebSphere

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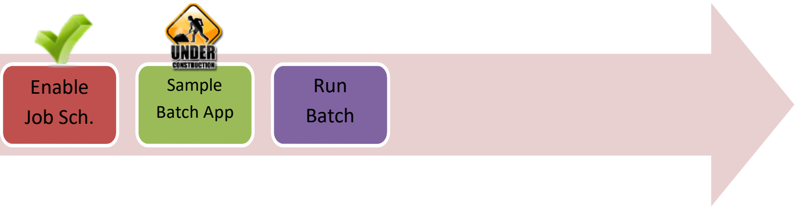
Documentation

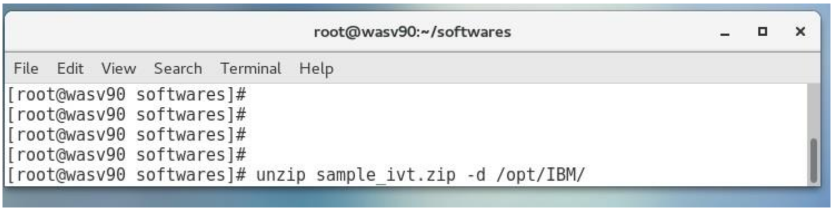
For documentation, including articles and PDF files, visit the online information center.

Task 1 is complete!

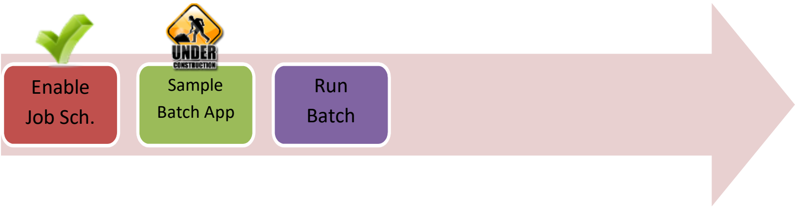


Task 2: Install a sample batch application

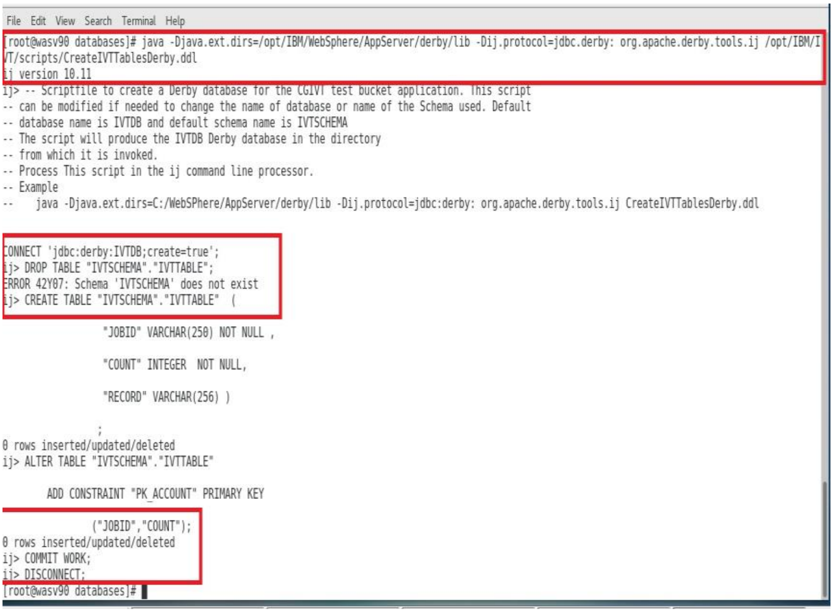
Step 1: Unzip the sample_ivt.zip to “/opt/IBM/”.



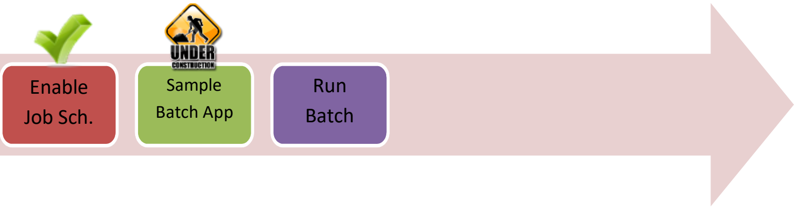
```
[root@wasv90 softwares]#
[root@wasv90 softwares]#
[root@wasv90 softwares]#
[root@wasv90 softwares]#
[root@wasv90 softwares]# unzip sample_ivt.zip -d /opt/IBM/
```



Step 2: Change directory to “/opt/IBM/WebSPhere/AppServer/derby/databases” and run “java –Djava.ext.dirs=/opt/IBM/WebSphere/AppServer/derby/lib –Dij.protocol=jdbc:derby: org.apache.derby.tools.ij /opt/IBM/IVT/scripts/CreateIVTTablesDerby.ddl”.



```
[root@wasv90 databases]# java -Djava.ext.dirs=/opt/IBM/WebSphere/AppServer/derby/lib -Dij.protocol=jdbc.derby: org.apache.derby.tools.ij /opt/IBM/I
VT/scripts/CreateIVTTablesDerby.ddl
ij version 10.11
ij> -- Scriptfile to create a Derby database for the CGIVT test bucket application. This script
-- can be modified if needed to change the name of database or name of the Schema used. Default
-- database name is IVTDB and default schema name is IVTSCHEMA
-- The script will produce the IVTDB Derby database in the directory
-- from which it is invoked.
-- Process This script in the ij command line processor.
-- Example
--    java -Djava.ext.dirs=C:/WebSPhere/AppServer/derby/lib -Dij.protocol=jdbc:derby: org.apache.derby.tools.ij CreateIVTTablesDerby.ddl


CONNECT 'jdbc:derby:IVTDB;create=true';
ij> DROP TABLE "IVTSCHEMA"."IVTTABLE";
ERROR 42Y07: Schema 'IVTSCHEMA' does not exist
ij> CREATE TABLE "IVTSCHEMA"."IVTTABLE"  (

                  "JOBID" VARCHAR(250) NOT NULL ,

                  "COUNT" INTEGER  NOT NULL,

                  "RECORD" VARCHAR(256) )

                 ;
0 rows inserted/updated/deleted
ij> ALTER TABLE "IVTSCHEMA"."IVTTABLE"

        ADD CONSTRAINT "PK_ACCOUNT" PRIMARY KEY

                ("JOBID","COUNT");
0 rows inserted/updated/deleted
ij> COMMIT WORK;
ij> DISCONNECT;
[root@wasv90 databases]#
```

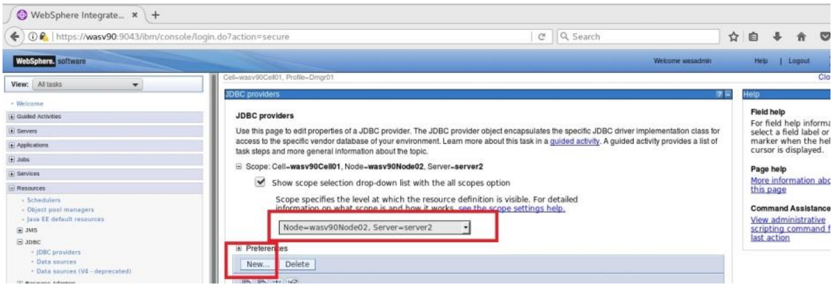


Enable Job Sch.

Sample Batch App

Run Batch

Step 3: Navigate to “Resources>JDBC>JDBC providers” and click “New”.



JDBC providers

Use this page to edit properties of a JDBC provider. The JDBC provider object encapsulates the specific JDBC driver implementation class for access to the specific vendor database of your environment. Learn more about this task in a guided activity. A guided activity provides a list of task steps and more general information about the topic.

