



IBM Software Group

WebSphere® Enterprise Service Bus V6.1 WebSphere Process Server V6.1

Network Deployment environment creation



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This presentation discusses installation and configuration of a Network Deployment environment for the WebSphere Enterprise Service Bus and WebSphere Process Server V6.1.

Goals

- New installation features common to
 - ▶ WebSphere Enterprise Service Bus
 - ▶ WebSphere Process Server
- Usage of these features
- Create Network Deployment topology



This presentation covers the new installation and profile management tool features, which are common to both the WebSphere Enterprise Service Bus and the WebSphere Process Server. The presentation covers the use of these new features in the creation of the three new pre-defined Network Deployment topologies. Any references within this presentation to the WebSphere Process Server also represent the WebSphere Enterprise Service Bus unless otherwise specified.

Agenda

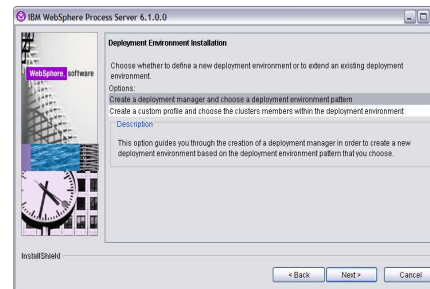
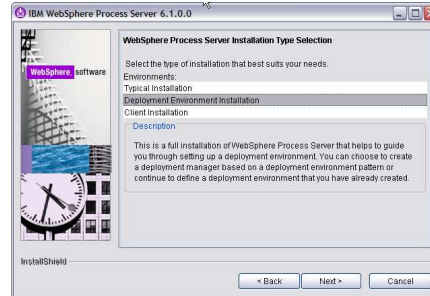
- Network Deployment topology creation
 - ▶ Installation
 - ▶ Profile management tool
 - ▶ Administrative console



The focus of this presentation is the creation of a Network Deployment topology. It covers the topology creation during installation, and using the profile management tool. It also shows some of the topology creation and configuration options that are available within the administrative console.

Installation for network deployment

- Previous panels covered in installation presentation
- Deployment environment
 - ▶ Creates new deployment manager
 - ▶ Cluster members for existing topology



During the installation of the WebSphere Process Server there are now three options for the type of server installation available. The typical installation allows the creation of a stand-alone server, a deployment manager or a custom profile. This path for profile creation requires that the profile be configured manually to create a Network Deployment environment. The deployment environment option allows the selection of one of three pre-defined topologies for the deployment manager. This can be done later using the profile management tool also. A second option for the deployment environments allows the creation of a custom profile on a system during installation. You might use this to configure a node on a separate system. The installer connects to a deployment manager to federate this node. A third option at the first panel allows a stand-alone client to be installed with a smaller footprint for use with the server environment.

Deployment manager creation

- Security required
- Topology type
 - Single cluster
 - Remote messaging
 - Remote messaging and support
- Create new database
 - Product
 - Name
- Use host name
- Creates first topology only

The screenshot shows the IBM WebSphere Process Server 6.1.0.00 installation wizard. It is divided into several panels:

- Enable Administrative Security:** A panel with a heading "Enable Administrative Security" and a sub-heading "For Network Deployment Outaged Installation, administrative security will be enabled. Please specify a user name and password to log in to the administrative tools. The administrative user is created in a repository within the WebSphere Enterprise Service Bus. After installation completes, you can add more users, groups, or external repositories." It includes fields for "User name:", "Password:", and "Confirm password:".
- Deployment Manager and Deployment Environment Pattern:** A panel with a heading "Deployment Manager and Deployment Environment Pattern" and a sub-heading "Choose the deployment environment pattern to use for the deployment environment installation." It lists "Deployment Environment Patterns:" with options: "Remote Messaging and Remote Support", "Remote Messaging", and "Single Cluster".
- Additional Database Configuration:** A panel with a heading "Additional Database Configuration" and a sub-heading "Additional information is required to complete Derby Network Server database." It includes fields for "Database server host name (for example, randyfox)", "Server port:" (with "1527" entered), and "Choose a database product:" (with "Derby Network Server" selected).
- Deployment Manager Database Configuration:** A panel with a heading "Deployment Manager Database Configuration" and a sub-heading "Define the database to be used with the deployment manager. If you need to define a database of a type that is not available from the installer, you will need to use the Profile Management Tool to create the deployment manager." It includes checkboxes for "Create new database" (checked) and "Delay execution of database scripts". It also has a "Database name:" field with "WPRCSDB" entered.

