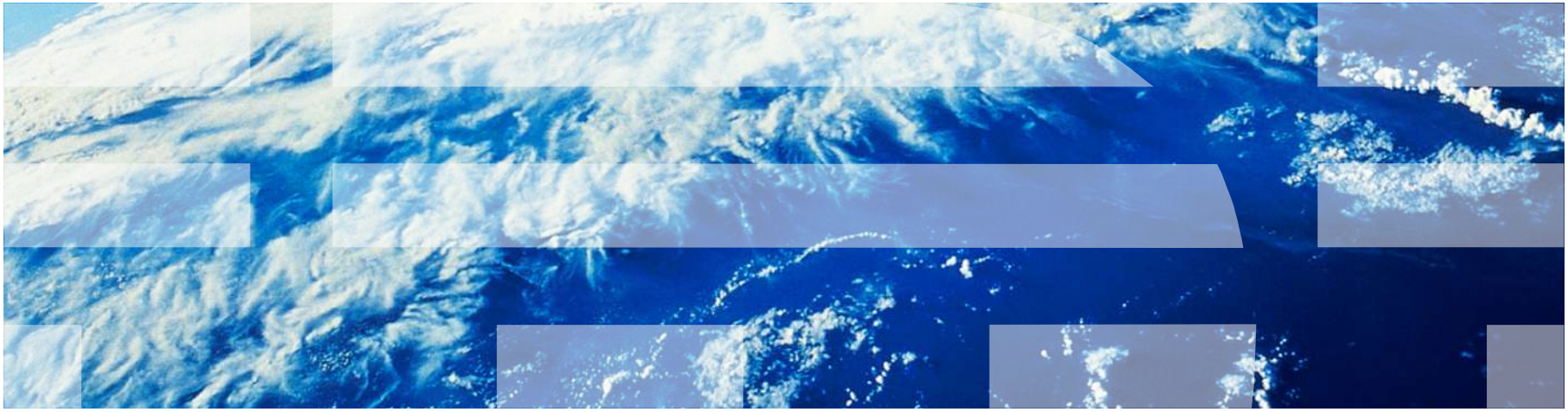
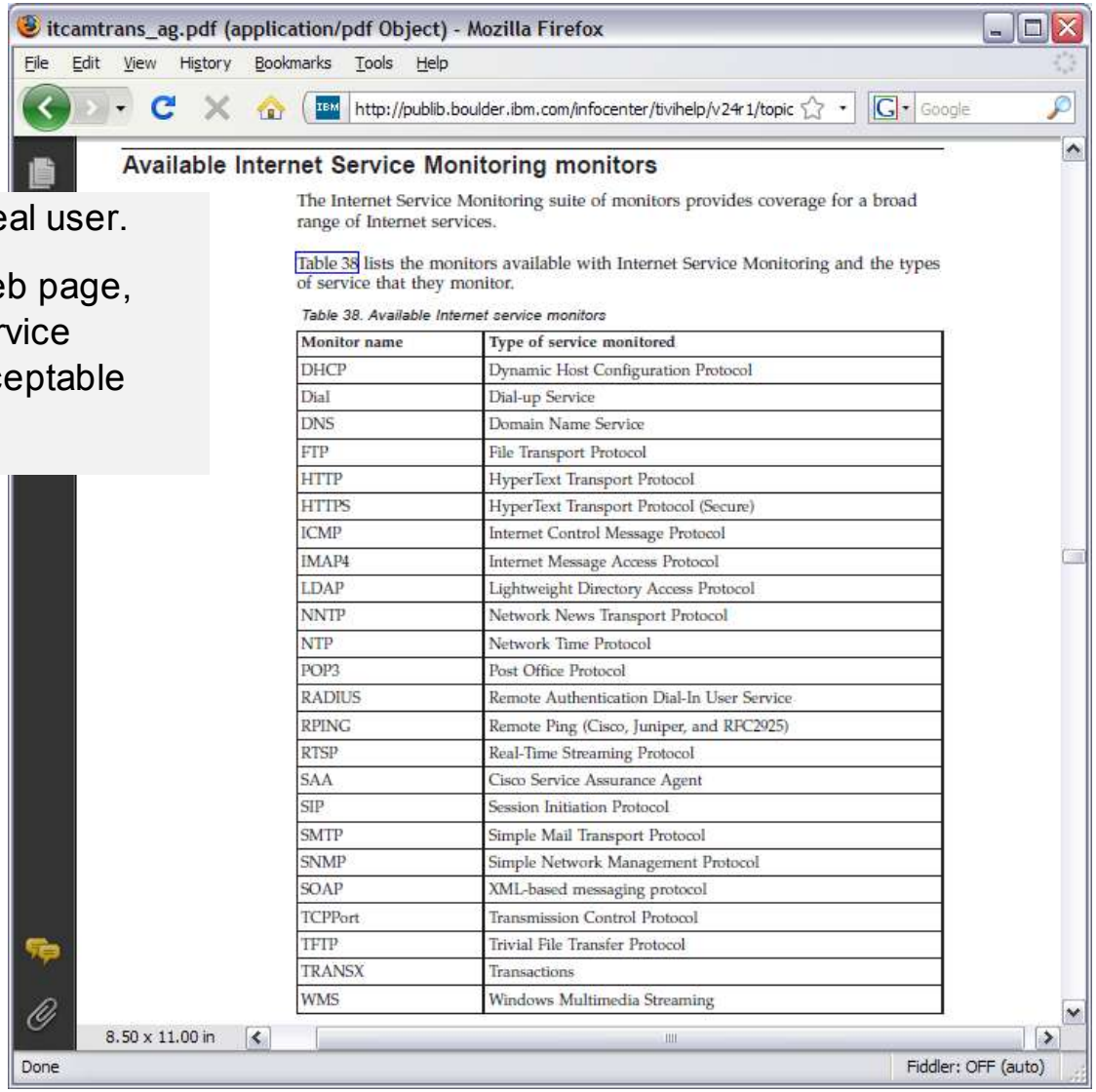
ITCAM for Transactions
Introduction to Internet Service Monitoring



What is Internet Service Monitoring?

- Works by emulating the actions of a real user.
- i.e. HTTP monitor tries to access a web page, then measures how well the HTTP service performed. Admin decides on the acceptable return values.

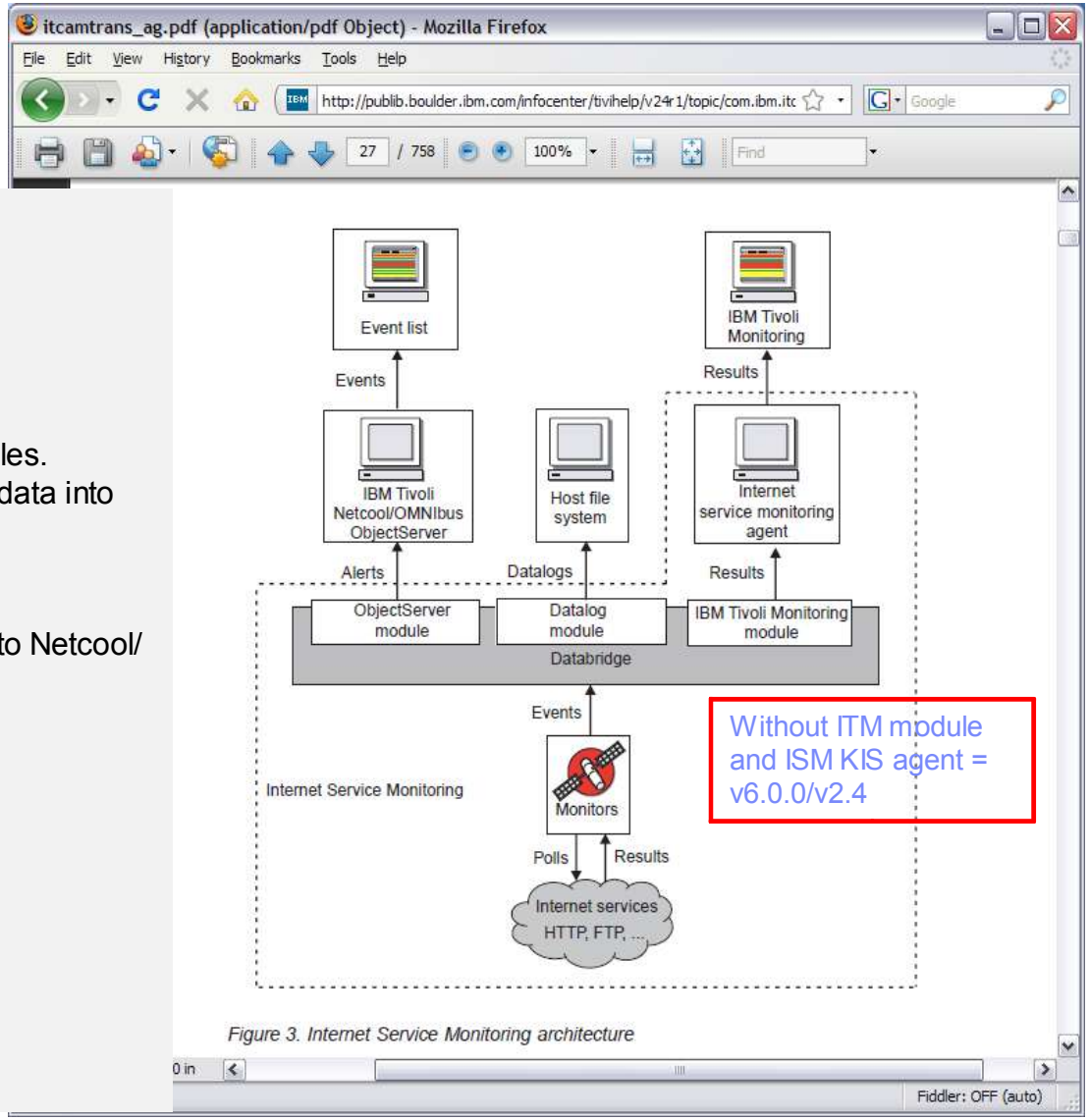


Architecture (Version 6.0.1 and Up)

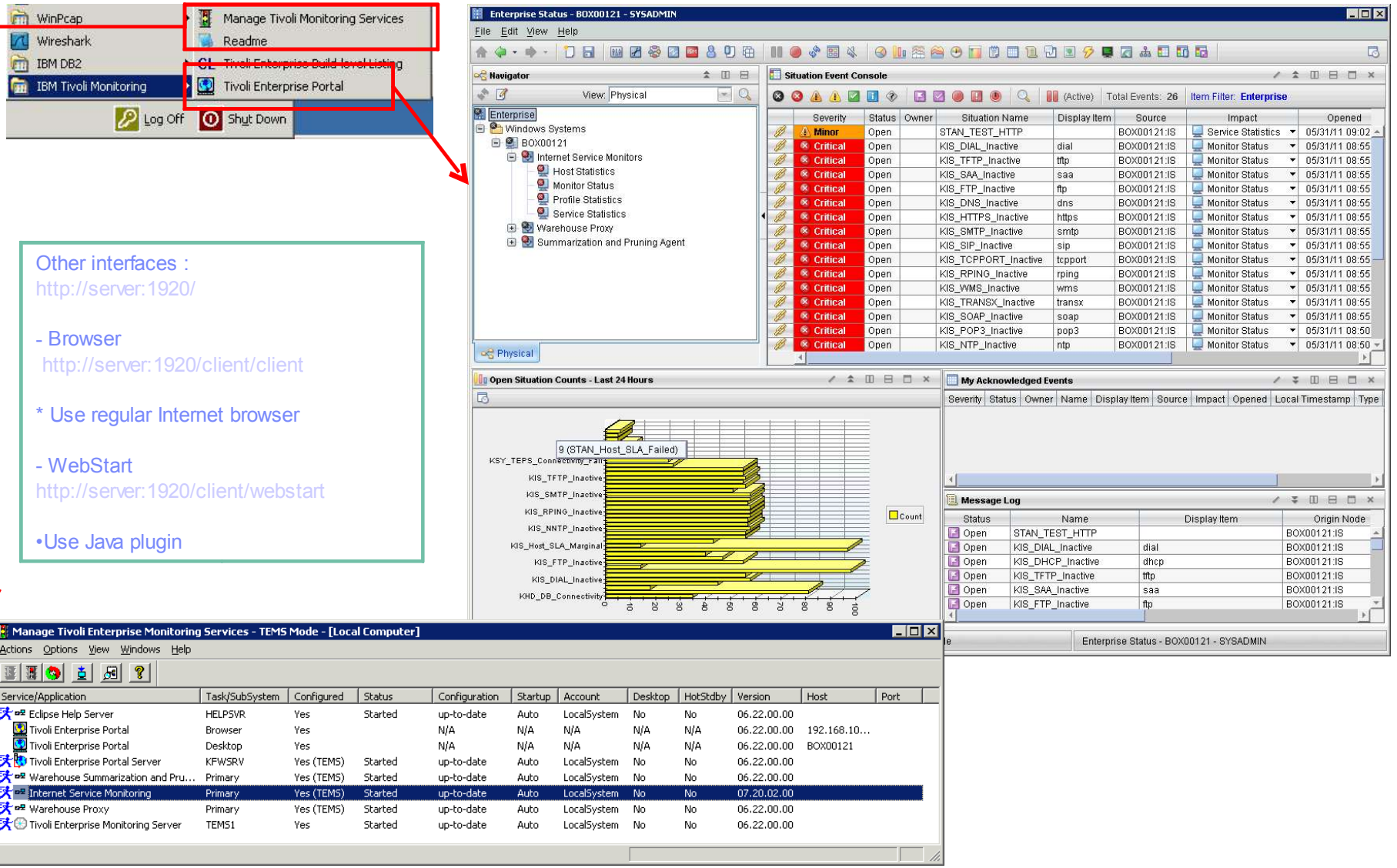
- Monitors
  - Monitors = Protocols = Elements.
  - Emulate users
  - Connects to Databridge.
- Databridge
  - Communication bus for monitors and modules.
  - Receives data from Monitors and converts data into different formats for the modules.
- Modules
  - ObjectServer - converts data and forward to Netcool/ ObjectServer as events
  - Datalogs – converts data into XML
  - KIS agent – sends results to ITM

