

IBM Tivoli Monitoring Agent Builder V6.2.2.7

Creating an Agent Builder agent to parse a SOAP response



IBM Tivoli® Monitoring Agent Builder V6.2.2.7, Creating an Agent Builder agent to parse a SOAP response.

Objectives

When you complete this module, you can create an Agent Builder agent to collect and parse an XML response from a URL

This module contains the steps for creating an Agent Builder agent that collects the SOAP response. When you complete this module, you can create an Agent Builder agent to collect and parse an XML response from a URL.

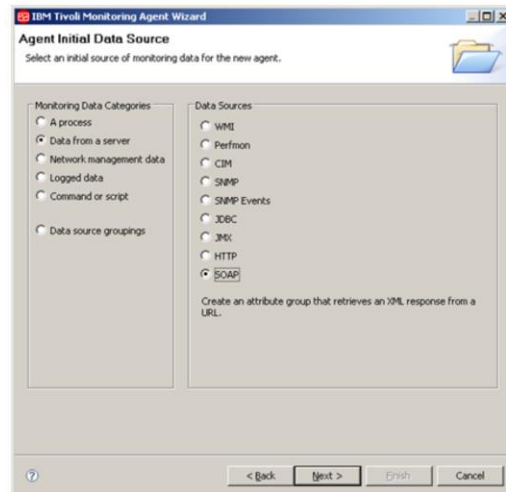
Outline

- SOAP data provider concepts
- XPath concepts
- Using the SOAP data provider
- Viewing the agent

This module explains key concepts about the SOAP data provider and the XPath language that is used to parse the XML response. It also explains the configuration steps that you use to define the SOAP data provider. After the configuration is complete, you can view the generated agent in the Tivoli Enterprise Portal.

SOAP data provider (1 of 2)

- Collect and parse an XML response from a URL
- Send a GET, POST, or PUT request
- Use XPath to specify how to populate individual attributes
- Run the SOAP data provider in a Java process
- Use version 1.0 of the XPath implementation



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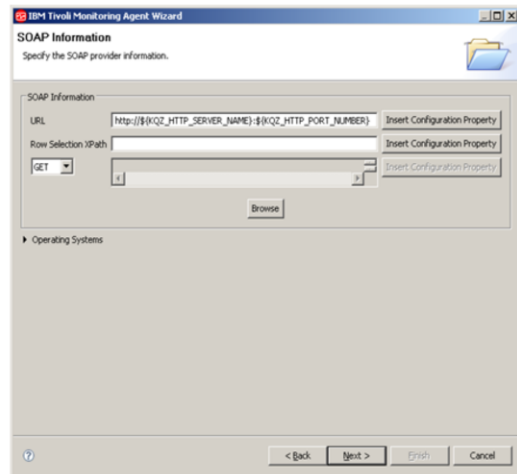
Starting from release 6.2.2.7 of the Agent Builder tool, you can select SOAP as a data source. The goal of this data provider is to process XML responses from an HTTP server and provide specific data from the XML response to IBM Tivoli Monitoring.

You can send a GET, POST, or PUT request to the server. After the server provides the XML response, you can parse this response by using the XPath language. The XPath language is the standard language that is used to query an XML document.

The SOAP data provider runs in a Java process. This version of Java includes version 1.0 of the XPath language. Switching to another XPath implementation is not supported.

