



IBM Software Group

Monitoring DataPower with ITCAM for SOA, ITCAM Agent for DataPower, and WAMC

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WebSphere® Support Technical Exchange



Agenda

- Monitoring and management overview

- Sample issues
 - ▶ DataPower monitoring - ITCAM Agent
 - ▶ Appliance management - WAMC
 - ▶ Services management - ITCAM SOA

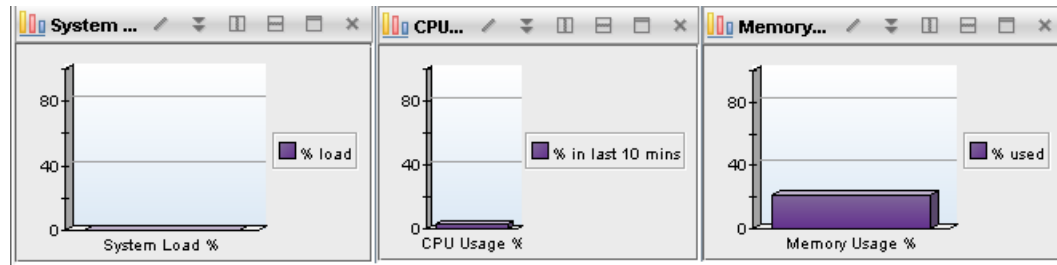
Monitoring and Management

- DataPower monitoring
 - ▶ Resource utilization and more
- Appliance management
 - ▶ Service configuration
 - ▶ Appliance firmware
- Services management
 - ▶ Transaction response time
 - ▶ Message counts and sizes

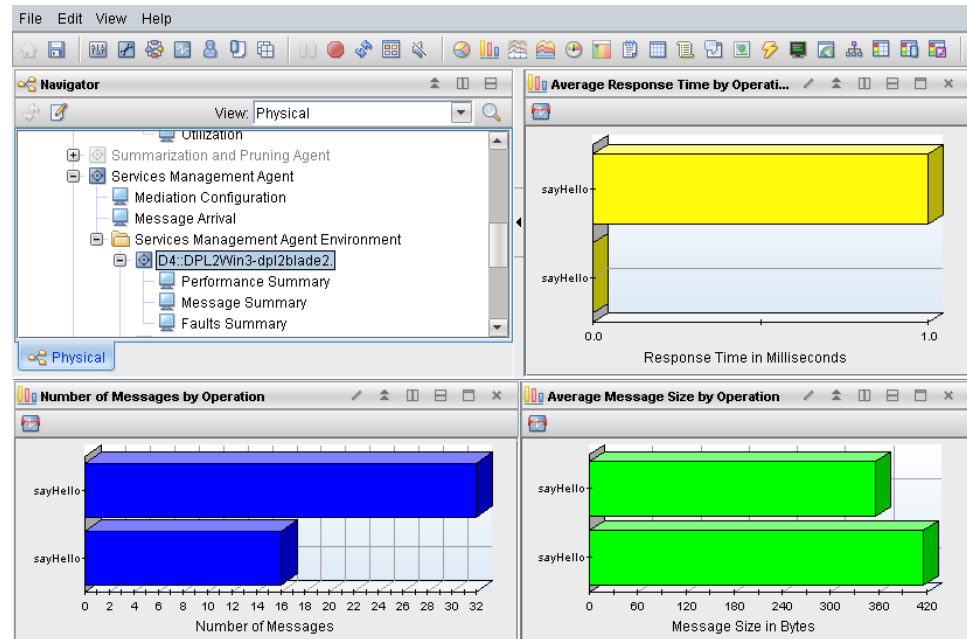


Monitoring and Management

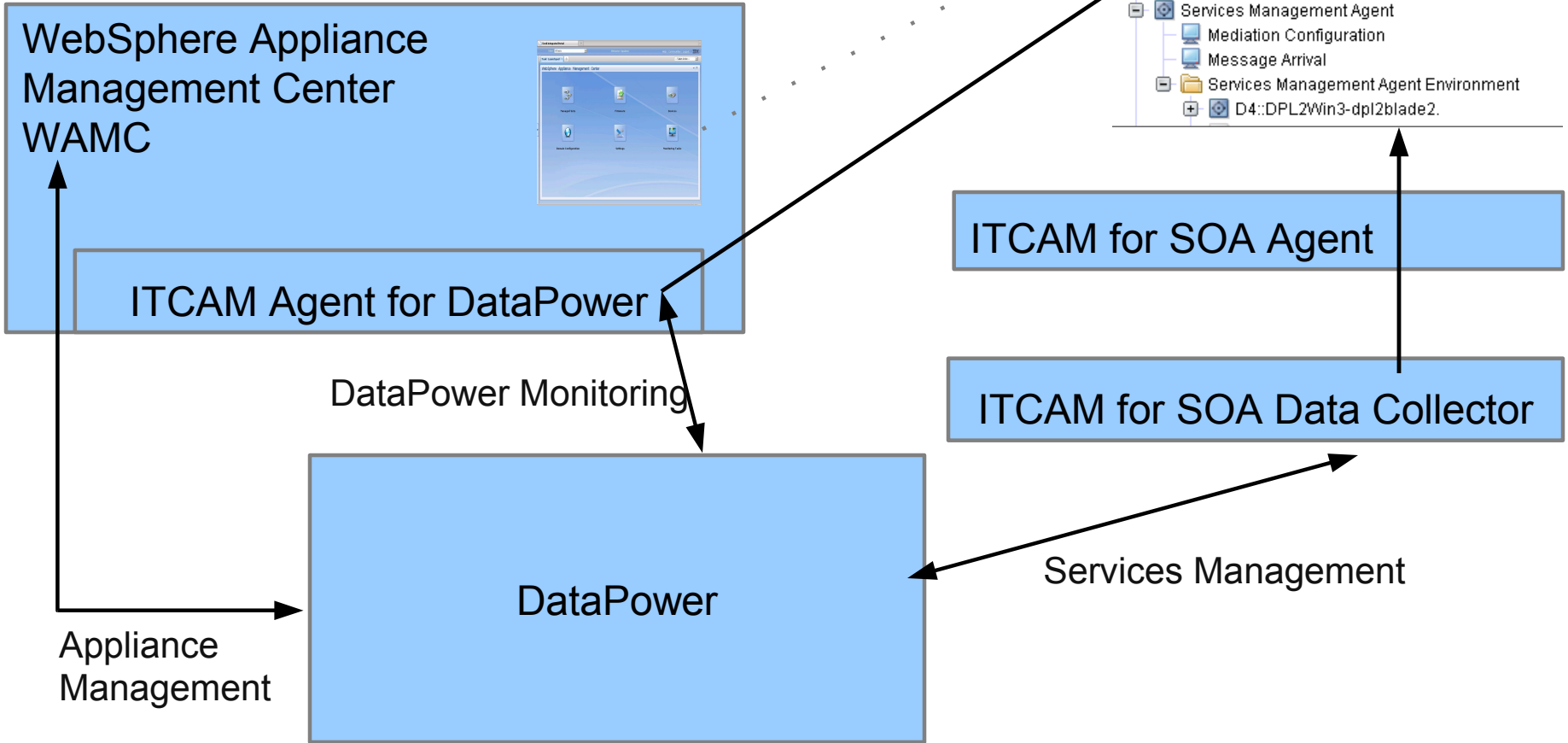
Appliance level metrics...



