



IBM Software Group

IBM® WebSphere® Extended Deployment V6.1

WebSphere Virtual Enterprise

Formerly Operations Optimization

Other middleware servers and applications



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This presentation will cover the ability of WebSphere Extended Deployment V6.1 to manage other middleware servers and applications.

This module was originally recorded for WebSphere Extended Deployment Operations Optimization, which is now called WebSphere Virtual Enterprise. Though the module uses the previous names, the technical material covered is still accurate.

Agenda

- Overview
- Architecture
- Several levels of support
- Extended administration support
- Summary



This presentation will first provide an overview of other middleware support in WebSphere Extended Deployment version 6.1 and how this is accomplished. It will then cover the different levels of support for different server types. Finally this presentation will describe some of the administrative enhancements which enable management of other middleware nodes, servers, and applications.

Overview

- Extended Deployment V6.0 support for non-WebSphere environments
 - ▶ Requires configuring generic server clusters
 - ▶ Advanced routing and traffic control
 - ▶ Limited monitoring and visualization available for foreign servers through mixed server environment



WebSphere Extended Deployment version 6.0 provided limited support for servers that are not running WebSphere Extended Deployment. With the remote agent that was provided with the mixed server environment offering, generic server clusters can be configured to route work to these other server types. The remote agent monitors the external node and sends processor utilization, node speed, and the number of processors information to the WebSphere Extended Deployment V6.0 autonomic controllers. Application placement and health monitoring were not supported for these other server types.

Overview

- Extended Deployment V6.1 expands the non-WebSphere Support to include most critical Extended Deployment functions
 - ▶ Application Placement through Dynamic Clusters
 - ▶ Health Management
 - ▶ Application version handling (in some instances)
- Extends management capabilities to various middleware platforms beyond WebSphere Application Server, such as
 - ▶ Apache Tomcat Server
 - ▶ Apache HTTP
 - ▶ WebSphere Application Server Community Edition Server
- Unifies the management model into a new system called Middleware Servers and Applications



WebSphere Extended Deployment version 6.1 extends this support with the *middleware agent*. The middleware agent replaces the remote agent, providing a much richer level of support. Through the middleware agent, WebSphere Extended Deployment version 6.1 provides full dynamic operations capabilities for other middleware, including JBoss, BEA WebLogic, and Apache servers. In addition, the middleware agent provides most of the health monitoring capabilities available to WebSphere Extended Deployment servers.

Several new panels have been added to the administrative console, making it simple to manage WebSphere Extended Deployment and other middleware nodes, servers, and applications from a consolidated location.

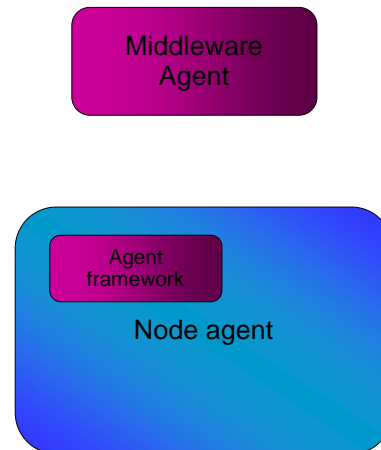
Section

Architecture

This section will provide an overview of how WebSphere Extended Deployment version 6.1 extends its support to other middleware server types.

