

IBM Tivoli Monitoring Agent Builder V6.2.2.7

Flow of messages in the Agent Builder agent for SOAP



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IBM Tivoli® Monitoring Agent Builder V6.2.2.7, Flow of messages in the Agent Builder agent for SOAP.

Assumptions

Before you proceed, the module designer assumes that you have these skills and knowledge:

- Basic knowledge of SOAP
- Basic knowledge of XPath language
- Basic knowledge of SOAP data provider

The module designer assumes that you can:

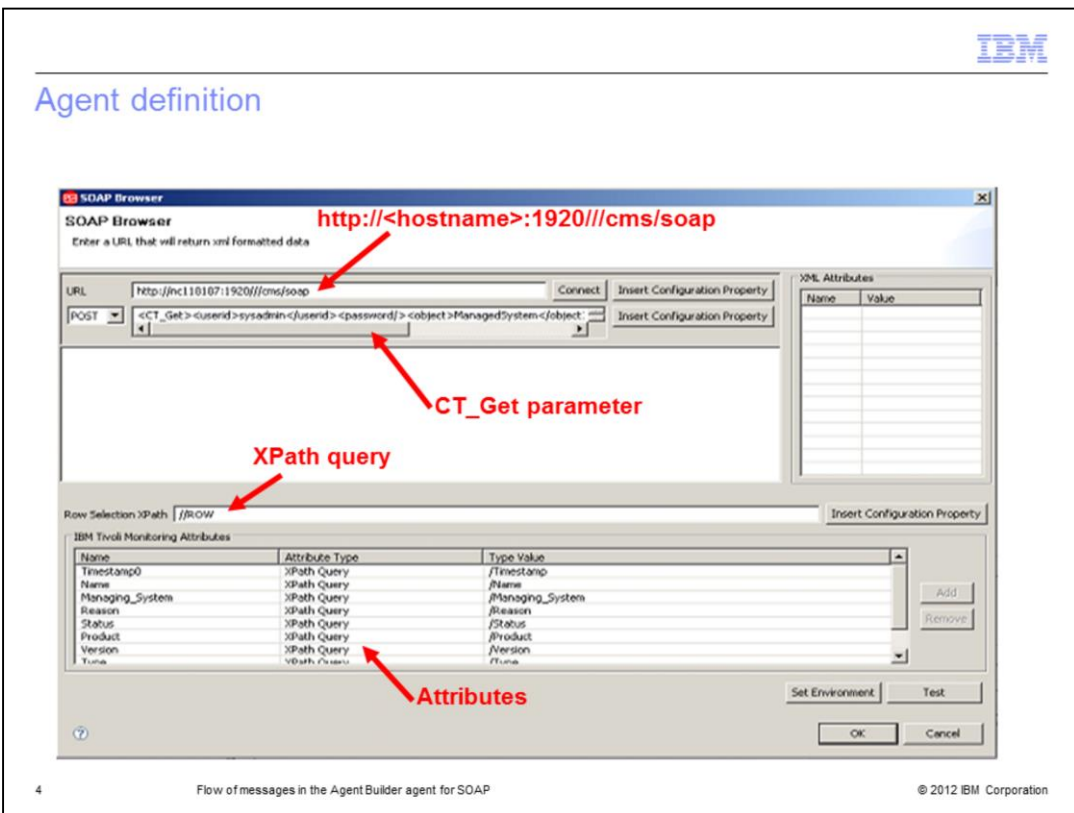
- Understand basic knowledge of SOAP concepts and XPath language
- Create and define a SOAP agent with the Agent Builder tool by using the SOAP data provider.

Objectives

When you complete this module, you can analyze the agent trace logs to identify the problem with the Agent Builder agent that monitors a SOAP response

This module describes the steps that are performed by the Agent Builder agent to collect the SOAP data. When you complete this module, you can analyze the agent trace logs to identify the problem with the Agent Builder agent that monitors a SOAP response.

Agent definition



In this SOAP browser window, you can see the definition of the SOAP agent. This agent is defined to perform these tasks:

- Connect to a Tivoli Enterprise Monitoring Server.
- Retrieve data for the CT_Get action that returns data for all the agents that are connected to this server.
- Show all the returned rows on the Tivoli Enterprise Portal GUI, considering that the XPath query is //ROW.

Log entries (1 of 4)

Name	Managing System	Reason	Status	Product	Version	Type	HLOCFLAG
RZ:orcl-orcl-nc118189:RDB	orcl:nc118189:RZ	FA	*OFFLINE	RZ	06.31.00	V	L

KBB_RAS1=ERROR (UNIT:custom ALL)(UNIT:cps_socket ALL)

