WBEM Event Subscription for HP-UX Systems Managed by HP Systems Insight Manager

Introduction

WBEM uses http or https to communicate between systems. HP Systems Insight Manager has a command line utility named **mxwbemsub** and corresponding menu options in HP Systems Insight Manager, which use normal WBEM communication paths. Before processing a request, HP WBEM Services requires a remote user to supply a valid, local system user name and password. In environments where password authentication is not considered to be sufficiently secure for remote access, SSH can be used, in conjunction with HP WBEM Services, to support key-based authentication.

The methods documented in this white paper assume WBEM providers, version 2.0 and above, have been installed on the HP-UX managed system.

Setup of WBEM subscriptions requires privileged access on each managed system. In this approach, login to the managed system uses SSH for the secure login, then executes WBEM commands on the managed system. This white paper assumes you are familiar with SSH and the way it has been implemented in HP Systems Insight Manager. You should also be familiar with WBEM services on HP-UX. Refer to the *CIM Event Model* white paper for more information on subscription classes. Go to http://www.dmtf.org/standards/documents/CIM/DSP0107.pdf.

SSH Tool to execute WBEM commands on managed system

A WBEM provider installed on an HP-UX system has the capability to send indications (events) to a destination system. For the purposes of this discussion, we will be using an installation of HP SIM. Using this capability includes configuring the WBEM provider with a destination address and management and deletion of the addresses.

The command **wbemexec** is used on the managed system for creating, deleting, and managing WBEM subscriptions. This command must be run with an XML file as an argument. The XML file dictates the action that is executed, such as create, delete, or list subscription on the managed system.

On HP SIM, you must create a tool definition file with two arguments that will log into the managed system using SSH, copy an XML file to the managed system, and run **wbemexec** against that file. The XML file running on the managed system creates an instance of a CIM class. The example tool definition file in Appendix A, copies an XML file from the HP SIM Central Management Server (CMS) to a managed system running HP-UX and executes **wbemexec** with the XML file that was just copied as the argument.

CIM Class Description for WBEM Subscriptions

Three CIM classes make up a subscription:

- CIM_IndicationHandlerCIMXML
- CIM_IndicationFilter
- CIM_IndicationSubscription.

The tool definition file must be executed three times, once for each of the subscription classes. The handler and filter instances must be created on the managed system before the subscription instance is created. This is because the subscription instance is an association class that associates the handler and filter instances. When deleting a subscription, the subscription instance must be deleted first and only then can the handler and filter instance be deleted. A handler and filter instance can be deleted only after all subscription association instances that refer to them are deleted.

Appendix B contains example XML to create instances of subscription classes. Appendix C contains example XML to delete instances of subscription classes. The text in *italics* (highlighted in *green*) in the XML files should be changed to appropriate values.

All instances of the three subscription classes can be enumerated by running the enumeration command using the XML files in Appendix D. If subscriptions need to be setup to send events to more than one destination, then an additional subscription must be created. The handler instance has a **Destination** property, which contains the URL used to send the events. This URL must be modified so that it includes the fully qualified DNS name of the system that will be running HP Systems Insight Manager.

Appendix D has XML files that can enumerate all instances of the three subscription classes. These XML files are not needed to create or delete subscriptions. However, they can be used to confirm if the subscription was created or deleted by enumerating the component classes of WBEM subscriptions.

Appendix A: Tool Definition File

This tool definition file executes a WBEM command on the managed system. It copies an XML file from the source on the CMS to the destination on the managed system. It takes two arguments as parameters, the first is the source path on the system with HP Systems Insight Manager, and the second is the path on the managed system.

Here is an example command that executes the tool definition file `sshwbemexec` with two arguments. The tool definition file copies the XML file `createhandler.xml` from `c:\Documents and Settings\Administrator` directory, on a Windows® system to the directory `/home/`*anyuser* directory on a managed system `anymanagedsystem` running HP-UX and then executes **wbemexec** with `createhandler.xml` as the argument. Please note, that tool definition files use "/" as the delimiter even when the source path (the first argument) is a path on a Windows system. This tool can also be executed from a browser through the HP Systems Insight Manager browser interface. It appears as **sshwbemexec** under **Options** → **Events** on the main menu bar.

```
mxexec -t sshwbemexec -A "c:/Documents and
Settings/Administrator/createhandler.xml" /home/anyuser/createhandler.xml
-n anymanagedsystem
```

