How to integrate ITCAM for SOA with DataPower?

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Agenda

- Integration overview

- Configuring DataPower

- Configuring ITCAM SOA

- Testing and monitoring

- Troubleshooting

- Q & A

Integration overview

Business Traffic flows from requesters, through the WebSphere DataPower SOA appliance, to servers.
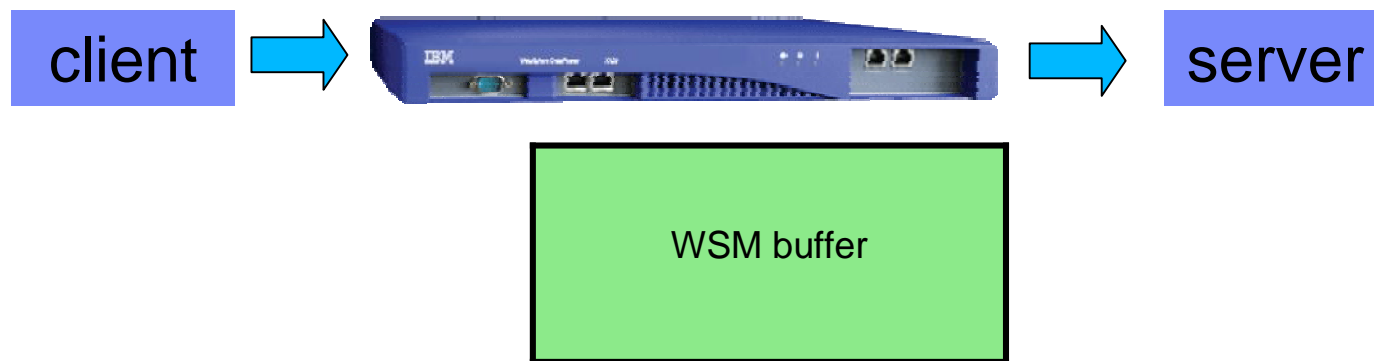
client ➡️ ➡️ server

Two DataPower proxy types that can process SOA messages:
- Web Services Proxy
    - processes SOAP messages
   - based on a WSDL
- Multi-Protocol Gateway

Integration overview

Business Traffic flows from requesters, through the WebSphere DataPower SOA appliance, to servers.

client ⟹ [DataPower appliance] ⟹ server

WSM buffer

DataPower can be configured to retain data about business requests in a Web Services Management (WSM) buffer

Integration overview

ITCAM SOA can login to DataPower and pull data from the WSM buffer. Other Tivoli components manage display of the data in the Tivoli Enterprise Portal console
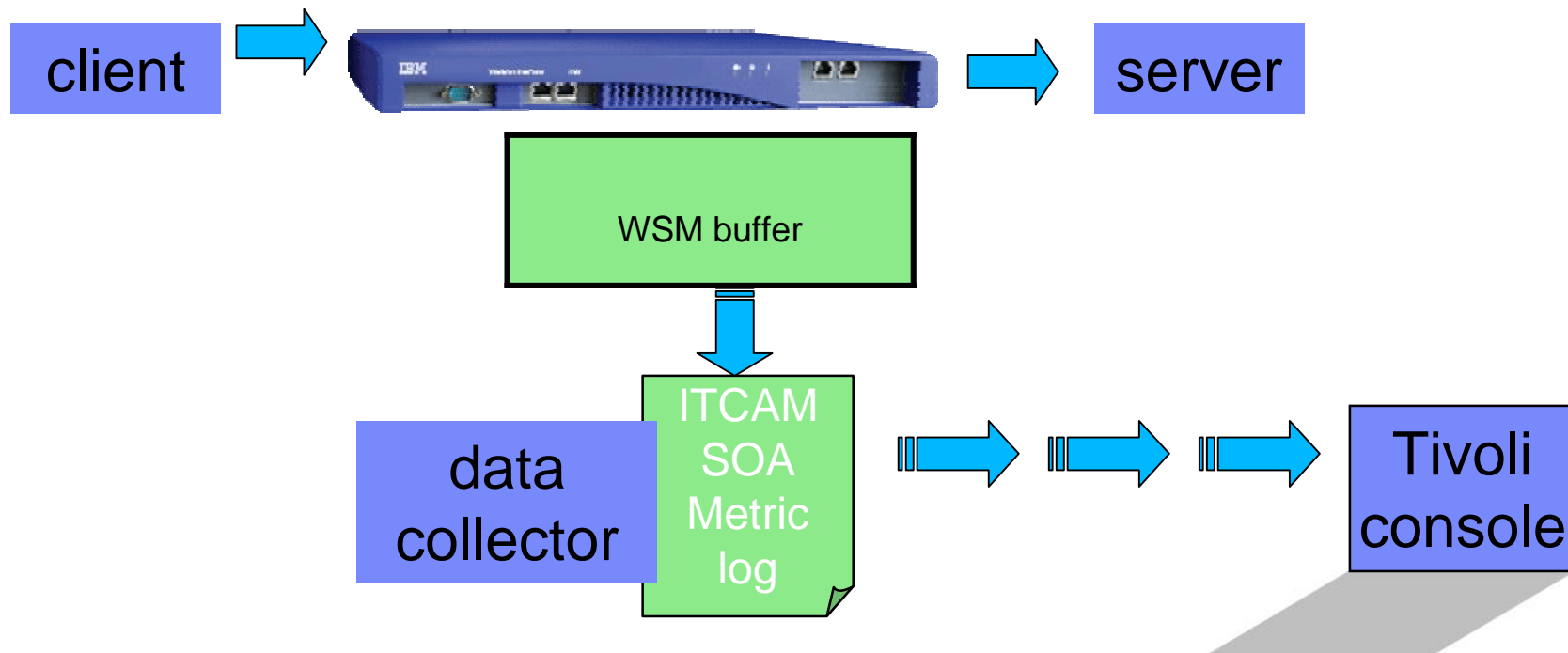
Configuring DataPower for monitoring