⊟ Scope: Cell=**wasv90Cell01**, Node=**wasv90Node02**, Server=**server2**

☑ Show scope selection drop-down list with the all scopes option

Scope specifies the level at which the resource definition is visible. For detailed information on what scope is and how it works, see the scope settings help.

Node=wasv90Node02, Server=server2

⊞ Preferences

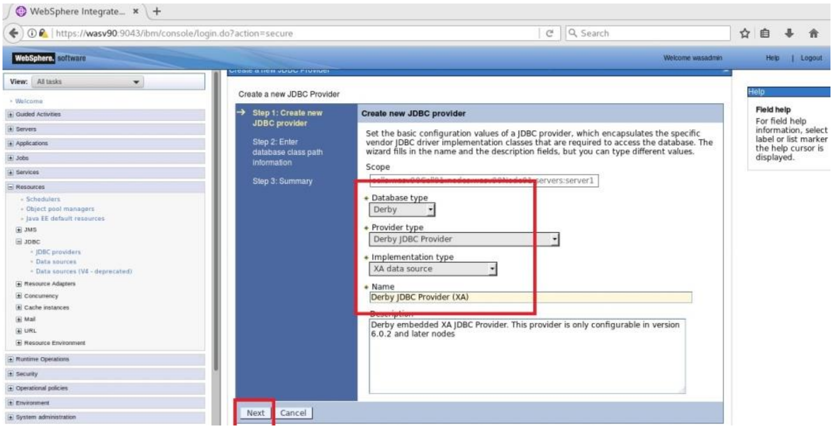
New... Delete

Field help
For field help informa
select a field label or
marker when the hel
cursor is displayed.

Page help
More information abo
this page

Command Assistance
View administrative
scripting command f
last action

Step 4: Add a “Derby” database as follows.



Create a new JDBC Provider

→ Step 1: Create new JDBC provider

Step 2: Enter database class path information

Step 3: Summary

Create new JDBC provider

Set the basic configuration values of a JDBC provider, which encapsulates the specific vendor JDBC driver implementation classes that are required to access the database. The wizard fills in the name and the description fields, but you can type different values.

Scope
cells:wasv90Cell01:nodes:wasv90Node01:servers:server1

* Database type
Derby

* Provider type
Derby JDBC Provider

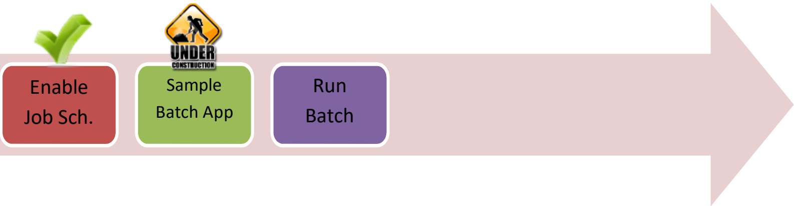
* Implementation type
XA data source

* Name
Derby JDBC Provider (XA)

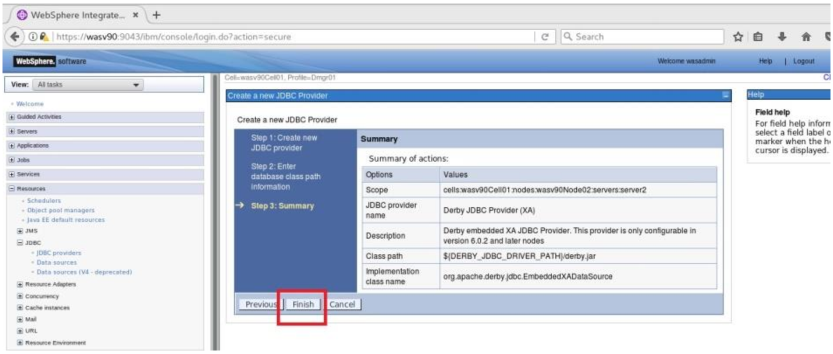
Description
Derby embedded XA JDBC Provider. This provider is only configurable in version 6.0.2 and later nodes

Next Cancel

Field help
For field help information, select label or list marker the help cursor is displayed.



Step 5: Click “Finish” to complete.



Create a new JDBC Provider

Create a new JDBC Provider

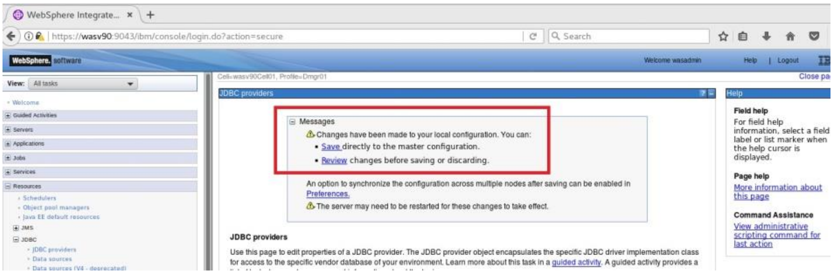
Summary

Summary of actions:

Options	Values
Scope	cells:wasv90Cell01:nodes:wasv90Node02:servers:server2
JDBC provider name	Derby JDBC Provider (XA)
Description	Derby embedded XA JDBC Provider. This provider is only configurable in version 6.0.2 and later nodes
Class path	${DERBY_JDBC_DRIVER_PATH}/derby.jar
Implementation class name	org.apache.derby.jdbc.EmbeddedXADataSource

Field help
For field help inform
select a field label o
marker when the h
cursor is displayed.

Step 6: Click “Save” to write changes.



JDBC providers

Messages

⚠ Changes have been made to your local configuration. You can:

- Save directly to the master configuration.
- Review changes before saving or discarding.

An option to synchronize the configuration across multiple nodes after saving can be enabled in Preferences.

⚠ The server may need to be restarted for these changes to take effect.

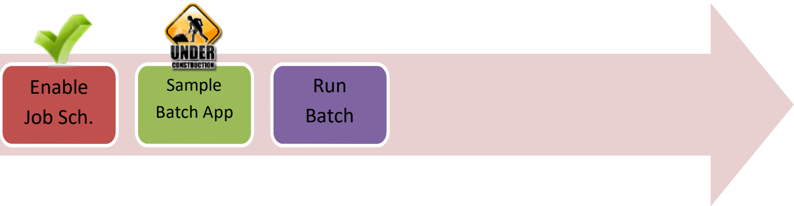
JDBC providers

Use this page to edit properties of a JDBC provider. The JDBC provider object encapsulates the specific JDBC driver implementation class for access to the specific vendor database of your environment. Learn more about this task in a guided activity. A guided activity provides a

Field help
For field help information, select a field label or list marker when the help cursor is displayed.

Page help
More information about this page

Command Assistance
View administrative scripting command for last action

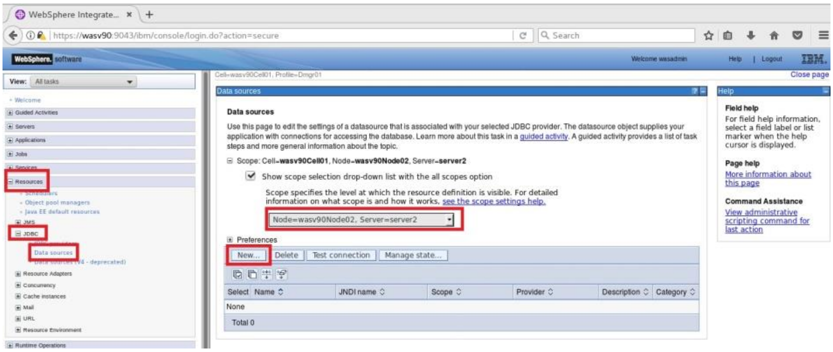


Enable Job Sch.