Appendix B shows the output generated when this example command is executed. The content of the example file 'createhandler.xml' is in Appendix B.

```
<?xml version="1.0" encoding="UTF-8"?>
<tool-list>
    <ssa-command-tool name="sshwbemexec">
        <category>Configuration Tool</category>
        <description>Execute WBEM command on managed system over
SSH.</description>
        <comment><![CDATA[
          Usage: wbemexec <xmlfile>...
          XML file is required as an argument.  ]]>
      </comment>
         <execute-as-user>root</execute-as-user>
        <toolbox toolbox-name="Monitor Tools" />
        <include-filter type="os">
            <node-filter name="OSName" operator="eq" value="HPUX" />
        </include-filter>
        <include-filter type="protocol">
            <node-filter name="SSH" operator="ge" value="1.0" />
        </include-filter>
        <ssa-block>
            <copy-block>
                <source>%1</source>
                <destination>%2</destination>
</copy-block>
            <command command-type="stdout"
log="false">/opt/wbem/bin/wbemexec %2</command>
        <parameter index="1" prompt="source" required="true" />
        <parameter index="2" prompt="destination" required="true" />
        </ssa-block>
        <attribute name="schedulable">false</attribute>
        <attribute name="show-cmdline">true</attribute>
        <attribute name="menu-path">Options|Events</attribute>
        <attribute name="i18n-attrs">TOOL,mxtools</attribute>
    </ssa-command-tool>
</tool-list>
```

Appendix B: Create subscription instance XML files

This XML file creates an instance of handler class, *CIM_IndicationHandlerCIMXML*. The instance name is *HPSIM_mycms* and the events are sent to the system mycms.domainname.com.

```xml
<?xml version="1.0" encoding="utf-8"?>
<CIM CIMVERSION="2.0" DTDVERSION="2.0">
  <MESSAGE ID="020001" PROTOCOLVERSION="1.0">
    <SIMPLEREQ>
      <IMETHODCALL NAME="CreateInstance">
        <LOCALNAMESPACEPATH>
          <NAMESPACE NAME="root"/>
          <NAMESPACE NAME="cimv2"/>
        </LOCALNAMESPACEPATH>
        <IPARAMVALUE NAME="NewInstance">
          <INSTANCE CLASSNAME="CIM_IndicationHandlerCIMXML">
            <PROPERTY NAME="CreationClassName" TYPE="string">
              <VALUE>CIM_IndicationHandlerCIMXML</VALUE>
            </PROPERTY>
            <PROPERTY NAME="Name" TYPE="string">
              <VALUE>HPSIM_mycms</VALUE>
            </PROPERTY>
            <PROPERTY NAME="Destination" TYPE="string">
              <VALUE>https://mycms.domainname.com:50004</VALUE>
            </PROPERTY>
          </INSTANCE>
        </IPARAMVALUE>
      </IMETHODCALL>
    </SIMPLEREQ>
  </MESSAGE>
</CIM>
```

This is an example of the output that is generated when the example tool definition file is executed with the create handler instance XML file.

```
Running tool wbemsubssh with job id 11889.
Task Name        :defRunNowTaskId_1087256175653_25
Job ID           :11889
Tool Name        :wbemsubssh
Job State        :Complete
User Name        :MYCMS\administrator
Execute As User  :root
Start Time       :Monday, June 14, 2004 4:36:20 PM PDT
End Time         :Monday, June 14, 2004 4:36:33 PM PDT
Elapsed Time     :12 seconds 953 milliseconds
Node             :anymanagedsystem.domainname.com
Status           :Complete
Exit Code        :0
Files copied     :1/1
Source           :mycms.domainname.com:c:/Documents and
Settings/administrator/createhandler.xml
Destination
:anymanagedsystem.domainname.com:/home/anyuser/createhandler.xml
STDOUT           :
<?xml version="1.0" encoding="utf-8"?>
<CIM CIMVERSION="2.0" DTDVERSION="2.0">
<MESSAGE ID="020001" PROTOCOLVERSION="1.0">
<SIMPLERSP>
<IMETHODRESPONSE NAME="CreateInstance">
<IRETURNVALUE>
<INSTANCENAME CLASSNAME="CIM_IndicationHandlerCIMXML">
<KEYBINDING NAME="CreationClassName">
<KEYVALUE VALUETYPE="string">
CIM_IndicationHandlerCIMXML
</KEYVALUE>
</KEYBINDING>
<KEYBINDING NAME="Name">
<KEYVALUE VALUETYPE="string">
HPSIM_mycms
</KEYVALUE>
</KEYBINDING>
<KEYBINDING NAME="SystemCreationClassName">
<KEYVALUE VALUETYPE="string">
CIM_UnitaryComputerSystem
</KEYVALUE>
</KEYBINDING>
<KEYBINDING NAME="SystemName">
<KEYVALUE VALUETYPE="string">
systemname.domainname.com
</KEYVALUE>
</KEYBINDING>
</INSTANCENAME>
</IRETURNVALUE>
</IMETHODRESPONSE>
</SIMPLERSP>
</MESSAGE>
</CIM>
```

