

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.

The screenshot shows a Mozilla Firefox window with the title bar "itcamtrans_ag.pdf (application/pdf Object) - Mozilla Firefox". The address bar shows the URL "http://publib.boulder.ibm.com/infocenter/tivihelp/v24r1/topic/G/Google". The main content area displays a PDF document with the heading "Available Internet Service Monitoring monitors". Below the heading, a text block states: "The Internet Service Monitoring suite of monitors provides coverage for a broad range of Internet services." A caption "Table 38" is followed by the text "lists the monitors available with Internet Service Monitoring and the types of service that they monitor." A table titled "Table 38. Available Internet service monitors" is shown, listing various protocols and their corresponding monitors. The table has two columns: "Monitor name" and "Type of service monitored".

Monitor name	Type of service monitored
DHCP	Dynamic Host Configuration Protocol
Dial	Dial-up Service
DNS	Domain Name Service
FTP	File Transport Protocol
HTTP	HyperText Transport Protocol
HTTPS	HyperText Transport Protocol (Secure)
ICMP	Internet Control Message Protocol
IMAP4	Internet Message Access Protocol
LDAP	Lightweight Directory Access Protocol
NNTP	Network News Transport Protocol
NTP	Network Time Protocol
POP3	Post Office Protocol
RADIUS	Remote Authentication Dial-In User Service
RPING	Remote Ping (Cisco, Juniper, and RPC2925)
RTSP	Real-Time Streaming Protocol
SAA	Cisco Service Assurance Agent
SIP	Session Initiation Protocol
SMTP	Simple Mail Transport Protocol
SNMP	Simple Network Management Protocol
SOAP	XML-based messaging protocol
TCPPort	Transmission Control Protocol
TFTP	Trivial File Transfer Protocol
TRANSX	Transactions
WMS	Windows Multimedia Streaming

Architecture (Version 6.0.1 and Up)

▪ Monitors

- Monitors = Protocols = Elements.
- Emulate users
- Connects to Databridge.

▪ Databridge

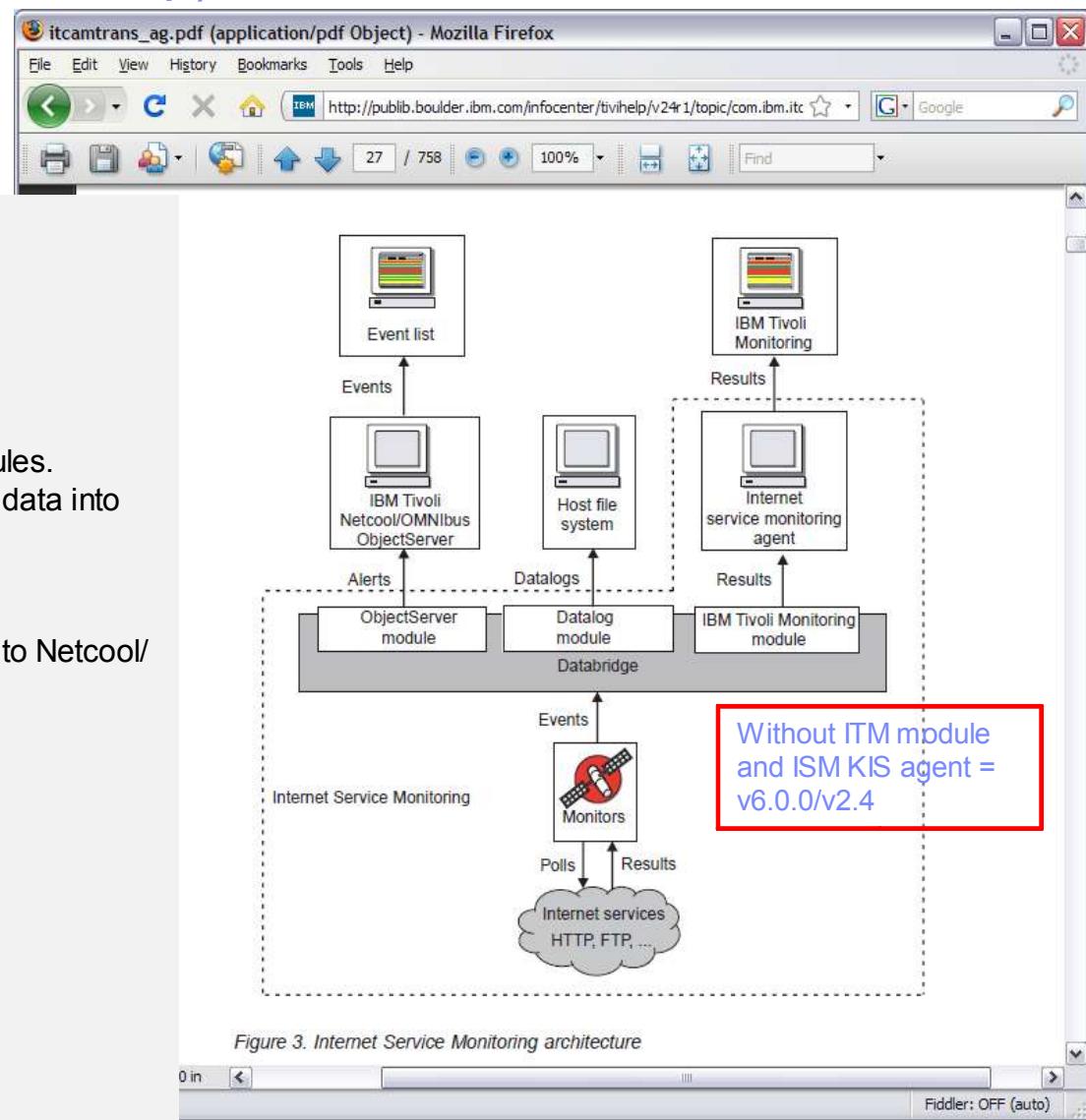
- Communication bus for monitors and modules.
- Receives data from Monitors and converts data into different formats for the modules.

▪ 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



TEM Interface and MTEMS Window

Other interfaces :

<http://server:1920/>

- Browser
<http://server:1920/client/client>
- * Use regular Internet browser
- WebStart
<http://server:1920/client/webstart>
- Use Java plugin

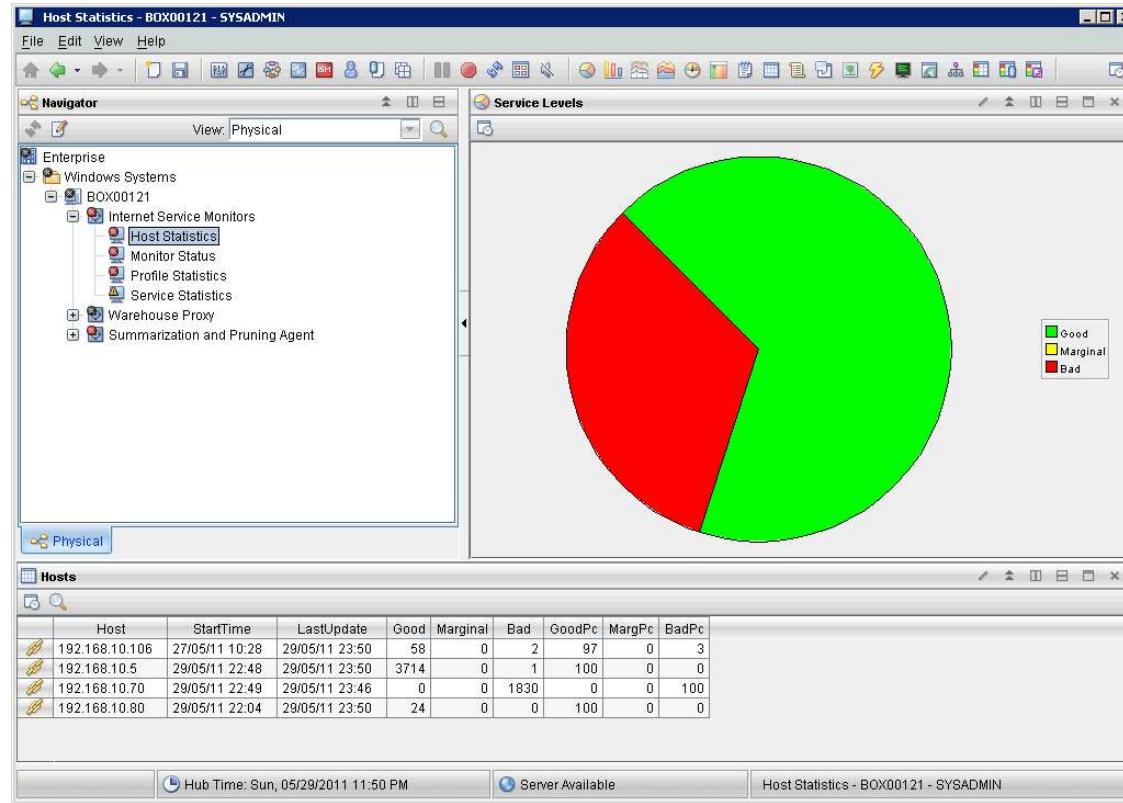
Severity	Status	Owner	Situation Name	Display Item	Source	Impact	Opened
Minor	Open	STAN_TEST_HTTP			BOX00121:IS	Service Statistics	05/31/11 09:02 AM
Critical	Open	KIS_DIAL_Inactive	dial		BOX00121:IS	Monitor Status	05/31/11 08:55
Critical	Open	KIS_TFTP_Inactive	ftp		BOX00121:IS	Monitor Status	05/31/11 08:55
Critical	Open	KIS_SAA_Inactive	saa		BOX00121:IS	Monitor Status	05/31/11 08:55
Critical	Open	KIS_FTP_Inactive	ftp		BOX00121:IS	Monitor Status	05/31/11 08:55
Critical	Open	KIS_DNS_Inactive	dns		BOX00121:IS	Monitor Status	05/31/11 08:55
Critical	Open	KIS_HTTPS_Inactive	https		BOX00121:IS	Monitor Status	05/31/11 08:55
Critical	Open	KIS_SMTP_Inactive	smtp		BOX00121:IS	Monitor Status	05/31/11 08:55
Critical	Open	KIS_SIP_Inactive	sip		BOX00121:IS	Monitor Status	05/31/11 08:55
Critical	Open	KIS_TCPORT_Inactive	tcport		BOX00121:IS	Monitor Status	05/31/11 08:55
Critical	Open	KIS_RPING_Inactive	rping		BOX00121:IS	Monitor Status	05/31/11 08:55
Critical	Open	KIS_WMS_Inactive	wms		BOX00121:IS	Monitor Status	05/31/11 08:55
Critical	Open	KIS_TRANSGX_Inactive	transx		BOX00121:IS	Monitor Status	05/31/11 08:55
Critical	Open	KIS_SOAP_Inactive	soap		BOX00121:IS	Monitor Status	05/31/11 08:55
Critical	Open	KIS_POP3_Inactive	pop3		BOX00121:IS	Monitor Status	05/31/11 08:50
Critical	Open	KIS_NTP_Inactive	ntp		BOX00121:IS	Monitor Status	05/31/11 08:50

Manage Tivoli Enterprise Monitoring Services - TEMS Mode - [Local Computer]

Actions Options View Windows Help

Service/Application	Task/SubSystem	Configured	Status	Configuration	Startup	Account	Desktop	HotStandby	Version	Host	Port
Eclipse Help Server	HELPVR	Yes	Started	up-to-date	Auto	LocalSystem	No	No	06.22.00.00		
Tivoli Enterprise Portal	Browser	Yes		N/A	N/A	N/A	N/A	N/A	06.22.00.00	192.168.10...	
Tivoli Enterprise Portal	Desktop	Yes		N/A	N/A	N/A	N/A	N/A	06.22.00.00	BOX00121	
Tivoli Enterprise Portal Server	KFWSRV	Yes (TEMS)	Started	up-to-date	Auto	LocalSystem	No	No	06.22.00.00		
Warehouse Summarization and Pr...	Primary	Yes (TEMS)	Started	up-to-date	Auto	LocalSystem	No	No	06.22.00.00		
Internet Service Monitoring	Primary	Yes (TEMS)	Started	up-to-date	Auto	LocalSystem	No	No	07.20.02.00		
Warehouse Proxy	Primary	Yes (TEMS)	Started	up-to-date	Auto	LocalSystem	No	No	06.22.00.00		
Tivoli Enterprise Monitoring Server	TEM51	Yes	Started	up-to-date	Auto	LocalSystem	No	No	06.22.00.00		

