IBM Software Group

IBM WebSphere Application Server V6.1

System Management

Commands

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This presentation will focus on some of the system management commands of IBM WebSphere® Application Server V6.1.

Goals

- Describe many common command line tools provided by WebSphere Application Server V6 and V6.1

- Commands to start, stop and monitor different processes (Deployment Manager, Node Agents, Application Servers) are described in a separate presentation

- Pre-requisites:
  - Basic understanding of WebSphere Application Server V6 system management architecture – provided in a separate presentation

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The goals of this presentation are to describe some of the IBM WebSphere Application Server V6 command line tools.

Command line tools that will be covered in this presentation are manageprofiles tool, tools to display information about a profile and to change ports for the servers in a profile, tools to back up and restore IBM WebSphere Application Server configurations, node level command tools, troubleshooting tools, utilities, status tools, and miscellaneous tools. The commands to start and stop the different processes are covered in a separate presentation called "Stop, Start, and Monitor WebSphere processes". More complete information about the manageprofiles tool is provided in a separate presentation called "The Manage Profiles Tool".

This section will cover the command line tools.

Command Line Tools:

- Several command line tools exist to start, stop, and monitor WebSphere Application Server processes and nodes

- Commands only work on local servers or Nodes

- Command line tools are run from the Qshell command line or from CL command line using STRQSH CMD('command_and_parameters')

- All commands are run from "bin" directory of the profile, <PROFILE_HOME>/bin or the bin directory of the product install <WAS_HOME>/bin
  - ▶ Commands run from the <PROFILE_HOME>/bin directory apply only to that specific profile
    - No need to provide the "-profileName" option when running from the profile bin directory
  - ▶ Commands run from the <WAS_HOME>/bin directory apply to the default profile, when no profile option is specified
    - Specify –profileName <profile_name> option to apply to a specific profile

Command line tools will help you administer and manage local IBM WebSphere Application Server processes. To manage remote processes, use the Administrative Console or wsadmin. The command line tools are Qshell scripts which are invoked from the Qshell command line or from the CL command line using STRQSH with the CMD parameter. Local commands are run from the profile home or install root bin directory. By default, the commands operate on the profile associated with the bin directory that they are called from. However, these commands accept a –profileName parameter that can be used to specify exactly which profile they are to operate upon, regardless of which bin directory the commands are called from.

Creating IBM WebSphere Application Server profiles is done using the command line tool "manageprofiles". This is used to create, list, and delete profiles. A profile is a run-time execution environment that includes configuration files, the default location for deployed applications, logs, and other data. All profiles on a machine can share the same product files, but do not change the product files. Detailed information on profiles can be found in the IBM WebSphere Application Server V6.1 Manage Profiles presentation located under the Installation and Migration view, and in the Information Center.

Displaying and changing profiles

- dspwasinst [-profileName <profile_name>]
  - Utility to display information about the servers, ports used, and applications for a profile
  - For Network Deployment Cell, run dspwasinst against the deployment manager to see the nodes managed deployment manager in addition to the deployment manager details
    - Specify –node <managedNodeName> to see details on a specific node managed by the deployment manager
- chgwassvr [-profileName <profile_name>] –server server_name [–endpoint <endpointname> -port <new_value>] OR [-portblock <starting_port>]
  - Utility to change one or more port values for a server
  - Can change all ports using –portblock or one or more ports using multiple –endpoint/-port parameters
  - For a node in a ND cell, run chgwassvr against the deployment manager specifying –node <managedNodeName> -server <managed_server_name> and perform syncNode afterwards
  - For example,
    - chgwassvr –portblock 10380
    - chgwassvr –endpoint WC_adminhost –port 9065 –endpoint SOAP_CONNECTOR_ADDRESS –port 10000
    - chgwassvr –profileName myDmgr –node MYISERIES –server server1 –endpoint WC_defaulthost –port 9085

The tools described on this page are only available on i5/OS.

