

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

Craig Guess
CA Technologies

March 5th, 2015
Session 16738



#SHAREorg



SHARE is an independent volunteer-run information technology association that provides **education, professional networking and industry influence.**



Agenda

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

WebCenter



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



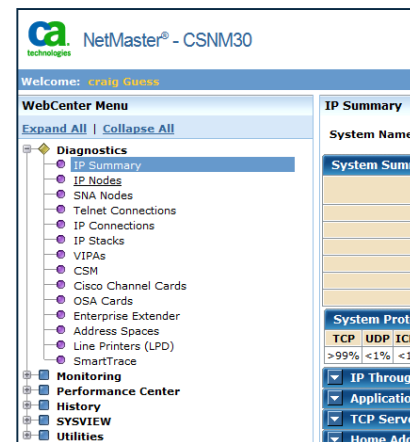
WebCenter

- 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: CSNM30

[All Definitions](#) |
 [Active Definitions](#) |
 [Resource Traces](#) |
 [Connection Traces](#) |
 [Saved Traces](#)

Execute

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

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 ..... 35.228
    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)

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 083678A3 50107CFE R #4 E FS (T 2 6) P I
+0010 00000000
    
```

Back to Top

Complete your session evaluations online at w

Traffic Stats vs /Perf



Complete your session evaluations online at www.SHARE.org/Seattle-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
___  TCP/IP31 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: 141.202.65.31   569.2    374k    65%
___  Remote Network: Most active: 141.202.*    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: 141.202.161.11 7323k    36%
___  Bytes by EE Connection Most Active: USILDA01.A11X99 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 *****

Comp 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
-----|-----|-----|-----|-----|-----|-----|
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
Week      Date and Time      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/Seattle-Eval



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

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.

```
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**
```

SmartTrace



Complete your session evaluations online at www.SHARE.org/Seattle-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 141.202.66.11 21 <- 1169 - 48 Syn Win=65535 Seq=3
___ 00002 141.202.66.11 21 -> 1169 <0.001 44 Ack Syn Win=32768 Seq=1
___ 00003 141.202.66.11 21 <- 1169 0.059 40 Ack Win=65535 Seq=3
___ 00004 141.202.66.11 21 -> 1169 0.063 106 Rsp: 220-FTPD111 IBM FT
___ 00005 141.202.66.11 21 <- 1169 0.239 40 Ack Win=65469 Seq=3
___ 00006 141.202.66.11 21 -> 1169 <0.001 100 Rsp: 220 Connection wil
___ 00007 141.202.66.11 21 <- 1169 0.059 54 Req: user CAMTHA4
___ 00008 141.202.66.11 21 -> 1169 0.001 67 Rsp: 331 Send password
___ 00009 141.202.66.11 21 <- 1169 0.059 55 Req: PASS Saddam90
___ 00010 141.202.66.11 21 -> 1169 0.222 40 Ack Psh Win=32753 Seq=1
___ 00011 141.202.66.11 21 -> 1169 4.296 101 Rsp: 230 CAMTHA4 is log
___ 00012 141.202.66.11 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 ..... TCP/IP11
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 of data *****
```

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/Seattle-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

