



IBM Software Group

WebSphere DataPower Multistep Probe

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WebSphere® Support Technical Exchange



Agenda

- What is the probe
- How does the probe work (externals)
- How does the probe work (internals)
- What the probe can do
- What the probe cannot do
- Common misconceptions
- Cautions
- Issues w/ the user agent
- Issues w/ content type

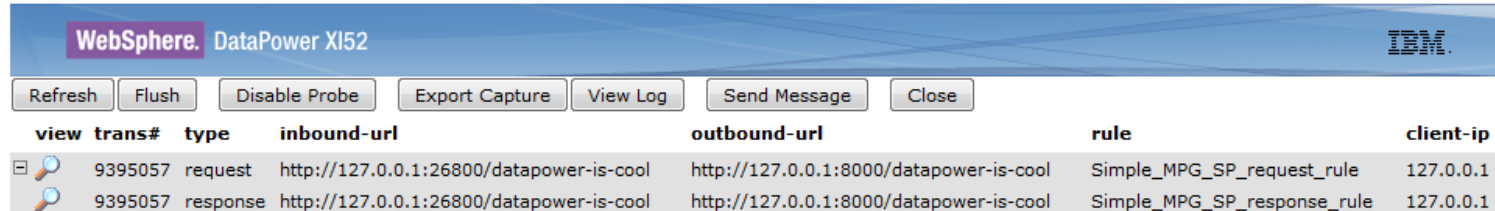




What is the probe?

- Troubleshooting tool
- Provides step-by-step debugging during multi-step processing
- Displays the contents of contexts and the value of variables at each processing step of a processing rule
- Can be an invaluable tool during the development phase of service applications



Graphical view of the Probe



view	trans#	type	inbound-url	outbound-url	rule	client-ip
	9395057	request	http://127.0.0.1:26800/datapower-is-cool	http://127.0.0.1:8000/datapower-is-cool	Simple_MPG_SP_request_rule	127.0.0.1
	9395057	response	http://127.0.0.1:26800/datapower-is-cool	http://127.0.0.1:8000/datapower-is-cool	Simple_MPG_SP_response_rule	127.0.0.1

- View – Use to view the step-by-step processing
- Trans# - ID of the transaction captured
- Type – Tells the direction of processing
- Inbound-url – Shows the URL of the request
- Outbound-url – URL used to contact the backend
- Rule – The processing rule invoked
- Client-ip – IP address of the client that made the request

Graphical view of the Probe (cont'ed)

- Step-by-step processing display when magnifying glass is clicked

The screenshot displays the 'Input Context' of a probe step in the IBM WebSphere graphical user interface. At the top, there are navigation buttons: 'Previous' (left arrow), 'Input Context '1' of Step 0' (center), and 'Next' (right arrow). Below these are several icons representing different actions or views. The main text area shows the configuration for 'Step 1: Validate Action', including parameters like Input=INPUT, Output=PIPE, WSDLURL=local:///SimpleSOAP.wsdl, Transactional=off, SOAPValidation=body, SQLSourceType=static, Asynchronous=off, ResultsMode=first-available, RetryCount=0, RetryInterval=1000, MultipleOutputs=off, IteratorType=XPATH, Timeout=0, MethodRewriteType=GET, MethodType=POST, and MethodType2=POST. Below this is a tabbed interface with 'Content' selected, and other tabs for Headers, Attachments, Local Variables, Context Variables, Global Variables, and Service Variables. The 'Content of context 'INPUT':' section shows a SOAP envelope XML structure. At the bottom, there are links for 'Show unformatted', 'Show unformatted', and 'Send as message'.

Previous Input Context '1' of Step 0 Next

Step 1: Validate Action:Input=INPUT, Output=PIPE, NamedInOutLocationType=default, WSDLURL=local:///SimpleSOAP.wsdl, Transactional=off, SOAPValidation=body, SQLSourceType=static, Asynchronous=off, ResultsMode=first-available, RetryCount=0, RetryInterval=1000, MultipleOutputs=off, IteratorType=XPATH, Timeout=0, MethodRewriteType=GET, MethodType=POST, MethodType2=POST

Content Headers Attachments Local Variables Context Variables Global Variables Service Variables

Content of context 'INPUT':

```
<soapenv:Envelope
  xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
  xmlns:sim="http://www.example.org/SimpleSOAP/"
>
  <soapenv:Header />
  <soapenv:Body>
    <sim:GoToLoopback>
      <test>blahblahblah</test>
    </sim:GoToLoopback>
  </soapenv:Body>
</soapenv:Envelope>
```

Show unformatted Show unformatted Send as message

How does it work? (externals)

- Activated on a 'per-service' basis
- Not saved as part of the persisted configuration
- Option for MPWG; XML FW and WS-Proxy
 - ▶ Not for the WAF
- Turning on and off is a configuration change as usual
 - ▶ Temporary interruption of service



Options

- Mode – on/off/unbounded
 - ▶ Normally there is a global max. of 3 concurrent probe transactions; but setting unbounded goes around that limit
- History 10/250/25
 - ▶ Limits the amount of ramdisk used
 - ▶ Unbounded uses 250
- Trigger
 - ▶ How can the trigger be used? (next slide)



Trigger Options

- Client IP
- Incoming URI
- Outgoing URI
- Rule Type
- Rule Match
- Xpath



How does it work? (internals)

- Adding a 'hidden' debug action into the rules between all the other actions
- As well as before the first action first and after last
- Hidden action is a special transform
- Runs an IBM stylesheet
- Collects all data & metadata to a special probe listener
- Data is kept on the hidden 'internal' ramdisk



How does it work? (internals)

- If you configure a service on port 63504 then the probe cannot work
- If the 'temporary' filesystem is full then the probe will fail
- Be careful of your user agent configuration
 - ▶ User Agent → Proxy Policy



User agent concerns

- The probe stylesheet makes a HTTP url-open call to port 63504
- The user agent configuration of the service that has the probe enabled can effect the url-open call
- Most commonly; the customer has a proxy policy or ssl policy matching on all ('*')
- This will also match on the probe calls and cause them to fail
- In general it is a best practice to have more specific matches in the user agent



Summary

- Great for development
- Not for troubleshooting services under heavy load
 - ▶ Production or Test environments
- Breaks streaming
- Would not capture data in case were 'Pass-Thru' request/response type is used



Summary (continued)

- Can be very heavyweight
 - ▶ Adds latency
 - ▶ Modifies the data/headers in some case
 - ▶ Content-type may not be preserved
 - ▶ Some stylesheets can work differently; do not always test with probe on



Additional WebSphere Product Resources

- Learn about upcoming WebSphere Support Technical Exchange webcasts, and access previously recorded presentations at:
http://www.ibm.com/software/websphere/support/supp_tech.html
- Discover the latest trends in WebSphere Technology and implementation, participate in technically-focused briefings, webcasts and podcasts at:
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- Access key product show-me demos and tutorials by visiting IBM Education Assistant:
<http://www.ibm.com/software/info/education/assistant>
- View a webcast replay with step-by-step instructions for using the Service Request (SR) tool for submitting problems electronically:
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Questions and Answers