The Display WebSphere Application Server Instance tool displays useful information about a profile such as the location of the profile, the type of profile, the servers contained within the profile, the status (stopped or running) of the servers, ports assigned to the servers, and the installed applications. You can use this tool against a deployment manager profile to view information for the deployment manager AND information for the nodes managed by the deployment manager. To view information for a managed node, use the –node parameter with the name of the managed node you want to display.

The Change WebSphere Application Server Server tools allows you to change one or more ports used by a server in a profile. Use the –portblock <starting_port> to reassign all of the ports for a server to a block of ports which starts at the specified starting port value. You can change specific port values by using the –endpoint parameter. Each port used by a server is specified using an EndPoint name. End point names can be found in the serverindex.xml for the profile.

To change the ports for a node which is part of a deployment manager cell, run the Change WebSphere Application Server command against the deployment manager profile specifying the –node and –server parameters for the server you want to modify. The node and server should be stopped when you run the command and you must run the

syncNode command against the managed node profile before restarting the node.

Backup and Restore Configuration

- backupConfig <file-name>
  - Utility to back-up configuration to a zipped file
  - For Stand-alone node, run backupConfig at the Node level
  - For Network Deployment Cell, run backupConfig at the DMgr level, since it contains the master repository

- restoreConfig <file-name>
  - Utility to restore the configuration of your Stand-alone Application Server or the Cell from a backed up configuration file

- Note that the backing up configuration is not sufficient to recreate the entire system
  - There might be other directories like application binaries, that reside outside the configuration

The backupConfig command is a simple tool to back up the configuration of your WebSphere Application Server node to a file. By default, all servers on the node stop before the backup is made so that partially synchronized information is not saved. Remember to re-start servers after using backupConfig, or use the –nostop option. If you do not have root authority, you must specify a path for the backup file in a location where you have file write permission. The backup file will be in zip format and a .zip extension is recommended.

The restoreConfig command is a simple utility to restore the configuration of your IBM WebSphere Application Server after backing up the configuration using the backupConfig command. By default, all servers on the node stop before the configuration restores so that a node synchronization does not occur during the restoration. Servers are not automatically restarted after the configuration is restored. If the configuration directory already exists, it is renamed before the restoration occurs.

Node Level Utility Command Line Tools

- syncNode
  - Forces full synchronization between the node and the Deployment Manager
  - Used as error recovery tool, in case the node level configuration is damaged to the point where the Node Agent does not start
  - Can also be done through the Administrative Console or wsadmin

- cleanupNode <cellhost> <cellport>
  - Removes node configuration after node is forcefully removed from the cell
  - Executed at the DMgr

The syncNode command forces a configuration synchronization to occur between the node and the deployment manager for the cell in which the node is configured. The node agent server runs a configuration synchronization service that keeps the node configuration synchronized with the master cell configuration. If the node agent is unable to run because of a problem in the node configuration, you can use the syncNode command to perform a synchronization when the deployment manager is not running in order to force the node configuration back in sync with the cell configuration.

The cleanupNode command cleans up a node configuration from the cell repository. Only use this command to clean up a node if you have a node defined in the cell configuration, but the node no longer exists.

The Collector tool gathers log files, configuration files, system information, names of other programs installed, environment variables, and other information that IBM Customer Support personnel are likely to ask for when troubleshooting a problem. Running it will store configuration and log files into a single jar file.

The name space stored by a given name server can be dumped with the dumpNameSpace tool that is shipped with IBM WebSphere Application Server. This tool can be invoked from the command line or from a Java program. The naming service for the WebSphere Application Server host must be active when this tool is invoked.

There are various utility command line tools that are available as well. Here you see some of the more common tools that are used. Ws_ant will invoke Another Neat Tool (ANT) with IBM WebSphere Application Server extensions. The ejbdeploy tool is used to generate deployment code and can be invoked from the command line or during application installation. Another command line tool that is beneficial is the ability to generate the http server plug-in configuration file. This can also be done using the Administrative Console.