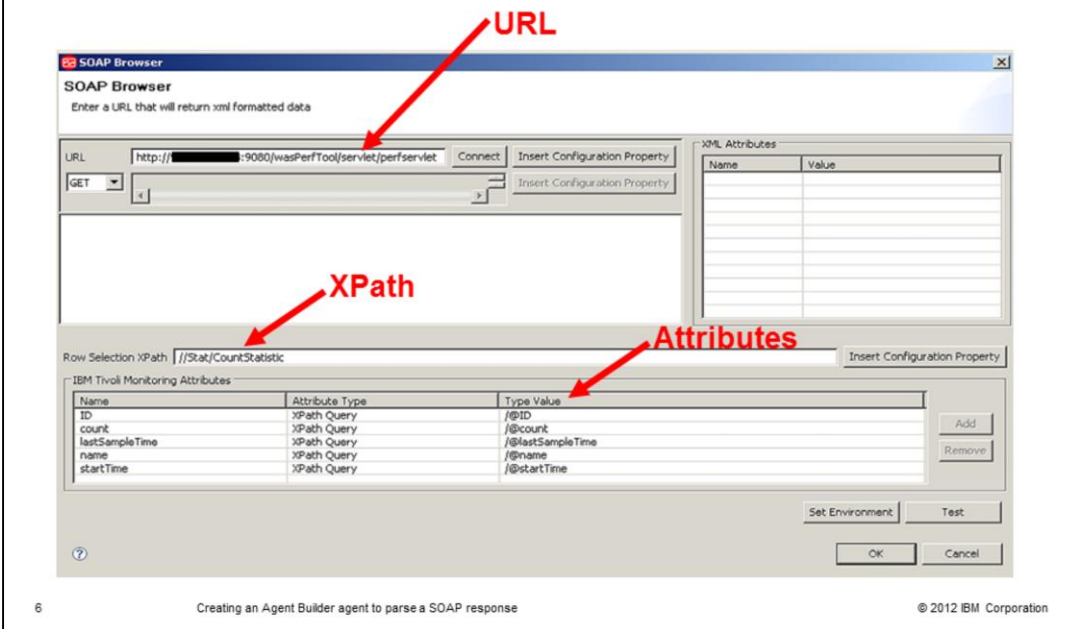
SOAP data provider (2 of 2)

- **URL:** URL string, whose default value is `http://${KQZ_HTTP_SERVER_NAME}:${KQZ_HTTP_PORT_NUMBER}`
- **Row Selection XPath:** XPath string that is used to retrieve all the information that you need to monitor
- **Request:** GET, PUT, or POST



After you select the SOAP data provider, you see the SOAP Information window. In this window, you must specify the URL of your server, which consists of the host name and port information. You specify the type of your request: GET, POST, or PUT. You can also specify the XPath query that is used to retrieve all the data from the XML response.

SOAP concepts in Agent Builder GUI (1 of 2)



After you provide all the required information, you can connect to the server and verify the XML output. You can browse the XML output and define the XPath query based on this output.

In the SOAP Browser window, you have a **URL** field and a **Row Selection XPath** field. The **URL** field contains the information that is used to connect to the server. The **Row Selection XPath** field is where you enter the XPath query.

After you specify the XPath query, you click the **Add** button. Then, you can see a list of the attributes that are displayed in the Tivoli Enterprise Portal GUI. If you click the **Test** button, you can verify whether the agent retrieves all the required data and parses the XML response correctly.

SOAP concepts in Agent Builder GUI (2 of 2)

Test SOAP Collection

Test how the XML response will be parsed.

URL:

Row Selection XPath:

GET

Attributes and Values

Results

Show hidden attributes

ID	count	lastSampleTime	name	startTime
1	0	1298995129796	CreateCount	1298995129796
2	0	1298995129796	RemoveCount	1298995129796
11	0	1298995129796	MethodCallCount	1298995129796
21	0	1298995129796	ReturnsToPoolCount	1298995129796
22	0	1298995129796	ReturnsDiscardCount	1298995129796
1	0	1298995152531	CreateCount	1298995129796
2	0	1298995152531	RemoveCount	1298995129796
11	0	1298995152531	MethodCallCount	1298995129796
21	0	1298995152531	ReturnsToPoolCount	1298995129796
22	0	1298995152531	ReturnsDiscardCount	1298995129796
1	0	1298995152531	CreateCount	1298995129796

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After clicking the Test button, you see the Test SOAP Collection window. In this window, you see a list of attributes and the related collected values. These values are shown in the Tivoli Enterprise Portal GUI.

