



Hidden Gems in *CA NetMaster for TCP/IP*: Come Explore where You May Have Missed Them

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CA Technologies

August 13, 2015
Session 17790



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Agenda

- WebCenter
- Traffic Stats vs /Perf
- Event Detectors
- SmartTrace
- Growth Tracker
- Creating Emails
- Performance Charts and Graphs
- Integration to OPS/MVS, SYSVIEW

WebCenter



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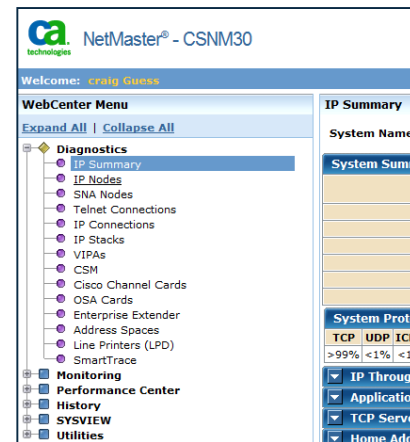


WebCenter

- No need for external web servers
- Easily configured and instantly available (/PARM..Interfaces/WebCenter)
- Can be secured with AT-TLS if required
- Can control access to WebCenter menu options programmatically by using the variables in the CC2DEXEC(\$W3MH01X)

```
WEBCENTER - WebCenter Web Interface
Web Interface Port ..... 1666 (NONE, 1 to 65535)
Access URL ..... http://141.202.36.251:1666
Access URL Host Override ..... 141.202.36.251
User Timeout ..... 02.00 (hh.mm)
Enable SYSVIEW Interface ..... NO (YES or NO)
Enable Public IP Pages ..... YES (YES or NO)

Performance Charts
Enable Performance Charts ..... YES (YES or NO)
Color Thresholds ..... Smallest Small Medium Large
Active TCP Connections ..... 0 5 10 20
I/Os Per Second ..... 0 100 1000 10000
```



Flexibility



Welcome: **craig Guess**

WebCenter Menu

[Expand All](#) | [Collapse All](#)

- ◆ **Diagnostics**
 - IP Summary
 - IP Nodes
 - SNA Nodes
 - Telnet Connections
 - IP Connections
 - IP Stacks
 - VIPAs
 - CSM
 - Cisco Channel Cards
 - OSA Cards
 - Enterprise Extender
 - Address Spaces
 - Line Printers (LPD)
 - **SmartTrace**
- ◆ **Monitoring**
- ◆ **Performance Center**
- ◆ **History**
- ◆ **SYSVIEW**
- ◆ **Utilities**

SmartTrace Packet Tracing

Region:

- All Definitions
- Active Definitions
- Resource Traces
- Connection Traces
- Saved Traces**

Execute

Saved Traces

Information:

Actions

G

G

G

G

SmartTrace Trace View [Update](#) [Execute](#) [Preferences](#) [Close](#)

Definition Name: SBWEB
Stack: TCPIP31V
Protocol: TCP
Local Host: 192.200.141

Description: WEB Alert monitor trace

Latest Packets for Trace:

Sequence Number	Direction	Foreign Host	Foreign Port	+Time	Bytes	
0001	←	...	35.228 13595	-	48	Sy
0002	→	...	35.228 13595	<0.001	44	Ac
0003	←	...	35.228 13595	0.090	40	Ac
0004	←	...	35.228 13595	<0.001	576	Ac
0005	←	...	35.228 13595	<0.001	277	Ac
0006	→	...	35.228 13595	<0.001	40	Ac
0007	→	...	35.228 13595	<0.001	40	Ac
0008	→	...	35.228 13595	0.297	576	Ac
0009	→	...	35.228 13595	<0.001	576	Ac
0010	→	...	35.228 13595	<0.001	576	Ac
0011	→	...	35.228 13595	<0.001	576	Ac
0012	→	...	35.228 13595	<0.001	576	Ac
0013	←	...	35.228 13595	0.091	40	Ac

Details for Packet 00006 [Close](#)

Formatted Packet

PKT Packet # 00006 Direction Send
 Date 22-MAR-2013 Time 10:07:55.947851
 Link Name OSD0C1V85

IP Source Addr 192.200.141 Destination Addr 192.200.141
 IP Version 4 Header Length 20
 Type of Service B'00000000' Total Length 40
 Identification x'562B' Flags B'000'
 Frag Offset 0 Time To Live 64
 Protocol TCP Header Checksum x'0000' (Incorrect)

▼ Show IP Header Dump

TCP Src Port 2630 Dest Port 13595
 Seq Number 676650034 Ack Number ... 3644226467
 Data Offset 20 Flags ACK
 Window 31995 Checksum x'0000' (Incorrect)
 Urgent Pointer 0

Offset	TCP Header	EBCDIC	ASCII
+0000	0A46351B 28840C32 093678A3 50107CFE	R #4 8	PS (T 2 6) P 1
+0010	00000000		

Back to Top

Traffic Stats vs /Perf



Complete your session evaluations online at www.SHARE.org/Orlando-Eval



Traffic Summary - /IPSUM

Real-time information

- Real-time information on everything NetMaster is monitoring
 - Provides a way to view lots of data at a glance.

```

CSNM30----- TCP/IP : Summary Display -----Hold
Command ==> Scroll ==> CSR

                .-=Expand or Collapse ?=more actions

___ System ...+ CA31

___ Condition Summary 12:35
___  Stack IP, TCP, and UDP Layers           Warning 1      Problem 2      Status PROBLEM
___  TCPIP31 Network Interfaces             0      0      OK
___  Ports (by number)                       0      0      OK
___  Enterprise Extender                     0      0      OK

___ IP Traffic Summary 12:35
___  IP Throughput: Total: 2 Stks, 282 Interfaces 886.5    643k    580
___  Application: Most active: lca-R&D          132.9    148k    11%
___  TCP Server Port: Most active: 47644        103     96644   <1%
___  Home Address: Most active: 141. .65.31     569.2    374k    65%
___  Remote Network: Most active: 141. .*       310.5    271k    41%
___  IP Protocol: TCP: >99% UDP: <1% ICMP: <1% OSPF: 0% Other: 0%
___  Subsystem: DB2: <1% CICS: 0% IMS: 0% MQ: 0% Other: >99%

___ EE Traffic Explorer Traffic since 01-AUG-2014 09:44
___  Bytes by VIPA Most Active: 141 .161.11     7323k    36%
___  Bytes by EE Connection Most Active: USILDA01.A1 9     7323k    36%
___  Bytes by EE Port Most Active: 12002 (high)        18M     88%
___  Bytes by Protocol Layer Largest: SNA RU          10.6M    52%
___  Bytes by Payload SNA Payload:                11.6M    56%
___ Total Bytes 20.5M 100% ---10--20--30--40--50--60--70--80--90--
___ EE Overhead 4318k 21%
___ APPN/HPR Overhead 4667k 23%
___ SNA Payload 11.6M 56%
___  Bytes by Direction Total Bytes: 20.5M Sent: 39% Received: 61%
___  Packets by Type Most Common: SNA 61323 52%
___  Packet Indicators ARB Slowdown 2: 91 <1%

___ Alert Summary: 3 sev1 4 sev2 2 sev3
***** Bottom of data *****

Com F1=Help F2=Split F3=Exit F5=Find F6=AutoRef
F7=Backward F8=Forward F9=Swap F12=Collapse
    
```



Performance Overview - /Perf

Longer periods of time

```
CSNM9----- Performance Overviews Menu -----CA11
Command ==>                                     Scroll ==> CSR

                                     S>Show Performance Overview from CA11

Business Views                               Business Applications
Applications                               Telnet Applications
                                           Address Spaces
                                           CSM
Sessions and Connections                   Stack IP Connections
                                           Home Addresses
                                           Network IP Connections
                                           Stack Telnet Connections
                                           Network Telnet Connections
                                           Stack FTP Connections
                                           FTP Users
                                           Network FTP Connections
Protocols and Ports                       Stack IP, TCP, and UDP
                                           Ports
IP Networking                             Stack IP, TCP, and UDP
                                           IP Nodes
Logical Devices                           Enterprise Extender
                                           Enterprise Extender Connections
                                           APPN/HPR
                                           VIPA
Devices and Links                         Stack Network Interfaces
                                           OSA Cards
                                           Cisco Channel Cards (not monitored)
                                           NCPs
```


Performance Overview

Review up to 10 weeks of data

- Allows one to review Hourly, Daily and Weekly information
 - Weekly Interval List, can drill down to see Days and hourly

```

CSNM9----- TCP/IP Performance : Baseline List -----CA11
Command ==> Scroll ==> CSR

Performance Data .... Connection Workload, by Application
Resource ..... Business Application $Bank-FX

                S=Samples H=Hours D=Days W=Weeks B=BLvalues
Attribute      Stack      Last Start  HourOfDay HourOfDay  DayOfWeek
Summary Hour      Baseline    % Diff     Baseline
-----
ConActive      TCPIP11      18.2  12:00      10.8      +68%       12.2
ConBytes       TCPIP11      17.9M 12:00       8.1M      +120%      367.4M
w ConConnects  TCPIP11      737.0 12:00       1.0K      -28%       2.4K
**END**

CSNM9----- TCP/IP : Weekly Interval List -----
Command ==> Scroll ==> CSR

Performance Data .... Connection Workload, by Application
Resource ID ..... Business Application $Bank-FX, Stack TCPIP11
Attribute ID (Type) ConConnects (counter)
Description ..... Connections for application
Period ..... Last 10 weeks

                D=Show days of this week H=Show hours
                Hourly Total Daily Total
-----
This week      Fri 01-Aug-2014 13:00      5.2K      25.5K
1 week ago     Fri 25-Jul-2014 13:00      4.5K      48.6K
2 weeks ago    Fri 18-Jul-2014 13:00      4.5K      19.2K
3 weeks ago    Fri 11-Jul-2014 13:00      80.0      57.0K
4 weeks ago    Fri 04-Jul-2014 13:00      80.0      14.2K
5 weeks ago    Fri 27-Jun-2014 13:00      4.7K      33.3K
6 weeks ago    Fri 20-Jun-2014 13:00      3.0      36.8K
7 weeks ago    Fri 13-Jun-2014 13:00     208.0     35.8K
8 weeks ago    Fri 06-Jun-2014 13:00      4.5K      42.4K
9 weeks ago    Fri 30-May-2014 13:00      4.5K      27.3K
**END**
    
```

