

Help! I've Inherited the Network – and They Expect Me to Manage It!

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Abstract

- This presentation takes a practical approach to reducing operational costs on z/OS[®]. It discusses (1) the use of OMEGAMON[®] thresholds to detect network problems, generating alerts based on OMEGAMON events, and using NetView[®] automation and other services to respond to those alerts, and (2) other NetView IP network management capabilities **to help you manage the network you've inherited.**

Agenda

- • **Introduction**
- Triggering NetView automation based on OMEGAMON thresholds
- Automating the response to alerts
- Visual interfaces – What do you use?

Integrated Service Management Ecosystem



Visibility

Problem Determination,
Management and Resolution



Automation

Application, network and system
command and message automation

OMEGAMON XE for
Mainframe Networks

Alerts

NetView for z/OS

IP management Automation Engine
SNA management

Cmds

System Automation
for MP/zOS/AM

Integration across
TBSM & OMNibus

Events

Ctrl

GDPS®
Active/Active



Control

Commands, Management
and Environmental Control



NetView for z/OS and OMEGAMON for Mainframe Networks

Work together to create single view of enterprise networks

NetView for z/OS

Manage Network Availability

OMEGAMON XE for
Mainframe Networks

Monitor Network Performance

- Common user interface integrates TCP/IP data from both NetView for z/OS and OMEGAMON XE for Mainframe Networks.
- Integration provides customers with a consolidated TCP/IP workbench
 - Allowing management of both TCP/IP availability and performance from the same user interface.
- Smart IP tracing to immediately learn where poor or unstable TCP/IP connections hamper application performance



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- Introduction
- • Triggering NetView automation based on OMEGAMON thresholds
- Automating the response to alerts
- Visual interfaces – What do you use?

Triggering NetView Automation with Situations



ITM/TEP Situation Event Console

- Depicting OMEGAMON XE for Mainframe Networks (N3T) and NetView for z/OS (NAS) Situations

The screenshot displays the Enterprise Situation Event Console interface. The top window shows a list of events with columns for Severity, Status, Owner, Name, and Display Item. A red circle highlights the 'Owner' column for several events, including 'MQSeries_Queue_Manager_Problem', 'N3T_Conn_Byte_Rate', 'N3T_Conn_Datagram_Rate', 'N3T_Conn_Rnd_Trip_Time', 'N3T_Conn_Rnd_Trip_Variance', 'N3T_Connection_Count', 'N3T_Device_Status_Inactive', 'N3T_TCP_In_Errs', 'NAS_TCPIPConn_Pct_Seg_Retran', and 'NT_Log_Space_Low'. The 'Severity' column shows 'Critical' (red), 'Informational' (blue), and 'Warning' (yellow) levels. The 'Status' column shows 'Open' for all listed events.

Below the event list, there are two additional windows. The 'Open Situation Counts - Last 24 Hours' window shows a horizontal bar chart with categories like 'Sysplex_Workloads_PerfIdx_Warn', 'Slow_Transactions', 'N3T_Conn_Pct_Segs_Rexmit', 'N3T_Conn_Current_Retransmits', 'NAS_NVTASK_CPU_Util_Crit', 'MS_Offline', 'KRN_Cat_Hit_Pct_Warning', and 'esg_top_bytes_buffered'. The 'My Acknowledged Events' window shows a table with columns for Severity, Status, Owner, Name, Display Item, Source, Impact, Opened, Local Timestamp, Type, UUID, Node, and Reference ID. The 'Message Log' window shows a table with columns for Status, Name, Display Item, and Origin Node.

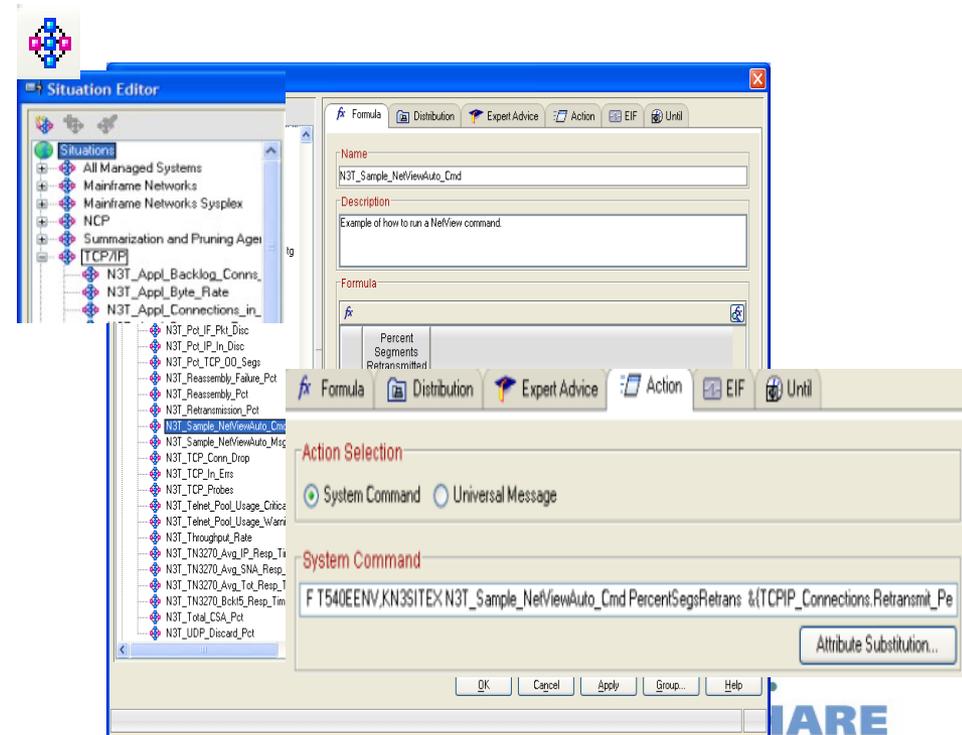
Value of Automating OMEGAMON Situations

- Surface problems in the z/OS environment
- Many problems can be managed through automation
- Some customers have been slow to relinquish manual investigation of performance problems
 - Complexity of z/OS problems requires a skilled assessment
 - Weak organizational links between automation and monitoring
 - Unclear on mechanisms to trigger automation
- **HOWEVER**, many problems surfaced by OMEGAMON result in a repeatable response that can easily be automated
 - Directly improves service
 - Frees sysprog time to work on higher-value issues
 - Like automating more situations...

Triggering NetView Automation with Situations

Three ways to trigger NetView from OMEGAMON: MODIFY, SEND, EIF

- **MODIFY** example in OMEGAMON for MfN: **N3T_Sample_NetViewAuto_Cmd**
 - Illustrates how to run a NetView command when situation fires
 - Uses MVS **MODIFY** command for NetView application procedure
 - Executes command in NetView address space
- **SEND** example in MfN: **N3T_Sample_NetViewAuto_Msg**
 - Illustrates how to generate a message that NetView Automation Table will recognize
 - Uses MVS **SEND** command
 - Message text contains situation information, matches input requirements for sample automation
- EIF events
 - Forward events from Hub TEMS



Triggering NetView Automation with MODIFY

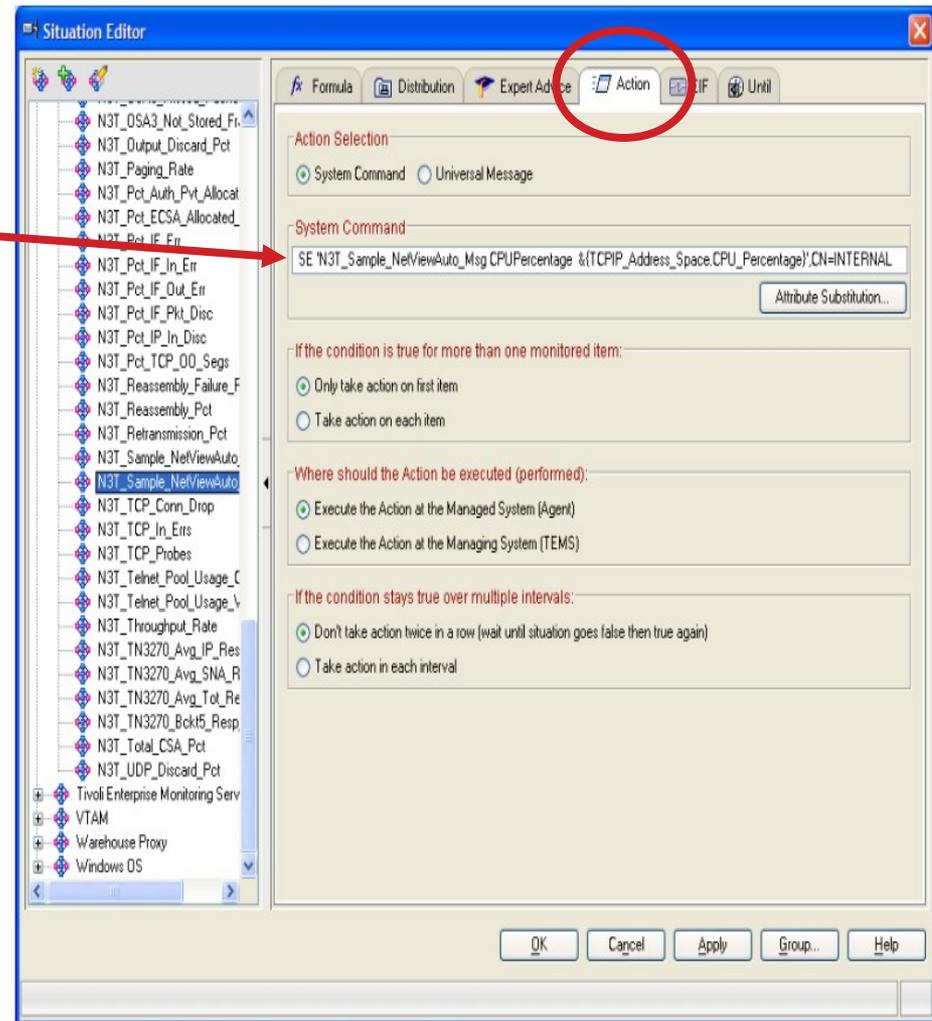


- Specify an MVS **MODIFY (F)** command in the **System Command** input field of the situation's **Action** tab.
- **MODIFY** command must specify NetView procedure name and name of REXX exec you want to run. This **MODIFY** command causes the REXX exec to run in the NetView address space.
- **F NetViewProcName,KN3SITEX
N3A_Sample_NetViewAuto_Cmd CPUpercentage
&{TCPIP_Address_Space.CPU_Percentage}**
- OMEGAMON will replace variable names with data to be passed to the EXEC
- Simple. Effective. Easy to maintain.
- MVS console commands limited to 126 characters