This XML file creates an instance of filter class *CIM_IndicationFilter*

```xml
<?xml version="1.0" encoding="utf-8"?>
<CIM CIMVERSION="2.0" DTDVERSION="2.0">
  <MESSAGE ID="010001" PROTOCOLVERSION="1.0">
    <SIMPLEREQ>
      <IMETHODCALL NAME="CreateInstance">
        <LOCALNAMESPACEPATH>
          <NAMESPACE NAME="root"/>
          <NAMESPACE NAME="cimv2"/>
        </LOCALNAMESPACEPATH>
        <IPARAMVALUE NAME="NewInstance">
          <INSTANCE CLASSNAME="CIM_IndicationFilter">
            <PROPERTY NAME="CreationClassName" TYPE="string">
              <VALUE>CIM_IndicationFilter</VALUE>
            </PROPERTY>
            <PROPERTY NAME="Name" TYPE="string">
              <VALUE>HPSIM_EMSWrapper_Filter</VALUE>
            </PROPERTY>
            <PROPERTY NAME="Query" TYPE="string">
              <VALUE>SELECT * FROM HP_DeviceIndication</VALUE>
            </PROPERTY>
            <PROPERTY NAME="QueryLanguage" TYPE="string">
              <VALUE>WQL</VALUE>
            </PROPERTY>
            <PROPERTY NAME="SourceNamespace" TYPE="string">
              <VALUE>root/cimv2</VALUE>
            </PROPERTY>
          </INSTANCE>
        </IPARAMVALUE>
      </IMETHODCALL>
    </SIMPLEREQ>
  </MESSAGE>
</CIM>
```

This is an example of the output that will be generated when the example tool definition file is executed with the create filter instance XML file.

```
Running tool wbemsubssh with job id 12382.
Task Name     :defRunNowTaskId_1087351820255_32
Job ID      :12382
Tool Name        :wbemsubssh
Job State        :Complete
User Name        :MYCMS\administrator
Execute As User :root
Start Time       :Monday, June 15, 2004 3:36:20 PM PDT
End Time         :Monday, June 15, 2004 3:36:33 PM PDT
Elapsed Time     :12 seconds 953 milliseconds
Node             :anymanagedsystem.domainname.com
Status           :Complete
Exit Code        :0
Files copied     :1/1
Source           :mycms.domainname.com:c:/Documents and
Settings/administrator/createfilter.xml
Destination
:anymanagedsystem.domainname.com:/home/anyuser/createfilter.xml
STDOUT           :
<?xml version="1.0" encoding="utf-8"?>
<CIM CIMVERSION="2.0" DTDVERSION="2.0">
<MESSAGE ID="010001" PROTOCOLVERSION="1.0">
<SIMPLERSP>
<IMETHODRESPONSE NAME="CreateInstance">
<IRETURNVALUE>
<INSTANCENAME CLASSNAME="CIM_IndicationFilter">
<KEYBINDING NAME="CreationClassName">
<KEYVALUE VALUETYPE="string">
CIM_IndicationFilter
</KEYVALUE>
</KEYBINDING>
<KEYBINDING NAME="Name">
<KEYVALUE VALUETYPE="string">
HPSIM_EMSWrapper_Filter
</KEYVALUE>
</KEYBINDING>
<KEYBINDING NAME="SystemCreationClassName">
<KEYVALUE VALUETYPE="string">
CIM_UnitaryComputerSystem
</KEYVALUE>
</KEYBINDING>
<KEYBINDING NAME="SystemName">
<KEYVALUE VALUETYPE="string">
systemname.domainname.com
</KEYVALUE>
</KEYBINDING>
</INSTANCENAME>
</IRETURNVALUE>
</IMETHODRESPONSE>
</SIMPLERSP>
</MESSAGE>
</CIM>
```

This XML file creates an instance of subscription association class, *CIM_IndicationSubscription*. This file contains the names of the handler and filter instances. It associates the handler instance *HPSIM_mycms* with the filter instance *HPSIM_EMSWrapper_Filter*.

```xml
<?xml version="1.0" encoding="utf-8"?>
<CIM CIMVERSION="2.0" DTDVERSION="2.0">
<MESSAGE ID="030001" PROTOCOLVERSION="1.0">
<SIMPLEREQ>
<IMETHODCALL NAME="CreateInstance">
<LOCALNAMESPACEPATH>
<NAMESPACE NAME="root"/>
<NAMESPACE NAME="cimv2"/>
</LOCALNAMESPACEPATH>
<IPARAMVALUE NAME="NewInstance">
<INSTANCE CLASSNAME="CIM_IndicationSubscription">
<PROPERTY.REFERENCE NAME="Filter"
REFERENCECLASS="CIM_IndicationFilter">
<VALUE.REFERENCE>
<INSTANCENAME CLASSNAME="CIM_IndicationFilter">
<KEYBINDING NAME="SystemCreationClassName">
<KEYVALUE VALUETYPE="string">CIM_UnitaryComputerSystem</KEYVALUE>
</KEYBINDING>
<KEYBINDING NAME="SystemName">
<KEYVALUE VALUETYPE="string">systemname.domainname.com</KEYVALUE>
</KEYBINDING>
<KEYBINDING NAME="CreationClassName">
<KEYVALUE VALUETYPE="string">CIM_IndicationFilter</KEYVALUE>
</KEYBINDING>
<KEYBINDING NAME="Name">
<KEYVALUE VALUETYPE="string">HPSIM_EMSWrapper_Filter</KEYVALUE>
</KEYBINDING>
</INSTANCENAME>
</VALUE.REFERENCE>
</PROPERTY.REFERENCE>
<PROPERTY.REFERENCE NAME="Handler"
REFERENCECLASS="CIM_IndicationHandler">
<VALUE.REFERENCE>
<INSTANCENAME CLASSNAME="CIM_IndicationHandlerCIMXML">
<KEYBINDING NAME="SystemCreationClassName">
<KEYVALUE VALUETYPE="string">CIM_UnitaryComputerSystem</KEYVALUE>
</KEYBINDING>
<KEYBINDING NAME="SystemName">
<KEYVALUE VALUETYPE="string">systemname.domainname.com</KEYVALUE>
</KEYBINDING>
<KEYBINDING NAME="CreationClassName">
<KEYVALUE VALUETYPE="string">CIM_IndicationHandlerCIMXML</KEYVALUE>
</KEYBINDING>
<KEYBINDING NAME="Name">
<KEYVALUE VALUETYPE="string">HPSIM_mycms</KEYVALUE>
</KEYBINDING>
</INSTANCENAME>
</VALUE.REFERENCE>
</PROPERTY.REFERENCE>
<PROPERTY NAME="SubscriptionState" TYPE="uint16">
<VALUE>2</VALUE>
</PROPERTY>
</INSTANCE>
</IPARAMVALUE>
</IMETHODCALL>
</SIMPLEREQ>
</MESSAGE>
</CIM>
```