Event Detectors



Complete your session evaluations online at www.SHARE.org/Orlando-Eval



Sample Event Detectors supplied

```
CSNM30----- CAS : Valid Value List -----19
Command ==>                                     Scroll ==> CSR

S/=Select (one only)

Field: Event Detector Type

Full Value      Description
-----
CCTN3270      Cisco Channel TN3270 Log Messages
CONNECT       Connection Monitor
CONNSTAT      TCP Connection Status
CONSOLE       z/OS Console Messages
CUSTOM        Custom Event Detector
FRAGMENT      IP Packet Fragmentation
FTPFAIL       FTP Failures
ICMP          ICMP Message Monitor
LINUX         Linux Messages
LISTENER      IP Port Listener Monitor
NOLISTEN      TCP Conn Attempt Fail No Listener Port
RTPRED5M      APPN RTP Pipe ARBmode=RED >5min
SSLHFAIL      SSL Handshake Failure
SURRESET      TCP Server Connection RESET
SYSLOGD       USS Syslog Daemon Messages
TCPEND        TCP Connection Ended
TCPSTART      TCP Connection Started
UMEVENT       UM Events
UMMSG         UM Messages
**END**
```

Event Detectors – proactive management

- CONNSTAT – Monitors number of connections with a client.
 - Insure minimum number of connections present, i.e., EE requirements.
- SVRRESET – Monitors TCP connections that are reset by server.
 - Alerts if client trying to connect but can't, helps insure PCI compliancy.
- SSLHFAIL – Monitors Secure Sockets Layer(SSL) handshake failures
 - Many levels of SSL Handshake errors possible, helps eliminate wasted time in determining cause of failure.
- TCPSTART – Monitors client/server connections.
 - Restrict the detection to specified client-server connections
- TCPEND – Monitor connection end and reason codes

Event Detector

TCP Connection Status – (CONNSTAT)

- Detects when a server has 0 connections
 - When you have mission-critical connections to a z/OS IP application that must remain up 24 x 7.
 - You must maintain a certain number of connections to a z/OS IP application to provide the necessary health indication, traffic throughput, or volume.

```
----- TCP/IP : TCP Connection Status -----
Command ==>                                     Function=Browse

Short Description ..... SAMPLE: Server has 0 connections      Status INACTIVE

Monitor TCP Connection Status for:
Stack Name ..... TCPIP99
Server Host ..... 123.123.123.123
Server Ports ..... 12345
Client Host ..... 234.234.234.234
Connections Active .... 1
Auto Alert Clear? ..... NO

Create Alert:
Description  &$IPSTDDESC
Severity ... 4

Initiate Actions:
**NONE**
```

Event Detector

TCP Server Reset – (SVRRESET)

- Detects when an established connection is reset
 - All server reset connection failures involving a specific application.
 - Any server reset connection failures and who they are most often happening to.

```
CSNM9----- TCP/IP : TCP Server Reset Detector -----  
Command ==>                                     Function=Browse  
  
Short Description ..... SAMPLE: RST sent by server 12345      Status INACTIVE  
  
Monitor TCP Server Resets for:  
Server Host ..... 123.123.123.123  
Server Port ..... 12345  
Active Alert Limit .... 5  
  
Create Alert:  
Description  &$IPSTDDESC  
Severity ... 4  
  
Initiate Actions:  
**NONE**
```

Event Detector

SSL Handshake failure – (SSLHFAIL)

- Detects when SSL security negotiation fails
 - You need to be notified of all connection failures of a specific critical secure connection.
 - You need to be notified of all connection failures to a secure application.
 - You want to know of any SSL handshake problems and where they are occurring most often.

```
CSNM9----- TCP/IP : SSL Handshake Failure Detector -----
Command ==>                                     Function=Update

Short Description ..... SAMPLE: SSL failure for a server           Status INACTIVE

Monitor SSL Handshake Failures for:                (F4 to set)
Server Host ..... 123.123.123.123
Server Port ..... 12345
Active Alert Limit .... 5

Create Alert:                                       (F5 to set)
Description  &$IPSTDDESC
Severity ... 4

Initiate Actions:                                   (F6 to set)
**NONE**
```

Event Detector

Connection started – (TCPSTART)

- Detects when a connection has started for local/remote host or port
 - You need to be notified of all connections from a specific remote host, such as an external gateway.
 - You want to know of all connections to a restricted application and where they come from.
 - You want to know all connections between specific remote host and application.
 - You want to know any connection is not a secured connection.

```
CSNM9----- TCP/IP : TCP Connection Started Detector -----  
Command ==> Function=Browse  
  
Short Description ..... SAMPLE: A connection has started          Status INACTIVE  
  
Monitor TCP Connections Started for:  
Server Host ..... 123.123.123.123  
Server Port ..... 12345  
Client Host ..... 234.234.234.234  
Active Alert Limit .... 5  
  
Create Alert:  
Description  &$IPSTDDESC  
Severity ... 4  
  
Initiate Actions:  
**NONE**
```


Event Detector

Connection ended – (TCPEND)

- Detects when a connection has ended and its details match a specified criteria.
 - You want to know all connection failures due to a specific reason code.
 - You need to know the reason for all connection terminations between specific partners.

```

CSNM30----- TCP/IP : TCP Connection Ended Detector -----
Command ==>                                     Function=Update

Short Description ..... Connection closed by IDS                Status ACTIVE

Monitor TCP Connections Ended for:                (F4 to set)
Server Host ..... *.*.*.*
Server Port ..... 1-65535
Active Alert Limit .... 5

Create Alert:                                     (F5 to set)
Description &$IPSTDDESC
Severity ... 4

Initiate Actions:                                 (F6 to set)
Automation_Services_Process IDS Gen SNMP Trap to MoM
AUTO_TROUBLE_TICKET IDS event detected
  
```

Comple



TCPEND – Reason Codes to select from

```
CSNM30----- TCP/IP : TCP Conn End Reason Codes -----28
Command ==> Scroll ==> CSR
```

Use S or / to select the required value

Field: Reason Codes

Code Description

- ___ 11 Error occurred during a send using FRCA(AFPA), possibly because the stack is terminating
- ___ 12 A persistent socket used by FRCA (AFPA) was closed by a FIN
- ___ 21 The connection was terminated because the stack was terminating
- ___ 22 Last stack that can own the dynamic VIPA bound to the socket is terminating
- ___ 31 Intrusion detection found the connection to be malicious and closed the connection
- ___ 32 Connection was denied because of a NetAccess rule
- ___ 33 ACK received in lastack state
- ___ 41 The connection was terminated because of an administrator action (for example, using Netstat DDrop/-D command or the NMI API)
- ___ 42 The connection was terminated because the local IP address bound by the application has been deleted from the stack
- ___ 51 The connection from a client was terminated because the application closed the socket before performing an accept()
- ___ 52 The application using the socket, closed the connection using a close()
- ___ 53 A pascal routine issued an orderly close request
- ___ 54 A pascal routine issued a disconnect
- ___ 55 An error occurred during a pascal accept
- ___ 61 The connection was terminated because the client sent a reset
- ___ 71 The connection was closed because the same packet was being re-transmitted multiple times
- ___ 72 The connection was closed because the TCP window the client was reduced to zero and multiple window probes were not acknowledged
- ___ 73 The connection was closed because multiple keepalive probes were not acknowledged
- ___ 74 The connection was terminated because the stack timed out waiting for a fin in the finwait-2 state
- ___ ANY Any non-zero reason code

END



SmartTrace



Complete your session evaluations online at www.SHARE.org/Orlando-Eval



SmartTrace Gems

Both Simple and advanced options use the same set of tools and interface for viewing the trace – no additional learning curve.

- **SAVE** – stored all traces in one repository (no additional dataset required).
- **PRINT** – a choice of printers or external data sets/HFS or even email.
- **EXPORT** – to 3rd party formats CTRACE (IBM only) and libpcap (distributed platform), collect the packets in SmartTrace and use your favourite packet viewer.