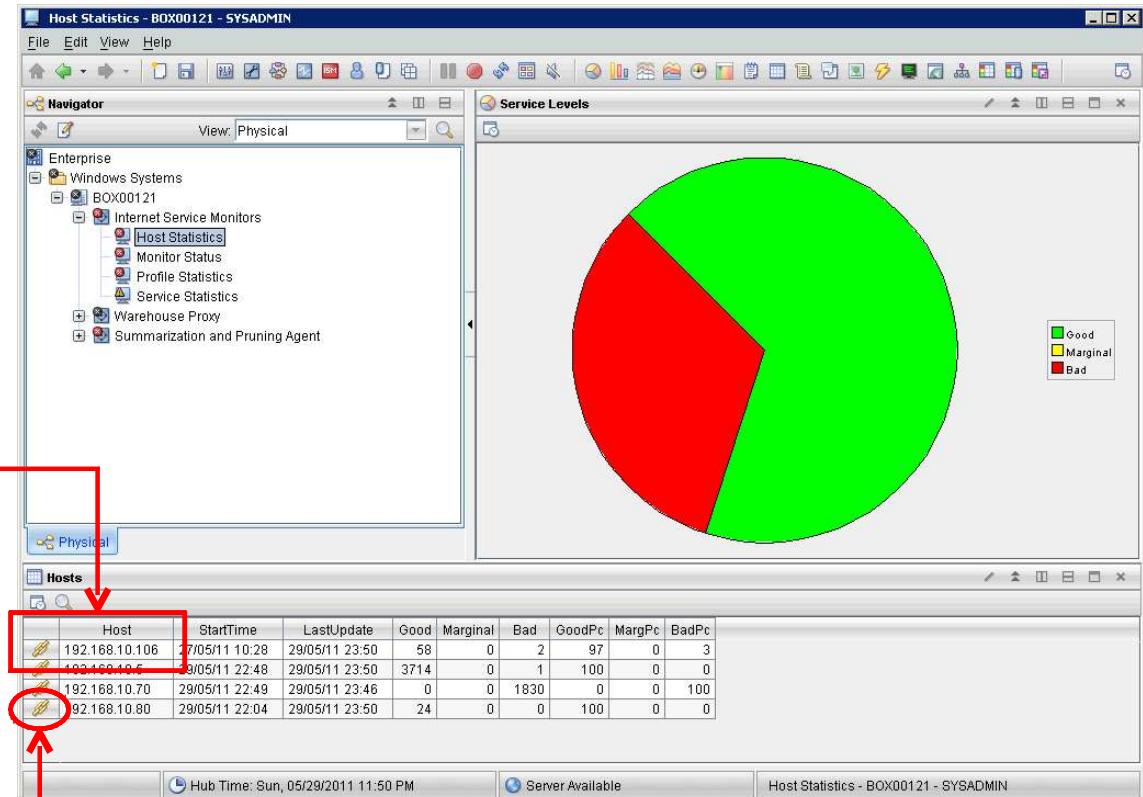
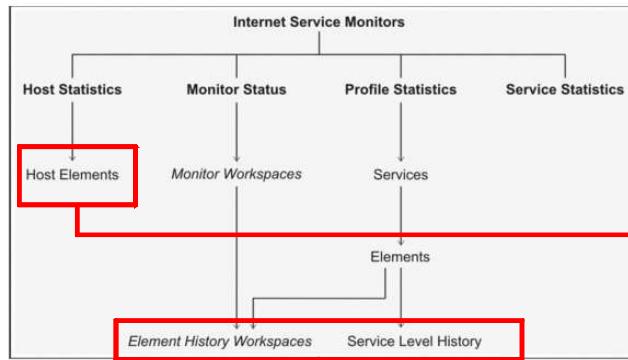
ISM Workspaces



ISM Workspace / Host Statistics

- Summary of service level of host being monitored

Figure 1. Internet Service Monitoring workspaces



Configure Historical Reporting or else :

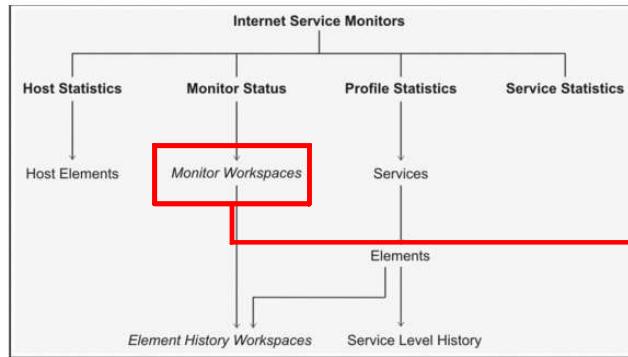
KFWITM217E request error:
sql1_openrequest failed rc=3000

Left-Click chain to drill down

ISM Workspace / Monitor Status

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

Figure 1. Internet Service Monitoring workspaces



The screenshot shows the 'Monitor Status - BOX00121 - SYSADMIN' window. The left pane displays a tree view of the enterprise, with 'Windows Systems' expanded to show 'BOX00121' and its sub-monitors: Host Statistics, Monitor Status, Profile Statistics, and Service Statistics. The 'Monitor Status' node is selected. The right pane is titled 'Services' and contains a table listing various service types and their statuses. A red box highlights the 'Status' column, and a red arrow points from the 'Monitor Workspaces' section in the diagram above to this column. Below the table, a red box contains the text 'Left-Click chain to drill down'. A red circle highlights the status 'Inactive' for several services, such as dhcp, dial, dns, ftp, http, https, imap, imap4, ldap, rntp, rpop, rrdp, radius, ping, rtsp, and saa. The table has columns: ServiceType, Monitor Location, Status, LastUpdate, Node, and Timestamp.

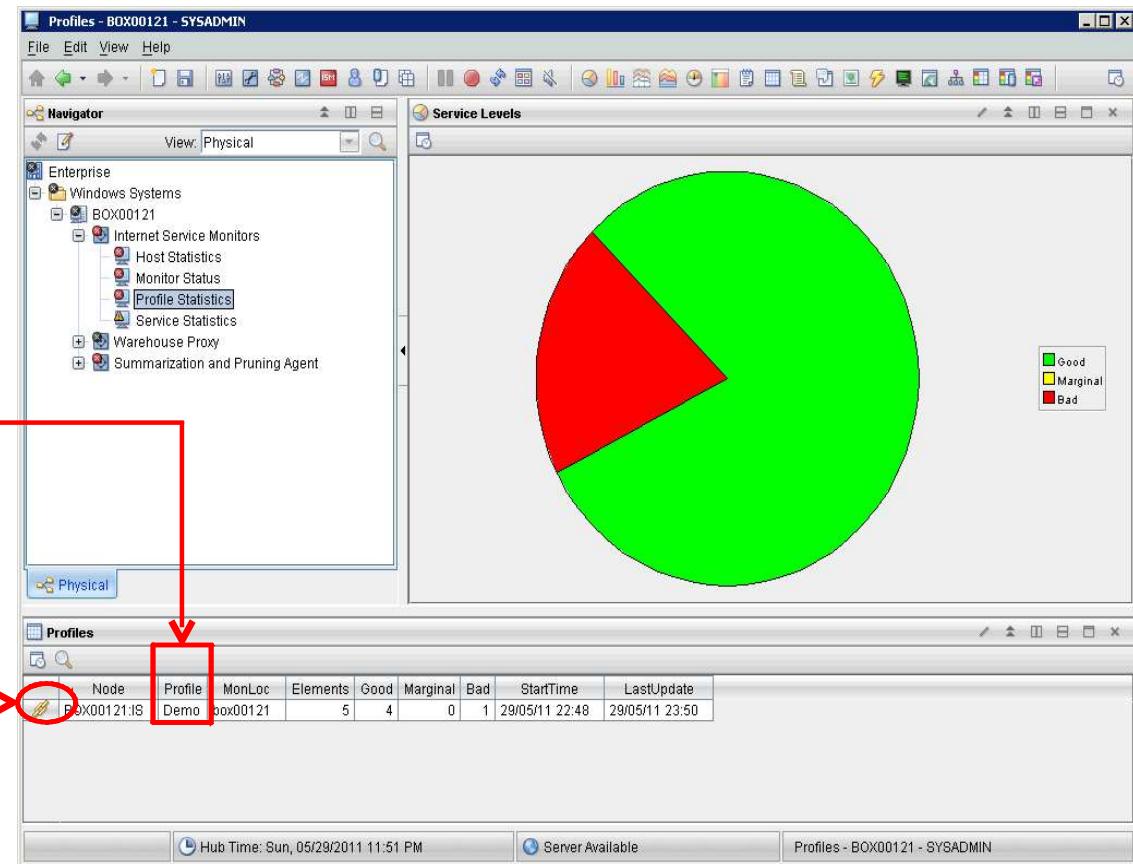
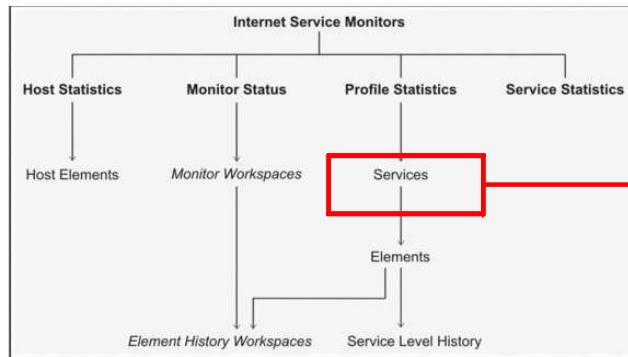
ServiceType	Monitor Location	Status	LastUpdate	Node	Timestamp
bridge	127.0.0.1	Active	29/05/11 23:51	BOX00121:IS	27/05/11 09:19
dhcp	127.0.0.1	Inactive	27/05/11 09:38	BOX00121:IS	27/05/11 09:38
dial	127.0.0.1	Inactive	27/05/11 09:38	BOX00121:IS	27/05/11 09:38
dns	127.0.0.1	Inactive	27/05/11 09:38	BOX00121:IS	27/05/11 09:38
ftp	127.0.0.1	Inactive	27/05/11 09:38	BOX00121:IS	27/05/11 09:38
http	127.0.0.1	Active	29/05/11 23:50	BOX00121:IS	29/05/11 23:50
https	127.0.0.1	Inactive	27/05/11 09:38	BOX00121:IS	27/05/11 09:38
imap	127.0.0.1	Active	29/05/11 23:51	BOX00121:IS	29/05/11 23:51
imap4	127.0.0.1	Inactive	27/05/11 09:38	BOX00121:IS	27/05/11 09:38
ldap	127.0.0.1	Inactive	27/05/11 09:38	BOX00121:IS	27/05/11 09:38
rntp	127.0.0.1	Inactive	27/05/11 09:38	BOX00121:IS	27/05/11 09:38
rpop	127.0.0.1	Inactive	27/05/11 09:38	BOX00121:IS	27/05/11 09:38
rrdp	127.0.0.1	Inactive	27/05/11 09:38	BOX00121:IS	27/05/11 09:38
radius	127.0.0.1	Inactive	27/05/11 09:38	BOX00121:IS	27/05/11 09:38
ping	127.0.0.1	Inactive	27/05/11 09:38	BOX00121:IS	27/05/11 09:38
rtsp	127.0.0.1	Inactive	27/05/11 09:38	BOX00121:IS	27/05/11 09:38
saa	127.0.0.1	Inactive	27/05/11 09:38	BOX00121:IS	27/05/11 09:38

Hub Time: Sun, 05/29/2011 11:51 PM Server Available Monitor Status - BOX00121 - SYSADMIN