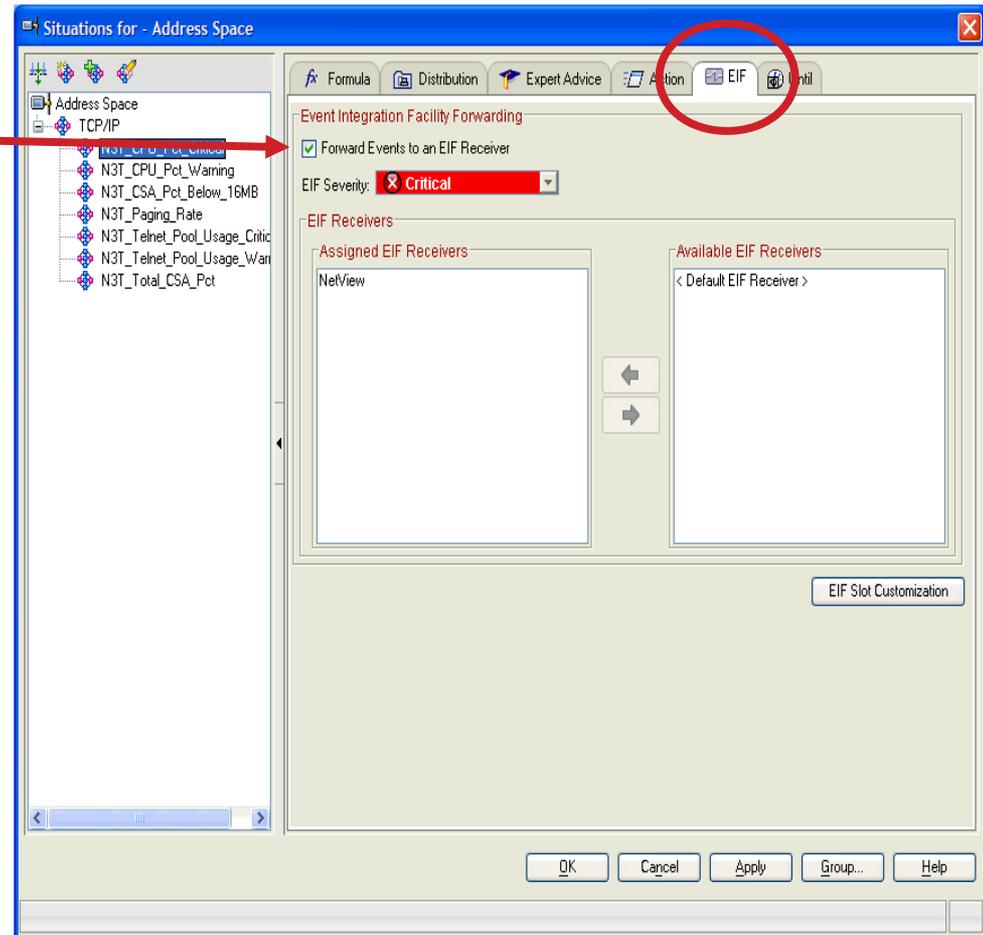
Triggering NetView Automation with SEND

- Create a situation, specifying **SEND** command in **System Command** input field of situation's **Action** tab.
- Create an automation table entry to process the message sent by situation event.
- Simple. Effective
- Entire command limited to 126 chars



Triggering NetView Automation with EIF

- Specify the event is to be forwarded to NetView in the situation's Event Integration Facility (EIF) tab.
- Requires setup on ITM/OMEGAMON and NetView
- About 3,000 characters can be passed, allowing many more diagnostic variables to be passed



Enabling EIF in OMEGAMON

- On OMEGAMON side, prepare the following:
 - Enable EIF on the hub TEMS, causing Situation Editor to display EIF tab
 - Monitoring server can now forward events to event server specified for a situation
- If you want NetView event receiver task to be default EIF server:
 - When prompted for location of event server during Monitoring Server EIF setup process, specify host name or IP address of system where NetView event receiver task is running.
 - When prompted for port, specify port where NetView event receiver task is listening.

Enabling EIF in NetView

- Start NetView Event/Automation Service event receiver task.
 - Member IHSAEVNT in NetView CNMSAMP data set provides sample start procedure for NetView Event/Automation Service.
 - NetView SCNMUXCL data set contains sample configuration files for event automation services tasks.
- Member IHSAECFG specifies port where event receiver will listen and whether event receiver should be started or not.
- Member IHSAECDS contains statements used to convert EIF event to NMVT.
- Verify that NetView ALERT PPI receiver task, CNMICALRT, is started.
 - Use command **LIST TASK=CNMICALRT** to determine whether or not task is started. If it is not started, use the following command to start it:
START TASK=CNMICALRT
- Start NetView Hardware Monitor (NPDA) task.

Enabling EIF in NetView

- To modify how EIF events are converted to Network Management Vector Transports (NMVTs), customize sample IHSAECDS member, found in SCNMUXCL data set.
- Develop and enable a NetView automation table entry to recognize MfN events. Member KN3AUMSU of *&thilev.TKANSAM* data set provides a sample for DSIPARM.
- Develop and enable a REXX exec to perform an action when an MfN event is received. Member KN3SITMS of *&thilev.TKANSAM* data set provides a sample REXX exec for DSICLD.

Enabling EIF in NetView

- To view forwarded events in NetView's NPDA **Alerts Dynamic** panel:
 - Issue command **NPDA ALERTSD**
 - Press **Enter** to display Alerts Static panel
 - From this panel, you can display event details.
- By default, the Hardware Monitor only displays events with a severity of **Minor** or greater.
 - If you think all necessary NetView tasks are started and configured correctly and you are not seeing situation events you expect, you may need to modify filters being used by NPDA. This command causes all alerts passed to NPDA to be viewable:

```
SRFILTER AREC PASS DEFAULT
```

Agenda

- Introduction
- Triggering NetView automation based on OMEGAMON thresholds
- • Automating the response to alerts
 - Automatically open a trouble ticket
 - Send notifications to appropriate destinations, including Netcool/OMNIBus, e-mail and paging
- Visual interfaces – What do you use?

Triggering NetView Automation with Situations

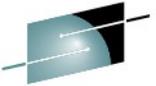


Sample NetView automation routines provided by OMEGAMON XE for Mainframe Networks:

- **KN3AUMSG** – recognize messages, invoke sample REXX exec KN3SITEX
- **KN3AUMSU** – recognize situation events, invoke sample REXX exec KN3SITMS
- **KN3SITEX** – parses message text, displays situation name and attribute name/value pairs
- **KN3SITMS** – parses situation event, displays situation name and attribute name/value pairs



Triggering NetView Automation with Situations



SHARE
Technology · Connections · Results

Sample NetView automation table segment:

- **KN3AUMSU** – IBM-supplied message automation table sample with MSU trap code
- Can be found in OMEGAMON's .TKANSAM dataset
- There is also a **KN3AUMSG** if you prefer to trap on MSGID

```
DEMOMVS - [43 x 80]
File Edit View Communication Actions Window Help
Menu Utilities Compilers Help
BROWSE NV390.V6R1.USER.DSIPARM(KN3AUMSU) - 01.09 Line 00000099 Col 001 080
Command ==> Scroll ==> CSR
*****
* CHANGE ACTIVITY:
*
* FLG=REASON ,RELEASE,DATE ,USER :DESCRIPTION
*-----
* @00 DEMO ,HKNA3510,130216,IBMFC:NetView automation for N3 situations 01040008
* @01 DEMO ,HKNA610,130216,IBMFC:NetView automation for NA situations 01040108
* @02 DEMO ,=====,130216,IBMFC:NetView automation for all situations 01041008
*-----
* *****
* @00 N3 for OMEGAMON XE for Mainframe Networks
* IF (HIER(3) = 'ITM'.) &
* (MSUSEG(0000.31(*).30 3) = 'integration_type=N'.) &
* (MSUSEG(0000.31(*).30 3) = 'situation_status=Y'.) &
* (MSUSEG(0000.31(*).30 3) = 'sub_source=' ORGNMSYS) &
* (VALUE(ORGNMSYS) = ' '.) &
* (MSUSEG(0000.31(*).30 3) = 'situation_name=N3'.) THEN
* EXEC(CMD('KN3SITMS') ROUTE(ONE AUTO1))
* CONTINUE(Y);
* @01 NA for NetView for z/OS
* IF (HIER(3) = 'ITM'.) &
* (MSUSEG(0000.31(*).30 3) = 'integration_type=N'.) &
* (MSUSEG(0000.31(*).30 3) = 'situation_status=Y'.) &
* (MSUSEG(0000.31(*).30 3) = 'sub_source=' ORGNMSYS) &
* (VALUE(ORGNMSYS) = ' '.) &
* (MSUSEG(0000.31(*).30 3) = 'situation_name=NA'.) THEN
* EXEC(CMD('KN3SITMS') ROUTE(ONE AUTO1))
* CONTINUE(Y);
* @02 ALL {TESTING ONLY}
* IF (HIER(3) = 'ITM'.) &
* (MSUSEG(0000.31(*).30 3) = 'integration_type=N'.) &
* (MSUSEG(0000.31(*).30 3) = 'situation_status=Y'.) &
* (MSUSEG(0000.31(*).30 3) = 'sub_source=' ORGNMSYS) &
* (VALUE(ORGNMSYS) = ' '.) THEN
* EXEC(CMD('KN3SITMS') ROUTE(ONE AUTO1))
* CONTINUE(N);
* ***** Bottom of Data *****
```

Triggering NetView Automation with Situations



Sample NetView automation table segment:

- **KN3AUMSU** trap executes CLIST **KN3SITMS**
- Which does some displays using REXX's "Say ..."
- "We need more!" you say ...

```
DEMOVMS - [43 x 80]
File Edit View Communication Actions Window Help
Menu Utilities Compilers Help
BROWSE NV390.V6R1.USER.DSIPARM(KN3AUMSU) - @1.09 CHARS 'KN3SITMS' found
Command ==> situation. Scroll ==> CSR
*
* 00970000
* 00980000
* 00990000
* 01000000
* 01010000
* 01020008
* 01030000
* 01040008
* 01040108
* 01041008
* 01050008
* 01050000
* 01051007
* 01070009
* 01080009
* 01090009
* 01100009
* 01110009
* 01120009
* 01130009
* 01130109
* 01130207
* 01130309
* 01130409
* 01130509
* 01130609
* 01130709
* 01130809
* 01130909
* 01131009
* 01131105
* 01131205
* 01132003
* 01133003
* 01134005
* 01135005
* 01137005
* 01170005
***** Bottom of Data *****
MA a 24/014
Connected to remote server/host demovms.demopkg.ibm.com using lu/pool TCP00027 and port 23
usoril2b-PRT-16-800 Magnolia Ave, Suite 1600-Orl
```

Triggering NetView Automation with Situations



Sample NetView automation CLIST:

- We say, “Modify **KN3SITMS** to issue a meaningful message.”
- Like so ...

```
DEMOVMS - [43 x 80]
File Edit View Communication Actions Window Help
Menu Utilities Compilers Help
BROWSE      NV390.V6R1.USER.CNMCLST(KN3SITMS) - 01.16      CHARS 'WTO' found
Command ==> _____ Scroll ==> CSR
END;
/* ***** */
/* ISSUE TRAPABLE WTO FOR AUTOMATION      */
/* ***** */
ROUTCDE = '(1)'
DESC = '(2)'
WTO.TEXT = 'EIF911I 'msitform
          'WTO'
EXIT;
***** Bottom of Data *****
```

Triggering NetView Automation with Situations



Sample NetView automation table segment:

- ... then trap the meaningful message
- which (in the example) opens a problem ticket &
- sends email alerts using NetView's INFORM policy processing

```
DEMONMVS - [43 x 80]
File Edit View Communication Actions Window Help

Menu Utilities Compilers Help

BROWSE NV390.V6R1.USER.DSIPARM(USRMSGD0) - 01.43 CHARS 'EIF911I' found
Command ==> Scroll ==> CSR
***** 00991034
* TRAP EIF911I MESSAGE & OPEN TICKET & SEND EMAILS FOR ITM N3 SITS * 00991142
***** 00991234
IF MSGID = 'EIF911I' & TEXT = MESSAGE 00991342
  & TOKEN(6) = 'TCP/IP:MVSA' | TOKEN(5) = 'TCP/IP:MVSA' 00991443
  & THRESHOLD(3 0 00:00:30) = '0' 00991543
THEN 00991643
EXEC(CMD('TRANTIMN 'MESSAGE) 00991743
ROUTE(ALL *) DISPLAY(N) BEEP(N) HOLD(N) NETLOG(Y) SYSLOG(N) 00991843
EXEC(CMD('INFORMTB INFP000') 00991943
ROUTE(ONE AUTNET2)) DISPLAY(N) BEEP(N) HOLD(N) NETLOG(Y) SYSLOG(N) 00992043
EXEC(CMD('INFORM INFP002 'MESSAGE) 00992143
ROUTE(ONE AUTNET2)) DISPLAY(N) BEEP(N) HOLD(N) NETLOG(Y) SYSLOG(N) 00992243
EXEC(CMD('INFORMTB OFF') 00992343
ROUTE(ONE AUTNET2)) DISPLAY(N) BEEP(N) HOLD(N) NETLOG(Y) SYSLOG(N) 00992443
CONTINUE(Y); 00992543
***** 00992634
* END USER ADDED MESSAGES FOR THE MVS (DEMONET) NDC * 00993034
***** 01000029
***** Bottom of Data *****

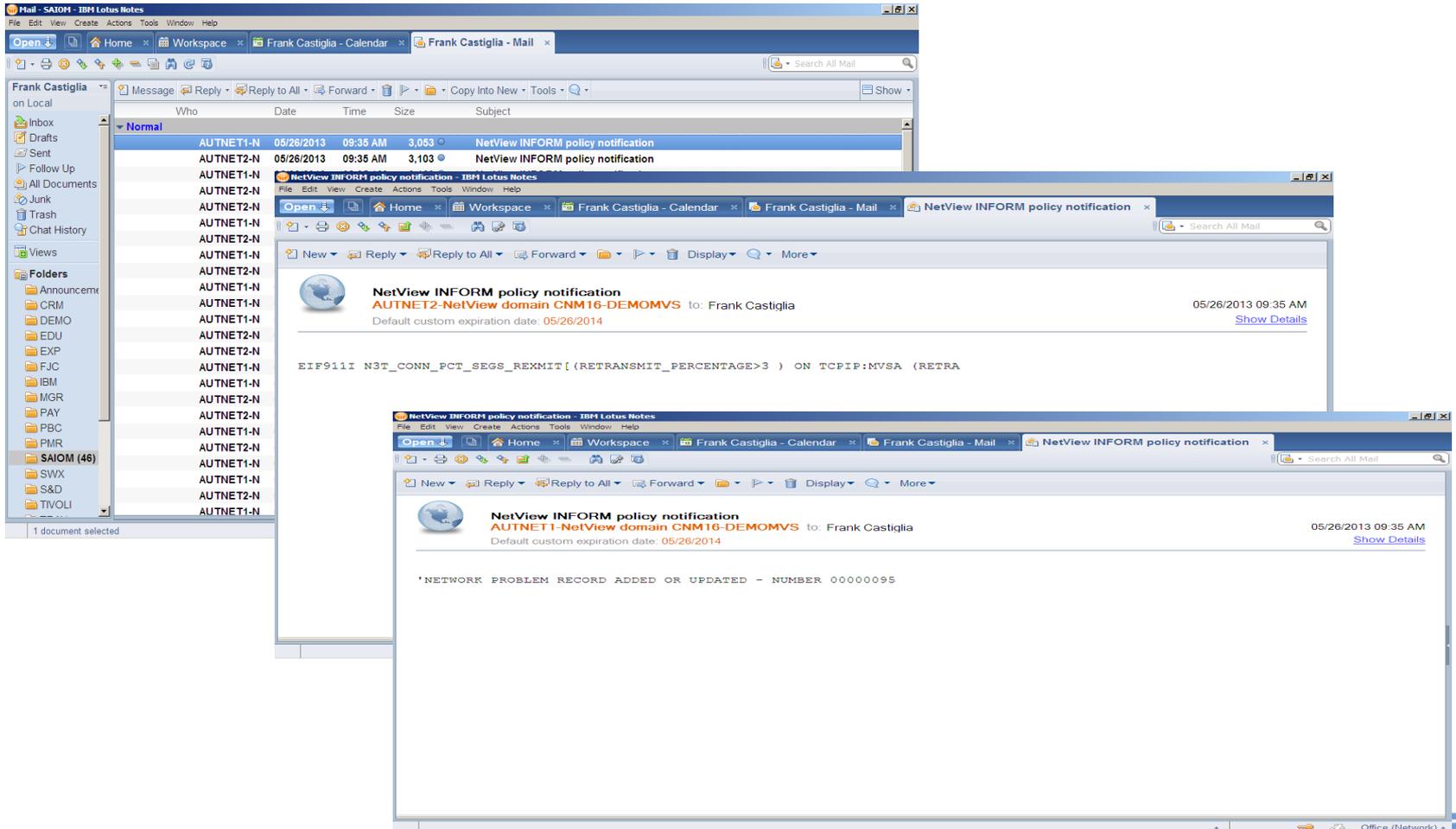
MA a 06/008
Connected to remote server/host demonmvs.demonpki.ibm.com using lu/pool.TCP00027 and port 23
User: zib-PRR-16-800 Magnolia Ave., Suite 1600-Orl
```

Triggering NetView Automation with Situations

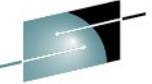


Email messages from NetView

- Sent using NetView's INFORM policy processing



Triggering NetView Automation with Situations



SHARE
Technology - Connections - Results

Sample NMVT Alert to SNMP Trap

- Meanwhile ... NPDA has converted the alert into an SNMP trap
- Using an **SRFILTER TRAPROUT** on T(type) APPL ...

```
DEMOVMS - [43 x 80]
File Edit View Communication Actions Window Help
Menu Utilities Compilers Help
BROWSE NV390.V6R1.USER.CNMCLST(SNMPTRP) - 01.04 CHARS 'APPL' found
Command ==> Scroll ==> CSR
***** Top of Data *****
CLIST
&CONTROL ERR
NPDA SRFILTER TRAPROUT PASS E PERF
NPDA SRFILTER TRAPROUT PASS T APPL
NPDA SRFILTER TRAPROUT PASS T DEV
NPDA SRFILTER OPER PASS E PERF
NPDA SRFILTER OPER PASS T APPL
*NPDA SRFILTER OPER PASS T DEV
&EXIT
***** Bottom of Data *****
MA a 09/031
Connected to remote server/host demomvs.demopkg.ibm.com using lu/pool TCP00027 and port 23
[usor]2b-PRT-16-800 Magnolia Ave, Suite 1600-Ort
```