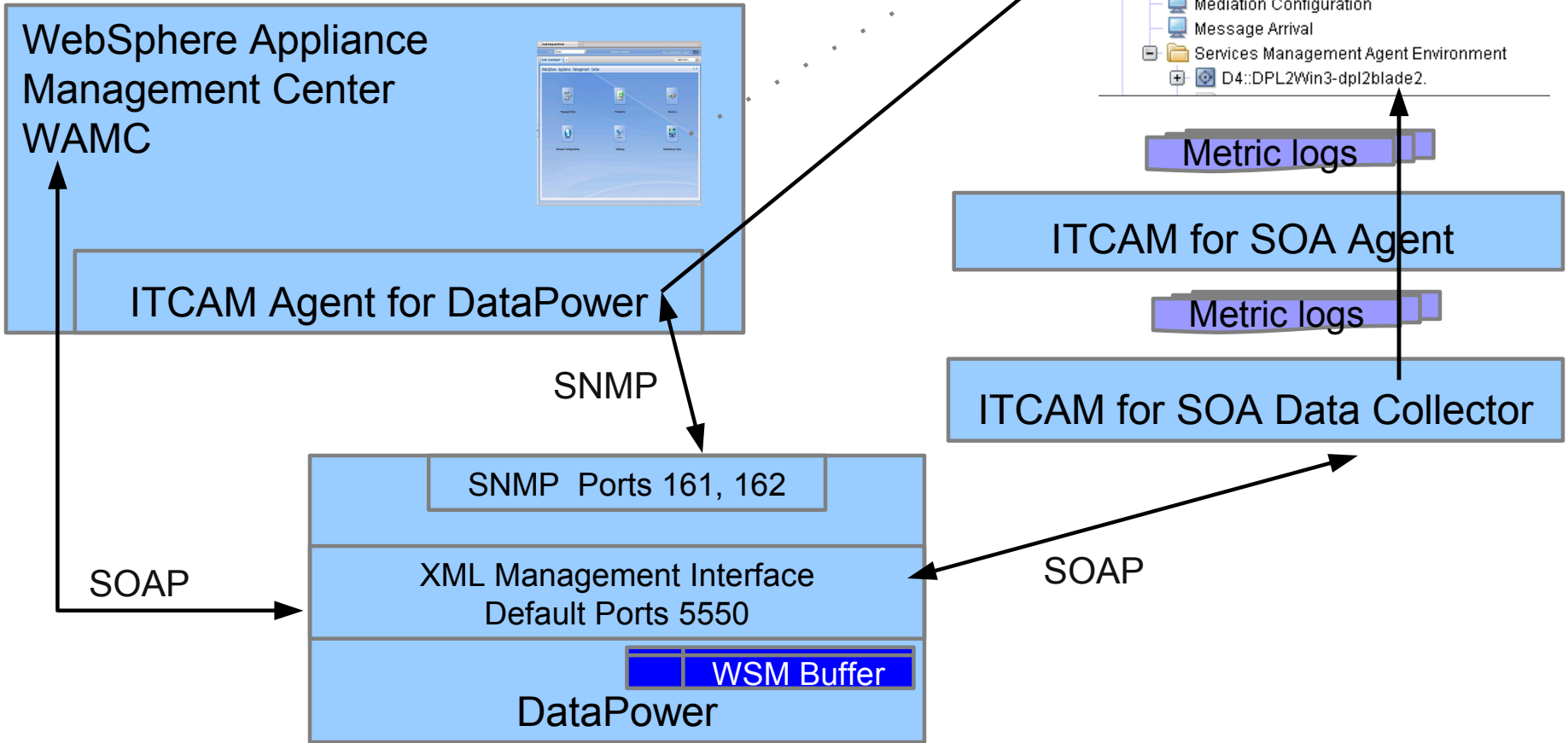
...and service level metrics are both needed to evaluate load test results and production performance.



Monitoring and Management



Monitoring and Management



Troubleshooting – sample issues

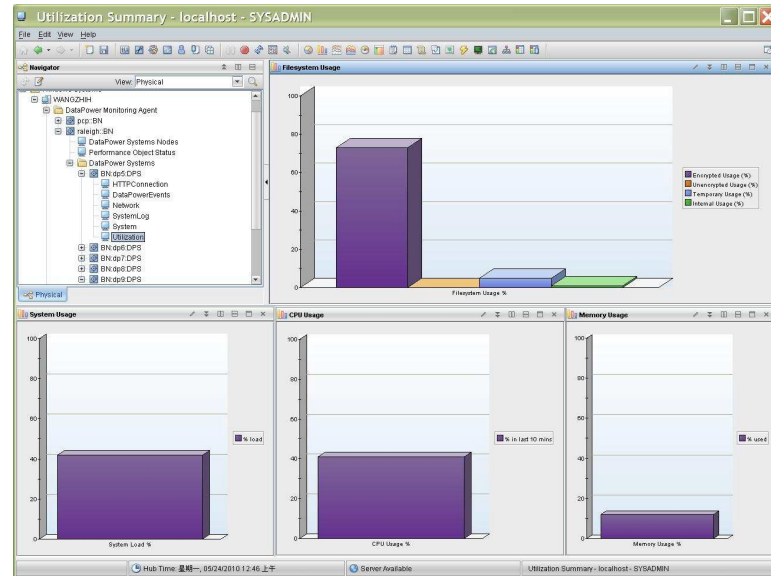
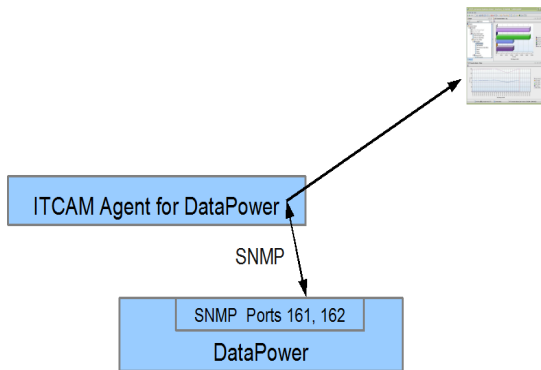
- DataPower monitoring
 - ▶ No utilization reported in TEP
- Appliance Management
 - ▶ Unable to add appliance
 - ▶ Unable to upgrade firmware
- Services management
 - ▶ No performance metrics report in TEP

