

IBM WebSphere Application Server V8.5 Lab

Selectable SDK

Scenario

IBM WebSphere Application Server V8.5 is pre-configured to use Java 6; however, it can be configured to use Java 6 or Java 7. You are a system administrator who needs to learn how to install and uninstall Java 7 support, and to use shell and wsadmin commands to manage SDK assignments.

Goals

During this lab, you will learn to do the following:

1. Install WebSphere SDK Java Technology Edition V7 to an existing WebSphere Application Server installation.
2. Use the `managesdk` command to display and set the Java SDK used by profiles, nodes, servers, and script commands in the product bin directory that do not target a specified profile or a default profile.
3. Use the AdminSDKCmds `wsadmin` command group to manage SDK assignments at the node and server level.
4. Uninstall WebSphere SDK Java Technology Edition V7 from a WebSphere Application Server installation.

For more information, see the following WebSphere Application Server V8.5 information center topics:

- [Installing and uninstalling SDK Java Technology Edition Version 7.0 on distributed operating systems](#)
- [managesdk command](#)
- [AdminSDKCmds command group for the AdminTask object](#)

This lab is provided **AS-IS**, with no formal IBM support.

Prerequisites

The lab instructions assume the use of a single host that includes a WebSphere Application Server Network Deployment V8.5 cell with two application server nodes. The basic setup is outlined below.

- IBM Installation Manager 1.5.2 (or later)
- Local or remote Installation Manager repository containing WebSphere SDK Java Technology Edition V7
- WebSphere Application Server Network Deployment V8.5
 - Application server root
 - Windows: C:\Program Files\IBM\WebSphere\AppServer
 - UNIX or Linux: /opt/IBM/WebSphere/AppServer

- Deployment Manager Node
 - Profile name: Dmgr01
 - Profile path
 - Windows: C:\Program Files\IBM\WebSphere\AppServer\profiles\Dmgr01
 - UNIX or Linux: /opt/IBM/WebSphere/AppServer/profiles/Dmgr01
 - Cell name: DmgrCell01
 - Node name: DmgrCellManager01
 - Server name: dmgr
 - Administrative account
 - User name: was
 - Password: was
- Federated Application Server Node 1
 - Profile name: AppSrv01
 - Profile path
 - Windows: C:\Program Files\IBM\WebSphere\AppServer\profiles\AppSrv01
 - UNIX or Linux: /opt/IBM/WebSphere/AppServer/profiles/AppSrv01
 - Node name: AppSrv01Node
 - Server name: server1
- Federated Application Server Node 2
 - Profile name: AppSrv02
 - Profile path
 - Windows: C:\Program Files\IBM\WebSphere\AppServer\profiles\AppSrv02
 - UNIX or Linux: /opt/IBM/WebSphere/AppServer/profiles/AppSrv02
 - Node name: AppSrv02Node
 - Server name: server2

Procedure

1. Configure IBM Installation Manager to use a local repository containing WebSphere SDK Java Technology Edition V7.

First use the operating system shell to launch IBM Installation Manager. Next, click *File > Preferences*. Then use the Preferences window to add the file system path or URL of the repository containing WebSphere SDK Java Technology Edition V7. Finally, click **OK** to save the changes and close the Preferences window.

2. Install WebSphere SDK Java Technology Edition V7.

On the Installation Manager home screen, click **Install**. Next, install WebSphere SDK Java Technology Edition V7 to the WebSphere Application Server installation. Then close Installation Manager.

3. Start the deployment manager and the two node agents.

Open a command prompt and use the startServer command script to start the deployment manager and the two node agents, for example,

Windows

```
C:\Program Files\IBM\WebSphere\AppServer\profiles\Dmgr01\bin\startServer dmgr
C:\Program Files\IBM\WebSphere\AppServer\profiles\AppSrv01\bin\startServer nodeagent
C:\Program Files\IBM\WebSphere\AppServer\profiles\AppSrv02\bin\startServer nodeagent
```