Profiles

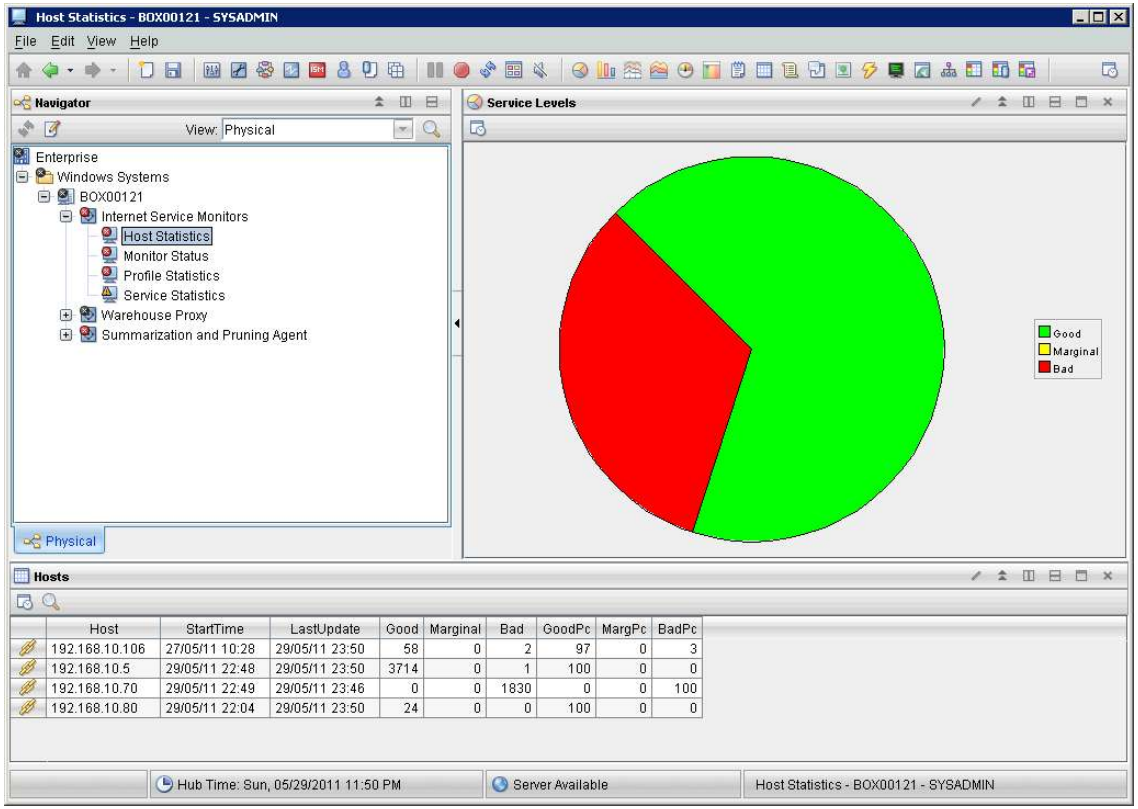
- Holds elements



TEP Interface and MTEMS Window



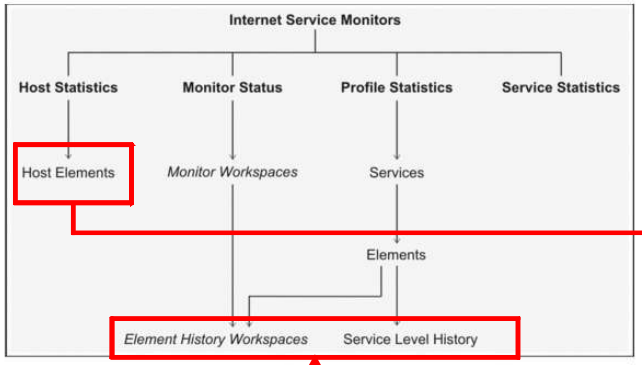
ISM Workspaces

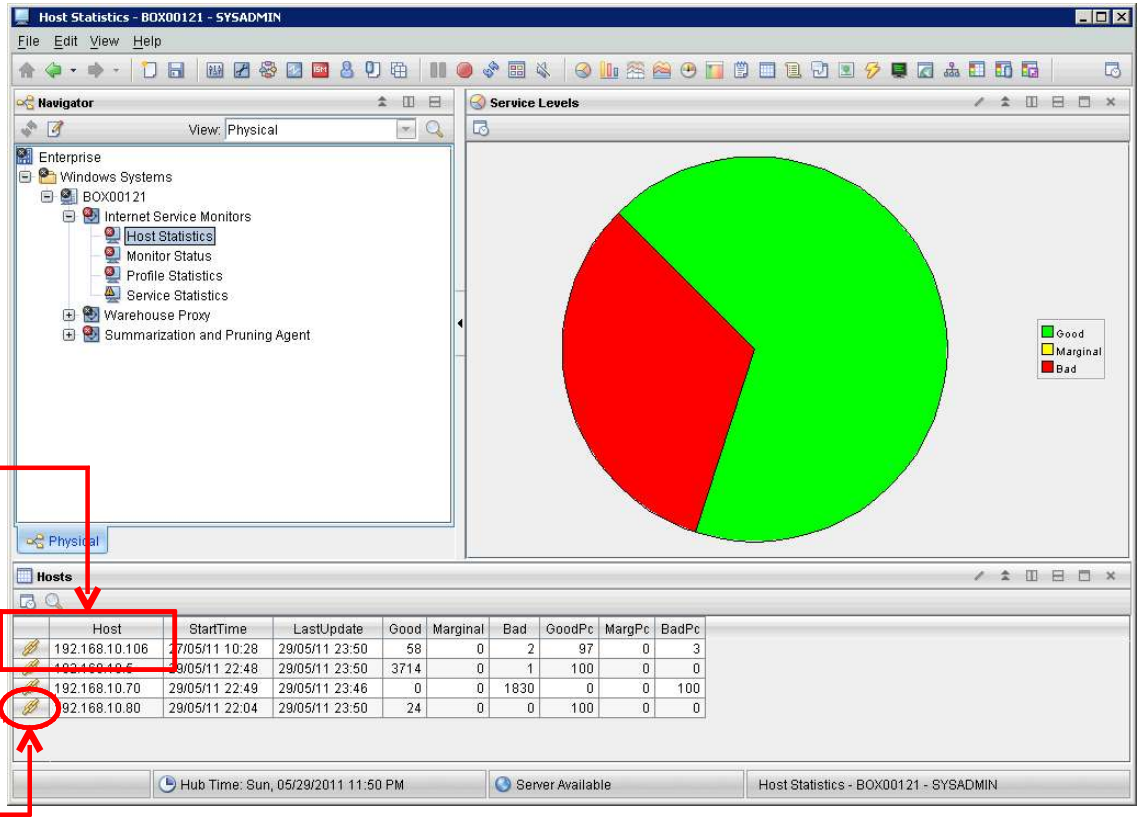


ISM Workspace / Host Statistics

- Summary of service level of host being monitored

Figure 1. Internet Service Monitoring workspaces





Configure Historical Reporting or else :

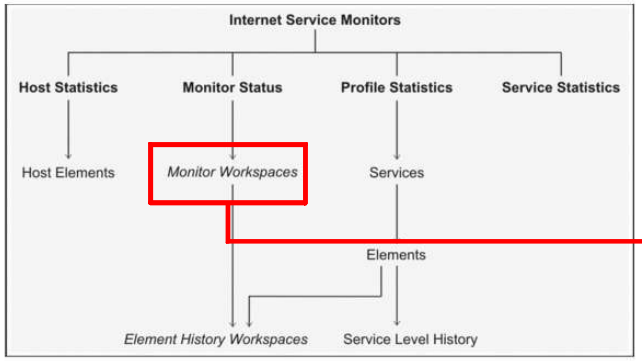
KFWITM217E request error:
sql1_openrequest failed rc=3000

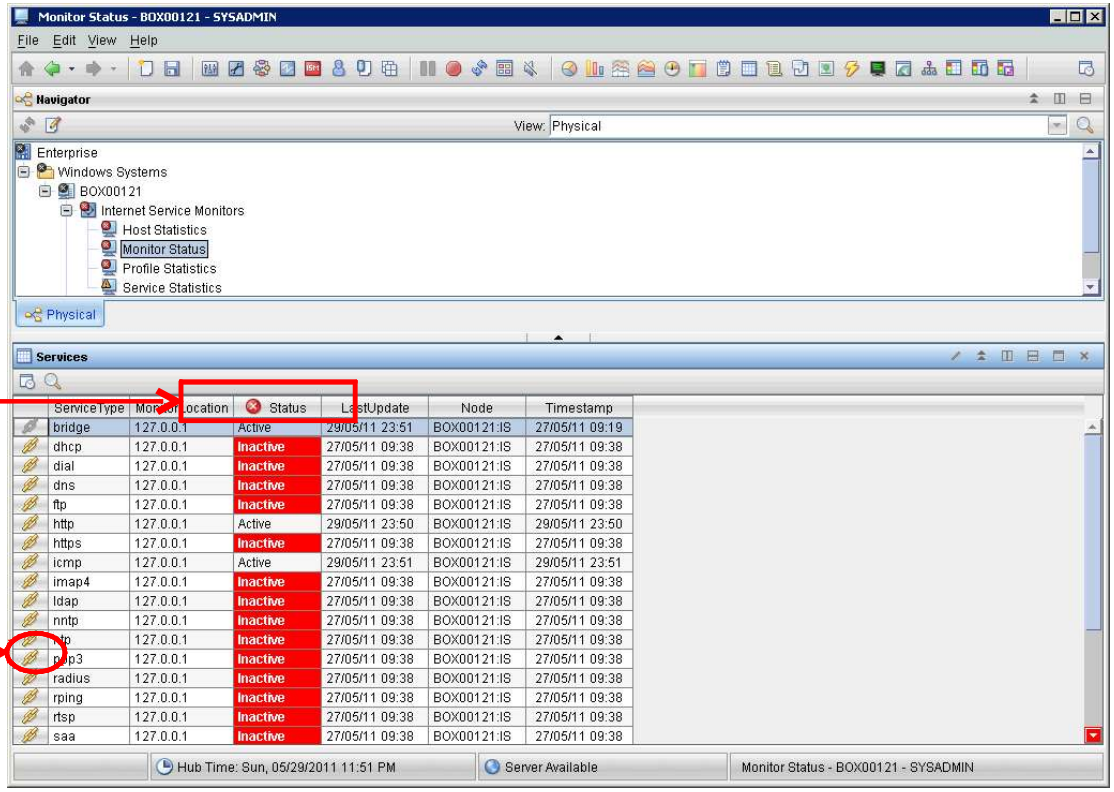
Left-Click chain to drill down

ISM Workspace / Monitor Status

- Indicates status (Inactive/Active) of monitors and bridge.

