

# Smart Network Management with CA NetMaster Network Management

Craig Guess CA Technologies

August 11th, 2011 Session #09293

#### **Agenda**



- Overview of NetMaster
- General Housekeeping
- Couple of Key Features
- Usage Scenarios
- Questions

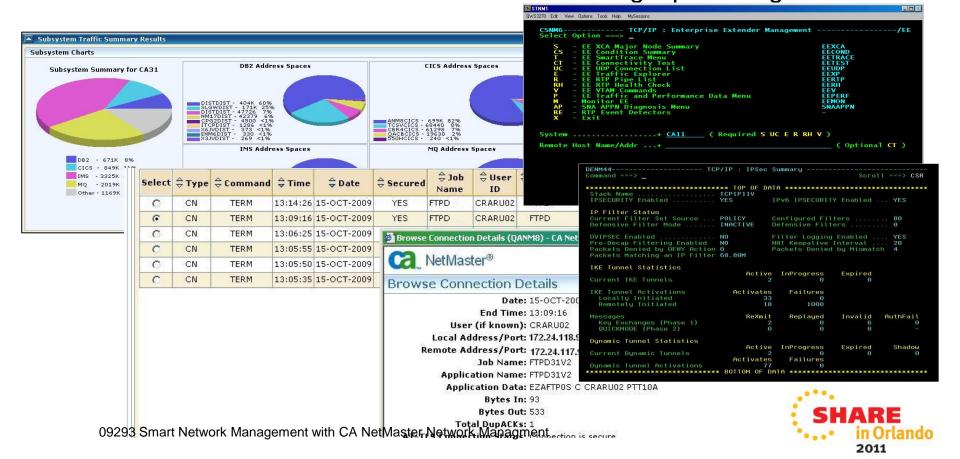


#### What is NetMaster?



#### **Product Description**

 CA NetMaster Network Management empowers new and experienced network administrators to easily identify and resolve network issues before they impact the end user and plan for future demands with a choice of interfaces on a single pane of glass.



# CA Mainframe Network Management Product Family



CA NetMaster®
Network
Management
for TCP/IP 12.0

CA NetMaster®
Network
Management
for SNA 12.0

CA NetMaster®
Network
Automation
12.0

CA NetMaster® File Transfer Management 12.0

CA NetSpy™
Network
Performance
12.0



#### **Comprehensive Toolset**









#### CA NetMaster for TCP/IP

Logical z/OS mainframe IP resources Physical z/OS mainframe IP resources

ENTERPRISE NETWORK

Other network resources

SNA Resources





#### **NetMaster Base Functionality**

Monitoring Functions

 SNA, TCP/IP, MVS, File Transfers, other

Historical Information

 Trends, Reporting, Diagnosis

Diagnostics

 Proactive, Intuitive, Flexible

Reporting

Intuitive, Flexible





#### **General Housekeeping**



#### The zIIP capabilities



- zIIP utilization: a growing factor in assessing the true value of mainframe software purchases.
- CA NetMaster delivers the best zIIP exploitation capabilities:
  - Code specifically designed to execute on a zIIP
  - Measures its own zIIP eligible and actual zIIP CPU consumption

