



IBM Software Group

IBM WebSphere Application Server V6.1

System Administration Enhancements - wsadmin



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Converted to video May 14, 2015

This presentation will focus on enhancements to the wsadmin program and to the underlying system administration functions that it invokes in WebSphere® Application Server V6.1.

Agenda

- Overview of V6.1 system management
- wsadmin “AdminApp” command enhancements
- Jython Editor for automation in Application Server Toolkit
- New high level administration commands
- New utility commands
- Summary



This presentation will begin with a short overview of system administration followed by a discussion of the enhancements made to the wsadmin command interpreter. It then moves to introduce the new Jython Editor that is part of the Application Server Toolkit. The last two sections show some of the new high level commands that may be used and the new command line utility programs. A summary section at the end repeats the high points of the presentation.

Overview

- WebSphere Application Server V6.1 System Management functions are based and built on the proven, easy to use V6.0.X System Management model and functions
 - ▶ All V6.0.X functions and commands continue to work on V6.1
- Some key enhancements have been added to System and Application Management in V6.1 to assist system administrators
 - ▶ This presentation focuses on the details of these administration enhancements and their benefits



The System Management operations used in WebSphere Application Server V6.1 are based on the proven model used in WebSphere Application Server V6.0.X. All V6.0.X commands continue to work as before.

Enhancements have been introduced to simplify some the tasks of system administration. This presentation focuses on these enhancements and their benefits.

Section

AdminApp command enhancements



This section discusses wsadmin command enhancements to the 'AdminApp' object that supports application administration.

AdminApp Command Enhancements

- Wildcard usage for AdminApp scripts
 - ▶ Removes requirement for redundant data entry for application configuration
 - ▶ Regular expression pattern can be used in V6.1
 - ▶ **Example: V6.0 Old Script**
 - ```
$AdminApp install earFile {-MapWebModToVH {
 {'My Web Module' mymod.war,WEB-INF/web.xml default_host}
 {'Web Module' yourmod.war,WEB-INF/web.xml default_host}}}
```
  - ▶ **Example: V6.1 New Script**
    - ```
$AdminApp install earFile {-MapWebModToVH {{ .*\.war  
default_host}}}
```



The application management functions of install, edit and update provided by \$AdminApp object in wsadmin are typically quite complex as their input parameters include specification of various steps (e.g. Mapping ejb-refs in the application to JNDI names, Mapping web modules to virtual hosts etc), each of which in turn require multiple data elements.

In V6.1 a regular expression pattern can be specified instead of all the parameters. For example, in order to specify target for all web modules one can specify `.*war*` as module URI pattern in the MapModulesToServer step

AdminApp Command Enhancements (cont.)

- Multiple default targets can be specified
 - ▶ Install and update commands have a `--server` option to specify a single default server for install
 - ▶ In V6.1, multiple servers can be specified as targets
 - ▶ **Example:**
 - `$AdminApp install ear_path {- MapModulesToServer webSphere:cell=myCell,node=myNode,server=myServer1+ webSphere:cell=myCell,node=myNode2,server=webserver}`
- Easy target manipulation
 - ▶ In V6, new targets always replaced the existing targets during update
 - All the targets have to be specified again
 - ▶ In V6.1, a leading "+" or "-" can be used to add or remove targets
 - ▶ **Example:**
 - `+WebSphere:cell=c,node=n,server=s2`



Install and update commands now support a `--server` or `--node` option to specify a default target for installation or updating. Additionally, multiple targets can be specified in a single command, avoiding the need to repeat a command for each target.

A + or - leading delimiter is used in `$AdminApp` install or edit operations to add or remove deployment targets. Lack of leading delimiter replaces existing targets with specified ones which is the behavior in V6.

Example:

To add `myServer` and `myServer2` to existing deployment targets one can specify

```
-MapModulesToServer {{.* ModuleURI
+WebSphere:cell=myCell,node=myNode,server=myServer+
WebSphere:cell=myCell,node=myNode2,server=myServer2}}
```

To remove `myServer` and `myServer2` from existing deployment targets one can specify

```
-MapModulesToServer {{.* ModuleURI -
WebSphere:cell=myCell,node=myNode,server=myServer-
WebSphere:cell=myCell,node=myNode2,server=myServer2}}
```

To add `myServer` and remove `myServer2` from existing deployment targets one can specify

