

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

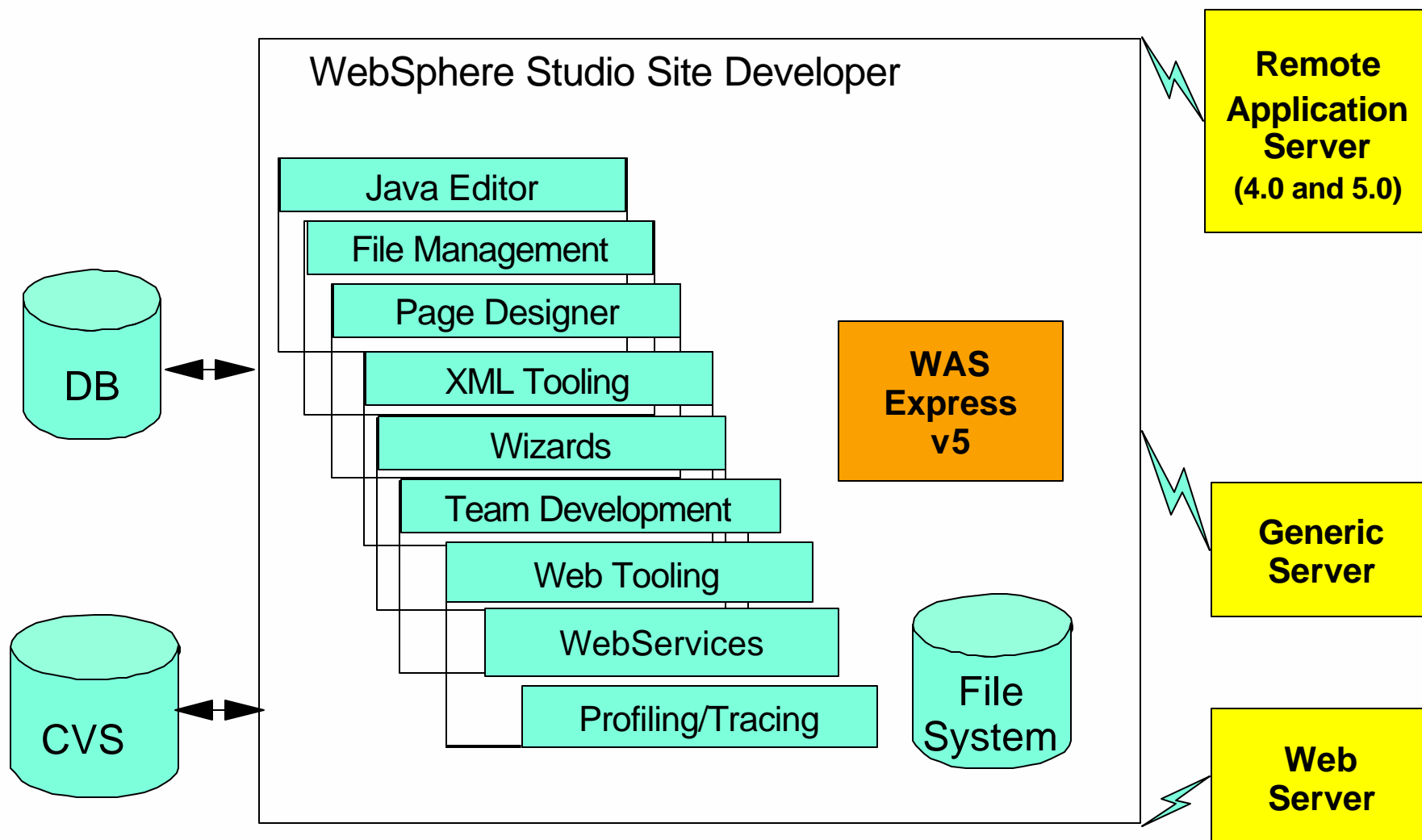
Server Tools - New Functions in v5

- 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

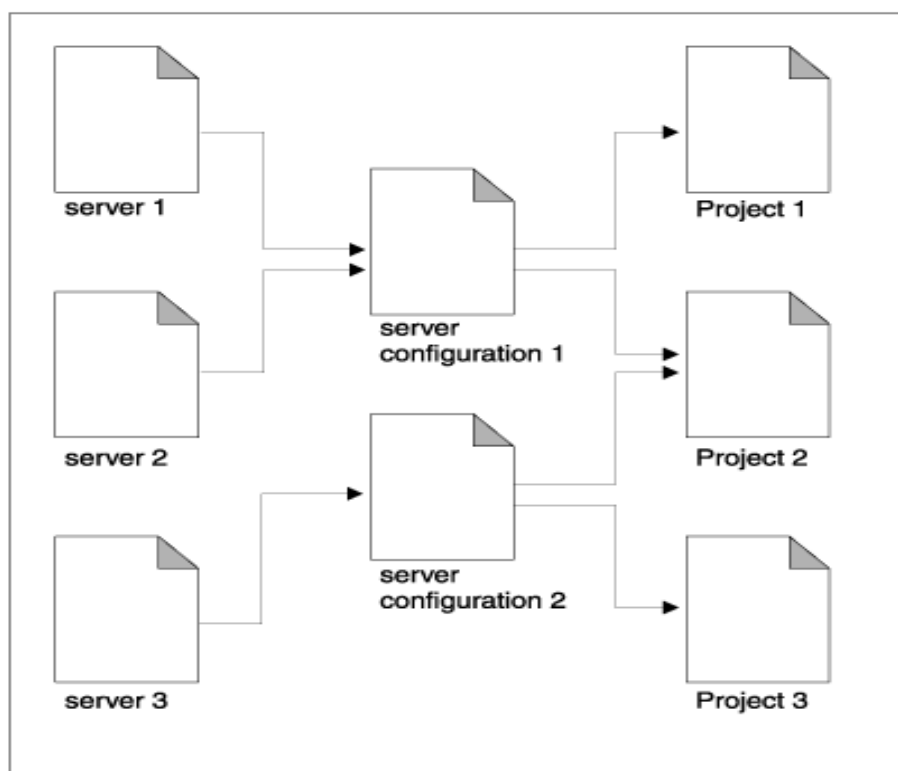
- ▶ From Server Configuration View, perform the "Switch Configuration" action on the Server

■ 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



resources that contain
setup information or pointers

Server Perspective and Views - Default

The screenshot displays the WebSphere v5.0 Test Environment interface. The main window is titled "WebSphere v5.0 Test Environment" and shows the "WebSphere Server" configuration page. The left sidebar contains the "Navigator" and "Server Configuration" views. The "Navigator" view lists various projects, including "AccountAndTransferEJB", "AccountEJB", "AuctionExample", "AuctionRunV5EJB", "AuctionRunV5Web", "Default13EAR", "HelloEJBClient", "HelloEJB", and "IncrementEJB". The "Server Configuration" view shows a tree structure of servers and configurations, including "Servers", "SWebServer", "WAS4.0 Test", "WebSphere v5.0 Test Environment", and "Server Configurations". The main content area displays the "WebSphere Server" configuration page, which includes a "Server" tab and a "Server name" field set to "WebSphere v5.0 Test I". Below the configuration page is a "Servers" table showing the status of various servers.