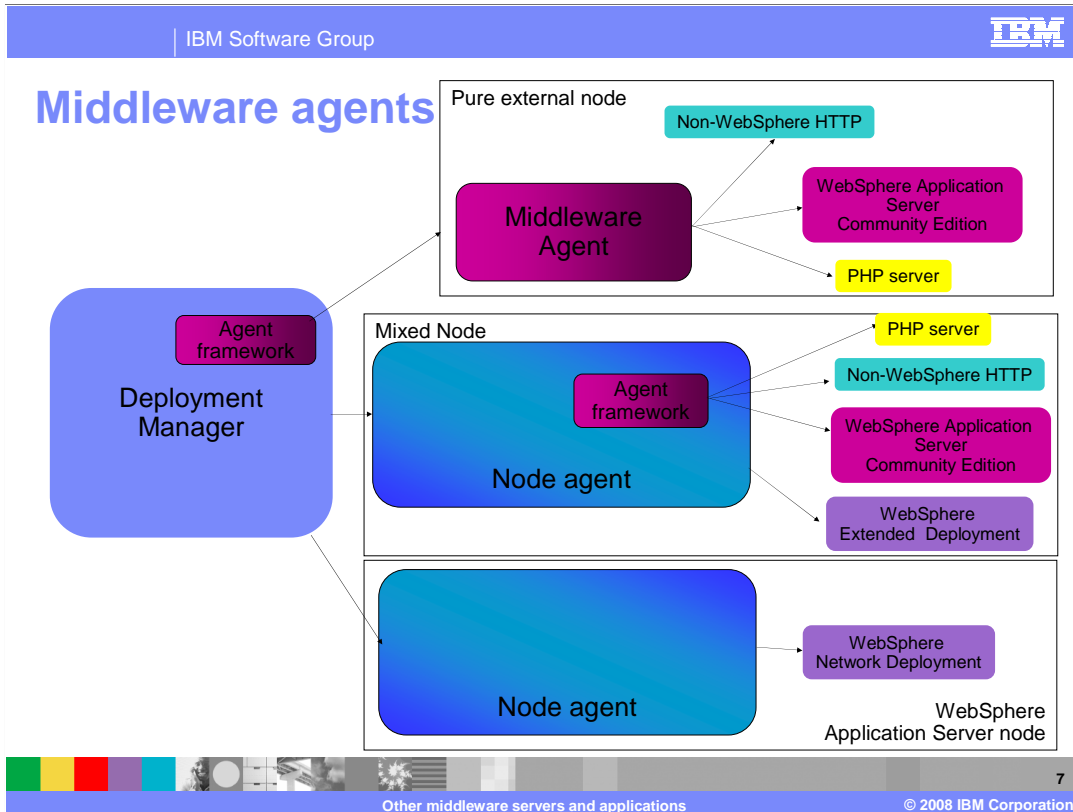
Middleware agents

- **Middleware agent**
 - ▶ Installed on machines hosting non-WebSphere middleware platforms
 - ▶ Provide services for managing and monitoring non-WebSphere processes
 - ▶ Much like node agents provides for WebSphere
- **Node agent**
 - ▶ Augmented with middleware agent framework
 - ▶ Adds ability to monitor and control non-WebSphere servers
 - ▶ Still performs all node agent functions



The middleware agent is a light weight monitoring and control agent that you install on nodes that you want WebSphere Extended Deployment to manage. It can run on any node where you might want to manage and monitor other middleware. Nodes that run the middleware agent do not need to have WebSphere Application Server or WebSphere Extended Deployment installed. The middleware agent provides a subset of the capabilities of the WebSphere Application Server node agent. For instance, it can start and stop instances of other middleware servers, and monitor the status of the servers.

However, the middleware agent is not a complete replacement for the node agent. It cannot manage WebSphere Application Server Network Deployment V6.1 or WebSphere Extended Deployment servers. When you install WebSphere Extended Deployment on a WebSphere Application Server node, the augmentation process extends the existing node agent, adding middleware agent capabilities. This allows an augmented node agent to manage not only WebSphere servers, but other middleware server types as well.



This diagram illustrates several ways that WebSphere Extended Deployment can be installed on different node types. The bottom box is a pure WebSphere Application Server Network Deployment node that does not have Extended Deployment installed. This node is still part of the WebSphere cell, but can not take part in any of the Extended Deployment advanced features.