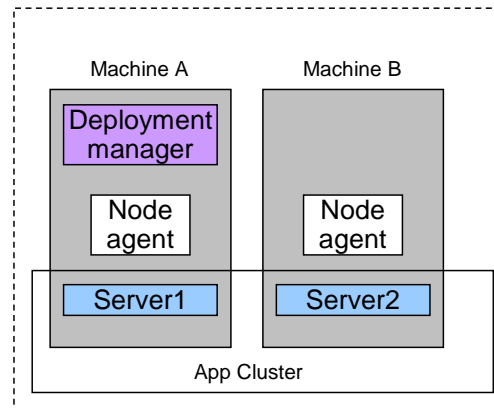


When creating the deployment environment, security must be enabled and configured. Security can be disabled using the administrative console later. Next, one of three pre-defined topology types must be selected. Researching usage scenarios shows that 80% of the topologies can be supported with one of these three types. Details of these are covered in the next few slides.

Database creation allows you to use the default Derby database, which is supplied with the WebSphere Process Server, or you can use any one of several other databases. The database host name and port must be supplied to allow the installer to configure the database. This process allows only the creation of the first topology on any system. The profile management tool must be used to create additional servers on the same system.

Single cluster topology

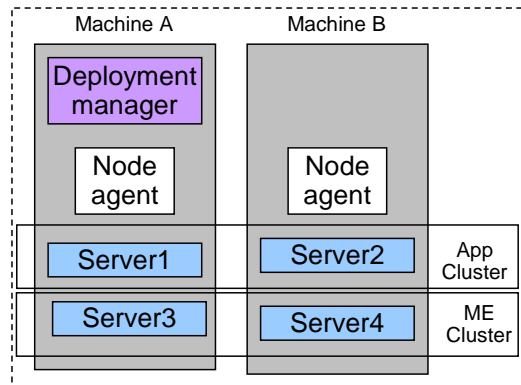
- Application deployment
- Messaging
- Common event infrastructure



The single cluster is the simplest pattern that defines one cluster for the application deployment. The application, messaging, and common event infrastructure with support applications are configured on the application deployment cluster. This topology might be good for a small set of applications or development but does not scale up for production requirements.

Remote messaging topology

- Cluster for application deployment
 - ▶ Common event infrastructure
 - ▶ Support applications
- Cluster for messaging



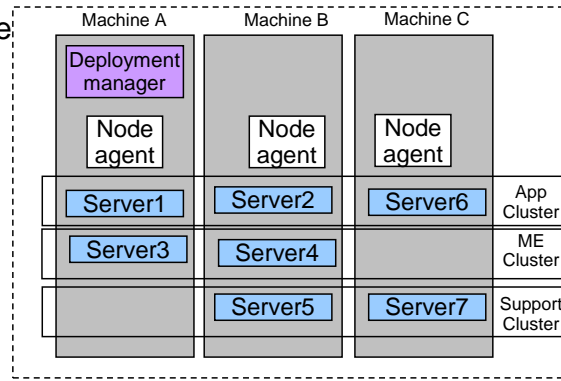
The remote messaging pattern defines one cluster for application deployment and one remote cluster for messaging. The common event infrastructure and other support applications are configured on the application deployment cluster.

