



IBM Software Group

IBM® WebSphere® Extended Deployment V6.1

WebSphere Virtual Enterprise

Formerly Operations Optimization

PHP support



@business on demand.

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This presentation will provide an overview of the PHP support offered in WebSphere Extended Deployment Version 6.1.

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
- Details
- Summary



This presentation will introduce PHP, then cover how PHP support is provided in WebSphere Extended Deployment Version 6.1.

PHP overview

- “PHP: Hypertext Preprocessor”
 - ▶ General-purpose scripting language
 - Server-side scripting
 - Command-line scripting
 - Desktop application
 - ▶ Widely-used
 - ▶ Especially suited for Web development
 - Can be embedded into HTML
 - ▶ Simple for a newcomer
 - ▶ Offers many advanced features
- <http://www.php.net/>



PHP is a recursive acronym for “PHP: hypertext pre-processor”. PHP is a widely used open-source general-purpose scripting language. Though PHP supports command line scripting and can be used for desktop application development, it is most commonly used for server-side scripting. PHP is especially suited for Web development as it is easily embedded into an HTML document. Unlike client-side scripting languages such as JavaScript, PHP is converted to pure HTML on the server. PHP is relatively simple to learn for a person with moderate programming knowledge, and includes many advanced features for professional Web developers. PHP modules are available on all major operating systems, and for most of the Web servers in use today.

PHP usage

- High utilization on the Internet and usage growing rapidly
- No vendor support for problems
- Not part of mainstream application servers
 - ▶ Application deployment and management outside standard corporate processes
 - ▶ Until WebSphere Extended Deployment version 6.1



According to published internet usage statistics, PHP can be found on more Internet Servers than Servlets or JSPs, despite the lack of support from mainstream application server vendors. In a corporate environment, a PHP application may begin as a department-level tool within a single organization. As the application grows over time it may be adopted by other departments or organizations. Eventually it becomes mission critical, and operational responsibility is transferred to the corporate IT department. The lack of support in mainstream application servers makes PHP difficult to incorporate into the corporate IT environment. WebSphere Extended Deployment version 6.1 adds first class support for PHP servers to the WebSphere platform, making this task more manageable.

Section

Architecture



This section will cover WebSphere Extended Deployment runtime support for PHP servers.

PHP support in Extended Deployment 6.1

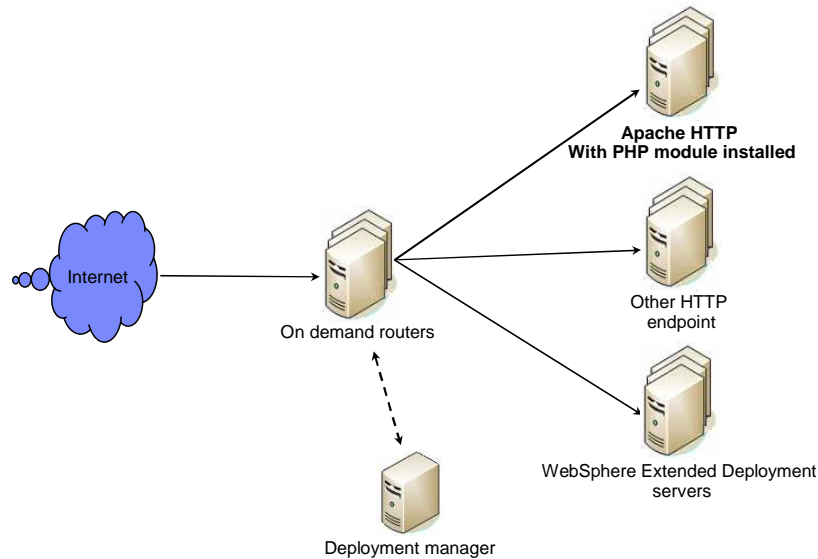
Focus areas

- ▶ Production management
 - Servers
 - Applications
 - Application version management
 - Automated on demand router configuration
- ▶ Quality of service enhancements
 - Dynamic operations support (on-demand router, health monitoring, application placement)
- ▶ WebSphere Extended Deployment will not provide a PHP runtime