UNIX or Linux

```
/opt/IBM/WebSphere/AppServer/profiles/Dmgr01/bin startServer.sh dmgr
/opt/IBM/WebSphere/AppServer/profiles/AppSrv01/bin startServer.sh nodeagent
/opt/IBM/WebSphere/AppServer/profiles/AppSrv02/bin startServer.sh nodeagent
```

4. List the available SDK's.

Run the following commands from the application server bin directory, for example,

Windows: C:\Program Files\IBM\WebSphere\AppServer\bin

UNIX or Linux: /opt/IBM/WebSphere/AppServer/bin

a. Display the SDK's available to the product installation.

```
managesdk -listAvailable
```

Note: You can include the `-verbose` option to display detailed information about the SDK's available to the product installation, for example,

```
managesdk -listAvailable -verbose
```

5. Change all profiles to use SDK 1.7_32.

Run the following commands from the application server bin directory, for example,

Windows: C:\Program Files\IBM\WebSphere\AppServer\bin

UNIX or Linux: /opt/IBM/WebSphere/AppServer/bin

a. Display the current SDK's that each profile, and its node and servers, is currently configured to use.

```
managesdk -listEnabledProfileAll
```

Notes

- You can use the `-listEnabledProfile` option to display the SDK's that a specified profile, and its node and servers, is configured to use, for example,

```
managesdk -listEnabledProfile -profileName AppSrv01
```

- You can include the `-verbose` option to display detailed information about the SDK's.

b. Change each profile, and its node and servers, to use SDK 1.7_32.

```
managesdk -enableProfileAll -sdkname 1.7_32 -enableServers -user was -password was
```

Notes

- When the `-enableServers` option is included, all server-level SDK assignments are removed; as a result, all servers use the node-level default SDK (set when this command is run).
- You can use the `-enableProfile` option to change a specified profile, and its node and servers, to use a specified SDK, for example,

```
managesdk -enableProfile -profileName AppSrv01 -sdkname 1.7_32 -  
enableServers -user was -password was
```

- To directly manage node-level default and server-level SDK assignments, use the `wsadmin` commands covered later in this lab.

c. Verify that all profiles, and their nodes and servers, are now using SDK 1.7_32.

```
managesdk -listEnabledProfileAll
```

6. Change the default SDK used for new profiles to SDK 1.7_32.

Run the following commands from the application server bin directory, for example,

Windows: `C:\Program Files\IBM\WebSphere\AppServer\bin`

UNIX or Linux: `/opt/IBM/WebSphere/AppServer/bin`

a. Display the current default SDK used for new profiles.

```
managesdk -getNewProfileDefault
```

Note: You can include the `-verbose` option to display detailed information about the SDK.

b. Change the default SDK used for new profiles to SDK 1.7_32.

```
managesdk -setNewProfileDefault -sdkname 1.7_32
```

7. Update the installation to use SDK 1.7_32 for script commands in the product bin directory that do not target a specified profile or a default profile.

Run the following commands from the application server bin directory, for example,

Windows: C:\Program Files\IBM\WebSphere\AppServer\bin
UNIX or Linux: /opt/IBM/WebSphere/AppServer/bin

a. Display the current SDK used for script commands in the product bin directory that do not target a specified profile or a default profile.

```
managesdk -getCommandDefault
```

Note: You can include the `-verbose` option to display detailed information about the SDK.

b. Update the installation to use SDK 1.7_32 for script commands in the product bin directory that do not target a specified profile or a default profile.

```
managesdk -setCommandDefault -sdkname 1.7_32
```

8. Reverse all SDK changes.

Run the following commands from the application server bin directory, for example,

Windows: C:\Program Files\IBM\WebSphere\AppServer\bin
UNIX or Linux: /opt/IBM/WebSphere/AppServer/bin

a. Change each profile, and its node and servers, to use SDK 1.6_32.

```
managesdk -enableProfileAll -sdkname 1.6_32 -enableServers -user was -password was
```

b. Verify that all profiles, and their nodes and servers, are now using SDK 1.6_32.

```
managesdk -listEnabledProfileAll
```

c. Change the default SDK used for new profiles to SDK 1.6_32.

```
managesdk -setNewProfileDefault -sdkname 1.6_32
```

d. Update the installation to use SDK 1.6_32 for script commands in the product bin directory that do not target a specified profile or a default profile.

```
managesdk -setCommandDefault -sdkname 1.6_32
```