The top box represents a pure external node that does not have WebSphere Application Server installed, but does host other middleware servers. Installing the WebSphere Extended Deployment middleware agent makes it possible to make these other middleware servers part of the WebSphere cell. This node can take advantage of most of Extended Deployment's advanced features.

The center right box represents a mixed node running a WebSphere Extended Deployment node agent. This node agent is able to manage both WebSphere and other middleware servers, and can take advantage of all of WebSphere Extended Deployment's advanced features.

Note that all of these options require a deployment manager that has been augmented for WebSphere Extended Deployment

Types of nodes

- WebSphere Extended Deployment machine
- WebSphere Application Server machine
- Other WebSphere version machine
- Pure external machine



WebSphere Extended Deployment version 6.1 supports several kinds of nodes within its administrative domain.

A WebSphere Extended Deployment machine runs a WebSphere node agent that has been augmented for WebSphere Extended Deployment. This node type can run WebSphere managed servers plus any other kinds of servers.

A WebSphere Application Server machine runs a WebSphere Application Server node agent that has not been augmented for Extended Deployment. This node type can only run WebSphere managed servers, and these servers can not take part in Extended Deployment's advanced features.

"Other WebSphere version" machines might be running a WebSphere Application Server version 5.1 or version 6.0 node agent as part of a separate cell, or WebSphere Application Server Community Edition. These machines do not run WebSphere Extended Deployment, and have their own administrative interfaces. If installed with the Extended Deployment middleware agent, servers on these machines can take part in Extended Deployment dynamic operations, and can also host other middleware server types.

A pure external machine runs other middleware servers. It does not run a WebSphere Application Server node agent, but supports external management through the middleware agent.

Server life cycle management

- Managed non-WebSphere servers
 - ▶ Managed using the administrative console
 - ▶ PHP servers are a special managed server since you can create new ones
- Unmanaged non-WebSphere servers
 - ▶ Cannot create or remove instances
 - ▶ Must use their own administration
- All supported server types
 - ▶ Included in Extended Deployment's on demand operating environment
 - ▶ Managed using the administrative console
 - ▶ Can start and stop



WebSphere Extended Deployment version 6.1 supports two broad categories of servers: managed and unmanaged. Managed servers can be created and removed from the administrative console, and can fully participate in Extended Deployment's advanced features, including edition management. Unmanaged servers can take part in dynamic operations, but cannot take part in edition management.

Both server types can be started, stopped, monitored, and can take part in Extended Deployment's dynamic operations capabilities.

Application life cycle management

- Managed applications
 - ▶ Deployed through Extended Deployment's Administrative console
 - ▶ Quality of service supported through work classes
 - ▶ Application version handling supported
- Unmanaged applications
 - ▶ Manually added to Extended Deployment's configuration
 - ▶ Quality of service supported
 - ▶ Application versions can be identified but they are not supported for automated functions within Edition Management



A WebSphere Extended Deployment version 6.1 environment can contain several types of applications.

A managed application is completely managed from WebSphere. These applications can be installed, removed, started, or stopped from WebSphere administration, and can take part in edition management's seamless rollout. An example of a managed application is a Java Platform, Enterprise Edition application deployed to a WebSphere Application Server cluster.

Unmanaged applications are installed and configured outside of the WebSphere Extended Deployment and WebSphere Application Server environment, typically on externally created middleware servers. WebSphere Extended Deployment needs information about these applications in order to route HTTP requests to them. An *unmanaged Web application* is a representation of an application that is installed on the other middleware server. WebSphere Extended Deployment does not manage the life cycle of the application in any way, but can route requests to the application. The status of unmanaged Web applications is directly linked to the status of the server to which the unmanaged Web applications are deployed.

Because the application is unmanaged, you cannot perform edition control commands such as rolling out or validating new editions. However, if you install another edition on the externally created servers, you can create a new edition of the application in the administrative console. Do this by creating a new representation of the unmanaged Web application with a different edition name. You can then specify routing policies to control how to route the requests to the multiple editions.