Sample Batch App

Run Batch

Step 7: Navigate to “Resources>JDBC>Data sources” and click “New”.



Cell=wasv90Cell01, Profile=Dmgr01

Data sources

Data sources

Use this page to edit the settings of a datasource that is associated with your selected JDBC provider. The datasource object supplies your application with connections for accessing the database. Learn more about this task in a guided activity. A guided activity provides a list of task steps and more general information about the topic.

⊟ Scope: Cell=**wasv90Cell01**, Node=**wasv90Node02**, Server=**server2**

☑ Show scope selection drop-down list with the all scopes option

Scope specifies the level at which the resource definition is visible. For detailed information on what scope is and how it works, see the scope settings help.

Node=wasv90Node02, Server=server2

⊞ Preferences

New... | Delete | Test connection | Manage state...

Select	Name	JNDI name	Scope	Provider	Description	Category
None						
Total 0						

Field help

For field help information, select a field label or list marker when the help cursor is displayed.

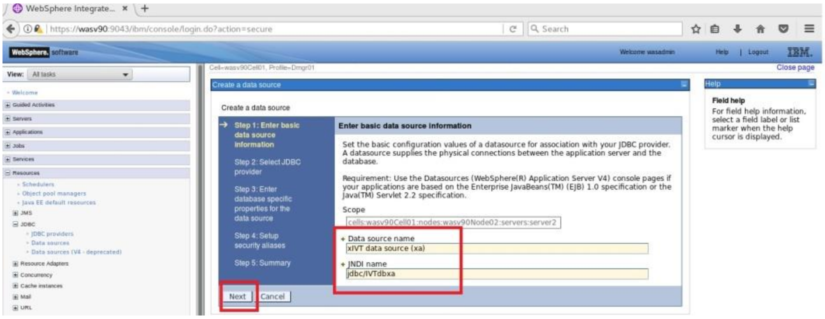
Page help

More information about this page

Command Assistance

View administrative scripting command for last action

Step 8: Use “jdbc/IVTdbxa” as JDNI name and click “Next”.



Cell=wasv90Cell01, Profile=Dmgr01

Create a data source

Create a data source

→ **Step 1: Enter basic data source information**

Step 2: Select JDBC provider

Step 3: Enter database specific properties for the data source

Step 4: Setup security aliases

Step 5: Summary

Enter basic data source information

Set the basic configuration values of a datasource for association with your JDBC provider. A datasource supplies the physical connections between the application server and the database.

Requirement: Use the Datasources (WebSphere(R) Application Server V4) console pages if your applications are based on the Enterprise JavaBeans(TM) (EJB) 1.0 specification or the Java(TM) Servlet 2.2 specification.

Scope
cells:wasv90Cell01:nodes:wasv90Node02:servers:server2

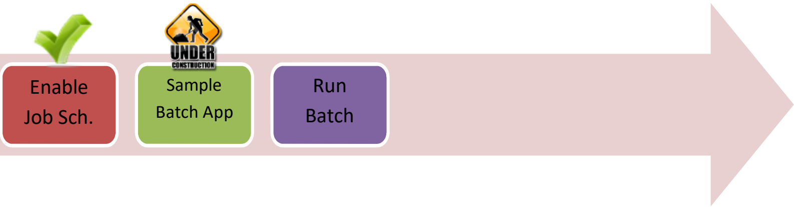
* Data source name
xIVT data source (xa)

* JNDI name
jdbc/IVTdbxa

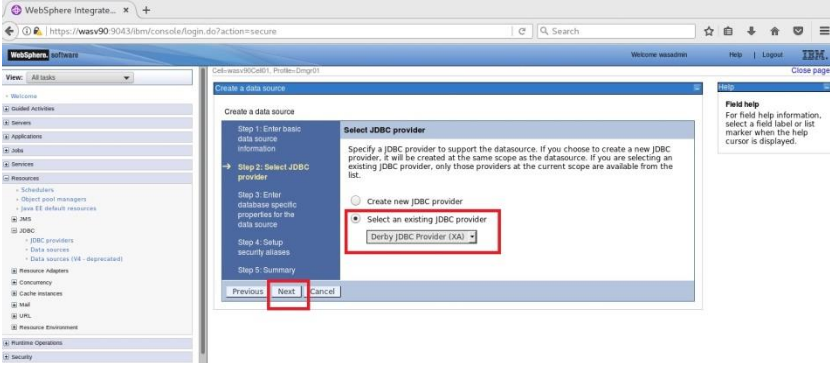
Next | Cancel

Field help

For field help information, select a field label or list marker when the help cursor is displayed.



Step 9: Select “Derby JDBC Provider (XA)” and click “Next”.



Create a data source

Create a data source

Step 1: Enter basic data source information

→ Step 2: Select JDBC provider

Step 3: Enter database specific properties for the data source

Step 4: Setup security aliases

Step 5: Summary

Select JDBC provider

Specify a JDBC provider to support the datasource. If you choose to create a new JDBC provider, it will be created at the same scope as the datasource. If you are selecting an existing JDBC provider, only those providers at the current scope are available from the list.

○ Create new JDBC provider

● Select an existing JDBC provider

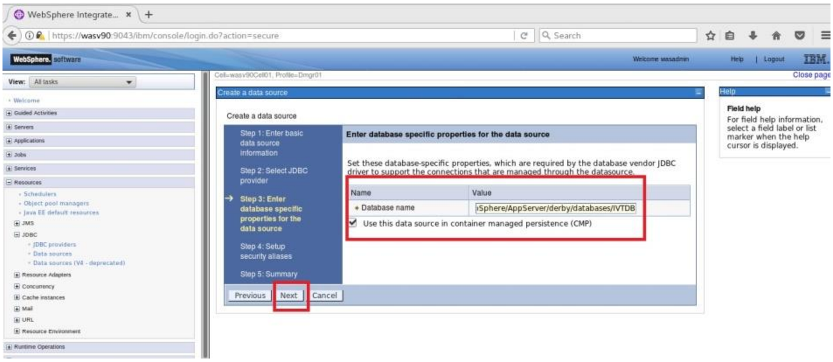
Derby JDBC Provider (XA)

Previous | Next | Cancel

Field help

For field help information, select a field label or list marker when the help cursor is displayed.

Step 10: Eneter “/opt/IBM/WebSPhere/AppServer/derby/databases/IVTDB” and click “Next”.



Create a data source

Create a data source

Step 1: Enter basic data source information

Step 2: Select JDBC provider

→ Step 3: Enter database specific properties for the data source

Step 4: Setup security aliases

Step 5: Summary

Enter database specific properties for the data source

Set these database-specific properties, which are required by the database vendor JDBC driver to support the connections that are managed through the datasource.

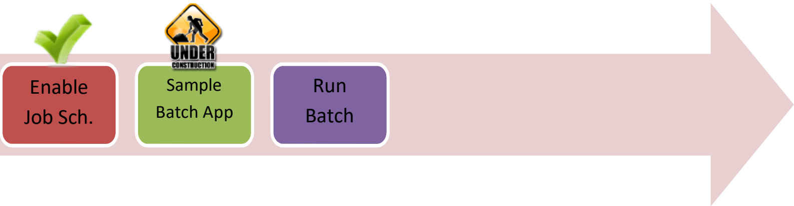
Name	Value
* Database name	ıSphere/AppServer/derby/databases/IVTDB

☑ Use this data source in container managed persistence (CMP)

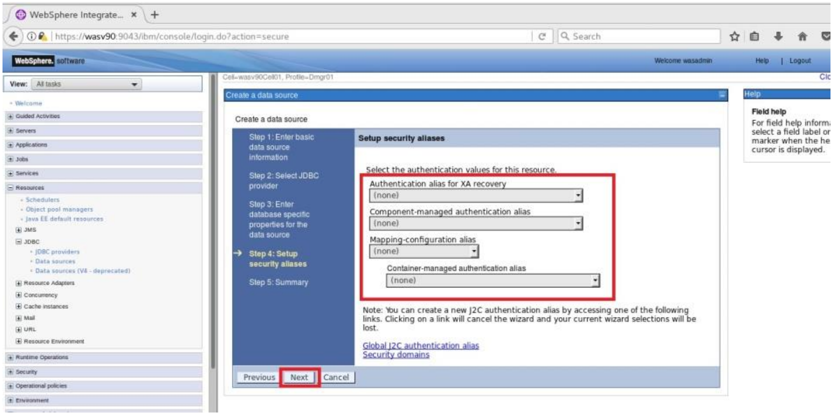
Previous | Next | Cancel

Field help

For field help information, select a field label or list marker when the help cursor is displayed.



