

WebSphere software



Server Tools

WebSphere Application Server - Express Beta

IBM Software Group

Agenda

- Server Tools Basics
- Server Types
- What is new in WSSD v5
- Integration with WebSphere Application Server v5
- How to create Test Environment
 - ▶ Information needed to create Test environments
- Deployment environment
- Functions not present in Beta Driver

Server Tools - Basics

- Provides environment to test:
 - ▶ J2EE 1.2 and 1.3 Enterprise Applications
 - ▶ Static Web Pages on a Web Server
- Resources used by Server Tools - in Server perspective
 - ▶ Server - points to a specific run-time environment
 - ▶ Configuration - information required to set up and publish to a server
 - ▶ Server Project - holds the Server and the Configuration
- All servers run in their own process, different than WSSD process

Server Test Environments

■ WAS-Express v5

- ▶ Test environment - uses built-in WAS Express 5.0 environment and runs your application directly out of the workspace
- ▶ Remote Server to administer and deploy on your production WAS Express 5.0 (Not in beta)
- ▶ Remote Server - Attach (Not in beta)
 - attach to a running remote WAS Express 5.0

■ WAS v4

- ▶ Remote Server - Attach (Not in beta)
 - attach to a running remote WAS v4

■ Apache Tomcat version 3.2 and 4.0

- ▶ Test environment - Runs Web Projects directly out of the workbench
- ▶ Local Server - Publishes and runs Web projects to local Tomcat Server
- ▶ You download the Tomcat Server

Server Test Environments

- TCP/IP Monitoring Server - allows monitoring of TCP/IP Request/Response
- Generic Server
 - ▶ Remote Server - Attach
- Publishing Server
 - ▶ Used to publish data from any project to on any Server (Web Server or App Server) - its copying files to the Server using ftp or file copy
- Static Web Server
 - ▶ Used to publish web pages from your Static Web project directly to a Web Server