Remote messaging and support topology

- Application deployment
- Remote cluster for messaging
- Support cluster for
 - ▶ Common event infrastructure
 - ▶ Support applications

Select	Name	Status
<input type="checkbox"/>	default.AppTarget	➔
<input type="checkbox"/>	default.Messaging	➔
<input type="checkbox"/>	default.Support	➔
Total 3		

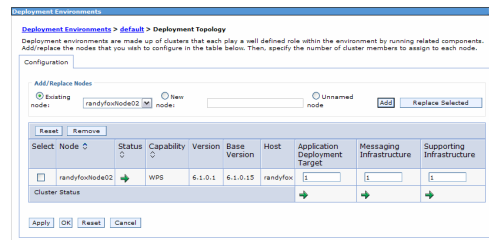
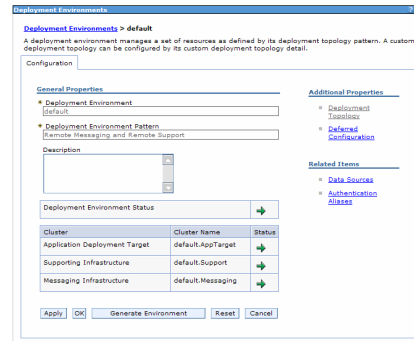
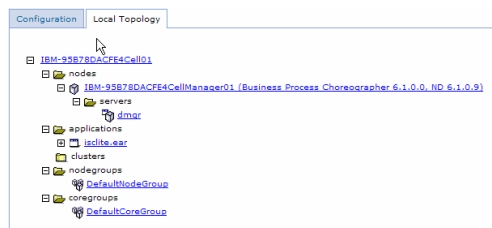
Select	Name	Node	Version	Cluster Name	Status
<input checked="" type="checkbox"/>	default.AppTarget.localhost01.0	localhost01	Business Process Choreographer 6.1.0.0 NO 6.1.0.11	default.AppTarget	➔
<input checked="" type="checkbox"/>	default.AppTarget.localhost02.0	localhost02	Business Process Choreographer 6.1.0.0 NO 6.1.0.11	default.AppTarget	➔
<input checked="" type="checkbox"/>	default.Messaging.localhost02.0	localhost02	Business Process Choreographer 6.1.0.0 NO 6.1.0.11	default.Messaging	➔
<input checked="" type="checkbox"/>	default.Messaging.localhost03.0	localhost03	Business Process Choreographer 6.1.0.0 NO 6.1.0.11	default.Messaging	➔
<input checked="" type="checkbox"/>	default.Support.localhost02.0	localhost02	Business Process Choreographer 6.1.0.0 NO 6.1.0.11	default.Support	➔
Total 5					



This pattern defines one cluster for application deployment, one remote cluster for messaging, and one remote cluster for the common event infrastructure and other support applications. This pattern configures a setup that performs well for most business integration needs. If in doubt, select this pattern.

Topology creation results

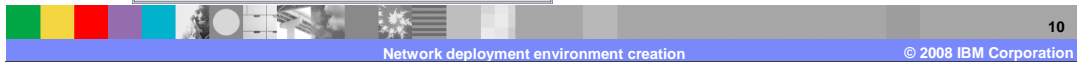
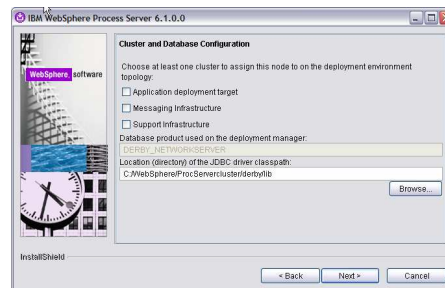
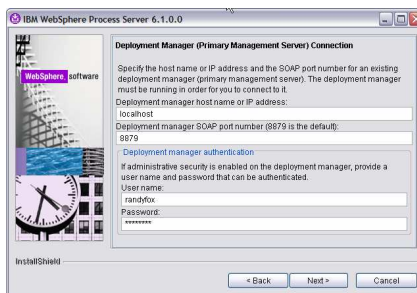
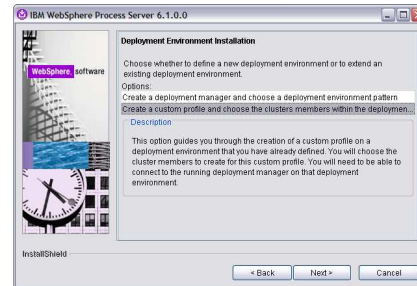
- Deployment environment
 - ▶ Application cluster
 - ▶ Messaging cluster
 - ▶ Support cluster



Once the installation has completed, the administration console shows the newly created deployment environment. This slide shows the most common deployment using separate clusters for applications, messaging and support. The installer has created the environment only. The profile management tool must be used to create each of the nodes as cluster members.

