



IBM Software Group

IBM WebSphere Application Server V6.1

Thin Administrative Client



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This presentation will discuss the Thin Administrative Client – a new feature, introduced in the 6.1 release of WebSphere® Application Server.

Agenda

- Overview
- Details
- Use Cases
- JMX Interoperability
- Summary



This presentation will first give an overview of the Thin Administrative Client, followed by slides describing more of the details, and possible use cases. Following those sections is a section on JMX Interoperability that discusses interoperability in a cell with mixed versions of WebSphere Application Server. The final section is a summary of what was covered in the presentation.

Section

Overview



This section will introduce the Thin Administrative Client.

Thin Administrative Client - Overview

- V6.1 includes a lightweight runtime package to support administrative client functions
 - ▶ Allows clients to embed a lightweight runtime package to support administrative client functions with their applications
 - ▶ Does not require a full WebSphere Application Server client or Express runtime on the remote machine
- Thin Administrative Client supports the following:
 - ▶ Instantiate an AdminClient object using either SOAP or RMI connector
 - ▶ Query and modify the WebSphere configuration using config services APIs
 - ▶ Use the admin command framework
 - ▶ Use of WebSphere security
 - ▶ Support of wsadmin in non-local mode
 - ▶ Support for JSR160 compliant clients
- Benefits:
 - ▶ Allows an administrator to run wsadmin or stand-alone administration client program, including JSR160 compliant clients, using the IBM JDK and the supplied jar files



Previous versions of WebSphere Application Server required that you install WebSphere Application Server or a WebSphere Application Server Client product to develop or run administrative client programs. Apart from the formal install of the product, the amount of disk space required varied from 100 megabytes to 600 megabytes. The Thin Administrative Client is packaged in a single jar file that is approximately 25 megabytes in size. This single jar file supports development and execution of WebSphere Application Server administrative clients.

The Thin Administrative Client supports creation of a SOAP or RMI connector to a WebSphere Application Server, query and modification of WebSphere Application Server configuration data, and use of the WebSphere Application Server admin command framework. It also supports WebSphere Application Server security, wsadmin in non-local mode, and JSR160 compliant clients.

Section

Details



This section will provide more details of the Thin Administrative Client.

Thin Administrative Client - Details

- **Environment:** Client can run in either non-OSGi or OSGi environment
- **Packaging:** Jar file “**com.ibm.ws.admin.client_6.1.0.jar**”
 - ▶ Located in <APP_SERVER_HOME>/runtimes/ directory
 - ▶ Size is approximately 25 MBytes
 - ▶ Included in all WebSphere Application Server V6.1 packages, including the WebSphere Application Server Client V6.1
 - ▶ JDK requirement: IBM JDK or IBM-packaged JDK
- **Security:** Thin administrative client has the same security support as wsadmin and can support same security related properties
- **Compatibility:** Thin administrative client is supported to connect to all V6.* servers
 - ▶ In a mixed cell Network Deployment environment, thin administrative clients can connect to a V6 Deployment Manager and manage V5 servers through which they can indirectly access old release nodes



For maximum flexibility, the Thin Administrative Client can be used in either an OSGi or a non-OSGi environment. It can be used with a JDK (Java™ Development Kit) produced by IBM or a JDK that has been packaged by IBM for use with WebSphere Application Server version 6.1. Normal WebSphere Application Server security features are supported. Clients that use the Thin Administrative Client jar file can be used to connect to all WebSphere Application Servers at the 6.0 or later level.

Thin Administrative Client - Details

- **Stand-alone mode not supported:**

- ▶ The Thin Administrative Client is designed to be connected to a WebSphere server. The client depends on the WebSphere server to perform many functions (e.g., query/modification of the WebSphere configuration data).
- ▶ This reduces footprint and startup time of clients that use the Thin Administrative Client.
- ▶ Stand-alone (not connected to a WebSphere server) mode is not supported.



To reduce footprint and startup time, The Thin Administrative Client relies on WebSphere Application Server to perform many functions. Because of this, the client must be connected to WebSphere Application Server to fully function.

Section

Use cases



This section will discuss some possible use cases for the Thin Administrative Client.

Thin Administrative Client - Use Cases

- Creating J2SE™ client in non-OSGi environment
 - ▶ Copy thin client jar file into application development environment
 - ▶ Setup CLASSPATH to point to the jar file
 - ▶ Compile and test the application against the jar file
- Creating J2SE™ client in OSGi environment
 - ▶ Copy thin client jar into OSGi development environment
 - ▶ Setup OSGi environment to use thin client jar as dependent jars
- For wsadmin scripts
 - ▶ Copy thin client jars into the user's environment
 - ▶ Launch wsadmin
 - ▶ Sample .bat and .sh files are provided in the information center
- Property files for J2SE™ clients and wsadmin command line using “-D” option
 - ▶ com.ibm.CORBA.configURL: specifies the location of sas.client.props file, which is used to specify security configuration for RMI connection to the server
 - ▶ com.ibm.SOAP.configURL: specifies the location of soap.client.props file, which is used to specify configuration for SOAP connection to the server
- For samples and details, refer to the WebSphere Application Server V6.1 Information Center



Some of the possible use cases for the Thin Administrative Client are shown on this slide. The information on this slide is meant to show scenarios at a very high level. For detailed information and examples, you should consult the WebSphere V6.1 Information Center which describes the above scenarios and others.