This is an example of the output that is generated when the example tool definition file is executed with the create subscription association instance XML file.

```
Running tool wbemsubssh with job id 12382.
Task Name        :defRunNowTaskId_1087351820255_32
Job ID           :12382
Tool Name        :wbemsubssh
Job State        :Complete
User Name        :MYCMS\administrator
Execute As User  :root
Start Time       :Monday, June 15, 2004 5:36:20 PM PDT
End Time         :Monday, June 15, 2004 5:36:31 PM PDT
Elapsed Time     :10 seconds 683 milliseconds
Node             :anymanagedsystem.domainname.com
Status           :Complete
Exit Code        :0
Files copied     :1/1
Source           :mycms.domainname.com:c:/Documents and
Settings/administrator/createsubscription.xml
Destination
:anymanagedsystem.domainname.com:/home/anyuser/createsubscription.xml
STDOUT           :
<?xml version="1.0" encoding="utf-8"?>
<CIM CIMVERSION="2.0" DTDVERSION="2.0">
<MESSAGE ID="030001" PROTOCOLVERSION="1.0">
<SIMPLERSP>
<IMETHODRESPONSE NAME="CreateInstance">
<IRETURNVALUE>
<INSTANCENAME CLASSNAME="CIM_IndicationSubscription">
<KEYBINDING NAME="Filter">
<VALUE.REFERENCE>
<INSTANCENAME CLASSNAME="CIM_IndicationFilter">
<KEYBINDING NAME="CreationClassName">
<KEYVALUE VALUETYPE="string">
CIM_IndicationFilter
</KEYVALUE>
</KEYBINDING>
<KEYBINDING NAME="Name">
<KEYVALUE VALUETYPE="string">
HPSIM_EMSWrapper_Filter
</KEYVALUE>
</KEYBINDING>
<KEYBINDING NAME="SystemCreationClassName">
<KEYVALUE VALUETYPE="string">
CIM_UnitaryComputerSystem
</KEYVALUE>
</KEYBINDING>
<KEYBINDING NAME="SystemName">
<KEYVALUE VALUETYPE="string">
systemname.domainname.com
</KEYVALUE>
</KEYBINDING>
</INSTANCENAME>
</VALUE.REFERENCE>
</KEYBINDING>
<KEYBINDING NAME="Handler">
<VALUE.REFERENCE>
<INSTANCENAME CLASSNAME="CIM_IndicationHandlerCIMXML">
<KEYBINDING NAME="CreationClassName">
<KEYVALUE VALUETYPE="string">
CIM_IndicationHandlerCIMXML
```

```
</KEYVALUE>
</KEYBINDING>
<KEYBINDING NAME="Name">
<KEYVALUE VALUETYPE="string">
HPSIM_mycms
</KEYVALUE>
</KEYBINDING>
<KEYBINDING NAME="SystemCreationClassName">
<KEYVALUE VALUETYPE="string">
CIM_UnitaryComputerSystem
</KEYVALUE>
</KEYBINDING>
<KEYBINDING NAME="SystemName">
<KEYVALUE VALUETYPE="string">
systemname.domainname.com
</KEYVALUE>
</KEYBINDING>
</INSTANCENAME>
</VALUE.REFERENCE>
</KEYBINDING>
</INSTANCENAME>
</IRETURNVALUE>
</IMETHODRESPONSE>
</SIMPLERSP>
</MESSAGE>
</CIM>
```