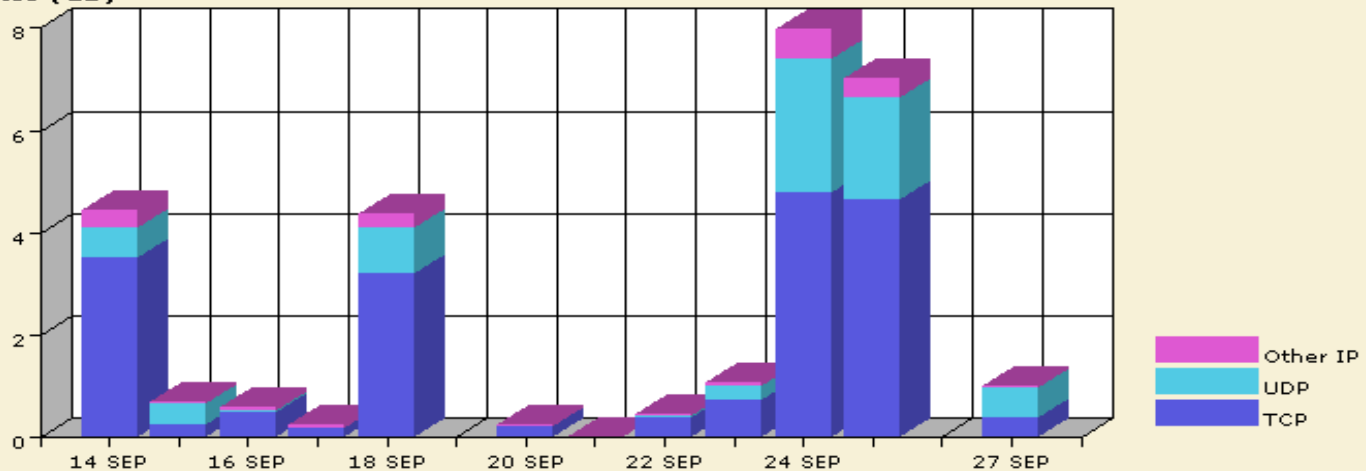
Close

System Name: CO11

Time Frame: 14 Days

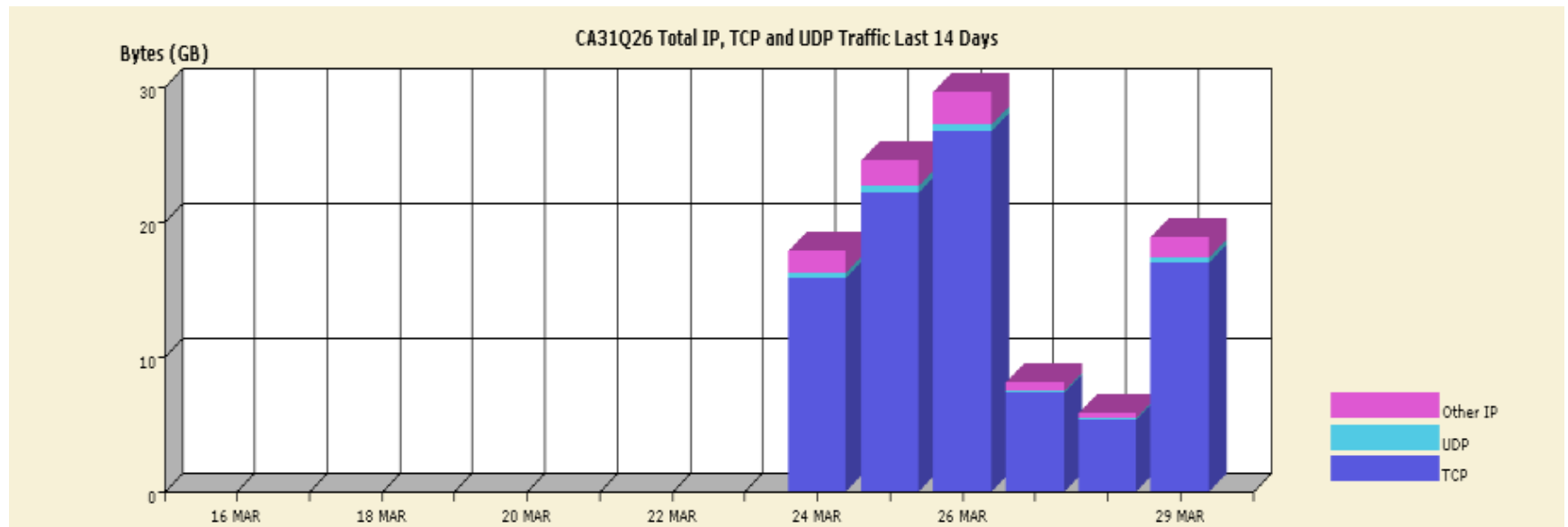
IP Traffic Growth