Section

Several levels of support



WebSphere Extended Deployment version 6.1 provides several levels of support for other middleware server types. This section will describe these levels of support.

First class support for other middleware platforms

- Before Extended Deployment V6.1:
 - ▶ Other server types were represented as a port and host name
 - ▶ No administration of these types
 - ▶ No health monitoring was exposed
 - ▶ Minimal performance monitoring
- Extended Deployment 6.1 provides three Categories of Support for Other Middleware Server Types:
 - ▶ Complete life cycle management
 - ▶ Assisted life cycle management
 - ▶ Generic life cycle management



In WebSphere Extended Deployment version 6.0, other middleware servers can be represented only as generic server clusters. The only information available to the Extended Deployment environment was a host name and port: information used by the on demand router to route requests to the server. The only Extended Deployment feature available for these servers was routing through the on demand router using defined service policies.

WebSphere Extended Deployment version 6.1 adds support for many of the Extended Deployment advanced features to other middleware server types. Version 6.1 provides three levels of support based on the amount of information that Extended Deployment knows about the specific server type. The different levels of support are complete, assisted, and generic life cycle management for both servers and applications.

Servers and applications

- To support non-WebSphere middleware platforms, Extended Deployment must discover or be told:
 - ▶ Information about the non-WebSphere servers:
 - Install locations
 - Ports
 - Start/stop commands
 - Other commands
 - Log locations, etc
 - ▶ Information about the applications hosted on the servers to support
 - Routing
 - Service policies



In order to manage a server, Extended Deployment must be configured with basic installation and deployment information about that server that can be used, for instance, to start and stop server instances. In addition, Extended Deployment must have information about the applications hosted on the server in order to route requests to the server.

Complete life cycle management

- Create and remove server instances
- Govern all aspects of server configuration
- Provide operational control
 - Such as Start/stop
- Application life cycle support
 - Deploy and fully manage application life cycle through Extended Deployment's administrative interface (install, remove, start, stop)
 - Roll out new application editions with full edition control center support
- Monitor and visualize server health and performance
- WebSphere Network Deployment, PHP,
WebSphere Community Edition



WebSphere Extended Deployment version 6.0 provided complete life cycle management support only for WebSphere Application Server and WebSphere Extended Deployment servers that are part of the Extended Deployment cell. Complete life cycle management includes the ability to create and remove server instances, configure the servers, and install applications to the servers with full edition management support. Version 6.1 adds complete life cycle management for PHP module running in Apache HTTP server. Version 6.1.0.1 adds complete life cycle management for WebSphere Application Server Community Edition, Version 2.

Assisted life cycle management

- Provides templates for creating representations of specific existing middleware servers and applications.
- Servers can be controlled operationally.
 - ▶ Started/stopped
 - ▶ Custom operations
- Administrative utilities are provided to manage the external configuration and runtime.
- Monitor and visualize server health and performance.
- No application life cycle support.
- Tomcat, JBoss, WebLogic, Apache, **WebSphere V5.1 and V6.0**



WebSphere Extended Deployment version 6.1 includes templates for the most commonly used middleware server types. The server templates contain information on default ports for routing traffic to the servers, and commands for starting and stopping the servers. The templates also contain a default list of core configuration files for the servers and a default list of log directories.

The values in the templates are based on the default values for each server type. If your environment uses default ports, commands, and so on then you do not need to edit the template. However, the values provided should always be confirmed.

The templates contain all the information needed for these servers to take part in Extended Deployment's dynamic operations capabilities.

WebSphere Extended Deployment does not provide configuration administration for these servers, and cannot install applications on them. You must create representations of the unmanaged applications running in these servers so the on demand router can route requests to them.

V6.1.0.1 adds support for WebSphere Application Server V5.1 and V6.0 stand-alone or Network Deployment servers. This allows you to take advantage of WebSphere Extended Deployment capabilities for V5.1 and V6.0 servers that are not part of the Extended Deployment cell, and for the applications installed on them.