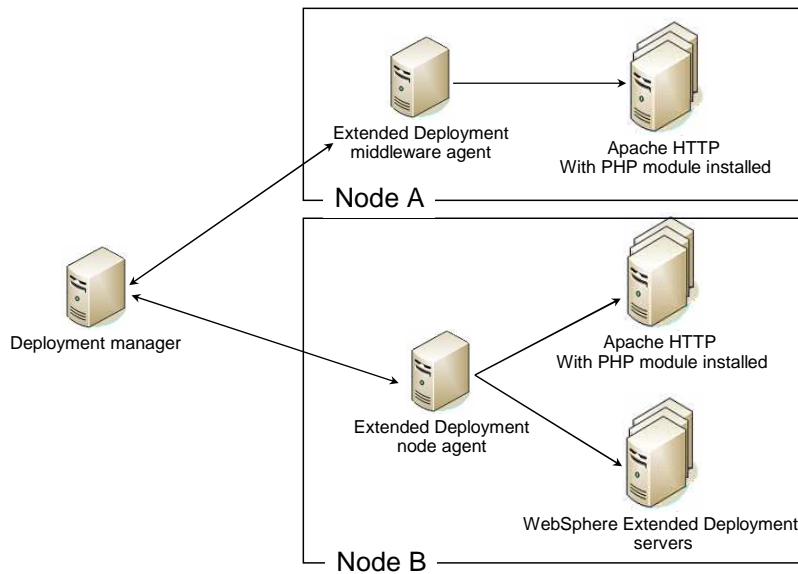
Extended Deployment version 6.1 supports PHP versions 4 and 5 running on Apache HTTP server versions 1.3, 2.0, and 2.2. Though WebSphere Extended Deployment version 6.1 does not provide a PHP runtime, it does provide full support for PHP servers. WebSphere Extended Deployment administrations allows you to fully manage PHP servers, including creating and removing server instances. By creating PHP Hypertext Preprocessor servers or dynamic clusters, you can use WebSphere Extended Deployment to manage these PHP servers and applications in production. You can install PHP applications with full application edition manager support, allowing you to roll out new versions of your application with no outage of service. Work can be routed to these applications on your PHP servers using advanced routing rules driven by the on demand router. In addition, dynamic operations support for PHP can extend the qualities of service provided by WebSphere Application Server. For example, health monitoring and improved resource management through the application placement controller.

Runtime topology



As this diagram shows, the on demand router is capable of routing requests not only to WebSphere Application Server managed servers, but also to PHP servers and other HTTP endpoints. The on demand router retrieves information about servers and applications that are active in the cell, allowing it to accurately route HTTP requests to those application servers which are currently running.

Management topology



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PHP support

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The Extended Deployment middleware agent plays a pivotal role in enabling the deployment manager to communicate with PHP servers in the cell. As this diagram illustrates, the deployment manager can manage, monitor and communicate with PHP servers through the Extended Deployment middleware agent. Note that the WebSphere Extended Deployment node agent is augmented with the middleware agent framework and can interact with PHP servers in a mixed environment. A middleware agent can run on any platform supported by WebSphere Extended Deployment, and does not require WebSphere Application Server on that node. The middleware agent framework performs many of the same functions for PHP servers as the WebSphere node agent performs for WebSphere managed servers, such as monitoring, configuration synchronization, and server maintenance.

Section

Details

This section will describe how you can use WebSphere Extended Deployment to manage PHP applications and servers.

Server management

- Provide basic control of the PHP server from the WebSphere Administration system
 - ▶ Start, stop, and restart of the server
 - ▶ Auto-restart on failure
 - ▶ Monitoring
 - Current status and some performance metrics
 - ▶ Central configuration control
 - Managed PHP configuration files



Using the administrative console or scripting you can create a PHP server instance, list all PHP servers, start or stop PHP servers, remove a PHP server, or monitor performance metrics for your PHP servers. You can also edit PHP server configuration files from the WebSphere Extended Deployment administrative console. The PHP configuration files are stored as part of the WebSphere cell configuration and distributed to the target nodes as part of node synchronization.