Figure 1. Internet Service Monitoring workspaces



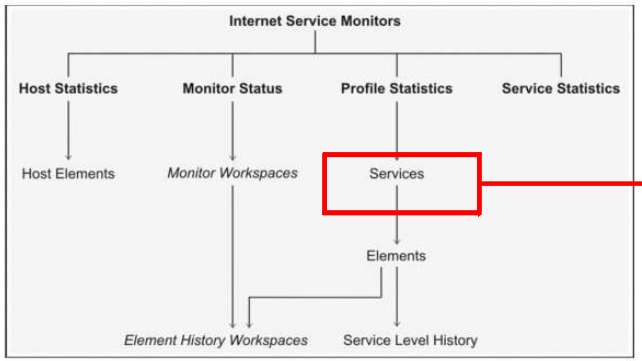


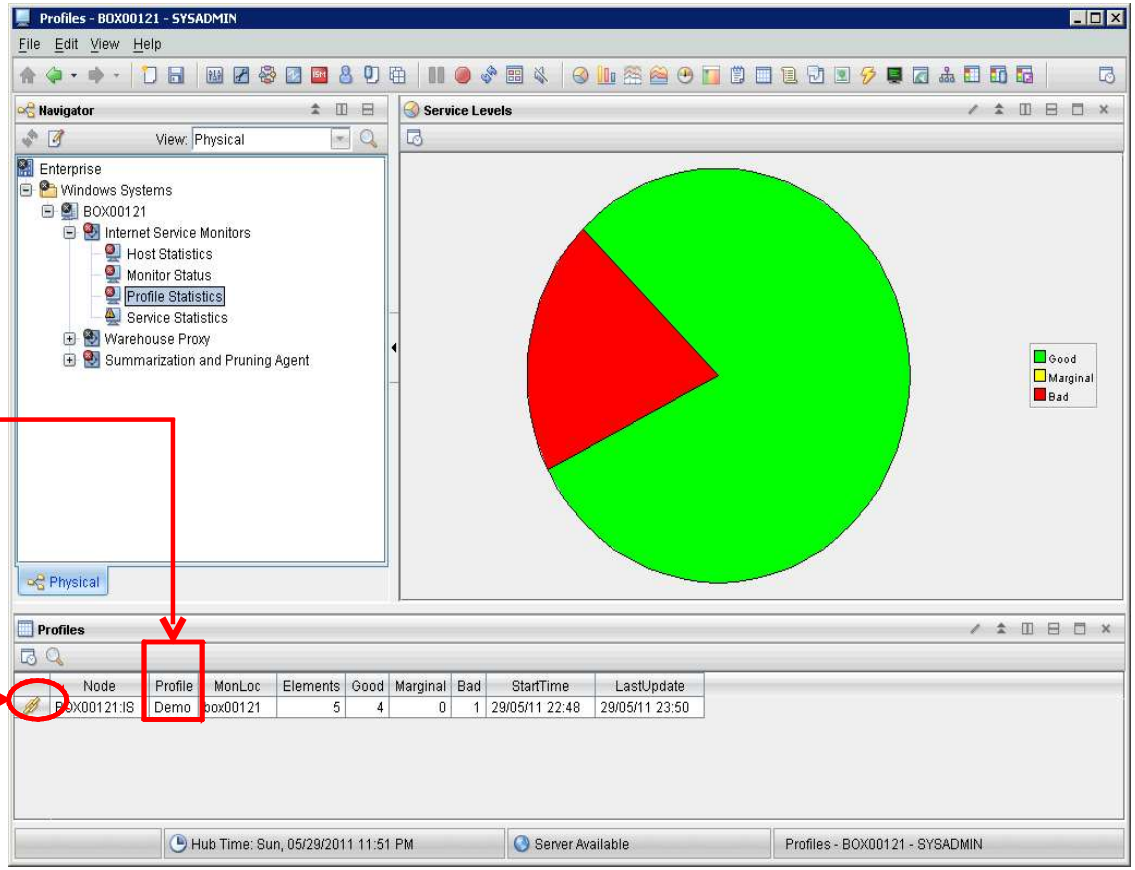
Left-Click chain to drill down

ISM Workspace / Profile Statistics

- Service level info for all profiles

Figure 1. Internet Service Monitoring workspaces



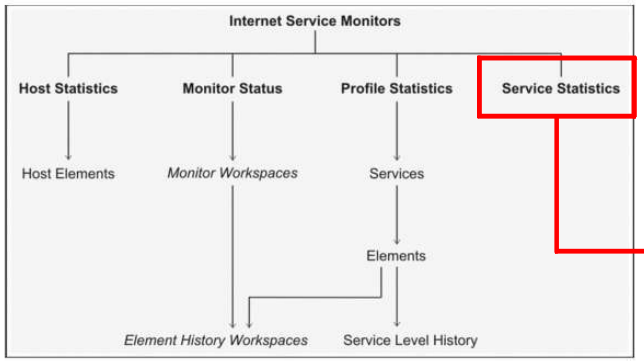


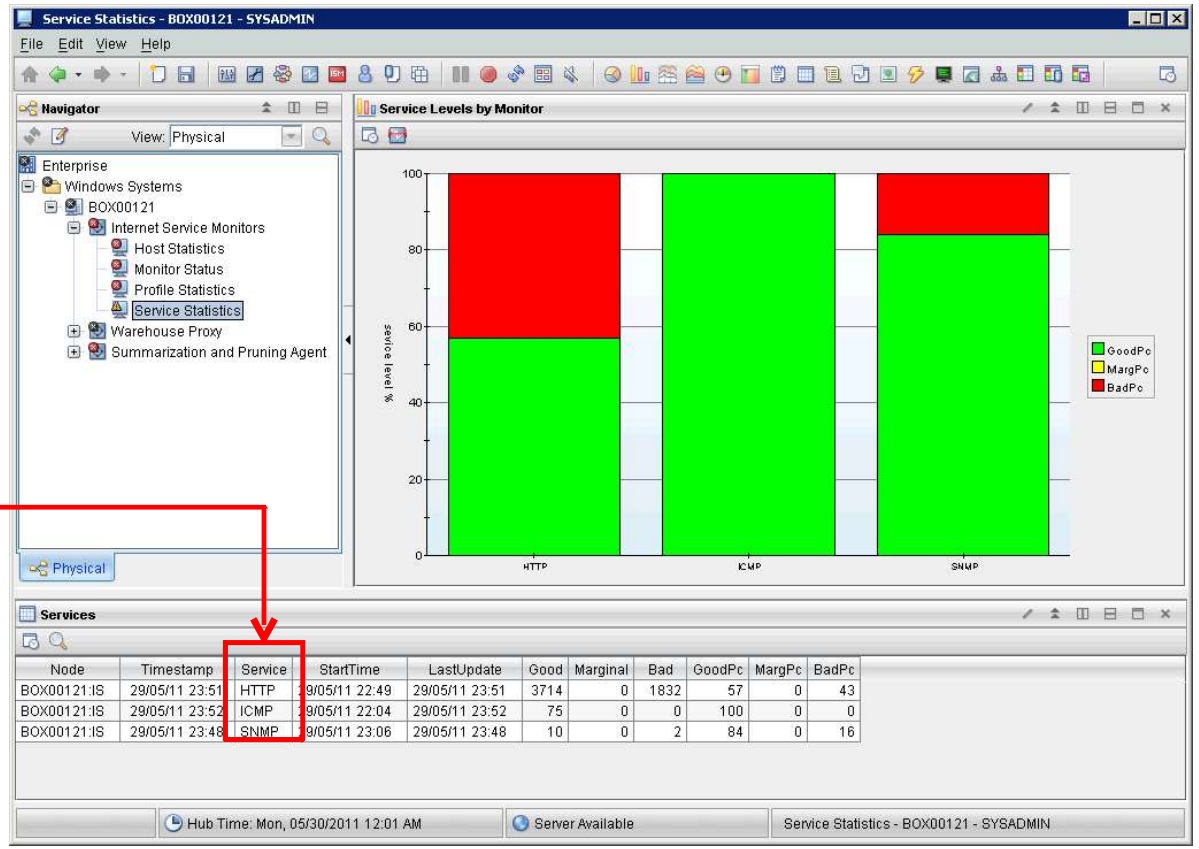
Left-Click chain to drill down

ISM Workspace / Service Statistics

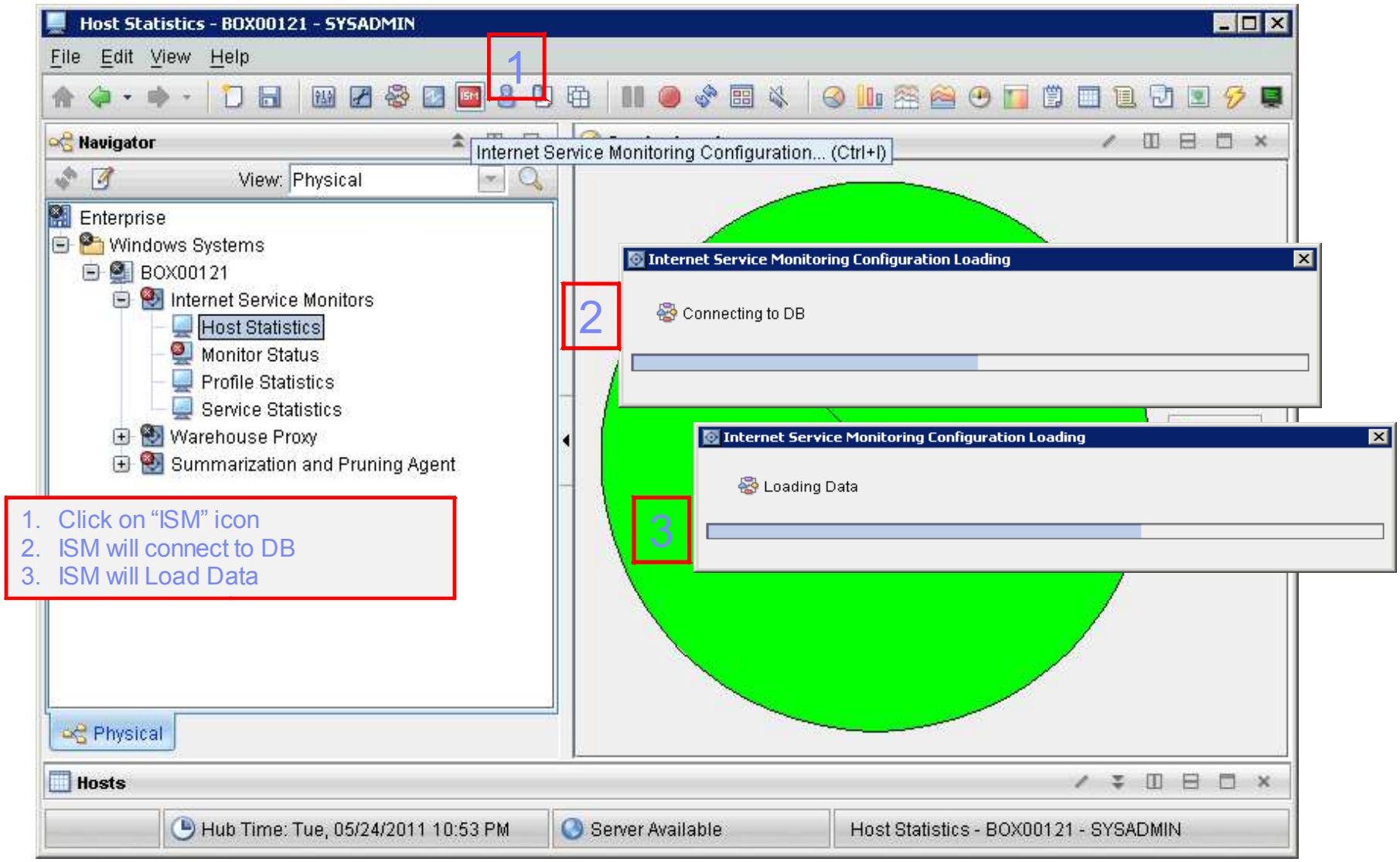
- Service level info for all monitors monitored

Figure 1. Internet Service Monitoring workspaces

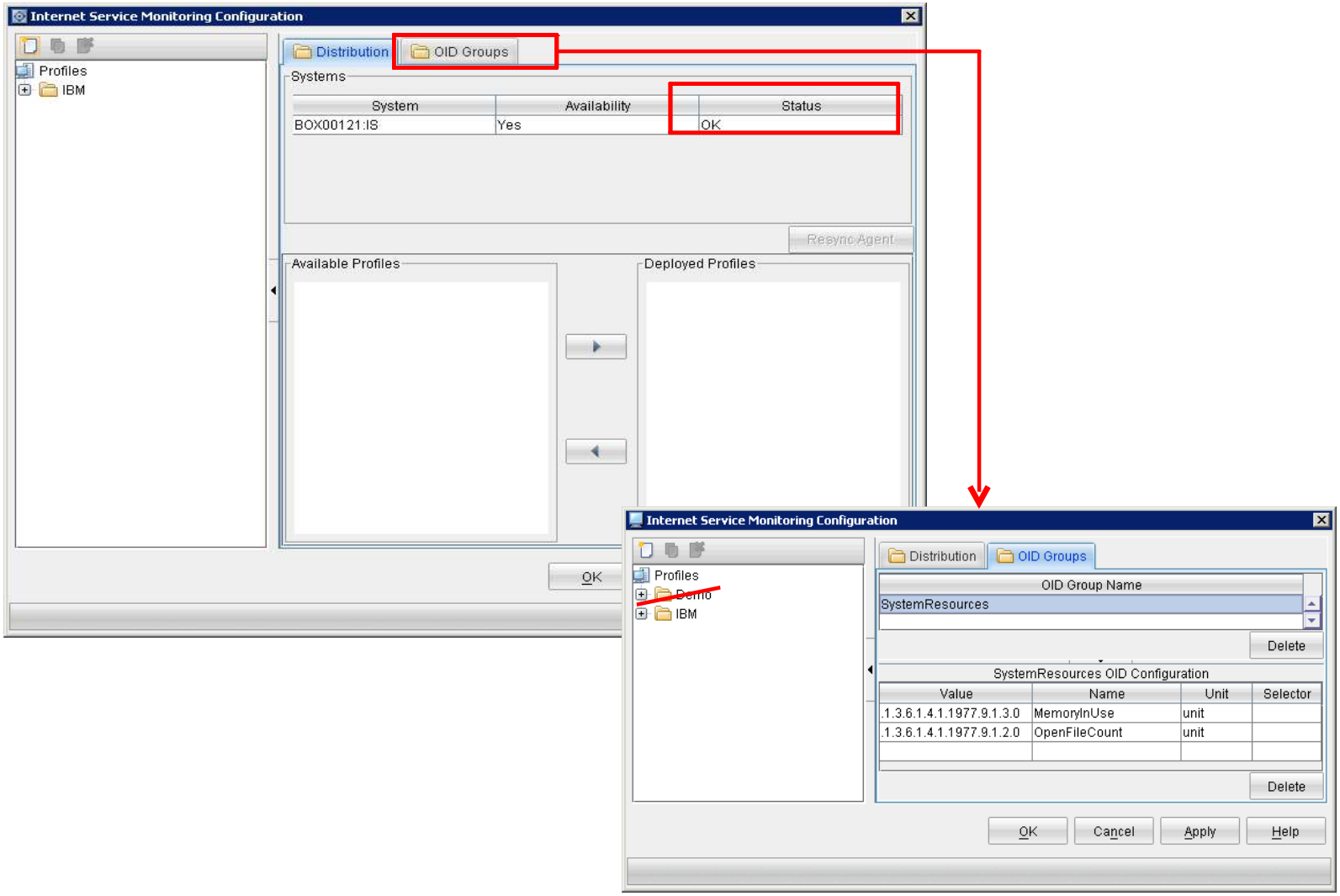




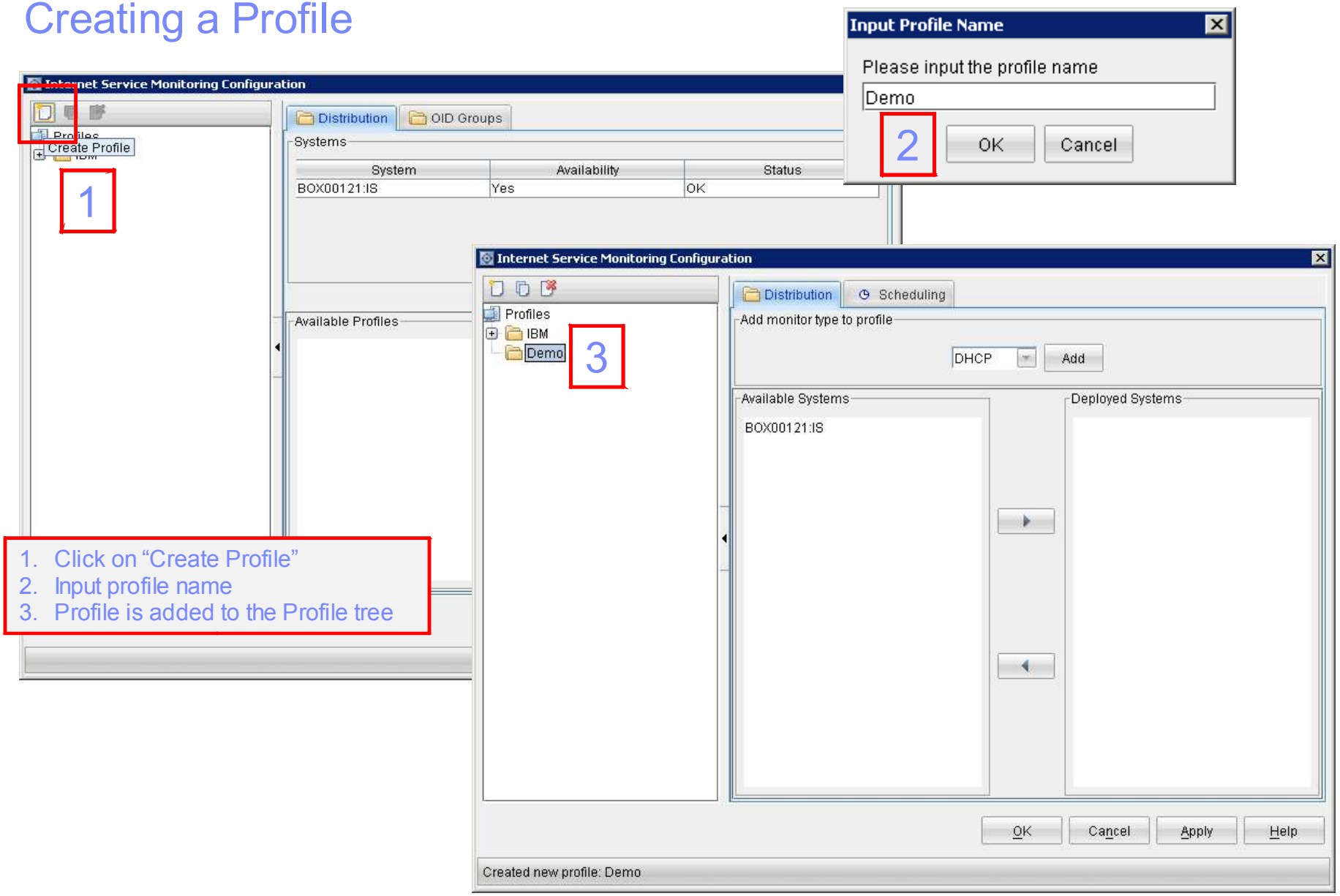
Loading ISM Configuration (Eye or ISM square icon)



ISM Configuration (Loaded)