- Upgrade your DataPower firmware to the minimum supported version.

- Configure a user account on the DataPower SOA appliance for use with the DataPower data collector.

- Enable the XML Management Interface on the appliance.

- Choose to retain data when data collection is stopped.

- Enable the ITCAM for SOA transforms for the Multi-Protocol gateways.

Configuring a user account on the DataPower SOA appliance

- The DataPower user ID used by the data collector must belong to a user group with the following permissions:
  - *Read* permission on the **Login XML-Mgmt** Resource Type in the default domain.
  - *Read* permission on the **XML-mgmt** Resource Type in each domain to be monitored using this user ID.
  - *Read* permission on the **(any)** Resource Type in each domain to be monitored using this user ID.

Enable the XML Management Interface on the appliance

1. Navigate to **Objects –> Device Management –> XML Management Interface**.

2. Make note of the port number that is displayed. You will need to specify this port number later when you enable or disable data collection.

3. In the **Main** tab, find the **WS-Management Endpoint** option and select the **on** check box.

4. Click **Apply** to activate the changes and enable the WS-Management Endpoint.

XML Management Interface [up]

Apply   Cancel   Undo

Administrative State   ⊙ enabled ⊙ disabled

Local IP Address   0.0.0.0   Select Alias *

Port Number   5550   *

Access Control List   xml-mgmt ▼ + ...

Comments

Enabled Services
☑ SOAP Management URI
☑ SOAP Configuration Management
☑ SOAP Configuration Management (v2004)
☑ AMP Endpoint
☑ SLM Endpoint
☑ WS-Management Endpoint
☑ WSDM Endpoint
☑ UDDI Subscription
☐ WSRR Subscription

Choose to retain data when data collection is stopped

- Navigate to **Objects > Device Management > Web Services Management Agent**.

- Change **Buffering Mode** to from **Discard** to **Buffer**.

Web Services Management Agent [up]

Apply   Cancel   Undo

Administrative State	⦿ enabled ◯ disabled
Comments	
Maximum Record Size	3000 records *
Maximum Memory Usage	64000 KB *
Capture Mode	Faults only ▾ *
Buffering Mode (deprecated)	Buffer ▾ *
Mediation Enforcement Metrics	◯ on ⦿ off