Region = XM={ TASK | ZIIP | BEST }
SSI = PAEXMODE={ TASK | ZIIP | BEST }



#### Primary menu – customizable

Profile command

```
NetMaster : Primary Menu
SDBTEST-
                                                                        Scroll ===> PAGE
Command ===>
                                                   .=Expand or Collapse ?=more actions
         - Monitors
                                                                         Userid GUECR01
         - Historical Data
         - IP and SNA Network Diagnosis
                                                                                 23:20:00
         - User Services
                                                                          SAT 06-AUG-2011
         - Operator Console Services
                                                                         OPSYS z/os
         - Administration and Definition
                                                              http:// 299.299.299.299:1036
         - Terminate Window/Exit
    IP System + CA31
    Condition Summary 23:20 (Auto-refreshed)

Stack TCPIP31 IP, TCP, and UDP Layers
TCPIP31 Network Interfaces
                                                          Warning
                                                                    Problem
                                                                               Status
                                                                               WARNING
                                                                               PROBLEM
    No ports monitored (by number)
    Enterprise Extender
    - APPN/HPR (USILDA01.A31X99)
        IP Traffic Summary 23:17
                                                                 Pkts/Sec
                                                                                     Conns
    D- IP Throughput: Total: 1 Stk, 8 Interfaces
D- Applications: Most active: OTHER
                                                                 233.5
                                                                 214.4
                                                                              130k
                                                                                       51%
                                                                            F6=Refresh
               F2=Split
                                                             F5=Find
 F7=Backward F8=Forward
                               F9=Swap
```





```
Resource Monitor
                                                                              CA31-0001
                                                                      Scroll ===> PAGE
Command ===>
                       S=Status L=Transient Log D=Display DB=Database ?=List Cmds
                                                             Mode
                                                                         Logical
OK
    System CA31
              Class
                        Resource
                                       Desired
                        USILDA01.A31 ACTIVE
                                                             MANUAL
              APPNHPR
                                                 ACTIVE
    CA31
                        NMDCIP3
                                                             MANUAL
                                                                         ALERTSEV2
              CIP
                                                 ACTIVE
                                       ACTIVE
    CA31
              CSM
                        CSM
                                                 ACTIVE
                                                             MANUAL
    CA31
                                                             MANUAL
                                                                         OK
              EΕ
                                                 ACTIVE
    CA31
              IPNODE
                        NMDCIP3
                                       ACTIVE
                                                 ACTIVE
                                                                         OK
    CA31
              IPNODE
                        NMDSWH5
                                                             MANUAL
                                                                         OK
    CA31
              IPNODE
                        RABBIT
                                                 ACTIVE
                                                             MANUAL
                                                                         OK
                        141.202.85.1 ACTIVE
                                                             MANUAL
                                                                         OK
    CA31
              IPNODE
                                                 ACTIVE
    CA31
              OSA
                        OSA-0C
                                                 ACTIVE
                                                             MANUAL
                                                                         OK
    CA31
                        OSA-00
                                                             MANUAL
                                                                         OK
            S/B=Browse T=Track N=Notes A=Analyze TT=TroubleTicket C=Close ?=More
```

### Split Screen Horizontal

## Split Screen Vertical

Description

```
SDI TEST
                                Resource Monitor --
                                                              (23.44.50)---- Alert
                                                      Command ===>
Command ===>
                      S=Status L=Transient Log D=D
                                                                  S/B=Browse T=Track
             Class
                                                          Time
    System
                       Resource
                                     Desired Actua
                                                                    Description
    CA31
              APPNHPR
                       USILDA01.A31 ACTIVE
                                               ACTIV
    CA31
             CIP
                       NMDCIP3
                                     ACTIVE
                                               ACTIV
    CA31
             CSM
                       CSM
                                               ACTIV
             EE
                       EE
    CA31
                                      ACTIVE
                                               ACTIV
    CA31
             IPNODE
                       NMDCIP3
                                      ACTIVE
                                               ACTIV
    CA31
                       NMDSWH5
             IPNODE
                                     ACTIVE
                                               ACTIV
    CA31
             IPNODE
                       RABBIT
                                      ACTIVE
                                               ACTIV
    CA31
             IPNODE
                       141.202.85.1
                                               ACTIV
                                                          23.40.57 STACK
    CA31
             OSA
                       OSA-0C
                                      ACTIVE
                                               ACTIV
                                                                           (EZ60SM02)
    CA31
             OSA
                       0SA-00
                                      ACTIVE
                                               ACTIV
                                                          23.40.57 STACK (EZ60SM01)
    CA31
             OSA
                       0SA-01
                                     ACTIVE
                                               ACTIV
                                                          **END**
    CA31
                       TCPIP31
                                     ACTIVE
                                               ACTIV
              STACK
```





#### **Shortcuts**

```
SDBTEST---
                             CAS : Menu Shortcuts List
                                                                      Scroll ===> PAGE
Command ===>
                         Select the required shortcut by placing an 'S' beside it
    Shortcut
                Description
                Administration : Primary Menu
Alert Monitor : Administration Menu
     /ADMIN
     /ALADMIN
                 Alert Monitor
     /ALERTS
     /ALFILT
                Define Filters
     'ALHIST
                Alert History
                List Allocated Files
     /ALLOC
                Alert Monitor Self Test
     /ALTEST
                                                               =A.A.I
                Define Trouble Ticket Interface
     /ALTTI
                 APING a Control Point
     APING
                List CP-CP Sessions
     /APPNCP
     /APPNDLU
                List Dependent LU Requestors
                APPN/HPR : RTP Management
     /APPNHPR
                List RTP Pipes
     /APPNRTP
                Display APPN Subnetwork Topology Information
     /APPNTOP
                List Transport Resource List Entries
Automation Services : Administration Menu
     /APPNTRL
     /ASADMIN
     /ASINFO
                 Address Space Information
               F2=Split
                          F3=Exit
                                                           F5=Find
 F1=Help
                                            F4=Return
                                                                          F6=Refresh
               F8=Forward
 F7=Backward
                              F9=Swap
```