Triggering NetView Automation with Situations



Sample NMVT Alert to SNMP Trap

- Sends the trap to an RFC-compliant SNMP Manager
- Sample snmpd.conf (HFS) file

```
DEMOVMS - [43 x 80]
File Edit View Communication Actions Window Help
Menu Utilities Compilers Help
BROWSE /DEMOVMS/etc/snmpd.conf CHARS 'NCOMS' found
Command ==> Scroll ==> CSR_
#-----
NOTIFY notify1 traptag trap -
*NOTIFY notify2 informtag inform -
#-----
# TARGET_ADDRESS
# Format is:
# targetAddrName tDomain tAddress tagList targetParams timeout retryCount stora
#-----
#NCOMS is tivnmip2.democentral.ibm.com @ 9.39.64.65 ITNM MSM & SNMP MGR -----
#NCOMS is tivnmip.democentral.ibm.com @ 9.39.68.152 SNMP Manager# -----
TARGET_ADDRESS NCOMS UDP 9.39.64.65 traptag trapparms1 - - - -
TARGET_ADDRESS NCOMS UDP 9.39.64.65 traptag trapparms2 - - - -
#TARGET_ADDRESS NCOMS UDP 9.39.68.152 traptag trapparms1 - - - -
#TARGET_ADDRESS NCOMS UDP 9.39.68.152 traptag trapparms2 - - - -
#-----
#TARGET_ADDRESS Target3 UDP 127.0.0.1 traptag trapparms3 - - - 255.0.0.255
#TARGET_ADDRESS Target4 UDP 127.0.0.1 informtag informparms - - - -
#-----
# TARGET_PARAMETERS
# Format is:
# paramsName mpModel securityModel securityName securityLevel storageType
#-----
#TARGET_PARAMETERS trapparms1 SNMPv1 SNMPv1 publicv1 noAuthNoPriv -
#TARGET_PARAMETERS trapparms2 SNMPv2c SNMPv2c publicv2c noAuthNoPriv -
TARGET_PARAMETERS trapparms1 SNMPv1 SNMPv1 demonet noAuthNoPriv -
TARGET_PARAMETERS trapparms2 SNMPv2c SNMPv2c demonet noAuthNoPriv -
#TARGET_PARAMETERS trapparms3 SNMPv3 USM u2 AuthNoPriv -
#TARGET_PARAMETERS informparms SNMPv3 USM u4 noAuthNoPriv -
#-----
# NOTIFY_FILTER_PROFILE
# Format is:
# targetParamsName profileName storageType
#-----
NOTIFY_FILTER_PROFILE trapparms3 filProf -
#-----
MA a 16/016
Connected to remote server/host demovms.demopkg.ibm.com using lu/pool TCP00027 and port 23
/usr/lib2b-PRT-16-800 Magnolia Ave., Suite 1600-Orli
```

Triggering NetView Automation with Situations



Sample EIF to OMNibus

- As an alternative to SNMP traps, EIF events can be sent directly to OMNibus if OMNibus is not the SNMP Manager
- Sample **SRFILTER TECROUTE** for T(ype) APPL

```
Menu Utilities Compilers Help
BROWSE NV390.V6R1.USER.CNMCLST(EIFTECF) - 01.10 CHARS 'APPL' found
Command ==> Scroll ==> GSR
***** Top of Data *****
CLIST
&CONTROL ERR
*NPDA SRFILTER TECROUTE PASS T APPL
NPDA SRFILTER TECROUTE PASS T PROG
NPDA SRFILTER TECROUTE PASS T AUTO
*NPDA SRFILTER TECROUTE PASS E UNKN
&EXIT
***** Bottom of Data *****
```

Documentation on Triggering NetView Automation

For information on	Refer to
sending alert information to NetView	<i>OMEGAMON for Mainframe Networks: User's Guide</i> <ul style="list-style-type: none"> • section on triggering NetView automation
enabling the EIF for a hub monitoring server running on a distributed platform	<i>IBM Tivoli Monitoring: Installation Guide</i> , sections on: <ul style="list-style-type: none"> • "Integrating Event Management Systems," • "Setting up event forwarding to Netcool/OMNIbus" • "Configuring the hub monitoring server to forward events"
enabling the EIF for a hub monitoring server running on a z/OS system	<i>IBM Tivoli Management Services on z/OS: Configuring the Tivoli Enterprise Monitoring Server on z/OS</i> , sections on: <ul style="list-style-type: none"> • "Configuring hub and remote monitoring servers on z/OS" • "Configuring the hub monitoring server and monitoring agents in the same runtime environment"
EIF in NetView	<i>IBM Tivoli NetView for z/OS: Configuring Additional Components</i> , chapter on <ul style="list-style-type: none"> • "Setting Up UNIX Systems Services for the NetView Program," specifically the section on "Enabling the Event/Automation Service"

Documentation on Triggering NetView Automation

For information on	Refer to
configuring and starting NPDA	<i>IBM Tivoli NetView for z/OS: Installation: Configuring Additional Components</i> , chapter on <ul style="list-style-type: none">• "Defining NetView Components," specifically the section "Defining the Hardware Monitor"
how EIF events are converted to Network Management Vector Transports (NMVTs)	<i>IBM Tivoli NetView for z/OS: Customization Guide</i> , chapter on <ul style="list-style-type: none">• "Customizing the Event/Automation Service," specifically the section on "Advanced Customization – Translating Data"
using the NetView Hardware Monitor	<i>IBM Tivoli NetView for z/OS: User's Guide</i> , chapter on <ul style="list-style-type: none">• "Monitoring Hardware and Software Problems"
how to configure Hardware Monitor filtering	<i>IBM Tivoli NetView for z/OS Installation: User's Guide: NetView</i> , section on <ul style="list-style-type: none">• "Using Hardware Monitor Filters"

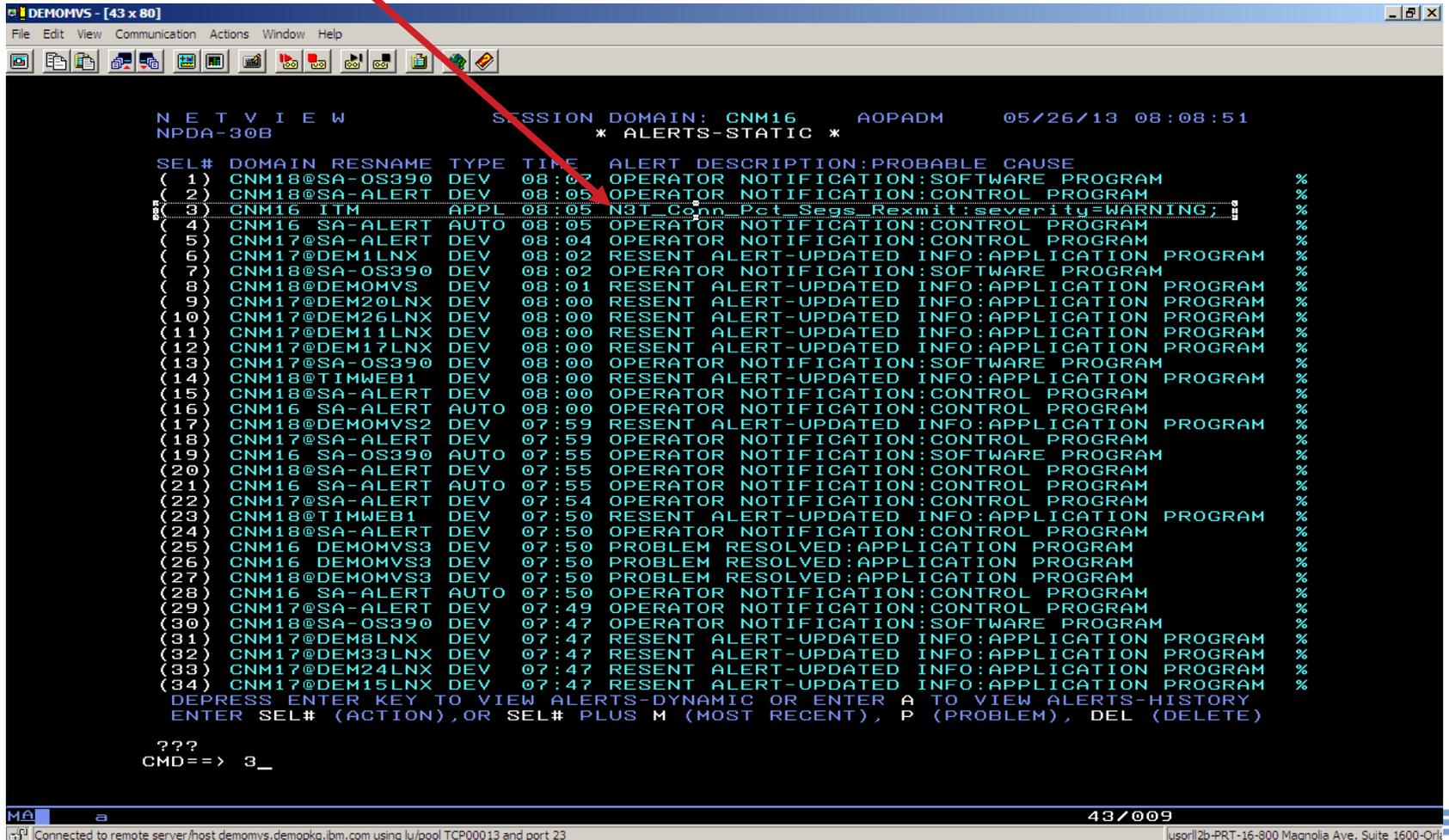
Agenda

- Introduction
- Triggering NetView automation based on OMEGAMON thresholds
- Automating the response to alerts
- • **Visual interfaces – What do you use?**

Other Interfaces ... What to Use

For starters ...