Enable the ITCAM for SOA transforms for the Multi-Protocol gateways
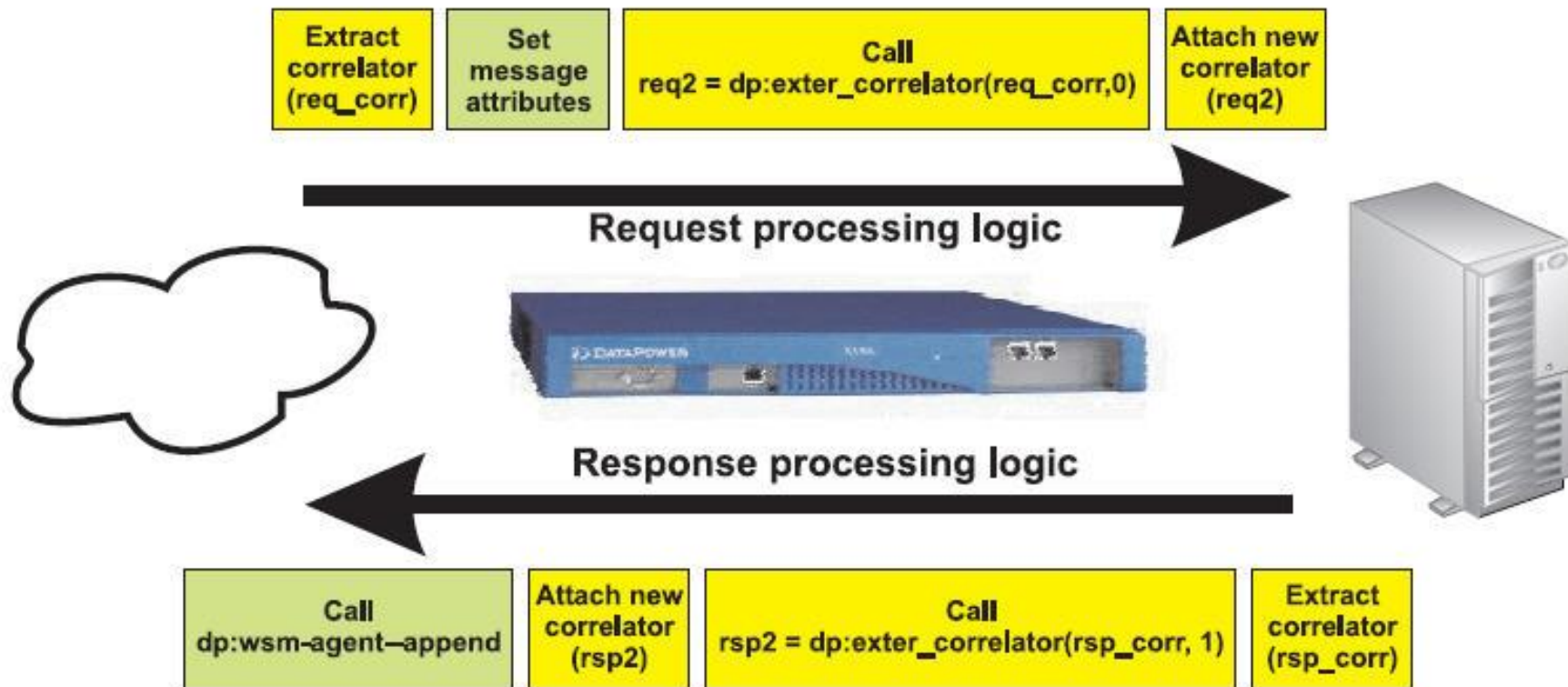
Configuring ITCAM SOA

- ITCAM for SOA provides the **Data Collector Configuration Utility** to simplify the enabling and disabling of data collection for many of the supported runtime environments.

- You start the Data Collector Configuration Utility by running the ConfigDC script, located in the *<ITCAM4SOA_Home>*/KD4/bin

- Running the ConfigDC script with the **-console** option starts the Data Collector Configuration Utility in the command window, if you prefer to use that over the default graphical user interface.

  - DataPower Host Name: mydatapower.xx.yy.com
  - DataPower user ID: admin
  - DataPower password: mypw
 - DataPower Domain List:
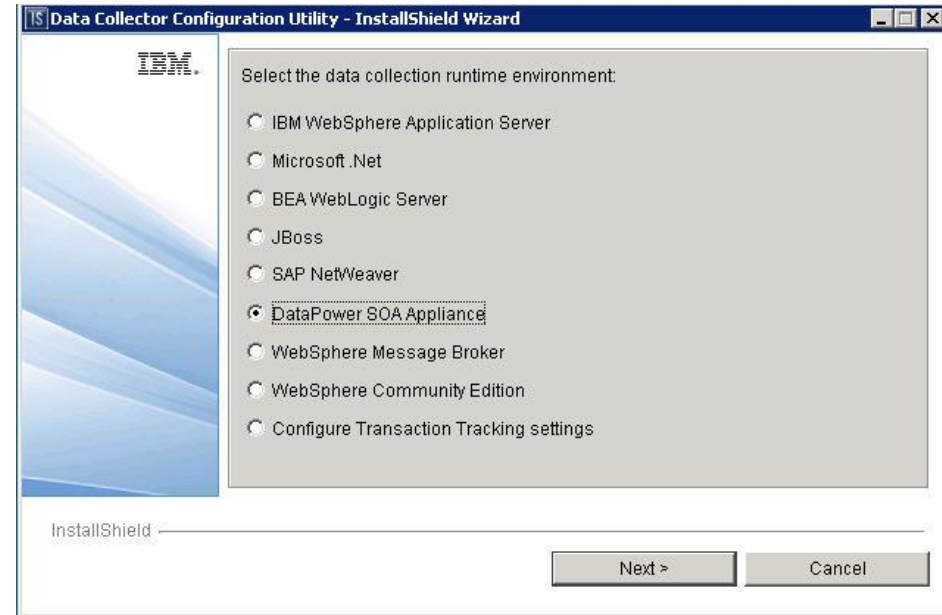
Configuring ITCAM SOA