Step 11: Click “Next” to continue.



Cell=wasv90Cell01, Profile=Dmgr01

Create a data source

Create a data source

Setup security aliases

Select the authentication values for this resource.

Authentication alias for XA recovery: (none)

Component-managed authentication alias: (none)

Mapping-configuration alias: (none)

Container-managed authentication alias: (none)

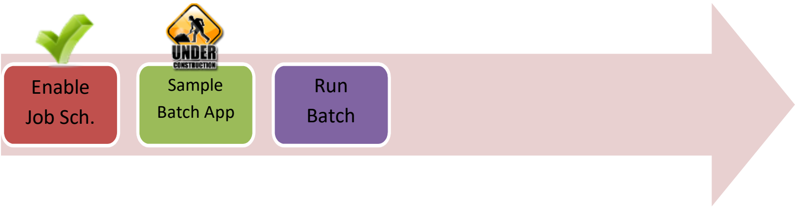
Note: You can create a new J2C authentication alias by accessing one of the following links. Clicking on a link will cancel the wizard and your current wizard selections will be lost.

Global J2C authentication alias
Security domains

Help

Field help

For field help inform
select a field label or
marker when the he
cursor is displayed.

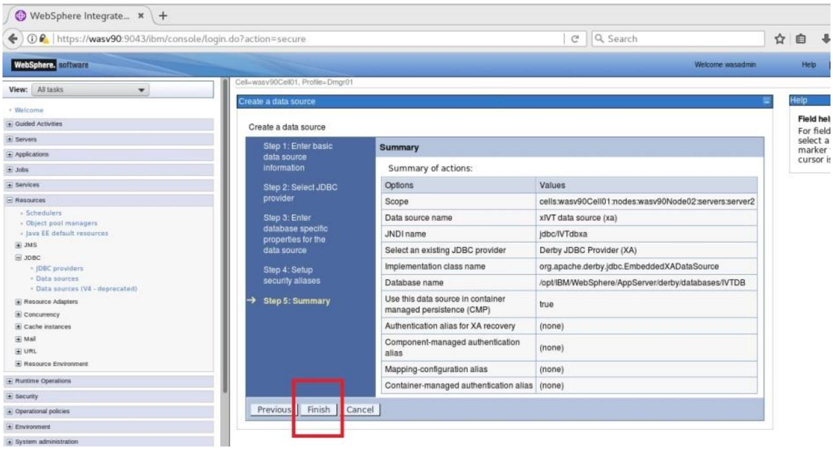


Enable Job Sch.

Sample Batch App

Run Batch

Step 12: Click “Finish” to complete.



Cell=wasv90Cell01, Profile=Dmgr01

Create a data source

Create a data source

Step 1: Enter basic data source information

Step 2: Select JDBC provider

Step 3: Enter database specific properties for the data source

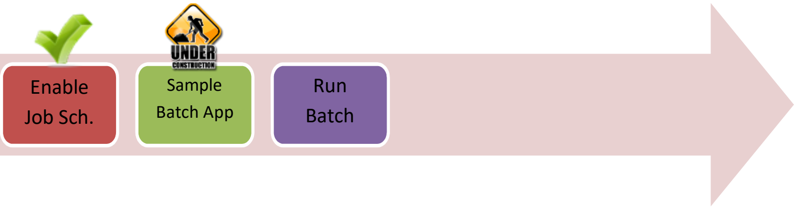
Step 4: Setup security aliases

→ **Step 5: Summary**

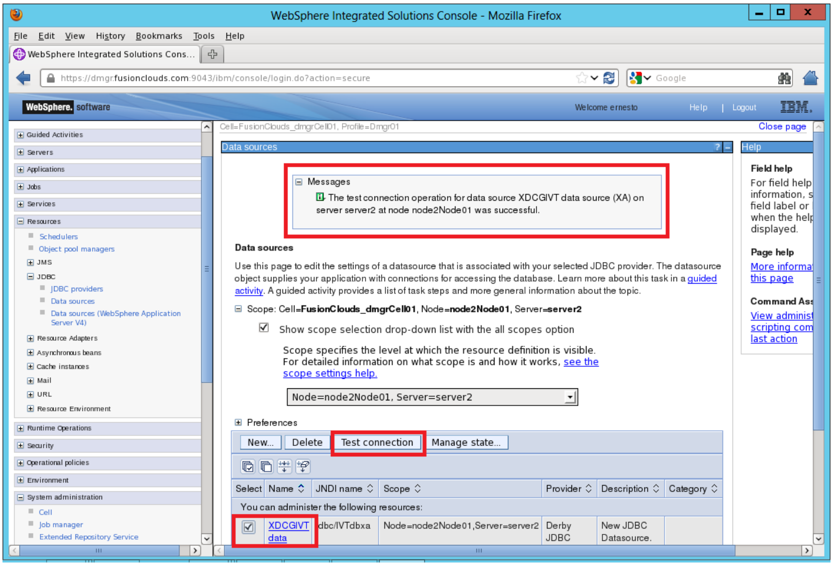
Summary

Summary of actions:

Options	Values
Scope	cells:wasv90Cell01:nodes:wasv90Node02:servers:server2
Data source name	xIVT data source (xa)
JNDI name	jdbc/IVTdbxa
Select an existing JDBC provider	Derby JDBC Provider (XA)
Implementation class name	org.apache.derby.jdbc.EmbeddedXADataSource
Database name	/opt/IBM/WebSphere/AppServer/derby/databases/IVTDB
Use this data source in container managed persistence (CMP)	true
Authentication alias for XA recovery	(none)
Component-managed authentication alias	(none)
Mapping-configuration alias	(none)
Container-managed authentication alias	(none)



Step 13: Select the new data source and click “Test connection” to verify the database conencitvity.



Cell=FusionClouds_dmgrCell01, Profile=Dmgr01

Data sources

Messages

The test connection operation for data source XDCGIVT data source (XA) on server server2 at node node2Node01 was successful.

Data sources

Use this page to edit the settings of a datasource that is associated with your selected JDBC provider. The datasource object supplies your application with connections for accessing the database. Learn more about this task in a guided activity. A guided activity provides a list of task steps and more general information about the topic.

Scope: Cell=**FusionClouds_dmgrCell01**, Node=**node2Node01**, Server=**server2**

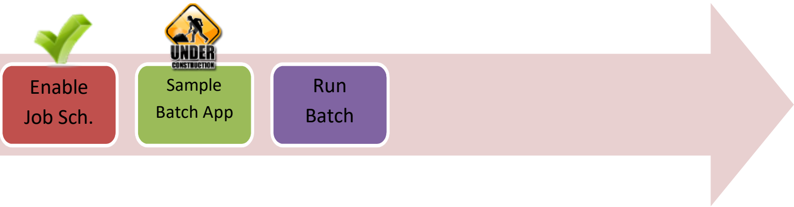
☑ Show scope selection drop-down list with the all scopes option

Scope specifies the level at which the resource definition is visible. For detailed information on what scope is and how it works, see the scope settings help.

