



Lotus Expeditor 6.1 Education

# IBM® Lotus® Expeditor 6.1 Client for Desktop

## Web container and Web applications

**Lotus** software



@business on demand software

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This presentation explains the Web Container and Web Applications supported by IBM Lotus Expeditor 6.1 Client for Desktop.

## Goals

- Understand the Web Container and Web Applications provided by IBM Lotus Expeditor 6.1 Client for Desktop.

The goal of this presentation is to understand the Web Container and Web Applications supported by IBM Lotus Expeditor 6.1 Client for Desktop.

## 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 Lotus Expeditor 6.1 Client for Desktop.

## Section

# ***Web container and Web applications***

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

## Application capabilities

OSGi HttpService

JSP 2.0

Web  
Container

Servlet 2.4

- “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 1.1.1) and JSP Standard Tag Libraries (JSTL 1.1)
    - The client now provides JSF and JSTL jars as shared components to reduce memory requirements
    - Legacy JSF applications may include the required JSF jars

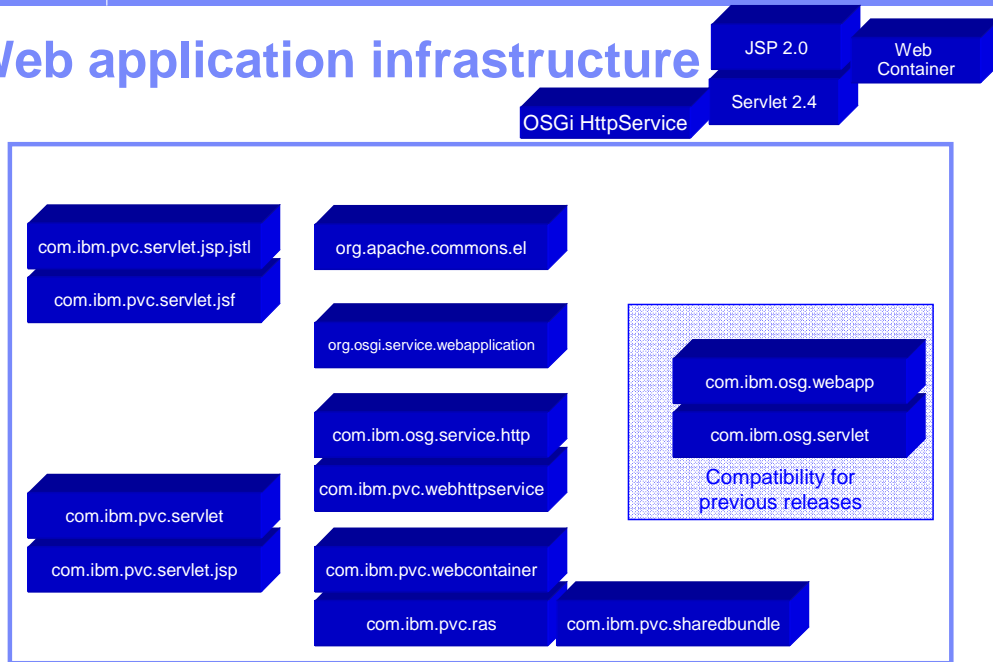
IBM Lotus Expeditor 6.1 Client for Desktop provides two methods to enable content serving using an HTTP Server – a basic, lightweight HTTP server and a Web Container.

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 using a URL.

The **Web Container** provides the ability to run web applications serving content using 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.

# Web application infrastructure



This slide shows the Web Application infrastructure on the client platform. The install provides the HttpService and Web Container to support Web applications, along with support for JSF, 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 that were 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 Lotus Expeditor 6.1 Toolkit 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 Lotus Expeditor 6.1 Client for Desktop 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 using Java System Properties or Configuration Administration
- 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 *Assembling and Deploying Lotus Expeditor Applications* and *Developing Application for Lotus Expeditor*

The Web Container can be configured using Java System properties or using Configuration Admin. Configurable properties include the port to listen on and the IP address to listen on. A full list of configurable properties are documented in the *Assembling and Deploying Lotus Expeditor Applications* guide and the *Developing Application for Lotus Expeditor* 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 configuration information can be viewed on the OSGi console if you start the Expeditor client platform using the command line.

## 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
- The client must be running the J2SE VM ( and not the default jclDesktop ) for SSL support

The Web Container can be configured for SSL. The steps are documented in the *Assembling and Deploying Lotus Expeditor Applications* guide. Note, the client must be running the J2SE VM and not the JCLDesktop VM for SSL support.

## Web container serviceability

JSP 2.0

Web  
Container

Servlet 2.4

- Web Container leverages JSR47 logging to log all messages
- JSR47 logging is the Expeditor platform runtime logging framework
  - ▶ Default Settings
    - Logging turned on, default level is INFO
    - Tracing turned off
- Runtime Logging and Tracing levels can be modified by updating `rcpinstall.properties`

The Web Container leverages the JSR47 logging framework to log all messages; this is the Expeditor Client platform runtime logging framework.

The default configuration of the platform logging framework is stored in the user's `workspace/.config/rcpinstall.properties` file.

This is further documented in the *Developing Applications for Lotus Expeditor* guide.

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