Monitoring and Management

DataPower monitoring: No utilization reported in TEP

Analysis

- ITCAM Agent logs
- Configuration
- Packet capture



Troubleshooting – DataPower monitoring

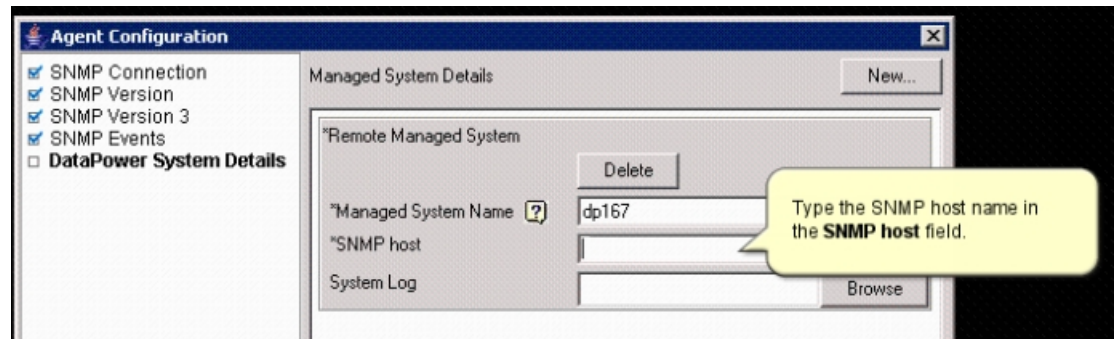
DataPower monitoring: No utilization reported in TEP

Check the ITCAM Agent logs

- Right click on the Agent and choose Advanced > View trace log
- <ITM_HOME>/TMAITM6/logs/myinstance_myagent_BN.LG0
For example: datapower_level2_DPL2WIN3_BN.LG0

"handle_snmp_response_async") ERROR: decoded PDU is null -- this is a timeout scenario

"internalCollectData") Timeout occurred. No response from agent mydatapower.ibm.com.



Troubleshooting – DataPower monitoring

Check the configuration: DataPower and the ITCAM Agent should specify the compatible host names, SNMP versions and port numbers

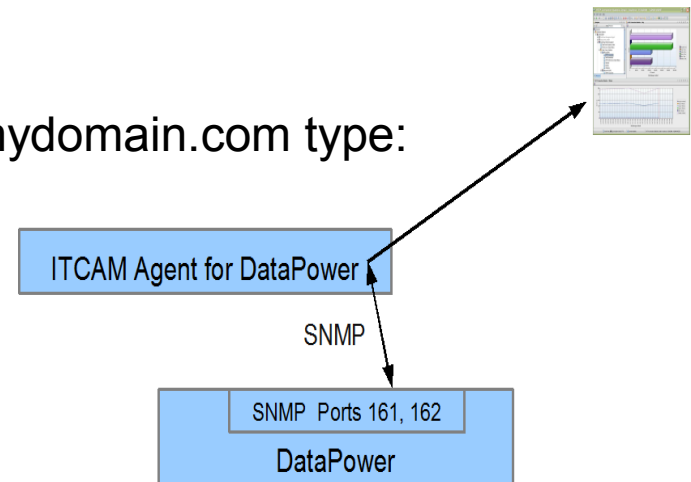
■ DataPower

- ▶ From an SSH session on mydatapower.mydomain.com type:
show snmp

```
admin-state enabled
ip-address 0.0.0.0
port 161
community public default read-only 0.0.0.0/0
```

■ ITCAM Agent

- ▶ File <ITM_HOME>\TMAITM6\DPL2Win3_bn_datapower_level2.cfg
SECTION=KQZ_SNMPVER [{ SNMP_VERSION=snmpV2 } { SNMP_PORT=161 }
SECTION=DPS:mydatapower [{ SNMP_HOST=mydatapower.mydomain.com }

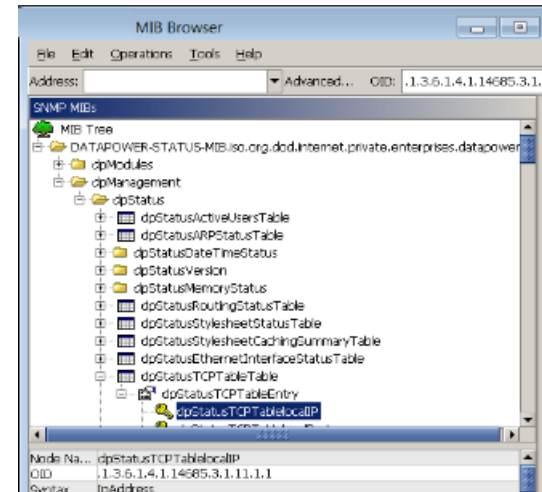


Troubleshooting – DataPower monitoring

Use the DataPower packet capture feature to see SNMP traffic. A packet capture filtered with “snmp” in Wireshark shows the community, port, and MIB OIDs

Time	Source	Destination	Protocol	Info
2012-02-14 15:00:16.648203	itcam.ip.addr	dp.ip.addr	SNMP	get-next-request 1.3.6.1.4.1.14685.3.1
2012-02-14 15:00:22.434266	itcam.ip.addr	dp.ip.addr	SNMP	get-next-request 1.3.6.1.4.1.14685.3.1
2012-02-14 15:00:22.438184	itcam.ip.addr	dp.ip.addr	SNMP	get-next-request 1.3.6.1.4.1.14685.3.1

Frame 486: 119 bytes on wire (952 bits), 119 bytes captured (952 bits)
 Ethernet II, Src: Intel_f7:80:12 (00:0e:0c:f7:80:12), Dst: Ibm_3a:45:14
 Internet Protocol Version 4, Src: itcam.ip.addr, Dst: dp.ip.addr
 User Datagram Protocol, Src Port: 33125 (33125), Dst Port: snmp (161)
 Simple Network Management Protocol
 version: version-1 (0)
 community: public
 data: get-next-request (1)

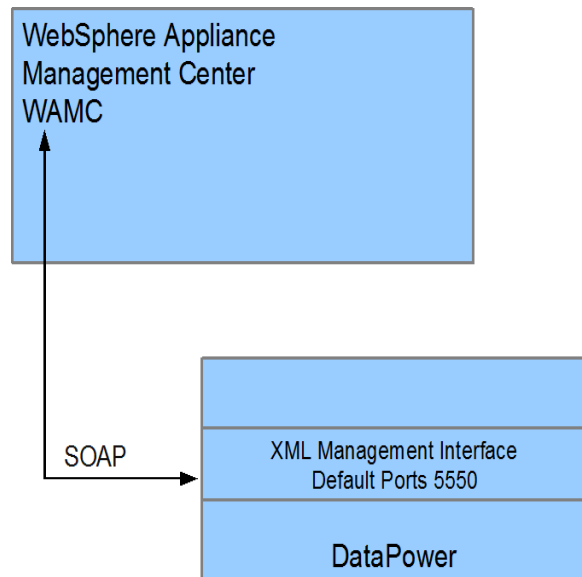


Troubleshooting – DataPower monitoring

- SNMP get-next requests without responses might indicate
 - ▶ A configuration problem: re-check that the community, port, and local IP address configured in DataPower
 - ▶ SNMP responses are being routed through an interface not in the packet capture: capture another interface, or all interfaces:
packet-capture-advanced all temporary:all.pcap 60 10 -1
- If the snmp filter finds no matching frames in the packet capture
 - ▶ Try a packet capture from the server running the agent
 - ▶ Review the network between the agent and DataPower
 - ▶ Check the agent to be sure it is running