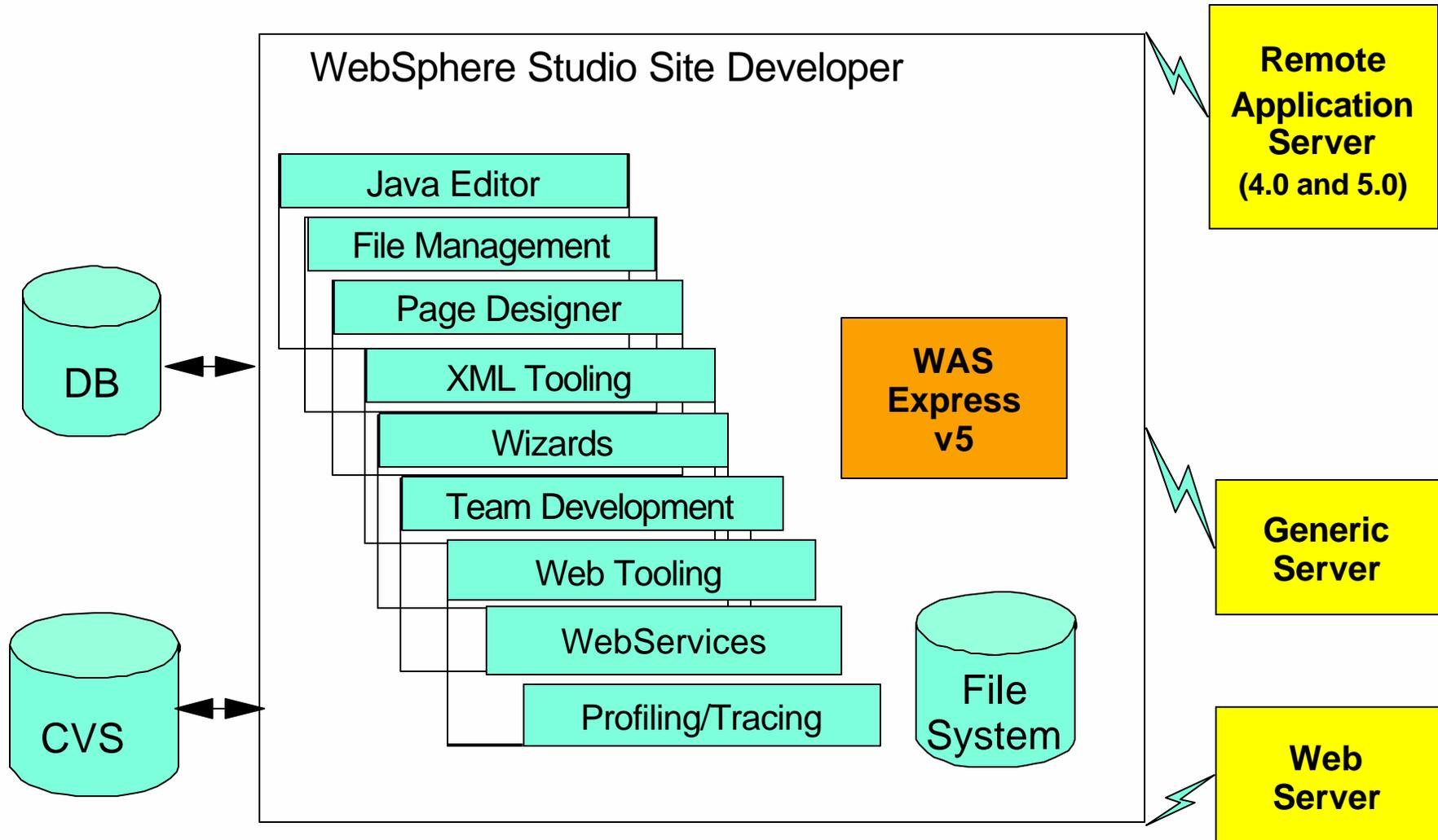
Server Tools - New Functions in v5

- Server Instance (in v4) is now called Server
- New Server types
 - ▶ WebSphere 5.0 Test Environment
 - ▶ Publishing and Static Web Server
- Loose Module Support
 - ▶ Module path is not hardcoded in EAR - allows EAR to be in source control
- Loose Archives for EAR and Web Projects
 - ▶ Support for specifying a Java project instead of physically copying the JAR file within the project

Server Tools - New Functions in v5 ...

- Publishing Server(s)
- Templates for data Source creation for WAS Express v5
- Simplified Server editors
 - ▶ Common Editor for Server and configuration, flat look like other editors
- Run on Sever
 - ▶ Shows the default Server and other applicable Server options

Test Environment



What is needed to test a Project

- Need a Server and an associated Server Configuration
 - ▶ Server defines the type of Server, where to run
 - ▶ Configuration defines the attributes on how to run the Server
 - Web Attributes, Ports, Data Sources, etc.
- Add the Project (EAR, Web) to the Server Configuration
- Publish the Server
- Run the Server or Debug on Server or Profile on Server
- Once the server has started, the output (log) messages will appear in the Console view in Server perspective

Creating a Test Environment - Server and Configuration

Automatic

- Done by selecting the following action on the EAR or Web project
 - ▶ Run on Server
 - ▶ Debug on Server
 - ▶ Profile on Server
- By default, J2EE 1.3 applications are assigned to a default WAS Express v5 built-in test environment
- Project is added to the default Server and its Configuration
 - ▶ Would need to update Server and/or Configuration, if needed
 - Like, adding a Data Source, changing the ports, adding classpaths, etc.
- Server is started
- This would cover over 90% of your Unit test requirement

Creating a Test Environment - Server and Configuration

Manual

- You create the Server and/or the Configuration of a specific Server type
- Can use a Server template to define the settings for the Server and/or Configuration
- Update Server and/or Configuration, if needed
- Add the Project to the Server Configuration
- Start the Server

Create a new server and server configuration

Choose the properties for the new server.

Server name: Test Server

Folder: Servers

Server type:

- WebSphere version 5.0
 - Remote Server Attach
 - Test Environment
- Apache Tomcat version 4.0
- Apache Tomcat version 3.2
- Publishing Server
- Remote Application Server Attach

