



IBM Software Group

IBM® WebSphere® Everyplace® Deployment for Windows and Linux Version 6

Web Container and Web Applications



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This presentation explains the Web Container and Web Applications supported by IBM WebSphere Everyplace Deployment for Windows and Linux Version 6.

Goals

- Understand the Web Container and Web Applications provided by IBM WebSphere Everyplace Deployment for Windows and Linux Version 6

The goal of this presentation is to understand the Web Container and Web Applications supported by IBM WebSphere Everyplace Deployment for Windows and Linux Version 6.

Agenda

- Web Container and Web Applications
 - ▶ Application Capabilities
 - ▶ Web Application Infrastructure
 - ▶ Plug-in Descriptions
 - ▶ Web Applications
 - ▶ Web Container Description
 - ▶ Web Container Configuration
 - ▶ Web Container Serviceability
 - ▶ Web Container SSL

The agenda of this presentation is to explain the Web Application capabilities the client platform provides to you, the infrastructure and plug-ins that enable these capabilities, and details about the Web Applications and Web Container supported by IBM WebSphere Everyplace Deployment for Windows and Linux Version 6.

Section

Web Container and Web Applications

So, let's describe more details about the Web Container and Web Applications.

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Application Capabilities

- “Simple” HTTP applications using OSGi HTTP Service
 - ▶ Lightweight HTTP 1.0 Server with Servlet 2.1 implementation
- J2EE Style Web Applications using Web Container
 - ▶ Supports Servlet 2.3 & JSP 1.2
 - ▶ Supports Servlet 2.4 & JSP 2.0
 - ▶ Supports Struts
 - Must include Struts jars in Web Application
 - ▶ Supports Java Server Faces (JSF) and JSP Standard Tag Libraries (JSTL)
 - The client now provides JSF and JSTL jars as shared components to reduce memory requirements
 - Legacy JSF applications may include the required JSF jars

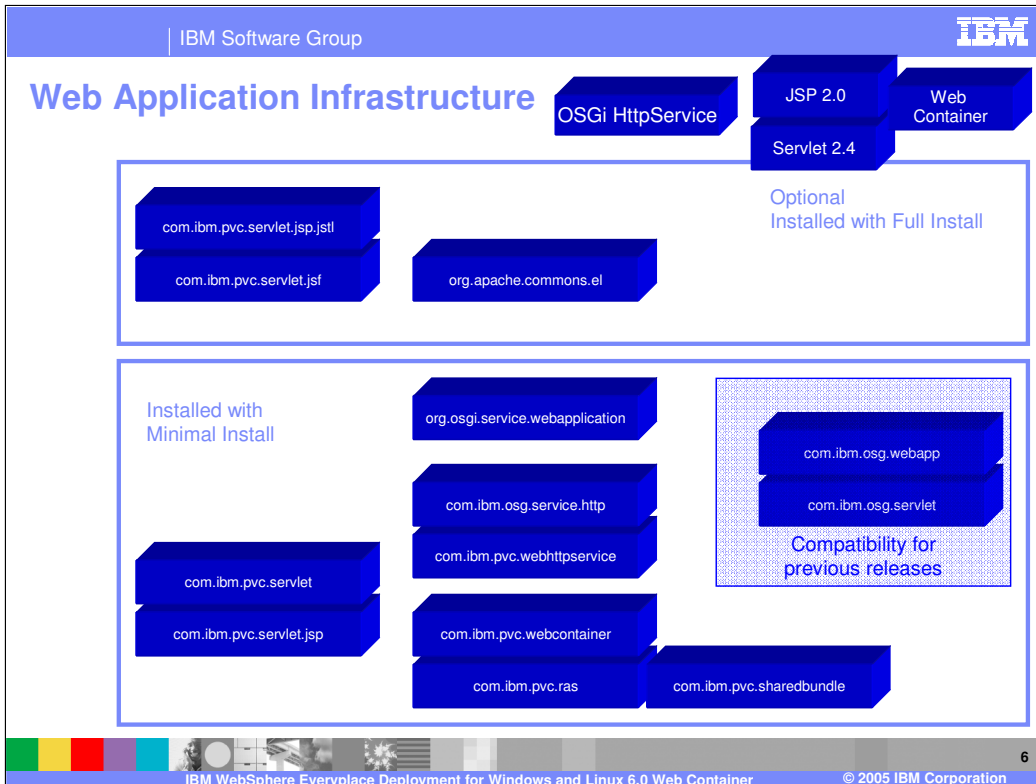
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IBM WebSphere Everyplace Deployment for Windows and Linux 6.0 Web Container © 2005 IBM Corporation

IBM WebSphere Everyplace Deployment for Windows and Linux Version 6 provides two methods to enable content serving via an HTTP Server – a basic, lightweight HTTP server and a Web Container.

The basic Web Server model is the **HttpService**, which is an implementation of the OSGi specification for HttpService. The HttpService implements an HTTP 1.0 Web server with a Servlet 2.1 engine. The HttpService provides a complete implementation of the Servlet 2.1 specification. The HTTP Service enables other bundles to dynamically register and unregister servlets and other static resources such as GIF files. You can register HTML files, GIF files, class files, or any resources found via a URL.