SmartTrace

Utilities



- Easy to use interface and utilities for managing traces
 - SAVE, EXPORT, PRINT

```

CSNM9----- TCP/IP : Packet Tracing Menu -----/SMART
Select Option ==>

A   - Add SmartTrace Definition                TRADD
L   - List All SmartTraces                     TRALL
LA  - List Active and Ended SmartTraces        TRACES
LS  - List All Saved SmartTraces              TRSAV
EE  - EE SmartTrace Menu                      ETRACE
IM  - Import libpcap Trace File               LIBPCAP
CT  - Packet Tracing using Component Trace (CTRACE)
X   - Exit                                     CTRACE

Link Name .....+ CSNM9
    
```

```

DENM44----- SmartTrace : Packet List -----
Command ==> _                               Scroll ==> CSR
                                           S/V=View P=Print

Definition DBTEST2
Stack .... TCPIP11                          Description FTP causing lunchtime c
Local Host *                                <--> Foreign Host 138.42.36.40
Protocol TCP

      Local Host      LPort Dir Port      +Time Bytes  Summary Information
___ 00001 141. 66.11 21 <- 1169      -    48  Syn   Win=65535 Seq=3
___ 00002 141. 66.11 21 -> 1169 <0.001    44  Ack Syn Win=32768 Seq=1
___ 00003 141. 66.11 21 <- 1169 0.059    40  Ack   Win=65535 Seq=3
___ 00004 141. 66.11 21 -> 1169 0.063   106  Rsp: 220-FTPD111 IBM FT
___ 00005 141. 66.11 21 <- 1169 0.239    40  Ack   Win=65469 Seq=3
___ 00006 141. 66.11 21 -> 1169 <0.001   100  Rsp: 220 Connection wil
___ 00007 141. 66.11 21 <- 1169 0.059    54  Req:  user CAMTHA4
___ 00008 141. 66.11 21 -> 1169 0.001    67  Rsp: 331 Send password
___ 00009 141. 66.11 21 <- 1169 0.059    55  Req:  PASS Saddam90
___ 00010 141. 66.11 21 -> 1169 0.222    40  Ack Psh Win=32753 Seq=1
___ 00011 141. 66.11 21 -> 1169 4.296   101  Rsp: 230 CAMTHA4 is log
___ 00012 141. 66.11 21 <- 1169 0.059    48  Req:  TYPE A

F1=Help      F2=Split      F3=Exit      F5=Find
F7=Backward  F8=Forward    F9=Swap      F10=Left     F11=Right
    
```

Exporting Traces and Reports

```
CSNM2----- SmartTrace : Export Packet Trace -----
Command ==>                                     Function=Export

Trace Details
Definition Name ..... TEST1023 - 1023test
Stack ..... TCPIP11
Description ..... CSNM2 packet trace to 1023
Saved ..... 02-MAY-2012 at 18:39 by BEEST03
Number of Packets ... 28

Export Details
Dataset or HFS File:
_____
_____

Adjust Time By ..... (+/-hh:mm, mm must be 00 or 30)
Output Format ..... LIBPCAP (LIBPCAP or CTRACE)
```

Export Trace

```
CSNM9----- SmartTrace : Trace Reports -----
Command ==>                                     Scroll ==> CSR

S/V=View P=Print SAV=Save ?=More Actions

IPCS Reports
___  UDP Sessions Report (70)
___  Flag Report
___  Interface Report
___  IP Address Report
___  UDP Port Report
8  Protocol Summary Report
___  Session Summary Report
***** Bottom *****
```

GR - listing
Report -
viewing

```
CSNM9----- SmartTrace : IPCS Protocol Summary Report -----
Command ==>                                     Scroll ==> CSR

Protocol Report

Total      Input      Data      Output      Data      First yyyy/mm/dd hh.mm.ss
250        175        24422     75          8891     1 2013/01/31 16:34:10
250        175        24422     75          8891     Total

1 Protocol(s) found

Protocol Summary Report
Input                                     Output                                     Total
Protocol  Packets      Bytes  Packets      Bytes  Packets      Bytes
Tcp        0             0       0             0       0             0
Udp       175          24422    75           8891    250          33313
Icmp       0             0       0             0       0             0
SNA        0             0       0             0       0             0
Other      0             0       0             0       0             0

Data Byte Totals
Ip header:                5000
Protocol Header:          2000
Data :                    33313
Total:                    40313

***** Bottom of data *****
```

Growth Tracker



Complete your session evaluations online at www.SHARE.org/Orlando-Eval



Growth Tracker

Out-of-the-box historical reporting on network activity

- IP Volumes, connections counts and connection durations are summed each day
 - Stored indefinitely
 - Multiple timeframes for reports supported
 - 14,30,60,90 day reports
 - 6, 12 and ALL month reports
- Provides meaningful insights into network activity
- Assists in network planning

Growth Tracker

- Records growth in total mainframe IP usage over time.
 - IP Volumes, connections counts and connection durations are summed each day- stored indefinitely.

ca NetMaster®

[Help](#)

IP Growth Tracker

Execute

CSV Download

Send Link

Close

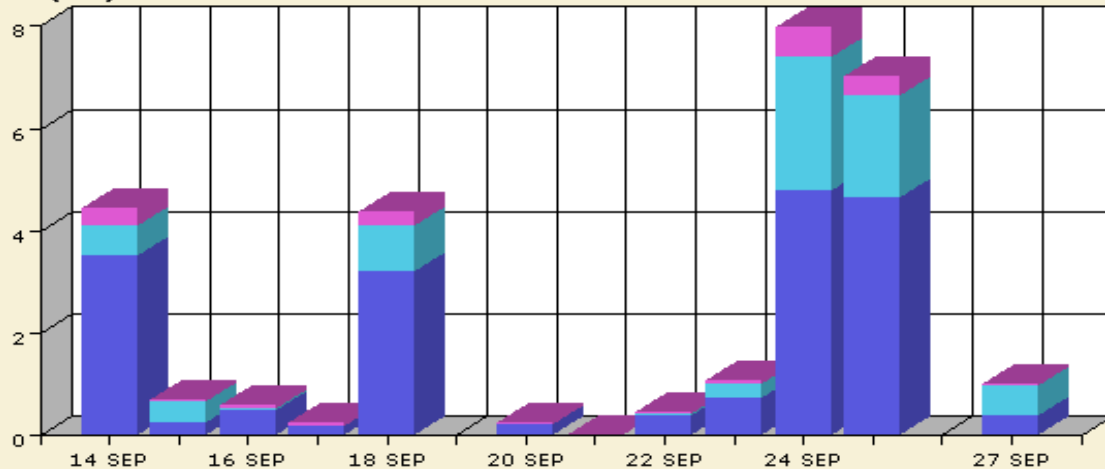
System Name: CO11

Time Frame: 14 Days

IP Traffic Growth

Bytes (GB)

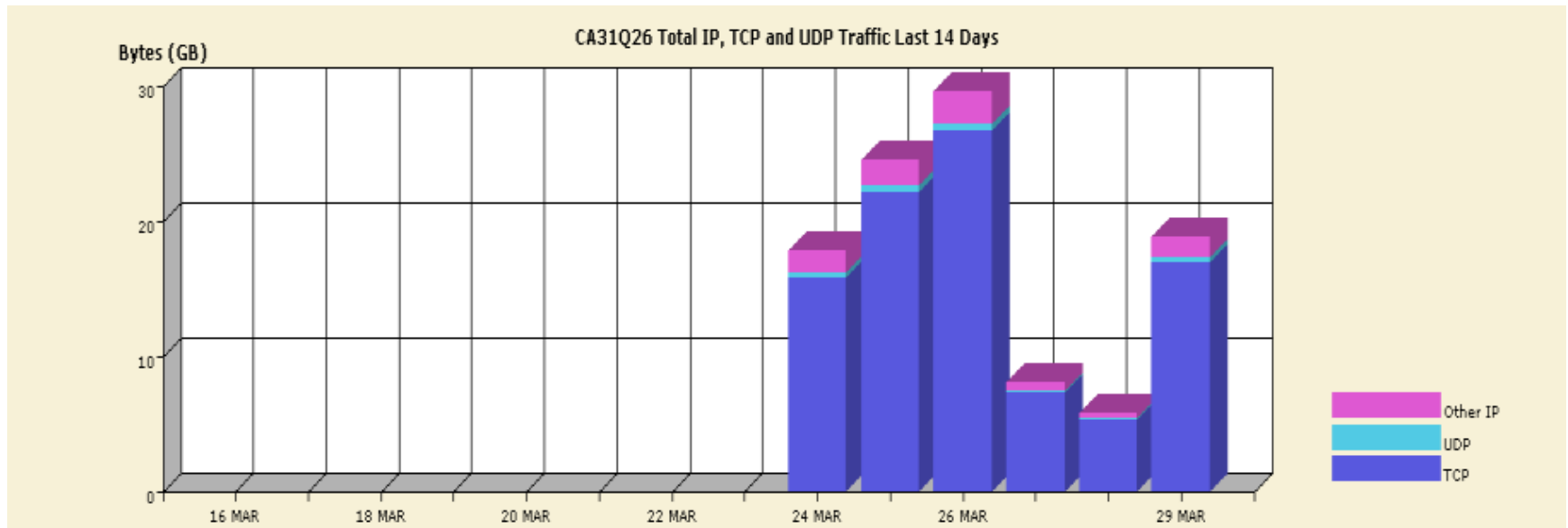
CO11 Total IP, TCP and UDP Traffic Last 14 Days