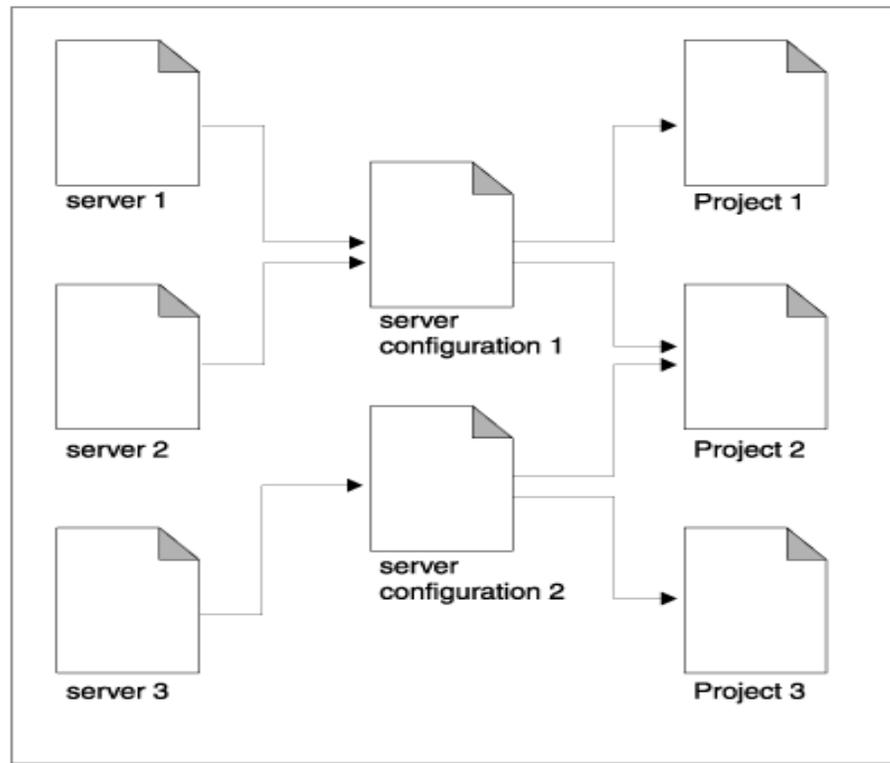
Template: None

Playing "What-if" with different Configurations

- Creating multiple Server Configurations
 - ▶ You can define multiple Server configurations and associate a Server to any configuration (of the same Server type)
 - Example: Can create 2 Server configurations, one with cookies enabled and other with URL rewriting. One run of Server would be with the 1st configuration, and another run could be with the 2nd configuration
- How to change Server configuration
 - ▶ From Server Configuration View, perform the "Switch Configuration" action on the Server
- Adding/Deleting Projects to the configuration
 - ▶ Dynamically add and remove projects on a Server configuration
 - ▶ From Server Configuration View, perform the "Add", "Delete" action on the Server Configuration

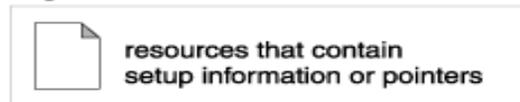
Relation between Server and Configuration

- Server points to ONE configuration
- Configuration can be pointed by multiple Servers
- Projects are added to the Configuration



Server/Configuration Relationship

Legend



Server Perspective and Views - Default

The screenshot displays the IBM WebSphere v5.0 IDE interface in the Server Perspective. The interface is divided into several panes:

- Navigator:** Located on the left, it shows a tree view of projects and modules, including AccountAndTransferEJB, AccountEJB, AuctionExample, AuctionRunV5EJB, AuctionRunV5Web, Default13EAR, HelloEJBClient, HelloEJB, and IncrementEJB.
- Server and Config. Editor:** The main central pane, titled "WebSphere v5.0 Test Environment", displays the configuration for the "WebSphere Server". It includes a "Server" section with the instruction "Enter settings for the server." and a text field for "Server name" containing "WebSphere v5.0 Test".
- Server Configuration:** A pane below the Navigator showing a tree view of server configurations, including Servers, SWebServer, WAS4.0 Test, and WebSphere v5.0 Test Environment.
- Servers Panel:** A table at the bottom of the Server Configuration pane showing the status of various servers.

Functions :

- Edit Servers
- Set Server Config
- Edit Configurations
- Add/delete Projects

Server Functions :

- Start/Stop Servers
- Publish to Server

Server Panel

Server	Status
SWebServer	Started
WAS4.0 Test	Stopped
WebSphere v5.0 Test Environment	Stopped

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Editing Server Configuration - Data Sources

WebSphere v5.0 Test Environment

Data sources

Scope: BaseApplicationServerCell/localhost/ser

Node Settings

Server Settings

Create and manage data sources. **Define Data Sources**

JDBC provider list:

Name	Implementation class name	Add...	Remove	Edit...
Cloudscape J...	com.ibm.db2j.jdbc.DB2jConnectionPoolD...			
Cloudscape J...	com.ibm.db2j.jdbc.DB2jXADDataSource			
DB2 JDBC	COM.ibm.db2.jdbc.DB2ConnectionPoolD...			