Troubleshooting – Appliance Management

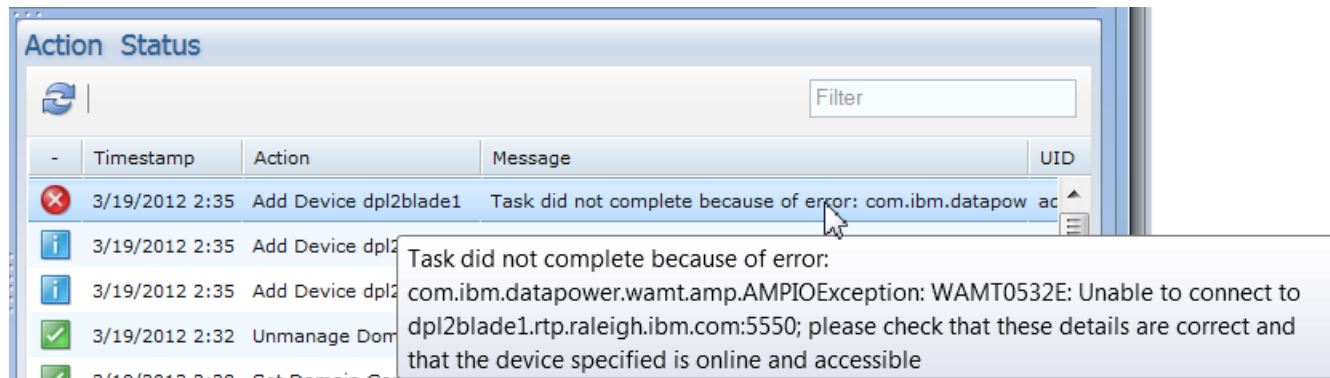
- Appliance Management
 - ▶ Unable to add appliance



- ▶ Unable to set firmware

Troubleshooting – Appliance Management

- Adding a device in the WAMC console fails



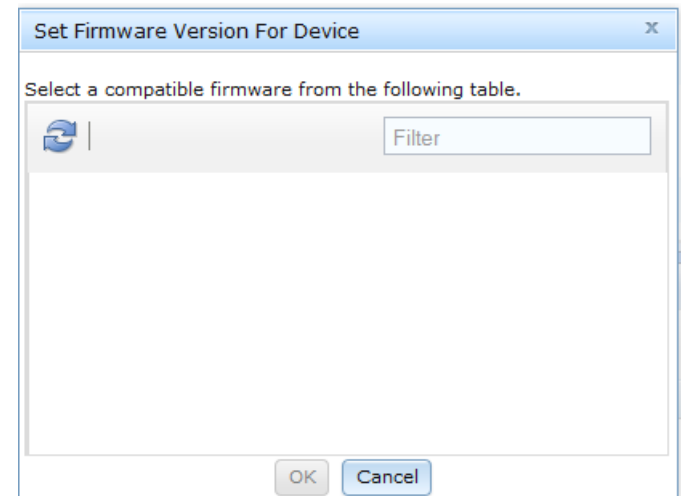
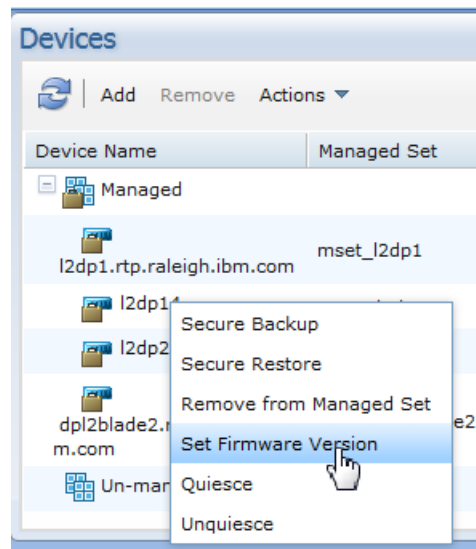
- From an SSH session on mydatapower.mydomain.com type **show xml-mgmt**
- The port in WAMC should match the xml-mgmt port

```
xml-mgmt [up]
admin-state enabled
ip-address 0.0.0.0
port 5555
acl xml-mgmt [up]
slm-peering 10
mode any+soma+v2004+amp+slm+wsm
```

Troubleshooting – Appliance Management

Unable to set firmware

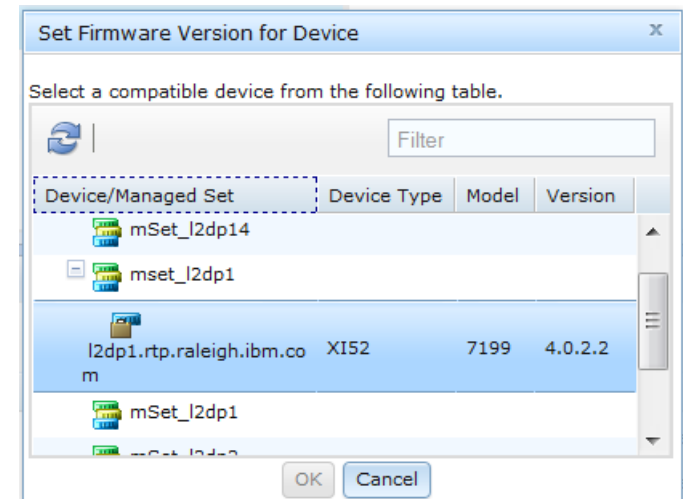
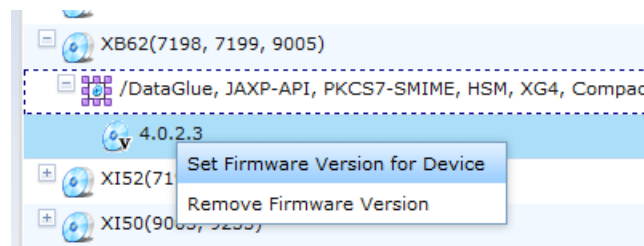
If there is not a firmware that matches the appliance chosen, the WAMC firmware window will be displayed with no content.



