

JMX adapters

by SuperBonBon

1. About

JAFS provides adapter to manage the server. Those [adapters](#) are currently based on MX4J adapters.

These adapters are used to access/communicate with the JMX management beans that the server is exposing for administration.

The first adapter *net.sbbi.jafs.management.MX4JHttpConsole* can be used to start an small embeded HTTP server and access and administration console to manage the server from a browser.

The second adapter *net.sbbi.jafs.management.MX4JRemoteAdapter* can be used to start an JRMP (RMI) or IIOP adapter. Such adapter can be used with custom JMX administration console such as MC4J.

The last adapter *net.sbbi.jafs.management.MX4JWSCconnector* still based on MX4J adapters can be used to communicate with the server using web services oriented technologies such as SOAP, and Caucho Hessian and Burlap protocols.

2. Create your own adapters

If the provided adapters are not scalable enough for you, you can develop your own adapter and plug it in the service configuration.

First create your adapter, it must implement the interface *net.sbbi.jafs.management.JMXAdapter*

When the adapter is ready add an [adapter](#) config entry in the [management](#) config element :

```
<management locale="en_US" manage-session="true" plug-to-server="false">
  ...
  <adapter name="My very first adapter" class-name="foo.bar.MyAdapter">
    <setting name="myFirstSetting">someValue</setting>
    <setting name="myOtherSetting">someOtherValue</setting>
  </adapter>
```

```
...  
</management>
```

You're ready to start the application and pray ;o)

3. Adapter `net.sbbi.jafs.management.MX4JHttpConsole` settings

3.1. port

The port to use to connect to the HTTP administration console. The port 80 will be used by the adapter when the setting is not provided.

3.2. allowedUser

The user names that are allowed to access the console within the defined JAAS authentication realm. All users will be accepted (as long as they provide a valid password..) by the adapter when the setting is not provided.

3.3. locale

The language of the administration console, french (fr_FR) or english (en_US). 'en_US' will be used by the adapter when the setting is not provided.

3.4. JAASRealm

The JAAS authentication realm name that will be used to authenticate users on the administration console. The setting is required.

3.5. securityProtocol

The security protocol used to access the http management console. Values can be 'TLS', 'SSL' (https) or 'none' for clear connections. 'none' will be used by the adapter when the setting is not provided.

3.6. certsConfName

The server keystore, CA keystore and CRL entry setting [name](#) to be used when secure sockets are used by the adapter. 'default' will be used by the connector when the setting is not provided.

3.7. allowWANORLAN

true means that your console is accessible from your WAN or your LAN. When set to true the 0.0.0.0 Ip will be use to bind the adapter listening socket. The *bindHostName* has absolutly no more effect in this situation. When set to false the IP returned by the *bindHostName* adapter setting will be used to create the adapter listening socket. 'false' will be used by the adapter when the setting is not provided.

3.8. useUPNP

true will try to open the console port on the first NAT UPNP IGD device found on the network. It will have only effect if you are behind an UPNP NAT firewall and if you have enabled UPNP IGD device. 'false' will be used by the adapter when the setting is not provided.

3.9. useCache

Setting to enable cache during console operations, true or false. 'false' will be used by the adapter when the setting is not provided.

3.10. bindHostName

The host name (or IP) that should be used to bind the HTTP adapter listening socket. Try to change this value if you have problems to make the adapter work on your LAN or from the WAN. When the *allowWANORLAN* adapter setting is set to true, this setting has absolutly no more effect. 'localhost' will be used by the adapter when the setting is not provided.

3.11. wantClientAuth

When the securityProtocol is set to TLS or SSL, this option will either ask the client that connect to the console an X509 certificate (true) or no certificate (false). The session will be created if no certificate is provided. 'false' will be used by the adapter when the setting is not provided.

3.12. needClientAuth

When the securityProtocol is set to TLS or SSL, this option will either ask the client that connect to the console an X509 certificate (true) or no certificate (false). The session will not be created if no certificate is provided. 'false' will be used by the adapter when the setting is not provided.

3.13. startBrowser

When this setting is set to true, the console will try to open a browser automatically to access the HTTP console after a successful startup. The *browserBinaryPath* setting will be used to launch the desired process. 'false' will be used by the adapter when the setting is not provided.

3.14. browserBinaryPath

This setting defines the desired binary path (I.E /foo/bar/myBrowser.exe) to be used to launch the browser to access the console during startup. A default browser will be tried to be used when this setting is not provided.

4. Adapter net.sbbi.jafs.management.MX4JRemoteAdapter settings

4.1. jndiName

The JNDI name of the connector.

4.2. connectorType

The type of protocol to be used, can be 'JRMP' for RMI based protocol or 'IIOP' for CORBA based protocol. 'JRMP' will be used by the adapter when the setting is not provided.

4.3. startNamingService

true to start the naming service that will be used by JRMP or IIOP, false if you want to use a naming service that has been already started by some other application. 'true' will be used by the adapter when the setting is not provided.