ISM Workspace / Profile Statistics

- Service level info for all profiles

Figure 1. Internet Service Monitoring workspaces

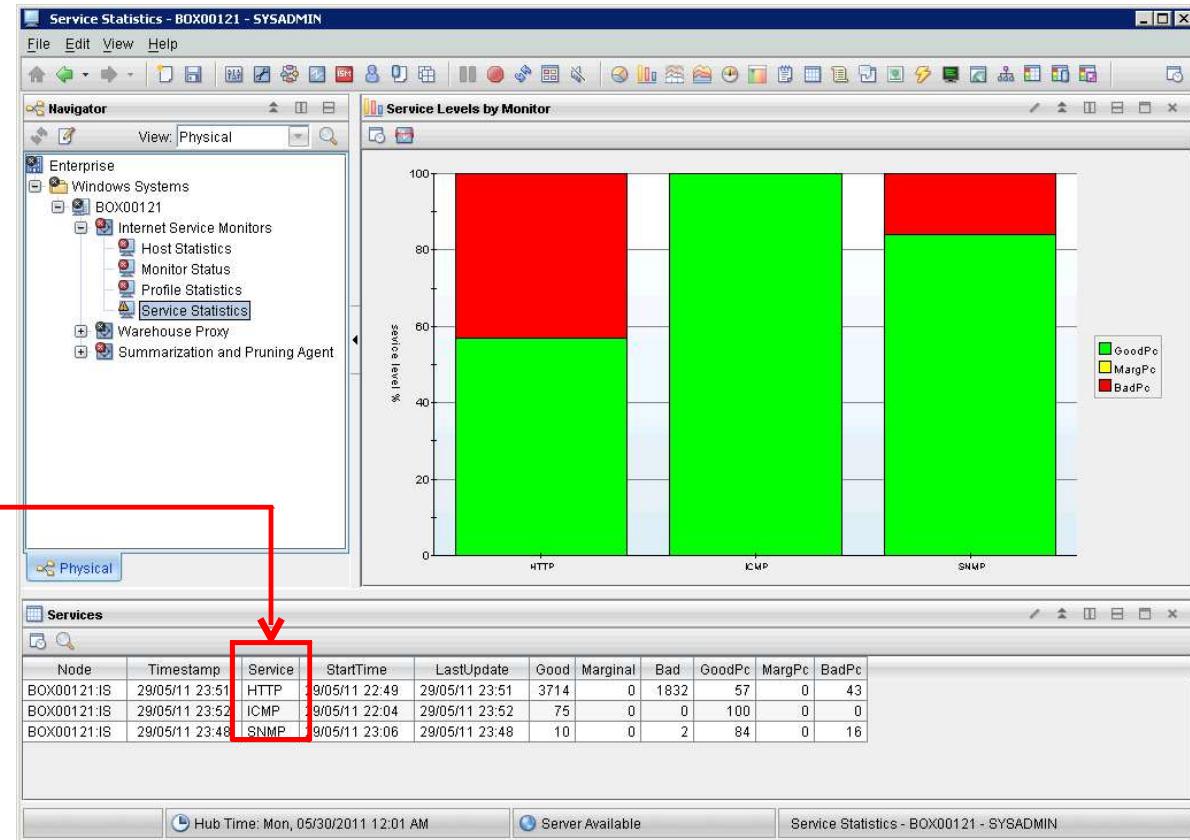
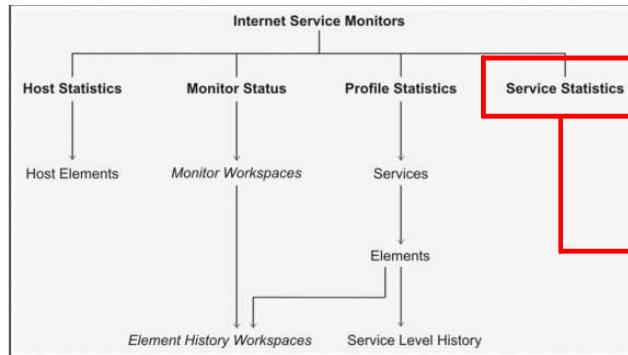


Left-Click chain to drill down

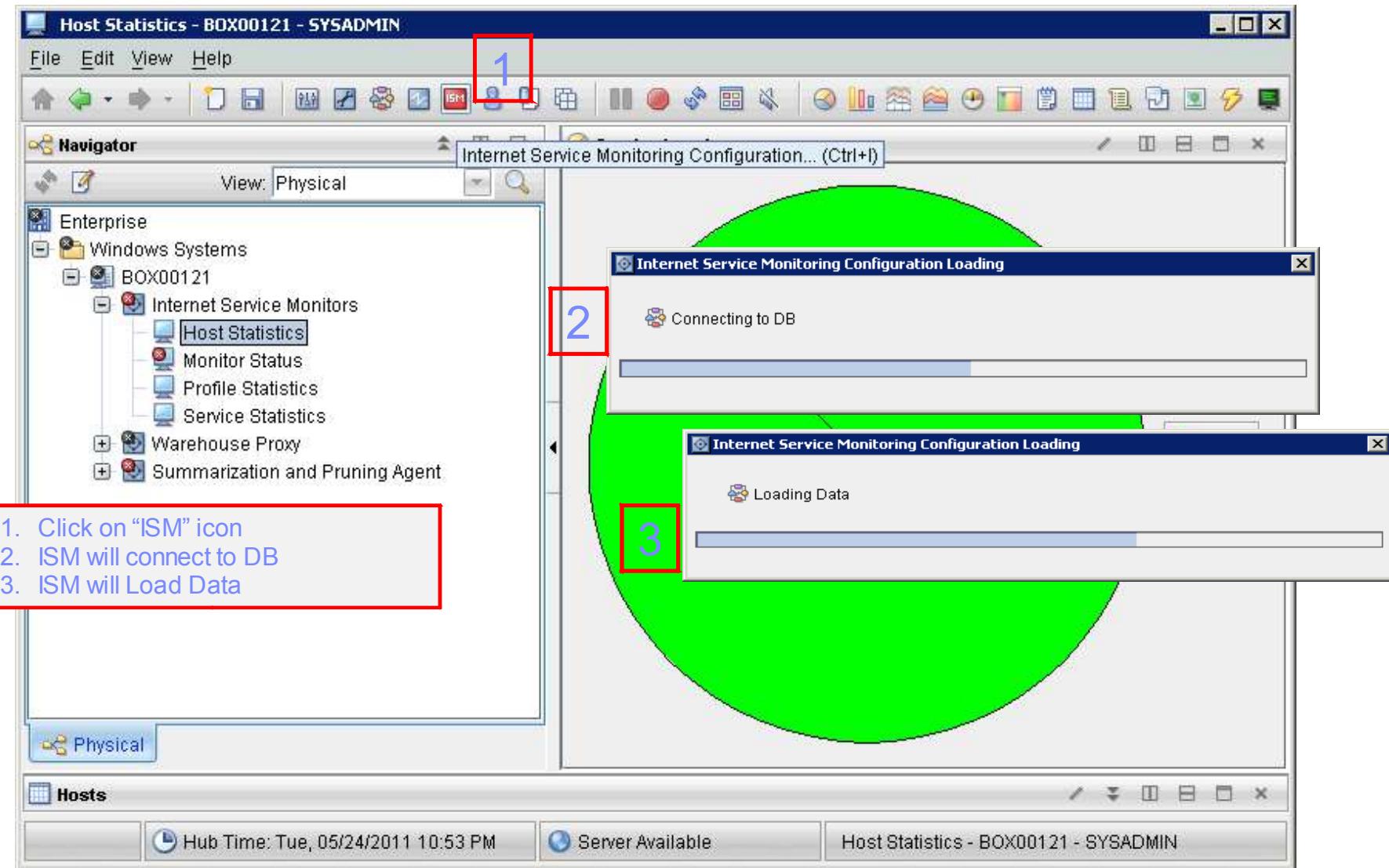
ISM Workspace / Service Statistics

- Service level info for all monitors monitored

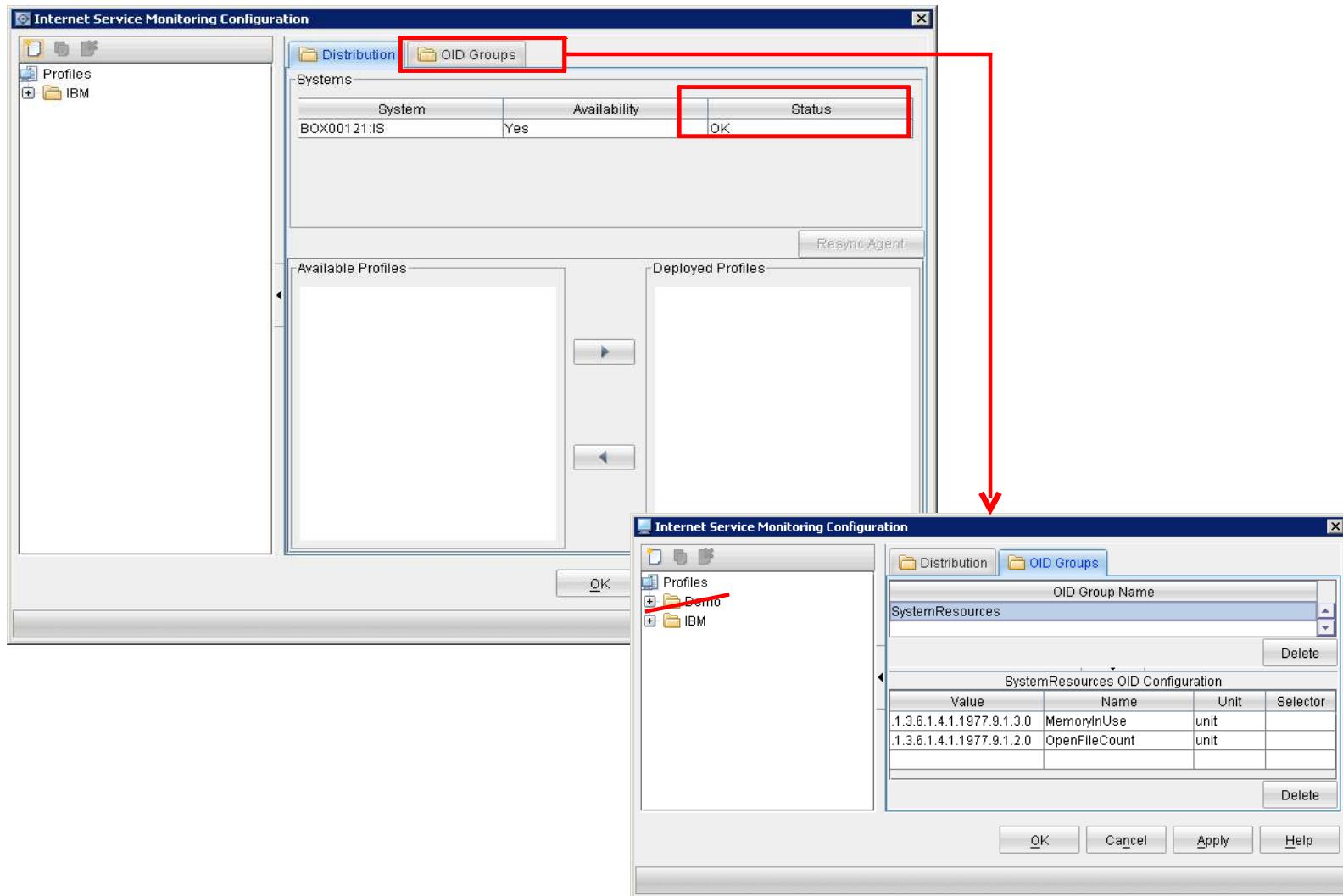
Figure 1. Internet Service Monitoring workspaces