Troubleshooting - Appliance Management

Unable to set firmware

Try a different angle from the WAMC firmware view



Troubleshooting - Appliance Management

Unable to set firmware – check SystemOut:
 <WAMC_HOME>\management\profiles\TIPProfile\logs\server1\SystemOut.log

- WAMC > Settings > WebSphere Administrative Console
 - ▶ Troubleshooting > Logs and Trace > server1 > JVM Logs
 - RunTime tab > SystemOut View button

Integrated Solutions Console Welcome admin

Cell=TIPCell, Profile=TIPProfile

Logging and Tracing

[Logging and Tracing](#) > [server1](#) > **Log File**

Display the contents of the given file.

Total: 1324, Filtered total: 164

Retrieve Lines (eg. 250-600)

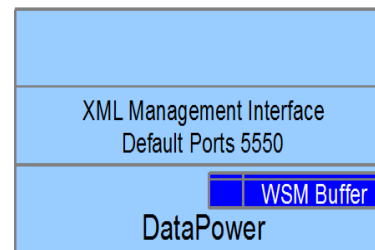
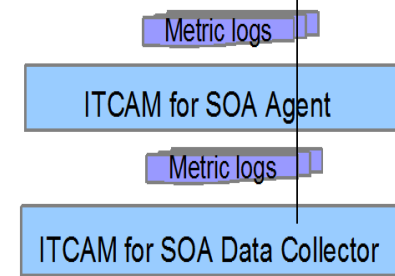
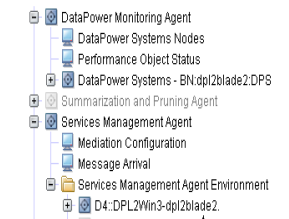
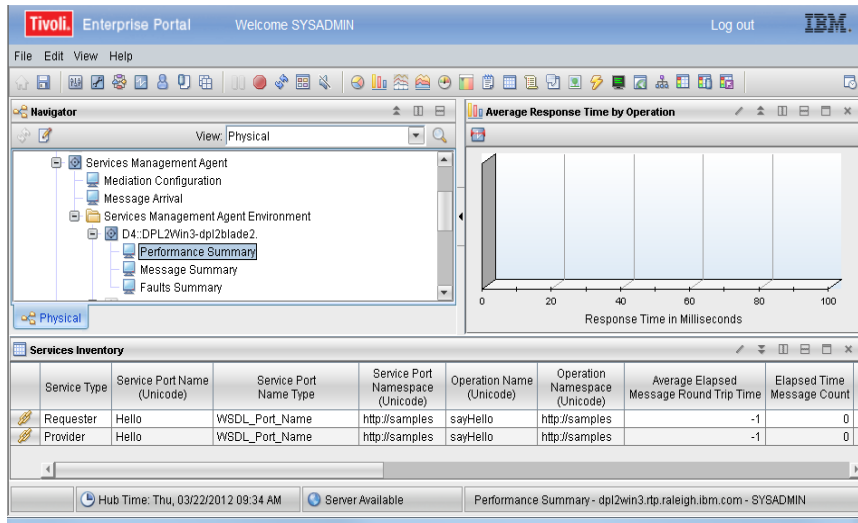
Log File

```
[3/22/12 8:27:53:121 EDT] 00000016 IWidgetHandle W IWidgetHandler service iWidget_920665640 doesn't have user fs.
[3/22/12 8:27:53:137 EDT] 00000016 IWidgetHandle W IWidgetHandler service iWidget_920665641 doesn't have user fs.
[3/22/12 8:29:37:996 EDT] 00000016 Firmware I com.ibm.datapower.wamt.clientAPI.Firmware assertCompatibility WAMT0101E:
[3/22/12 8:29:37:996 EDT] 00000016 Firmware I com.ibm.datapower.wamt.clientAPI.Firmware assertCompatibility WAMT0101E:
[3/22/12 8:29:37:996 EDT] 00000016 Firmware I com.ibm.datapower.wamt.clientAPI.Firmware assertCompatibility WAMT0101E:
```

WAMT0101E: The XB60 appliance type for the firmware does not match the XI52 type on the l2dp14 appliance

Troubleshooting – Services Management

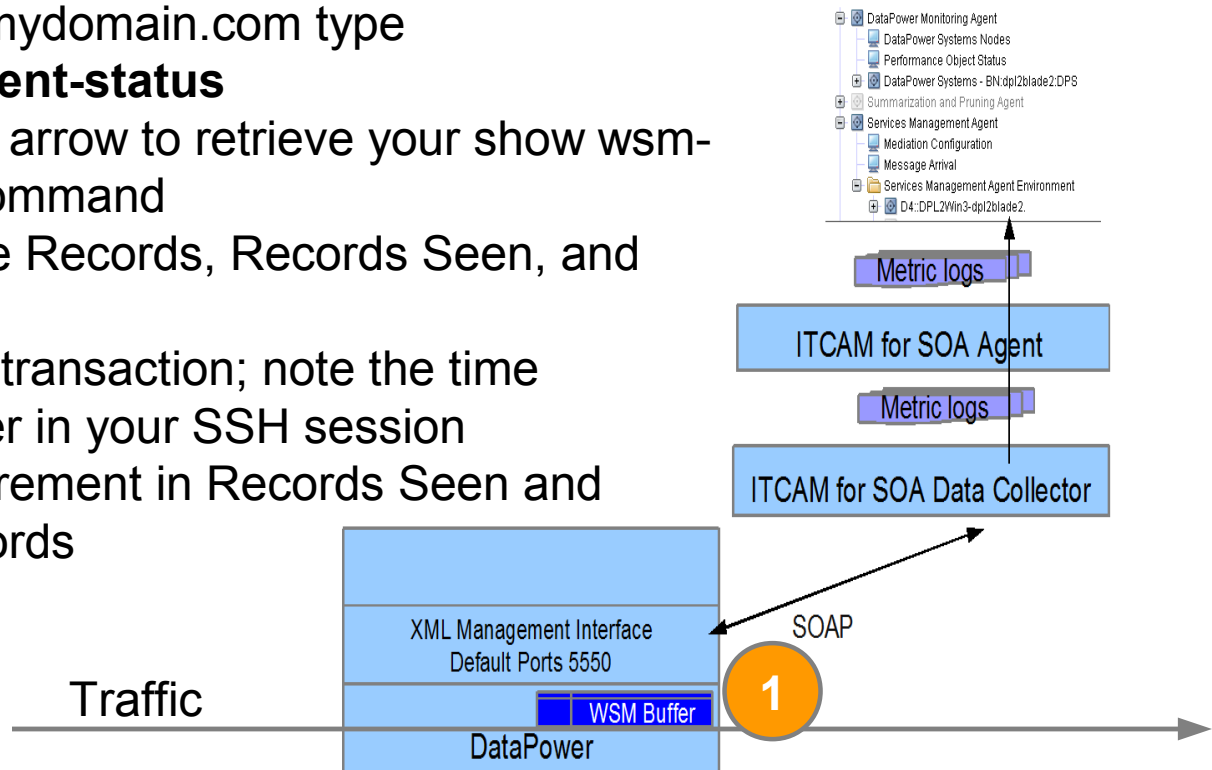
Services Data not displaying in Tivoli Enterprise Portal (TEP)



