



IBM Software Group

WebSphere® Process Server V6.1 WebSphere Integration Developer V6.1

Testing applications



@business on demand.

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This presentation covers testing applications using the test environment included with IBM WebSphere Integration Developer V6.1 and using WebSphere Process Server V6.1.

Adding applications to test servers

- Run on server (debug on server, profile on server)
 - ▶ Select or define new server for application
 - ▶ Server is started if not already started (local only)
- Add/remove projects
 - ▶ Server is started if not already started (local only)
- Publish
 - ▶ Reinstalls applications from the workspace onto the server

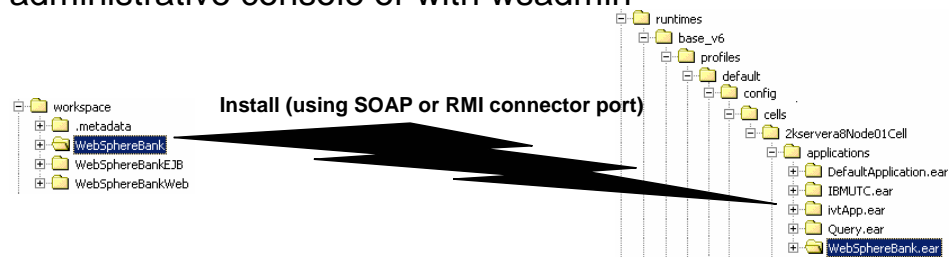


Once you have configured application servers, whether they be local or remote, you can run applications on those servers for testing purposes. Applications can be installed onto servers using either the run on server command or the add/remove projects dialog box. Both methods perform the same operation. The server must be started in order to install an application. Both these commands will attempt to start a local server if it is not already started. Once the server is started, the application is installed and started. There are minor differences in behavior between these two commands, but the Add/Remove Projects command is recommended as the best option.

Applications can be reinstalled using the Publish command. This will reinstall all applications that are configured in your workspace.

Adding applications to test servers

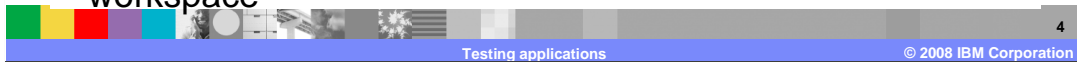
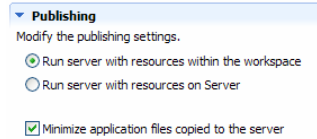
- Applications are added through communication through the SOAP or RMI connector port and installed on the server
 - ▶ Applications added to server configuration and registered in serverindex.xml as part of installation process
 - ▶ Exactly the same as installation through administrative console or with wsadmin



The call to install the application is made over the SOAP or RMI connector port and the installation takes place just as if performed from the administrative console or through the wsadmin command line tool.

Consideration for adding applications

- When applications are added to a local test server or separate local installation, the actual binaries can be located in different places
- Application binaries location
 - ▶ Workspace (Run server with resources within the workspace)
 - Certain changes made to applications are picked up automatically
 - Test server will contain orphaned applications if workspace containing applications deleted
 - ▶ Server (Run server with resources on server)
 - Changes to applications will need to be published
- Setting applies to all applications added from a workspace
- Removal of applications using Add/Remove Projects or the administrative console does not remove projects from a workspace



When installing applications onto your test server, you can specify whether the application binaries should start out of the workspace or be published to the server. Here are some considerations to help you decide what works better in your environment:

First, if the application binaries run from the workspace, certain changes, such as saving a .jsp file, will be updated and reloaded automatically. A drawback to this is that if a single test environment is used for multiple workspaces and you deploy multiple applications to that single test server, and then later delete workspaces without removing the application from the server, this will result in error messages during server startup.

Second, whatever settings you choose will apply to all applications for that server.

Third, if the application binaries run on the server, you must republish whenever updates to the applications are made.

Finally, if you change settings after installing an application, the application will continue to run with the old settings. You must remove the application and add it again in order for it to run under the new settings. Applications are removed using the Add/Remove Projects dialog or the administrative console. When you remove an application using the administrative console, it will only be removed from the server configuration, the installation binaries are not removed from the workspace.