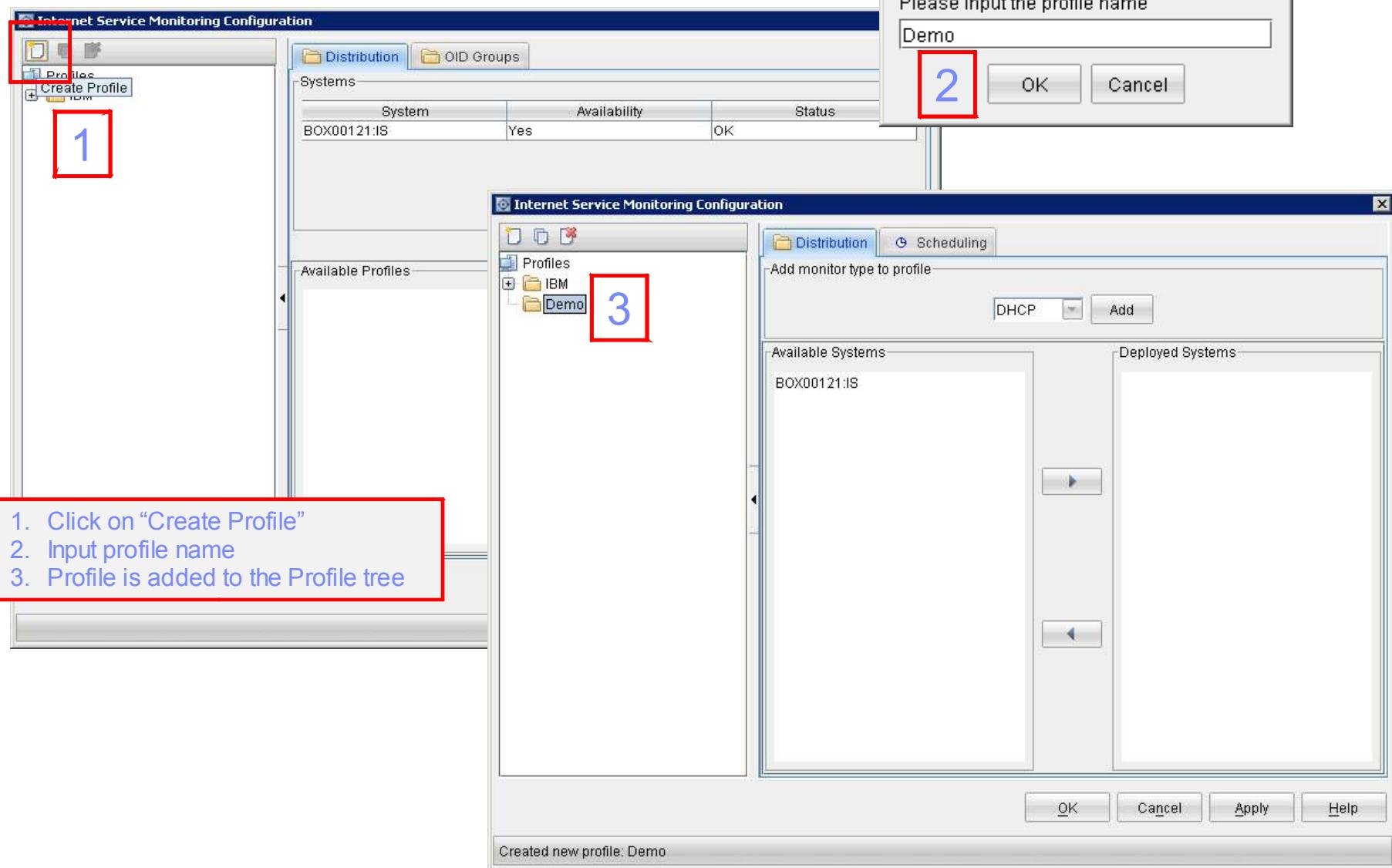
Loading ISM Configuration (Eye or ISM square icon)



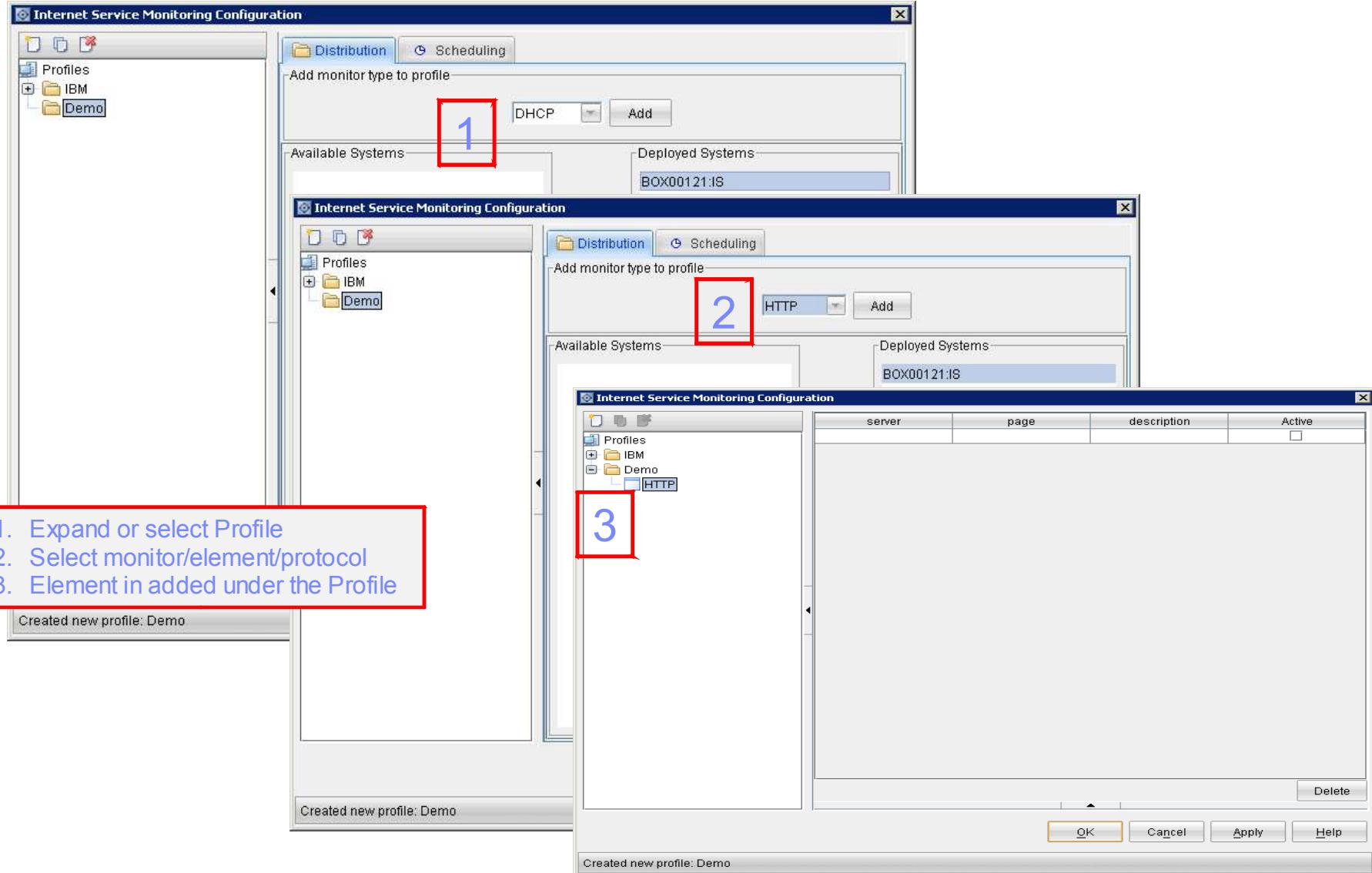
ISM Configuration (Loaded)



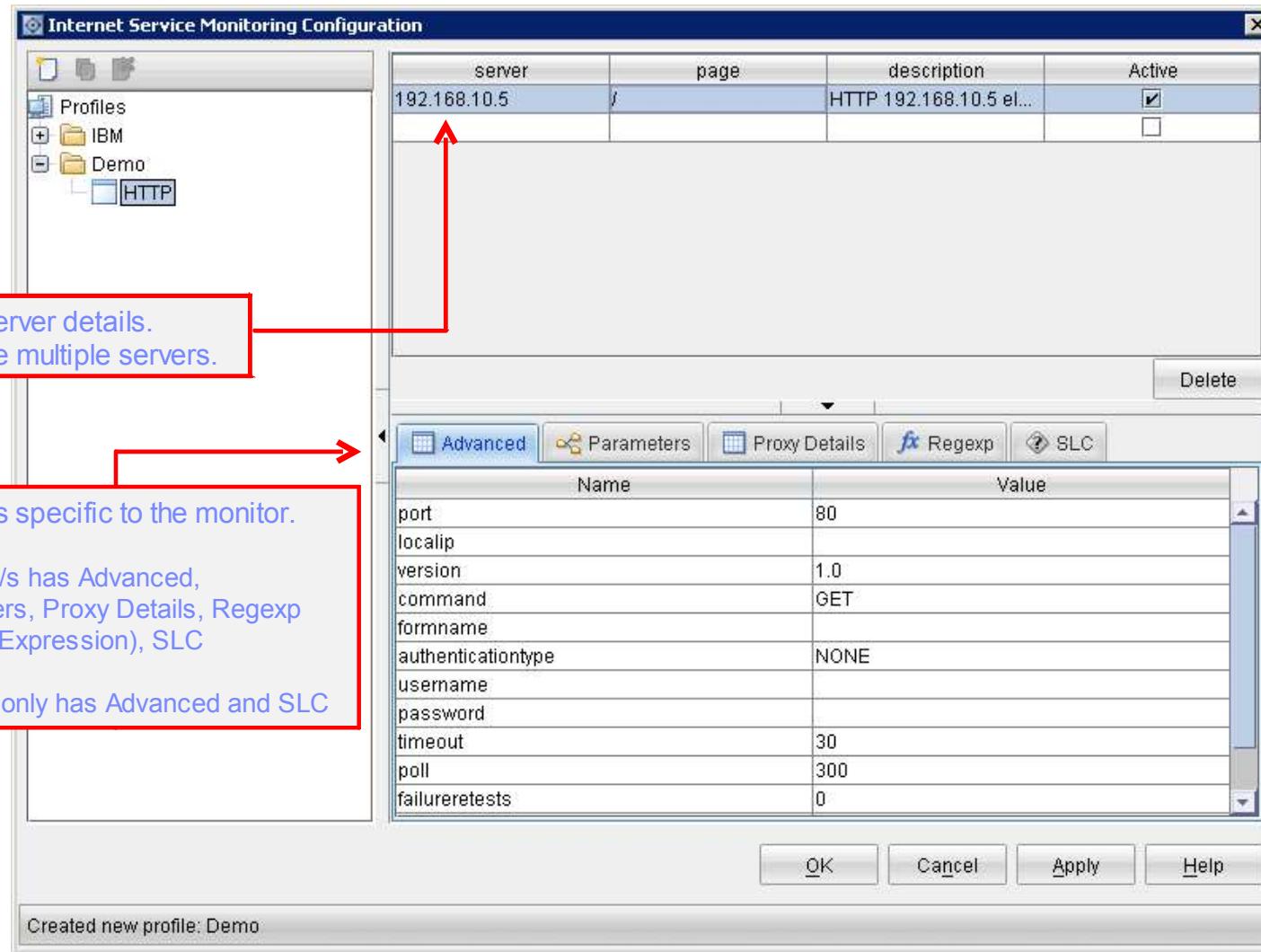
Creating a Profile



Creating an Element



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.

Table 81. HTTP monitor configuration

Field	Description
server	The host name of the server to be monitored.
page	The URL of the page to be monitored.
description	A text field for providing descriptive information on the element.
Active	Selects whether or not the profile element should be activated once it is created.
port	The port on the HTTP server to use. Default: 80
localip	Specifies the IP address of the network interface that the monitor uses for the test. If this field is empty, the monitor uses the interface specified by the ipAddress property.
version	The HTTP protocol version to be used: <ul style="list-style-type: none">• 1.0• 1.1 Default: 1.0

Appendix K. HTTP monitor 529

Table 81. HTTP monitor configuration (continued)

Field	Description
command	The HTTP request type: <ul style="list-style-type: none">• HEAD• GET

Sample Element / HTTP - Service Level Classification tab

Internet Service Monitoring Configuration

Profiles
IBM
Demo
HTTP

server	page	description	Active
192.168.10.5	/	HTTP 192.168.10.5 el...	<input checked="" type="checkbox"/>
			<input type="checkbox"/>