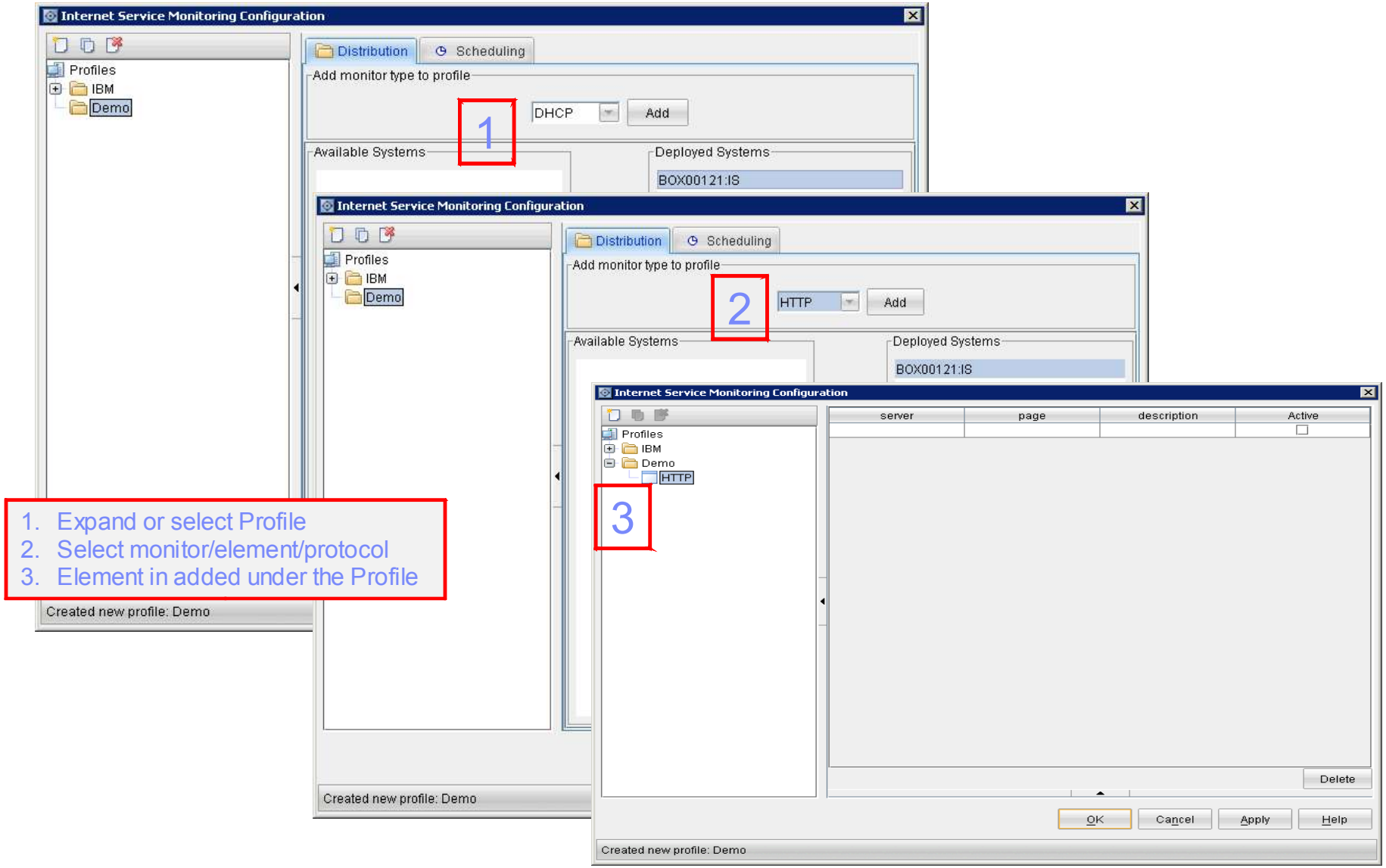


Creating a Profile



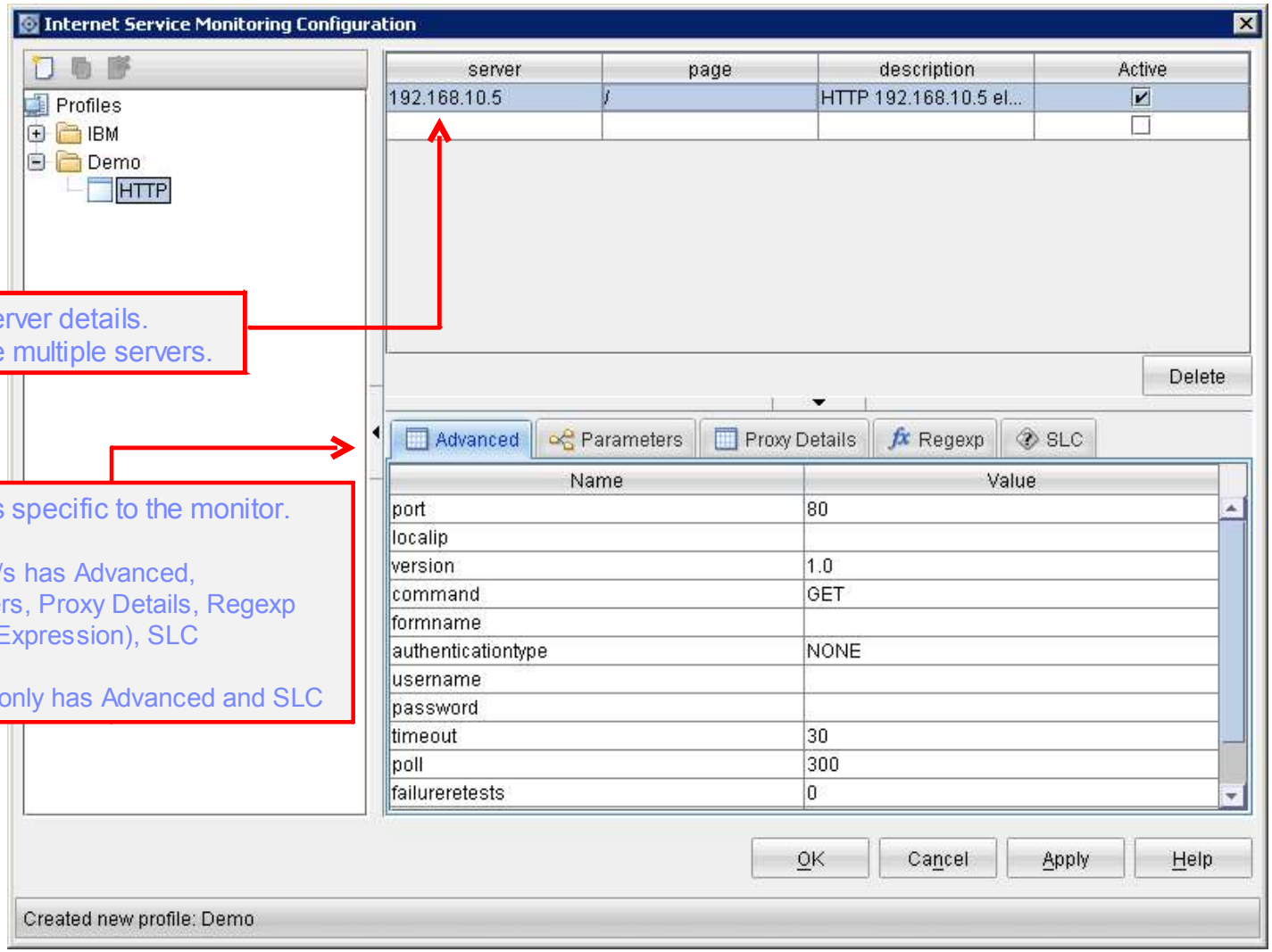
1. Click on “Create Profile”
2. Input profile name
3. Profile is added to the Profile tree

Creating an Element



1. Expand or select Profile
2. Select monitor/element/protocol
3. Element in added under the Profile

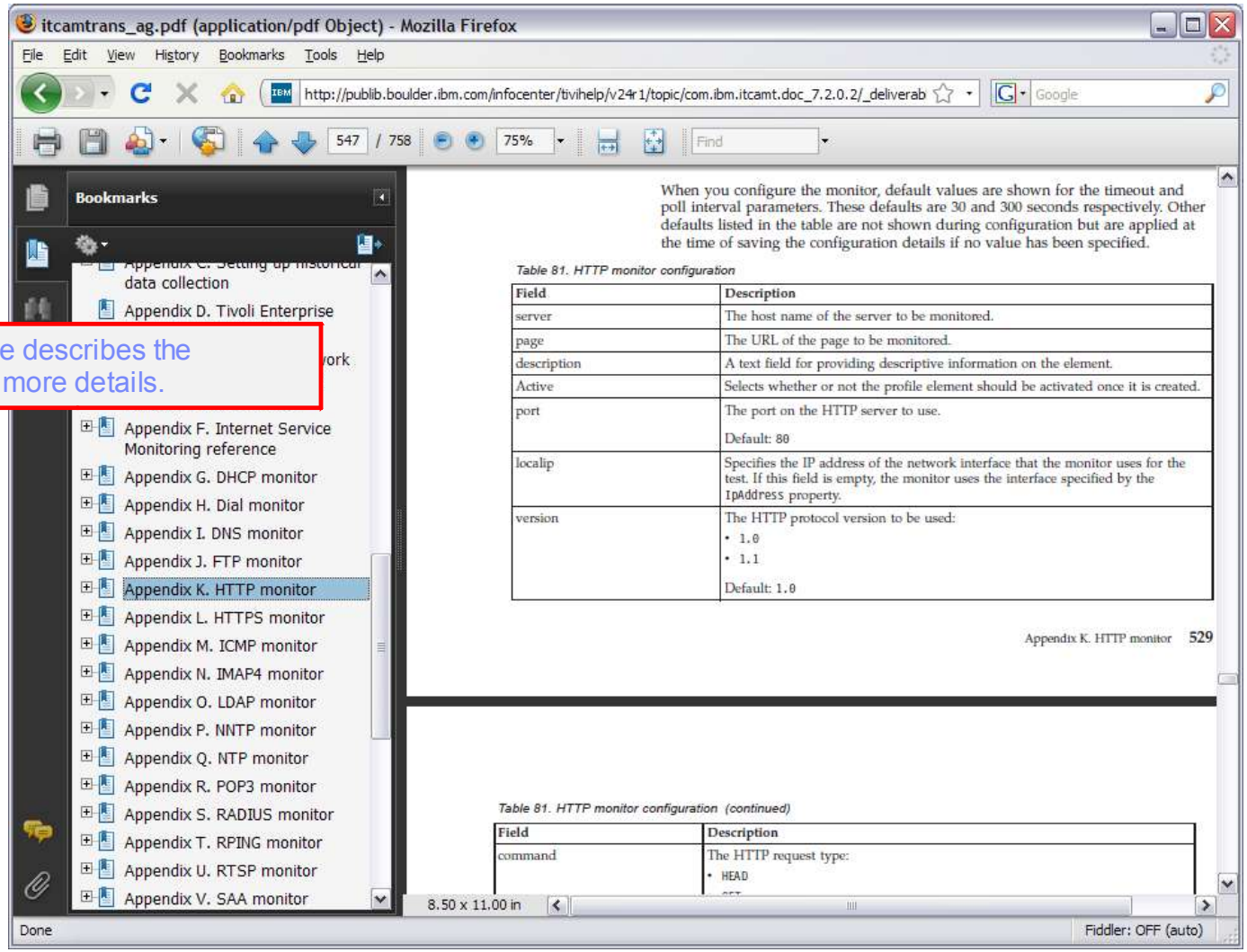
Sample Element / HTTP - Advance tab (or other tabs)



Sample Element / HTTP - Reference on the attributes

http://publib.boulder.ibm.com/infocenter/tivihelp/v24r1/topic/com.ibm.itcamt.doc_7.2.0.2/_deliverables/itcamtrans_ag.pdf

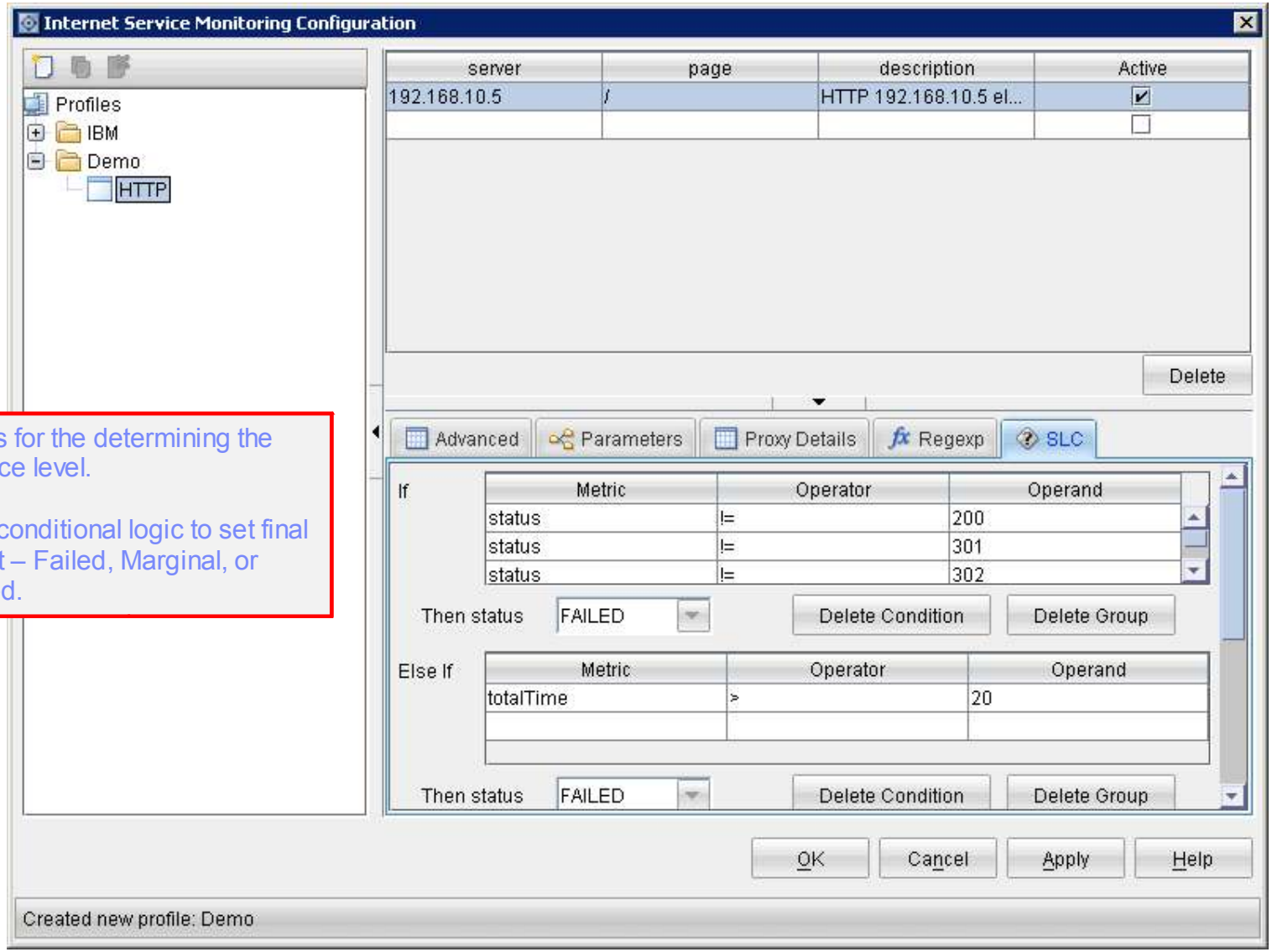
Admin Guide describes the attributes in more details.



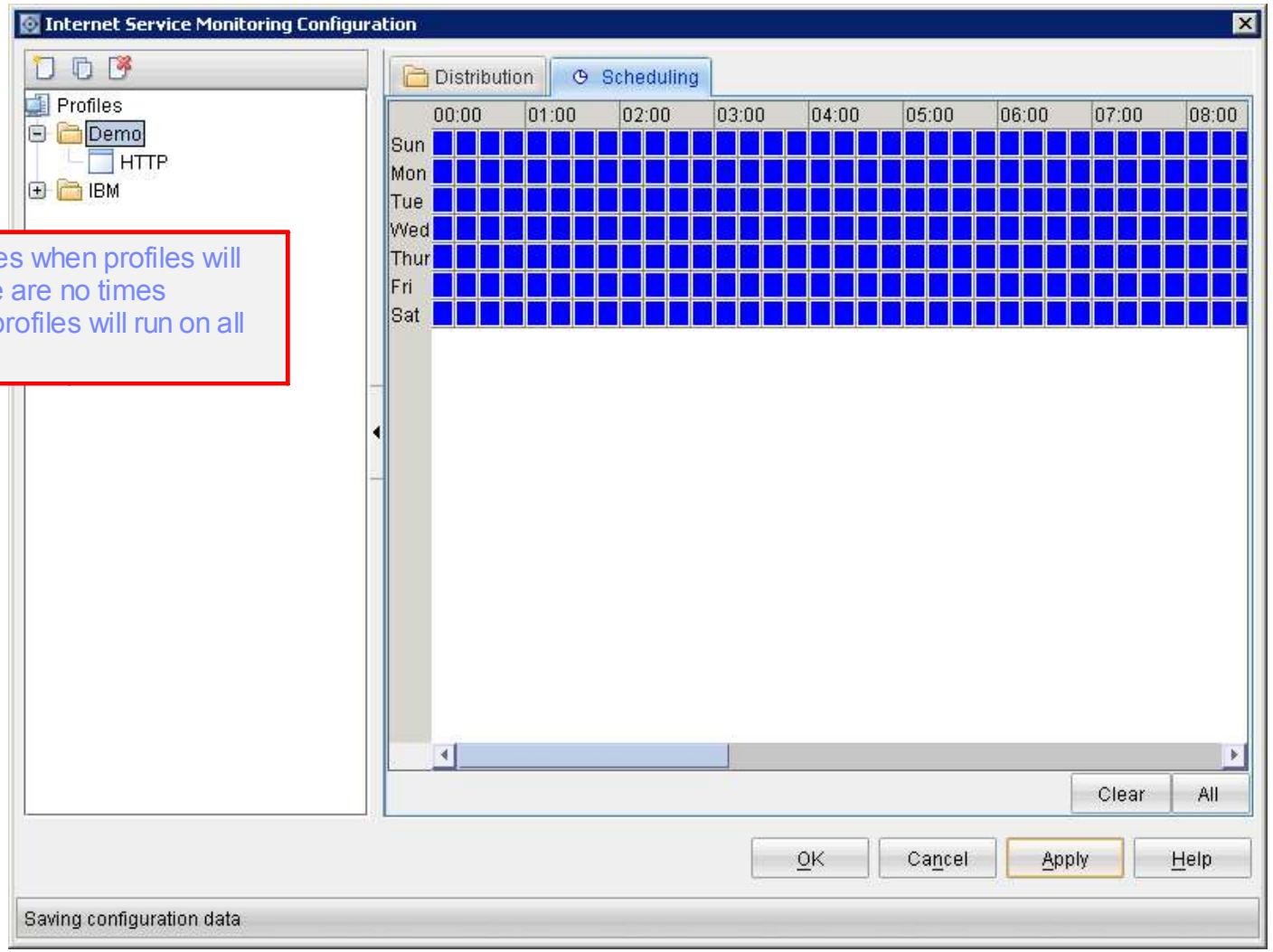
Sample Element / HTTP - Service Level Classification tab

Rules for the determining the service level.

Use conditional logic to set final result – Failed, Marginal, or Failed.