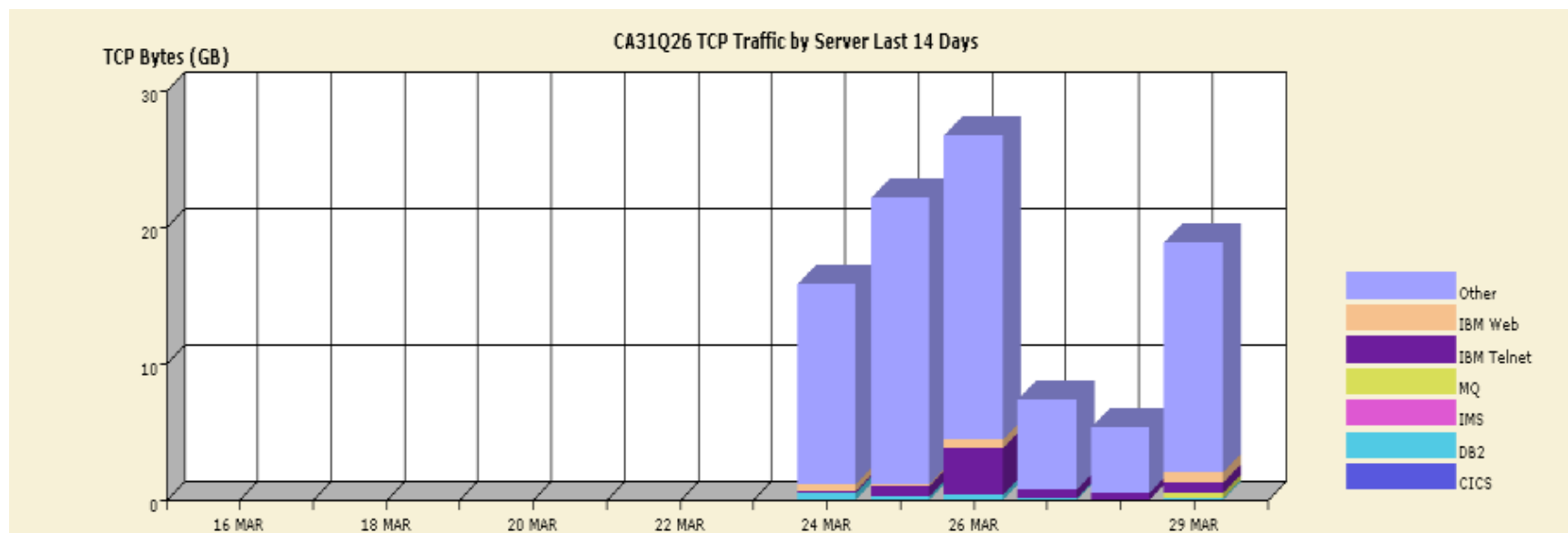
Complete you



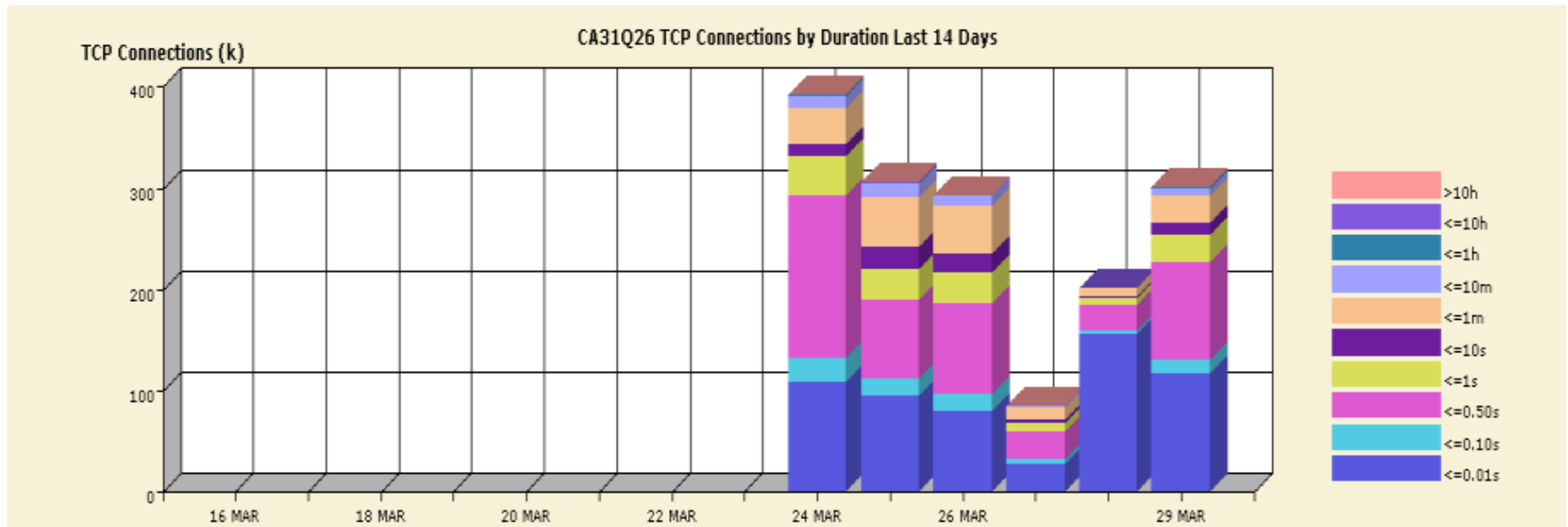
Total IP, TCP and UDP traffic



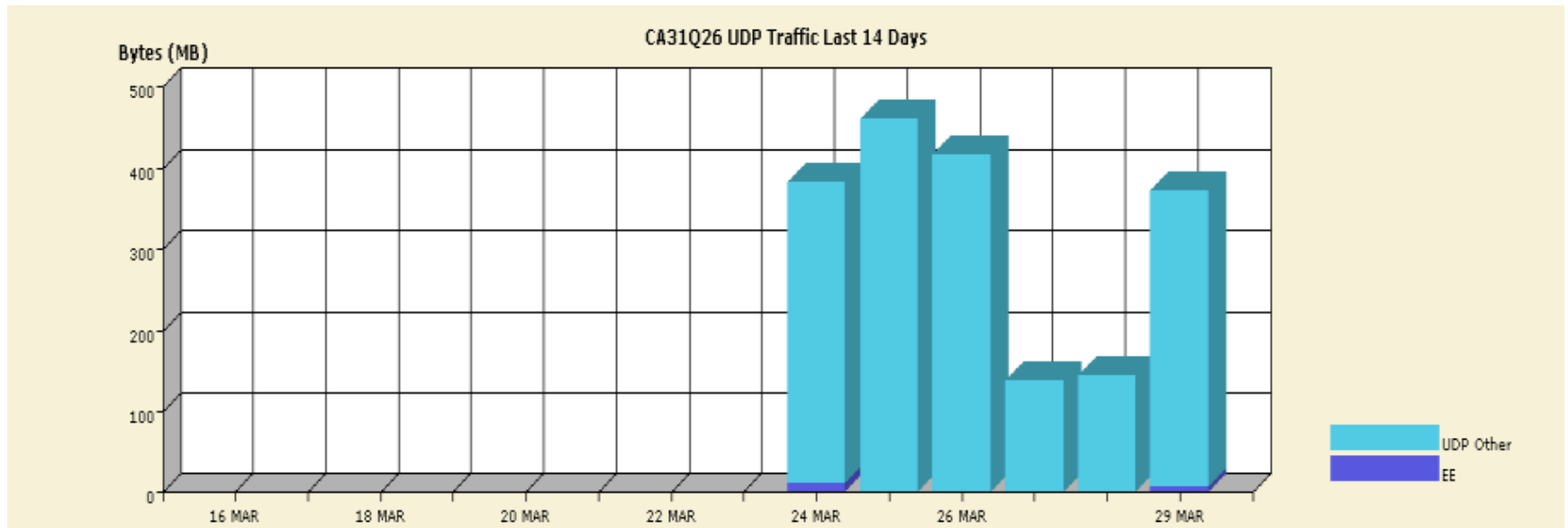
TCP traffic by server



TCP connections by duration



total UDP traffic



Complete your session evaluations online at www.SHARE.org/Orlando-Eval

Predicting Growth

Problem quotes

- *“Our SNA sessions to DB2 haven’t changed much for years... but surely DB2 remote access is growing? If I can show that, I can get more resources for my DB2 group.”*
- *“Maybe the growth is with users coming in with TCP/IP?”*

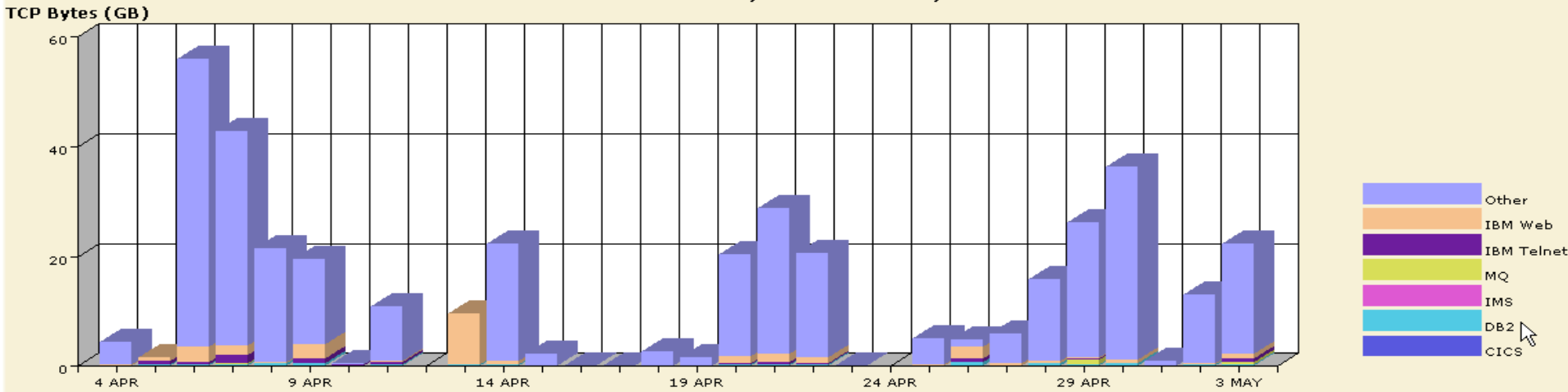
Use Growth Tracker

- Illustrate the increase over time in mainframe IP network activity
- Out-of-the-box tracking, no setup, no databases
- Connection and Traffic totals are kept indefinitely