XPath query example

- Data from **Stat** element is the name="Hello Pervasive Servlet" (in blue)
- The Agent Builder generates the row selection query //Stat
- Detailed query is **//Server/Stat/Stat/Stat/Stat**

```
<PerformanceMonitor responseStatus="success" version="6.1.0.0">
  <Node name="nc053011Node01">
    <Server name="server1">
      <Stat name="Web Applications">
        <Stat name="DefaultApplication#DefaultWebApplication.war">
          <Stat name="Servlets">
            <Stat name="Hello Pervasive Servlet">
              <Stat name="URLs">
                <CountStatistic ID="15" count="0" ...
                <TimeStatistic ID="17" lastSampleTime="1295891520046" ...
              </Stat>
            <CountStatistic ID="11" count="0" ...
            <TimeStatistic ID="13" lastSampleTime="1295891520046" ...
          </Stat>
        </Stat>
      </Stat>
    </Server>
  </Node>
</PerformanceMonitor>
```

You can use the XPath queries to identify the data that you want to retrieve from an XML file. In this example of an XPath query, you are retrieving data from the **Stat** element by using the name "Hello Pervasive Servlet", as shown in blue.

By default, the Agent Builder generates the row selection query, "//Stat". This query matches all the Stat elements. To match a specific element, you must provide a more detailed row selection query, such as "//Server/Stat/Stat/Stat/Stat". This query retrieves only the data from the Stat element that you want, as shown in the example.

SOAP request scenario

Enter your SOAP Request here:

Endpoint:

Endpoint:

Interface:

Method:

Payload (XML):

Your Soap Response Payload:

```
<?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>
    <SOAP-CHK:Success xmlns:SOAP-CHK="http://soaptest1/soaptest/"
xmlns="urn:candle-soap:attributes">
      <TABLE name="O4SRV.INODESTS">
        <OBJECT>ManagedSystem</OBJECT>
        <DATA>
          <ROW>
            <Timestamp>111031617363000</Timestamp>
            <Name>RZ:orc1-orc1-nc118189:RDB</Name>
            <Managing_System>orc1:nc118189:RZ</Managing_System>
            <ORIGINNODE>RZ:orc1-orc1-nc118189:RDB</ORIGINNODE>
            <Reason>F</Reason>
            <Status>OFFLINE</Status>
            <Product>RZ</Product>
            <Version>06.31.00</Version>
          </Type>
        </Type>
        <HLOCFLAG>L</HLOCFLAG>
        <Host_Info></Host_Info>
        <HHOSTLOC></HHOSTLOC>
        <Host_Address></Host_Address>
      </ROW>
    </DATA>
  </SOAP-CHK:Success>
  </SOAP-ENV:Body>
</SOAP-ENV:Envelope>
```

**<CT_Get><userid>sysadmin</userid>
<password></password><object>Ma
nagedSystem</object><target>Manag
edSystemName</target></CT_Get>**

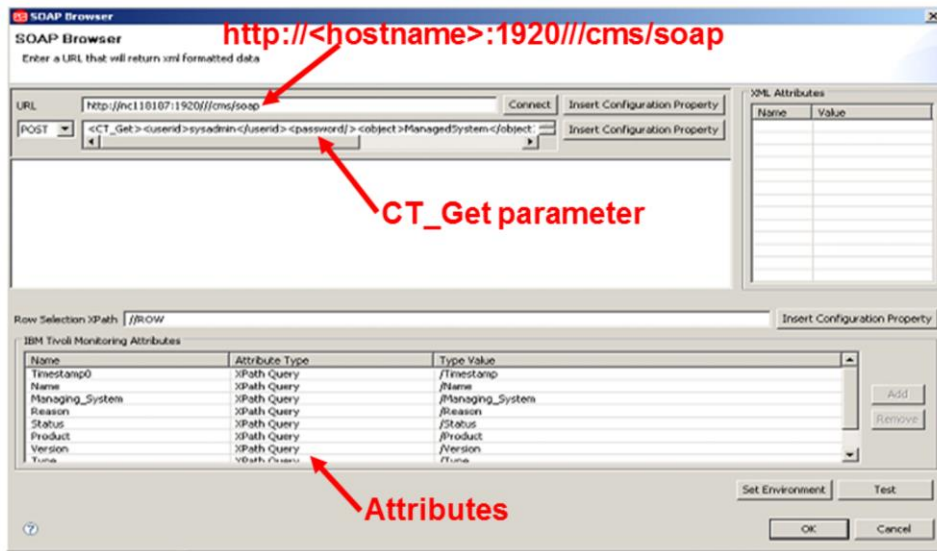
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As described in the previous slides, you can set up an agent that uses the SOAP data provider by entering information about the URL, the method, and the XPath query.