Troubleshooting – Services Management

No data showing in TEP: Step 1 – Check WSM buffer

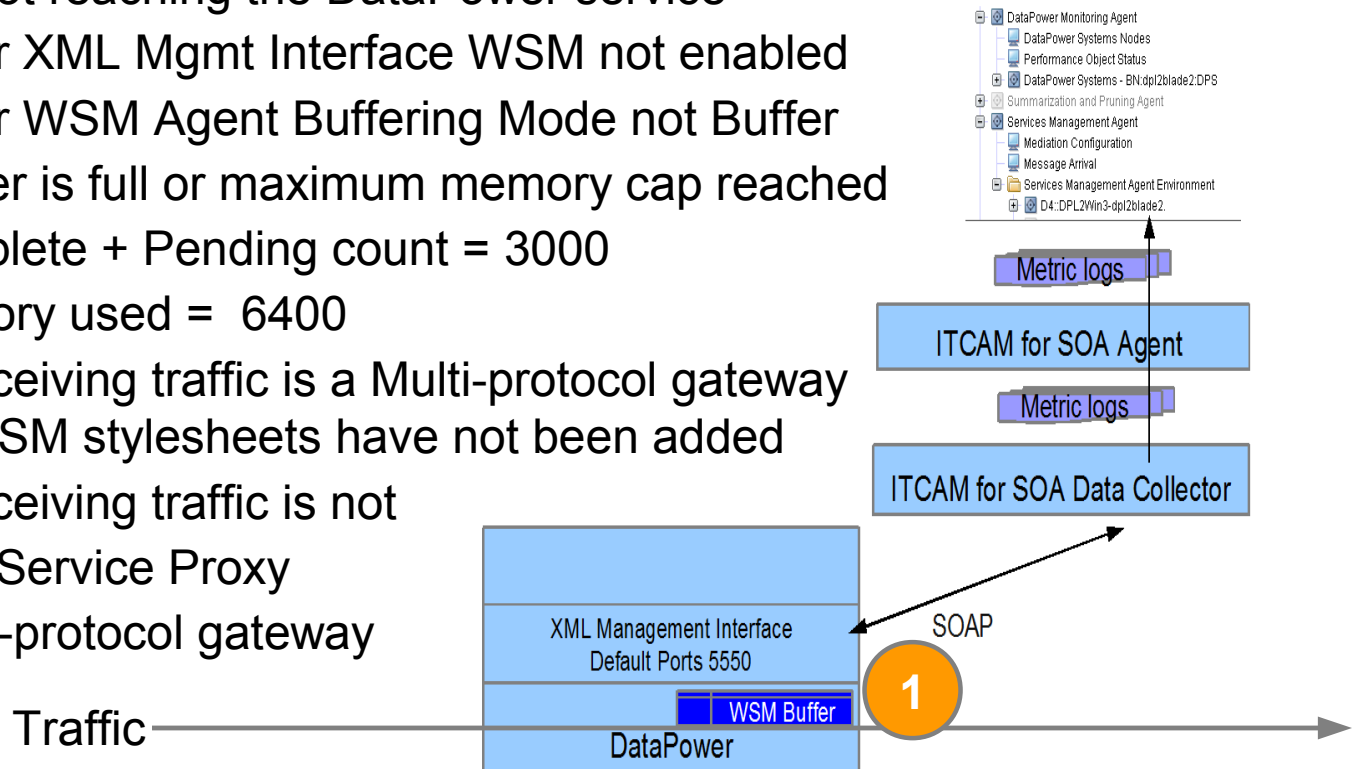
- From an SSH session on mydatapower.mydomain.com type **show wsm-agent-status**
- Click on the up arrow to retrieve your show wsm-agent-status command
- Note: Complete Records, Records Seen, and Records Lost
- Send your test transaction; note the time
- Quickly hit enter in your SSH session
- Look for an increment in Records Seen and Complete Records



Troubleshooting – Services Management

No data showing in TEP: Step 1 – possible issues

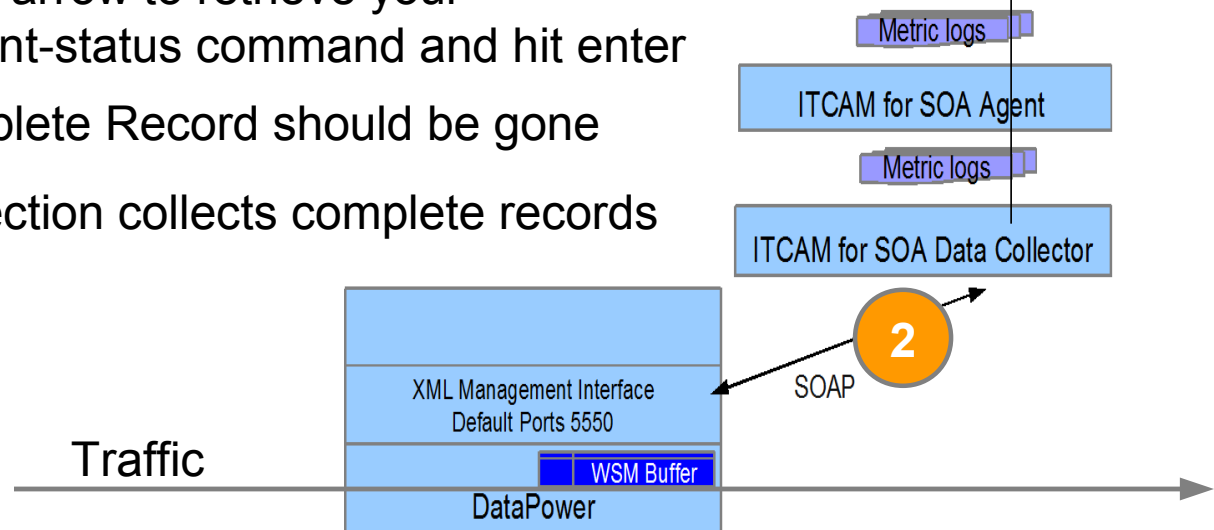
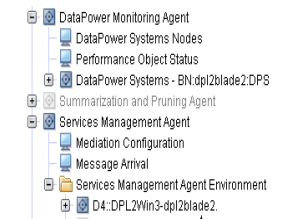
- Traffic is not reaching the DataPower service
- DataPower XML Mgmt Interface WSM not enabled
- DataPower WSM Agent Buffering Mode not Buffer
- WSM buffer is full or maximum memory cap reached
 - ▶ Complete + Pending count = 3000
 - ▶ Memory used = 6400
- Service receiving traffic is a Multi-protocol gateway
 - ▶ Custom WSM stylesheets have not been added
- Service receiving traffic is not
 - ▶ Web Service Proxy
 - ▶ Multi-protocol gateway