IP Growth Tracker, TCP Traffic Growth



CA31 TCP Traffic by Server Last 30 Days



Date	TCP Bytes (Total)	CICS	DB2	IMS	MQ	IBM Telnet	IBM Web	TCP (Other)	TCP Connections
4 APR	4,390,539,717	0	119,860,682	0	0	725,826	135,771,444	4,134,181,765	245,126
5 APR	0	23,828	231,128,422	0	0	640,416,837	719,469,879	0	0
6 APR	56,014,335,211	167,864	275,604,934	0	148,229,496	362,247,365	2,722,615,492	52,505,470,060	394,942
7 APR	42,764,851,062	7,230	394,128,108	0	181,341,750	1,376,375,200	1,733,115,914	39,079,882,860	340,622
8 APR	21,442,093,761	546,862	459,633,662	0	33,099,406	94,920,342	93,672,059	20,760,221,430	284,298
9 APR	19,606,701,833	40,095,093	549,289,569	0	0	844,782,057	2,533,143,911	15,639,391,203	494,922
10 APR	534,175,687	0	197,727,488	0	0	41,769,322	1,558,254	293,120,623	124,117
11 APR	10,818,018,168	0	231,231,626	0	0	444,675,045	267,484,367	9,874,627,130	698,175
12 APR	0	0	0	0	0	0	0	0	0
13 APR	0	154,652	268,154,796	0	0	131,598,424	9,267,433,937	0	0
14 APR	22,238,183,725	13,191	255,481,129	0	0	74,130,762	636,777,449	21,271,781,194	353,671
15 APR	2,291,443,756	4,766	5,667,095	0	0	6,894,687	34,501,362	2,244,375,843	62,774
16 APR	989,183	2	2,446	0	0	2,976	14,893	968,865	27
17 APR	46,904,192	0	18,051,507	0	0	8,011	2,736,515	26,108,159	2,506

Creating Emails



Complete your session evaluations online at www.SHARE.org/Orlando-Eval



Where to find it

```
NMMS----- Administration : Primary Menu -----
Select Option ==> /aladmin_

A - Alert Monitor Administration ALADMIN
R - Resource Administration RADMIN
S - Service Administration SADMIN
E - Event Administration EADMIN
G - Graphical Monitor Administration GADMIN
M - Multi-System Support Administration MADMIN
IP - TCP/IP Administration IPADMIN
SN - SNA Administration SNADMIN
AS - Automation Services Administration ASADMIN
SS - Security Administration SADMIN
C - Configuration Administration CADMIN
X - Exit
```

```
NMMS----- Alert Monitor : Administration Menu -----
Select Option ==>

I - Define Trouble Ticket Interface
D - Define Trouble Ticket Data Entry
F - Define Filters
L - Define List Formats
ST - Alert Monitor Self Test
X CSNM9----- CAS : Valid Value List -----4
Command ==> Scroll ==> CSR
```

```
Field: TroubleTicket I/Face S/=Select (one only)

Abbrev Full Value Description
-----
C CUSTOM User Supplied NCL Procedure
E EMAIL Use eMail to Request Trouble Ticket
NONE NONE Clear Trouble Ticket Interface Type
S SERVICEDESK Create CA Service Desk Request
**END**
```

Alert Monitor Email Interface set up

```
CSNM9----- Alert Monitor : Email A Trouble Ticket -Columns 00001 00072
Command ==>                                     Function=Update Scroll ==> CSR

Mail Address                                     &$USRNAM
Host Name (IBM)                                 USILDAMD
SMTP Node Name (IBM)                           USILDAMD
SMTP Job Name (IBM)                             SMTP
SMTP DEST Id (TCPAccess)                       _____
Exit Procedure Name                             _____
Subject                                         &$AMSDESC

Enter Mail Text Below

***** TOP OF DATA *****
000001 SERIALNM..... &$AMSERIALNM
000002 DATE..... &$AMDATE
000003 TIME..... &$AMTIME
000004 DAY..... &$AMDAY
000005 SYSTEMID..... &$AMSYSTEMID
000006 SOURCE..... &$AMSOURCE
000007 DESC..... &$AMDESC
000008 APPLID..... &$AMAPPLID
000009 CLASSID..... &$AMCLASSID
000010 RESCLASS..... &$AMRESCLASS
000011 RESTYPE..... &$AMRESTYPE
***** BOTTOM OF DATA *****

F1=Help      F2=Split      F3=File      F4=Save      F5=Find      F6=Change
F7=Backward  F8=Forward    F9=Swap     F10=Left    F11=Right   F12=Cancel
```



Alert Monitor

Total parameters available

- **Parameters**

- \$AMAPPLID Application that created the alert
- \$AMDESC Alert short description
- \$AMDATE Date when the alert was generated
- \$AMDAY Day of the week when the alert was generated
- \$AMGMTOFFST Local time difference from Greenwich Mean Time (UTC)
- \$AMLASTDATE Date when the alert last occurred
- \$AMLASTTIME Time when the alert last occurred
- \$AMOCCURRED Number of times the alert has occurred
- \$AMSERIALNM Software generated alert identifier
- \$AMSEVERITY Severity of the alert
- \$AMSYSTEMID System that created the alert
- \$AMTEXT* Alert text line * (1 through 5)
- \$AMTIME Time when the alert was generated
- \$AMUPDDATE Date when the alert was last updated
- \$AMUPDTIME Time when the alert was last updated
- \$AMRECM* Alert recommended action line * (1 through 20) when not retrieved from a CAS message
- \$AMCLASSID Class of the alert
- \$AMCLOSDATE Date when the alert was closed
- \$AMCLOSTIME Time when the alert was closed
- \$AMRESOURCE Resource name causing the alert
- \$AMRESID Resource name if a second one is needed
- \$AMRESCLASS The resource class
- \$AMRESTYPE The resource class type
- \$AMELAPTIME The amount of time (hh:mm) between when

Alert Monitor Email Interface

Sample NCL Procedure

```
&DOWHILE .&ADDR&CNT NE .
  &WRITE LOG=YES COLOR=YELLOW DATA=&0 Mail sent to &ADDR&CNT
  -$AMEMAIL ACTION=SENDMAIL +
- *      ADDRESS=&ADDR&CNT +
- *      ADDRESS=guecr01@ca.com +
- *      SMTPJOB=SMTP +
- *      CLASS=X +
- *      SMTPNODE=USILCA31 +
- *      HOSTNAME=TCPIP31V.CA.COM +
- *      SMTPNODE=USILCA11 +
- *      HOSTNAME=USILCA11.CAI.COM +
- *      FROM=testmail +
- *      TYPE=IBM
  &CNT = &CNT + 1
&DOEND
&END
```

Via Process definition

```
CSNM9----- Automation Services : Process Definition -----Function=Browse
Command ==> Scroll ==> CSR
```

Process Definition

```
System Name .+ $PROCESS Version ...+ 0001
Name ..... EMAIL
Description .. Send Email message to a person or a pager
```

Process Steps

P=Parms

StepName	Condition	Macro	Description
EMAIL	Step/RC Opr RC	STARTNCL	START AN NCL PROCEDURE
END			

```
----- Automation Services : STARTNCL Macro Parameter Definition -----
Command ==> Function=UPDAT
```

NCL Procedure Details

```
NCL Name .... EMAIL
Region .....+ BSYS (AOMP, BLOG, BMON, BSYS, CNMP, LOGP or PPOP)
Parameters .. GROUP=&GROUP SUBJECT="&SUBJECT"
              TEXT1="&TEXT1"
              TEXT2="&TEXT2"
              TEXT3="&TEXT3"
Segment Multi-word Parameter Variables ... NO (YES or NO)
```

Alert Monitor Email Interface

Receiving emails

Microsoft
Outlook Web App

Mail > Inbox 11325 Items

▶ Favorites

▶ Guess, Craig S

New ▾ Delete ▾ Move ▾ Filter ▾ View ▾

Search Entire Mailbox

Conversations by Date ▾ Newest on Top

Today

- ✉ **STACK (NMDTCPJH): Ad...**
CSNM9 7:43 PM
- ✉ **Monitoring for ASMON ...**
CSNM9 7:43 PM
- ✉ **IPNODE: NETSTATUS is ...**
CSNM9 7:43 PM
- ☑ **STACK (OSA): ifStatusOper...**
CSNM9 7:42 PM
- ✉ (no subject)
CSNM9 7:38 PM
- ✉ (no subject)
CSNM9 7:37 PM
- ▶ **Quick question on SSL and...**
Benbow, John C; Scalzo, Rob... 7:25 PM
- ✉ **Fury QA Overnight Regres...**
Powell, Paul W 5:28 PM
- ✉ **Chorus - Discipline and Pla...**
Loesch, Mary-Joelle 4:18 PM

STACK (OSA): ifStatusOper is Down

STACK (OSA): ifStatusOper is Down - Windows Internet Explorer

Reply Reply All Forward

STACK (OSA): ifStatusOper is Down

CSNM9 [csnm9@USILDAMD.CAI.COM]

To: Guess, Craig S

Friday, August 01, 2014 7:42 PM

SUBJECT..... STACK (OSA): ifStatusOper is Down
SERIALNM..... CSNM11 2014080112320000013A
DATE..... 20140801
TIME..... 12.32.31
DAY..... FRI
SYSTEMID..... CSNM11
SOURCE..... CS11
DESC..... STACK (OSA): ifStatusOper is Down
APPLID..... \$IP
CLASSID..... IFMONVALUE
RESCCLASS.....
RESTYPE.....