```
-MapModulesToServer {{.* ModuleURI
+WebSphere:cell=myCell,node=myNode,server=myServer-
WebSphere:cell=myCell,node=myNode2,server=myServer2}}
```

Section

Jython editor for automation



This section introduces the Jython Editor for Automation that is part of the WebSphere V6.1 Application Server Toolkit.

Jython Editor for Automation

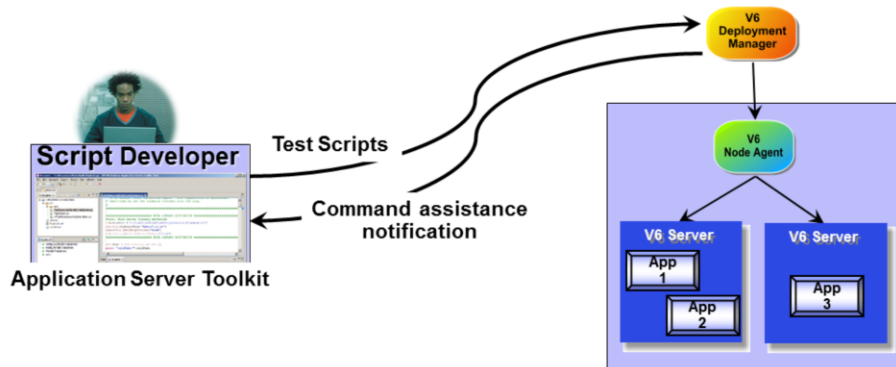
- Application Server Toolkit V6.1 includes a full function development environment for wsadmin scripts
- Toolkit contains:
 - ▶ A Jython editor for developing Jython scripts with color syntax highlighting of Jython keywords
 - ▶ Editor code completion and keyword help for the wsadmin Jython keywords
 - ▶ wsadmin Launcher for executing the wsadmin scripts and viewing the resulting output
 - ▶ Support for debugging Jython scripts
 - ▶ Integration of command assistance from the Application Server Administrative console
 - Console must be enabled to send JMX notifications and Application Server Toolkit must be enabled to receive the notifications



The Application Server Toolkit now includes a full function development environment for wsadmin scripts. The Toolkit contains:

- 1) A Jython editor for developing Jython scripts with color syntax highlighting of Jython keywords.
- 2) Editor code completion and keyword help for the wsadmin Jython keywords
- 3) A wsadmin Launcher for executing the wsadmin scripts and viewing the resulting output
- 4) Support for debugging Jython scripts
- 5) And Integration of command assistance from the Application Server Administrative console

WebSphere Administrative Script Launcher



- WebSphere Administrative Script Launcher can be used to run administrative script files within the development environment

This pictures in this slide illustrate how the automation toolkit can be used to run administrative scripts from within the development environment.

WebSphere Administrative Script Launcher can be used to run administrative script files on a WebSphere Server.

A WsadminLauncher can be configured to connect to a remote machine but a local installation of Application server is required to access wsadmin command and Jython debug library.

Documentation is included in the AST showing how to use the automation toolkit.

Section

New wsadmin Commands and Utilities

This section will discuss the new high level administrative commands added in V6.1. These commands are exposed in wsadmin as AdminTask commands.

New High Level Commands

- Several new high level commands have been added to wsadmin to ease administrative tasks

High level Command group	Commands
DataSourceManagement	createJDBCProvider, createDataSource, listJDBCProviders, listDatasources
ServerManagement	New commands to modify and view server configurations
VariableConfiguration	setVariable, removeVariable, showVariables
PortManagement	listServerPorts, modifyServerPort, listApplicationPorts
Report generation commands	ReportConfigInconsistencies, ReportConfiguredPorts

Several new high level commands have been added to wsadmin to ease administrative tasks. The table shown on this slide shows the new commands as well as the relevant high level command group.

New Utility Commands

Utility	Function and Example
isFederated	Checks if the system is a single server or network deployment, and thus federated Output: Boolean. Returns true if the system is network deployment
getDmgrProperties	Returns the name, the host and the port of the deployment manager Output: String. Returns the name, the host and the port of the deployment manager in a network deployment system. Returns empty string if the system is a single server.
changeHostName	Changes the host name of a node. Parameter: nodeName, hostName, SystemName (for z/OS)

Some specific utility commands were introduced. The `isFederated` command can be used to determine if the environment is a single server or if it is part of a network deployment environment. The `getDmgrProperties` command returns useful information about the deployment manager associated with the environment. The `changeHostName` command can be used to change the host name of a node.

New Utility Commands (cont.)

Utility	Function and Example
renameNode	<p>Rename node of a federated node. Command is executed from the node's bin directory</p> <p>During the rename, it does the following:</p> <ul style="list-style-type: none">▶ Connects to the Deployment Manager▶ Stops all servers▶ Changes the node configuration on the Deployment Manager▶ Synchronizes Node (syncNode)▶ Changes node name of all the scripts on the node <p>Syntax: renameNode.sh dmgr_host dmgr_port node_name [-nodeshortname] [-trace] [-conntype type] [-username uid] [-password pwd] [logfile filename] [-help]</p> <p>Example: renameNode localhost 8879 newnode</p>

A new command line utility, renameNode, can be used to rename a federated node in a network deployment environment.

Section

Summary and reference

This section will summarize the enhancements to the wsadmin program in WebSphere Application Server V6.1.

Summary

- Customers migrating from WebSphere Application Server V6.0.X will find the same management model and administration commands in V6.1
- In addition, V6.1 adds new administrative functions to help ease some of the tasks performed by system administrator
- Changes have been made to make existing commands more powerful, new commands have been introduced and command line utilities have been introduced.
- A Jython Development environment that is part of the Application Server Toolkit simplifies development of wsadmin scripts.



Users migrating from WebSphere Application Server V6.0.X will find the same management model and administration commands in V6.1. In addition, V6.1 adds new administrative functions to help ease some of the tasks performed by system administrator. Changes have been made to make existing commands more powerful, new commands have been introduced and command line utilities have been introduced. A Jython Development environment that is part of the Application Server Toolkit simplifies development of wsadmin scripts.