#### **Command Entry**





#### LOGGING -/LOG

```
SDBTEST----- Activity Log : THU 11-AUG-2011
                                                            Scroll ===> PAGE
Command ===> text 1st493I
        Log Data for CS30
         SDBTEST------Filter:ist493I
                                                                       Scroll ===> PAGE
         Command ===> _
09.56.42
09.56.42
                  Log Data for CS30
09.56.42
                                            TOP-OF-DAY
         01.40.43 IST493I
                                      FOR ID = EL000
                           VARY ACT
09.56.42
                           VARY ACT
                                         ID = EL001
          01.40.43 IST493I
09.56.43
                                      FOR ID = EL002
09.56.43
                                      FOR ID = FI \cap 3
         01.40.43 IST4931
09.56.43
                                      FOR ID
                           VARY
                                                  Display Formats
                                      FOR ID
                                                  Scrolling
09.56.43
                                                   Printing
                                      FOR ID
09.56.43
                                                   Locating Records by Time
                                      FOR ID
                           VARY
09.56.43
                                                   Locating Records by Date
                           VARY ACT
                                      FOR ID
                                                   Finding a Character String
09.56.43
                           VARY
                                      FOR ID
                                                   Highlighting Log Records
                           VARY ACT
                                      FOR ID
09.56.43
                                                   Filtering Log Records
                           VARY ACT
                                      FOR ID
                                                   Viewing Records from Another Region
09.56.43
         01.40.43 IST493I
                                      FOR ID
                                                   Issuing MS Commands and Shortcuts
                           VARY
09.56.43
                                                   Defining and Locating Labels
                                      FOR ID
                           VARY
                                                  Function Keys
09.56.43
                                      FOR ID
                                                   Controlling Message Attributes
                                      FOR ID
 F1=Help
```





#### **Couple of Key Features**



# CA NetMaster Network Management Alert Monitor Overview



2011

```
(06.33.24) ---- Alert Monitor
                                     (97:
Command ==
                                                                            CSR
                      OCCURRED OFFSCREEN (BELO
      S/B=Browse T=Track N=Notes A=Analyze TT=TroubleTicket C=Close
                                                                          ?=More
              Description
                                                                        Sys
                             TBMXCF, XCF
                                                                        MVSD
                                                                        MVSC
                                                                        MVSD
                                          F4=History
               F2=Split
                                                                      F6=Hold
 F1=Help
              F8=Forward
```

## CA NetMaster Network Management Alert Monitor Overview



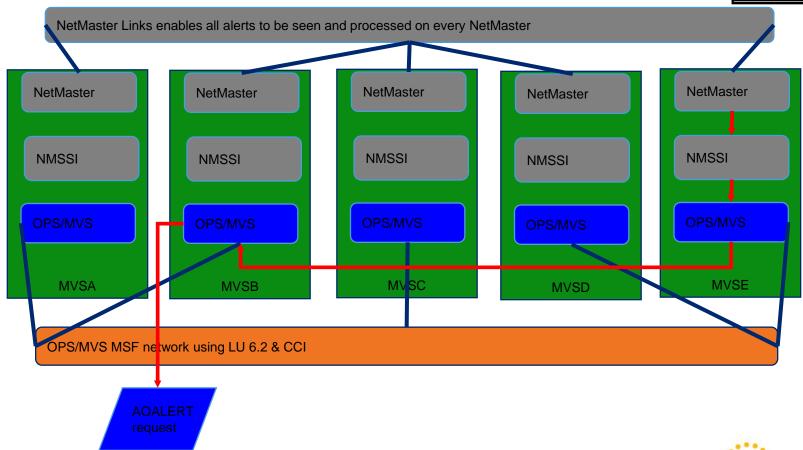
```
Alert Monitor: Alert Display ----Columns 00001
    00079
Command ===>
                                                                                                           Scroll ===>
    CSR
 SSM STATE warning: 86 $STCTBL tasks are current=DOWN, DESIRED=UP
 Alert Text
   List of tasks w/ current=DOWN, DESIRED=UP:
                            $D ADTCORD2 ADT131D ADT131X ADT132 ADT133D ADT133X
                                                                NetMaster® -
                                                                                            Recommended Action
                                                                                            To Fix from console, Issue:
                                                                Welcome: bob stark
                                                                                            SSM MANAGE TPX4VGRE
                                                                WebCenter Menu
                                                                               Alert Monitor
                                                                                            To Fix from ISPF, Issue:
                                                                                            1. TSO OPS S
                               OCCICD OCCIMD
                                                                Expand All | Collapse
                                                                               Alert Monitor C
                                                                                            2. Scroll down or filter to locate resource
                                                                                            3. Use U line command to set current_state

■ ■ Diagnostics

                                                                                             to LINIUNICARAL
                                                                Monitoring
 Recommended Action
                                                                   Alerts
                                                                                                                      Cancel
                                                                   IP Resources
   To Fix from console, Issue:
                                                                   IP Nodes
                                                                                Execute
                                                                🗓 🔳 Performance
                                                                                           Java Applet Window
       SSM MANAGE resource
                                                                ⊞ ■ History
                                                                               Alert List 15-SEP-2008 16:17:08 Freeze
                                                                                                                      Options
                                                                                                                             Filter
                                                                ⊞ ■ Utilities
   To Fix from ISPF, Issue:
                                                                                                                       Go
                                                                              Select Alert(s) and:
                                                                                                                                1-4 of 832
     1. TSO OPS S
                                                                              S... Last Date/Time
                                                                                                                   Resource Track Se
                                                                                                   Description
                                                                               Sep 15, 2008 4:... SSM STATE warning: $STCTBL.$AVRSY is CUR...
     2. Scroll down or filter to loca
                                                                               Sep 15, 2008 4:... SSM STATE warning: $STCTBL.TPX4VGRE is C.
     3. Use U line command to set cur
                                                                                                                  MQMAIL1CSQM.
                                                                                                           103
                                                               Copyright @ 2008 CA, All rights reserved,
    709293 Smart Network Management with CA NetMaster Network N
                                                               Applet alertmon started
                                                                                                                         Local intranet
```