Charts and Graphs

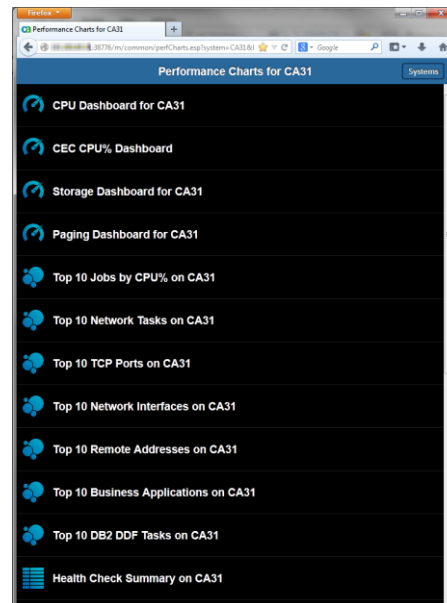
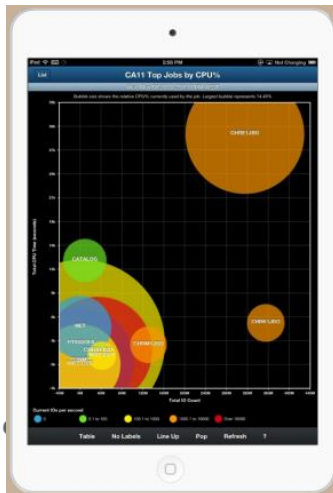
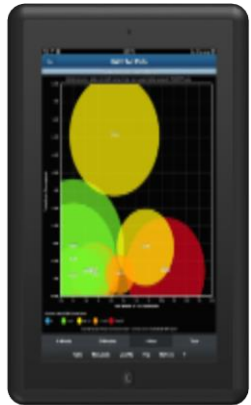


Complete your session evaluations online at www.SHARE.org/Orlando-Eval



Performance Charts/Alerts Mobility Post GA 12.1

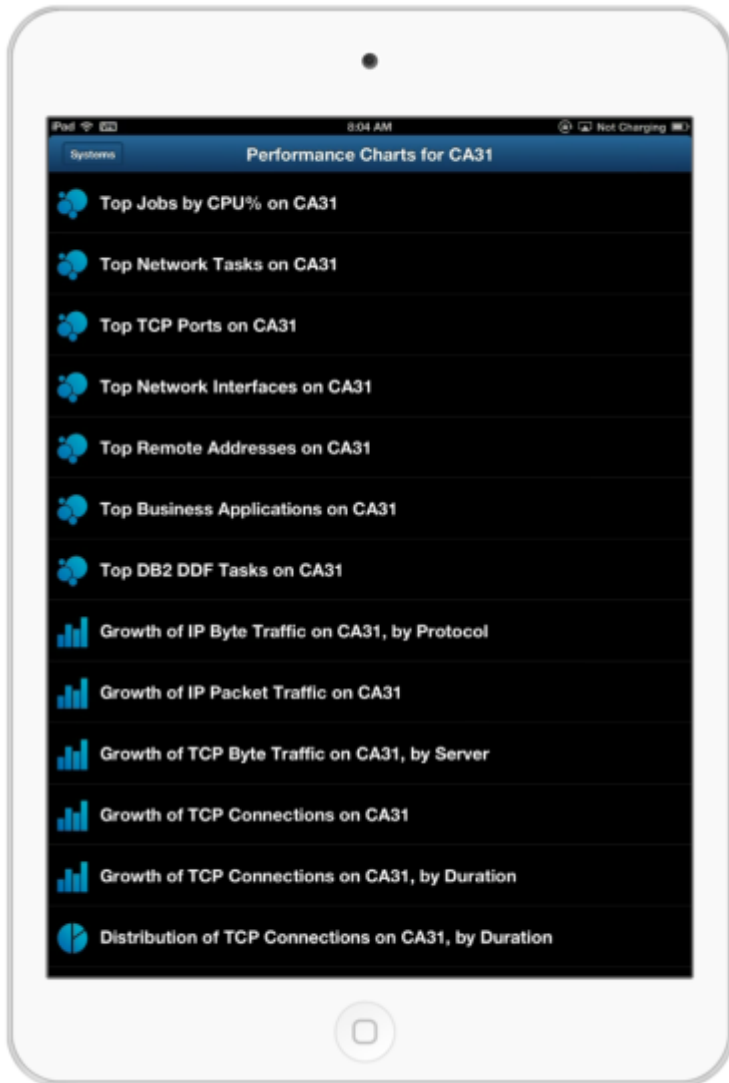
- Being truly mobile doesn't mean being tied to one device.
- Our solution works anywhere the user needs to be.



Complete your session

SHARE.org/Orlando-Eval

Mobility in the workplace



Complete your session evaluations online at www.SHARE.org/Orlando-Eval

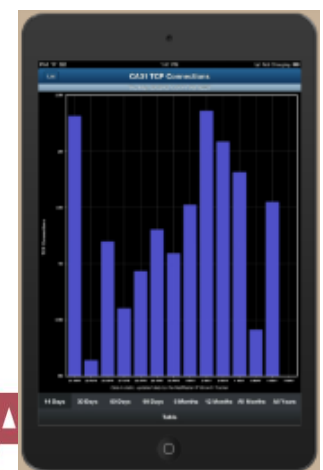
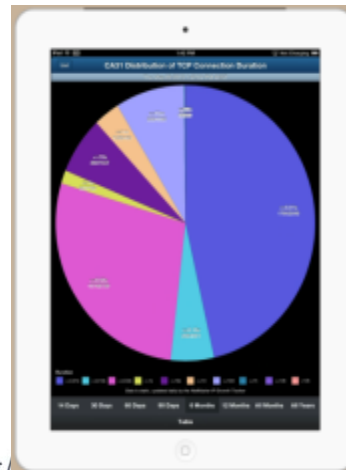
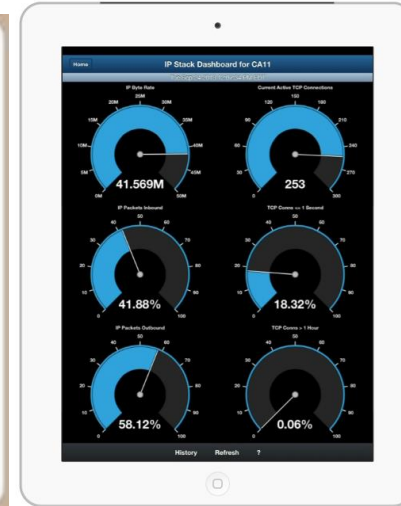
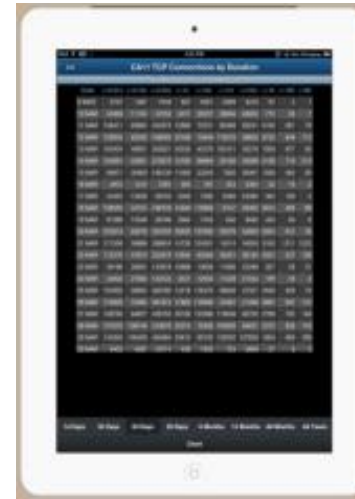
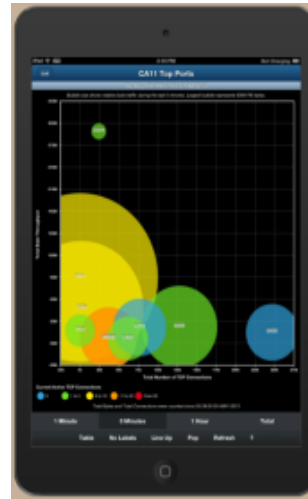
Performance Charts for Networks

What it looks like

What it does

Mainframe server retrieves mainframe network performance data from NetMaster, then generates graphical mobile web pages to display it.

- Real-time IP network flow analysis data helps problem diagnosis, and shows network usage patterns of critical mainframe applications and servers.
- Historical high level TCP/IP network traffic growth data helps operational reviews and capacity planning.



Complete your session evaluations online at www.SHARE.org

in Orlando 2015



Performance Charts for Systems

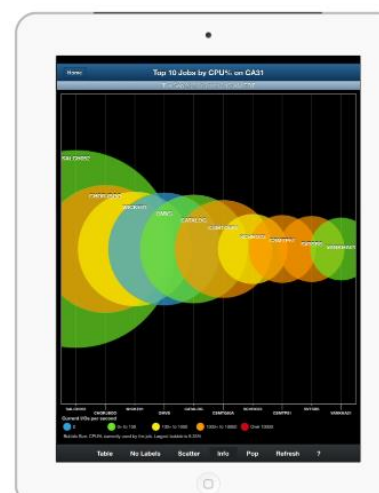
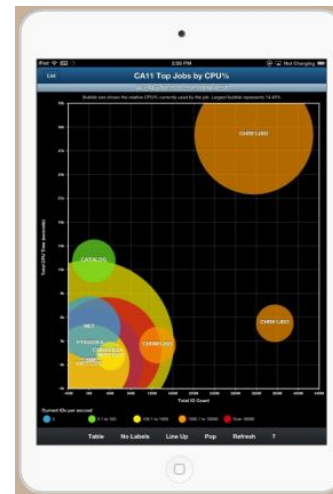
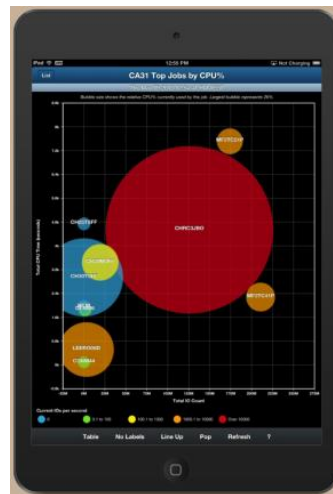
What it does

What it looks like

Mainframe server retrieves performance data from SYSVIEW then generates graphical mobile web pages to display it.

- SYSVIEW reaches deep into the operating system to measure every aspect of system, user and resource activity.