Delete

Advanced Parameters Proxy Details Regexp SLC

If

Metric	Operator	Operand
status	!=	200
status	!=	301
status	!=	302

Then status FAILED Delete Condition Delete Group

Else If

Metric	Operator	Operand
totalTime	>	20

Then status FAILED Delete Condition Delete Group

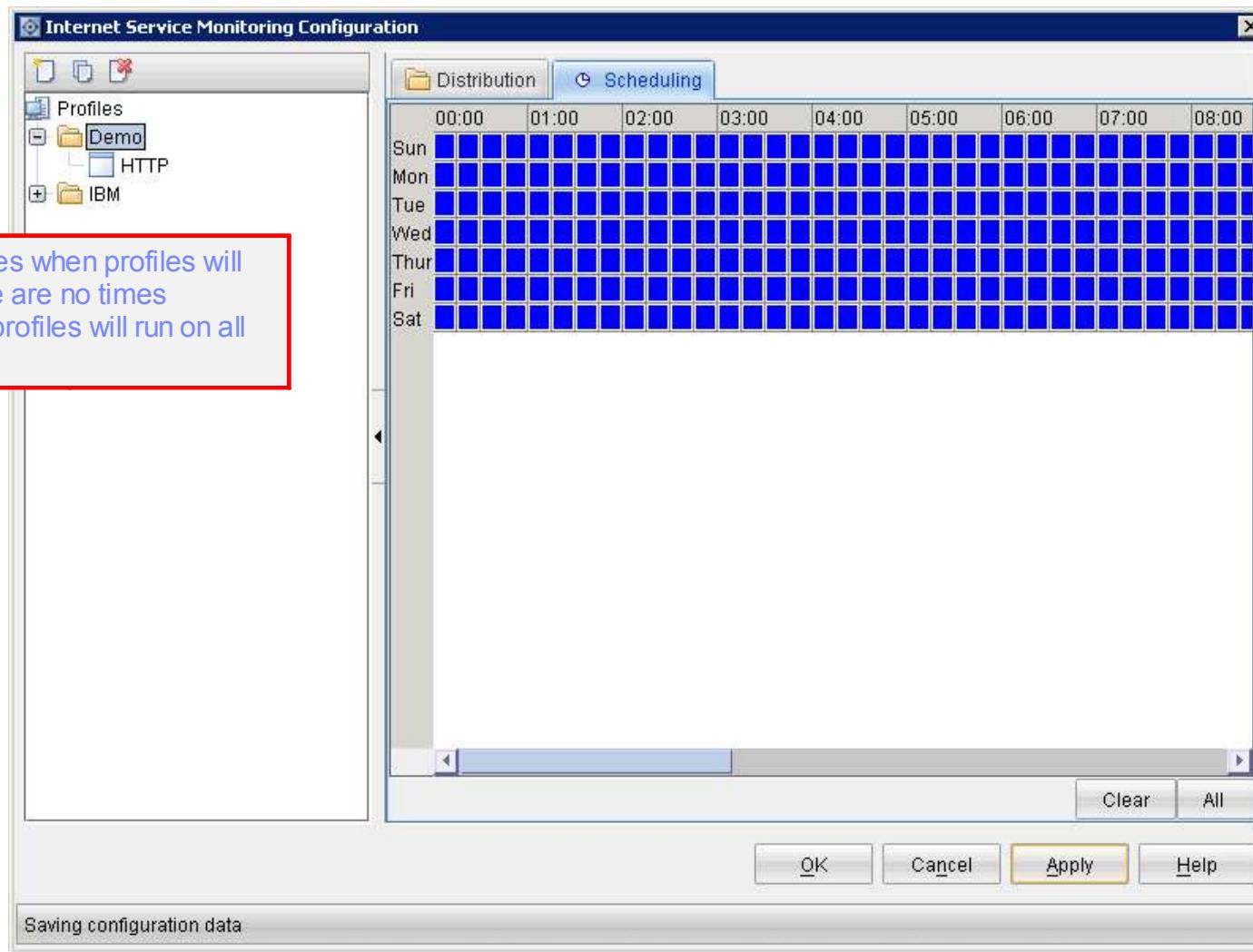
OK Cancel Apply Help

Created new profile: Demo

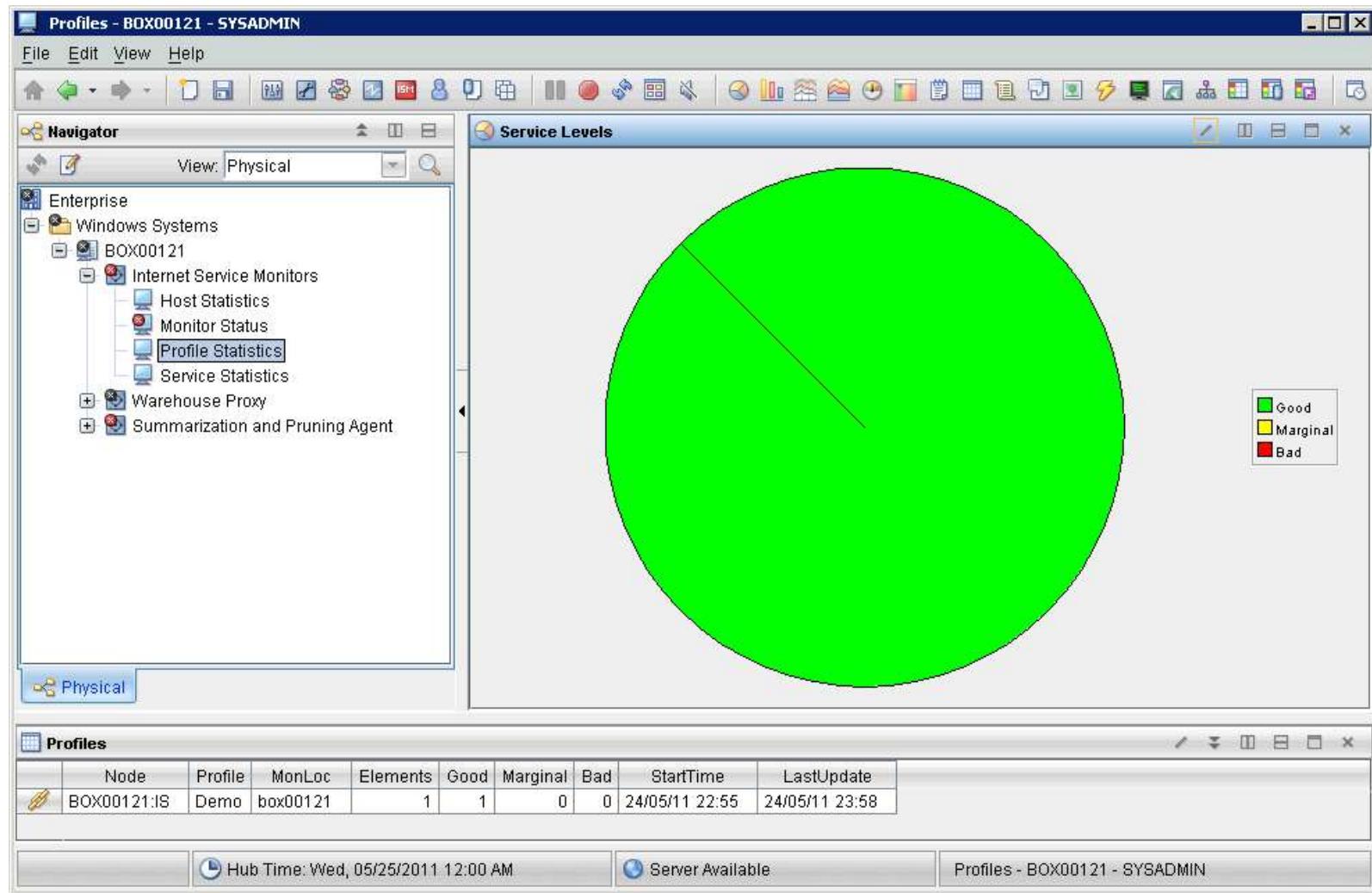
Rules for the determining the service level.
Use conditional logic to set final result – Failed, Marginal, or Failed.

The screenshot shows the 'Internet Service Monitoring Configuration' window. On the left, there's a tree view of profiles: 'Profiles', 'IBM', 'Demo', and 'HTTP'. Under 'Demo', there's a selected 'HTTP' node. The main area has a table with columns 'server', 'page', 'description', and 'Active'. One row is active, showing '192.168.10.5' as the server, '/' as the page, and a long description starting with 'HTTP 192.168.10.5 el...'. There are checkboxes for 'Active' and another row below it. A 'Delete' button is at the bottom right of the table area. Below the table is a toolbar with tabs: 'Advanced', 'Parameters', 'Proxy Details', 'Regexp', and 'SLC' (which is selected). The 'SLC' tab contains two sections: 'If' and 'Else If'. The 'If' section has three rows of conditions: 'status != 200', 'status != 301', and 'status != 302'. It also includes a 'Then status' dropdown set to 'FAILED' and buttons for 'Delete Condition' and 'Delete Group'. The 'Else If' section has one row of conditions: 'totalTime > 20'. It also includes a 'Then status' dropdown set to 'FAILED' and buttons for 'Delete Condition' and 'Delete Group'. At the bottom are 'OK', 'Cancel', 'Apply', and 'Help' buttons. A message 'Created new profile: Demo' is at the very bottom.

Sample Element / HTTP - Profile Scheduling



Sample Element / HTTP - Profile Statistics



Location of the data in DB

Stored in KIS Schema

DB2 Control Center Screen Captures

The screenshot shows two DB2 Control Center windows displaying tables from the KIS schema.

Open Table - ELEMENTS
BOX00121 - DB2 - TEPS - KIS.ELEMENTS
Edits to these results are performed as searched UPDATES and Deletes. Use the Tools Settings notebook to change the form of editing.

ELEMENT_ID	PROFILE_ID	ACTIVE
1	1	1
5	2	0

Open Table - PROFILES
BOX00121 - DB2 - TEPS - KIS.PROFILES
Edits to these results are performed as searched UPDATES and Deletes. Use the Tools Settings notebook to change the form of editing.

PROFILE_ID	NAME
1	Demo
2	IBM

Open Table - HTTP
BOX00121 - DB2 - TEPS - KIS.HTTP
Edits to these results are performed as searched UPDATES and Deletes. Use the Tools Settings notebook to change the form of editing.

ELEMENT_ID	SERVER	PAGE	PORT	LOCALIP	VERSION	COMMAND
1	192.168.10.5	/	80		1.0	GET
5	www.ibm.com	/	80		1.0	GET

A red arrow points from the PROFILE_ID column in the ELEMENTS table to the ELEMENT_ID column in the HTTP table, indicating a relationship between them.

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.

The screenshot illustrates the data flow and configuration for monitoring. The left side shows the physical storage of profiles in XML files. The right side shows the configuration interface where profiles are managed and synchronized.

File Explorer (Left):

- Address: C:\IBM\ITM\TMAITM6\ism\profiles\active
- Content: Shows XML files (dummy.txt, http.xml, icmp.xml, snmp.xml) and a Text Document (dummy.txt).

GVIM Editor (Right):

```
<?xml version="1.0" encoding="UTF-8" standalone="no" ?>
<profile>
  <http>
    <element active="true" checksum="zeit_1306302193_16372_1CE3" datalogpath="http_Proxy192_168_10_5_80__NONE_zeit_1306302193_16372_1CE3" dynamiccontent="false" profile="Demo" updated="1306735542" useproxy="false">
      <fields>
        <server>192.168.10.5</server>
        <page></page>
        <port>80</port>
        <localip/>
        <version>1.0</version>
        <action>GET</action>
        <Formname/>
        <authenticationtype>NONE</authenticationtype>
        <username/>
        <password crypt="true"/>
        <timeout>30</timeout>
        <poll>300</poll>
        <failuretests>0</failuretests>
        <retestinterval>0</retestinterval>
        <description>HTTP 192.168.10.5 element.</description>
        <hostnamelookup preference>Default</hostnamelookup preference>
        <extra/>
      </fields>
      <parameters/>
      <proxydetails nocache="false">
        <server/>
      </proxydetails>
    </element>
  </http>
</profile>
```

Internet Service Monitoring Configuration Dialog (Bottom Left):

- Buttons: OK, Cancel, Apply, Help.
- Available Profiles: Demo, HTTP, ICMP, SNMP, IBM.
- Deployed Profiles: Demo, IBM.
- Resync Agent button.