Configure cluster members

- Create custom profile
- Enter user name and password for WSAAdmin
- WSAAdmin connects



Additional installations can be run on different systems for the creation of a custom profile on a deployment environment that is already defined. This allows the selection of the cluster that this node supports. The installer needs to connect to the running deployment manager for that deployment environment, and the database needs to be running. The host, port, user name and password must be specified to establish the connection using wsadmin. When creating a cluster on a system with the installation already completed, the profile management tool must be used instead of the installer. This deployment environment allows separate clusters for applications, messaging and support. When creating the cluster, any of the three can be selected or any combination can also be selected.

Profile management tool

- Custom profile
- Deployment environment profile creation
- Profile name and location
- Node name and host name
- Deployment manager
 - User name and password
- Ports

Select the type of environment to create.

Environments:

- Cell (deployment manager and a federated application server)
- Deployment manager
- Application server
- Custom profile
-
- WebSphere Enterprise Service Bus
- WebSphere Process Server

Select a profile type for the WebSphere Process Server environment.

Profile Types:

- Deployment manager profile
- Stand-alone process server profile
- Custom profile

Profile Creation Options

Choose the profile creation process that meets your needs. Pick the Typical option to allow the Profile Management tool to assign a set of default configuration values to the profile. Pick the Advanced option to specify your own configuration values for the profile.

Typical profile creation

Create a custom profile that uses default configuration settings. The Profile Management tool assigns unique names to the profile, node, and host. You can specify whether to federate the node to an existing deployment manager or federate the node later. All required databases will be set to Derby Network Server.

Advanced profile creation

Create a custom profile using default configuration settings, or specify your own values for the settings such as the location of the profile and names of the profile, node, and host. You can specify whether to federate the node to an existing deployment manager or federate the node later. You can also specify your own values for the Common database configuration.

Deployment environment profile creation

Create a custom profile using the same configuration options as those for advanced profile creation. You must specify how to federate the node to an existing deployment manager with a defined deployment environment pattern. You must also specify at least one cluster to assign this node to on the deployment environment topology.



The profile management tool can be run to create a WebSphere Enterprise Service Bus or WebSphere Process Server node on a system that has already been installed without a profile. The selection of the custom profile allows an empty node to be created that can be federated into a deployment environment when deployment environment profile creation is selected. Additional panels specify the profile name, location, node name and host name for the node. The deployment managers host name and port must be specified along with the user name and password in order to connect and federate the new node.

Node creation

- Select cluster
- Database location correct
- Create profile

Deployment Environment Configuration

Choose at least one cluster to assign this node to on the network deployment topology:

Application Deployment Target
Consists of a cluster to which user applications need to be deployed. Depending on the chosen deployment environment pattern, the application deployment target cluster may also assume the functionality of the messaging and the supporting infrastructure clusters.

Messaging Infrastructure
Consists of a cluster where the bus members are located.

Support Infrastructure
Consists of a cluster that hosts the Common Event Infrastructure server and other infrastructure services that are used to manage your system.

Database Configuration

Various components use the (0) common database. Enter the information for the database type used on the deployment manager.

Database type used by the deployment manager:

Location (directory) of JDBC driver classpath files:

Deployment Environments

[Deployment Environments](#) > [default](#) > **Deployment Topology**

Deployment environments are made up of clusters that each play a well defined role within the environment. Add/replace the nodes that you wish to configure in the table below. Then, specify the number of nodes.