- Check your configuration
  - View KD4.dpdcConfig.properties

        # Sample DataPower data collector configuration file
        DataPower.count=2
        #
        DataPower.host.1=dpbox1
        DataPower.port.1=5550
        DataPower.path.1=/
        DataPower.poll.1=60
        DataPower.user.1=admin
        DataPower.encpswd.1=#$%*&
        DataPower.domainlist.1=default,testdom1
        #
        DataPower.host.2=dpbox2
        DataPower.port.2=5550
        DataPower.path.2=/
        DataPower.poll.2=30
        DataPower.user.2=user1
        DataPower.encpswd.2=&*%$#
        DataPower.domainlist.2=userdom1,userdom2,userdom3

Testing and monitoring - DataPower

- Send four requests to your DataPower appliance
- Check the WSM buffer
  - Choose Status > Web Service > WSM Agent Status
  - Status is 4 records seen, 4 complete records
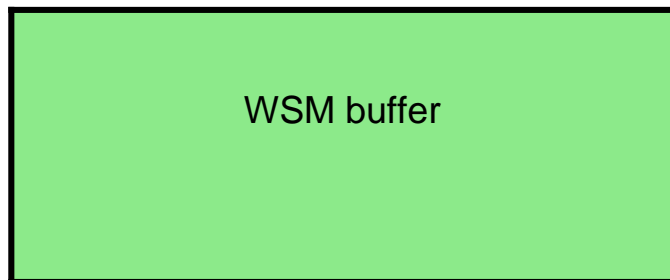
WSM buffer		
Active Subscribers	0
Records Seen	4
Records Lost	0
Pending Records	0
Complete Records	4

Testing and monitoring - DataPower

- Records seen: total lost + complete
- Records lost: discarded when the buffer was full
- Complete records: ready for data collection
- Pending records: requests awaiting a server response
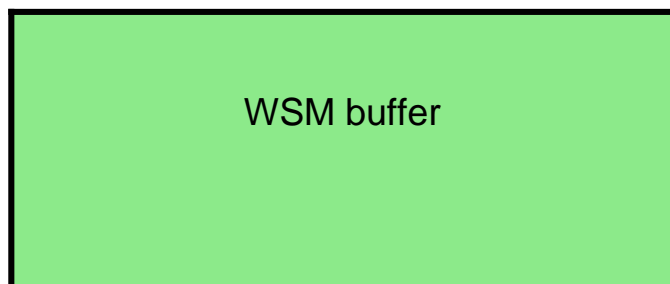
WSM buffer		

Active Subscribers	0
Records Seen	4
Records Lost	0
Pending Records	0
Complete Records	4

Testing and monitoring - DataPower

- Start ITCAM SOA data collector
  - ./startDPDC.sh –background

- Refresh the DataPower WSM Agent Status

- Active Subscribers: will increase from zero to one
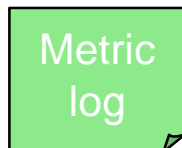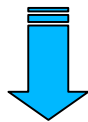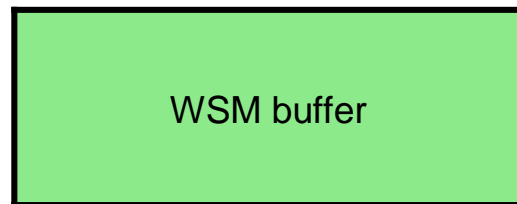
- Complete records: will change from four to zero
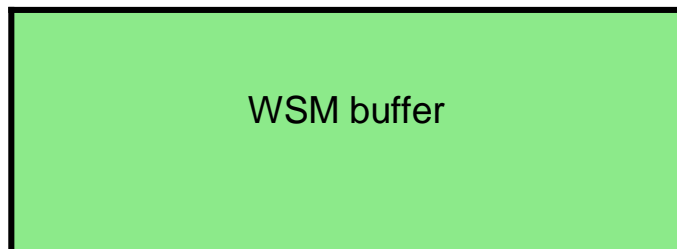
WSM buffer

Active Subscribers	1
Records Seen	4
Records Lost	0
Pending Records	0
Complete Records	0
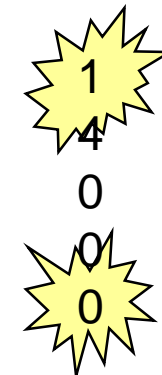
Testing and monitoring – ITCAM SOA

- On the ITCAM SOA data collector, check for records in the metric log

- View KD4.8.mydatapowerhost.mydomain.metric.log

WSM buffer

Metric log

3;1258493501000;4e6876b8-697d-7203-b7dc-91d1603d40ef;2;0;1;

{http://samples}Hello;{http://samples}sayHello;1;1;0;1;0;;

d0fb1e8d-cca6-3cfb-568c-86848e9bac97;;;;1;

