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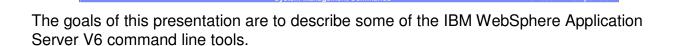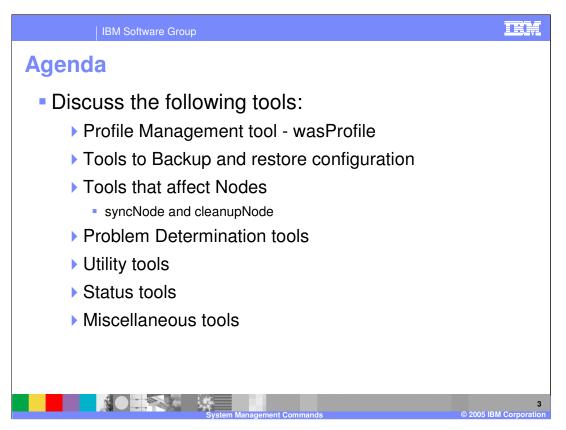# IBM® WebSphere® Application Server V6

System Management

Commands

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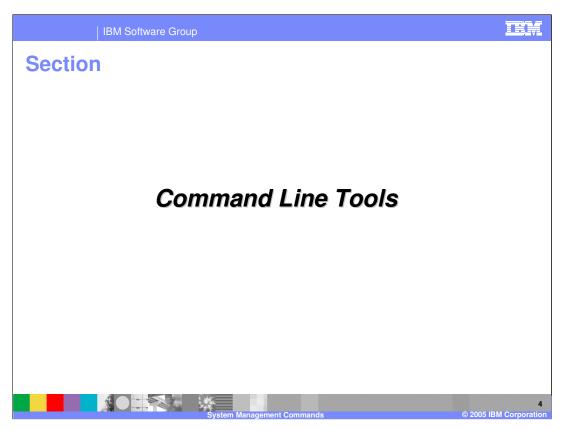
Goals

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

- 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

System Management Commands

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

Agenda

- Discuss the following tools:
  - ▶ Profile Management tool - wasProfile
  - ▶ Tools to Backup and restore configuration
  - ▶ Tools that affect Nodes
    - syncNode and cleanupNode
  - ▶ Problem Determination tools
  - ▶ Utility tools
  - ▶ Status tools
  - ▶ Miscellaneous tools

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Command line tools that will be covered in this presentation are Profile creation tool, 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".

Section

Command Line Tools

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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

- All commands are run from "bin" directory of the profile, <PROFILE_HOME>/bin or product install <WAS_HOME>/bin
  - Commands run from the <PROFILE_HOME>/bin directory apply only to that specific profile – RECOMMENDED
    - 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

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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. 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.

Managing WebSphere Profiles

- wasprofile.bat or wasprofile.sh
  - ▶ Command line tool provides complete management of profiles - create, list, delete, validate, etc.
  - ▶ Profile Creation Tool uses wasProfile under the covers to create profiles

- Details of WebSphere Profile and wasprofile are in a separate presentation within the Install section

Creating IBM WebSphere Application Server profiles is done using the command line tool "wasProfile". This is used to create, list and delete profiles. Again, 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 system files, but do not change the system files. Detailed information on profiles can be found in the IBM WebSphere Application Server V6 Profile presentation and in the Information Center.

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 IBM 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.

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Problem Determination Command Line Tools

- collector
  - ▸ Tool collects logs & configuration files in single jar file
  - ▸ Additionally, the tool collects system information like configuration, OS system logs, available disk space, etc.

- waslogbr
  - ▸ Launch stand-alone Log Analyzer tool

- dumpNameSpace
  - ▸ Displays Java™ Naming and Directory Interface (JNDI) namespace and entries

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 waslogbr command launches the Log Analyzer in stand-alone mode. The tool takes log and trace files and formats them for easier reading, and looks up messages in a symptom database to locate suggestions for problem resolution.

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.

Utility Command Line Tools

- ws_ant
  - ▸ Launch ANT with WebSphere Application Server extensions

- ikeyman
  - ▸ Generate and maintain security keys and keyfiles for SSL

- ejbdeploy
  - ▸ Generate container specific deployment classes for EJBs
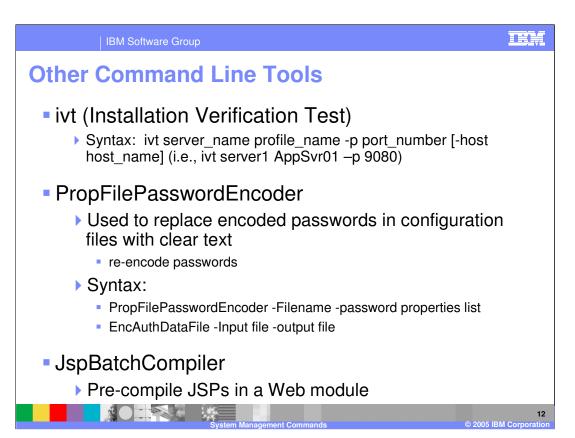   - Can also be done during Application install time

- GenPluginCfg
  - ▸ Regenerate HTTP server Plug-in configuration file
    - Can also be done with the Administrative Console or wsadmin

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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. Another tool is the uninstallCleanup. This tool will remove any directories and files that are left behind by the uninstall operation. The ikeyman tool can be used to create key databases, public and private key pairs and certificate requests for securing IBM WebSphere Application Server. 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.

Status/Version Command Line Tools

- serverStatus
  - ▸ Retrieves server status
    - Syntax: serverStatus <server name>

- versionInfo
  - ▸ Provides IBM WebSphere Application Server Version Report

- genHistoryReport, genVersionReport
  - ▸ Generate html history/version reports

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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.

Other Command Line Tools

- ivt (Installation Verification Test)
  - ▶ Syntax: ivt server_name profile_name -p port_number [-host host_name] (i.e., ivt server1 AppSvr01 –p 9080)

- PropFilePasswordEncoder
  - ▶ Used to replace encoded passwords in configuration files with clear text
    - re-encode passwords
  - ▶ Syntax:
    - PropFilePasswordEncoder -Filename -password properties list
    - EncAuthDataFile -Input file -output file

- 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 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.

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