# Alert forwarding OPS/MVS









#### **Filtering Alerts**

- FILTER primary command changes the alert filter
- Has effect only for the life of your CA NetMaster Network Management session
  - Each user's profile can have a default filter
- Filter syntax:
  - FILTER Bring up filter menu (shown next)
  - FILTER filterName Change the current filter
  - FILTER OFF Show all alerts
  - FILTER RESET Return to filter stored in your profile





#### **Resource Monitor**

```
------ Resource Monitor --
                                                           -----CA31-0001
SDBTEST--
                                                                  Scroll ===> PAGE
Command ===>
                      S=Status L=Transient Log D=Display DB=Database ?=List Cmds
             Class
                                    Desired Actual
                                                         Mode
                                                                     Logical
    System
                       Resource
                                                                                0vr
    CA31
                       USILDA01.A31 ACTIVE
             APPNHPR
                                              ACTIVE
                                                          MANUAL
                                                                     OK
    CA31
             CIP
                       NMDCIP3
                                    ACTIVE
                                              ACTIVE
                                                          MANUAL
                                                                     ALERTSEV2
    CA31
             CSM
                       CSM
                                    ACTIVE
                                              ACTIVE
                                                          MANUAL
                                                                     OK
    CA31
             EΕ
                       EE
                                     ACTIVE
                                              ACTIVE
                                                          MANUAL
                                                                     OK
    CA31
             IPNODE
                       NMDCTP3
                                     ACTIVE
                                              ACTIVE
                                                          MANUAL
                                                                     OK
    CA31
             IPNODE
                                     ACTIVE
                                                                     OK
                                              ACTIVE
                                                          MANUAL
    CA31
             IPNODE
                                     ACTIVE
                                                                     OK
                       RABBIT
                                              ACTIVE
                                                          MANUAL
                       141.202.85.1 ACTIVE
    CA31
             IPNODE
                                                          MANUAL
                                                                     OK
                                              ACTIVE
    CA31
             OSA
                       OSA-0C
                                                                     OK
                                                          MANUAL
    CA31
             OSA
                       0SA-00
                                                                     OK
                                                          MANUAL
    CA31
             OSA
                       OSA-01
                                    ACTIVE
                                              ACTIVE
                                                          MANUAL
                                                                     OK
                                                                     ALERTSEV1
             STACK
                       TCPIP31
                                    ACTIVE
                                              ACTIVE
                                                          MANUAL
U
    **END**
              F2=Split
                            F3=Exit
                                          F4=Add
                                                       F5=Find
 F1=Help
 F7=Backward
              F8=Forward
                            F9=Swap
```





#### Select specific monitoring

command ===>	Resource		tivate Type I=1		nCA31-000
Address Connect FTP Wor IP Secu IP, TCP MIB Att	Monitoring Space Monito ion Workload kload Monitor rity Monitori , and UDP Mon ribute Monito Interface Mo	oring Monitoring ring ng nitoring	Status ACTIVE ACTIVE ACTIVE INACTIVE ACTIVE ACTIVE ACTIVE ACTIVE ACTIVE ACTIVE	Monitor Rate <u>10</u> <u>10</u> <u>10</u>	
TCP Port(s)	ddress Space				
F1=Help F7=Backward	F2=Split F8=Forward	F3=File F9=Swap	F4=Save	F11=Panels	F12=Cancel