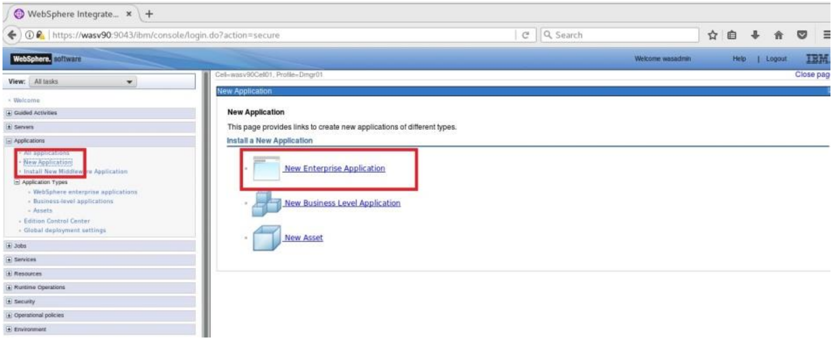
Node=node2Node01, Server=server2

Preferences

Select	Name	JNDI name	Scope	Provider	Description	Category
You can administer the following resources:						
☑	XDCGIVT data	dbc/IVTdbxa	Node=node2Node01,Server=server2	Derby JDBC	New JDBC Datasource.	



Step 14: Navigate to “Applications>New Application” and click “New Enterprise Application”.



Cell=wasv90Cell01, Profile=Dmgr01

New Application

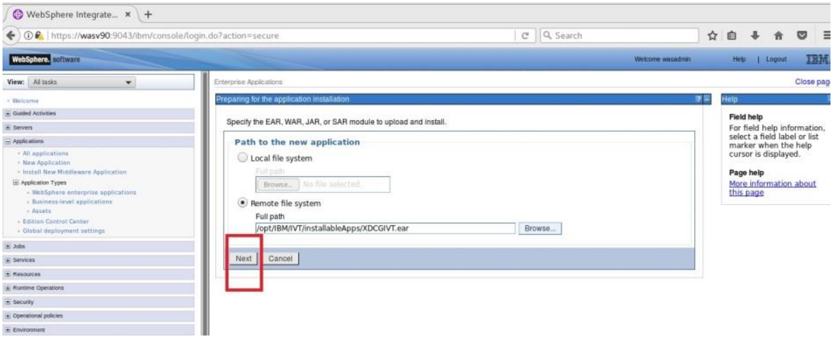
New Application

This page provides links to create new applications of different types.

Install a New Application

- New Enterprise Application
- New Business Level Application
- New Asset

Step 15: Browse “/opt/IBM/sample_ivt/sample_ivt/IVT/installableApps/XDCGIVT.ear” and click “Next”.



Enterprise Applications

Preparing for the application installation

Specify the EAR, WAR, JAR, or SAR module to upload and install.

Path to the new application

○ Local file system

Full path

Browse... No file selected.

● Remote file system

Full path

/opt/IBM/IVT/installableApps/XDCGIVT.ear

Browse...

Next Cancel

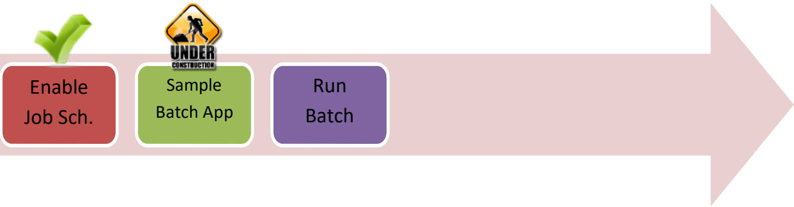
Help

Field help

For field help information, select a field label or list marker when the help cursor is displayed.

Page help

More information about this page

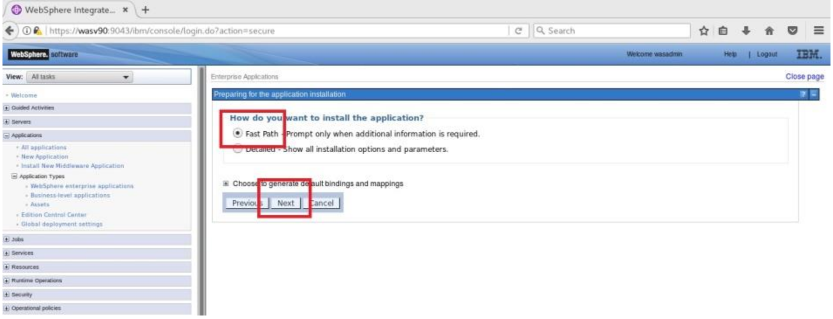


Enable Job Sch.

Sample Batch App

Run Batch

Step 16: Select “Fast Path” and click “Next”.



Preparing for the application installation

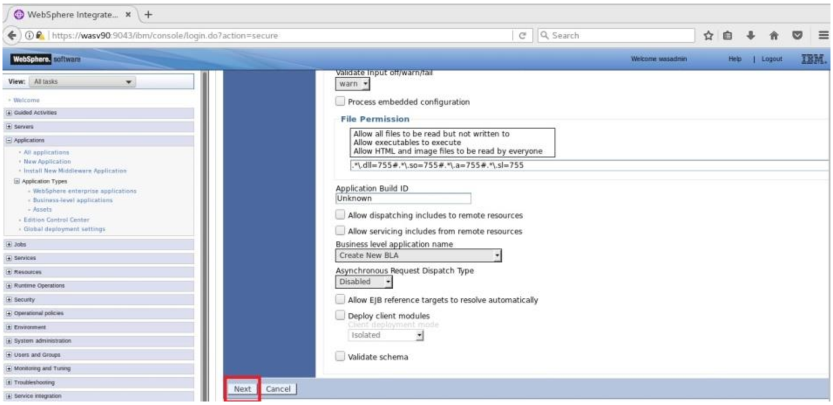
How do you want to install the application?

● Fast Path - Prompt only when additional information is required.

○ Detailed - Show all installation options and parameters.

⊞ Choose to generate default bindings and mappings

Step 17: Accept the default settings and click “Next”.



Validate Input off/warn/fail: warn

□ Process embedded configuration

File Permission

Allow all files to be read but not written to
Allow executables to execute
Allow HTML and image files to be read by everyone

.*\.dll=755#.*\.so=755#.*\.a=755#.*\.sl=755

Application Build ID: Unknown

□ Allow dispatching includes to remote resources

□ Allow servicing includes from remote resources

Business level application name: Create New BLA

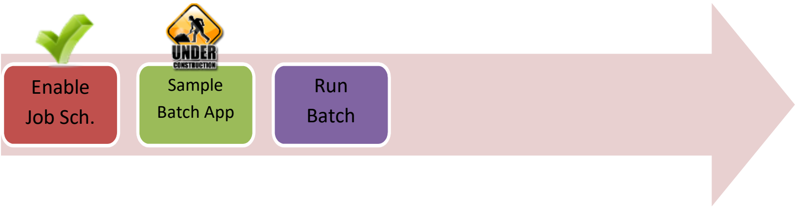
Asynchronous Request Dispatch Type: Disabled

□ Allow EJB reference targets to resolve automatically

□ Deploy client modules

Client deployment mode: Isolated

□ Validate schema

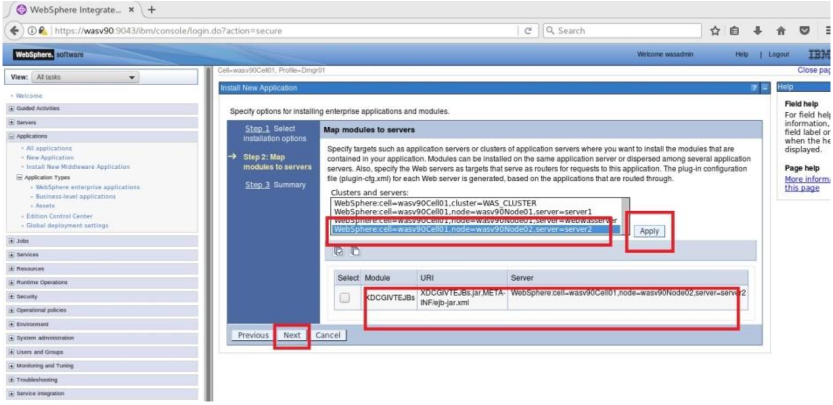


Enable Job Sch.