- NetView's NPDA ALERTS-DYNAMIC & ALERTS-STATIC
- Showing (N3T) Alert from OMEGAMON XE for Mainframe Networks



```

DEMOVMS - [43 x 80]
File Edit View Communication Actions Window Help
[Icons]
NETVIEW          SESSION DOMAIN: CNM16      AOPADM      05/26/13 08:08:51
NPDA-30B
* ALERTS-STATIC *

SEL#  DOMAIN  RESNAME  TYPE  TIME  ALERT DESCRIPTION:PROBABLE CAUSE
( 1)  CNM18@SA-OS390  DEV  08:07  OPERATOR NOTIFICATION:SOFTWARE PROGRAM
( 2)  CNM18@SA-ALERT  DEV  08:05  OPERATOR NOTIFICATION:CONTROL PROGRAM
( 3)  CNM16 ITM      APPL  08:05  N3T Conn Pct Segs Rexmit:severity=WARNING;
( 4)  CNM16 SA-ALERT  AUTO  08:05  OPERATOR NOTIFICATION:CONTROL PROGRAM
( 5)  CNM17@SA-ALERT  DEV  08:04  OPERATOR NOTIFICATION:CONTROL PROGRAM
( 6)  CNM17@DEM1LNX  DEV  08:02  RESENT ALERT-UPDATED INFO:APPLICATION PROGRAM
( 7)  CNM18@SA-OS390  DEV  08:02  OPERATOR NOTIFICATION:SOFTWARE PROGRAM
( 8)  CNM18@DEMOMVS  DEV  08:01  RESENT ALERT-UPDATED INFO:APPLICATION PROGRAM
( 9)  CNM17@DEM20LNX  DEV  08:00  RESENT ALERT-UPDATED INFO:APPLICATION PROGRAM
(10)  CNM17@DEM26LNX  DEV  08:00  RESENT ALERT-UPDATED INFO:APPLICATION PROGRAM
(11)  CNM17@DEM11LNX  DEV  08:00  RESENT ALERT-UPDATED INFO:APPLICATION PROGRAM
(12)  CNM17@DEM17LNX  DEV  08:00  RESENT ALERT-UPDATED INFO:APPLICATION PROGRAM
(13)  CNM17@SA-OS390  DEV  08:00  OPERATOR NOTIFICATION:SOFTWARE PROGRAM
(14)  CNM18@TIMWEB1  DEV  08:00  RESENT ALERT-UPDATED INFO:APPLICATION PROGRAM
(15)  CNM18@SA-ALERT  DEV  08:00  OPERATOR NOTIFICATION:CONTROL PROGRAM
(16)  CNM16 SA-ALERT  AUTO  08:00  OPERATOR NOTIFICATION:CONTROL PROGRAM
(17)  CNM18@DEMOMVS2  DEV  07:59  RESENT ALERT-UPDATED INFO:APPLICATION PROGRAM
(18)  CNM17@SA-ALERT  DEV  07:59  OPERATOR NOTIFICATION:CONTROL PROGRAM
(19)  CNM16 SA-OS390  AUTO  07:55  OPERATOR NOTIFICATION:SOFTWARE PROGRAM
(20)  CNM18@SA-ALERT  DEV  07:55  OPERATOR NOTIFICATION:CONTROL PROGRAM
(21)  CNM16 SA-ALERT  AUTO  07:55  OPERATOR NOTIFICATION:CONTROL PROGRAM
(22)  CNM17@SA-ALERT  DEV  07:54  OPERATOR NOTIFICATION:CONTROL PROGRAM
(23)  CNM18@TIMWEB1  DEV  07:50  RESENT ALERT-UPDATED INFO:APPLICATION PROGRAM
(24)  CNM18@SA-ALERT  DEV  07:50  OPERATOR NOTIFICATION:CONTROL PROGRAM
(25)  CNM16 DEMOMVS3  DEV  07:50  PROBLEM RESOLVED:APPLICATION PROGRAM
(26)  CNM16 DEMOMVS3  DEV  07:50  PROBLEM RESOLVED:APPLICATION PROGRAM
(27)  CNM18@DEMOMVS3  DEV  07:50  PROBLEM RESOLVED:APPLICATION PROGRAM
(28)  CNM16 SA-ALERT  AUTO  07:50  OPERATOR NOTIFICATION:CONTROL PROGRAM
(29)  CNM17@SA-ALERT  DEV  07:49  OPERATOR NOTIFICATION:CONTROL PROGRAM
(30)  CNM18@SA-OS390  DEV  07:47  OPERATOR NOTIFICATION:SOFTWARE PROGRAM
(31)  CNM17@DEM8LNX  DEV  07:47  RESENT ALERT-UPDATED INFO:APPLICATION PROGRAM
(32)  CNM17@DEM33LNX  DEV  07:47  RESENT ALERT-UPDATED INFO:APPLICATION PROGRAM
(33)  CNM17@DEM24LNX  DEV  07:47  RESENT ALERT-UPDATED INFO:APPLICATION PROGRAM
(34)  CNM17@DEM15LNX  DEV  07:47  RESENT ALERT-UPDATED INFO:APPLICATION PROGRAM

DEPRESS ENTER KEY TO VIEW ALERTS-DYNAMIC OR ENTER A TO VIEW ALERTS-HISTORY
ENTER SEL# (ACTION),OR SEL# PLUS M (MOST RECENT), P (PROBLEM), DEL (DELETE)

???
CMD=> 3_

```

Other Interfaces ... What to Use

For starters ...

- NetView's NPDA EVENT DETAIL

```

DEMOMVS - [43 x 80]
File Edit View Communication Actions Window Help
[Icons]

NETVIEW          SESSION DOMAIN: CNM16      AOPADM      05/26/13  08:19:42
NPDA-43R        * EVENT DETAIL MENU *                PAGE 1 OF 1

CNM16          MVSA          9.39.68.      ITM
DOMAIN        +-----+ +-----+ +-----+
              | PWS | | NTID | | APPL |
              +-----+ +-----+ +-----+

DATE/TIME: 05/26 08:05

SEL#  PRODUCES:
( 1 )  EVENT DETAIL DISPLAY
( 2 )  PRODUCT SET IDENTIFICATION DISPLAY
( 3 )  HEXADECIMAL DISPLAY OF DATA RECORD

ENTER SEL# OR A (ACTION)
??
CMD==> 1_
  
```

Other Interfaces ... What to Use

For starters ...

- NPDA provides detailed information from ITM Situation

```

DEMOVMS - [43 x 80]
File Edit View Communication Actions Window Help
N E T V I E W          SESSION DOMAIN: CNM16  AOPADM    05/26/13 08:15:21
NPDA-43S              * EVENT DETAIL *          PAGE 1 OF 2

CNM16                MVSA                9.39.68.    ITM
DOMAIN               PWS                NTID        APPL

HIERARCHY NAMES LIST:
PWS  MVSA
NTID 9.39.68.147
APPL ITM

DATE/TIME: RECORDED - 05/26 08:05
EVENT TYPE: IMPENDING PROBLEM
DESCRIPTION: N3T_Conn_Pct_Segs_Rexmit
PROBABLE CAUSES:
severity=WARNING;
ORIGINAL T/EC EVENT:
ITM_TCP/IP_Connections;
source=ITM;
sub_source=TCP/IP: MVSA;
cms_hostname=demomvs.demopkg.ibm.com;
cms_port=1920;
integration_type=U;
master_reset_flag='';
appl_label='';
situation_name=N3T_Conn_Pct_Segs_Rexmit;
situation_type=S;
situation_origin=TCP/IP: MVSA;
situation_time=05/26/2013 08:05:14.000;
situation_status=N;
situation_thrunode=DEMOVMS:CMS;

ENTER A (ACTION) OR DM (DETAIL MENU)
???
CMD=> _

DEMOVMS - [43 x 80]
File Edit View Communication Actions Window Help
N E T V I E W          SESSION DOMAIN: CNM16  AOPADM    05/26/13 09:07:05
NPDA-43S              * EVENT DETAIL *          PAGE 2 OF 2

CNM16                MVSA                9.39.68.    ITM
DOMAIN               PWS                NTID        APPL

hostname=MVSA;
origin=9.39.68.147;
adapter_host=MVSA;
severity=WARNING;
date=05/26/2013;
msg=N3T_Conn_Pct_Segs_Rexmit;
situation_fullname=N3T_Conn_Pct_Segs_Rexmit;
situation_displayitem='';
situation_eventdata='';
END

FLAGS:
TIVOLI EVENT

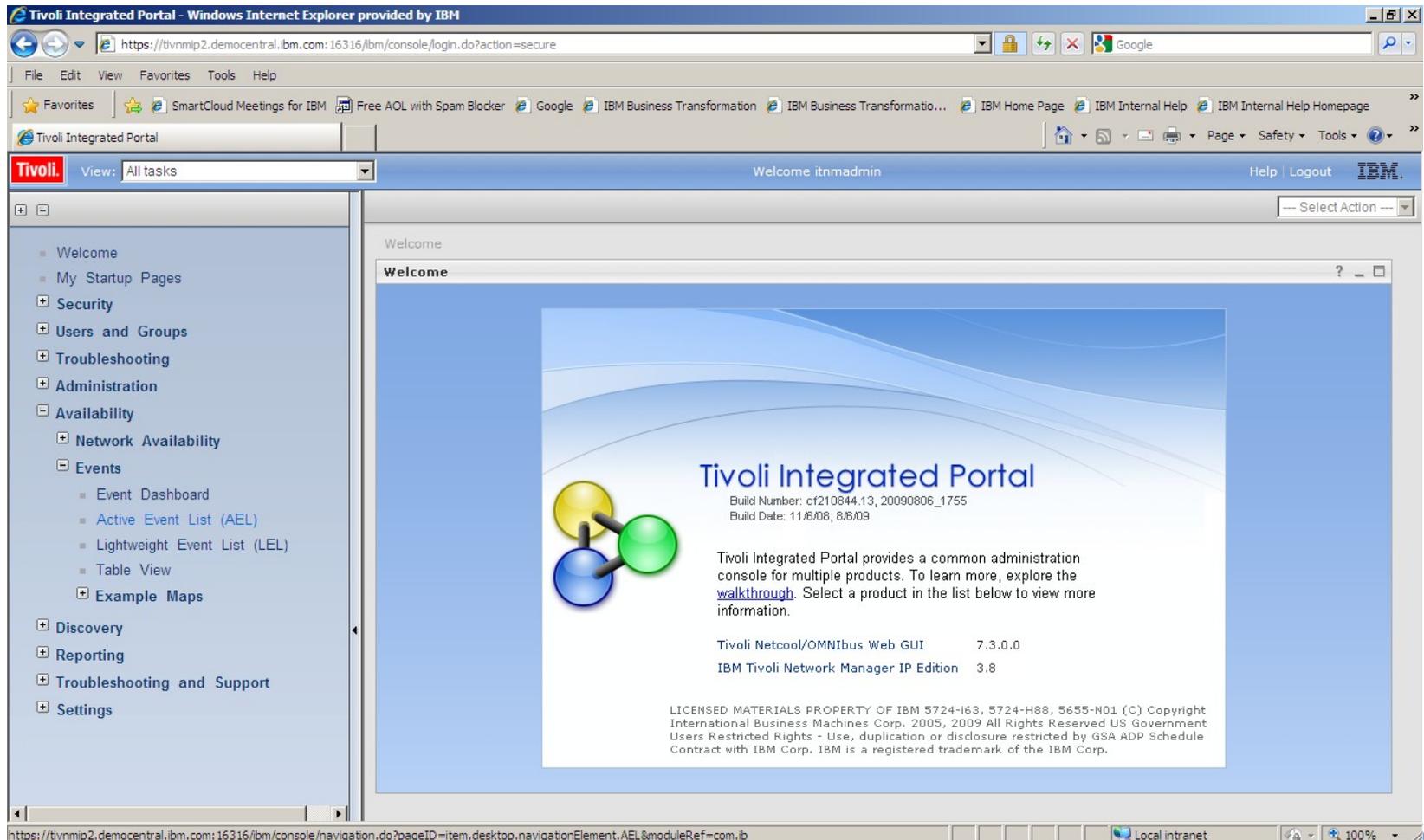
UNIQUE ALERT IDENTIFIER: PRODUCT ID - 5697B83  ALERT ID - FE176A0A
ENTER A (ACTION)
???
CMD=> _

43/008
Connected to remote server/host demomvs.demopkg.ibm.com using lu.pool.TCP00013 and port 23
  
```

Other Interfaces ... What to Use

Is there an SNMP Manager out there?