Callout: Click "Resync Agent" to manually resync profiles

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.

```
C:\WINDOWS\system32\cmd.exe - cmd /k ismconfig -u sysadmin -p netcool0 -config -add ""monitor=... C:\WINDOWS\system32\cmd.exe - cmd /k ismconfig -u sysadmin -p netcool0 -config -add "monitor=HTTP profile=Demo73 server=www.ibm.com page=index.html description=TestHTTP" C:\WINDOWS\system32\cmd.exe - cmd /k ismconfig -u sysadmin -p netcool0 -config -add "monitor=ICMP profile=Demo73 server=192.168.10.121 description=TestICMP" C:\WINDOWS\system32\cmd.exe - cmd /k ismconfig -u sysadmin -p netcool0 -config -listelts "monitor=HTTP profile=Demo73" C:\WINDOWS\system32\cmd.exe - cmd /k ismconfig -u sysadmin -p netcool0 -config -listelts "monitor=ICMP profile=Demo73" C:\WINDOWS\system32\cmd.exe - cmd /k ismconfig -u sysadmin -p netcool0 -config -deploy Demo73 BOX00123 :IS C:\WINDOWS\system32\cmd.exe - cmd /k ismconfig -u sysadmin -p netcool0 -config -deploy Demo73 BOX00123 :IS
```

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

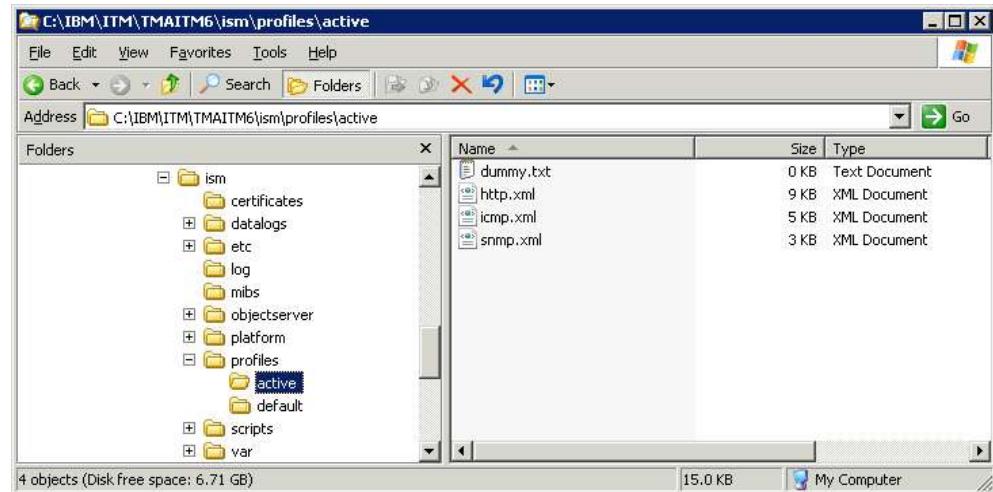
logs of bridge (bridge.log), kisagent (kisagent.log),
modules, and monitors (<monitor>.log)

-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

Manage Tivoli Enterprise Monitoring Services - TEMS Mode - [Local Computer]

Actions Options View Windows Help

Service/Application	Task/SubSystem	Configured	Status	Configuration	Startup	Accou...
Eclipse Help Server	HELPSVR	Yes	Started	up-to-date	Auto	Locals...
Tivoli Enterprise Portal	Browser	Yes		N/A	N/A	N/A
Tivoli Enterprise Portal	Desktop	Yes		N/A	N/A	N/A
Tivoli Enterprise Portal Server	KFWSRV	Yes (TEMS)	Started	up-to-date	Auto	Locals...
Warehouse Summarization and Pr...	Primary	Yes (TEMS)	Started	up-to-date	Auto	Locals...
Internet Service Monitoring	Primary	Yes (TEMS)	Started	up-to-date	Auto	Locals...
Warehouse Proxy	Primary	Yes (TEMS)	Started	up-to-date	Auto	Locals...
Tivoli Enterprise Monitoring Server	TEM51	Yes	Started	up-to-date	Auto	Locals...

Internet Service Monitoring Configuration

Object Server Connection

*Enable Object Server Connection
YES

*Name
VMOMNI730P

*Hostname
192.168.10.151

*Port
14100

OK Cancel

Tivoli Integrated Portal - Mozilla Firefox

File Edit View History Bookmarks Tools Help

https://192.168.10.151:16316/lbm/console/login.do?action=secure

Tivoli View: All tasks Welcome root Help | Logout IBM.

Active Event List (AEL)

Active Event List (AEL)

Sev	Ack	Node	Alert Group	Summary	Last Occurrence	Count
!	No	192.168.10.106	SystemResou...	DVC Failed - Timed out while waiting for response	5/30/11 3:13:09 AM	2
!	No	192.168.10.70	/	DVC Failed - Exceeded specified timeout of 30 seconds [Conne...	5/30/11 3:13:10 AM	2
!	No	192.168.10.106		DVC Good - Pings Complete: Echo reply 100% out of 5 (Average...	5/30/11 3:07:42 AM	2
!	No	192.168.10.80		DVC Good - Pings Complete: Echo reply 100% out of 5 (Average...	5/30/11 3:07:42 AM	1

1 rows selected Data Source(s): VMOMNI730P QuickFilter: None Auto refresh in: 44 sec.

Transferring data from 192.168.10.151... 192.168.10.151:16316 Fiddler: OFF (auto)

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

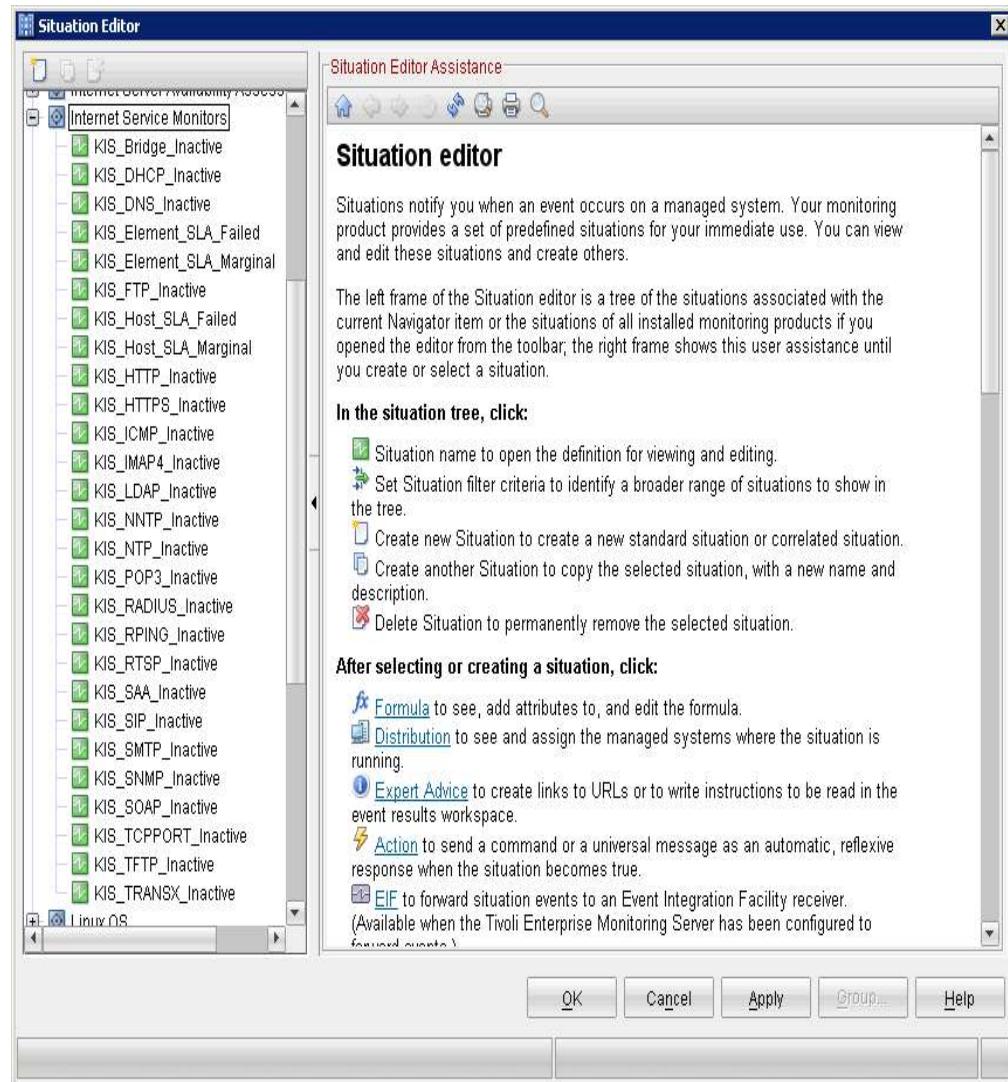
monitor is not running or has not sent any results recently

4. KIS_Element_SLA_Failed

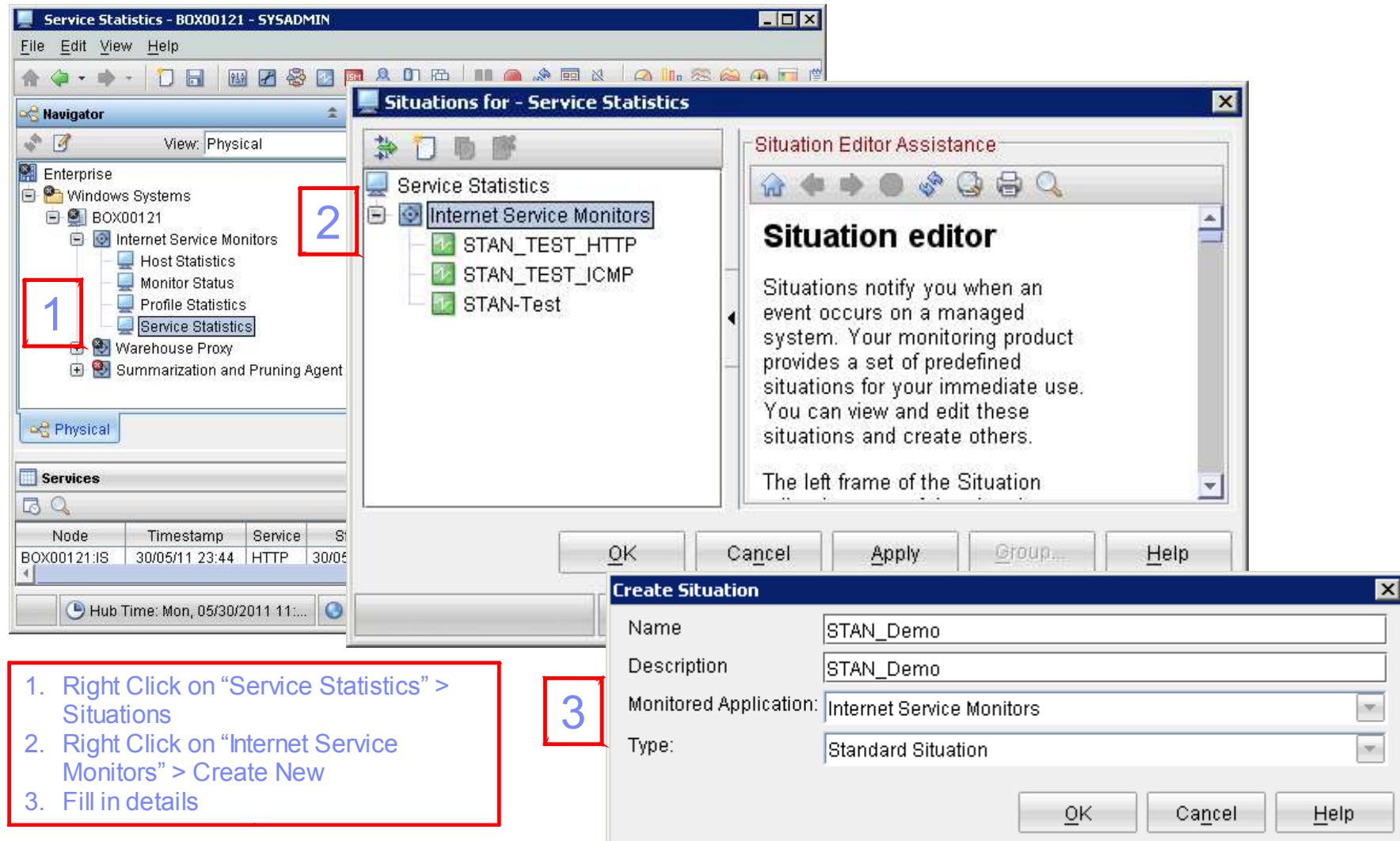
service monitored by a profile element has failed. Good falls below 95% of all test performed by the profile element.

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.