Troubleshooting – Services Management

No data showing in TEP: Step 2 – Data collection

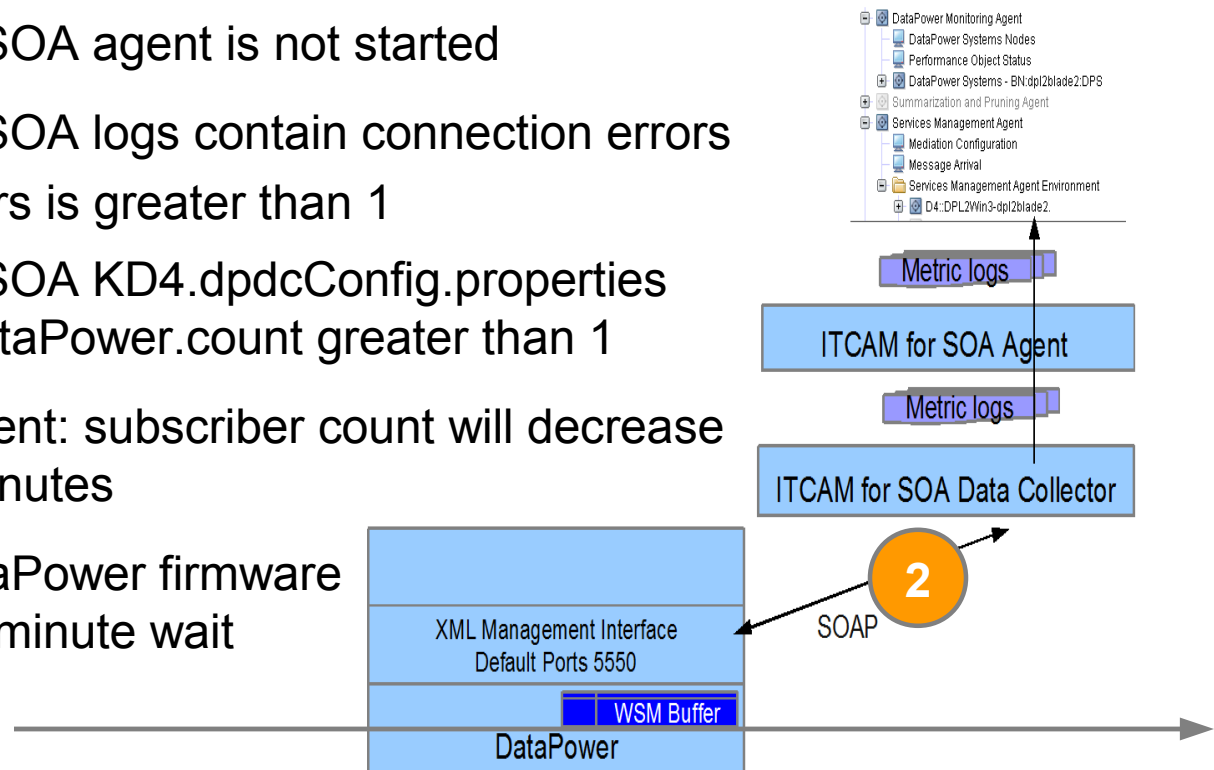
- Note: Complete Records, Records Seen, and Records Lost and Active Subscribers
 - ▶ There should be a Complete Record associated with your previous test
- Click on the up arrow to retrieve your show wsm-agent-status command and hit enter
 - ▶ The Complete Record should be gone
 - ▶ Data collection collects complete records



Troubleshooting – Services Management

No data showing in TEP: Step 2 – data collection issues

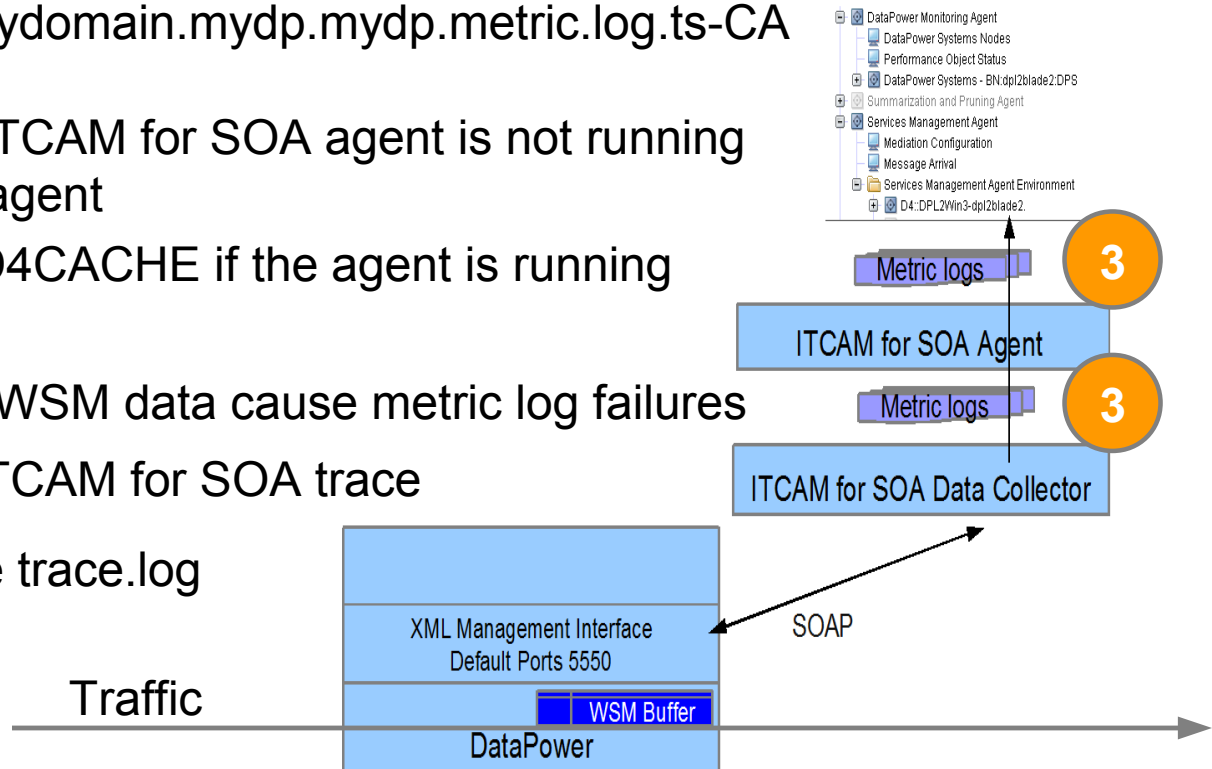
- Active Subscribers is 0
 - ▶ ITCAM for SOA agent is not started
 - ▶ ITCAM for SOA logs contain connection errors
- Active Subscribers is greater than 1
 - ▶ ITCAM for SOA KD4.dpdcConfig.properties contains DataPower.count greater than 1
 - ▶ Stop the agent: subscriber count will decrease within 30 minutes
 - ▶ Reload DataPower firmware to avoid 30 minute wait