#### **Attributes and Actions**

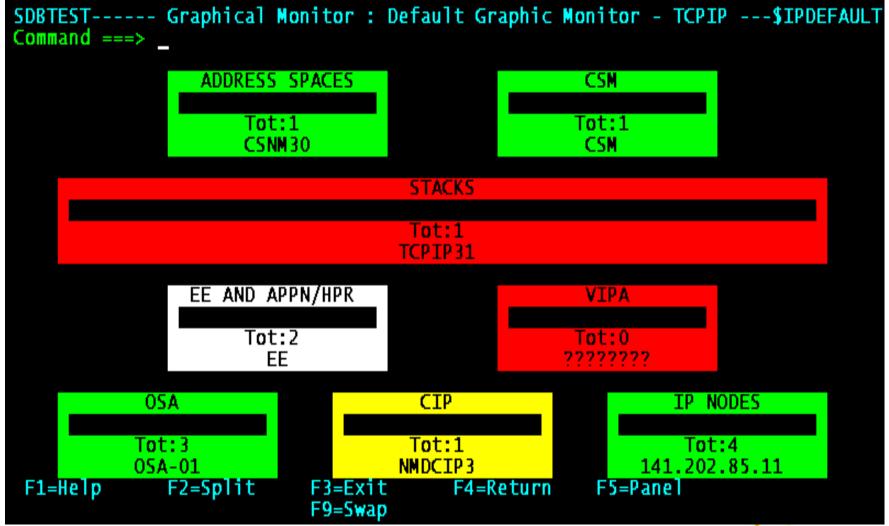
```
SDBTEST----- STACK TCPIP31 Monitoring Definition --
                                                          -----CA31-0001
                                                              Scroll ===> PAGE
Command ===>
                                                           S/U=Update R=Remove
     Attribute
                            Alert Summary
     ifInBandwidth%
                            Sev:3 >95 Reset: <90
     ifInBytes
     ifInPkts
     ifOutBandwidth%
                            Sev:3 >95 Reset: <90
     ifOutBytes
                            Sev:1 <999999999
     L OSA2
                            Sev:1 <1 Reset: >1
     ifOutPkts
     ifStatusMatch
                            Sev:3 NO Reset: ¬NO
     ifStatusOper
                            Sev:2 ,¬UP Reset: UP
     ifTotalPktsDiscard%
                            Sev: 3 > 2 Reset: <1
```

```
SDBTEST---- Monitor Attribute : Alert Control Details (COUNTER) -----CA31-0001
                                                               Scroll ===> PAGE
Command ===> _
                  TCPIP31 (STACK)
Attribute ...... ifOutBandwidth%
Description ..... Outbound byte rate as a % of bandwidth
                             (Daily, DayOfWeek or HourOfDay)
Baseline Type ...+
Three Strike Alert NO
                             (YES or NO)
                             S/U=Update A=Actions C=Clear Actions R=Reset Alert
                                                  Max
    Alert Type
                                                  Sev Act# Alert Description
                        Summary
                        Sev:3 >95 Reset: <90
    High Rate Alert
    Low Rate Alert
    Above Baseline Rate
    Below Baseline Rate
    **END**
```





#### **Graphic Monitor**





#### Diagnosis Tools for EE and APPN/HPR

- Enterprise Extender
  - 'missing' and inactive connection highlighting
  - Connectivity Test
  - Traffic Explorer
  - UDP Connection List
  - RTP Health Check
  - SmartTrace
- APPN/HPR
  - RTP List format extended and new sorting
  - RTP Health Check
  - VTAM Command prompt list





#### Enterprise Extender Management Menu

```
DENM44----- TCP/IP : Enterprise Extender Management
Select Option ===>
   S - EE XCA Major Node Summary
                                                      EEXCA
   CS - EE Condition Summary
                                                      EECOND
     - EE SmartTrace Menu
                                                      FETRACE
   CT - EE Connectivity Test
                                                      EETEST
  UC - EE UDP Connection List
                                                      EEUDP
      - EE Traffic Explorer
                                                      EEXP
     - EE RTP Pipe List
                                                      EERTP
     - EE RTP Health Check
                                                      EERH
      - EE VIAM Commands
                                                      EEV
     - EE Traffic and Performance Data Menu
                                                      EEPERF
      - Monitor EE
                                                      EEMON
     – SNA APPN Diagnosis Menu
                                                      SNAAPPN
     - RTP Event Detectors
     - Exit
System ..... + CA11 ( Required S UC E R RH V )
Remote Host Name/Addr ...+
                                                         ( Optional CT )
```