- Then forward the NPDA Alert to an SNMP Manager ...



https://tivnimip2.democentral.ibm.com:16316/ibm/console/login.do?action=secure

View: All tasks

Welcome itnmadmin

Help | Logout

--- Select Action ---

Welcome

Tivoli Integrated Portal

Build Number: cf210844.13, 20090806_1755
Build Date: 11/6/08, 8/6/09

Tivoli Integrated Portal provides a common administration console for multiple products. To learn more, explore the [walkthrough](#). Select a product in the list below to view more information.

Tivoli Netcool/OMNIbus Web GUI	7.3.0.0
IBM Tivoli Network Manager IP Edition	3.8

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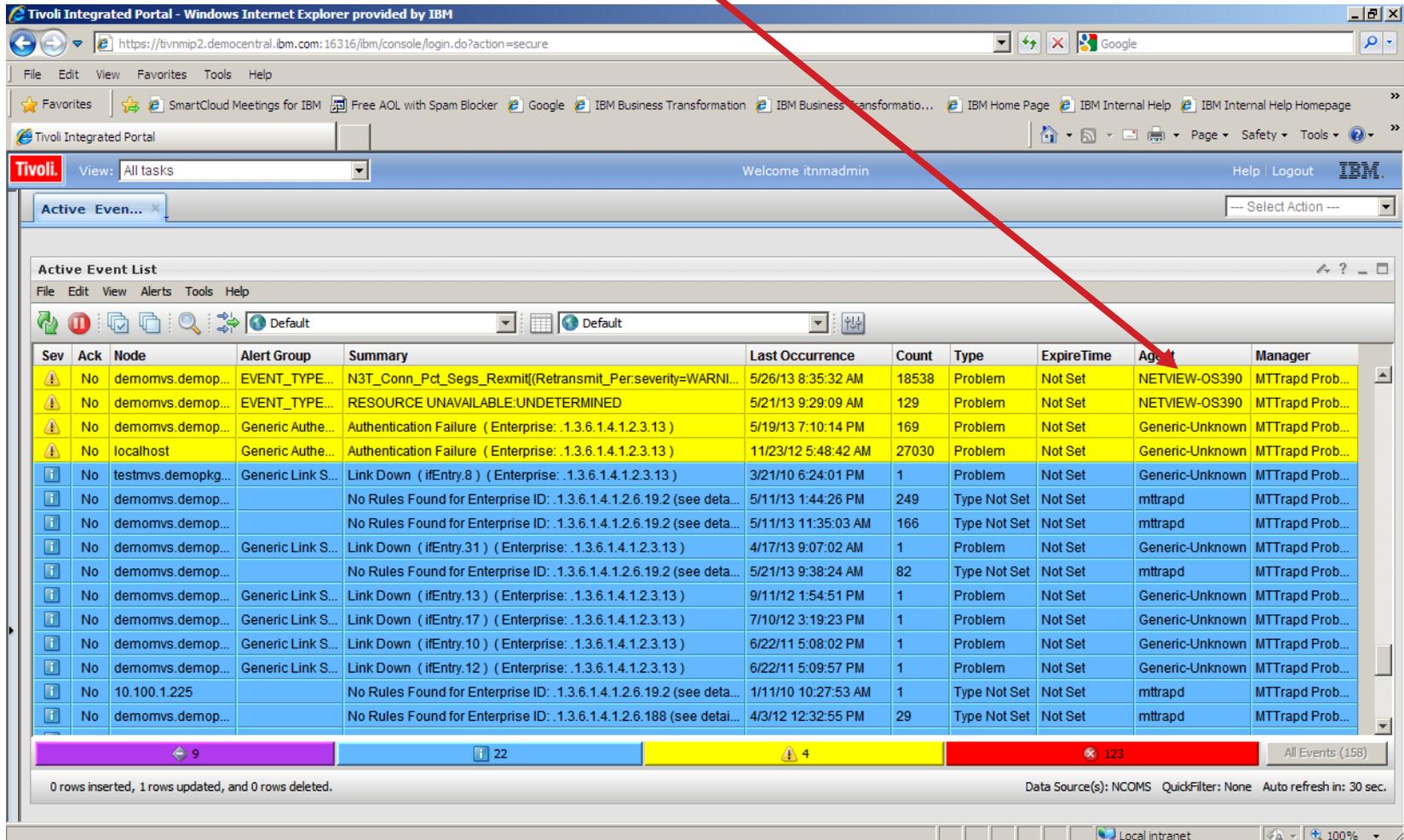
https://tivnimip2.democentral.ibm.com:16316/ibm/console/navigation.do?pageID=item.desktop.navigationElement.AEL&moduleRef=com.ibm

Local intranet 100%

Other Interfaces ... What to Use

Is there an SNMP Manager out there?

- View SNMP Traps from NetView



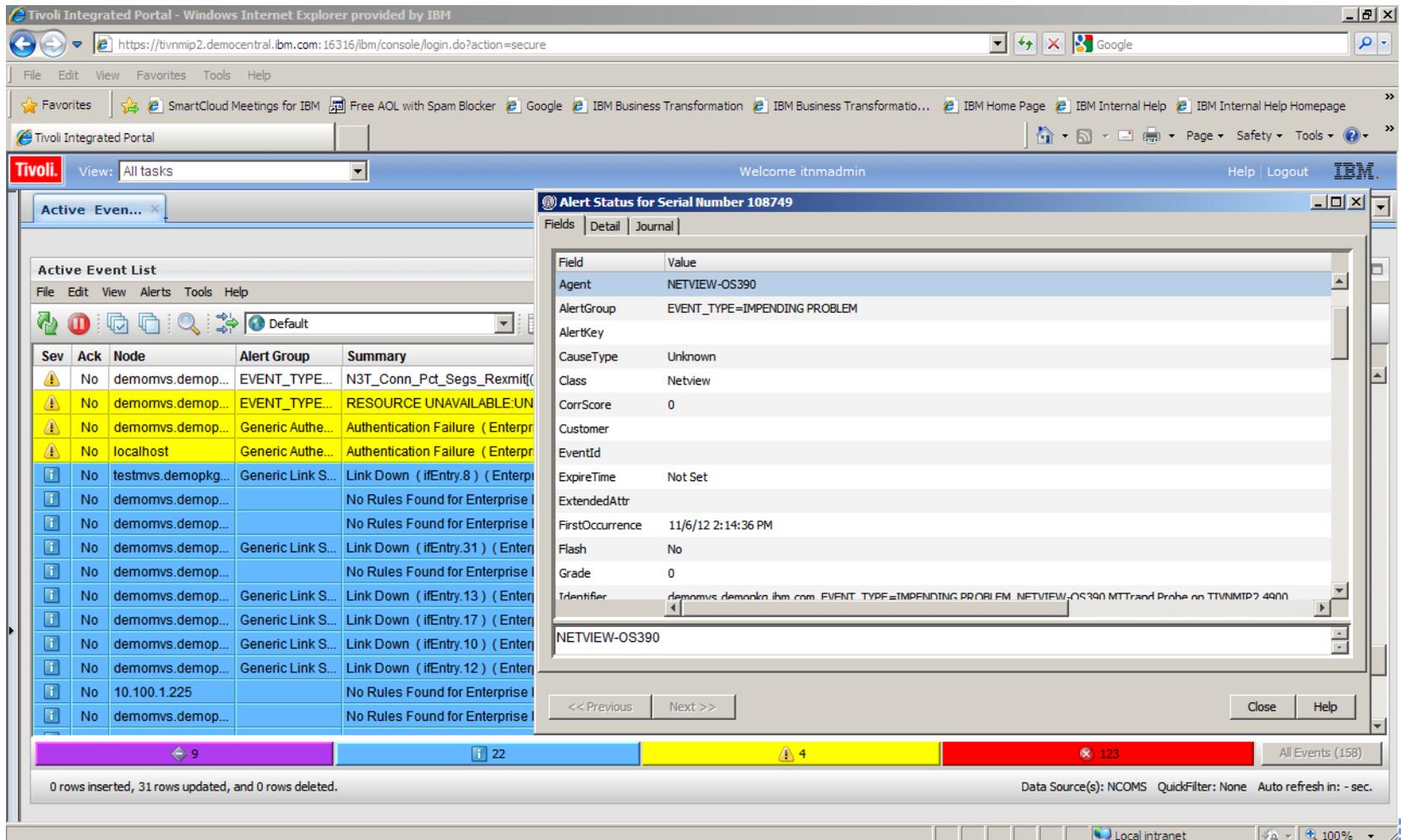
The screenshot shows the Tivoli Integrated Portal interface. The main content area displays an 'Active Event List' table. A red arrow points from the text 'View SNMP Traps from NetView' to the 'Agent' column of the table.