Troubleshooting – Services Management

No data showing in TEP: Step 3 – metric data created

- Look for metric logs named KD4.8.mydp.mydomain.mydp.mydp.metric.log.ts-CA
- In KD4/logs if ITCAM for SOA agent is not running
 - ▶ Start the agent
- In KD4/logs/KD4CACHE if the agent is running
- Errors parsing WSM data cause metric log failures
 - ▶ Turn on ITCAM for SOA trace
 - ▶ Check the trace.log



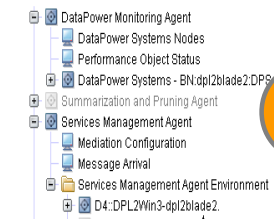
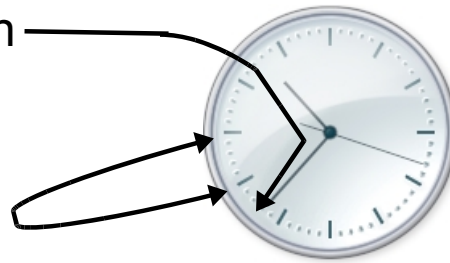
Troubleshooting – Services Management

No data showing in TEP: Step 4 – data in TEP – wait for it

From step 1: Send your test transaction;
note the time

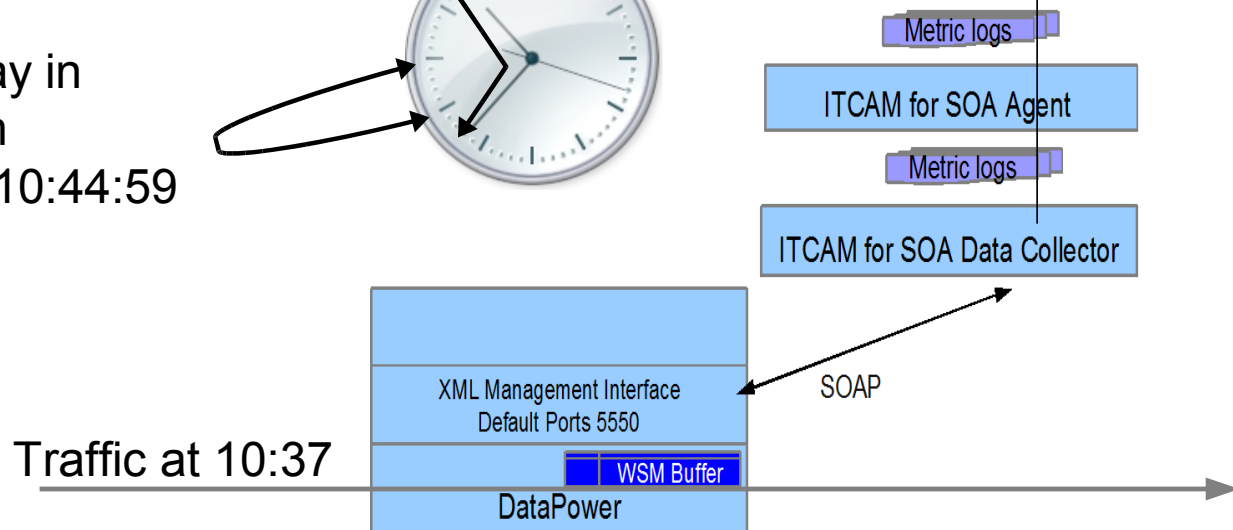
A 10:37 transaction

will display in
TEP from
10:40 to 10:44:59



4

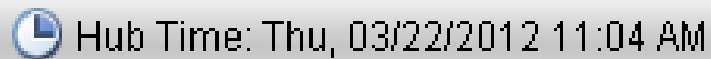
at 10:40



Troubleshooting – Services Management

No data showing in TEP: Step 4 – possible issue - synchronize clocks

- From an SSH session on mydatapower type: **show clock**
- Data collector and agent system time
- TEP HUB time



Hub Time: Thu, 03/22/2012 11:04 AM

- Metric logs do not move to archive, but remain KD4CACHE
- TEP Tabular views will show -1 for elapsed times and 0 for counts
- If you did not note the time of the transaction
 - ▶ Check the DataPower log for the time of the transaction
 - ▶ Check the epoch timestamp on the metric log records
KD4.8.mydp.mydomain.mydp.mydp.metric.log.ts-CA
2;1332349912000;...;{[http://samples](#)}Hello;...
1332349912000 is GMT: Wed, 21 Mar 2012 17:11:52 GMT

Summary

- DataPower monitoring
 - ▶ Use logs, configuration review, and finally packet capture for analysis of SNMP issues
- Appliance Management
 - ▶ The SystemOut.log available through the WAS console helps with debug of WAMC issues
- Service management
 - ▶ There are four steps in the process that displays DataPower service metrics in TEP

Resources

ITCAM Agent for DataPower

- User's Guide:
http://publib.boulder.ibm.com/infocenter/tivihelp/v24r1/index.jsp?topic=/com.ibm.itcamsoa.doc_6.2.2/DPAgent_UG.htm
- Videos in <https://www.ibm.com/developerworks/wikis/display/tivolimediagallery/>
 - ▶ Tivoli+Composite+Application+Manager+Agent+for+WebSphere+DataPower+Appliance
 - ▶ Installing+and+Configuring+the+ITCAM+Agent+for+WebSphere+DataPower+Appliance

WAMC

- Information Center <http://publib.boulder.ibm.com/infocenter/wamcinfo/v4r0m0/index.jsp>
- IBM® Education Assistant <http://publib.boulder.ibm.com/infocenter/ieduasst/v1r1m0/index.jsp>
- Forum <http://w3.ibm.com/connections/communities/service/forum/topics?communityUid=d0744626-ef82-4c01-b658-e63ec66a0987>

ITCAM for SOA

- Webcast replay: Configuring ITCAM SOA Data Collection for DataPower
<http://www-01.ibm.com/support/docview.wss?uid=swg27018064>
- ITCAM SOA InfoCenter: Configuring DataPower Processing Rules
<http://publib.boulder.ibm.com/infocenter/tivihelp/v3r1/index.jsp?topic=/com.ibm.itcamsoa.doc/kd4inmst148.htm>
- ITCAM for SOA Sample Stylesheets for DataPower MPGW Services
<http://www.ibm.com/developerworks/wikis/display/tivolimonitoring/Tivoli+Composite+Application+Manager+for+SOA>

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:
<http://www.ibm.com/developerworks/websphere/community/>
- Join the Global WebSphere Community:
<http://www.websphereusergroup.org>
- 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:
<http://www.ibm.com/software/websphere/support/d2w.html>
- Sign up to receive weekly technical My Notifications emails:
<http://www.ibm.com/software/support/einfo.html>

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Questions and Answers