Appendix C: Delete subscription instance XML files

This XML file deletes an instance of subscription association class, *CIM_IndicationSubscription*. The subscription instance that is deleted is the subscription instance that associates the handler instance with the name *HPSIM_mycms* to the filter instance *HPSIM_EMSWrapper_Filter*.

```xml
<?xml version="1.0" encoding="utf-8"?>
<CIM CIMVERSION="2.0" DTDVERSION="2.0">
<MESSAGE ID="150001" PROTOCOLVERSION="1.0">
<SIMPLEREQ>
<IMETHODCALL NAME="DeleteInstance">
<LOCALNAMESPACEPATH>
<NAMESPACE NAME="root"/>
<NAMESPACE NAME="cimv2"/>
</LOCALNAMESPACEPATH>
<IPARAMVALUE NAME="InstanceName">
<INSTANCENAME CLASSNAME="CIM_IndicationSubscription">
<KEYBINDING NAME="Filter">
<VALUE.REFERENCE>
<INSTANCENAME CLASSNAME="CIM_IndicationFilter">
<KEYBINDING NAME="CreationClassName">
<KEYVALUE VALUETYPE="string">CIM_IndicationFilter</KEYVALUE>
</KEYBINDING>
<KEYBINDING NAME="Name">
<KEYVALUE VALUETYPE="string">HPSIM_EMSWrapper_Filter</KEYVALUE>
</KEYBINDING>
<KEYBINDING NAME="SystemCreationClassName">
<KEYVALUE VALUETYPE="string">CIM_UnitaryComputerSystem</KEYVALUE>
</KEYBINDING>
<KEYBINDING NAME="SystemName">
<KEYVALUE VALUETYPE="string">systemname.domainname.com</KEYVALUE>
</KEYBINDING>
</INSTANCENAME>
</VALUE.REFERENCE>
</KEYBINDING>
<KEYBINDING NAME="Handler">
<VALUE.REFERENCE>
<INSTANCENAME CLASSNAME="CIM_IndicationHandlerCIMXML">
<KEYBINDING NAME="CreationClassName">
<KEYVALUE VALUETYPE="string">CIM_IndicationHandlerCIMXML</KEYVALUE>
</KEYBINDING>
<KEYBINDING NAME="Name">
<KEYVALUE VALUETYPE="string">HPSIM_mycms</KEYVALUE>
</KEYBINDING>
<KEYBINDING NAME="SystemCreationClassName">
<KEYVALUE VALUETYPE="string">CIM_UnitaryComputerSystem</KEYVALUE>
</KEYBINDING>
<KEYBINDING NAME="SystemName">
<KEYVALUE VALUETYPE="string">systemname.domainname.com</KEYVALUE>
</KEYBINDING>
</INSTANCENAME>
</VALUE.REFERENCE>
</KEYBINDING>
</INSTANCENAME>
</IPARAMVALUE>
</IMETHODCALL>
</SIMPLEREQ>
</MESSAGE>
</CIM>
```

This is an example of the output that is generated when the example tool definition file is executed with the delete subscription association instance XML file.

```
Running tool wbemsubssh with job id 12382.
Task Name        :defRunNowTaskId_1087351820255_32
Job ID           :12382
Tool Name        :wbemsubssh
Job State        :Complete
User Name        :MYCMS\administrator
Execute As User  :root
Start Time       :Monday, June 15, 2004 3:36:20 PM PDT
End Time         :Monday, June 15, 2004 3:36:33 PM PDT
Elapsed Time     :12 seconds 953 milliseconds
Node             :anymanagedsystem.domainname.com
Status           :Complete
Exit Code        :0
Files copied     :1/1
Source           :mycms.domainname.com:c:/Documents and
Settings/administrator/deletesubscription.xml
Destination
:anymanagedsystem.domainname.com:/home/anyuser/deletesubscription.xml
STDOUT           :
<?xml version="1.0" encoding="utf-8"?>
<CIM CIMVERSION="2.0" DTDVERSION="2.0">
<MESSAGE ID="150001" PROTOCOLVERSION="1.0">
<SIMPLERSP>
<IMETHODRESPONSE NAME="DeleteInstance">
</IMETHODRESPONSE>
</SIMPLERSP>
</MESSAGE>
</CIM>
```

This XML file deletes an instance of handler class, *CIM_IndicationHandlerCIMXML*, whose name is *HPSIM_mycms*.

```xml
<?xml version="1.0" encoding="utf-8"?>
<CIM CIMVERSION="2.0" DTDVERSION="2.0">
<MESSAGE ID="140001" PROTOCOLVERSION="1.0">
<SIMPLEREQ>
<IMETHODCALL NAME="DeleteInstance">
<LOCALNAMESPACEPATH>
<NAMESPACE NAME="root"/>
<NAMESPACE NAME="cimv2"/>
</LOCALNAMESPACEPATH>
<IPARAMVALUE NAME="InstanceName">
<INSTANCENAME CLASSNAME="CIM_IndicationHandlerCIMXML">
<KEYBINDING NAME="SystemCreationClassName">
<KEYVALUE VALUETYPE="string">CIM_UnitaryComputerSystem</KEYVALUE>
</KEYBINDING>
<KEYBINDING NAME="SystemName">
<KEYVALUE VALUETYPE="string">systemname.domainname.com</KEYVALUE>
</KEYBINDING>
<KEYBINDING NAME="CreationClassName">
<KEYVALUE VALUETYPE="string">CIM_IndicationHandlerCIMXML</KEYVALUE>
</KEYBINDING>
<KEYBINDING NAME="Name">
<KEYVALUE VALUETYPE="string">HPSIM_mycms</KEYVALUE>
</KEYBINDING>
</INSTANCENAME>
</IPARAMVALUE>
</IMETHODCALL>
</SIMPLEREQ>
</MESSAGE>
</CIM>
```