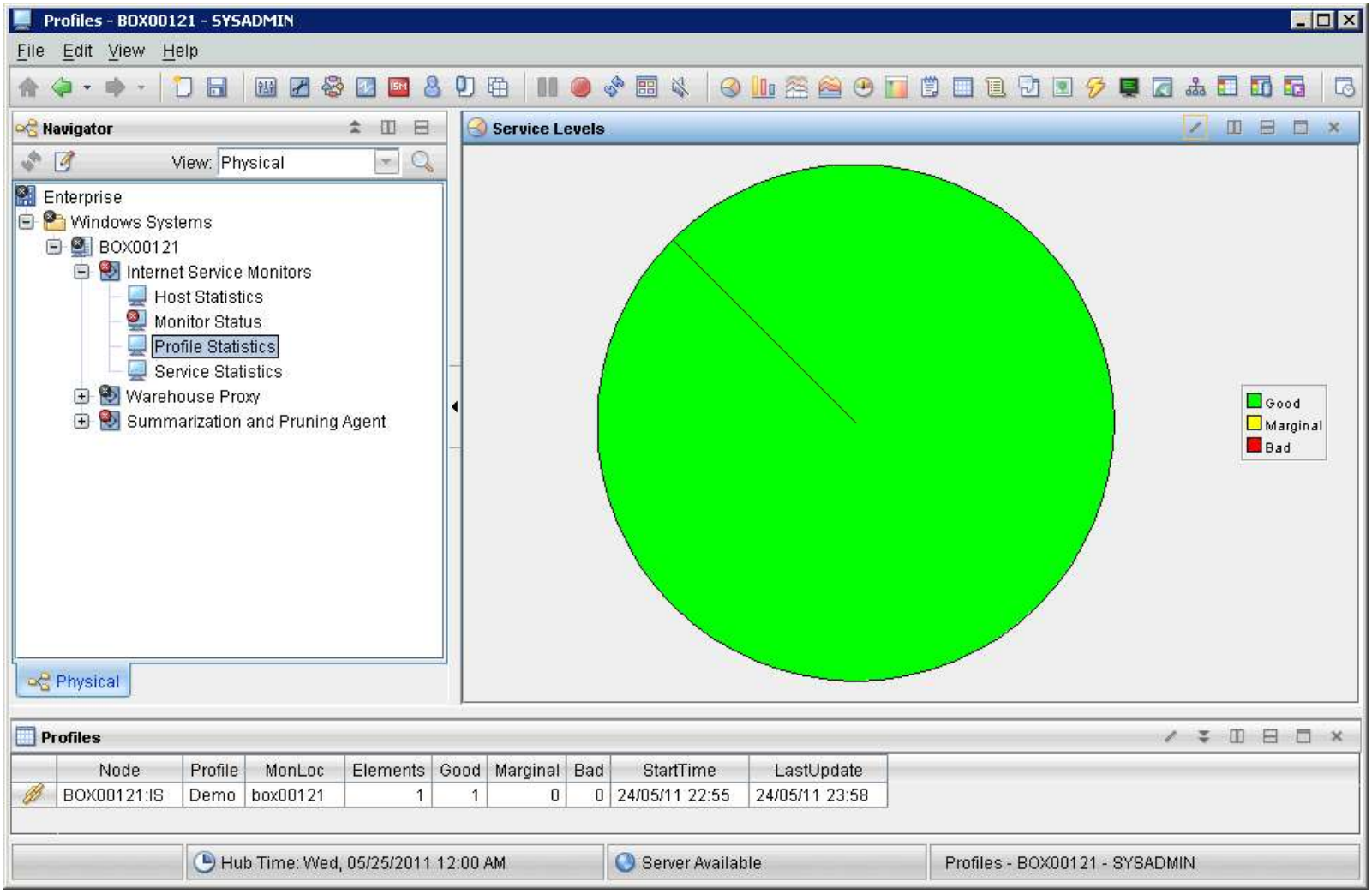


Sample Element / HTTP - Profile Scheduling



Select times when profiles will run. If there are no times selected, profiles will run on all times.

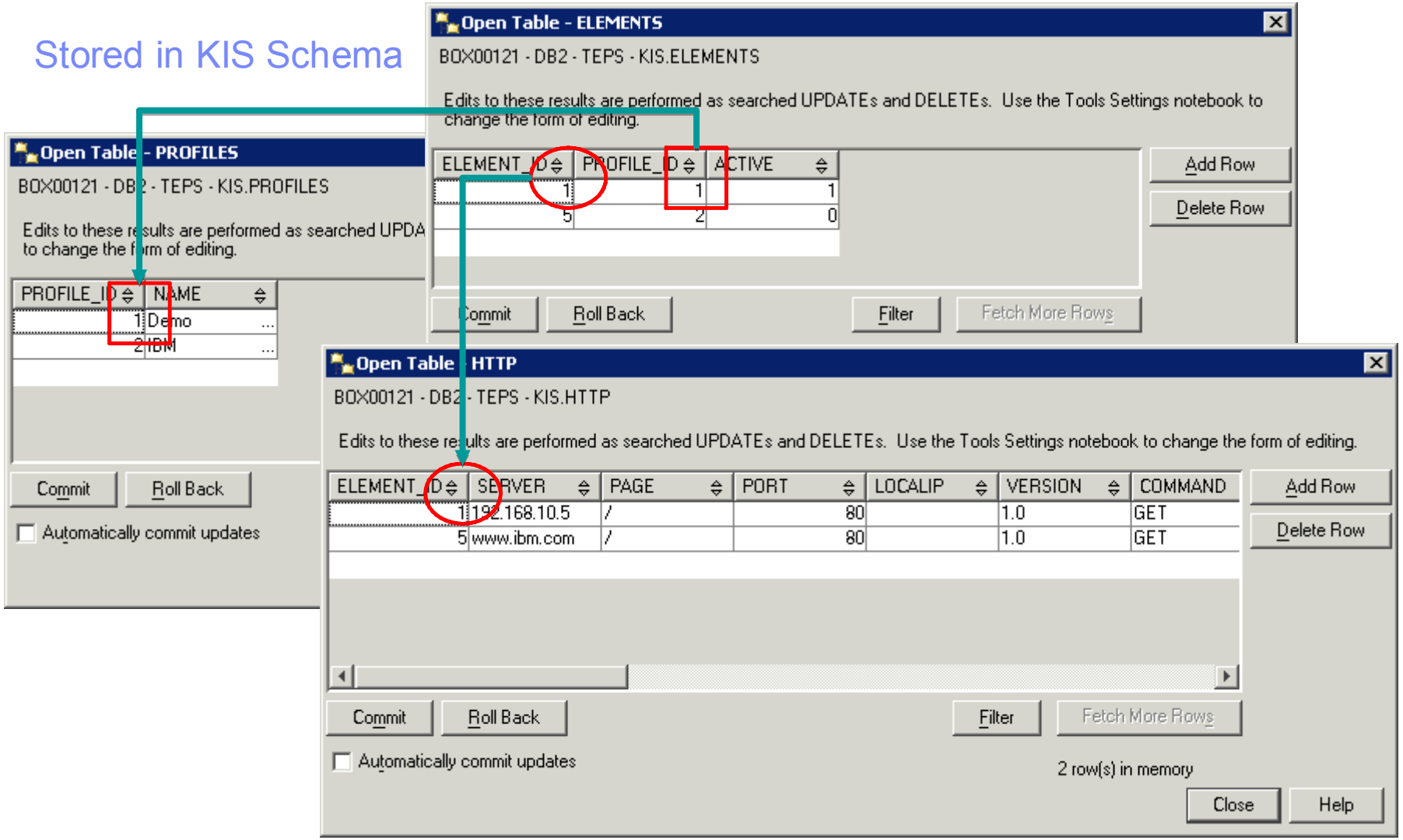
Sample Element / HTTP - Profile Statistics



Location of the data in DB

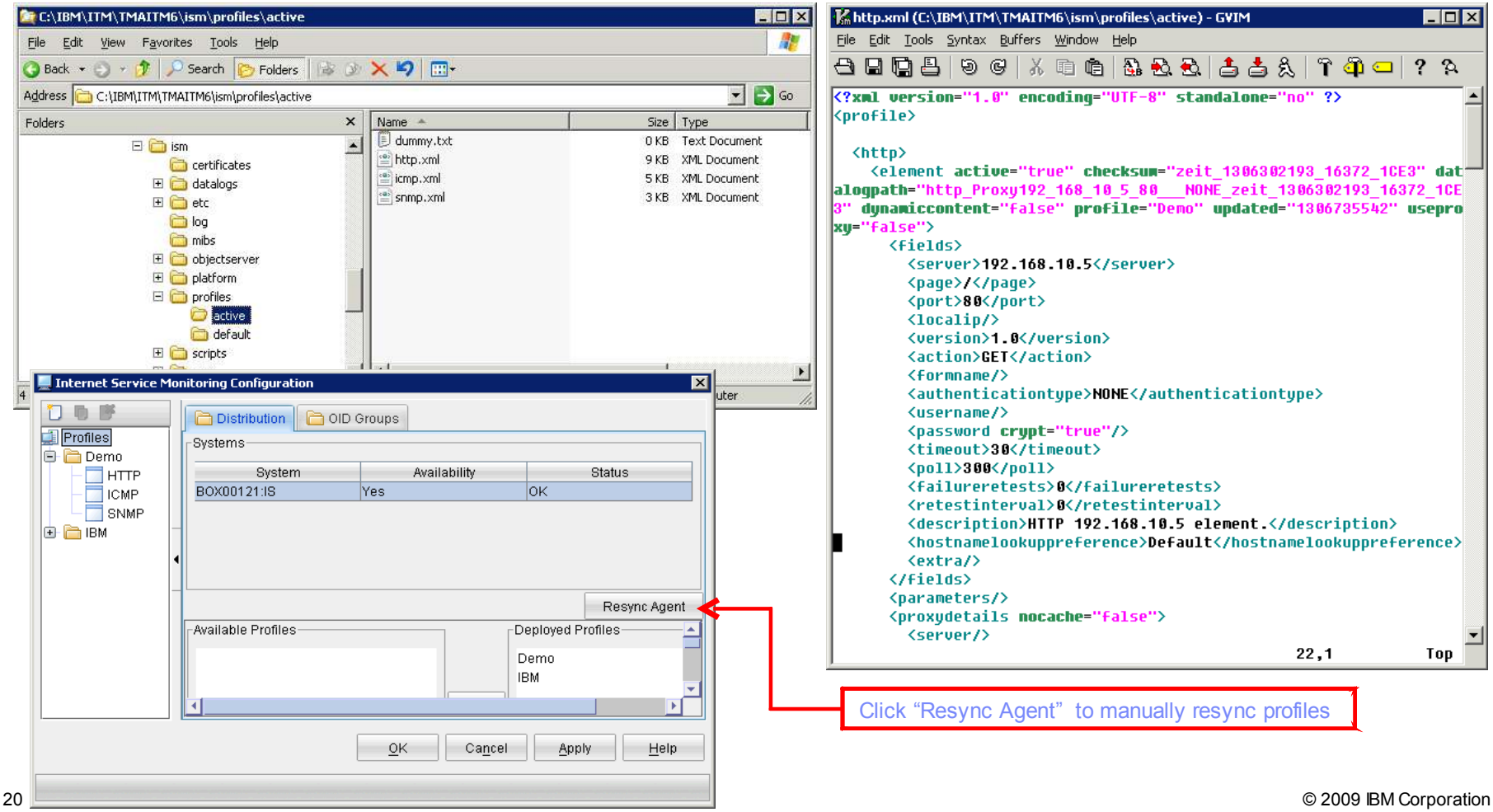
DB2 Control Center Screen Captures

Stored in KIS Schema



Location of data in the file system

- Profiles are generated from the data in the DB into XML files stored in the profiles directory for the monitors to read.



Command Line Tools

ismbatch

- Use to manage profiles or mirrors the commands in GUI.
- Commands are run locally. Does not update the data in the DB.

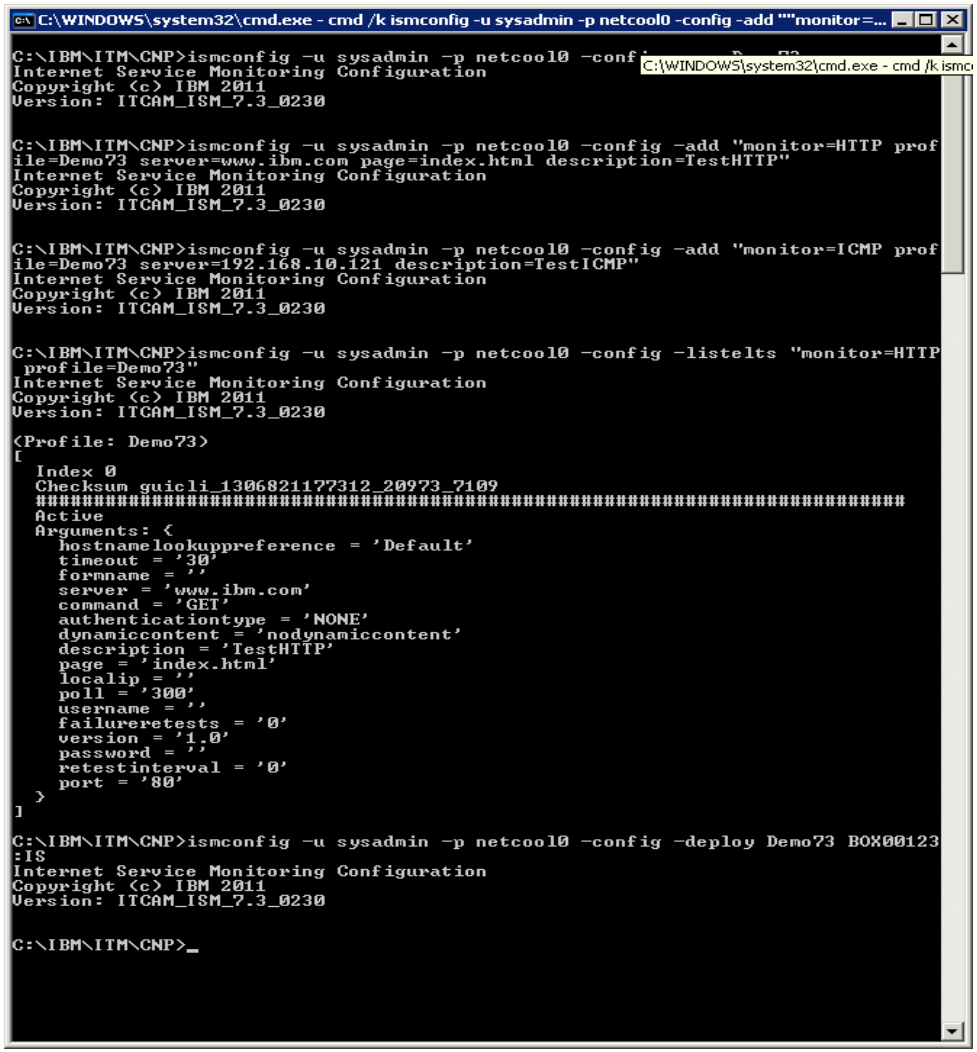
ismconfig (New in Version 7.3)

http://publib.boulder.ibm.com/infocenter/tivihelp/v24r1/topic/com.ibm.itcamt.doc_7.3/ism/dita/ag/concept/kis_cli_intro.html

- Use to manage profiles or mirrors the commands in GUI.
- Commands update the DB.

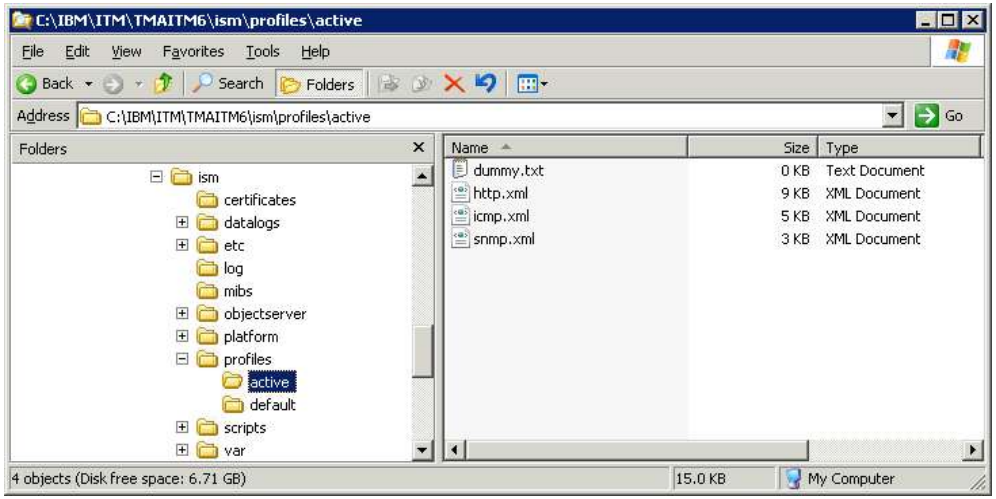
xml2cli (New in Version 7.3)

- Use to convert profiles created by ismbatch to command line format. Result is fed to ismconfig.