Application changes (run from workspace)

- Certain changes are picked up and take affect without publishing
 - ▶ Changes to servlets, enterprise beans, and deployment descriptors will be installed and restarted
- For Process Server artifacts (business processes, human tasks, business rules, business state machines, enabling monitoring), certain changes will be picked up and reinstalled
 - ▶ Not guaranteed to pick up changes; issue **Publish** command to be sure
- Server restart required when interface and business objects are updated and republished
 - ▶ Definitions are not completely refreshed with just an application republish/restart
- Other required server restarts
 - ▶ Enabled defined resources
 - Data sources at server level and above, JMS resources
 - ▶ Debugging and profiling applications
 - ▶ Enabling security
 - ▶ Changing virtual machine values on application server



When applications are run from the workspace, which is the default setting, some changes are picked up automatically. Edits to servlets, enterprise beans, deployment descriptors, and so on are picked up when the code is saved and the updated code is restarted in the local test environment. For most Process Server artifacts, this is the case; however, there are cases where some things are not reinitialized automatically. To force changes to be picked up, use the Publish command to re-install applications completely. If Publishing does not pick up all the changes, then restarting the server will force a complete refresh.

Other situations that require a server restart include enabling some resources, such as data sources, turning on debugging or profiling, turning security on or off, and changing virtual machine settings on the application server.

Application changes (run on server)

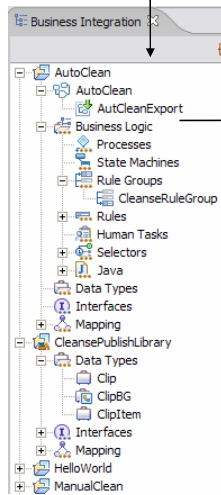
- Changes to installed applications (resources on server) can be published manually (default) or automatically to a test server
 - ▶ Code changes, Deployment Descriptor updates, Module additions/removals, changes to WebSphere Process Server artifacts (business processes, human tasks, business rules, business state machines, enabling monitoring)
 - ▶ Utilizes WebSphere Application Server's Fine Grain Application Update support for Java EE artifacts
 - ▶ Utilizes WebSphere Process Server update/install support for WebSphere Process Server artifacts
- Manual
 - ▶ Application can be removed and added again through Add/Remove Projects to pick up changes
 - ▶ Restart Project will publish new changes
 - ▶ Restart Server when restart is invoked from workspace
- Automatic publish
 - ▶ Enabled through setting Server document



As previously mentioned, when application binaries are run from the workspace, certain changes are propagated automatically when updates are made to the application. If the binaries are run from the server, you will need to republish whenever updates to the application are made. Update publishing can be configured to occur manually or automatically. WebSphere fine grain application update is used to publish changes, so only the parts or modules of the application that have been modified will be updated. If you are making frequent changes to an application, it can be beneficial to disable automatic publishing. In this case, you have to either remove and reinstall the application using add/remove projects, restart the project, or restart the server in order for the changes to be propagated. Automatic publish will periodically examine modifications that you have made to the application and publish them.

Automatic publish – run on server

Add/Change/Remove
artifact or module



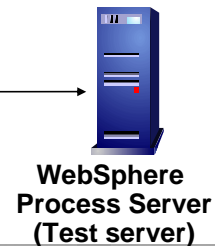
- Changes to applications are captured in preparation for publish

Builder runs and
starts ApplInstaller

ApplInstaller determines
type of change ("delta")



"Delta" published
to server



*Does not apply to resource running out of workspace

This slide illustrates the manner in which changes to an application are propagated to the test server. As part of the build process, the changes that are made to the projects or applications are noted and tracked. At publish times, the changes will be published to the server and WebSphere fine-grained update will apply the updates. Even when an artifact is deleted from a project or application a deletion package is sent to the server and read to delete the appropriate artifact.

Testing applications: notes and limitations

- Add/remove projects dialog will report application as installed even if application fails to install
- Keep paths and names short or updates/deletions can fail
 - ▶ WebSphere Integration Developer install path
 - ▶ Profile install path
 - ▶ host names or long application path lengths
 - ▶ 256 characters in path or less is best practice
- Console view is refreshed with SystemOut.log every ~5 seconds
 - ▶ Log file is not verbose
- All messages might not appear immediately in console view
- All messages may not be printed to the console view as the server is shutting down
 - ▶ This limitation exists for remote servers only



By design, if there is a problem with installing an application, the add/remove projects dialog will still report that the application has installed.

Long install paths can cause errors, such as application install failures or update failures. Because of Windows operating system limitations, these errors might be reported as path not found, or class not found, making the real cause difficult to determine.

The console view is refreshed from the SystemOut and SystemError log files every few seconds, but it is not a verbose feed of the system logs. At intervals, the system log messages are retrieved from the server through the file transfer application. The plug-in does some analysis and sorts the messages; sometimes that changes the sort order of the messages. Be aware that the console messages are processed this way, and that a message may show up in the console several seconds after the event actually occurs.

Summary

- Adding applications to test server
- Changing applications
- Notes and limitations



In summary, this presentation has covered adding and changing applications on the test servers, and reviewed some notes and limitations about testing applications.

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