Configuration

Add/Replace Nodes

Existing node: New node: Unnamed node:

Select	Node	Status	Capability	Version	Base Version	Host	Application Deployment Target	Messaging Infrastructure	Supporting Infrastructure
<input type="checkbox"/>	localhostNode01	➔	WPS	6.1.0.0	6.1.0.11	localhost	<input type="text" value="1"/>	<input type="text" value="0"/>	<input type="text" value="0"/>
<input type="checkbox"/>	localhostNode02	➔	WPS	6.1.0.0	6.1.0.11	localhost	<input type="text" value="1"/>	<input type="text" value="1"/>	<input type="text" value="1"/>
<input type="checkbox"/>	localhostNode03	➔	WPS	6.1.0.0	6.1.0.11	localhost	<input type="text" value="0"/>	<input type="text" value="1"/>	<input type="text" value="0"/>
Cluster Status							<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>

Select any combination of clusters that this node supports and specify the location of the local database library. The results of the node creation and cluster support can be viewed on the deployment topology panel in the administrative console.

Create servers

- Select node and server name
- Server template
- Properties

The image displays two screenshots from the IBM administrative console. The top screenshot shows the 'Create New Application Server' wizard, which is divided into four steps: Step 1: Select a node, Step 2: Select a server template, Step 3: Specify server specific properties, and Step 4: Confirm new server. In Step 1, the 'Select node' dropdown is set to 'randyfoxtNode02' and the 'Server name' field contains 'appserver2'. The bottom screenshot shows the 'Application servers' management page, which lists existing servers. The table below is a representation of the data shown in this screenshot.

Select	Name	Node	Version	Cluster Name	Status
<input type="checkbox"/>	default.AppTarget.randyfoxtNode02.0	randyfoxtNode02	Business Process Choreographer 6.1.0.1 RD 6.1.0.15	default.AppTarget	▶
<input type="checkbox"/>	default.Messaging.randyfoxtNode02.0	randyfoxtNode02	Business Process Choreographer 6.1.0.1 RD 6.1.0.15	default.Messaging	▶
<input type="checkbox"/>	default.Support.randyfoxtNode02.0	randyfoxtNode02	Business Process Choreographer 6.1.0.1 RD 6.1.0.15	default.Support	▶
Total 3					



A default server is created for each node during federation with the deployment manager. Additional servers can be added to a node through the administrative console. Select the node and specify a unique name for the new server. Then select the type of server that is required for this node and specify the properties.

Clusters

Cluster Topology

This page displays the list of application server clusters in a tree format.

Local Topology

- Cell
 - default.Support
 - Nodes
 - randyfoxNode02 (Business Process Choreographer 6.1.0.1, ND 6.1.0.15)
 - Cluster members
 - default.Support.randyfoxNode02.0
 - default.Messaging
 - Nodes
 - randyfoxNode02 (Business Process Choreographer 6.1.0.1, ND 6.1.0.1)
 - Cluster members
 - default.Messaging.randyfoxNode02.0
 - default.AppTarget
 - Nodes
 - randyfoxNode02 (Business Process Choreographer 6.1.0.1, ND 6.1.0.1)
 - Cluster members
 - default.AppTarget.randyfoxNode02.0

Node agents

Use this page to manage node agents and application servers on the node that a node agent manages. The node agent process serves as an intermediary between the application servers on the node and the deployment manager. The node agent process runs on every node and is specialized to perform node-specific administration functions, such as server process monitoring, configuration synchronization, file transfer, and request routing.

Preferences

Stop Restart Restart all Servers on Node

Select	Name	Node	Version	Status
<input type="checkbox"/>	nodeagent	randyfoxNode02	Business Process Choreographer 6.1.0.1 ND 6.1.0.15	➔

Total 1

Buses

A service integration bus supports applications using message-based and service-oriented architectures. A bus is a group of interconnected servers and clusters that have been added as members of the bus. Applications connect to a bus at one of the messaging engines associated with its bus members.

Preferences

New Delete

Select	Name	Description	Security
<input type="checkbox"/>	BPC.randyfoxCell01.Bus	Messaging bus for Process Choreographer	Enabled
<input type="checkbox"/>	CommonEventInfrastructure.Bus	CommonEventInfrastructure Bus	Enabled
<input type="checkbox"/>	SCA.APPLICATION.randyfoxCell01.Bus	Messaging bus for Service	Enabled
<input type="checkbox"/>	SCA.SYSTEM.randyfoxCell01.Bus	Messaging bus for Service	Enabled

Total 4

Network deployment environment creation

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Once the deployment environment has been created and a supporting node has been added, the cluster topology can be viewed in the administrative console. The node agent status for each node and the buses that were created can also be seen.