Sample Batch App

Run Batch

Step 18: Map the application to the application server selected as host of the job scheduler and click “Next”.



Cell=wasv90Cell01, Profile=Dmgr01

Install New Application

Specify options for installing enterprise applications and modules.

Step 1 Select installation options

→ Step 2: Map modules to servers

Step 3 Summary

Map modules to servers

Specify targets such as application servers or clusters of application servers where you want to install the modules that are contained in your application. Modules can be installed on the same application server or dispersed among several application servers. Also, specify the Web servers as targets that serve as routers for requests to this application. The plug-in configuration file (plugin-cfg.xml) for each Web server is generated, based on the applications that are routed through.

Clusters and servers:

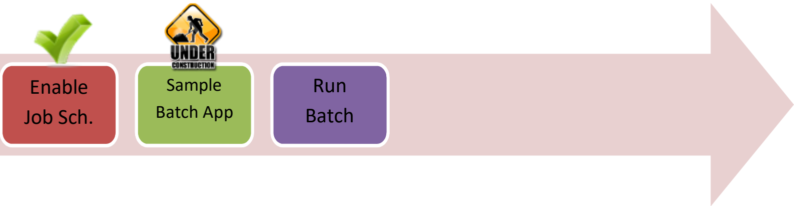
```
WebSphere:cell=wasv90Cell01,cluster=WAS_CLUSTER
WebSphere:cell=wasv90Cell01,node=wasv90Node01,server=server1
WebSphere:cell=wasv90Cell01,node=wasv90Node01,server=webwasserver
WebSphere:cell=wasv90Cell01,node=wasv90Node02,server=server2
```

Apply

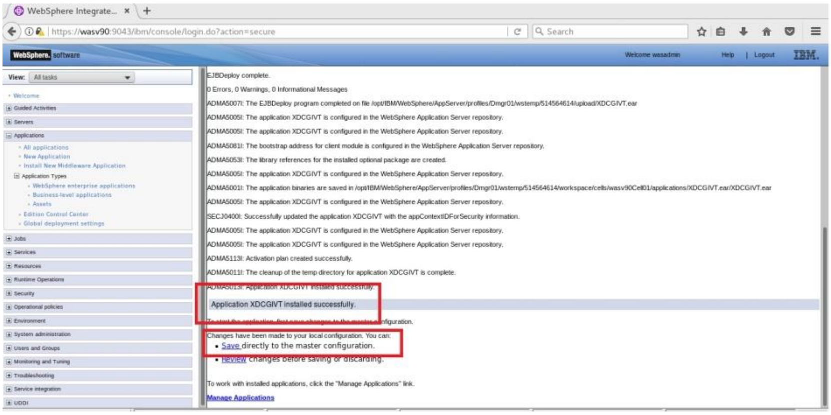
Select	Module	URI	Server
□	XDCGIVTEJBs	XDCGIVTEJBs.jar,META-INF/ejb-jar.xml	WebSphere:cell=wasv90Cell01,node=wasv90Node02,server=server2

Previous Next Cancel

For field help information, select a field label or list marker when the help cursor is displayed.



Step 19: Click “Finish” and wait for Installation of EAR. You should see the success message then click “Save”.



```
EJBDeploy complete.
0 Errors, 0 Warnings, 0 Informational Messages
ADMA5007I: The EJBDeploy program completed on file /opt/IBM/WebSphere/AppServer/profiles/Dmgr01/wstemp/514564614/upload/XDCGIVT.ear
ADMA5005I: The application XDCGIVT is configured in the WebSphere Application Server repository.
ADMA5005I: The application XDCGIVT is configured in the WebSphere Application Server repository.
ADMA5081I: The bootstrap address for client module is configured in the WebSphere Application Server repository.
ADMA5053I: The library references for the installed optional package are created.
ADMA5005I: The application XDCGIVT is configured in the WebSphere Application Server repository.
ADMA5001I: The application binaries are saved in /opt/IBM/WebSphere/AppServer/profiles/Dmgr01/wstemp/514564614/workspace/cells/wasv90Cell01/applications/XDCGIVT.ear/XDCGIVT.ear
ADMA5005I: The application XDCGIVT is configured in the WebSphere Application Server repository.
SECJ0400I: Successfully updated the application XDCGIVT with the appContextIDForSecurity information.
ADMA5005I: The application XDCGIVT is configured in the WebSphere Application Server repository.
ADMA5005I: The application XDCGIVT is configured in the WebSphere Application Server repository.
ADMA5113I: Activation plan created successfully.
ADMA5011I: The cleanup of the temp directory for application XDCGIVT is complete.
ADMA5013I: Application XDCGIVT installed successfully.
```

Application XDCGIVT installed successfully.

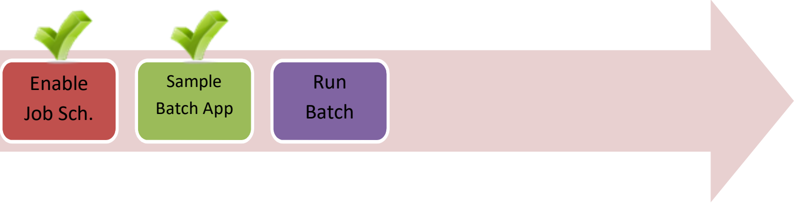
To start the application, first save changes to the master configuration.

Changes have been made to your local configuration. You can:

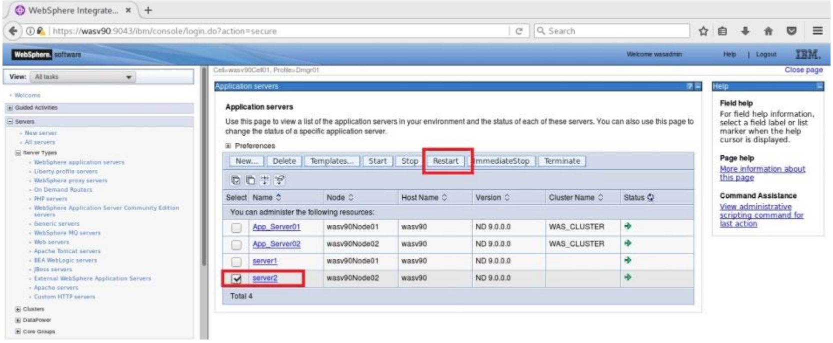
- Save directly to the master configuration.
- Review changes before saving or discarding.

To work with installed applications, click the "Manage Applications" link.

Manage Applications



Step 20: Restart the application servers.



Cell=wasv90Cell01, Profile=Dmgr01

Application servers

Application servers

Use this page to view a list of the application servers in your environment and the status of each of these servers. You can also use this page to change the status of a specific application server.