1.Data response received by the Java process

```
...cps_socket.cpp,1429,"CPS_Socket::receive") <0x1DEEC78,0xE98> Buffer after receive:
+4DB9866E.0003 00000000 3C646174 61526573 706F6E73 65206964 <dataResponse.id
+4DB9866E.0003 00000010 3D223022 3E3C6174 74724772 6F757020 ="0"><attrGroup.
+4DB9866E.0003 00000020 6E616D65 3D22534F 4150223E 3C696E3E name="SOAP"><in><al><a
+4DB9866E.0003 000000E0 20763D22 20222F3E 3C612076 3D223131 .v="."/><a.v="11
+4DB9866E.0003 000000F0 31303430 36313334 34323830 3031222F 10406134428001"/
+4DB9866E.0003 00000100 3E3C6120 763D2252 5A3A6F72 636C2D6F ><a.v="RZ:orcl-o
+4DB9866E.0003 00000110 72636C2D 6E633131 38313839 3A524442 rcl-nc118189:RDB
+4DB9866E.0003 00000120 222F3E3C 6120763D 226F7263 6C3A6E63 "/><a.v="orcl:nc
+4DB9866E.0003 00000130 31313831 38393A52 5A222F3E 3C612076 118189:RZ"/><a.v
+4DB9866E.0003 00000140 3D222022 2F3E3C61 20763D22 2A4F4E4C ="."/><a.v="*OFFL
+4DB9866E.0003 00000150 494E4522 2F3E3C61 20763D22 525A222F INE"/><a.v="RZ"/
+4DB9866E.0003 00000160 3E3C6120 763D2230 362E3331 2E303022 ><a.v="06.31.00"
+4DB9866E.0003 00000170 2F3E3C61 20763D22 56222F3E 3C612076 /><a.v="V"/><a.v
+4DB9866E.0003 00000180 3D224C22 2F3E3C2F 616C3E3C 2F696E3E ="L"/></al></in>
```

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Flow of messages in the AgentBuilder agent for SOAP

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The SOAP data provider runs in a Java process, so for problems with the SOAP data provider, you must analyze two log files: the agent trace log and the log for the Java process.

The first step is to analyze the agent trace log. For the agent, you must enable the trace level ERROR (UNIT: custom ALL) (UNIT: cps_socket ALL).

In step one, the agent reads the response that is received by the Java process. In the screen capture, you see a row that is returned from the CT_Get action. This row represents an extended Oracle agent that is connected to the selected Tivoli Enterprise Monitoring Server.

The information for the extended Oracle agent is in the response from the Java process, as you can see from the messages in red. In blue, you can see the name of the attribute group.

Log entries (2 of 4)

Name	Managing System	Reason	Status	Product	Version	Type	HLOCFLAG
RZ:orcl-orcl-nc118189:RDB	orcl:nc118189:RZ	FA	*OFFLINE	RZ	08.31.00	V	L

2. Received data that is mapped to the attributes

customproviderserver.cpp, 1390, "buildResultInstance") Dealing with metric Name

customproviderserver.cpp, 1396, "buildResultInstance") metric Name is a RAW metric

*customproviderserver.cpp, 1410, "buildResultInstance") Have attribute value **RZ:orcl-orcl-nc118189:RDB** for Name*

customproviderserver.cpp, 1416, "buildResultInstance") metric Name is STRING_DATA/PREVIOUS_STRING_DATA/VALUE_CHANGED

In step two, in the agent trace logs, the agent maps the received data to the specific IBM Tivoli Monitoring attributes. For example, in red text, the string RZ:orcl-orcl-nc118189:RDB is associated to the Name attribute and is displayed in the Tivoli Enterprise Portal GUI.

Log entries (3 of 4)

Java level: Maximum Debug

▪ Data collected by the Java process:

```
[date] - MID - <hostname> - KQZJobHandler0 - HttpRequest.collectData - SOAP response content:  
<?xml version="1.0" encoding="UTF-8"?><SOAP-ENV:Envelope xmlns:SOAP-  
ENV="http://schemas.xmlsoap.org/soap/envelope/" SOAP-  
ENV:encodingStyle="http://schemas.xmlsoap.org/soap/encoding/"> <SOAP-ENV:Body>
```

.....

▪ XML response parsed based on the XPath query:

```
[date] - INFO - <hostname> - KQZJobHandler0 - HttpResponse.evaluateXPath - XPath query returned  
25 nodes for query //ROW
```

Now, check the activities performed by the Java process. For this process, you must set the Maximum Debug level, which you can do during the configuration of your Agent Builder agent.

First of all, the Java process collects the data by querying your server. In red text, you can see the method, **HttpRequest.collectData**.

Next, the agent evaluates the XPath information that you specified on the collected data, in this case: **//ROW**. In red, you can see the method, **HttpResponse.evaluateXPath**.

Log entries (4 of 4)

3. For each ROW, the provider collects the value for each attribute:

[date] - MID - <hostname> - KQZJobHandler0 - AttributeGroupCollector.nextResource - Getting value for attribute group queryString=http://nc118187:1920//cms/soap metric ResponseQuery./Name

[date] - MID - <hostname> - KQZJobHandler0 - **HttpDataCollector.getAttributeValue** - Exit, return value = Attribute Name value for key ResponseQuery./Name is: RZ:orcl-orcl-nc118189:RDB

4. Sending data to the agent

[date] - MID - <hostname> - KQZJobHandler0 - **AgentImpl.SendRow** - Entry, parm 1 = tableID=K56SOAPevent=false

[date] - MAX - <hostname> - KQZJobHandler0 - CPCImpl.SendRow - tableId K56SOAP

[date] - MAX - <hostname> - KQZJobHandler0 - CPCImpl.SendRow - Sending row with 10 attributes

.....

[date] - INFO - <hostname> - KQZJobHandler0 - **ClientInterface.sendData** - **sending-->** <dataResponse id="0"><attrGroup name="SOAP"><in><a/></a/></in>

In step three, for each ROW, the agent collects the data for each attribute that you defined for your Agent Builder agent. In red, you can see the method, **HttpDataCollector.getAttributeValue**.

As a fourth step, the provider sends the collected data to the agent. In red, you see the methods **AgentImpl.SendRow**, for a single row, and **ClientInterface.SendData** for all the collected data.

Summary

Now that you completed this module, you can analyze the agent trace logs to identify the problem with the Agent Builder agent that monitors a SOAP response

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