This is an example of the output that is generated when the example tool definition file is executed with the delete handler instance XML file.

```
Running tool wbemsubssh with job id 12382.
Task Name        :defRunNowTaskId_1087351820255_32
Job ID           :12382
Tool Name        :wbemsubssh
Job State        :Complete
User Name        :MYCMS\administrator
Execute As User :root
Start Time       :Monday, June 15, 2004 3:36:20 PM PDT
End Time         :Monday, June 15, 2004 3:36:33 PM PDT
Elapsed Time     :12 seconds 953 milliseconds
Node             :anymanagedsystem.domainname.com
Status           :Complete
Exit Code        :0
Files copied     :1/1
Source           :mycms.domainname.com:c:/Documents and
Settings/administrator/deletehandler.xml
Destination
:anymanagedsystem.domainname.com:/home/anyuser/deletehandler.xml
STDOUT           :
<?xml version="1.0" encoding="utf-8"?>
<CIM CIMVERSION="2.0" DTDVERSION="2.0">
<MESSAGE ID="140001" PROTOCOLVERSION="1.0">
<SIMPLERSP>
<IMETHODRESPONSE NAME="DeleteInstance">
</IMETHODRESPONSE>
</SIMPLERSP>
</MESSAGE>
</CIM>
```

This XML file deletes an instance of filter class, *CIM_IndicationFilter*, whose name is *HPSIM_EMSWrapper_Filter*.

```xml
<?xml version="1.0" encoding="utf-8"?>
<CIM CIMVERSION="2.0" DTDVERSION="2.0">
<MESSAGE ID="130001" PROTOCOLVERSION="1.0">
<SIMPLEREQ>
<IMETHODCALL NAME="DeleteInstance">
<LOCALNAMESPACEPATH>
<NAMESPACE NAME="root"/>
<NAMESPACE NAME="cimv2"/>
</LOCALNAMESPACEPATH>
<IPARAMVALUE NAME="InstanceName">
<INSTANCENAME CLASSNAME="CIM_IndicationFilter">
<KEYBINDING NAME="SystemCreationClassName">
<KEYVALUE VALUETYPE="string">CIM_UnitaryComputerSystem</KEYVALUE>
</KEYBINDING>
<KEYBINDING NAME="SystemName">
<KEYVALUE VALUETYPE="string">systemname.domainname.com</KEYVALUE>
</KEYBINDING>
<KEYBINDING NAME="CreationClassName">
<KEYVALUE VALUETYPE="string">CIM_IndicationFilter</KEYVALUE>
</KEYBINDING>
<KEYBINDING NAME="Name">
<KEYVALUE VALUETYPE="string">HPSIM_EMSWrapper_Filter</KEYVALUE>
</KEYBINDING>
</INSTANCENAME>
</IPARAMVALUE>
</IMETHODCALL>
</SIMPLEREQ>
</MESSAGE>
</CIM>
```

This is an example of the output that is generated when the example tool definition file is executed with the delete filter instance XML file.

```
Running tool wbemsubssh with job id 12382.
Task Name       :defRunNowTaskId_1087351820255_32
Job ID          :12382
Tool Name       :wbemsubssh
Job State       :Complete
User Name       :MYCMS\administrator
Execute As User :root
Start Time      :Monday, June 15, 2004 3:36:20 PM PDT
End Time        :Monday, June 15, 2004 3:36:33 PM PDT
Elapsed Time    :12 seconds 953 milliseconds
Node            :anymanagedsystem.domainname.com
Status          :Complete
Exit Code       :0
Files copied    :1/1
Source          :mycms.domainname.com:c:/Documents and
Settings/administrator/deletefilter.xml
Destination
:anymanagedsystem.domainname.com:/home/anyuser/deletefilter.xml
STDOUT          :
<?xml version="1.0" encoding="utf-8"?>
<CIM CIMVERSION="2.0" DTDVERSION="2.0">
<MESSAGE ID="130001" PROTOCOLVERSION="1.0">
<SIMPLERSP>
<IMETHODRESPONSE NAME="DeleteInstance">
</IMETHODRESPONSE>
</SIMPLERSP>
</MESSAGE>
</CIM>
```

Appendix D: Enumerate subscription instances XML files

The enumeration XML files are not needed to create or delete subscriptions. They can be used to confirm if the subscription was created or deleted by enumerating the component classes of WBEM subscriptions.