Deployment environment

- Create new
- Load existing
- Select topology

Database

Edit the database parameters for the data sources that are needed by this deployment environment.

Select	Component	Database Instance	Schema	Create Tables	User Name	Password	Server	Provider
<input type="checkbox"/>	Common Event Infrastructure	Cu/WesSp		<input checked="" type="checkbox"/>	randyfox	*****	randyfox	Derby Ne
<input type="checkbox"/>	Common Event Infrastructure	Cu/WesSp	WPRCM01	<input checked="" type="checkbox"/>	randyfox	*****	randyfox	Derby Ne
<input type="checkbox"/>	Service Component Architecture	Cu/WesSp	WPRSD01	<input checked="" type="checkbox"/>	randyfox	*****	randyfox	Derby Ne
<input type="checkbox"/>	Service Component Architecture	Cu/WesSp	WPRSA01	<input checked="" type="checkbox"/>	randyfox	*****	randyfox	Derby Ne
<input type="checkbox"/>	Business Process Choreographer	Cu/WesSp	WPRBE01	<input checked="" type="checkbox"/>	randyfox	*****	randyfox	Derby Ne
<input type="checkbox"/>	Business Process Choreographer	Cu/WesSp	WPRBM01	<input checked="" type="checkbox"/>	randyfox	*****	randyfox	Derby Ne
<input type="checkbox"/>	Business Process Choreographer Event Collector	Cu/WesSp	WPRBC01	<input checked="" type="checkbox"/>	randyfox	*****	randyfox	Derby Ne

Create new deployment environment

Create a new deployment environment or load an external deployment environment definition. Choose the deployment environment name and its runtime capability.

At the end of the wizard, you can start the deployment environment generation by clicking on "Finish and Generate Environment". If you like to save the deployment environment definition, then you can click on "Finish" instead. The environment generation option is only valid if all needed parameters are met in order to generate the deployment environment.

If you would like to hide steps that have well defined default values, then check "Show only steps that need my attention".

Create Deployment Environment

Create a new deployment environment

Load an external deployment environment definition

File path: Browse

Deployment environment name:

Runtime capability: WPS

Show only steps that need my attention

Next Cancel

Deployment Environment Patterns

Remote Messaging and Remote Support

This pattern defines one cluster for application deployment, one remote cluster for the messaging infrastructure, and one remote cluster for the Common Event Infrastructure and other supporting applications. This pattern configures a setup that performs well for most of your business integration needs. If in doubt, select this pattern.

Remote Messaging

The remote messaging pattern defines one cluster for application deployment and one remote cluster for the messaging infrastructure. The Common Event Infrastructure and other supporting applications are configured on the application deployment target cluster.

Single Cluster

The single cluster is the simplest pattern that defines one cluster for application deployment. Both messaging infrastructure and Common Event Infrastructure with supporting applications are configured on the application deployment target cluster.

Custom

If none of the given patterns suit your needs, you can customize the deployment environment by configuring your own clusters and servers. This option is intended for advanced users who know how to tune their deployment environment.

Previous Next Cancel

The administrative console also allows the creation of deployment environments or the loading of a deployment environment that was created on another system. The topology type must be selected; this is followed by a set of panels to select the node, specify clusters, select a database, and set up security options.

Topology summary

- Overview
- Deployment targets
- Data sources
- Security
- BPC

Summary

This summary shows an overview of your new deployment environment. To save the deployment environment definition, click on "Finish". To save the definition and generate the deployment environment, click on "Finish and Generate Environment".