"0x01130006";"Failed to establish a backside connection"
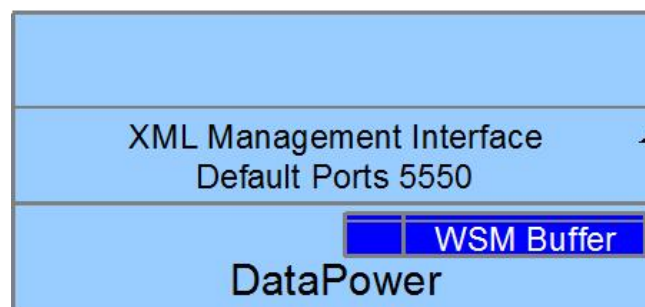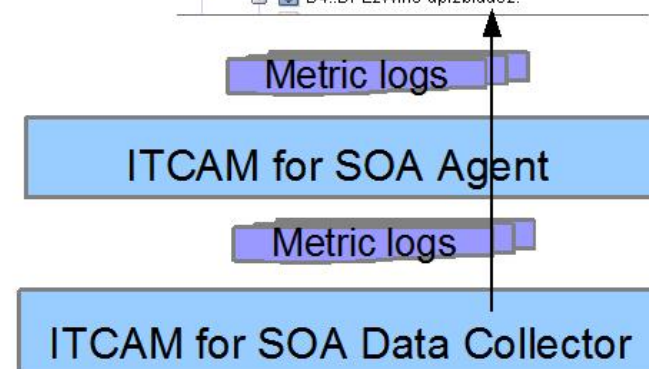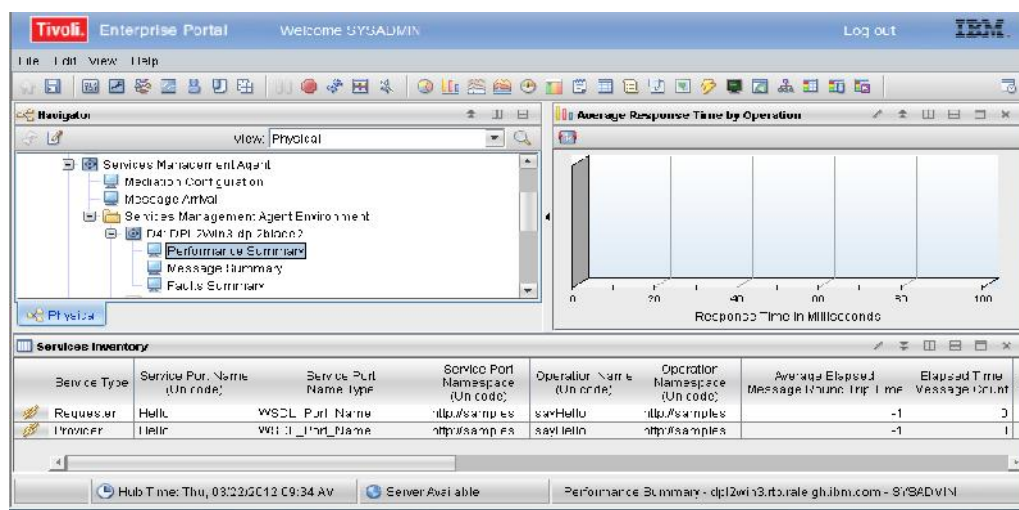
Testing and monitoring – ITCAM SOA

- Look for your data in the Tivoli Enterprise Portal (TEP)