This XML file enumerates all instances of filter class, *CIM_IndicationFilter*.

```xml
<?xml version="1.0" encoding="utf-8"?>
<CIM CIMVERSION="2.0" DTDVERSION="2.0">
  <MESSAGE ID="25000" PROTOCOLVERSION="1.0">
    <SIMPLEREQ>
      <IMETHODCALL NAME="EnumerateInstanceNames">
        <LOCALNAMESPACEPATH>
          <NAMESPACE NAME="root"/>
          <NAMESPACE NAME="cimv2"/>
        </LOCALNAMESPACEPATH>
        <IPARAMVALUE NAME="ClassName">
          <CLASSNAME NAME="CIM_IndicationFilter"/>
        </IPARAMVALUE>
      </IMETHODCALL>
    </SIMPLEREQ>
  </MESSAGE>
</CIM>
```

This is an example of the output that is generated when the example tool definition file is executed with the enumerate filter instance XML file.

```
Running tool wbemsubssh with job id 12727.
Task Name        :defRunNowTaskId_1087418755216_42
Job ID           :12727
Tool Name        :wbemsubssh
Job State        :Complete
User Name        :MYCMS\administrator
Execute As User  :root
Start Time       :Wednesday, June 16, 2004 1:45:55 PM PDT
End Time         :Wednesday, June 16, 2004 1:46:06 PM PDT
Elapsed Time     :11 seconds 78 milliseconds
Node             :anymanagedsystem.domainname.com
Status           :Complete
Exit Code        :0
Files copied     :1/1
Source           :mycms.domainname.com:c:/Documents and
Settings/administrator/enumeratefilter.xml
Destination
:anymanagedsystem.domainname.com:/home/anyuser/enumeratefilter.xml
STDOUT           :
<?xml version="1.0" encoding="utf-8"?>
<CIM CIMVERSION="2.0" DTDVERSION="2.0">
<MESSAGE ID="25000" PROTOCOLVERSION="1.0">
<SIMPLERSP>
<IMETHODRESPONSE NAME="EnumerateInstanceNames">
<IRETURNVALUE>
<INSTANCENAME CLASSNAME="CIM_IndicationFilter">
<KEYBINDING NAME="CreationClassName">
<KEYVALUE VALUETYPE="string">
CIM_IndicationFilter
</KEYVALUE>
</KEYBINDING>
<KEYBINDING NAME="Name">
<KEYVALUE VALUETYPE="string">
HPSIM_EMSWrapper_Filter
</KEYVALUE>
</KEYBINDING>
<KEYBINDING NAME="SystemCreationClassName">
<KEYVALUE VALUETYPE="string">
CIM_UnitaryComputerSystem
</KEYVALUE>
</KEYBINDING>
<KEYBINDING NAME="SystemName">
<KEYVALUE VALUETYPE="string">
systemname.domainname.com
</KEYVALUE>
</KEYBINDING>
</INSTANCENAME>
</IRETURNVALUE>
</IMETHODRESPONSE>
</SIMPLERSP>
</MESSAGE>
</CIM>
```

This XML file enumerates all instances of handler class, *CIM_IndicationHandlerCIMXML.*

```xml
<?xml version="1.0" encoding="utf-8"?>
<CIM CIMVERSION="2.0" DTDVERSION="2.0">
  <MESSAGE ID="25000" PROTOCOLVERSION="1.0">
    <SIMPLEREQ>
      <IMETHODCALL NAME="EnumerateInstanceNames">
        <LOCALNAMESPACEPATH>
          <NAMESPACE NAME="root"/>
          <NAMESPACE NAME="cimv2"/>
        </LOCALNAMESPACEPATH>
        <IPARAMVALUE NAME="ClassName">
          <CLASSNAME NAME="CIM_IndicationHandlerCIMXML"/>
        </IPARAMVALUE>
      </IMETHODCALL>
    </SIMPLEREQ>
  </MESSAGE>
</CIM>
```

This is an example of the output that is generated when the example tool definition file is executed with the enumerate handler instance XML file.

```
Running tool wbemsubssh with job id 12728.
Task Name        :defRunNowTaskId_1087418817621_43
Job ID           :12728
Tool Name        :wbemsubssh
Job State        :Complete
User Name        :MYCMS\administrator
Execute As User :root
Start Time       :Wednesday, June 16, 2004 1:46:57 PM PDT
End Time         :Wednesday, June 16, 2004 1:47:09 PM PDT
Elapsed Time     :11 seconds 671 milliseconds
Node             :anymanagedsystem.domainname.com
Status           :Complete
Exit Code        :0
Files copied     :1/1
Source           :mycms.domainname.com:c:/Documents and
Settings/administrator/enumeratehandler.xml
Destination      :anymanagedsystem.domainname.com:/home/anyuser/
enumeratehandler.xml
STDOUT           :
<?xml version="1.0" encoding="utf-8"?>
<CIM CIMVERSION="2.0" DTDVERSION="2.0">
<MESSAGE ID="25000" PROTOCOLVERSION="1.0">
<SIMPLERSP>
<IMETHODRESPONSE NAME="EnumerateInstanceNames">
<IRETURNVALUE>
<INSTANCENAME CLASSNAME="CIM_IndicationHandlerCIMXML">
<KEYBINDING NAME="CreationClassName">
<KEYVALUE VALUETYPE="string">
CIM_IndicationHandlerCIMXML
</KEYVALUE>
</KEYBINDING>
<KEYBINDING NAME="Name">
<KEYVALUE VALUETYPE="string">
HPSIM_mycms
</KEYVALUE>
</KEYBINDING>
<KEYBINDING NAME="SystemCreationClassName">
<KEYVALUE VALUETYPE="string">
CIM_UnitaryComputerSystem
</KEYVALUE>
</KEYBINDING>
<KEYBINDING NAME="SystemName">
<KEYVALUE VALUETYPE="string">
systemname.domainname.com
</KEYVALUE>
</KEYBINDING>
</INSTANCENAME>
</IRETURNVALUE>
</IMETHODRESPONSE>
</SIMPLERSP>
</MESSAGE>
</CIM>
```