Navigator

Server Persp..

Server Config.

Server and Config. Editor

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 X

Data sources

Scope: BaseApplicationServerCell/localhost/ser

Node Settings

Server Settings

Create and manage data sources.

JDBC provider list:

Name	Implementation class name
Cloudscape J...	com.ibm.db2j.jdbc.DB2jConnectionPoolD...
Cloudscape J...	com.ibm.db2j.jdbc.DB2jXADataSource
DB2 JDBC	COM.ibm.db2.jdbc.DB2ConnectionPoolD...

Data source defined in the JDBC provider selected above:

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

Resource properties defined in the data source selected above:

Name	Value	Type
------	-------	------

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

Server and Config. Editor

Define Data Sources

Create JDBC Provider

Create Data Source

Data Source Properties

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 ...

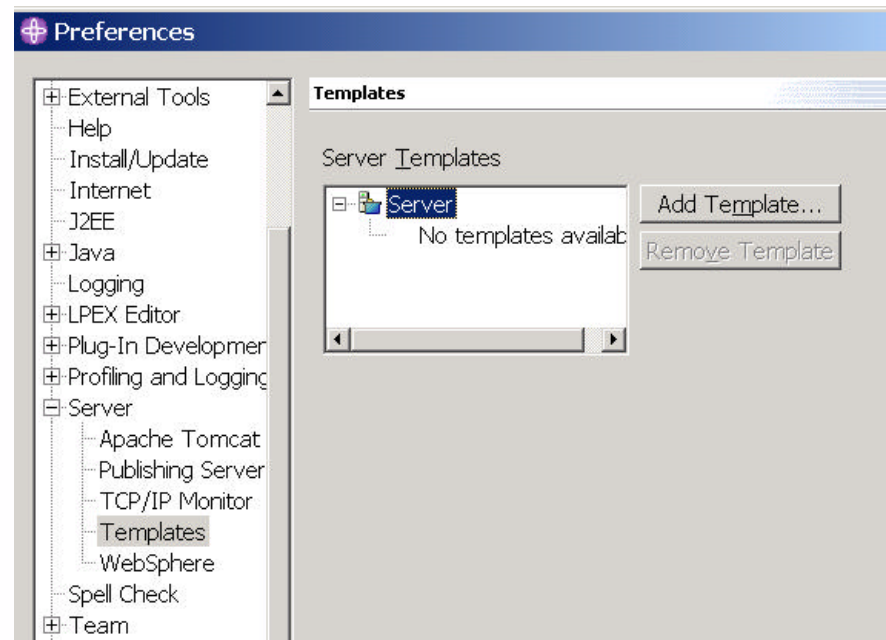
- For Publishing Server and Static Web Server
 - ▶ URL to the publishing directory
 - ▶ File transfer mechanism - FTP or Simple copy
 - ▶ Publishing Server port number
- For TCP/IP Monitoring Server - none
- For Remote Application Server Attach
 - ▶ Host
 - ▶ Ports: JVM Debug and HTTP