ISM Directory Structure

Windows : C:\IBM\ITM\TMAITM6\ism\
Unix : /opt/IBM/ITM/*itm_arch*/is/



- datalogs
  XML for the datalog module

- etc/props
  *.props or properties file.
  Props file contains specific properties for bridge, kis agent, modules, and monitors (<monitor>.props).

-etc/rules
  *.rules or rules files.
  Parse events into proper formats for modules

- logs
  logs of bridge (bridge.log), kisagent (kisagent.log), modules, and monitors (<monitor>.log)

-profiles
  XML files (<element>.xml).

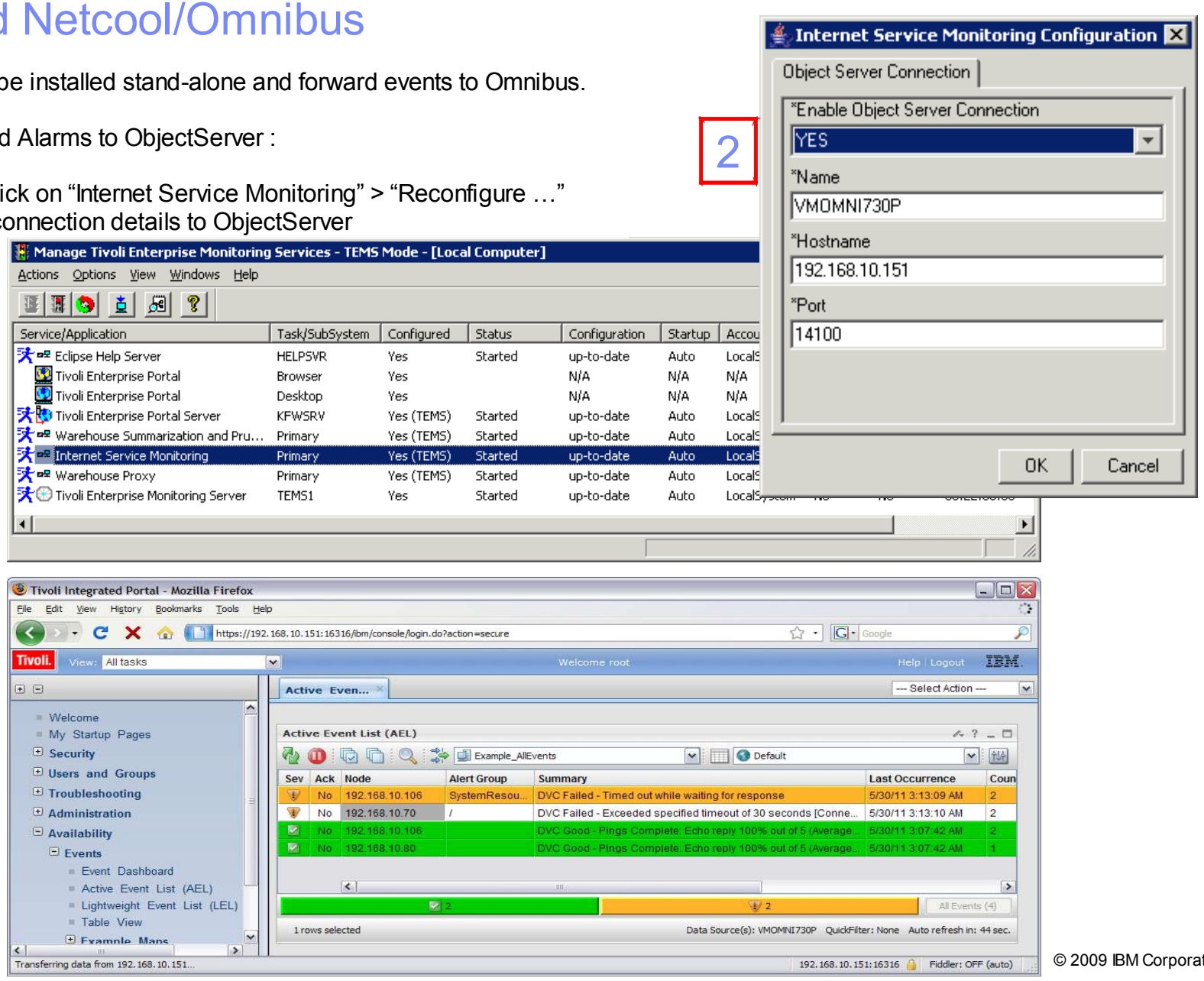
-var
  -store and Forward files (saf files)

ISM and Netcool/Omnibus

* ISM can be installed stand-alone and forward events to Omnibus.

To Forward Alarms to ObjectServer :

1. Right Click on “Internet Service Monitoring” > “Reconfigure …”
2. Fill the connection details to ObjectServer



Predefined Situations

1. KIS_Host_SLA_Failed

   monitored host has failed its service level agreement. Good is below 95% of all test on host.

2. KIS_Host_SLA_Marginal

   - monitored host is close to failing. Good is below 99% but greater than or equal 95%.

3. KIS_<monitor>_Inactive

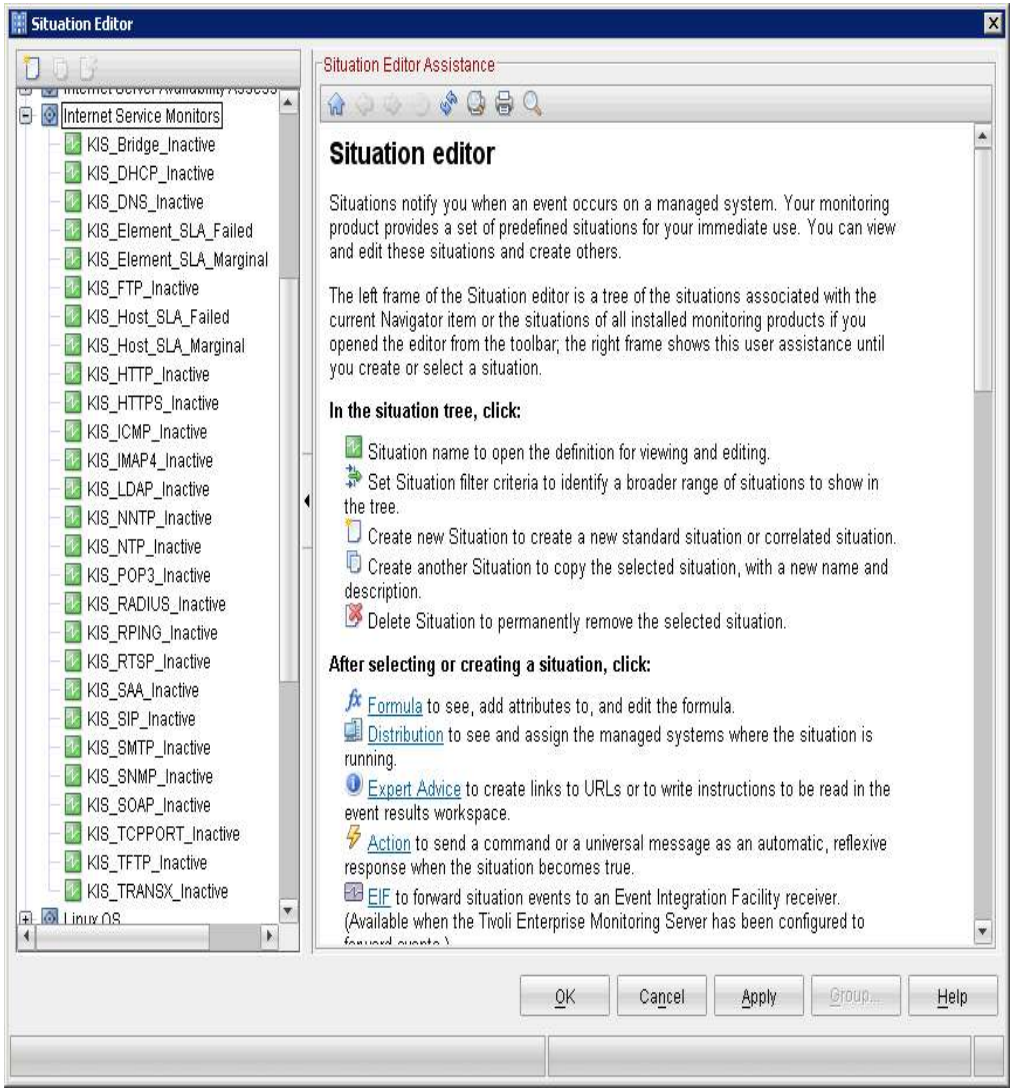
   monitor is not running or has not sent any results recently

4. KIS_Element_SLA_Failed

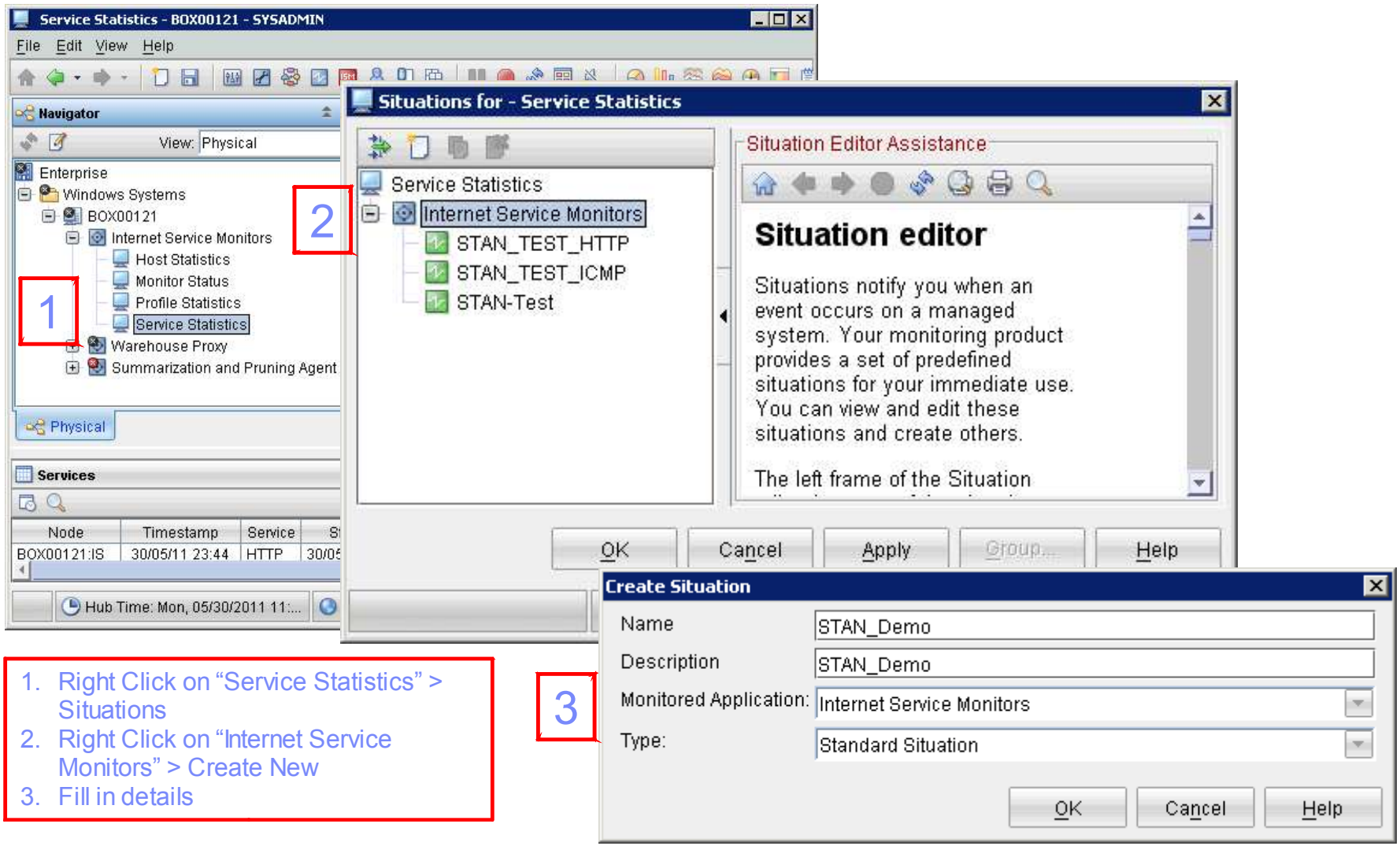
   service monitored by a profile element has failed. Good falls below 95% of all test performed by the profile element.

5. KIS_Element_SLA_Marginal

   service monitored by a profile element is close to failing. Good is below 99% but greater to equal to 95% of all test performed by the profile element.



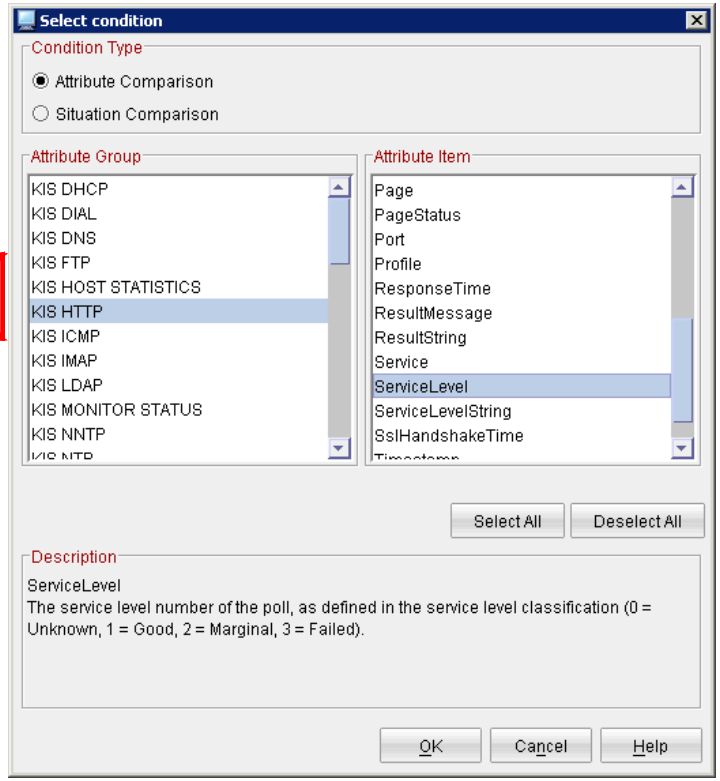
Creating Custom Situations

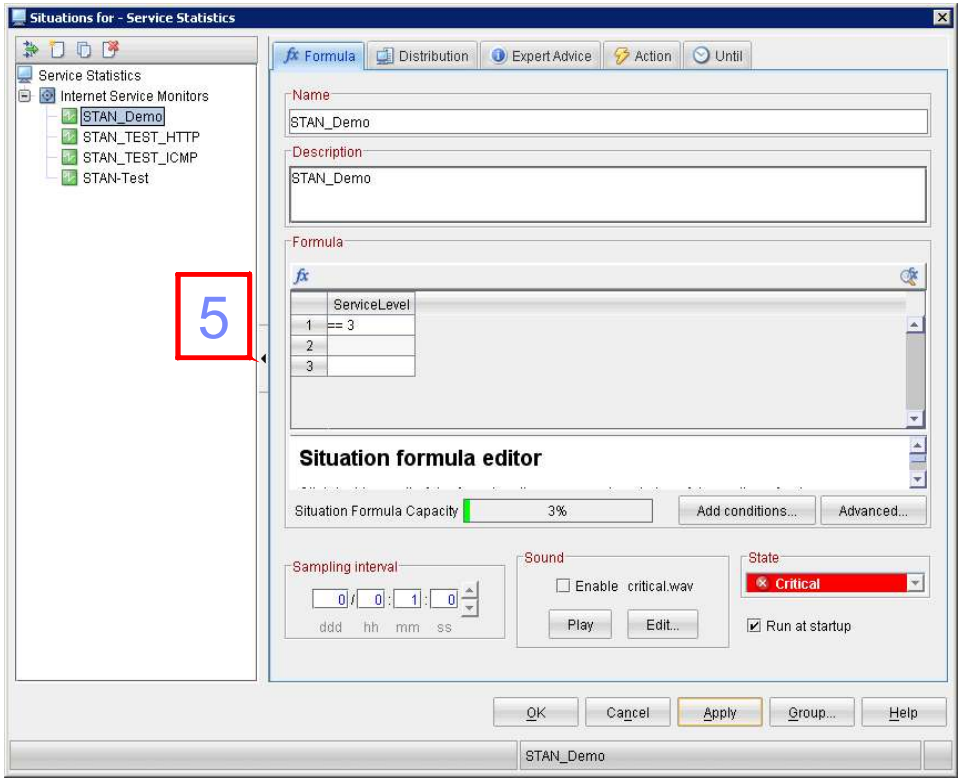


1. Right Click on “Service Statistics” > Situations
2. Right Click on “Internet Service Monitors” > Create New
3. Fill in details