This XML file enumerates all instances of subscription association class, *CIM_IndicationSubscription*.

```xml
<?xml version="1.0" encoding="utf-8"?>
<CIM CIMVERSION="2.0" DTDVERSION="2.0">
  <MESSAGE ID="25000" PROTOCOLVERSION="1.0">
    <SIMPLEREQ>
      <IMETHODCALL NAME="EnumerateInstanceNames">
        <LOCALNAMESPACEPATH>
          <NAMESPACE NAME="root"/>
          <NAMESPACE NAME="cimv2"/>
        </LOCALNAMESPACEPATH>
        <IPARAMVALUE NAME="ClassName">
          <CLASSNAME NAME="CIM_IndicationSubscription"/>
        </IPARAMVALUE>
      </IMETHODCALL>
    </SIMPLEREQ>
  </MESSAGE>
</CIM>
```

This is an example of the output that is generated when the example tool definition file is executed with the enumerate subscription association instance XML file.

```
Running tool wbemsubssh with job id 12382.
Task Name        :defRunNowTaskId_1087351820255_32
Job ID           :12382
Tool Name        :wbemsubssh
Job State        :Complete
User Name        :MYCMS\administrator
Execute As User :root
Start Time       :Tuesday, June 15, 2004 7:10:20 PM PDT
End Time         :Tuesday, June 15, 2004 7:10:33 PM PDT
Elapsed Time     :12 seconds 953 milliseconds
Node             :anymanagedsystem.domainname.com
Status           :Complete
Exit Code        :0
Files copied     :1/1
Source           :mycms.domainname.com:c:/Documents and
Settings/administrator/enumeratesubscription.xml
Destination
:anymanagedsystem.domainname.com:/home/anyuser/enumeratesubscription.xml
STDOUT           :
<?xml version="1.0" encoding="utf-8"?>
<CIM CIMVERSION="2.0" DTDVERSION="2.0">
<MESSAGE ID="25000" PROTOCOLVERSION="1.0">
<SIMPLERSP>
<IMETHODRESPONSE NAME="EnumerateInstanceNames">
<IRETURNVALUE>
<INSTANCENAME CLASSNAME="CIM_IndicationSubscription">
<KEYBINDING NAME="Filter">
<VALUE.REFERENCE>
<INSTANCENAME CLASSNAME="CIM_IndicationFilter">
<KEYBINDING NAME="CreationClassName">
<KEYVALUE VALUETYPE="string">
CIM_IndicationFilter
</KEYVALUE>
</KEYBINDING>
<KEYBINDING NAME="Name">
<KEYVALUE VALUETYPE="string">
HPSIM_EMSWrapper_Filter
</KEYVALUE>
</KEYBINDING>
<KEYBINDING NAME="SystemCreationClassName">
<KEYVALUE VALUETYPE="string">
CIM_UnitaryComputerSystem
</KEYVALUE>
</KEYBINDING>
<KEYBINDING NAME="SystemName">
<KEYVALUE VALUETYPE="string">
systemname.domainname.com
</KEYVALUE>
</KEYBINDING>
</INSTANCENAME>
</VALUE.REFERENCE>
</KEYBINDING>
<KEYBINDING NAME="Handler">
<VALUE.REFERENCE>
<INSTANCENAME CLASSNAME="CIM_IndicationHandlerCIMXML">
<KEYBINDING NAME="CreationClassName">
<KEYVALUE VALUETYPE="string">
CIM_IndicationHandlerCIMXML
</KEYVALUE>
```

```
</KEYBINDING>
<KEYBINDING NAME="Name">
<KEYVALUE VALUETYPE="string">
HPSIM_mycms
</KEYVALUE>
</KEYBINDING>
<KEYBINDING NAME="SystemCreationClassName">
<KEYVALUE VALUETYPE="string">
CIM_UnitaryComputerSystem
</KEYVALUE>
</KEYBINDING>
<KEYBINDING NAME="SystemName">
<KEYVALUE VALUETYPE="string">
systemname.domainname.com
</KEYVALUE>
</KEYBINDING>
</INSTANCENAME>
</VALUE.REFERENCE>
</KEYBINDING>
</INSTANCENAME>
</IRETURNVALUE>
</IMETHODRESPONSE>
</SIMPLERSP>
</MESSAGE>
</CIM>
```

For more information

HP Systems Insight Manager

www.hp.com/go/hpsim

OpenSSH

www.openssh.org

CIM/XML
http://www.dmtf.org/standards/cim

WBEM solutions for HP-UX
http://www.hp.com/go/wbem

Pegasus
http://www.openpegasus.org/

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