Service Performance Summary in ITCAM for SOA
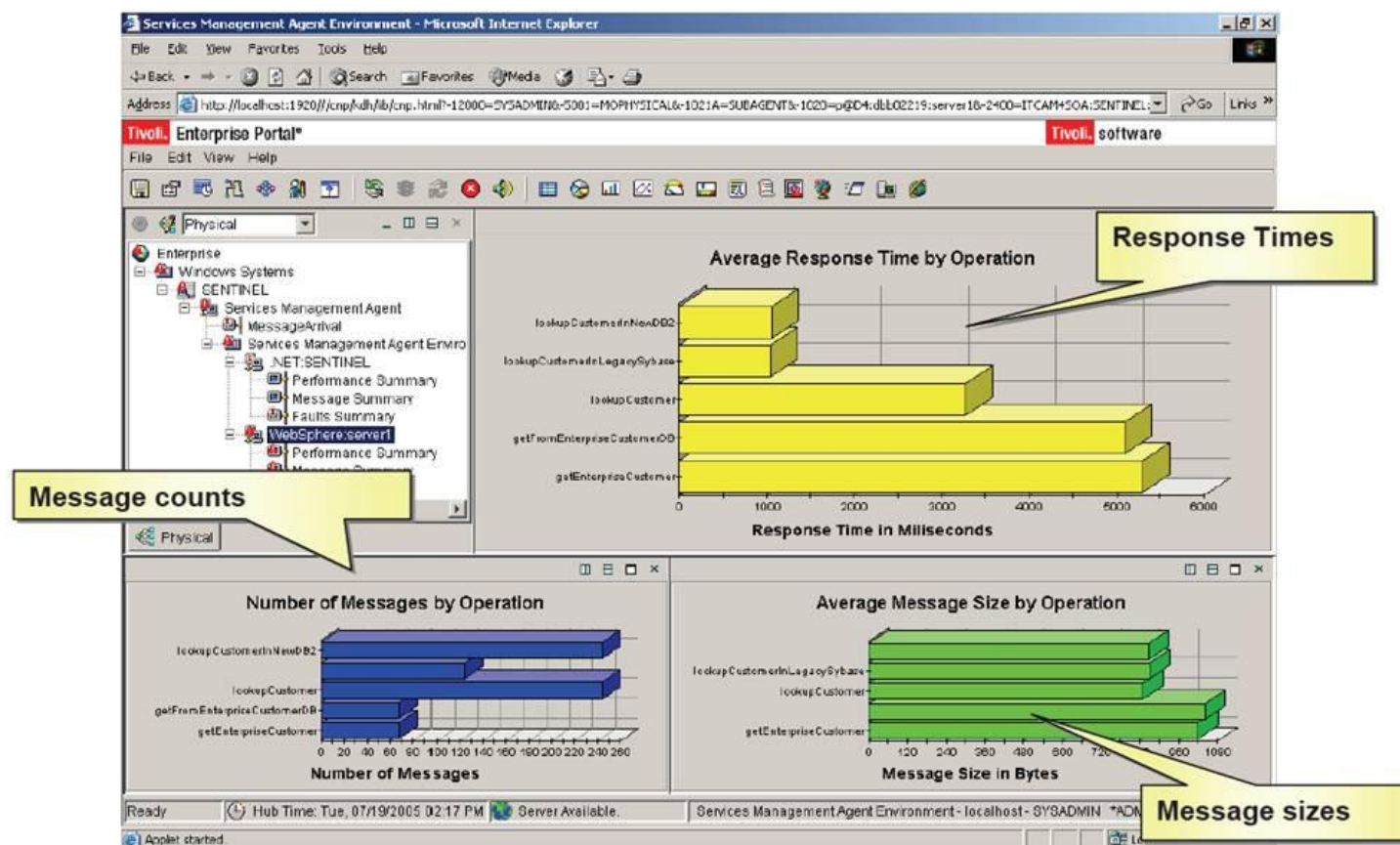
# Troubleshooting - Services Data not displaying in TEP

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
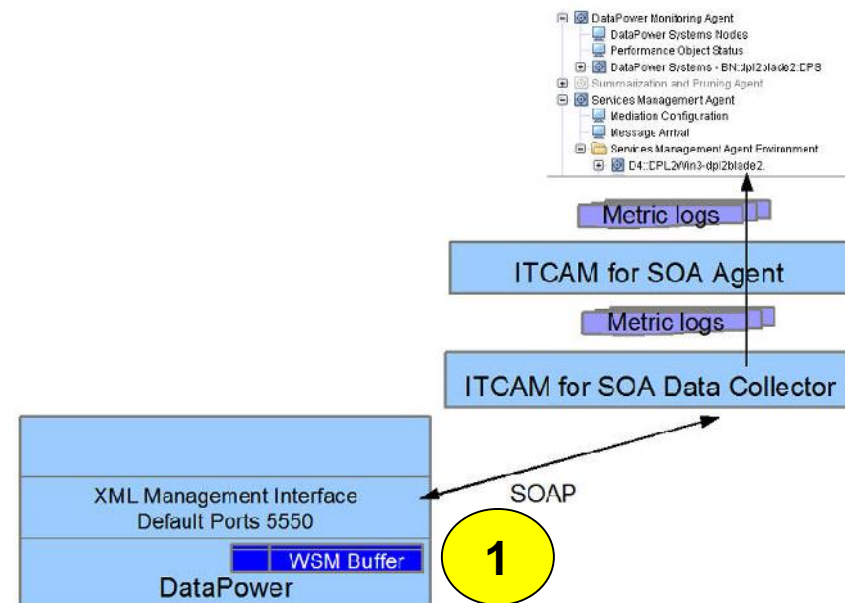
Step 1 – WSM buffer issues

- 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
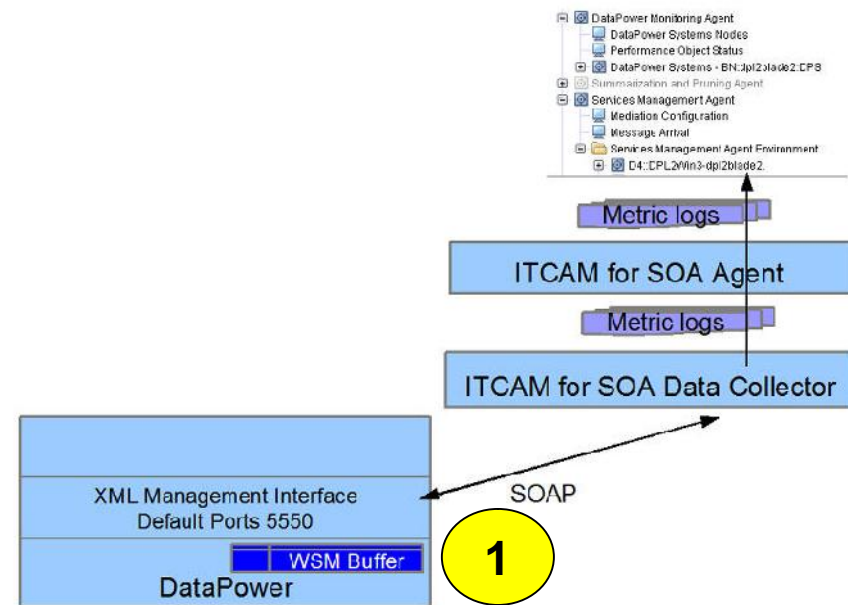
Step 2 – data collection