Creating Custom Situations (continuation)

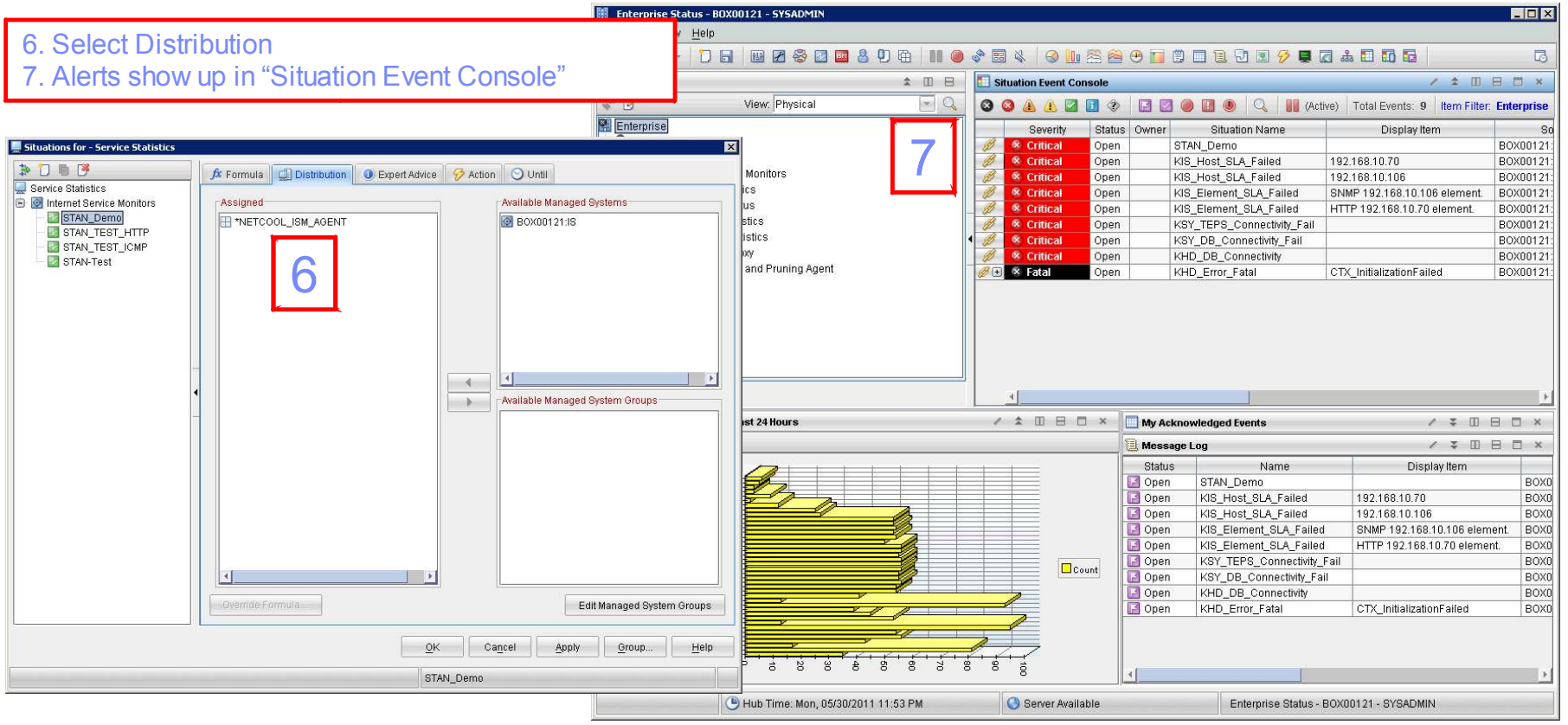
4. Select condition (fields to compare)
5. Provide formula (test value). State severity.





Creating Custom Situations (continuation)

6. Select Distribution
7. Alerts show up in “Situation Event Console”



Troubleshooting : Bridge Core dumps

1. Ensure the install is patched to the latest available patch

2. Clear the bridge log

3. Enable message level debug & restart bridge

   ISM_HOME/etc/bridge.props

   MaxLogFileSize : 10485760

   MessageLevel : "debug"

4. Replicate

5. Run truss or strace, and lsof

   truss -rwall -wall -a -e -f -d -o /tmp/out.truss ./
   nco_m_bridge

   strace -f –v –tt –o /tmp/out.strace –p <pid-of-process>

   lsof | grep <name> | wc -l

   When it cores, run pstack on the core file and save core file

6. Gather *.props, profiles , logs, all outputs

Ensure that core file creation enabled:
sh% ulimit –c 1000000
csh% limit coredumpsize 1000000

Troubleshooting: Bridge Hangs or Loops

1. Ensure the install is patched to the latest available patch

2. Clear the bridge log
   bridge.log

3. Enable message level debug and restart
   ISM_HOME/etc/bridge.props
   MaxLogFileSize : 10485760
   MessageLevel : "debug”

4. Replicate

5. Run pstack, and lsof
   pstack <pid>
   lsof | grep <name> | wc –l

6. Gather *.props, profiles, logs, all outputs

Troubleshooting: KIS Agent Core Dumps

1. Ensure the install is patched to the latest available patch

2. Clear the kisagent.log

3. Enable message level debug & restart agent

   ISM_HOME/etc/kisagent.props
   MaxLogFileSize : 10485760
   MessageLevel : "debug"

4. Replicate

5. Run truss or strace, and lsof

   truss -rwall -wall -a -e -f -d -o /tmp/out.truss ./kisagent
   strace -f –v –tt –o /tmp/out.strace –p <pid-of-process>
   lsof | grep <name> | wc -l

   When it cores, run pstack on the core file and save core file

6. Gather *.props, profiles , logs, all outputs

Troubleshooting: Monitor Core Dumps

1. Ensure the install is patched to the latest available patch

2. Clear the log
   <monitor>.log

3. Enable message level debug and restart
   ISM_HOME/etc/<monitor>.props
   MaxLogFileSize : 10485760
   MessageLevel : "debug"
   MaxCCA : 1

4. Replicate

5. Run truss or strace, and lsof
   truss -rwall -wall -a -e -f -d -o /tmp/out.truss ./
   nco_m_<monitor>
   strace -f –v –tt –o /tmp/out.strace –p <pid-of-process>
   lsof | grep <name> | wc -l

   When it cores, run pstack on the core file and save core file

6. Gather *.props, profilesm, logs, all outputs

Ensure that core file creation enabled:
sh% ulimit –c 1000000
csh% limit coredumpsize 1000000

Troubleshooting: Monitor Hangs or Loops

1. Ensure the install is patched to the latest available patch

2. Clear the log
   <monitor>.log

3. Enable message level debug and restart
   ISM_HOME/etc/<monitor>.props
   MaxLogFileSize : 10485760
   MessageLevel : "debug”
   MaxCCA : 1

4. Replicate

5. Run pstack, and lsof
   pstack <pid>
   lsof | grep <name> | wc –l

6. Gather *.props, profiles, all outputs

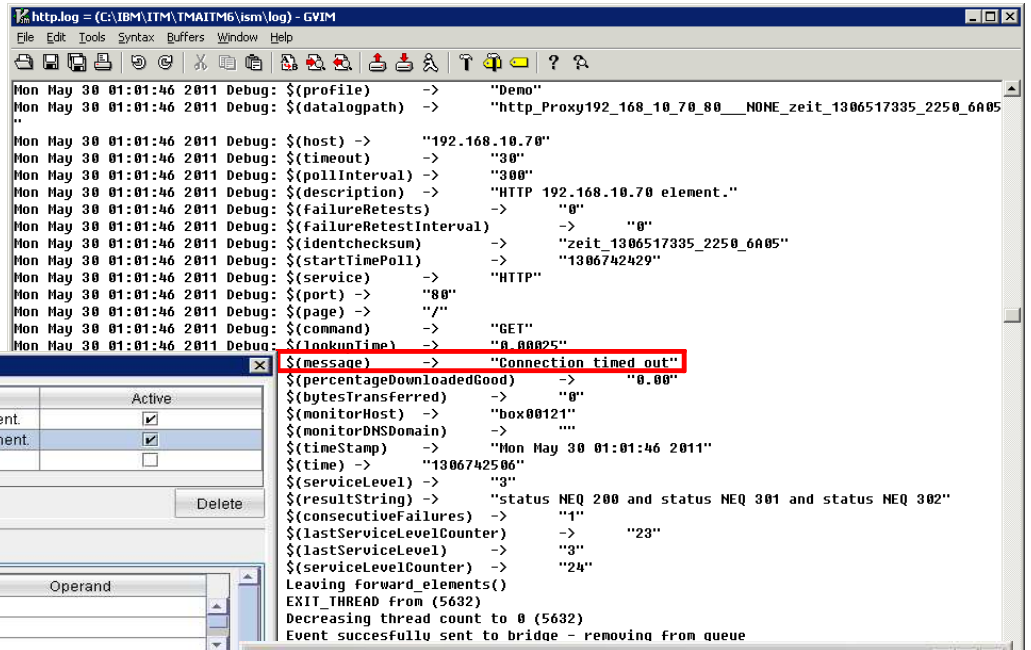
Troubleshooting: Element is Failing.

1. Enable message level debug and restart
   ISM_HOME/etc/<monitor>.props
   MaxLogFileSize : 10485760
   MessageLevel : "debug"

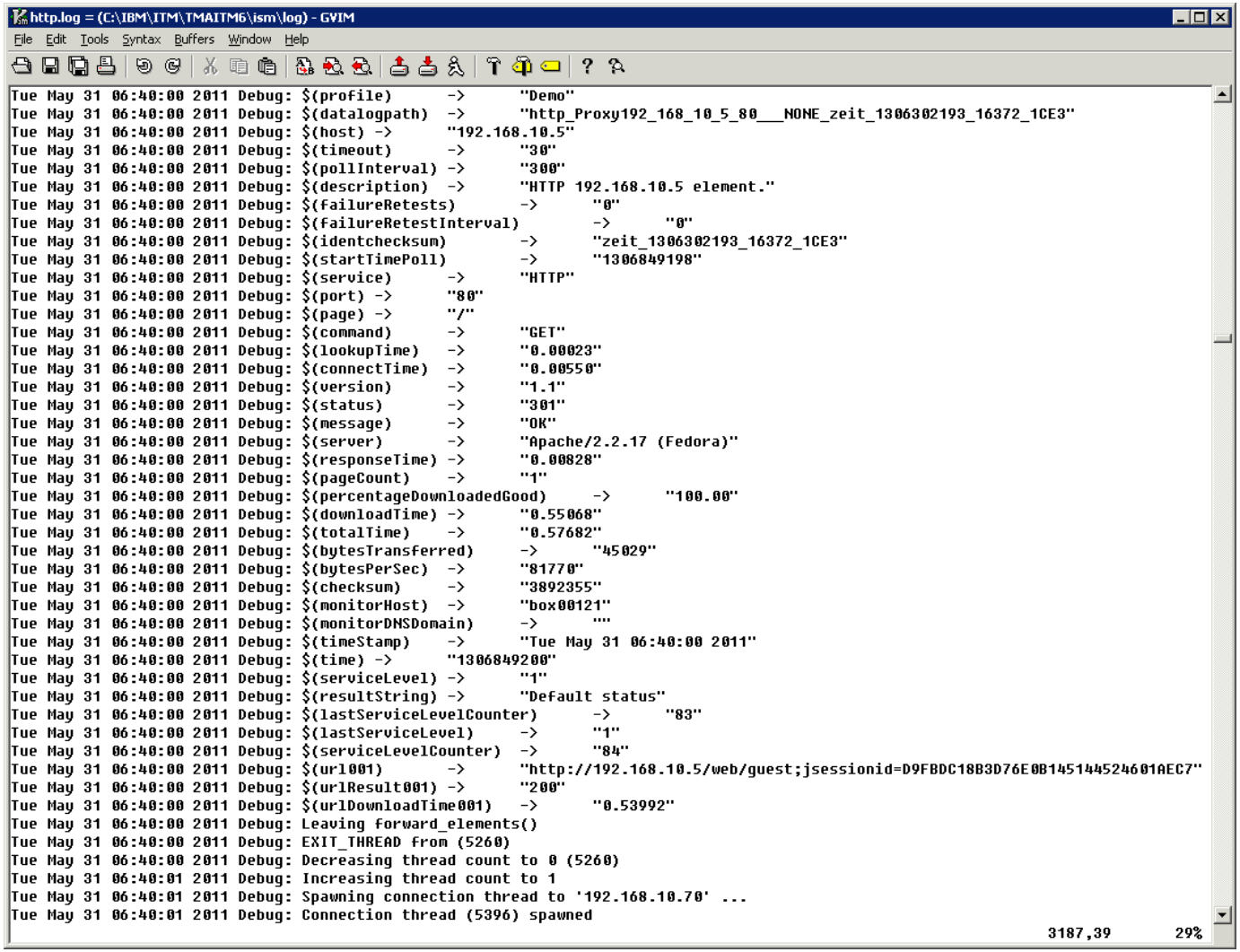
2. Replicate

3. Check status of target server.

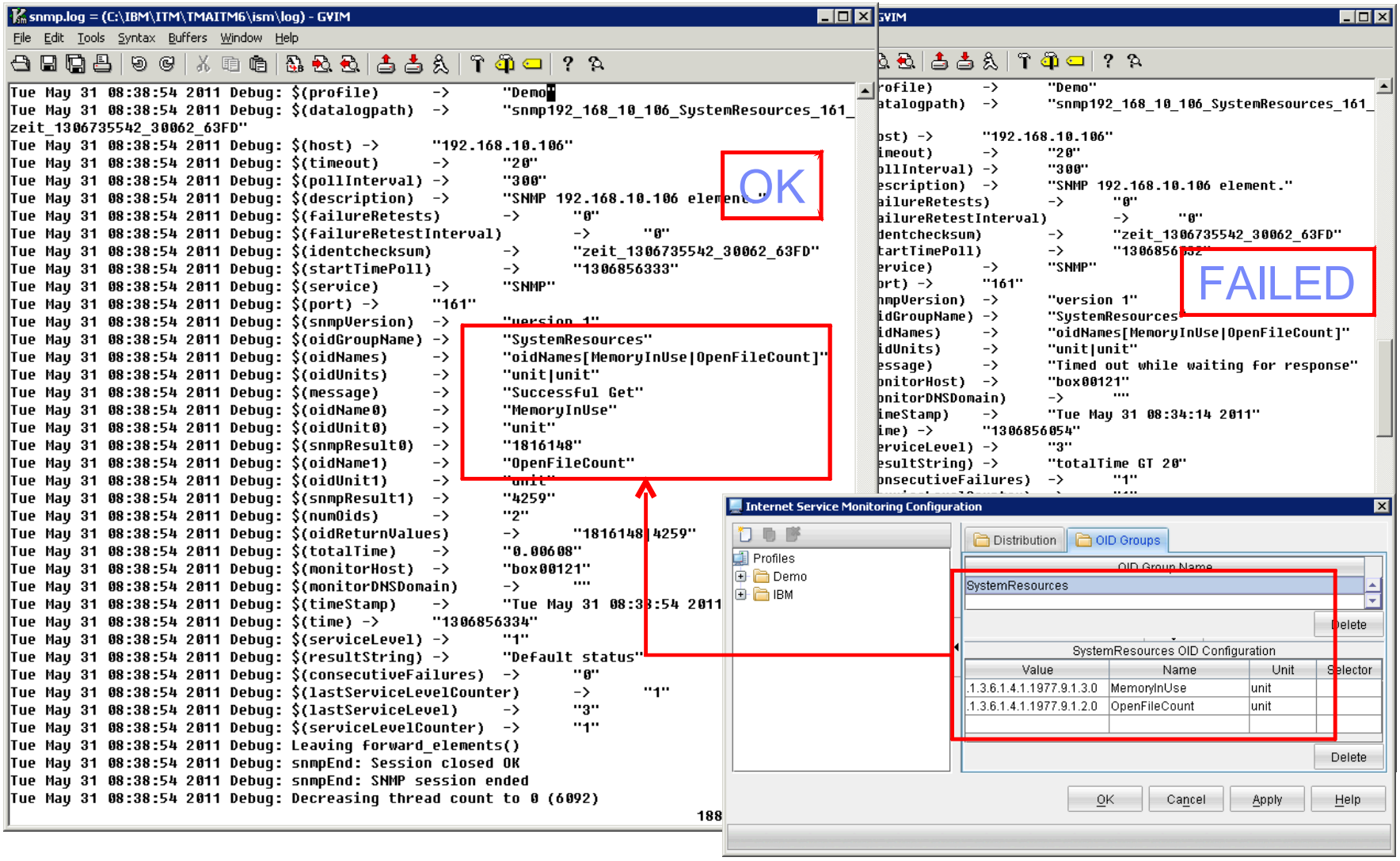
4. Check Profile and Element. Confirm the conditions in the SLC tab.