Sev	Ack	Node	Alert Group	Summary	Last Occurrence	Count	Type	ExpireTime	Agent	Manager
Warning	No	demomvs.demop...	EVENT_TYPE...	N3T_Conn_Pct_Segs_Rexmit((Retransmit_Per:severity=WARNI...	5/26/13 8:35:32 AM	18538	Problem	Not Set	NETVIEW-OS390	MTTrapd Prob...
Warning	No	demomvs.demop...	EVENT_TYPE...	RESOURCE UNAVAILABLE:UNDETERMINED	5/21/13 9:29:09 AM	129	Problem	Not Set	NETVIEW-OS390	MTTrapd Prob...
Warning	No	demomvs.demop...	Generic Auth...	Authentication Failure (Enterprise: .1.3.6.1.4.1.2.3.13)	5/19/13 7:10:14 PM	169	Problem	Not Set	Generic-Unknown	MTTrapd Prob...
Warning	No	localhost	Generic Auth...	Authentication Failure (Enterprise: .1.3.6.1.4.1.2.3.13)	11/23/12 5:48:42 AM	27030	Problem	Not Set	Generic-Unknown	MTTrapd Prob...
Info	No	testmvs.demopkg...	Generic Link S...	Link Down (ifEntry.8) (Enterprise: .1.3.6.1.4.1.2.3.13)	3/21/10 6:24:01 PM	1	Problem	Not Set	Generic-Unknown	MTTrapd Prob...
Info	No	demomvs.demop...		No Rules Found for Enterprise ID: .1.3.6.1.4.1.2.6.19.2 (see deta...	5/11/13 1:44:26 PM	249	Type Not Set	Not Set	mtrtrapd	MTTrapd Prob...
Info	No	demomvs.demop...		No Rules Found for Enterprise ID: .1.3.6.1.4.1.2.6.19.2 (see deta...	5/11/13 11:35:03 AM	166	Type Not Set	Not Set	mtrtrapd	MTTrapd Prob...
Info	No	demomvs.demop...	Generic Link S...	Link Down (ifEntry.31) (Enterprise: .1.3.6.1.4.1.2.3.13)	4/17/13 9:07:02 AM	1	Problem	Not Set	Generic-Unknown	MTTrapd Prob...
Info	No	demomvs.demop...		No Rules Found for Enterprise ID: .1.3.6.1.4.1.2.6.19.2 (see deta...	5/21/13 9:38:24 AM	82	Type Not Set	Not Set	mtrtrapd	MTTrapd Prob...
Info	No	demomvs.demop...	Generic Link S...	Link Down (ifEntry.13) (Enterprise: .1.3.6.1.4.1.2.3.13)	9/11/12 1:54:51 PM	1	Problem	Not Set	Generic-Unknown	MTTrapd Prob...
Info	No	demomvs.demop...	Generic Link S...	Link Down (ifEntry.17) (Enterprise: .1.3.6.1.4.1.2.3.13)	7/10/12 3:19:23 PM	1	Problem	Not Set	Generic-Unknown	MTTrapd Prob...
Info	No	demomvs.demop...	Generic Link S...	Link Down (ifEntry.10) (Enterprise: .1.3.6.1.4.1.2.3.13)	6/22/11 5:08:02 PM	1	Problem	Not Set	Generic-Unknown	MTTrapd Prob...
Info	No	demomvs.demop...	Generic Link S...	Link Down (ifEntry.12) (Enterprise: .1.3.6.1.4.1.2.3.13)	6/22/11 5:09:57 PM	1	Problem	Not Set	Generic-Unknown	MTTrapd Prob...
Info	No	10.100.1.225		No Rules Found for Enterprise ID: .1.3.6.1.4.1.2.6.19.2 (see deta...	1/11/10 10:27:53 AM	1	Type Not Set	Not Set	mtrtrapd	MTTrapd Prob...
Info	No	demomvs.demop...		No Rules Found for Enterprise ID: .1.3.6.1.4.1.2.6.188 (see detai...	4/3/12 12:32:55 PM	29	Type Not Set	Not Set	mtrtrapd	MTTrapd Prob...

Other Interfaces ... What to Use

Is there an SNMP Manager out there?

- Display SNMP Trap Fields ...



The screenshot shows the Tivoli Integrated Portal interface. On the left, the 'Active Event List' table displays several events. On the right, the 'Alert Status for Serial Number 108749' window is open, showing detailed information for a specific alert.

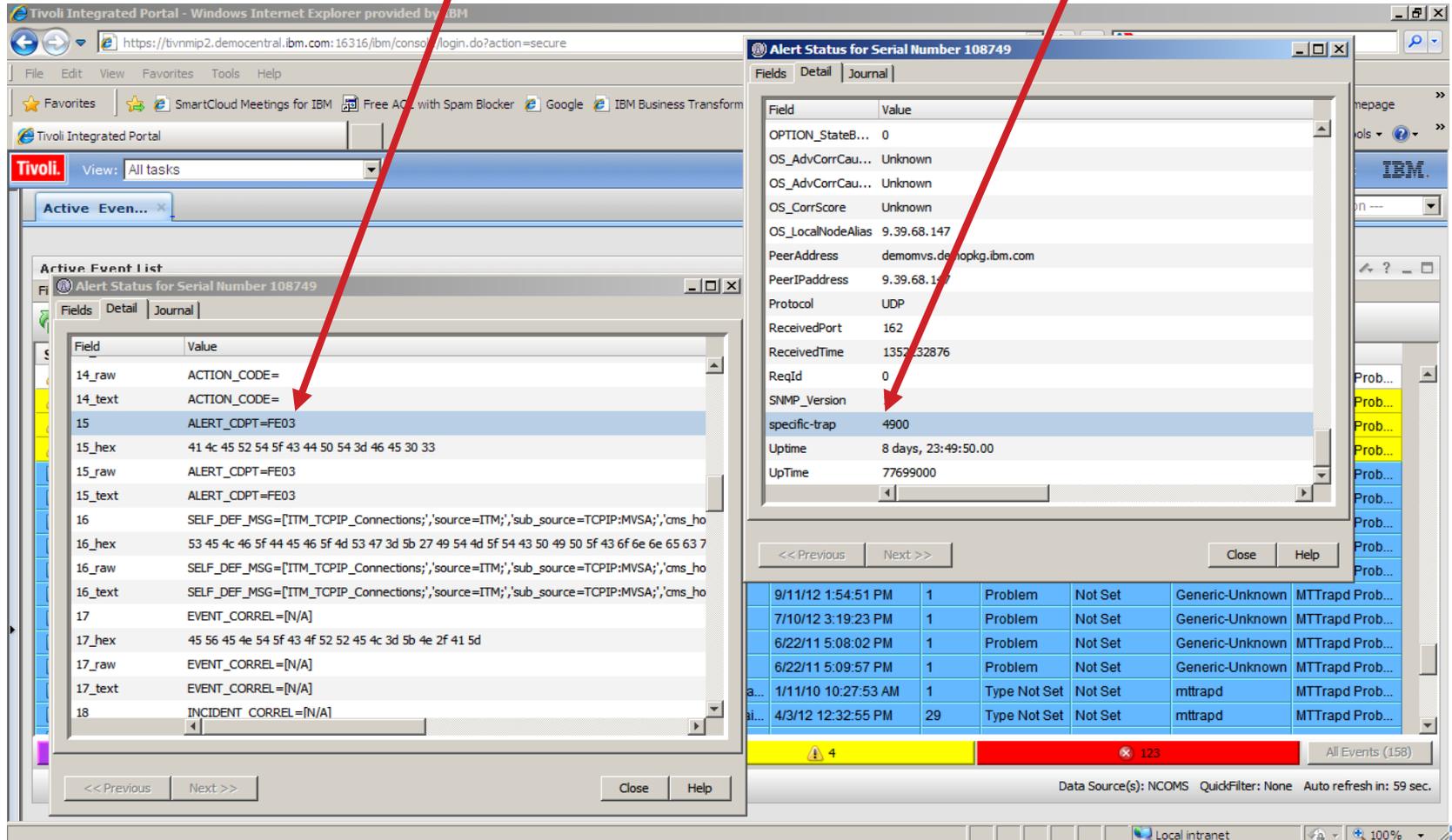
Sev	Ack	Node	Alert Group	Summary
Warning	No	demomvs.demop...	EVENT_TYPE...	N3T_Conn_Pct_Segs_Rexmit...
Warning	No	demomvs.demop...	EVENT_TYPE...	RESOURCE UNAVAILABLE:UN
Warning	No	demomvs.demop...	Generic Auth...	Authentication Failure (Enterpr
Warning	No	localhost	Generic Auth...	Authentication Failure (Enterpr
Info	No	testmvs.demopkg...	Generic Link S...	Link Down (ifEntry.8) (Enterp
Info	No	demomvs.demop...		No Rules Found for Enterprise I
Info	No	demomvs.demop...		No Rules Found for Enterprise I
Info	No	demomvs.demop...	Generic Link S...	Link Down (ifEntry.31) (Enterp
Info	No	demomvs.demop...		No Rules Found for Enterprise I
Info	No	demomvs.demop...	Generic Link S...	Link Down (ifEntry.13) (Enterp
Info	No	demomvs.demop...	Generic Link S...	Link Down (ifEntry.17) (Enterp
Info	No	demomvs.demop...	Generic Link S...	Link Down (ifEntry.10) (Enterp
Info	No	demomvs.demop...	Generic Link S...	Link Down (ifEntry.12) (Enterp
Info	No	10.100.1.225		No Rules Found for Enterprise I
Info	No	demomvs.demop...		No Rules Found for Enterprise I

Field	Value
Agent	NETVIEW-OS390
AlertGroup	EVENT_TYPE=IMPENDING PROBLEM
AlertKey	
CauseType	Unknown
Class	Netview
CorrScore	0
Customer	
EventId	
ExpireTime	Not Set
ExtendedAttr	
FirstOccurrence	11/6/12 2:14:36 PM
Flash	No
Grade	0
Identifier	demomvs.demopkg.ibm.com.EVENT_TYPE=IMPENDING PROBLEM.NETVIEW-OS390.MITrand Probe on TIVNIMP? 4900
	NETVIEW-OS390

Other Interfaces ... What to Use

Is there an SNMP Manager out there?