Application management

- Centrally manage and control PHP applications hosted on the PHP server
 - ▶ Install, uninstall
 - ▶ Application file distribution to clusters of servers
 - ▶ Monitoring
 - Status, basic performance metrics
- Application edition management features have been extended to PHP applications
 - ▶ Interruption-free rollout
 - ▶ Concurrent activation
 - ▶ Validation mode



Once the PHP server has been added to your configuration you can deploy PHP applications. Those applications are fully managed by WebSphere Extended Deployment, providing the same application management capabilities for PHP applications that are provided for J2EE applications. These capabilities include edition management support for concurrent activation of multiple application editions and interruption-free rollout of new editions.

Automated router configuration

- Routing information for PHP servers is automatically learned by the on demand router
 - ▶ On-demand configuration
 - ▶ PHP based applications are automatically discovered by the appropriate on demand routers in the topology
 - ▶ Administrator does not have to enter all endpoint and URL information to configure routing behavior of the on demand router



The on demand configuration is a component of the on demand router that enables it to remain “aware” of the cell’s runtime environment. The on demand configuration automatically retrieves information about WebSphere Extended Deployment application servers and applications that are deployed in the cell. It also dynamically configures routing rules at runtime to allow the on demand router to accurately route HTTP requests to those application servers which are currently running. The on demand configuration functionality has been extended to include PHP servers, so work can be routed by the on demand router to PHP servers in your environment.

Dynamic operations support

- Extend Extended Deployment's dynamic operations environment to support the PHP server
 - ▶ Dynamic cluster and application placement support to enable capacity control based on workload
 - ▶ Health management and monitoring to enable PHP servers to be monitored for
 - Corrective actions
 - Preventive actions
 - ▶ Quality of service fro response time goals
 - Service policies
 - Work class



WebSphere Extend Deployment provides full dynamic operations support for PHP Servers. This includes dynamic clusters with application server placement support to enable capacity control based on workload. The application placement controller can start or stop PHP servers defined in a dynamic cluster to ensure that individual nodes do not become overloaded. The autonomic request flow manager component of the on demand router dynamically adjusts the rates at which requests flow through to PHP servers to ensure that response time goals are met and that no PHP server is sent more requests than it can handle. Extended Deployment's Health management and monitoring capabilities can monitor PHP servers for problems, such as excessive response time, and take automatic actions to correct the condition.

The PHP runtime

- WebSphere Extended Deployment does not provide a PHP runtime
- Extended Deployment 6.1:
 - ▶ PHP versions 4 and 5
 - ▶ Apache HTTP server versions 1.3, 2.0, and 2.2



WebSphere Extended Deployment does not provide a PHP runtime. However, you can add a PHP server to your WebSphere Extended Deployment configuration. Several server templates, or generic copies of server configuration data, are provided to use as a starting point when adding a new PHP server to your configuration. WebSphere Extended Deployment provides default server templates for PHP versions 4 and 5 hosted on an Apache HTTP server version 1.3, 2.0 and 2.2.

Summary

- WebSphere Extended Deployment V6.1 has extended first class support to external PHP servers from within the WebSphere environment.
 - ▶ Basic control of the PHP server from the WebSphere Administration system
 - ▶ Server start, stop, restart
 - ▶ Full dynamic operation support
 - ▶ Visualization and management tools
 - ▶ Health monitoring
 - ▶ Application management
 - ▶ Central configuration control
 - ▶ Managed PHP conf files



WebSphere Extended Deployment version 6.1 extends dynamic operations and advanced manageability to PHP servers. The support enables simple tasks like starting or stopping a PHP server or managing PHP applications through the administrative console, and supports more advanced tasks like health monitoring, use of visualization tools, and application edition rollout.

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