Troubleshooting: Log Samples (Successful HTTP)



Troubleshooting: Log Samples (OK & FAILED SNMP)



Troubleshooting: General Monitor Issues

1. Ensure the install is patched to the latest available patch

2. Clear the log
   <monitor>.log

3. Enable message level debug and restart
   ISM_HOME/etc/<monitor>.props
   MaxLogFileSize : 10485760
   MessageLevel : "debug"
   MaxCCA : 1

4. Set system to capture network traffic
   snoop –o snoop.out server1 server2
   tcpdump –w tcpdump.out host server1 and server2
   wireshark/ethereal

5. Replicate. Have monitor poll several times.

6. Gather *.props, profiles, logs, all outputs

Example Issues :

- Poll Fails
- Poor performance

In addition to the ISM set of logs, generate another set of supporting logs when using a regular client for comparison. For example, when you are having issues with the HTTP monitor, generate the regular set of logs, and then generate another set (network traffic) when using a regular browser.

Troubleshooting: Monitor Hang / Crashes on Windows

1) Download Userdump Tool from Microsoft
http://support.microsoft.com/kb/241215

- UserModeProcessDumper8_1_2929_5.exe

- Run UserModeProcessDumper8_1_2929_5.exe. It will create C:\kktools\userdump8.1

- cd to C:\C:\kktools\userdump8.1\ and run setup.exe.

- Follow the direction.

2) Enable message level debug and restart
ISM_HOME/etc/etc/ism/<monitor>.props
MaxLogFileSize : 10485760
MessageLevel : "debug"
MaxCCA : 1

3) Create dump files for a hanging process

For example:
- Show processes
userdump.exe –p
Note the PID.

-Generate several dumps
-userdump.exe PID filename_iteration.dmp

#
userdump.exe 123 filename_1.dmp
wait for 1 minute
userdump.exe 123 filename_2.dmp
wait for 1 minute
userdump.exe 123 filename_3.dmp
---

4) Gather the following
•Current version of ISM and the monitor
• *.dmp files
•Corresponding monitor logs
•Props and profiles

Popular Links / Issues

- Common Issues

http://publib.boulder.ibm.com/infocenter/tivihelp/v24r1/topic/com.ibm.itcamt.doc_7.3/ism/dita/tsg/concept/kis_trouble_oview.html

- How to backup and restore.

http://www-01.ibm.com/support/docview.wss?uid=swg21408997

- Missing ISM Icon

https://www-304.ibm.com/support/docview.wss?uid=swg21450904

https://www-304.ibm.com/support/docview.wss?uid=swg21399492

- Historical Data (KFWITM217E request error: sql1_openrequest failed rc=3000)

https://www-304.ibm.com/support/docview.wss?uid=swg21319390

- IZ81470: PREVENT CUSTOM ACTIONS BREAKING THE AGENT

https://www-304.ibm.com/support/docview.wss?uid=swg1IZ81470

Documentation

- Version 7.3
- http://publib.boulder.ibm.com/infocenter/tivihelp/v24r1/topic/com.ibm.itcamt.doc_7.3/common/introduction/introduction.html
- http://publib.boulder.ibm.com/infocenter/tivihelp/v24r1/topic/com.ibm.itcamt.doc_7.3/_deliverables/itcamtrans_ag.pdf
- http://publib.boulder.ibm.com/infocenter/tivihelp/v24r1/topic/com.ibm.itcamt.doc_7.3/_deliverables/itcamtrans_icg.pdf
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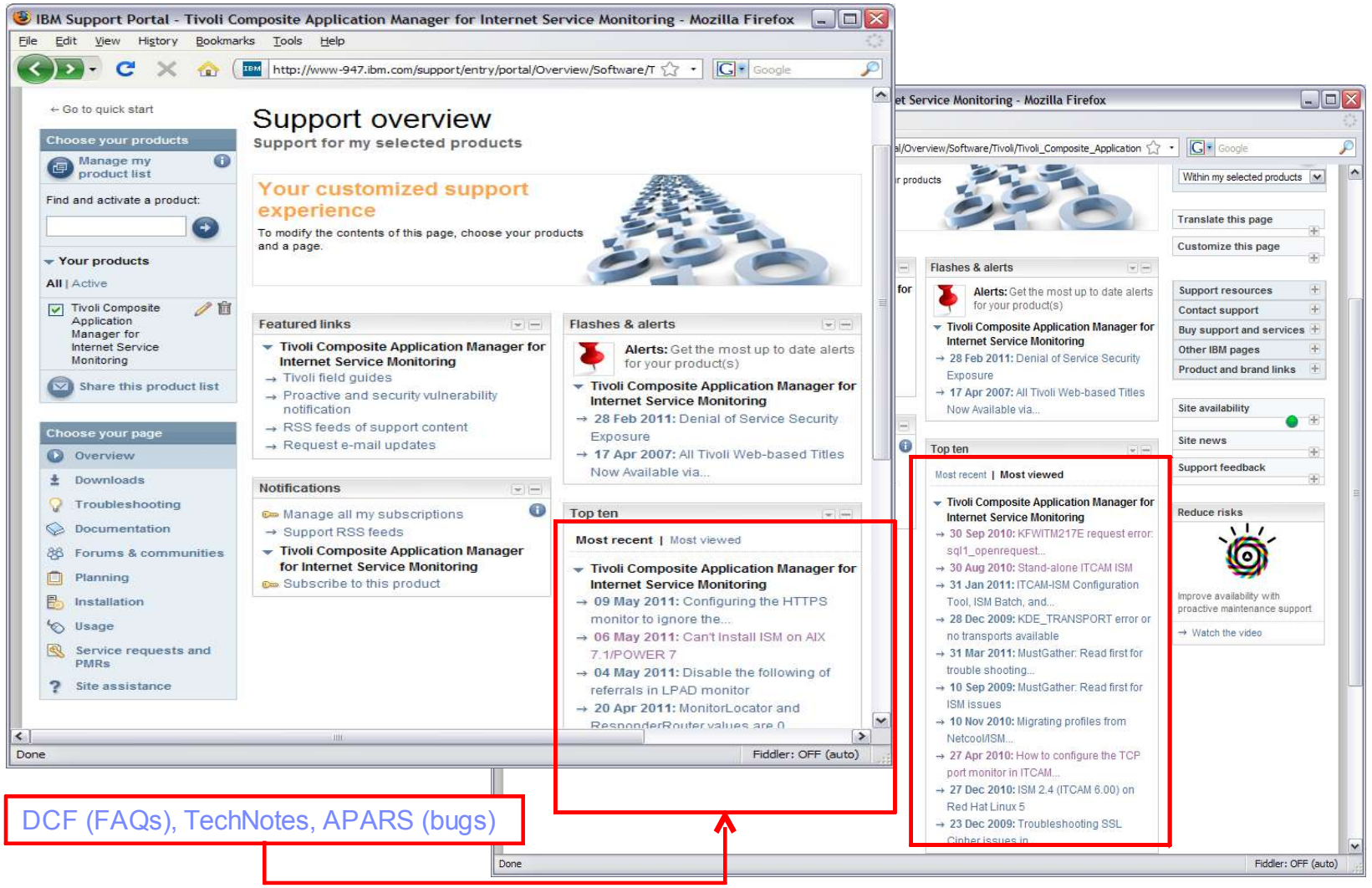
- http://publib.boulder.ibm.com/infocenter/tivihelp/v8r1/topic/com.ibm.itcamISM.doc/rg/ism24r2rg.pdf

Support Portal (Known Issues, DCF (FAQs), APARS (bugs))

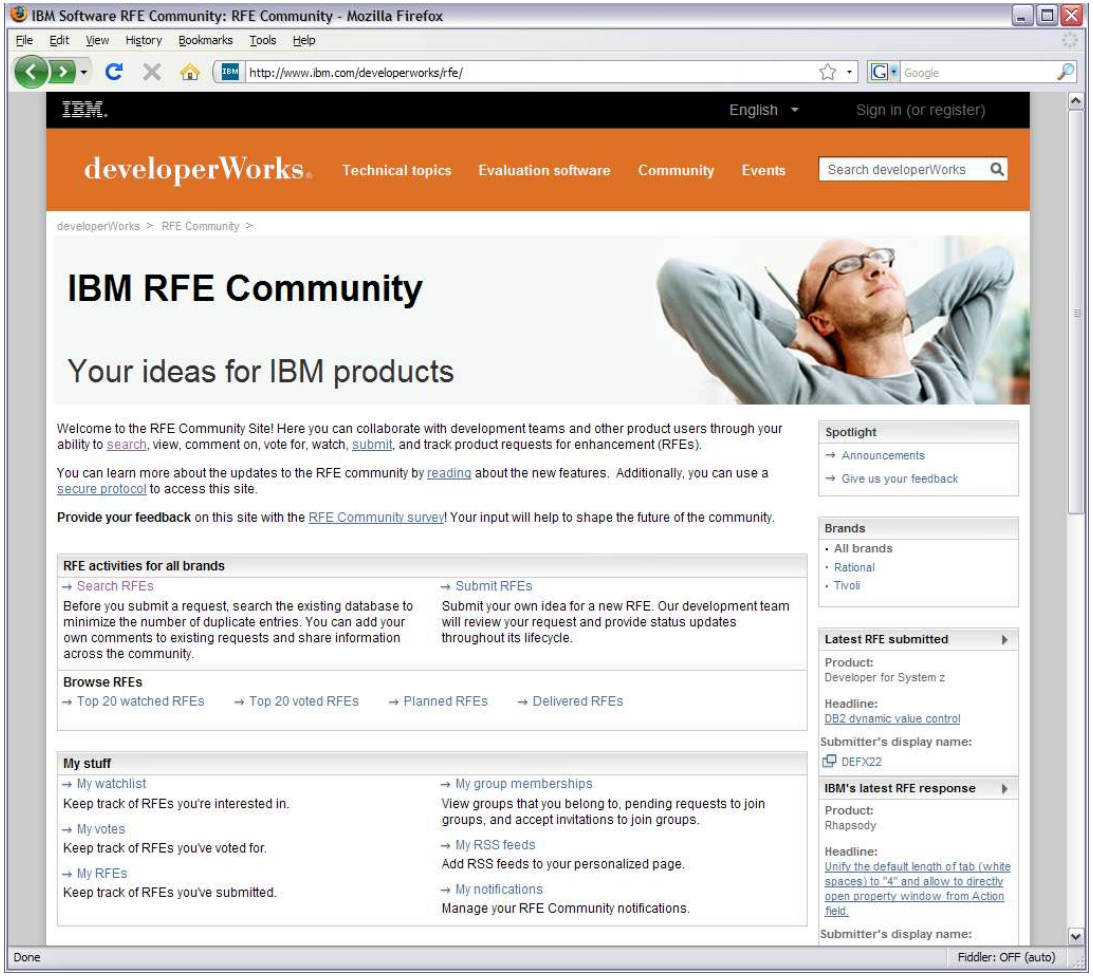
http://www-947.ibm.com/support/entry/portal/Overview/Software/Tivoli/Tivoli_Composite_Application_Manager_for_Internet_Service_Monitoring



IBM Request for Enhancement (RFE) Community

http://www.ibm.com/developerworks/rfe/

Client can now submit request for enhancements online.

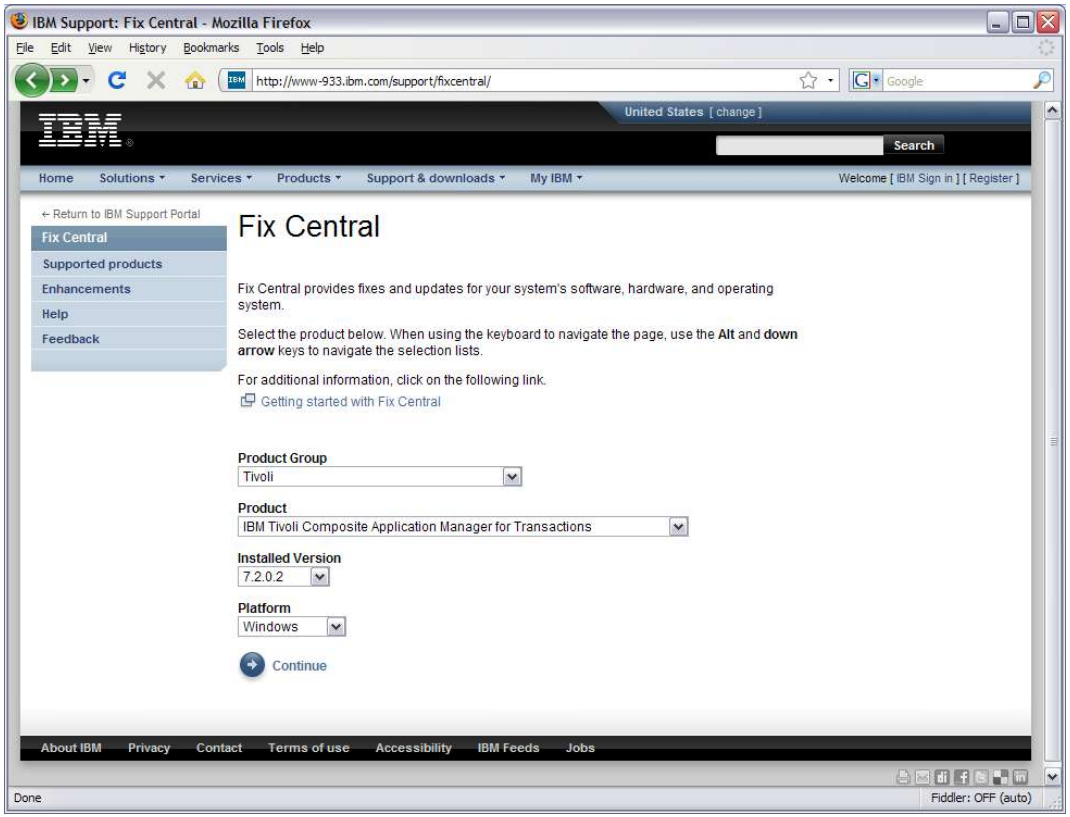


Patches - FixCentral

Download patches from FixCentral:
http://www-933.ibm.com/support/fixcentral/

For versions v6.0.0/v2.4, request patches from Support:

http://www.ibm.com/software/support/probsub.html



The End

- Questions?