Running on a Remote WebSphere Application Server Express

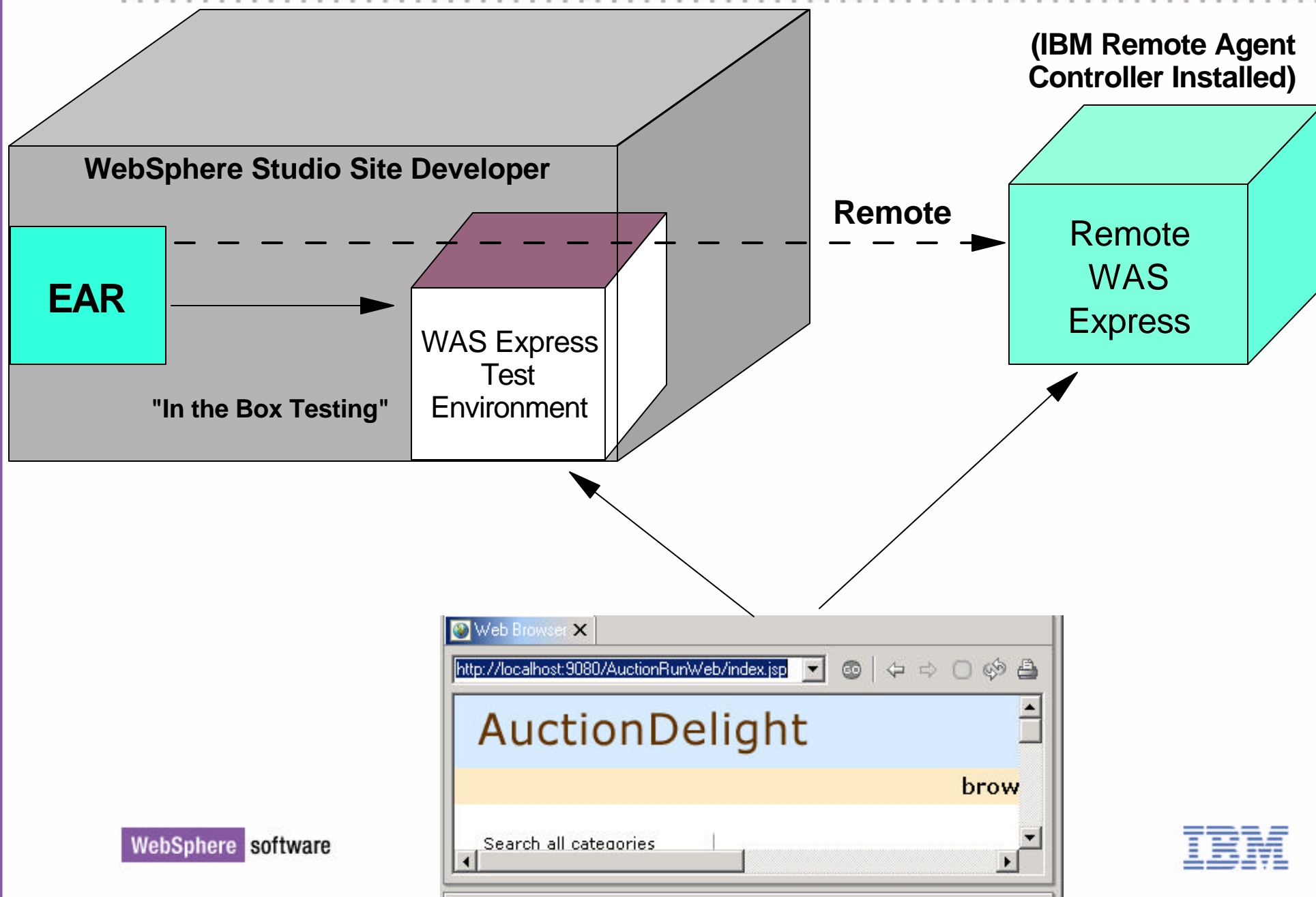
- Running on a Remote Server, the Site Developer will:
 - ▶ Validate Server configuration
 - ▶ Connect to the remote Server machine
 - ▶ Publish the Server configuration information defined in the Server instance to the remote Server using the remote file transfer mechanism defined in the Server instance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