Utility Command Line Tools continued

- grtwasaut
  - Grant explicit data and object authorities to a user profile or authorization list to some or all of the directories and files beneath a profile

- updwashost
  - For Stand-alone application server profiles and deployment managers, change the host name and IP address associated with the profile
    - Use when you change host name or IP address for your system after creating the profile

- enablejvm
  - Change the product or a specific profile to use the IBM J2SE V5 32-bit JVM on V5R4M0 instead of the Java Developer Kit V6 for i5/OS JVM
    - IBM J2SE V5 (5722-JV1 option 8) and its prerequisites must be installed

There are various utility command line tools that are available only on i5/OS. Here you see some of the more common tools that are used. Grant WebSphere Application Server Authority allows you to grant specific data or object authorities to the specified user profile or authorization list to some or all of the directories and files beneath a profile.

The update WebSphere Application Server host command is useful when you change the host name or IP address of your system after you have created a profile. The tool works well for stand-alone application server profiles. It does not update nodes which are part of a deployment manager cell effectively.

By default, WebSphere Application Server V6.1 for i5/OS is configured to use the i5/OS Java Developer Kit 5.0 JVM (also known as the "classic" JVM). Starting with i5/OS release V5R4M0, the IBM J2SE 5.0 32-bit developers kit is also available.
The enablejvm tool allows you to change a specific profile, or the installed product as a whole, to use the IBM J2SE 32-bit JVM. You can use the tools to switch between the JVMs as you like. Note that any JVM specific settings you may have specified for a server are not removed when you switch between the two JVMs, and may cause the application server to fail to start.

The server status command can be used to obtain the status of one or all of the servers configured on a node. The version info command generates reports from data it extracts from XML files in the properties/version folder to give you detail on the version of WebSphere Application Server. The genHistoryReport and genVersionReport will generate html files that give the version and history information of WebSphere Application Server.

The checkprereqs tool checks the system for required and optional products, PTFs, system settings, and other items which are necessary in order for your application server to run successfully.

The servicetools tool takes the –portconflict parameter and allows you check all or just some of the instances and profiles on the system for port conflicts which may exist. This can be useful for resolving port conflicts when you have multiple versions and editions of the product installed.

The querywasinstalls tool is new in V6.1. With the ability to install the product multiple times and to install locations of your choosing, a tool is needed to allow you to determine what WebSphere Application Server products are installed and where. The querywasinstalls tool is located in the product's bin directory but it is also located in a well known location, /QIBM/WAS/bin. The tool displays the currently installed WebSphere Application Server products. Additionally the product type, version, install location, default profile location and product library for each product are displayed.

Other Command Line Tools

- ivt (Installation Verification Test)
  - Syntax: ivt server_name profile_name [-p port_number] [-host host_name] (such as ivt server1 default)

- PropFilePasswordEncoder
  - Used to replace clear text passwords in configuration files with the encoded password
    - re-encode passwords
  - Syntax:
    - PropFilePasswordEncoder -filename -password properties list

- JspBatchCompiler
  - Pre-compile JSPs in a Web module

The ivt command starts the installation verification test (IVT) program. The IVT verifies that the installation of the application server profile was successful. Each profile has its own IVT command it can run. The IVT will start the application server automatically if the server process is not already running. After the server process initializes, the IVT runs a series of verification tests and displays pass or fail status in a console window. It will also scan the SystemOut.log file for errors and will verify the functionality of the profile.

The PropFilePasswordEncoder replaces clear text passwords with encoded passwords in configuration and properties files. This can be useful when you have changed your password and need to replace it in a configuration file. After saving the file with the clear text password, you should immediately run the PropFilePasswordEncoder tool to encode the password.

The JspBatchCompiler command is an IBM enhancement to JSP support in which IBM WebSphere Application Server provides a batch JSP compiler. Use this function to batch compile your JSP files and thereby enable faster responses to the initial client requests for the JSP files on your production Web server. Batch compiling makes the first request for a JSP file much faster because the JSP file is translated and compiled into a servlet. Batch compiling is also useful as a fast way to resynchronize all of the JSP files for an application.

Summary

- Covered some of the more common command line administrative tools

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In summary, this presentation has covered some of the commands to help you perform administrative tasks in IBM WebSphere Application Server Version 6 and V6.1.

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