Create JDBC Provider

Data source defined in the JDBC provider selected above:

Name	JNDI Name	Type	Add...	Remove	Edit...
Default Data...	DefaultDatasource	V5			
TechSamp	WSsamples/TechSamp...	V5			
PLANTSDB	jdbc/PlantsByWebSpher...	V5			

Create Data Source

Resource properties defined in the data source selected above:

Name	Value	Type	Add...
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Data Source Properties

Server Configuration Paths Environment Web **Data source** Ports Variables Trace Security EJB

Server and Config. Editor

Same Editor for Unit Test and Remote Express Server Configuration

Information to Create Servers and Configurations

- For WAS Express 5.0 Test Environment
 - ▶ HTTP port
- For WebSphere 5.0 Remote Server Attach
 - ▶ Host name
 - ▶ Ports: JVM Debug, HTTP and BSF Debug
- For WebSphere 5.0 Remote Server
 - ▶ Host
 - ▶ WebSphere installation directory
 - ▶ File transfer mechanism - FTP or Simple copy
- For WebSphere 4.0 Remote Server Attach
 - ▶ Host
 - ▶ Ports: JVM Debug and HTTP

**Express Customers
Focus Area**

Information to Create Servers and Configuration ...

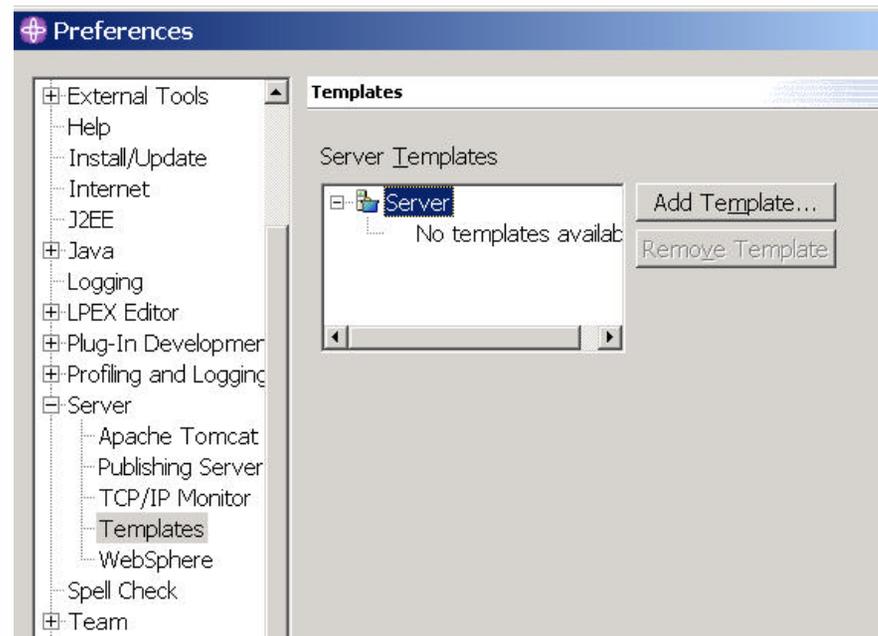
- For Publishing Server and Static Web Server
 - ▶ URL to the publishing directory
 - ▶ File transfer mechanism - FTP or Simple copy
 - ▶ Publishing Server port number
- For TCP/IP Monitoring Server - none
- For Remote Application Server Attach
 - ▶ Host
 - ▶ Ports: JVM Debug and HTTP