The **Web Container** provides the ability to run web applications serving content via servlets and JSPs. The Web container supports Servlet 2.4 and JSP 2.0 web applications as well as Servlet 2.3 and JSP 1.2 web applications. You can also develop and deploy Struts applications; however, the Struts runtime is not included in the client platform so you must include the Struts JARs in your Web application. You can also develop and deploy applications that use Java Server Faces (JSF) and JSP Standard Tag Libraries (JSTL). The runtime for both are now included in the client platform as shared components to reduce memory requirements so there is no need for you to include these JARs in your Web application. However, if you previously created JSF applications with these JARs to run on WCTME-EO 5.8.1, you may continue to do so and run these applications on the client platform.



This slide shows the Web Application infrastructure on the client platform, including the plug-ins (components) installed with the Minimal Install of the client platform and the additional plug-ins installed with the Full Install of the client platform. The Minimal Install provides the HttpService and Web Container to support Web applications. The Full Install adds support for Java Server Faces (JSF), JSP Standard Tag Libraries (JSTL) and the Expression Language Interpreter.

Plug-in Descriptions

OSGi HttpService

JSP 2.0

Web
Container

Servlet 2.4

Plug-in ID	Description
com.ibm.pvc.servlet	Servlet APIs
com.ibm.pvc.servlet.jsp	JSP APIs
com.ibm.pvc.servlet.jsp.jstl	JSTL (JSP Standard Tag Library) implementation
com.ibm.pvc.servlet.jsf	JSF (JavaServer Faces) implementation
org.osgi.service.webapplication	OSGi Web Application Service
com.ibm.pvc.httpservice	OSGi HTTP Service
com.ibm.pvc.webhttpservice	OSGi HTTP Service for Web Container
com.ibm.pvc.webcontainer	Web Container
com.ibm.pvc.ras	Logging/Tracing APIs used by Web Container
com.ibm.pvc.sharedbundle	HttpSettingListener Interface
org.apache.commons.el	JSP 2.0 Expression Language Interpreter



Here is the description of the plug-ins shown on the previous slide.

Web Applications

JSP 2.0

Web
Container

Servlet 2.4

- Web Applications are standard OSGi bundles
- JSP content within Web Applications must be pre-compiled
 - ▶ Toolkit Export wizards perform processing
 - ▶ wab command line tool performs processing
- J2EE WAR files not directly supported – can preprocess using wab tool

Since components in the client platform run as OSGi bundles, a Web application targeting the client platform is packaged and deployed as a Web Application Bundle or WAB. J2EE Web Archive (WAR) files cannot run directly on the client platform.

Within the Rational Software Development Platform, the IBM WebSphere Everyplace Client Toolkit Version 6 Export wizards pre-compile the JSP content into the WAB so this processing does not occur when running the Web application on the client platform. When using other J2EE Web tools, you can export your Web applications into a standard WAR file and then use the WAB command line tool provided by IBM WebSphere Everyplace Deployment for Windows and Linux Version 6 to convert the WAR to a WAB, which pre-compiles the JSP content into the WAB.

Web Container Configuration

JSP 2.0

Web
Container

Servlet 2.4

- Configured via Java System Properties or Configuration Admin
- Can specify port to listen on (com.ibm.pvc.webcontainer.port property)
 - ▶ 0 = dynamic port selection by web container
 - ▶ n = use specified port number
 - ▶ non-existent = does not listen on any port
- Can specify IP address to listen on (com.ibm.pvc.webcontainer.http.address property)
 - ▶ default is localhost (can't connect from another system)
 - ▶ ALL = listen on all IP addresses
- Full list documented in System Administrator's Guide and also Developer's Guide



Web Container Configuration

JSP 2.0

Web
Container

Servlet 2.4

- Locating web container configuration information in runtime
 - ▶ Start platform with the console
 - ▶ Locate the `com.ibm.pvc.webcontainer` bundle and note its id
 - ▶ `bundle <bundleid>`

```
osgi> b 46
update@/C:/Program
Files/IBM/WED/rcp/eclipse/plugins/com.ibm.pvc.webcontainer_1.0.0.20050912/ [46]
Id=46, Status=ACTIVE      Data Root=C:\Documents and
Settings\brianlil\IBM\RCP\1126979698778\brianlil\.config\org.eclip
se.osgi\bundles\46\data Registered Services
{org.osgi.service.cm.ManagedService}={http.redirectPort=-1,
http.address=localhost, service.id=41, http.maxThreads=20,
service.pid=com.ibm.pvc.webcontainer, http.timeout=60000, http.port=1489,
http.maxKeepAliveRequests=50, http.scheme=http, http.maxKeepAliveTimeout=20000,
http.minThreads=4, service.vendor=IBM, http.maxKeepAliveConnections=20}
```

Web Container SSL

JSP 2.0

Web
Container

Servlet 2.4

- Enabling SSL
 - ▶ Set up keystore and truststore files
 - ▶ Create SSL configuration file
 - ▶ Specify the SSL configuration file
(com.ibm.pvc.webcontainer.ssl.configfile property)
 - ▶ Specify the port to use for SSL
(com.ibm.pvc.webcontainer.port.secure property)
 - same rules as HTTP port
- Web Container reads SSL configuration file and rewrites webcontainer.properties file
- Keystore and Truststore passwords obfuscated



Web Container Serviceability

JSP 2.0

Web
Container

Servlet 2.4

- WebContainer has tracing facilities
- Update trace.properties in com.ibm.pvc.ras plugin
- Change logredirector.level setting to capture trace output
- Documented in Application Developer's Guide



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