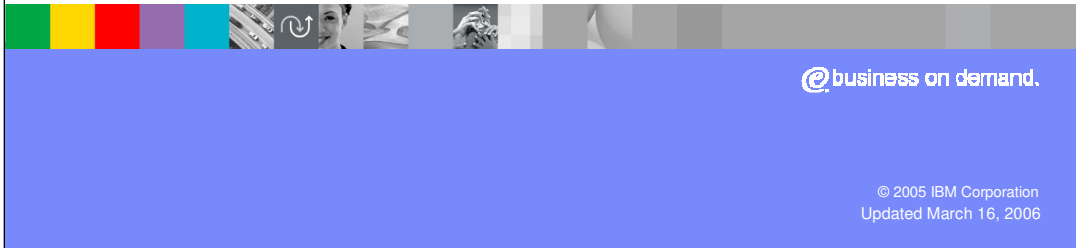




IBM Software Group

IBM® WebSphere® Extended Deployment V6

Business Grid - Example



@business on demand.

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This presentation will provide an example of how to use the business grid component offered in WebSphere Extended Deployment V6.

Agenda

- Example of configuring and using Business Grid



The agenda is to provide an example of how to configure your WebSphere environment to support the Business Grid and explain how to deploy long-running applications to the environment.

Section

Example



This section provides an example of the Business Grid.

Scheduler configuration

- Use DDL provided with WebSphere XD to create Scheduler and Execution Environment tables
- Define corresponding DataSource in WebSphere Application Server
 - ▶ The DataSource must be accessible to all nodes that can run the scheduler and execution endpoint
- Configure the scheduler with the Java™ Naming and Directory Interface (JNDI) name and authentication information for the DataSource



Several steps must be taken to create an environment that will support long-running applications. First, you must create the databases for the Scheduler component and for the long-running Execution Environment and DDLs to accomplish this are provided with WebSphere Extended Deployment. Once the tables are created, corresponding datasources must be created and accessible from all nodes that will host the scheduler or run long-running applications. The scheduler must then be configured with the JNDI name for the resource and any security information needed to use the datasource.

Scheduler configuration panel

Long-running scheduler

Long-running scheduler

The long-running scheduler accepts long-running jobs and determines where and when to execute them. As part of managing jobs, the long-running scheduler persists job information in an external job database. This configuration panel allows datasource, datasource credentials and custom properties to be configured for the scheduler.

Configuration **Runtime**

General Properties	Additional Properties
Database schema name <input type="text" value="LRSSHEMA"/>	<ul style="list-style-type: none">Custom properties
Data source JNDI name <input type="text" value="jdbc/lrsched"/>	Related Items
Data source alias <input type="text" value="wasxd01CellManager01/db2admin"/>	<ul style="list-style-type: none">Job ManagementJDBC providersJ2EE Connector Architecture (J2C) authentication data entries
<input type="button" value="Apply"/> <input type="button" value="OK"/> <input type="button" value="Reset"/> <input type="button" value="Cancel"/>	



Under the configuration panel for the scheduler you can configure the JNDI name for the datasource and specify the datasource authentication alias.

Develop long-running application

- Develop long-running applications using normal J2EE development tools
 - ▶ WebSphere Studio Application Developer
 - ▶ Rational Application Developer
 - ▶ Eclipse
- A long-running application is packaged in an ordinary EAR file
- EJB jar file contains deployment information for LongRunningController Stateless Session Bean and code for asynchronous bean (compute-intensive) or entity beans (batch)



Application developers should then create long-running applications based on either the computationally intensive or batch programming model using the normal J2EE development tools. Long-running applications are packaged into normal ear files. The EJB jar file for the application contains some specific information for long-running applications, such as the deployment information for the controller bean and the actual bean implementations of the applications.

Deploy long-running application

- Deploy the Long-Running Execution Environment to each dynamic cluster that will host long-running applications
- Long-running applications are deployed as regular J2EE applications
 - ▶ When the application is deployed, WebSphere XD automatically detects that it is a long-running application
- User is responsible for ensuring that a dynamic cluster contains only long-running applications or transactional applications
 - ▶ Never mix the two types of applications
- Once the application is deployed, define service policies for the new long-running application



Long-running applications are deployed like any regular J2EE application, and once one is deployed WebSphere Extended Deployment will detect that it is a long-running application. Administrators are responsible for ensuring policy settings will only allow long-running or transactional work to run in a given dynamic cluster. Once the application has been deployed, an administrator can define service policies for the application in preparation for submitting a job. The service policies are different for long-running applications, and the only metrics supported for long-running applications are maximum needed queue time and discretionary.

Submit job

- Construct xJCL to submit job to application
- Use one of the scheduler interfaces to submit job
 - ▶ Command line interface, Web Services, EJB
- Note job ID assigned by scheduler
- Use administrative console job management panels



Prior to submitting a job, an administrator should construct an xJCL document to describe the behavior of the application. The administrator then has a choice of interfaces to submit the job to the scheduler, noting the job ID assigned to the job by the scheduler. An administrator can then manage the job using the panels in the administrative console.

Job management panel

Jobs ?

Jobs
Job is an independent unit of long-running work. Long-running work can be submitted either manually via a CLI or programmatically. This panel shows the current jobs in the long-running scheduler. Select the Job ID link to view the job target object. To execute an action on a specific job, choose the action from the appropriate list and select the corresponding check box. Then press the Submit button.

Preferences

Submit

Apply following action to selected jobs Suspended Time (seconds)

Select	Action	Job ID	Submitter	Last Update	State	Node	Application Server
<input type="checkbox"/>	Remove	SimpleCIFear:0		Thu Oct 13 15:00:51 EDT 2005	Ended	wassvt01Node02	EEDC_wassvt01Node02
<input type="checkbox"/>	Remove	SimpleCIFear:2		Thu Oct 13 16:20:25 EDT 2005	Ended	wassvt01Node02	EEDC_wassvt01Node02
<input type="checkbox"/>	Remove	PostingsSampleEar:3		Thu Oct 13 16:21:45 EDT 2005	Ended	wassvt01Node02	EEDC_wassvt01Node02
<input type="checkbox"/>	Remove	OverdraftFileEar:4		Thu Oct 13 16:26:44 EDT 2005	Ended	wassvt01Node02	EEDC2_wassvt01Node02
<input type="checkbox"/>	Restart	PostingsSampleEar:1		Thu Oct 13 15:02:26 EDT 2005	Restartable	wassvt01Node02	EEDC_wassvt01Node02

Total 5 Filtered total: 5

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Administrators can use the Job management panel to monitor and control jobs that are currently running. This panel is available on the administrative console by expanding “Runtime Operations”, then selecting “Job Management.”

Job properties panel

Jobs > Job Target

General Properties

Remove

Job ID
zenithCell\zenithNode1\bjs_app_server:0

Type
Batch

State
Ended

Status Information
ended normally

Last Update
Thu Mar 31 15:11:28 EST 2005

Node

Submitter

Application Server

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By selecting an individual job from the previous panel, an administrator can view more information specific to that job.

Summary

- WebSphere XD provides an environment for managing and executing batch-style and compute-intensive applications
 - ▶ Jobs are scheduled using the Long Running Scheduler (LongRunningScheduler.ear)
 - ▶ Jobs are run in the Long Running Execution Environment (LREE.ear)
- A WebSphere XD Business Grid can dynamically balance the needs of long-running work against the needs of transactional applications within a cell



In summary, this presentation explained the benefits of the business grid provided by WebSphere Extended Deployment V6. It also showed by example how to use the new business grid component provided with WebSphere Extended Deployment V6.

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