#### **SmartTrace**

- Initiate trace and immediately view collected packets
- Run multiple concurrent traces with results presented independently of each other
- Multi-TCP connection trace
- Pre-define traces to capture difficult to reproduce network activity
- Parse and decode of packets
- Offload trace data to CTRACE or LIMBPCAP formats
- Print single packet or complete packet list





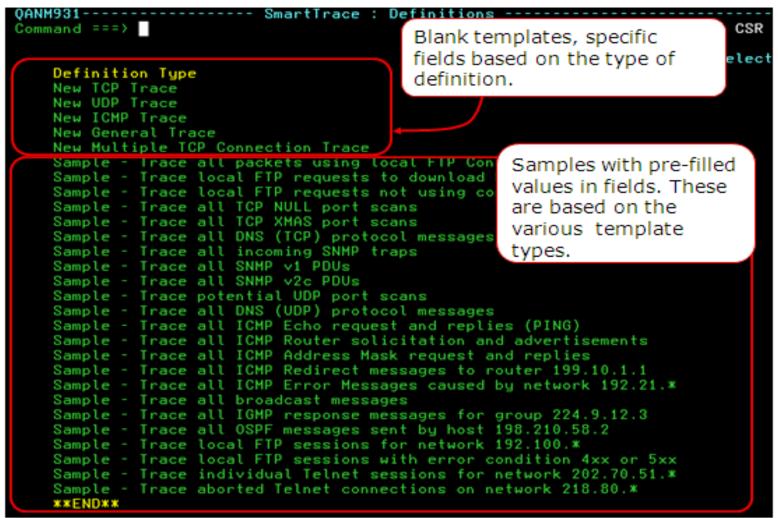
#### SmartTrace cont.

- •Traces can be simply started or made as complex as you require.
- Start traces( using context) from multiple menus
  - TCP connection list (/IPCON)
  - Resource Monitors (PT command)
    - Stack Resource
    - •EE Resource
    - ASMON Resource
    - IPNODE Monitor
  - Trace menu Advanced (/IPPKT)





#### **Advanced Tracing – templates**



#### **Advanced Tracing - continued**



SDBTEST SmartTrace : General Trace Details		SHADE
Command ===> _	Page 1 of 4	Technology - Connections - Results
Name         DEMO1           Description         demo general trace           IP Version         4 (4 or 6)		
Trace Packets with:  TCP/IP Stack+  Interface Name+  Either:		
Local Host Foreign Host		
Or: Special Address (Loopback, Multicast or	Broadcast)	
IP Protocol+		
Note This is the first of four trace definition panels. Use more selection criteria, stop criteria and trace option  F1=Help F2=Split F8=Forward SDBTEST	15.	 Page 2 of 4
Trace Packets with: Fragmentation IP Header Options Present TOS Bits Set QOS Values + Time To Live + Packet Length + Packet Direction	(0 to /)(In or Out)	Page 2 01 4
Packet Data (Following IP Head Oper Data 1 LIKE *demo* 2 LIKE *demo* 3 4 5 Expression + 1 OR 2	Format Pos. EBCDIC 1 EBCDIC 33	
F1=Help F2=Split F3=Fi F7=Backward F8=Forward F9=Sv		opAct F12=Cancel



#### **Advanced Tracing - continued**



SDBTEST SmartTrace : Ge Command ===>	neral Trace De	tailsPage 3 of 4
Stop After Tracing a Packet with: Fragmentation	(Yes or No) (Yes or No) ————————————————————————————————————	
Oper Data	Format	Start Pos. Length
Expression+		e.g. 1 and (2 or 3)
F1=Help F2=Split F3=File F7=Backward F8=Forward F9=Swap	F4=Save	F11=StopAct F12=Cancel