You can administer the following resources:

Select	Name	Node	Host Name	Version	Cluster Name	Status
□	App_Server01	wasv90Node01	wasv90	ND 9.0.0.0	WAS_CLUSTER	➔
□	App_Server02	wasv90Node02	wasv90	ND 9.0.0.0	WAS_CLUSTER	➔
□	server1	wasv90Node01	wasv90	ND 9.0.0.0		➔
☑	server2	wasv90Node02	wasv90	ND 9.0.0.0		➔

Total 4

Help

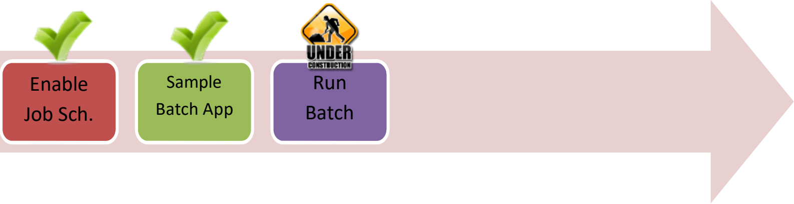
Field help
For field help information, select a field label or list marker when the help cursor is displayed.

Page help
More information about this page

Command Assistance
View administrative scripting command for last action

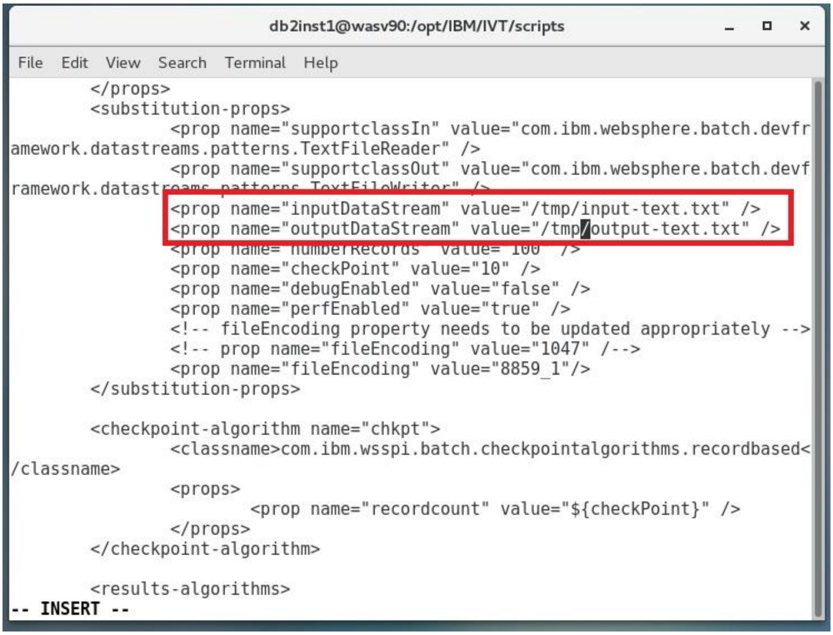
Make sure that restart is successful.

Task 2 is complete!

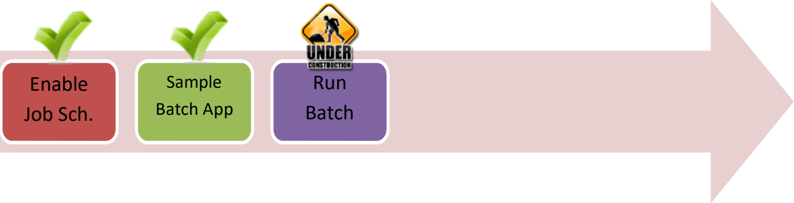


Task 3: Run a batch job

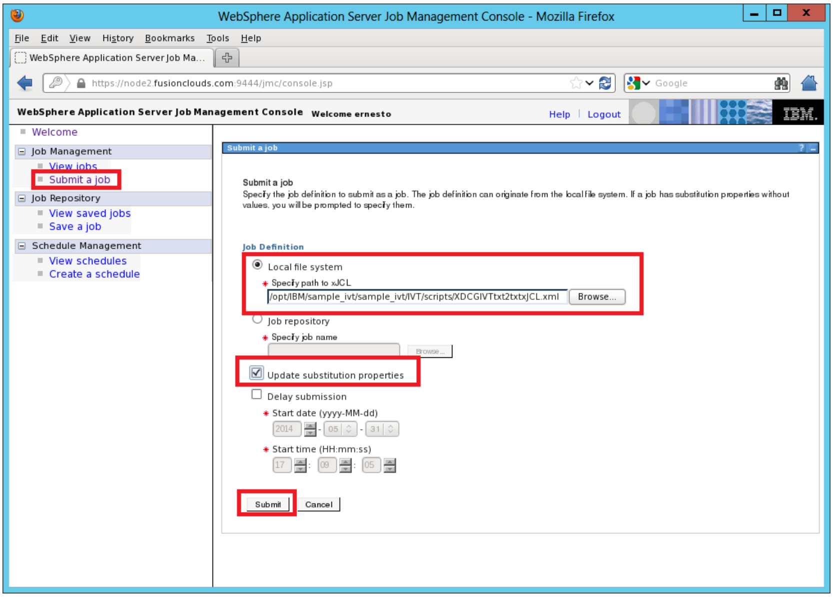
Step 1: Change "inputDataStream" and “outputDataStream” values according to your environment for the “XDCGIVTtxt2txtxJCL.xml”, “XDCGIVTbyte2bytexJCL.xml” and “XDCGIVTtxt2db2txtxJCL.xml” files under “scripts” folder.


db2inst1@wasv90:/opt/IBM/IVT/scripts
File Edit View Search Terminal Help

```
        </props>
        <substitution-props>
                <prop name="supportclassIn" value="com.ibm.websphere.batch.devfr
amework.datastreams.patterns.TextFileReader" />
                <prop name="supportclassOut" value="com.ibm.websphere.batch.devf
ramework.datastreams.patterns.TextFileWriter" />
                <prop name="inputDataStream" value="/tmp/input-text.txt" />
                <prop name="outputDataStream" value="/tmp/output-text.txt" />
                <prop name="numberRecords" value="100" />
                <prop name="checkPoint" value="10" />
                <prop name="debugEnabled" value="false" />
                <prop name="perfEnabled" value="true" />
                <!-- fileEncoding property needs to be updated appropriately -->
                <!-- prop name="fileEncoding" value="1047" /-->
                <prop name="fileEncoding" value="8859_1"/>
        </substitution-props>

        <checkpoint-algorithm name="chkpt">
                <classname>com.ibm.wsspi.batch.checkpointalgorithms.recordbased<
/classname>
                <props>
                        <prop name="recordcount" value="${checkPoint}" />
                </props>
        </checkpoint-algorithm>

        <results-algorithms>
-- INSERT --
```



Step 2: Login to “Job Management Console” and click on “Submit a job”. Browse “XDCGIVTtxt2txtxJCL.xml” file in “Local file system” and select “Update substitution properties” and click “Submit”.


WebSphere Application Server Job Management Console - Mozilla Firefox
File Edit View History Bookmarks Tools Help
WebSphere Application Server Job Ma...
https://node2.fusionclouds.com:9444/jmc/console.jsp
Google
WebSphere Application Server Job Management Console
Welcome ernesto
Help | Logout
IBM.
Welcome
Job Management
View jobs
Submit a job
Job Repository
View saved jobs
Save a job
Schedule Management
View schedules
Create a schedule
Submit a job

Submit a job

Specify the job definition to submit as a job. The job definition can originate from the local file system. If a job has substitution properties without values, you will be prompted to specify them.

Job Definition

● Local file system

* Specify path to xJCL

/opt/IBM/sample_ivt/sample_ivt/IVT/scripts/XDCGIVTtxt2txtxJCL.xml [Browse...]

○ Job repository

* Specify job name

[Browse...]