Generic life cycle management

- Provides generic templates and runtime components
- User manually defines server definitions and operational commands.
 - ▶ Port information
 - ▶ Operations for starting and stopping the server
 - ▶ Custom operations can also be defined and invoked
- Extended Deployment can control server operations
- Monitor health and performance.
- No application life cycle support.
- Any HTTP endpoint



WebSphere Extended Deployment provides a generic template to allow placement and routing to any server for which a specific template is not provided. You must configure port information for routing traffic to the servers, and commands for starting and stopping the servers. Once configured, the servers can take part in Extended Deployment's dynamic operations capabilities. As with assisted life cycle management servers, WebSphere Extended Deployment does not provide configuration administration for these servers, and cannot install applications on them. You must create representations of the unmanaged applications running in these servers so the on demand router can route requests to them.

Middleware descriptors and discovery

- **Middleware descriptors**
 - ▶ Provide information about different middleware server platforms
- **Discovery support**
 - ▶ Automatically discover installed middleware servers
 - ▶ Create server representations
 - Apache HTTP server
 - PHP
 - **WebSphere Application Server Community Edition** 
 - ▶ Not currently supported for other middleware server platforms



WebSphere Extended Deployment V6 provides access to middleware descriptors through the administrative console. These descriptors allow you to provide information about different middleware platform types in your environment. Extended Deployment node agents and middleware agents contain a discovery service that uses information from these middleware descriptors to automatically discover installed instances for certain middleware servers. The discovery service will create “assisted life cycle” server representations in the Extended Deployment configuration for these “discovered” servers.

Supported servers

Server Type	Complete	Assisted	Generic
WebSphere Application Server 6.1	<input checked="" type="checkbox"/>		
PHP	<input checked="" type="checkbox"/>		
WebSphere Application Server Community Edition	<input checked="" type="checkbox"/> (V6.1.0.1)	<input checked="" type="checkbox"/> (V6.1.0)	
External WebSphere V5.1 and V6		<input checked="" type="checkbox"/> (V6.1.0.1)	
Apache Geronimo		<input checked="" type="checkbox"/>	
Apache Tomcat		<input checked="" type="checkbox"/>	
BEA WebLogic		<input checked="" type="checkbox"/>	
JBoss		<input checked="" type="checkbox"/>	
Apache HTTP Server		<input checked="" type="checkbox"/>	
Generic HTTP Endpoint			<input checked="" type="checkbox"/>



This slide shows the types of middleware servers supported in WebSphere Extended Deployment version 6.1.

Unified administration across middleware

- Extended Deployment expands the administrative console with views of the middleware platforms it supports:
 - ▶ Nodes
 - ▶ Servers
 - ▶ Applications
- Common collection views allow administrators to interact with their WebSphere servers side by side with servers from other middleware platforms



WebSphere Extended Deployment extends the administrative console with new views for other middleware nodes, servers, and applications.

The Middleware Nodes view shows nodes running both WebSphere Node Agents and Extended Deployment middleware agent for host machines that run middleware platforms other than WebSphere. New capabilities include the ability to start an agent, both Extended Deployment middleware agent and WebSphere node agent, on a remote machine from the administrative console.

The “All servers” view shows all of the servers that have been configured in the system. Filtered views are available for each supported server type. From these views you can start, stop, or view status of the servers.

The “All applications” view shows all managed and unmanaged applications that have been installed or configured in the system.

Summary

- Extended Deployment V6.1 will expand support for non-WebSphere servers and applications.
- Full dynamic operations support
- Templates for most commonly used servers
- Generic template



WebSphere Extended Deployment version 6.1 greatly expands support for other middleware server types, allowing any HTTP endpoint to fully participate in Extended Deployment's dynamic operations and other advanced features. Templates for the most popular server types make it easy to create representations of these servers, and a generic template makes it possible to represent any HTTP endpoint.

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