- 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
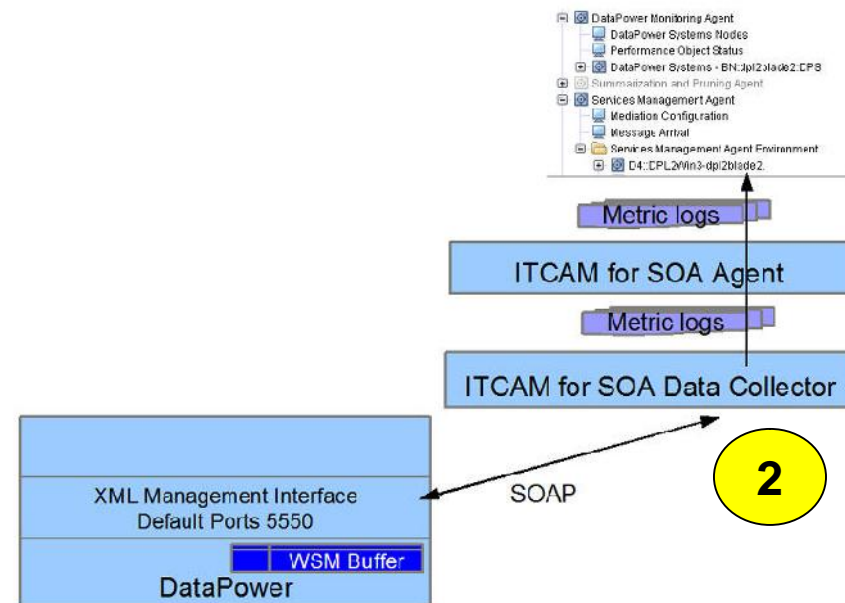
Step 2 – data collection issues

- Active Subscribers is 0
  - ITCAM for SOA Data Collector is not started
  - ITCAM for SOA logs contain connection errors

- Active Subscribers is greater than 1
  - Stop the agent: subscriber count will decrease within 30 minutes
  - Reload DataPower firmware to avoid 30 minute wait
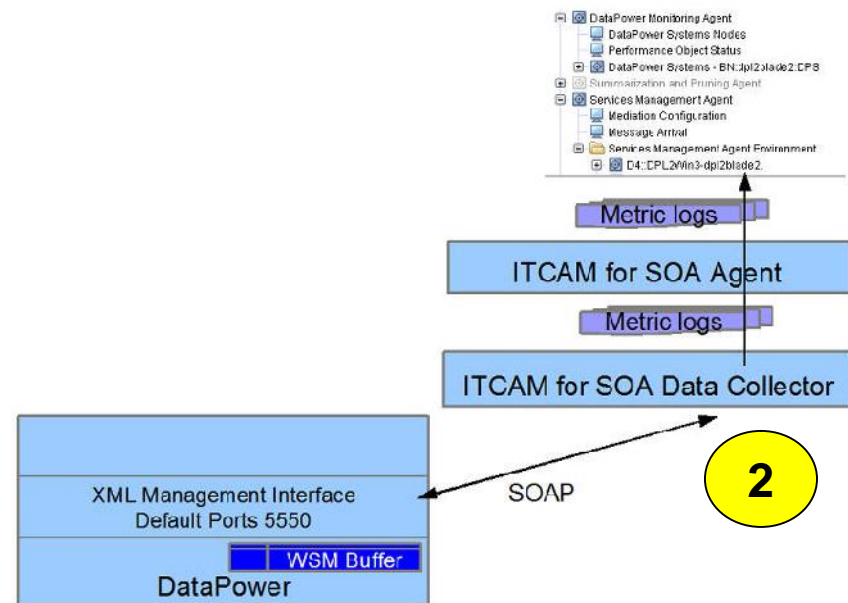
Step 3 – metric data created