Complete your session evaluations online at www.SHA1



Name	Status	Description	Curr	High	Mid	LO
CA_1001	EXCEPTION-HIGH	CA-1001	450	7	0	0
CA_1002	EXCEPTION-HIGH	CA-1002	360	1	0	0
CA_1003	EXCEPTION-MEDIUM	CA-1003	77	0	0	0
BMAS01	EXCEPTION-MEDIUM	IBM-Integration/Service	8	0	0	0
CA_1004	EXCEPTION-MEDIUM	CA-1004	54	0	0	0
CA_1005	EXCEPTION-MEDIUM	CA-1005	0	0	0	0
CA_1006	EXCEPTION-MEDIUM	CA-1006	4	0	0	0
CA_1007	EXCEPTION-MEDIUM	CA-1007	97	0	0	0
CA_1008	EXCEPTION-MEDIUM	CA-1008	10	0	0	0
CA_1009	EXCEPTION-MEDIUM	CA-1009	1	0	0	0
CA_1010	EXCEPTION-MEDIUM	CA-1010	30	0	0	0
BMAS02	EXCEPTION-MEDIUM	IBM-Integration/Manager	9	0	0	0
CA_1011	EXCEPTION-LOW	CA-1011	48	0	0	0
CA_1012	EXCEPTION-LOW	CA-1012	88	0	0	0
CA_1013	EXCEPTION-LOW	CA-1013	2	0	0	0
BMAS03	EXCEPTION-LOW	IBM-Integration/Manager	23	0	0	0
BMAS04	EXCEPTION-LOW	IBM-Integration/Manager	4	0	0	0
CA_1014	EXCEPTION-LOW	CA-1014	10	0	0	0
CA_1015	EXCEPTION-LOW	CA-1015	19	0	0	0
BMAS05	EXCEPTION-LOW	IBM-Integration/Manager	1	0	0	0
BMAS06	EXCEPTION-LOW	IBM-Integration/Manager	13	0	0	0
BMAS07	EXCEPTION-LOW	IBM-Integration/Manager	18	0	0	0
BMAS08	EXCEPTION-LOW	IBM-Integration/Manager	32	0	0	0
CA_1016	EXCEPTION-LOW	CA-1016	9	0	0	0
CA_1017	EXCEPTION-LOW	CA-1017	1	0	0	0
CA_1018	EXCEPTION-LOW	CA-1018	8	0	0	0
CA_1019	EXCEPTION-LOW	CA-1019	1	0	0	0
CA_1020	EXCEPTION-LOW	CA-1020	10	0	0	0
CA_1021	EXCEPTION-LOW	CA-1021	0	0	0	0
CA_1022	EXCEPTION-LOW	CA-1022	0	0	0	0
CA_1023	EXCEPTION-LOW	CA-1023	0	0	0	0
CA_1024	EXCEPTION-LOW	CA-1024	0	0	0	0
CA_1025	EXCEPTION-LOW	CA-1025	0	0	0	0
CA_1026	EXCEPTION-LOW	CA-1026	0	0	0	0
CA_1027	EXCEPTION-LOW	CA-1027	0	0	0	0
CA_1028	EXCEPTION-LOW	CA-1028	0	0	0	0
CA_1029	EXCEPTION-LOW	CA-1029	0	0	0	0
CA_1030	EXCEPTION-LOW	CA-1030	0	0	0	0

/PARMS

```

CSNM9----- Customizer : Parameter Groups -----86
Command ==> Scroll ==> CSR

                               S/B=Browse U=Update H=Help L=Ilog SD=Set Default

Category      Parameter
Group ID      Short Description
$NM SHF       SHF Interface
$NM SOCKETS   TCP/IP Sockets Interface
$NM SSI       SOLVE Sub-System Interface
$RM SYSLOGD   SYSLOGD Message Interface
$NM TELNETSRVR Telnet Server Controls
$RM UNICENTER NSM Agent Specification
S $NM WEBCENTER WebCenter Web Interface *Browse*
$RM WSPEER    Workstation Peer Specification
$RF XCAPI     CA-XCOM Interface
  
```

```

CSNM9----- Customizer : Parameter Group -----Page 1 of 2
Command ==> _ Function=Browse

[ WEBCENTER - WebCenter Web Interface

Web Interface Port ..... 8086 (NONE, 1 to 65535)
Access URL ..... http://141.202.65.11:8086
Access URL Host Override .....
User Timeout ..... 02.00 (hh.mm)
Enable SYSUIEW Interface ..... YES (YES or NO)
Enable Public IP Pages ..... YES (YES or NO)

Performance Charts
Enable Performance Charts ..... YES (YES or NO)
Color Thresholds
├ Active TCP Connections ..... 0 5 10 20
└ I/Os Per Second ..... 0 100 1000 10000
  
```

Integration to other CA Products

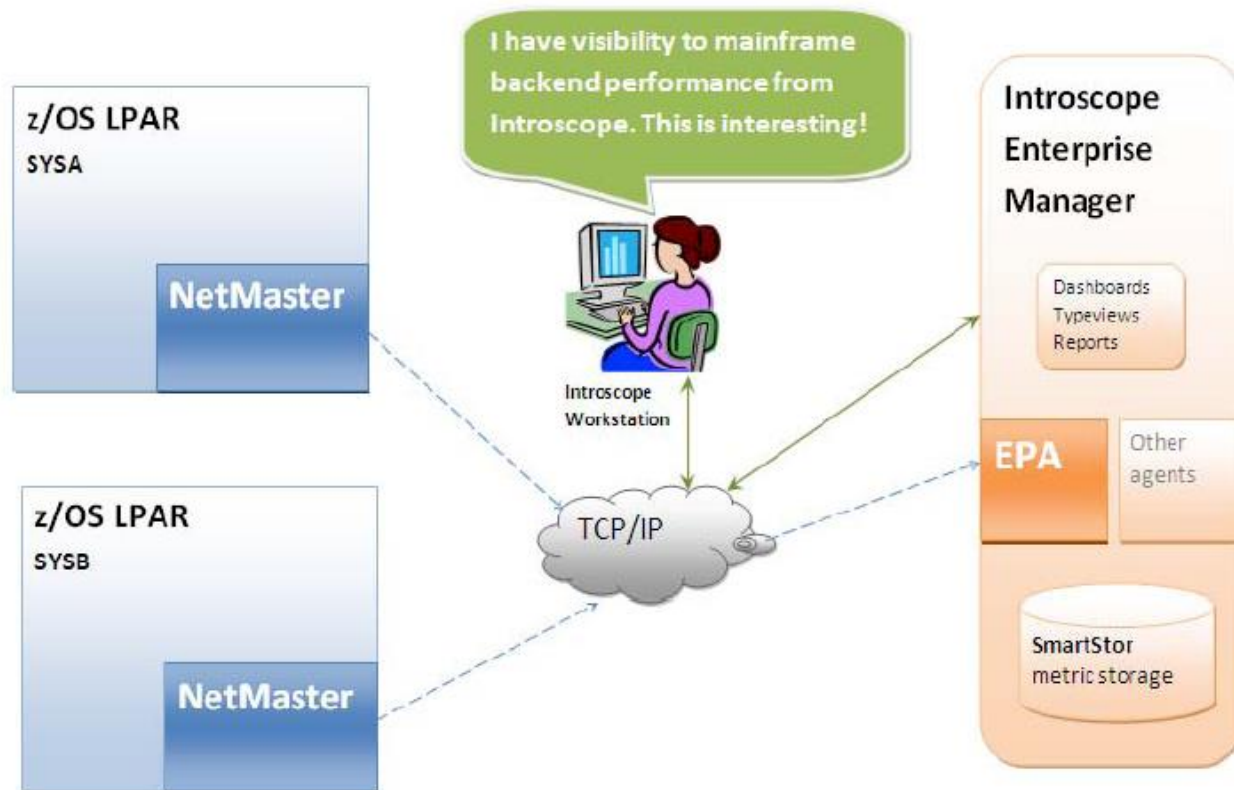


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NetMaster – CA APM Integration

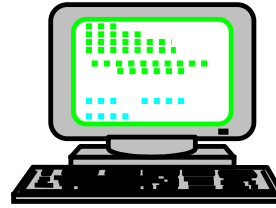
- Provides metric feeds from CA NetMaster®
- Viewed via CA APM
 - APM dashboards
 - APM reports