Running on a Remote WebSphere Application Server Express

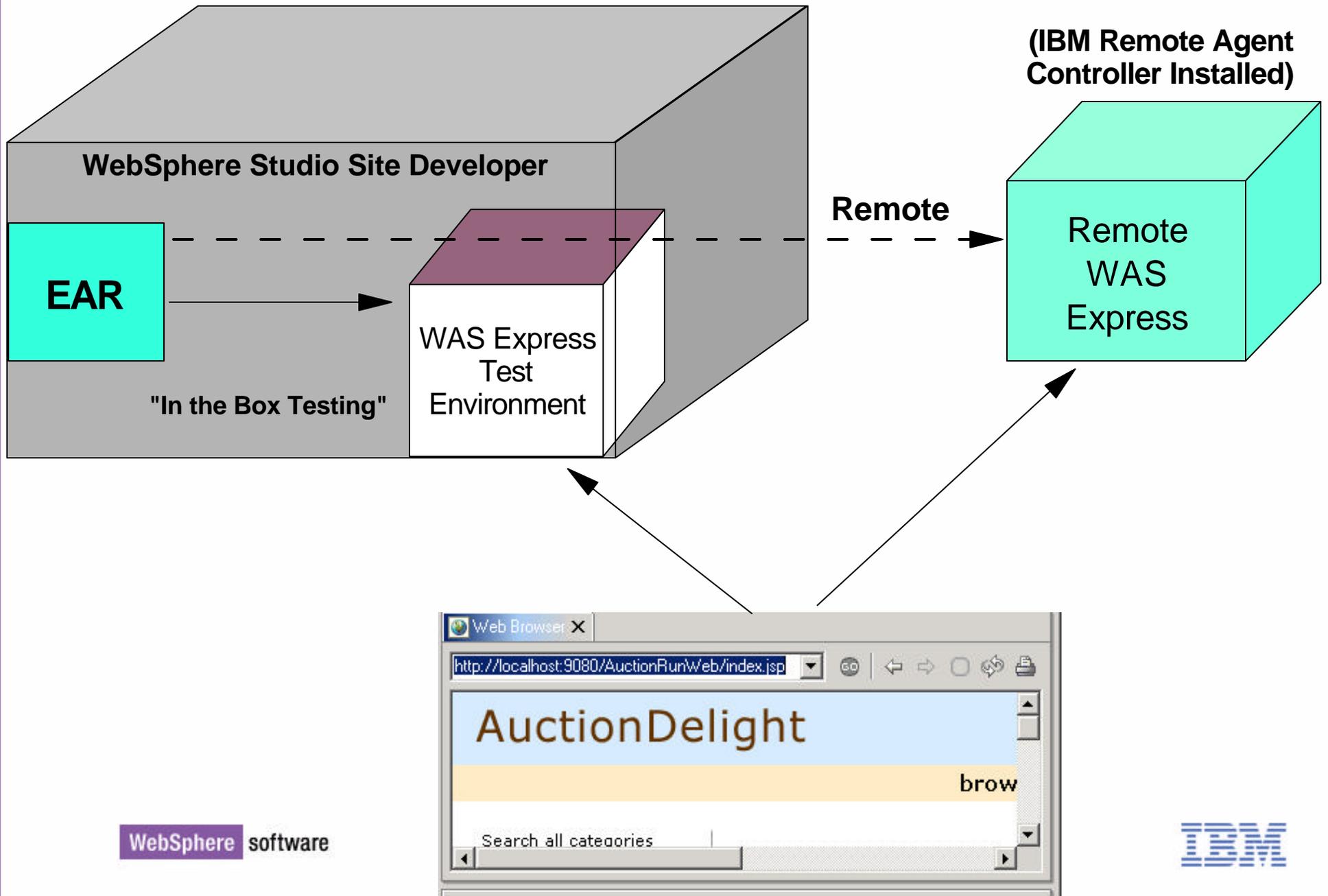
- Running on a Remote Server, the Site Developer will:
 - ▶ Validate Server configuration
 - ▶ Connect to the remote Server machine
 - ▶ Publish the Server configuration information defined in the Server instance to the remote Server using the remote file transfer mechanism defined in the Server instance
 - ▶ Publish the application to the remote machine
 - ▶ Start the Server instance
- Everything happens under the covers - Just happens

Server Preferences

- Via Windows -> Preferences
 - ▶ Setup Tomcat installation directory
 - ▶ Setup Publishing Server Default URL
 - ▶ Create Server and/or Configuration Templates
 - ▶ Setup WebSphere Remote Server DB2 location



WebSphere Express Test Environment



Functions not present in Beta Driver

- WAS Express v5 Remote Test and Remote Attach
- WAS v4 Remote Test and Remote Attach

Summary - Site Developer

- Looked at how Servers and Configurations work
- Provides tight integration of WebSphere Application Server environment for testing
- Provides an environment for source line debugging, tracing and profiling of your code
- Provides several other Server types

Appendix

TCP/IP Server

TCP/IP Monitoring Server : Run-time Support

- Forwards all request and responses (HTTP, FTP, etc.) between WebServer and Application Server
 - ▶ Listens for requests from the Web browser on the default port (8081)
 - ▶ Forwards these requests to the application Server on the default port 8080
 - ▶ Responses from the application Server are forwarded to the Web browser
- Records the request & response headers
- Only runs locally, and only supports Web projects
- Packaged with Site Developer