- 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
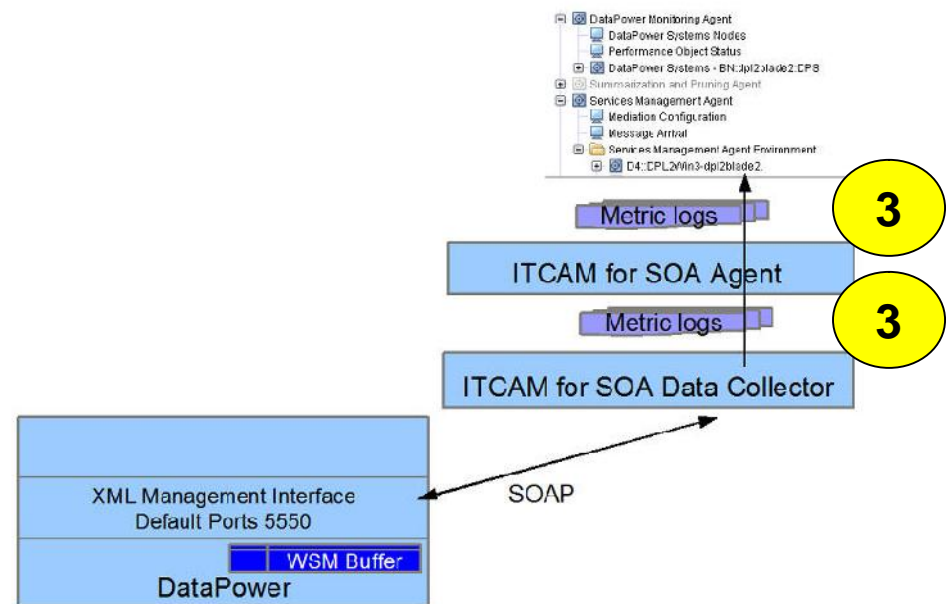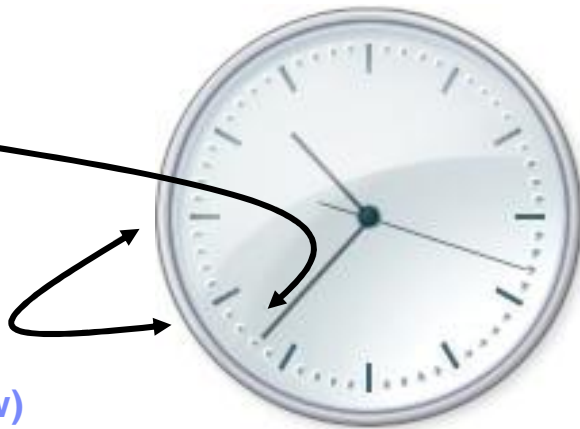
Step 4 – data in TEP – wait for it

- From step 1: Send your test transaction; **note the time**
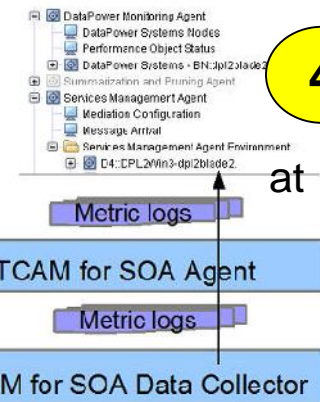
A 10:37 transaction

will display in

TEP from

10:40 to 10:44:59 **(5 min window)**

Traffic at 10:37

at 10:40

4

DataPower Monitoring Agent
 DataPower Systems Nodes
 Performance Object Status
 DataPower Systems - BN::dpl2blade2
 Summarization and Pruning Agent
 Services Management Agent
  Mediation Configuration
  Message Arrival
  Services Management Agent Environment
   D4::DPL2Win3-dpl2blade2.

Metric logs

ITCAM for SOA Agent

Metric logs

ITCAM for SOA Data Collector

XML Management Interface
Default Ports 5550

WSM Buffer

DataPower

SOAP

Step 4 – possible issue - synchronize clocks

- From an SSH session on mydatapower type: **show clock**

- Data collector and agent system time
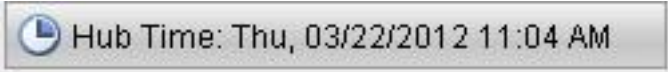
- TEP HUB time   Hub Time: Thu, 03/22/2012 11:04 AM

- 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

- Integration mechanism for DataPower and ITCAM SOA

- Monitor the WSM buffer to test DataPower and ITCAM SOA integration

- There are four steps in the process that displays DataPower service metrics in TEP

- Resources
  - IBM® WebSphere DataPower SOA Appliances Part IV: Management and Governance http://www.redbooks.ibm.com/abstracts/REDP4366.html?Open
  - Configuring data collection: DataPower SOA Appliance http://publib.boulder.ibm.com/infocenter/tivihelp/v3r1/index.jsp?topic=/com.ibm.itcamsoa.doc/kd4inmst138.htm

Questions and Answers

Additional WebSphere Product Resources

- 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/

- Learn about other upcoming webcasts, conferences and events:
  http://www.ibm.com/software/websphere/events_1.html

- Join the Global WebSphere User Group Community: http://www.websphere.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