Warning:

When using IIOP and startNamingService=true a 'nameserv' process will be created. This process won't be stopped if you do not make a clean shutdown of the application. This could cause problems if you restart the application. If such problem occurs kill manually the 'nameserv' process.

Warning:

When using JRMP only ONE naming service can be created on the JVM, if you want to use multiple naming service for JRMP you must start externally other 'rmiregistry' process. The executable is located in the bin directory of your JRE installation directory.

4.4. namingServicePort

The port of the naming service. The standard ports are 1099 for JRMP and 900 for IIOP. '1099' will be used by the naming service when the setting is not provided.

4.5. remoteObjectPort

The connector will be exposed as a remote object, this setting let you define the listening port of the remote object. '35340' will be used by the adapter when the setting is not provided.

4.6. useUPNP

true will try to open the naming service and remote object ports on the WAN firewall using UPNP. It will have only effect if you are behind a NAT IGD UPNP enabled firewall. 'false' will be used by the adapter when the setting is not provided.

Warning:

Only JRMP connectors can work behind NAT enabled devices. IIOP type connectors cannot work with this network configuration.

4.7. remoteServerHostName

If you want to allow WAN access and that you are behind a NAT firewall, you'll need to set this value with an IP or hostname that match your NAT firewall IP address. This IP will be 'localhost' will be used by the adapter when the setting is not provided.

Warning:

When the remoteServerHostName property is set, the connector will probably not work anymore from the LAN especially if you are behind a NAT firewall.

4.8. JAASRealm

The JAAS authentication realm name that will be used to authenticate users on the remote adapter. If the setting is not provided, no authentication will be needed to access the remote adapter. This could cause potential security issues.. You are now warned.

4.9. allowedUser

The user names that are allowed to access the adapter within the defined JAAS authentication realm. All users will be accepted (as long as they provide a valid password..) by the adapter when the setting is not provided.

4.10. securityProtocol

The security protocol used to access the JRMP (only) remote adapter. Values are usually 'TLS' or 'SSL'. Secure connections will use the configured CRL and keystores defined with the adapter *certsConfName* setting to check certificates and provide the server certificate. Clear connections will be used by the JRMP adapter when the setting is not provided.

4.11. certsConfName

The server keystore, CA keystore and CRL entry setting [name](#) to be used when secure sockets are used by the adapter. 'default' will be used by the connector when the setting is not provided.

4.12. bindHostName

The host name (or IP) that should be used to bind the connector to a listening socket. Try to change this value if you have problems to make the adapter work. 'localhost' will be used by the connector when the setting is not provided.

4.13. cosNSStartupWait

This settings is used when the connector is used with IIOP and startNamingService setting is set to true. Basically the IIOP connector must wait for the COS naming service to be started. This setting is used to define how many miliseconds the connector must wait. 2500 ms is the default value when no setting is provided. If you have problems to start the connector try to increase this value.

5. Adapter net.sbbi.jafs.management.MX4JRemoteAdapter restrictions

The remote adapter can't be used due to JRE restrictions on both LAN and WAN with JRMP mode on the same JVM if you are behind a NAT firewall. If you want to have a LAN and WAN enabled console on the same JVM, you'll have to use the following setup:

- The first adapter for LAN must be of type IIOP and must start its own naming service.
- The second adapter for WAN must be of type JRMP, you must setup correctly the *remoteServerHostName* setting and make sure that it is starting it's own naming service.

If you do not want to use IIOP but want both adapters LAN and WAN in JRMP, proceed as

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follows :

- The first adapter for LAN (WAN won't work) must be of type JRMP and must use a naming service **started externally** with the command `rmiregistry <registryPort>` located in your `bin java` home directory.
- The second adapter for WAN access must be of type JRMP, you must setup correctly the `remoteServerHostName` setting and make sure that it is starting it's own naming service.

6. Adapter `net.sbbi.jafs.management.MX4JWSCConnector` settings

6.1. `bindHostName`

The host name (or IP) that should be used to bind the adapter web container listening socket. Try to change this value if you have problems to make the adapter work on your LAN or from the WAN. 'localhost' will be used by the adapter when the setting is not provided.

6.2. `port`

The port of the web container adapter. 80 will be used by the adapter when the setting is not provided.

6.3. `useUPNP`

true will try to open the adapter listening port using UPNP. It will have only effect if you are behind a NAT firewall and if you have enabled UPNP. 'false' will be used by the adapter when the setting is not provided.

6.4. `protocol`

The protocol to be used by the adapter. 'soap', 'hessian' and 'burlap' are currently the only available protocols. 'soap' will be used by the adapter when the setting is not provided.

6.5. `path`

The path to access the adapter via HTTP (I.E if `path = /jmxconnector`, the url would be `http://foo.bar.com/jmxconnector`) '`/jmxconnector`' will be used by the adapter when the setting is not provided.

6.6. `jettyConfigPath`

The jetty configuration file path. Since this adapter is using jetty as the web container for the

adapters you can define a jetty configuration file to fine tune the adapter settings on the web container. When no setting is provided a default jetty instance will be created on the defined port.