Parameter	Value
Deployment Environment Pattern	Single Cluster
Deployment environment name	Single
Runtime capability	WPS
Deployment Environment Status	Incomplete

Deployment Targets

Cluster	Roles
Application Deployment Target	IBM-958780ACFF6410de02 IBM-958780ACFF6410de03

Data Sources

Component	Database Instance	Schema	Database Provider	Database Host
WBI_BPC	C:\WebSphere\ProcServer\profiles\Dmg01\database\WPRCSDB	WPRBEO0	DERBY_NETWORKSERVER	127.0.0.1
WBI_BPCEventCollector	C:\WebSphere\ProcServer\profiles\Dmg01\database\WPRCSDB	WPRBEO0	DERBY_NETWORKSERVER	127.0.0.1
WBI_BPCObserver	C:\WebSphere\ProcServer\profiles\Dmg01\database\WPRCSDB	WPRBEO0	DERBY_NETWORKSERVER	127.0.0.1
WBI_BPC_ME	C:\WebSphere\ProcServer\profiles\Dmg01\database\WPRCSDB	WPRBEO0	DERBY_NETWORKSERVER	127.0.0.1
WBI_CEL_EVENT	C:\WebSphere\ProcServer\profiles\Dmg01\database\WPRCSDB	WPRBEO0	DERBY_NETWORKSERVER	127.0.0.1
WBI_CEL_EVENTCATALOG	C:\WebSphere\ProcServer\profiles\Dmg01\database\WPRCSDB	WPRBEO0	DERBY_NETWORKSERVER	127.0.0.1
WBI_CEL_ME	C:\WebSphere\ProcServer\profiles\Dmg01\database\WPRCSDB	WPRBEO0	DERBY_NETWORKSERVER	127.0.0.1
WBI_SCA_APP_ME	C:\WebSphere\ProcServer\profiles\Dmg01\database\WPRCSDB	WPRBEO0	DERBY_NETWORKSERVER	127.0.0.1
WBI_SCA_SYS_ME	C:\WebSphere\ProcServer\profiles\Dmg01\database\WPRCSDB	WPRBEO0	DERBY_NETWORKSERVER	127.0.0.1

Security

Component	Authentication	User Name
WBI_BPC	BPC_Auth_Alias	randyfox
WBI_BPC_ME	BPCME_00_Auth_Alias	randyfox
WBI_BPC_ME	BPCME_00_Auth_Alias	randyfox
WBI_CEL_EVENT	CEL_Auth_Alias	randyfox
WBI_CEL_ME	CEIME_Single-AppTarget_Auth_Alias	randyfox
WBI_CEL_ME	CEIME_Single-AppTarget_Auth_Alias	randyfox
WBI_SCA_APP_ME	SCAAPME00_Auth_Alias	randyfox
WBI_SCA_SYS_ME	SCAYSME00_Auth_Alias	randyfox

Business Process Choreographer

Parameter	Value
Business Process Choreographer Explorer context root	/bpc
Business Process Choreographer Observer context root	/bpcobserver
Create a mail session to send e-mails	true
Mail session host	
Business Process Choreographer Explorer URL	
User for Administrator role	randyfox
Group for Administrator role	
User for Monitor role	randyfox
Group for Monitor role	

Business Rules Manager

Parameter

Business Rules Manager context root

Previous Finish Finish and Generate Environment Cancel

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At the end of setup process a summary panel is presented. The overview shows the deployment environment name and options that were specified. The node, data sources and security settings are also shown. Verify that all of these are correct before saving this topology using the finish button. The finish and generate button generates the topology after saving it. The generation of the environment can be done from the deployment environments panel also.

Summary

- Deployment environments
 - ▶ Single cluster
 - ▶ Messaging and support cluster
 - ▶ Application, messaging and support cluster
- Creation and configuration
 - ▶ Installation
 - ▶ Profile management tool
 - ▶ Administrative console
- Profile import / export



This presentation covered the creation of pre-defined deployment environments to create a single cluster, a messaging and support cluster or an application, messaging and support cluster. These topologies can be created and configured during installation, using the profile management tool or within the administrative console. This feature allows a network deployment environment to be setup within an hour rather than taking several days with previous versions. These three deployment environments cover 80% of production requirements. The ability to start with a deployment environment, modify it to the business needs, and then export that profile to be duplicated on other systems improves on the stability and ease of use to create a complete Network Deployment solution.

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