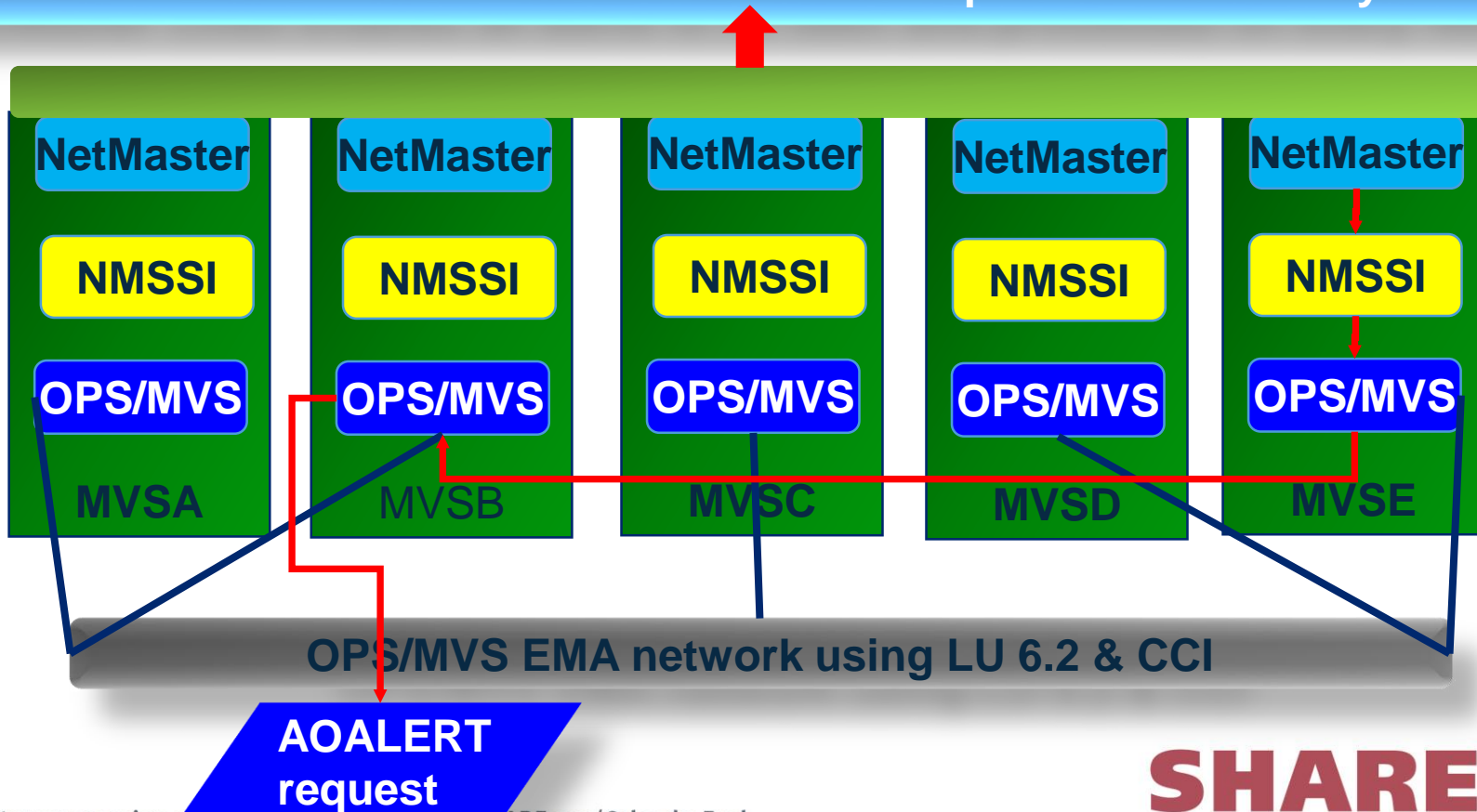
CA NetMaster® r12.1 and CA APM on Linux or Windows

NetMaster – OPS/MVS Integration

Alert forwarding from OPS/MVS EMA



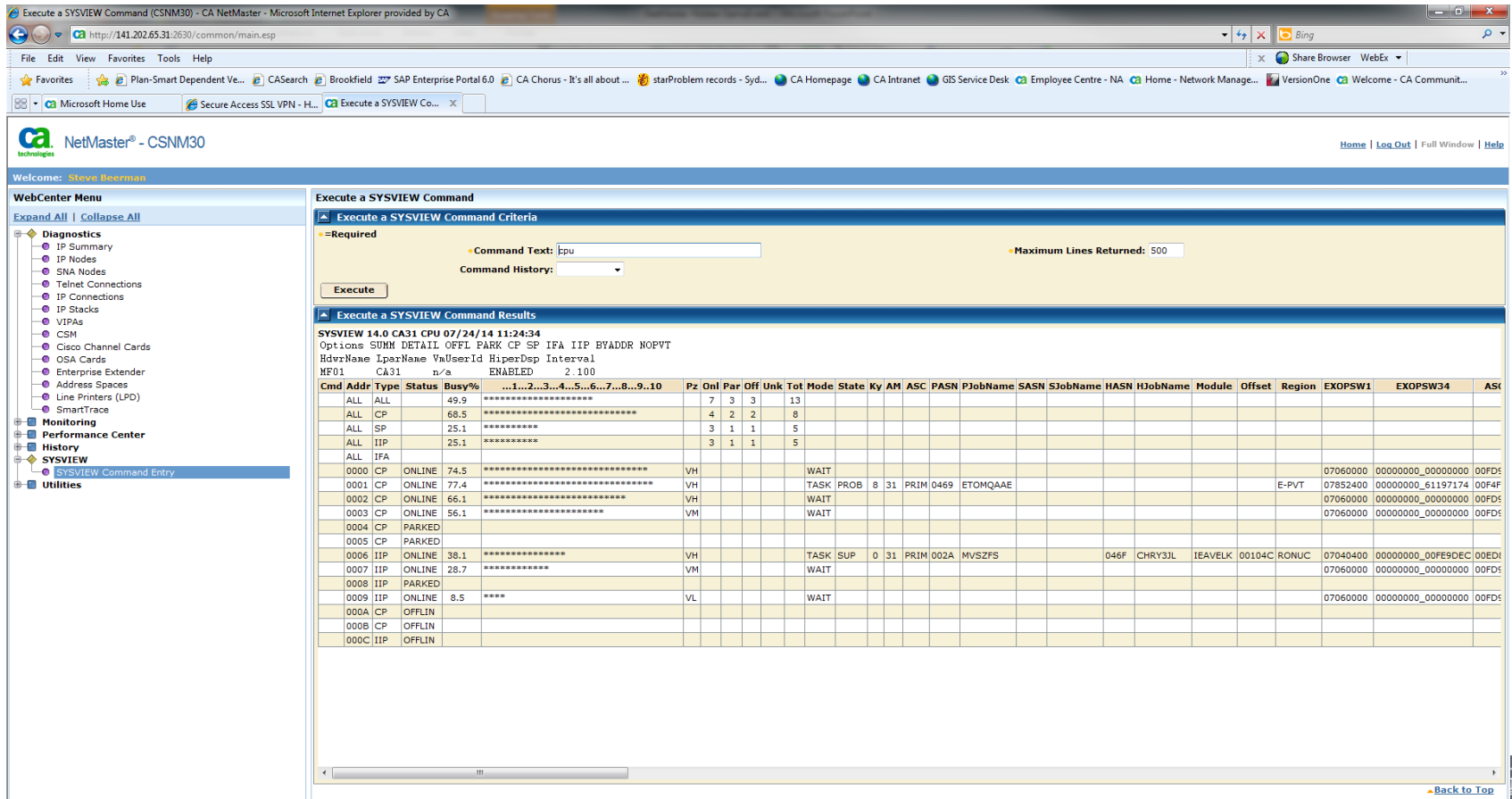
NetMaster Links enables all alerts to be seen and processed on every NetMaster



Integration with other products

SysView Command entry

- Issue Sysview commands from WebCenter



Execute a SYSVIEW Command (CSNM30) - CA NetMaster - Microsoft Internet Explorer provided by CA

http://141.202.65.31:2630/common/main.jsp

File Edit View Favorites Tools Help

Share Browser WebEx

Microsoft Home Use Secure Access SSL VPN - H... Execute a SYSVIEW Co...

NetMaster® - CSNM30

Welcome: Steve Beerman

Home | Log Out | Full Window | Help

WebCenter Menu

Expand All | Collapse All

- Diagnosics
 - IP Summary
 - IP Nodes
 - SNA Nodes
 - Telnet Connections
 - IP Connections
 - IP Stacks
 - VIPAs
 - CSM
 - Cisco Channel Cards
 - OSA Cards
 - Enterprise Extender
 - Address Spaces
 - Line Printers (LPD)
 - SmartTrace
- Monitoring
- Performance Center
- History
- SYSVIEW**
 - SYSVIEW Command Entry
- Utilities

Execute a SYSVIEW Command

Execute a SYSVIEW Command Criteria

Command Text: Maximum Lines Returned: 500

Execute

Execute a SYSVIEW Command Results

SYSVIEW 14.0 CA31 CPU 07/24/14 11:24:34

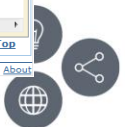
Options SUMM DETAIL OFFL PARK CP SP IFA IIP BYADDR NOPVT

HdvrName IparName VnUserId HiperDep Interval

MF01 CA31 n/a ENABLED 2.100

Cmd	Addr	Type	Status	Busy%	...	Pz	Onl	Par	Off	Unk	Tot	Mode	State	Ky	ASC	PASN	PJobName	SASN	SJobName	HASN	HJobName	Module	Offset	Region	EXOPSW1	EXOPSW34	ASL	
ALL	ALL			49.9	*****		7	3	3		13																	
ALL	CP			68.5	*****		4	2	2		8																	
ALL	SP			25.1	*****		3	1	1		5																	
ALL	IIP			25.1	*****		3	1	1		5																	
ALL	IFA																											
0000	CP	ONLINE		74.5	*****							WAIT													07060000	00000000_00000000	00FD5	
0001	CP	ONLINE		77.4	*****							TASK	PROB	8	31	PRIM	0469	ETOMQAAE							E-PVT	07852400	00000000_61197174	00F4F
0002	CP	ONLINE		66.1	*****							WAIT													07060000	00000000_00000000	00FD5	
0003	CP	ONLINE		56.1	*****							WAIT													07060000	00000000_00000000	00FD5	
0004	CP	PARKED																										
0005	CP	PARKED																										
0006	IIP	ONLINE		38.1	*****							TASK	SUP	0	31	PRIM	002A	MVSZFS		046F	CHRY33L	IEAVELK	00104C	RONUC	07040400	00000000_00F9DEC	00EDI	
0007	IIP	ONLINE		28.7	*****							WAIT													07060000	00000000_00000000	00FD5	
0008	IIP	PARKED																										
0009	IIP	ONLINE		8.5	****							WAIT													07060000	00000000_00000000	00FD5	
000A	CP	OFFLIN																										
000B	CP	OFFLIN																										
000C	IIP	OFFLIN																										

Back to Top



Hidden Gems in *CA NetMaster for TCP/IP*: Come Explore where You May Have Missed Them

August 13th, 2015
Session 17790



Hidden Gems in *CA NetMaster for TCP/IP*: Come Explore where You May Have Missed Them

Craig Guess

CA Technologies

August 13, 2015

Session 17790



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