#### **Exporting & Reports (report command)**



#### **Baselines**

Wednésday baseline

379.00

269.00 384.00

264.00 480.00

373.00 443.00

306.00

23:54

23:44

23:40

23:10

23:00 22:50





```
Scroll ===> PAGE
Command ===>
                                             .=Expand or Collapse ?=more actions
    IP System + CA31
    Warning
                                                             Problem
                                                                      Status
                                                                      OΚ
          IP Input Bytes/Hr
IP Output Bytes/Hr
                                              542M
                                              495M
          IP Fragmentation %
                                                                              10%
          IP Fragmentation Fail %
                                                                             10%
          IP Reassembly %
          IP Reassembly Failure %
                                                                             10%
          IP Input Error %
                                                                             10%
          IP Input Discard %
                                                                              10%
          IP Output Discard %
                                                                             10%
          TCP Current Connections
                                                                              500
                                               252
          TCP Retransmissions %
                                              0.23
          TCP Cons Dropped/Hr
                                               268
                                                                              500
          TCP Rcv Out-of-Order %
                                              0.02
          TCP Receive Error %
                                                 О
       SDBTEST---- TCP/IP Performance : Sample Hourly Rates Graph -----Link: CSNM30
       Command ===>
                                                                       Scroll ===> PAGE
            Resource ID .....
                                  TCPIP31
            Description ..... tcpip31
                                  tcpDroppedConns (COUNTER)
            Attribute ID (Type)
                                  TCP connections dropped
            Description .....
            Total Alert Count ... O
                                  2hrs 44mins : Wed 10-Aug-2011 from 21:10 to 23:54
            Period .....
                               Axis range is 1 to 540 each point is 10 ----+---100--+---200--+---300--+---400--+---500-
            Sample Time
                         Rate
            Daily baseline
```



#### **Usage Scenarios**





## Scenario 1 OSA utilization monitoring alert



- Monitoring
  - OSA utilization exceeds baseline threshold
  - EE Bytes Sent as Stack % exceeds normal threshold
- =/EEUDP to display EE UDP Connection List
  - SORT BYTESOUT to determine busiest
- R to list RTP pipes using this connection
  - SORT RATE D to determine most active
  - TRS to display traffic statistics for this RTP pipe
  - PT to trace RTP pipe
  - S to display and drilldown to sessions



## Scenario 2 LU Session fails with sense 087D



- A connection partner is unavailable
  - /EEXCA shows a connection as INACT or RESET
  - An SNAGRP resource contains a static PU not active
- /EEXCA
  - A to activate a static PU
  - CT to test connectivity
  - UN against line group to display unreachable partners
  - UNC to clear unreachable partner information





# Scenario 3 What application traffic is being carried now on this stack interface?

- You have traffic figures for each stack interface – and for each appl.
   But are they correlated?
- For stack interface ABC, what applications are contributing to its current traffic?
- For application XYZ, what stack interfaces are its current traffic flowing over?

# **Use the Interface- Application traffic figures**

- A TCP connection can send packets over more than one interface!
- Available from IP Summary



#### Interface-Application Traffic, by Interface



```
----- TCP/IP : IP Throughput Summary
Command ===>
                                                                    Scroll ===> CSR
                                               .=Expand or Collapse ?=more actions
    IP Throughput: Total: 4 Stks, 277 Interfaces 122.4
                                                                     46211
          Stack/
                               Connections
                                             ---Packets/Second----
                                                                     ----Butes/Seco
             Interface Name
                               Active
                                                           Ou t
                                                                         Ιn
                                                In
       CA31:
                                  103
                                              59.1
                                                         63.33
                                                                      18707
                                                                                  275
        - TCPIP31
                                  102 >99%
                                             51.54
                                                    87% 55.46
                                                                      17604
                                                                88%
                                                                             94% 259
            LOOPBACK
                                             24.62
                                                    48% 24.62
                                                                44%
                                                                      12754
                                                                             72%
                                                                                 127
                                             26.91
                                                    52% 17.99
                                                                32%
                                                                       4850
                                                                             28%
                                                                                   70
            OSA1
                                                    < 1 %
            OSA2
                                             0.003
                                                          12.7
                                                                23%
                                                                        0.2
                                                                             < 1 %
                                                                                   61
                                                     ⊙%
            HIPERLFF
                                                 0
                                                          0.14
                                                                < 1 %
                                                                          0
                                                                              0%
                                                                                   24
            LOOPBACK 6
                                                     Θ%
                                                                 ⊙%
                                                                              Θ%
                                                 0
                                                            0
                                                                          0
            LNKVIPA
                                                     ⊙%
                                                                 0%
                                                                              ⊙%
                                                             0
                                                                          0
DENM17------ TCP/IP : Interface Traffic Statistics
Command ===>
                                                                    Scroll ===> CSR
    Stack Name ..... TCPIP31
    Interface Name ..... OSA1
                              74.3M 100% ---10--20--30--40--50--60--70--80--90---
    Applications
                     Bytes
    FTP
                                      48%
                                36M
    OTHER
                              27.1M
                                      37%
    Unassigned
                              4645k
                                       6%
    CCITCPGW
                              3463k
                                       5%
                                       3%
    Hermes-31
                              2327k
                                      < 1 %
    TELNET
                               244k
                                      < 1 %
    MVSNFSC
                               232k
    STNM2
                               191k
                                      < 1 %
                                      < 1 %
                              51466
    DENM17
                              22776
                                      < 1 %
    CCITCP
    VANQAV62
                               9358
                                      < 1 %
                                      < 1 %
    SMTPMAIL
                               1674
```