9. Use wsadmin commands to manage SDK assignments at the node and server levels.

Change to the deployment manager profile bin directory, for example,

Windows: C:\Program Files\IBM\WebSphere\AppServer\bin

UNIX or Linux: /opt/IBM/WebSphere/AppServer/bin

Next, run the following command to start wsadmin:

Windows: wsadmin -lang jython -userName was -password was

UNIX or Linux: wsadmin.sh -lang jython -userName was -password was

Then run the following commands from the wsadmin prompt:

a. Display the version of the SDK for the cell.

```
AdminTask.getSDKVersion()
```

b. Display the version of the default SDK for node AppSrv01Node.

```
AdminTask.getSDKVersion(['-nodeName AppSrv01Node'])
```

c. Display the Java home variable and the default SDK for node AppSrv01Node.

```
AdminTask.getNodeDefaultSDK(['-nodeName AppSrv01Node'])
```

d. Display the SDK's that node AppSrv01Node is not using.

```
AdminTask.getUnusedSDKsOnNode(['-nodeName AppSrv01Node'])
```

e. Assign SDK 1.7_32 as the default SDK for node AppSrv01Node and clear all server SDK assignments, which causes all servers on the node to use the node default SDK.

```
AdminTask.setNodeDefaultSDK(['-nodeName AppSrv01Node -sdkName 1.7_32 -clearServerSDKs true'])
```

f. Display the version of the SDK assigned to server1 on node AppSrv01Node.

```
AdminTask.getSDKVersion(['-nodeName AppSrv01Node -serverName server1'])
```

g. Display the Java home variable and the SDK for server1 on node AppSrv01Node.

```
AdminTask.getServerSDK(['-nodeName AppSrv01Node -serverName server1'])
```

h. Assign SDK 1.6_32 to server1 on node AppSrv01Node.

```
AdminTask.setServerSDK(['-nodeName AppSrv01Node -serverName server1 -sdkName 1.6_32'])
```

Then verify the change.

```
AdminTask.getServerSDK(['-nodeName AppSrv01Node -serverName server1'])
```

i. Clear the SDK assignment for server1 on node AppSrv01Node, which causes server1 to once again use the node default SDK (1.7_32).

```
AdminTask.setServerSDK('[-nodeName AppSrv01Node -serverName server1]')
```

Then verify the change.

```
AdminTask.getServerSDK('[-nodeName AppSrv01Node -serverName server1]')
```

j. Assign SDK 1.6_32 as the default SDK for node AppSrv01Node.

```
AdminTask.setNodeDefaultSDK('[-nodeName AppSrv01Node -sdkName 1.6_32]')
```

k. Stop wsadmin.

```
exit
```

```
exit
```

10. Stop the deployment manager and the two node agents.

Open a command prompt and use the stopServer command script to stop the deployment manager and the two node agents, for example:

Windows

```
C:\Program Files\IBM\WebSphere\AppServer\profiles\Dmgr01\bin\stopServer dmgr
C:\Program Files\IBM\WebSphere\AppServer\profiles\AppSrv01\bin\stopServer nodeagent
C:\Program Files\IBM\WebSphere\AppServer\profiles\AppSrv02\bin\stopServer nodeagent
```

UNIX or Linux

```
/opt/IBM/WebSphere/AppServer/profiles/Dmgr01/bin stopServer.sh dmgr
/opt/IBM/WebSphere/AppServer/profiles/AppSrv01/bin stopServer.sh nodeagent
/opt/IBM/WebSphere/AppServer/profiles/AppSrv02/bin stopServer.sh nodeagent
```

11. Uninstall WebSphere SDK Java Technology Edition V7.

First use the operating system shell to start IBM Installation Manager. Next, click **Uninstall**. Then follow the prompts to uninstall WebSphere SDK Java Technology Edition V7 from the WebSphere Application Server installation.