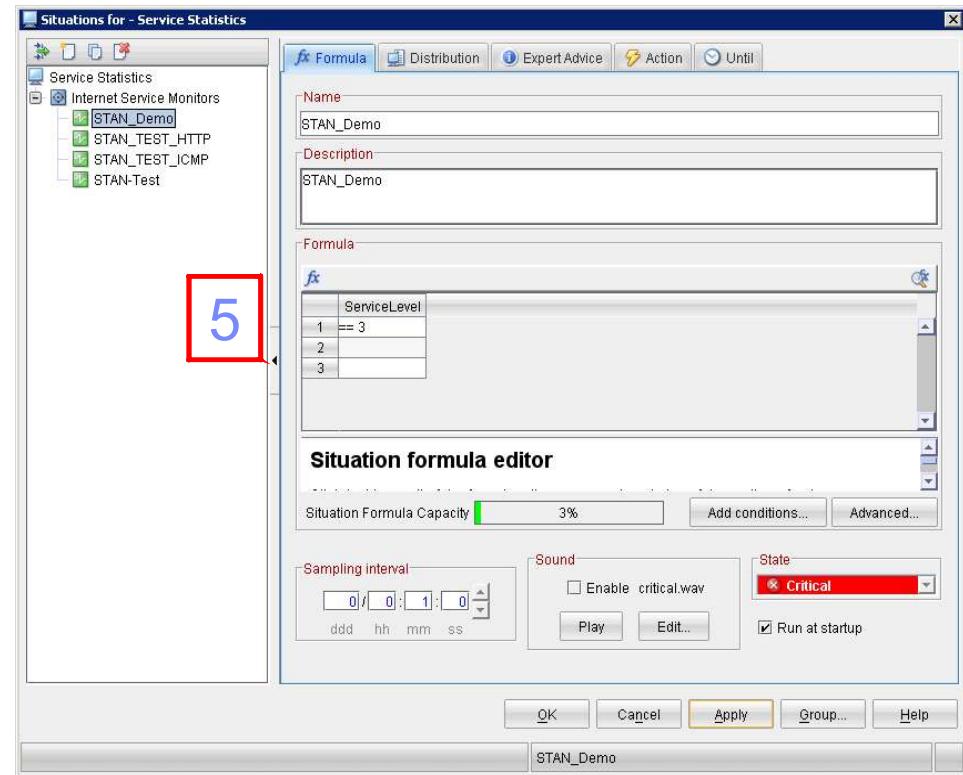
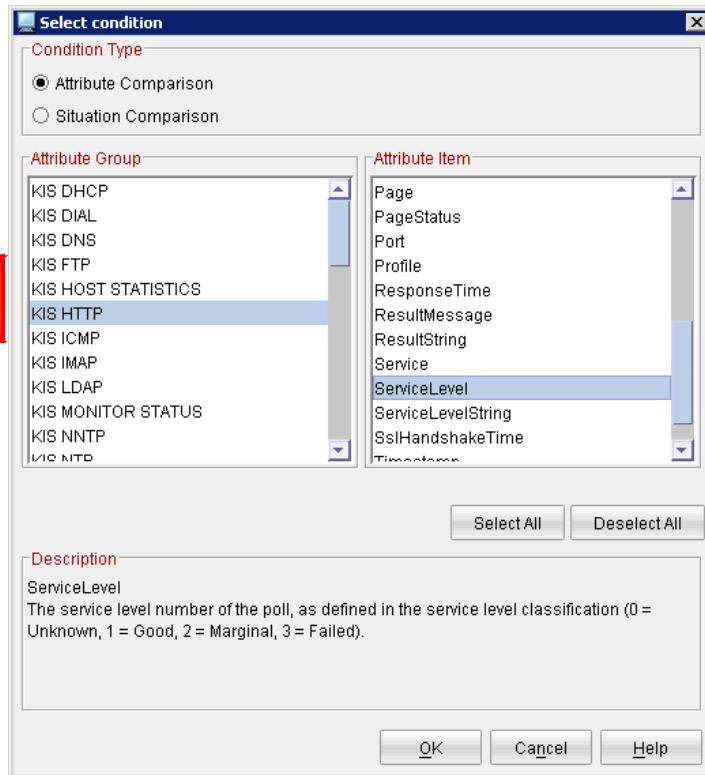


Creating Custom Situations



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"

The screenshot displays the IBM Tivoli Netcool/OMNIBUS interface across three windows:

- Situations for - Service Statistics**: This window shows the configuration of a new situation named "STAN_Demo". A red box highlights the "Distribution" tab, which is currently selected. A red number "6" is placed over the "Assigned" section where the agent "NETCOOL_ISM_AGENT" is listed.
- Enterprise Status - BOX00121 - SYSADMIN**: This window shows the "Monitors" pane with a red number "7" placed over the "Available Managed Systems" list, which contains "BOX00121:IS".
- Situation Event Console**: This window displays a table of alerts. The table includes columns for Severity, Status, Owner, Situation Name, Display Item, and Source. Most alerts are Critical (red) and Open. One alert is Fatal (black) and Open. The table lists various system failures such as host SLA failures, element SLA failures, connectivity issues, and initialization errors.

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
MaxLogFile : 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`
MaxLogFile : 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

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.

Internet Service Monitoring Configuration

Profiles: Demo (HTTP, ICMP, SNMP)

server	page	description	Active
192.168.10.5	/	HTTP 192.168.10.5 element.	<input checked="" type="checkbox"/>
192.168.10.70	/	HTTP 192.168.10.70 element.	<input checked="" type="checkbox"/>

SLC (Service Level Condition) Editor

If:

Metric	Operator	Operand
status	\neq	200
status	\neq	301
status	\neq	302

Then status: FAILED

Else If:

Metric	Operator	Operand
totalTime	>	20

Then status: FAILED

Else If:

Metric	Operator	Operand
totalTime	>	10

Then status: MARGINAL

Buttons: OK, Cancel, Apply, Help, Add Group

```
K:\http.log = (C:\IBM\ITM\TMAITM6\ism\log) - GVIM
File Edit Tools Syntax Buffers Window Help
Mon May 30 01:01:46 2011 Debug: ${profile} -> "Demo"
Mon May 30 01:01:46 2011 Debug: ${datalogpath} -> "http_Proxy192_168_10_70_80__NONE_zeit_1306517335_2250_6A05"
...
Mon May 30 01:01:46 2011 Debug: ${host} -> "192.168.10.70"
Mon May 30 01:01:46 2011 Debug: ${timeout} -> "30"
Mon May 30 01:01:46 2011 Debug: ${pollInterval} -> "300"
Mon May 30 01:01:46 2011 Debug: ${description} -> "HTTP 192.168.10.70 element."
Mon May 30 01:01:46 2011 Debug: ${failureRetests} -> "0"
Mon May 30 01:01:46 2011 Debug: ${failureReTestInterval} -> "0"
Mon May 30 01:01:46 2011 Debug: ${identChecksum} -> "zeit_1306517335_2250_6A05"
Mon May 30 01:01:46 2011 Debug: ${startTimePoll} -> "1306742429"
Mon May 30 01:01:46 2011 Debug: ${service} -> "HTTP"
Mon May 30 01:01:46 2011 Debug: ${port} -> "80"
Mon May 30 01:01:46 2011 Debug: ${page} -> "/"
Mon May 30 01:01:46 2011 Debug: ${command} -> "GET"
Mon May 30 01:01:46 2011 Debug: ${lookunlimte} -> "0.00025"
${message} -> "Connection timed out"
${percentageDownloadedGood} -> "0.00"
${bytesTransferred} -> "0"
${monitorHost} -> "box00121"
${monitorDNSDomain} -> ...
${timeStamp} -> "Mon May 30 01:01:46 2011"
${time} -> "1306742506"
${serviceLevel} -> "3"
${resultString} -> "status NEQ 200 and status NEQ 301 and status NEQ 302"
${consecutiveFailures} -> "1"
${lastServiceLevelCounter} -> "23"
${lastServiceLevel} -> "3"
${serviceLevelCounter} -> "24"
Leaving Forward_elements()
EXIT_THREAD from (5632)
Decreasing thread count to 0 (5632)
Event successfully sent to bridge - removing from queue
```

```
C:\WINDOWS\system32\cmd.exe
C:\Documents and Settings\Administrator>ping -n 1 192.168.10.70
Pinging 192.168.10.70 with 32 bytes of data:
Request timed out.

Ping statistics for 192.168.10.70:
  Packets: Sent = 1, Received = 0, Lost = 1 (100% loss),
C:\Documents and Settings\Administrator>_
```

Troubleshooting: Log Samples (Successful HTTP)

```
Tue May 31 06:40:00 2011 Debug: ${profile} -> "Demo"
Tue May 31 06:40:00 2011 Debug: ${datalogpath} -> "http_Proxy192_168_10_5_80__NONE_zeit_1306302193_16372_1CE3"
Tue May 31 06:40:00 2011 Debug: ${host} -> "192.168.10.5"
Tue May 31 06:40:00 2011 Debug: ${timeout} -> "30"
Tue May 31 06:40:00 2011 Debug: ${pollInterval} -> "300"
Tue May 31 06:40:00 2011 Debug: ${description} -> "HTTP 192.168.10.5 element.."
Tue May 31 06:40:00 2011 Debug: ${failureRetests} -> "0"
Tue May 31 06:40:00 2011 Debug: ${failureRetestInterval} -> "0"
Tue May 31 06:40:00 2011 Debug: ${identchecksum} -> "zeit_1306302193_16372_1CE3"
Tue May 31 06:40:00 2011 Debug: ${startTimePoll} -> "1306849198"
Tue May 31 06:40:00 2011 Debug: ${service} -> "HTTP"
Tue May 31 06:40:00 2011 Debug: ${port} -> "80"
Tue May 31 06:40:00 2011 Debug: ${page} -> "/"
Tue May 31 06:40:00 2011 Debug: ${command} -> "GET"
Tue May 31 06:40:00 2011 Debug: ${lookupTime} -> "0.00023"
Tue May 31 06:40:00 2011 Debug: ${connectTime} -> "0.00550"
Tue May 31 06:40:00 2011 Debug: ${version} -> "1.1"
Tue May 31 06:40:00 2011 Debug: ${status} -> "301"
Tue May 31 06:40:00 2011 Debug: ${message} -> "OK"
Tue May 31 06:40:00 2011 Debug: ${server} -> "Apache/2.2.17 (Fedora)"
Tue May 31 06:40:00 2011 Debug: ${responseTime} -> "0.00828"
Tue May 31 06:40:00 2011 Debug: ${pageCount} -> "1"
Tue May 31 06:40:00 2011 Debug: ${percentageDownloadedGood} -> "100.00"
Tue May 31 06:40:00 2011 Debug: ${downloadTime} -> "0.55068"
Tue May 31 06:40:00 2011 Debug: ${totalTime} -> "0.57682"
Tue May 31 06:40:00 2011 Debug: ${bytesTransferred} -> "45029"
Tue May 31 06:40:00 2011 Debug: ${bytesPerSec} -> "81770"
Tue May 31 06:40:00 2011 Debug: ${checksum} -> "3892355"
Tue May 31 06:40:00 2011 Debug: ${monitorHost} -> "box00121"
Tue May 31 06:40:00 2011 Debug: ${monitorDNSDomain} -> ...
Tue May 31 06:40:00 2011 Debug: ${timeStamp} -> "Tue May 31 06:40:00 2011"
Tue May 31 06:40:00 2011 Debug: ${time} -> "1306849200"
Tue May 31 06:40:00 2011 Debug: ${serviceLevel} -> "1"
Tue May 31 06:40:00 2011 Debug: ${resultString} -> "Default status"
Tue May 31 06:40:00 2011 Debug: ${lastServiceLevelCounter} -> "83"
Tue May 31 06:40:00 2011 Debug: ${lastServiceLevel} -> "1"
Tue May 31 06:40:00 2011 Debug: ${serviceLevelCounter} -> "84"
Tue May 31 06:40:00 2011 Debug: ${url1001} -> "http://192.168.10.5/web/guest;jsessionid=D9FBDC18B3D76E0B145144524601AEC7"
Tue May 31 06:40:00 2011 Debug: ${urlResult001} -> "200"
Tue May 31 06:40:00 2011 Debug: ${urlDownloadTime001} -> "0.53992"
Tue May 31 06:40:00 2011 Debug: Leaving Forward_elements()
Tue May 31 06:40:00 2011 Debug: EXIT_THREAD from (5260)
Tue May 31 06:40:00 2011 Debug: Decreasing thread count to 0 (5260)
Tue May 31 06:40:01 2011 Debug: Increasing thread count to 1
Tue May 31 06:40:01 2011 Debug: Spawning connection thread to '192.168.10.70' ...
Tue May 31 06:40:01 2011 Debug: Connection thread (5396) spawned
```

3187 , 39

29%

Troubleshooting: Log Samples (OK & FAILED SNMP)