#### Interface-Application Traffic, by Application

83

93

5%

4%

76

85

25% 82191

2% 23271

6%

6%

22.59

22.58



Application	1 1									echnology - Connections - Results
DENM17 Command ===>	TCP/I	P : A	pplica	tion	Usage	Summa	ary	Scr	 bll ==	=> CSR
					.=Exp	and c				actions
Applications:			ve: OT				29.05		910	74%
System/	Connecti	ons	Pacl	kets/	Second		Ву	jtes/S	econd-	
Appl.	Active		In		Out		In		Out	
— САЗ1	96		24.25		28.25		7484		16756	
OTHER	71		12.22	50%	16.83	60%	4657		12353	74%
Hermes-31	6	6%	1.86	8%	1.307	5%	391.6	5%	1714	10%
<u>s</u> - DB2	3	3%	1.347		1.237	4%	1287		348.8	2%
QAM1R4	1	1 %	1.077	4%	1.167	4%	320.7	4%	1258	8%
CCITCPGW	1	1 %	0.77	З%	0.74	З%	432.3		462.8	3%
QAM1	1	1 %	1.76	7%	1.32	5%	110.9		348.8	2%
F STNM2	2	2%	0.3	1 %	0.4	1 %	21.6	< 1 %	26.8	< 1 %
hvsnfsc	3		0.067		0.087	< 1 %	20.8		11.89	< 1 %
DENM17	1	1 %	0.18		0.253	< 1 %	14.03		18.54	< 1 %
	0	Θ%	0.16	< 1 %	0.167	< 1 %	8.12	< 1 %	13.44	< 1 %
DENM17	TCP/IP	App	licatio	n Tra	affic S	Statis	stics			
Command ===>										=> CSR
Application Na	me DE	32								
Stack Interfac	- Putan	0.457	31- 100%		1020-	20	-40E0-	60	7090	00
TCPIP31-LOOPBA			2k >99%		1020-	-30	4050	-60-	1060	90
Indeterminate	CK	1142								
ilide (el millate		1172	24 (1%)							- 1
Application Tr	affic Sta	atist:	ics thr	ough	stack:	TCP	[P31			
Packets			ets Out		Bytes			Bytes	Out	
	oun t	Stk%	Amoun		Stk%	Amou	ın t	Stk%	Amoun	t
	37	2%	32			37999		1 %	9478	
23.01 14% 11	00	14%	1092			1545	C <b>           </b>	12%	393k	
23.00 6%	67	4%	61		27%	64356	5	2%	17333	

#### Scenario 4



## Are we getting a lot of connection failures?

- Connection totals and active counts get lots of attention.
- What about connection failures?
- These can be close to invisible, but can indicate a wide variety of potential problems, such as:
- Security: is someone trying a random or brute force attack?
- Application performance: is an application unwell or unavailable?

## Use the new Real-Time IP Event Detectors

- NetMaster Packet Analyzer detects packet-based events by watching real-time packet streams
- For 'genuine' connection failures caused by TCP Server RST, use the SVRRESET detector
- For connection attempt failures, use the **NOLISTEN** detector
- Normal NetMaster Alerts are raised



# **SVRRESET IP Event Detector Setup Criteria**



DENM17 T Command ===>	CP/IP : TCP Server Reset Criteria -	
Short Description	WW Example 1	Status <u>ACTIVE</u>
		(Generic allowed) (Range allowed)
		(Generic allowed) (Range allowed)
Active Alert Limit	5 (Maximum active al	lerts. Range 1 to 20)

A TCP Server Reset event detector watches the TCP connections and detects when an established connection is reset by the server end of the connection. If detected an alert is raised indicating the connection partners.

This is a real-time Packet Analyzer based event. Client-initiated resets are ignored. (Also ignored are resets sent by the stack, in response to connection attempts to non-existent port listeners.)

Note: This detector only applies to packets coming from or going to the z/OS system seen by the Packet Analyzer.

Use this type of event detector when you want to know of the following conditions:

- All server reset connection failures involving a specific application
- Any server reset connection failures and who they are most often happening to

#### **Recap - Elements of success**



#### **NetMaster Strengths**

Monitoring Functions

 SNA, TCP/IP, MVS, File Transfers, other

Historical Information

 Trends, Reporting, Diagnosis

Diagnostics

 Proactive, Intuitive, Flexible

Reporting

Intuitive, Flexible





#### **Questions?**



Craig.guess@ca.com