- Display SNMP Trap Details
- Shows NetView Alert Code Point and the Specific SNMP Trap number generated



The screenshot displays the Tivoli Integrated Portal interface. On the left, the 'Active Event List' window shows a table of events for serial number 108749. The event at index 15 is highlighted, showing 'ALERT_CDPT=FE03'. A red arrow points from this event to the 'Alert Status for Serial Number 108749' window on the right. In this window, the 'SNMP_Version' field is expanded to show 'specific-trap 4900', with another red arrow pointing from the bullet point above to this specific value.

Field	Value
OPTION_StateB...	0
OS_AdvCorrCau...	Unknown
OS_AdvCorrCau...	Unknown
OS_CorrScore	Unknown
OS_LocalNodeAlias	9.39.68.147
PeerAddress	demomvs.demopkg.ibm.com
PeerIPaddress	9.39.68.147
Protocol	UDP
ReceivedPort	162
ReceivedTime	135232876
ReqId	0
SNMP_Version	specific-trap 4900
Uptime	8 days, 23:49:50.00
UpTime	77699000

Index	Field	Value
14	raw	ACTION_CODE=
14	text	ACTION_CODE=
15		ALERT_CDPT=FE03
15	hex	41 4c 45 52 54 5f 43 44 50 54 3d 46 45 30 33
15	raw	ALERT_CDPT=FE03
15	text	ALERT_CDPT=FE03
16		SELF_DEF_MSG=[ITM_TCPIP_Connections;';source=ITM;';sub_source=TCPIP:MVSA;';cms_ho
16	hex	53 45 4c 46 5f 44 45 46 5f 4d 53 47 3d 5b 27 49 54 4d 5f 54 43 50 49 50 5f 43 6f 6e 6e 65 63 7
16	raw	SELF_DEF_MSG=[ITM_TCPIP_Connections;';source=ITM;';sub_source=TCPIP:MVSA;';cms_ho
16	text	SELF_DEF_MSG=[ITM_TCPIP_Connections;';source=ITM;';sub_source=TCPIP:MVSA;';cms_ho
17		EVENT_CORREL=[N/A]
17	hex	45 56 45 4e 54 5f 43 4f 52 52 45 4c 3d 5b 4e 2f 41 5d
17	raw	EVENT_CORREL=[N/A]
17	text	EVENT_CORREL=[N/A]
18		INCIDENT CORREL=[N/A]

Other Interfaces ... What to Use

Is there an SNMP Manager out there?

- Sample of Specific SNMP Trap Rules code
- Implement rules on an SNMP Manager

```

DEMOVMS - [43 x 80]
File Edit View Communication Actions Window Help
Menu Utilities Compilers Help
BROWSE COMMON.NV390.ITNM.TRAP.RULES CHARS 'NetView' found
Command ==> Scroll ==> CSR
#####
#
# NetView for z/OS NMVT ALERT to SNMP TRAP Rules for ITNM
#
#####
case ".1.3.6.1.4.1.1.1588.1.3":
    log(DEBUG, "<<<<< Entering... ibm-Netview-OS390-Custom.rules >>>>>")
    @Agent = "NETVIEW-OS390"
    @Class = "700"
    switch($specific-trap)
    {
#Specific trap 4900
    case "4900": ###
    . . .
        @AlertGroup = $9
        @Summary = extract($7, "MSG=(.*)")
        @Severity = 5
        @Identifier = @Node + " " + @AlertKey + " " + @AlertGroup + " " + $D
    ..details($*)
#Specific trap 4200
    case "4200": ###
    . . .
        @AlertGroup = $9
        @Summary = extract($7, "MSG=(.*)")
        @Severity = 5
        @Identifier = @Node + " " + @AlertKey + " " + @AlertGroup + " " + $D
    ..details($*)
#Specific trap 4100
    case "4100": ###
    . . .
    }
    }
MA b 07/007
Connected to remote server/host demovms.demopkg.ibm.com using lu/pool TCP00017 and port 23
lusorl2b-PRT-16-800 Magnolia Ave, Suite 1600-Orl

```

Other IP Network Management Capabilities



- Dynamic stack discovery and monitoring
 - Sysplex, TCP/IP job, XCF group, host name/address, IPv4/v6, etc.
- DVIPA
 - Configuration, status, target servers, workload distribution, server health, etc.
- Command support
 - Manual or from automation: ping, traceroute, Telnet, SNMP, REXEC, RSH, etc.
- Connection management
 - Active and inactive connections
- SNA over IP
 - Identify, configuration, statistics, etc.
- Smart packet trace
 - Real-time trace, packet analysis to identify problem areas
- Packet trace on the fly
 - Start a trace dynamically
- Automated response to intrusions
 - Issue commands, collect data, notify
- Manage hung listeners
 - Automatically detect and respond



IP Management Setup

- See Rapid Results Package (RRP) in Customer Forum for easy IP management setup.

```

zNVIPMGT_RRP_GL_CUS.txt - Notepad
File Edit Format View Help
*****
*                               NetView for z/OS IP Management Rapid Results Package                               *
*                               General Information & Contents List                                           *
*                               zNVIPMGT_RRP_130630.zip                                                         *
*
* This implementation package should help you rapidly implement and deploy the NetView for                      *
* z/OS Version 5 or Version 6 IP Management Functions. It was built using both                               *
* NetView for z/OS V5R4 and V6R1. It will most likely work with a supported Version 5 NetView.                 *
*
* The approach brings together documented steps in a number of NetView guides. It is highly                   *
* recommended that you review those guides for a better understanding of the implementation.                   *
* References: Installation: Getting Started (SC31-8872-nn)                                                       *
*               Configuring Additional Components (SC31-8874-nn)                                               *
*               Security Reference (SC31-8870-nn)                                                                *
*               IP Management Guide (SC27-2506-nn)                                                             *
*               z/OS Communications Server V1.11,12,13 IP Configuration Reference (SC31-8776-nn)               *
*               z/OS Communications Server V1.11,12,13 IP Configuration Guide (SC31-8775-nn)                   *
*
* No IBM Licensed Code is delivered. The package contains instructions, parameters and JCL only.              *
* To obtain a copy access; http://groups.yahoo.com/group/NetView/files/zNVIPMGT\_RRP\_130630.zip *
*
* Author: Frank Castiglia/IBM  fjccastig@us.ibm.com                                                            *
*
*****
0. Package content:
Note ... Files beginning with "!" are instructions/descriptions files.
!!!README - General Instructions & Descriptions
!!Enabling IP Management.pdf - A guide put together by NV development to further assist this setup.
!!SNMP_STEPS - SNMP implementation steps
!!SNMP4MULTISTACKS - Considerations for running multiple SNMP agents and subagents
!AONDDF - DDF Disclaimer
!NETVIEW_STEPS - NetView IP management implementation steps
!NVIPCOMMANDS - NetView IP Commands you may not be aware of
!OSAM&X - Descriptions of new OSA types for zBX
!RACF - RACF or general SAF product considerations
BPXPRMxx - Sample BPX parms
CNMIPMGT - Sample DSIPARM member for IPMGT Tower
CNMPOLCY - Sample DSIPARM member for AON.TCP & IPMGT Tower
CNMSSUNX - Sample UNIX Server proc
CNMSTGEN - Sample DSIPARM style sheet override member for TOWER statements
CNMSTIDS - Sample DSIPARM style sheet override member for IP Intrusion Detection
CNMSTGIP - Sample DSIPARM style sheet override member for IP Management
EZLCFG01 - Sample AON BASE configuration member
  
```

Integration with Other Products

- OMEGAMON XE for Mainframe Networks
- System Automation for z/OS
- Geographically Dispersed Parallel Sysplex™ (GDPS)
- GDPS/Active-Active
- Netcool/OMNIbus or any SNMP Manager
- Tivoli Application Dependency Discovery Manager (TADDM) / CMDB
- Tivoli Service Request Manager (TSRM)
- Tivoli Business Services Manager (TBSM)
- Tivoli Workload Scheduler (TWS)

More Information

- NetView website
<http://www.ibm.com/software/tivoli/products/netview-zos/>
- NetView customer forum
<http://tech.groups.yahoo.com/group/NetView/>
- Whitepaper on IP management with NetView
https://www.ibm.com/developerworks/mydeveloperworks/groups/service/html/communityview?communityUuid=5e65990a-9690-42e2-93b1-c2267be7620c#fullpageWidgetId=Waa62f018a05a_4ca4_b612_49ffee80398e&file=1fafd5bd-512c-40cd-aa90-61112457f9fc

More Information

- Wikis

NetView for z/OS:

<https://www.ibm.com/developerworks/mydeveloperworks/wikis/home?lang=en#/wiki/Tivoli+System+z+Monitoring+and+Application+Management/page/Tivoli+NetView+for+zOS>

OMEGAMON: <https://www.ibm.com/developerworks/community/wikis/home?lang=en#!/wiki/Tivoli%20System%20z%20Monitoring%20and%20Application%20Management/page/OMEGAMON%20XE%20for%20Mainframe%20Networks>

- Documentation

NetView:

<https://www.ibm.com/developerworks/wikis/display/tivolidoccentral/Tivoli+NetView+for+zOS>

OMEGAMON: <https://www.ibm.com/developerworks/community/wikis/home?lang=en#!/wiki/Tivoli%20System%20z%20Monitoring%20and%20Application%20Management/page/Documentation%20for%20OMEGAMON%20XE%20for%20Mainframe%20Networks>

More Information

- Media gallery

NetView: <https://www.ibm.com/developerworks/mydeveloperworks/wikis/home?lang=en#/wiki/Tivoli+System+z+Monitoring+and+Application+Management/page/Media+Gallery+for+Tivoli+NetView+for+zOS>

OMEGAMON: <https://www.ibm.com/developerworks/community/wikis/home?lang=en#!/wiki/Tivoli%20System%20z%20Monitoring%20and%20Application%20Management/page/Media%20Gallery%20for%20OMEGAMON%20XE%20for%20Mainframe%20Network>

- Service Management Connect: System z community

<https://www.ibm.com/developerworks/servicemanagement/z/index.html>

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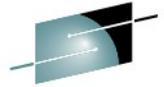
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