☑ Update substitution properties

□ Delay submission

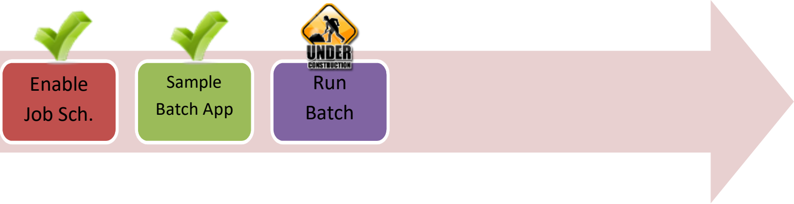
* Start date (yyyy-MM-dd)

2014 - 05 - 31

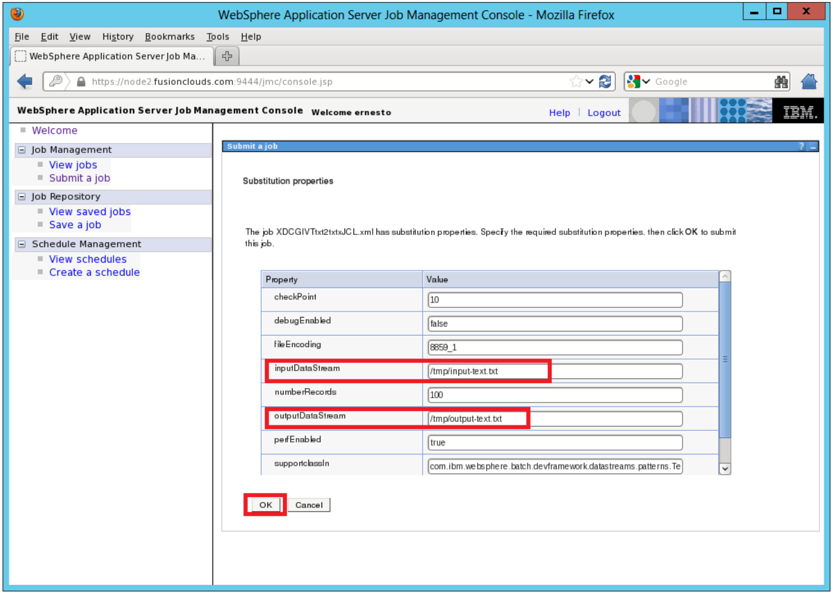
* Start time (HH:mm:ss)

17 : 09 : 05

[Submit] [Cancel]



Step 3: You can change properties and click “OK”.

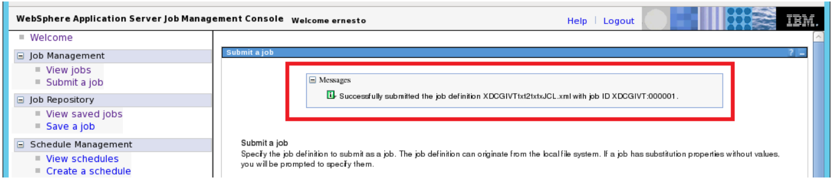

WebSphere Application Server Job Management Console - Mozilla Firefox
File Edit View History Bookmarks Tools Help
WebSphere Application Server Job Ma...
https://node2.fusionclouds.com:9444/jmc/console.jsp
Google
WebSphere Application Server Job Management Console Welcome ernesto
Help | Logout
IBM.
Welcome
Job Management
View jobs
Submit a job
Job Repository
View saved jobs
Save a job
Schedule Management
View schedules
Create a schedule
Submit a job

Substitution properties

The job XDCGIVT1xt2txtxJCL.xml has substitution properties. Specify the required substitution properties, then click **OK** to submit this job.

Property	Value
checkPoint	10
debugEnabled	false
fileEncoding	8859_1
inputDataStream	/tmp/input-text.txt
numberRecords	100
outputDataStream	/tmp/output-text.txt
perfEnabled	true
supportclassIn	com.ibm.websphere.batch.devframework.datastreams.patterns.Te

Step 4: You should see the job submission success message as follows.

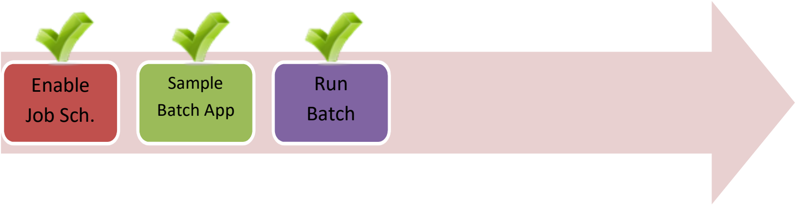


Messages

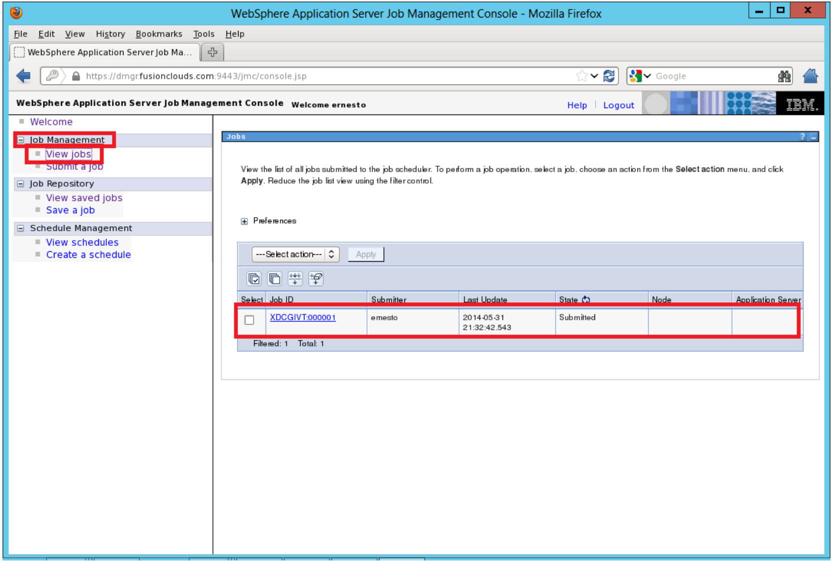
Successfully submitted the job definition XDCGIVT1xt2txtxJCL.xml with job ID XDCGIVT:000001.

Submit a job

Specify the job definition to submit as a job. The job definition can originate from the local file system. If a job has substitution properties without values, you will be prompted to specify them.



Step 5: You can take actions under “Job Management>View jobs” for the specific job.


WebSphere Application Server Job Management Console - Mozilla Firefox
File Edit View History Bookmarks Tools Help
WebSphere Application Server Job Ma...
https://dmgr.fusionclouds.com:9443/jmc/console.jsp
Google
WebSphere Application Server Job Management Console Welcome ernesto
Help | Logout
IBM.
Welcome
Job Management
View jobs
Submit a job
Job Repository
View saved jobs
Save a job
Schedule Management
View schedules
Create a schedule
Jobs
Preferences
---Select action---
Apply

View the list of all jobs submitted to the job scheduler. To perform a job operation, select a job, choose an action from the **Select action** menu, and click **Apply**. Reduce the job list view using the filter control.

Select	Job ID	Submitter	Last Update	State	Node	Application Server
□	XDCGIVT:000001	ernesto	2014-05-31 21:32:42.543	Submitted		

Filtered: 1 Total: 1

Task 3 is complete!

SUMMARY

Batch applications are used to run complex and long tasks that contain typically transactional and multi-step processes. WebSphere Application Server uses an XML based language, xJCL, to provide consistent architecture that is optimized for Java and long running batch applications. A batch job contains directives to run one or more batch applications. Batch applications are Java EE applications that are designed to run in a non-interactive mode to complete business critical jobs.

REFERENCES

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INDEX

Batch applications.. 420
batch job.. 420
Job database 421
Job scheduler 421