When you use SOAP in IBM Tivoli Monitoring, you can use the SOAP data provider to monitor the data that is returned by a SOAP query against the Tivoli Enterprise Monitoring Server database. In the screen capture, you can see the SOAP interface that you use to run the SOAP request to the Tivoli Enterprise Monitoring Server.

You must specify three pieces of information in the Agent Builder window: the URL information, the parameter to be passed to the server, in this case, CT_Get method, and the XML response.

Creating a SOAP agent



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In the Agent Builder window for the SOAP data provider, you can specify the data that you gathered. In this case, the data includes the URL, the POST method, and the CT_Get parameter. For the XPath query, you can specify //ROW to monitor all the agents that are connected to this Tivoli Enterprise Monitoring Server.

Tivoli Enterprise Portal GUI for the SOAP agent

The screenshot shows the Tivoli Enterprise Portal GUI. The top menu includes File, Edit, View, and Help. The Navigator pane on the left shows a tree view with folders for UNIX Systems, Windows Systems, and z/OS Systems. Under Windows Systems, there is a folder for NC114053, which contains sub-folders for SOAPTEMS and Performance Object Status. The SOAPTEMS folder is selected, and the SOAP agent is highlighted. The main workspace area displays a message: "This view has not been defined". Below this message, there is a "Report" table with the following data:

Timestamp	Timestamp0	Name	Managing System	Reason	Status	Product	Version	Type	HLOCFLAG
03/22/11 10:27:32	1110316173633000	RZ.orcl-orcl-nc118189.RDB	orcl.nc118189.RZ	FA	*OFFLINE	RZ	06.31.00	V	L
03/22/11 10:27:32	1110316173633001	orcl.nc118189.RZ	TEMS		*OFFLINE	RZ	06.31.00	V	L
03/22/11 10:27:32	1110322102024000	nc114062.KUX	TEMS		*ONLINE	UX	06.10.07	V	L
03/22/11 10:27:32	1110322102025000	PrimaryNC114066.NT	TEMS		*ONLINE	NT	06.22.01	V	L
03/22/11 10:27:32	1110322102050000	QM_nc114057.MQ	TEMS		*ONLINE	MQ	07.00.00	V	L
03/22/11 10:27:32	1110322102314000	nc118187.KUX	TEMS		*ONLINE	UX	06.22.02	V	L
03/22/11 10:27:32	1110322102400000	nc118188.SY	TEMS		*ONLINE	SY	06.22.02	V	L
03/22/11 10:27:32	1110322102502000	nc118187-CONFIG	TEMS		*ONLINE	CF	07.01.00	V	L
03/22/11 10:27:32	1110322102601000	nc114064.LZ	TEMS		*ONLINE	LZ	06.22.00	V	L
03/22/11 10:27:32	1110322102745000	nc118188.Warehouse	TEMS		*ONLINE	HD	06.22.02	V	L
03/22/11 10:27:32	1110322102748000	nc118188.KUX	TEMS		*ONLINE	UX	06.22.03	V	L
03/22/11 10:27:32	1110322102749000	TEMS	TEMS	00	*ONLINE	EM	06.22.02	L	
03/22/11 10:27:32	1110322102907000	nc118189.KUX	TEMS		*ONLINE	UX	06.22.02	V	L

At the bottom of the workspace, there is a status bar showing "Hub Time: Tue, 03/22/2011 11:54 AM", "Server Available", and "K56:K561001 - NC114053 - SYSADMIN".

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After you install the agent, you have a workspace like the example in the screen capture. In this workspace, you can see all the monitored data.

Review

- SOAP data provider concepts
- XPath concepts
- Using the SOAP data provider
- Viewing the agent

Process review.

- To create the SOAP agent, you perform these steps:
 1. Select the SOAP data provider.
 2. Specify the URL that represents the server that you want to query on.
 3. Specify the query method: GET, PUT, or POST.
 4. Enter the XPath query information.
 5. Test the SOAP settings.
- After the agent is created, you can install the agent.

Summary

Now that you completed this module, you can create an Agent Builder agent to collect and parse an XML response from a URL

Now that you completed this module, you can create an Agent Builder agent to monitor an XML response from a URL.

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