File Edit Tools Syntax Buffers Window Help

File Edit Tools Syntax Buffers Window Help

```

Tue May 31 08:38:54 2011 Debug: ${profile} -> "Demo"
Tue May 31 08:38:54 2011 Debug: ${datalogpath} -> "snmp192_168_10_106_SystemResources_161_zeit_1306735542_30062_63FD"
Tue May 31 08:38:54 2011 Debug: ${host} -> "192.168.10.106"
Tue May 31 08:38:54 2011 Debug: ${timeout} -> "20"
Tue May 31 08:38:54 2011 Debug: ${pollInterval} -> "300"
Tue May 31 08:38:54 2011 Debug: ${description} -> "SNMP 192.168.10.106 element."
Tue May 31 08:38:54 2011 Debug: ${failureRetests} -> "0"
Tue May 31 08:38:54 2011 Debug: ${failureRetestInterval} -> "0"
Tue May 31 08:38:54 2011 Debug: ${identchecksum} -> "zeit_1306735542_30062_63FD"
Tue May 31 08:38:54 2011 Debug: ${startTimePoll} -> "1306856333"
Tue May 31 08:38:54 2011 Debug: ${service} -> "SNMP"
Tue May 31 08:38:54 2011 Debug: ${port} -> "161"
Tue May 31 08:38:54 2011 Debug: ${snmpVersion} -> "version 1"
Tue May 31 08:38:54 2011 Debug: ${oidGroupName} -> "SystemResources"
Tue May 31 08:38:54 2011 Debug: ${oidNames} -> "oidNames[MemoryInUse|OpenFileCount]"
Tue May 31 08:38:54 2011 Debug: ${oidUnits} -> "unit|unit"
Tue May 31 08:38:54 2011 Debug: ${message} -> "Successful Get"
Tue May 31 08:38:54 2011 Debug: ${oidName0} -> "MemoryInUse"
Tue May 31 08:38:54 2011 Debug: ${oidUnit0} -> "unit"
Tue May 31 08:38:54 2011 Debug: ${snmpResult0} -> "1816148"
Tue May 31 08:38:54 2011 Debug: ${oidName1} -> "OpenFileCount"
Tue May 31 08:38:54 2011 Debug: ${oidUnit1} -> "unit"
Tue May 31 08:38:54 2011 Debug: ${snmpResult1} -> "4259"
Tue May 31 08:38:54 2011 Debug: ${numOids} -> "2"
Tue May 31 08:38:54 2011 Debug: ${oidReturnValues} -> "1816148|4259"
Tue May 31 08:38:54 2011 Debug: ${totalTime} -> "0.00088"
Tue May 31 08:38:54 2011 Debug: ${monitorHost} -> "box00121"
Tue May 31 08:38:54 2011 Debug: ${monitorDNSDomain} -> ...
Tue May 31 08:38:54 2011 Debug: ${timeStamp} -> "Tue May 31 08:38:54 2011"
Tue May 31 08:38:54 2011 Debug: ${time} -> "1306856334"
Tue May 31 08:38:54 2011 Debug: ${serviceLevel} -> "1"
Tue May 31 08:38:54 2011 Debug: ${resultString} -> "Default status"
Tue May 31 08:38:54 2011 Debug: ${consecutiveFailures} -> "0"
Tue May 31 08:38:54 2011 Debug: ${lastServiceLevelCounter} -> "1"
Tue May 31 08:38:54 2011 Debug: ${lastServiceLevel} -> "3"
Tue May 31 08:38:54 2011 Debug: ${serviceLevelCounter} -> "1"
Tue May 31 08:38:54 2011 Debug: Leaving forward_elements()
Tue May 31 08:38:54 2011 Debug: snmpEnd: Session closed OK
Tue May 31 08:38:54 2011 Debug: snmpEnd: SNMP session ended
Tue May 31 08:38:54 2011 Debug: Decreasing thread count to 0 (6092)

```

OK

FAILED

Internet Service Monitoring Configuration

OID Group Name
SystemResources

SystemResources OID Configuration			
Value	Name	Unit	Selector
.1.3.6.1.4.1.1977.9.1.3.0	MemoryInUse	unit	
.1.3.6.1.4.1.1977.9.1.2.0	OpenFileCount	unit	

OK Cancel Apply Help

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
MaxLogFile : 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
  MaxLogFile : 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\\_overview.html](http://publib.boulder.ibm.com/infocenter/tivihelp/v24r1/topic/com.ibm.itcamt.doc_7.3/ism/dita/tsg/concept/kis_trouble_overview.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/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_ag.pdf)
  - [http://publib.boulder.ibm.com/infocenter/tivihelp/v24r1/topic/com.ibm.itcamt.doc\\_7.3/\\_deliverables/itcamtrans\\_icg.pdf](http://publib.boulder.ibm.com/infocenter/tivihelp/v24r1/topic/com.ibm.itcamt.doc_7.3/_deliverables/itcamtrans_icg.pdf)
  - [http://publib.boulder.ibm.com/infocenter/tivihelp/v24r1/topic/com.ibm.itcamt.doc\\_7.3/\\_deliverables/itcamtrans\\_ug.pdf](http://publib.boulder.ibm.com/infocenter/tivihelp/v24r1/topic/com.ibm.itcamt.doc_7.3/_deliverables/itcamtrans_ug.pdf)
  - [http://publib.boulder.ibm.com/infocenter/tivihelp/v24r1/topic/com.ibm.itcamt.doc\\_7.3/\\_deliverables/itcamtrans\\_tsg.pdf](http://publib.boulder.ibm.com/infocenter/tivihelp/v24r1/topic/com.ibm.itcamt.doc_7.3/_deliverables/itcamtrans_tsg.pdf)
- **Version 7.2.0.2**
  - [http://publib.boulder.ibm.com/infocenter/tivihelp/v24r1/topic/com.ibm.itcamt.doc\\_7.2.0.2/ic-homepage.html](http://publib.boulder.ibm.com/infocenter/tivihelp/v24r1/topic/com.ibm.itcamt.doc_7.2.0.2/ic-homepage.html)
  - [http://publib.boulder.ibm.com/infocenter/tivihelp/v24r1/topic/com.ibm.itcamt.doc\\_7.2.0.2/\\_deliverables/itcamtrans\\_ag.pdf](http://publib.boulder.ibm.com/infocenter/tivihelp/v24r1/topic/com.ibm.itcamt.doc_7.2.0.2/_deliverables/itcamtrans_ag.pdf)
- **Version 6.0.0 / Netcool/ISM 2.4**
  - <http://publib.boulder.ibm.com/infocenter/tivihelp/v8r1/topic/com.ibm.itcamISM.doc/welcome.htm>
  - <http://publib.boulder.ibm.com/infocenter/tivihelp/v8r1/topic/com.ibm.itcamISM.doc/ag/ism24r2ag.pdf>
  - <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](http://www-947.ibm.com/support/entry/portal/Overview/Software/Tivoli/Tivoli_Composite_Application_Manager_for_Internet_Service_Monitoring)

The screenshot shows the IBM Support Portal interface for the Tivoli Composite Application Manager for Internet Service Monitoring. It displays two main tabs:

- Support overview**: This tab is currently active. It features a "Your customized support experience" section with a 3D icon of stars forming a staircase. Below this are sections for "Featured links", "Notifications", and "Top ten". The "Top ten" section is highlighted with a red box and lists recent issues:
  - 09 May 2011: Configuring the HTTPS monitor to ignore the...
  - 06 May 2011: Can't Install ISM on AIX 7.1/POWER 7
  - 04 May 2011: Disable the following of referrals in LPAD monitor
  - 20 Apr 2011: MonitorLocator and ResponderRouter values are 0
- Flashes & alerts**: This tab is shown in a separate window. It includes sections for "Alerts" (with a red icon) and "Top ten" (also highlighted with a red box). The "Top ten" list contains:
  - 30 Sep 2010: KFWITM217E request error: sql1\_openrequest...
  - 30 Aug 2010: Stand-alone ITCAM ISM
  - 31 Jan 2011: ITCAM/ISM Configuration Tool, ISM Batch, and...
  - 28 Dec 2009: KDE\_TRANSPORT error or no transports available
  - 31 Mar 2011: MustGather: Read first for trouble shooting...
  - 10 Sep 2009: MustGather: Read first for ISM issues
  - 10 Nov 2010: Migrating profiles from Netcool/ISM...
  - 27 Apr 2010: How to configure the TCP port monitor in ITCAM...
  - 27 Dec 2010: ISM 2.4 (ITCAM 6.0.0) on Red Hat Linux 5
  - 23 Dec 2009: Troubleshooting SSL Cipher Issues in...

A red box also highlights the text "DCF (FAQs), TechNotes, APARS (bugs)" at the bottom left of the main window.

# IBM Request for Enhancement (RFE) Community

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

Client can now submit request for enhancements online.

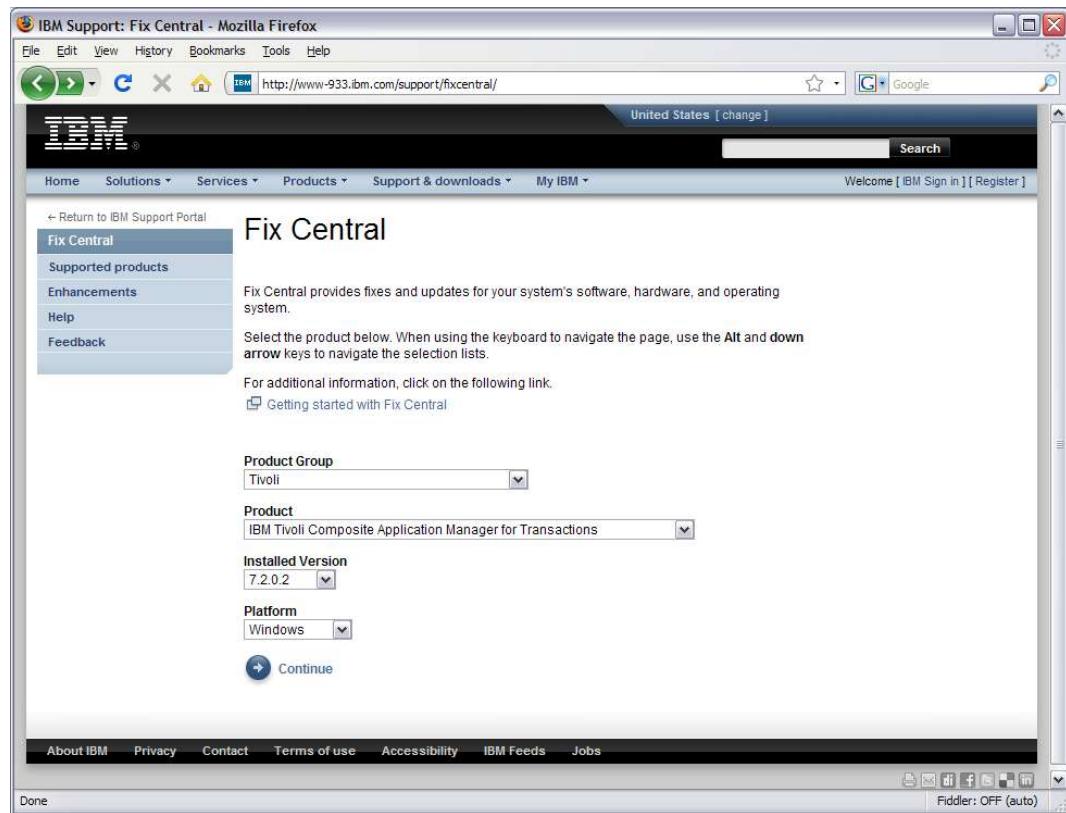
The screenshot shows a Firefox browser window displaying the IBM Software RFE Community website. The URL in the address bar is <http://www.ibm.com/developerworks/rfe/>. The page has a header with the IBM logo, developerWorks navigation, and a search bar. The main content area features a large image of a man with glasses resting his head on his hands. The title "IBM RFE Community" is prominently displayed, followed by "Your ideas for IBM products". Below this, there's a welcome message and links for "Search RFEs", "Submit RFEs", "Browse RFEs", and "My stuff". A sidebar on the right contains sections for "Spotlight", "Brands", "Latest RFE submitted", and "IBM's latest RFE response". The bottom right corner of the browser window shows "Fiddler: OFF (auto)".

# 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?