Section

JMX interoperability



This section describes JMX interoperability in a cell where nodes may be running different release versions of WebSphere Application Server.

JMX Support

- JMX implementation in WebSphere Application Server V6.1 is based on the JSR168, and is included in JDK 5
 - ▶ WebSphere Application Server V6.0.X JMX 1.2 implementation was based on open source MX4J
 - ▶ WebSphere Application Server V5 supports JMX 1.1, based on the IBM TMx4j implementation
- V6.1 JMX implementation supports JSR 160
 - ▶ JSR160, part of JDK 5.0, defines a connector architecture for how JMX clients communicate with JMX servers
- V6.1 JMX implementation supports interoperability between V6.1 and back level nodes
 - ▶ JMX interoperability ensure different versions of the WebSphere Application Server runtime can communicate with each other through JMX in a mixed version cell



The Java™ version 5 runtime includes JMX and this is used in WebSphere Application Server V6.1. Although previous versions of WebSphere Application Server used other implementations of JMX, WebSphere Application Server has been designed with so that JMX interoperability can occur in most cases. This ensures that different versions of WebSphere Application Server can communicate with each other in a mixed version cell environment with a few exceptions that are shown on next page. A client program that uses the Thin Administrative Client can perform administrative functions on any server in a cell.

JMX Interoperability in Mixed Version Cell

WebSphere Application Server Mixed Version Cell		RMI	SOAP	Comments
V6.1	V6.0.2	Y	Y	
V6.1	V6.0.1	N	N	SOAP is not supported due to a bug in MX4J, which was fixed in V6.0.2 – If mixed cell is required with V6.1, upgrade V6.0.1 to V6.0.2
V6.1	V5.0, V5.1	N	Y	
V6.0.2	V5.0, V5.1	N	Y	
V6.0.1	V5.0, V5.1	N	Y	

- V6.0.2 includes a fix to support both RMI and SOAP
- For V6.1 or V6.0.X to R5 interoperability, only SOAP connector will be supported as before



This slide shows the various versions WebSphere Application Server and support for JMX interoperability by connector type between them. Using a SOAP connector, the only combination where interoperability is not supported is between versions 6.1 and 6.0.1. However, the version 6.0.1 installation can be upgraded to version 6.0.2 and full interoperability will be available. Using an RMI connector, JMX interoperability is supported only between versions 6.1 and 6.0.2 of WebSphere Application Server.

JSR 160 Clients

- JSR 160 clients may use any compliant JDK 5.0 to make JMX invocations into WebSphere Application Server
 - ▶ Will need the thin administrative client .jar file in the classpath
 - ▶ Uses RMI/IIOP to connect to the Application Server
- JSR160 specification defines a JMXServiceURL to bootstrap to the Application Server
 - ▶ For WebSphere Application Server, it is:
"service:jmx:iiop://<host>:<port>/jndi/RMIServer"
- By default, JSR 160 support is enabled
 - ▶ To disable for a server, add the following property to the configuration of the RMI Connector
 - name=disableJDKJMXConnector
 - value=true
- JSR 160 samples are provided in the V6.1 information center



A JSR 160 client program that uses the Thin Administrative Client jar file file can use the WebSphere Application Server implementation of JMX provider. In this way, the client will use the WebSphere Application Server classes needed for method parameters, return values, and exceptions. JSR 160 JMX invocations correspond to the existing WebSphere Application Server RMI or SOAP Connectors, including the automatic re-routing of calls from the Deployment Manager to node agents and application servers as needed. The WebSphere Application Server V6.1 information center contains more details and sample code for building JSR 160 clients.

Section

Summary and reference



This section will summarize the Thin Administrative Client in version 6.1

Summary

- **The WebSphere Thin Administrative Client**
 - ▶ Provides lightweight package to support developing and running administrative client applications.
 - ▶ Packaged as a single jar file.
 - ▶ Designed to connect to a WebSphere server (version 6.0 or later).
 - ▶ JSR 160 clients that use the Thin Administrative Client jar file can be developed to establish JMX connections with WebSphere servers.
 - ▶ Complete instructions and examples are available in the WebSphere version 6.1 Information Center.



Version 6.1 of WebSphere Application Server introduces the Thin Administrative Client. The Thin Administrative Client is offered to provide a lightweight package that supports developing and running administrative clients. It is packaged as a single jar file and supports a wide range of client functions.

Complete information on the Thin Administrative Client is available in the WebSphere Application Server 6.1 Information Center.

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Thin Administrative Client

16

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