Bytes (GB) CO11 Total IP, TCP and UDP Traffic Last 14 Days

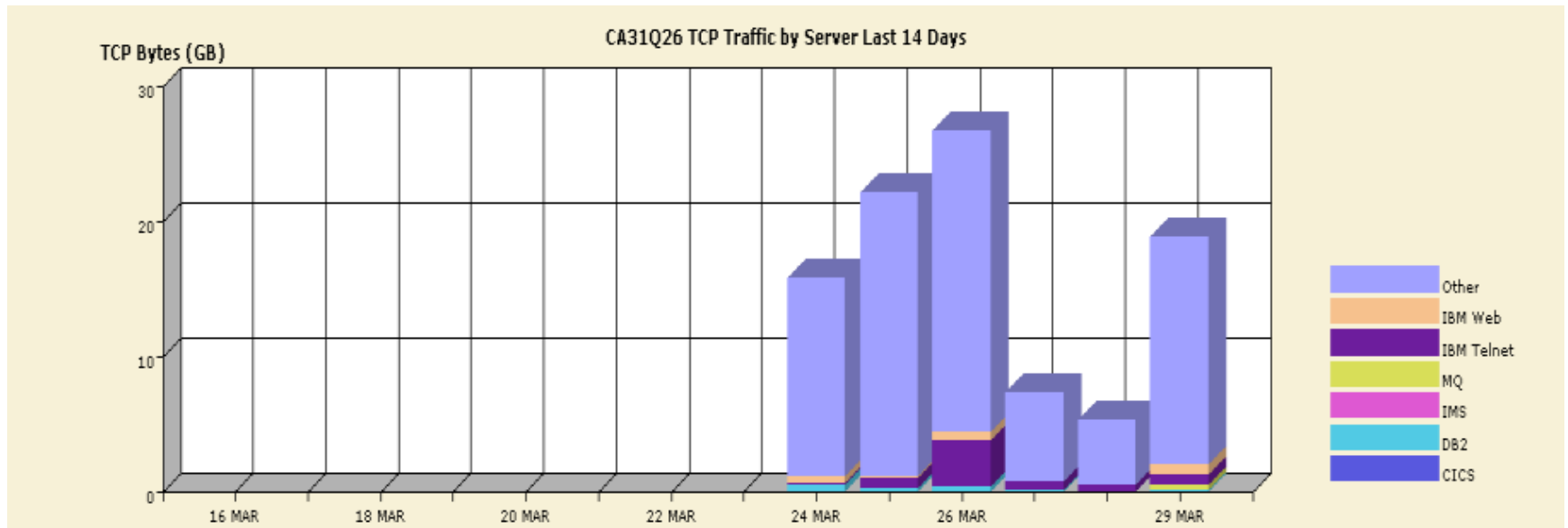


Complete you

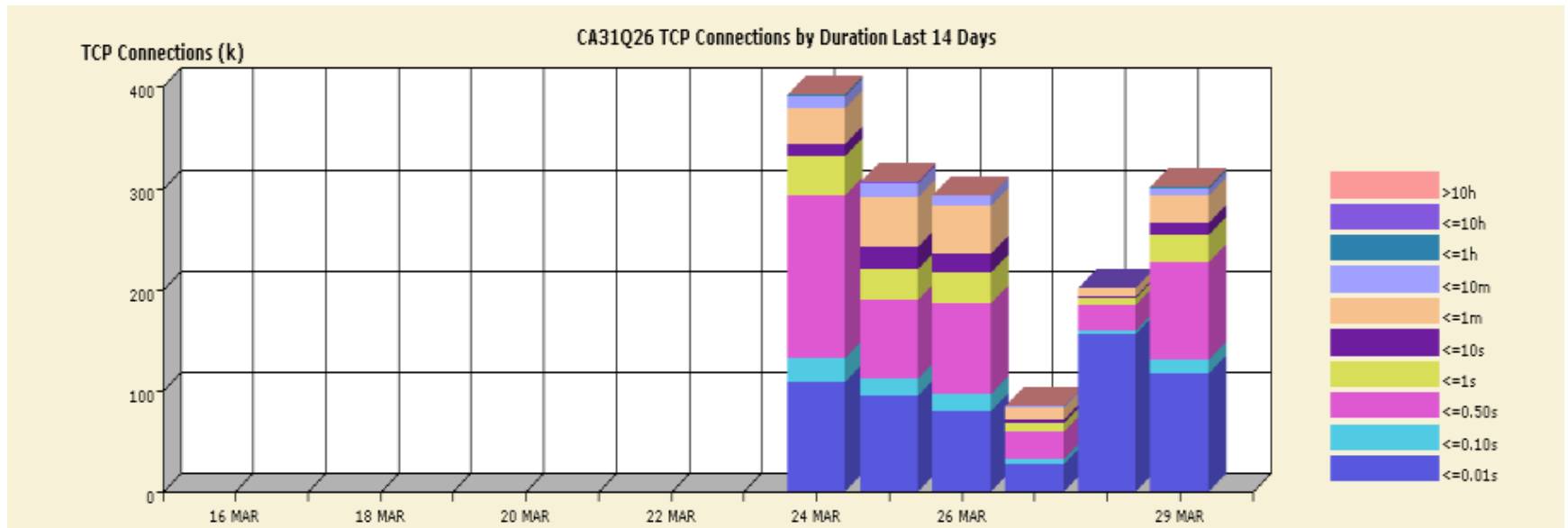
Total IP, TCP and UDP traffic



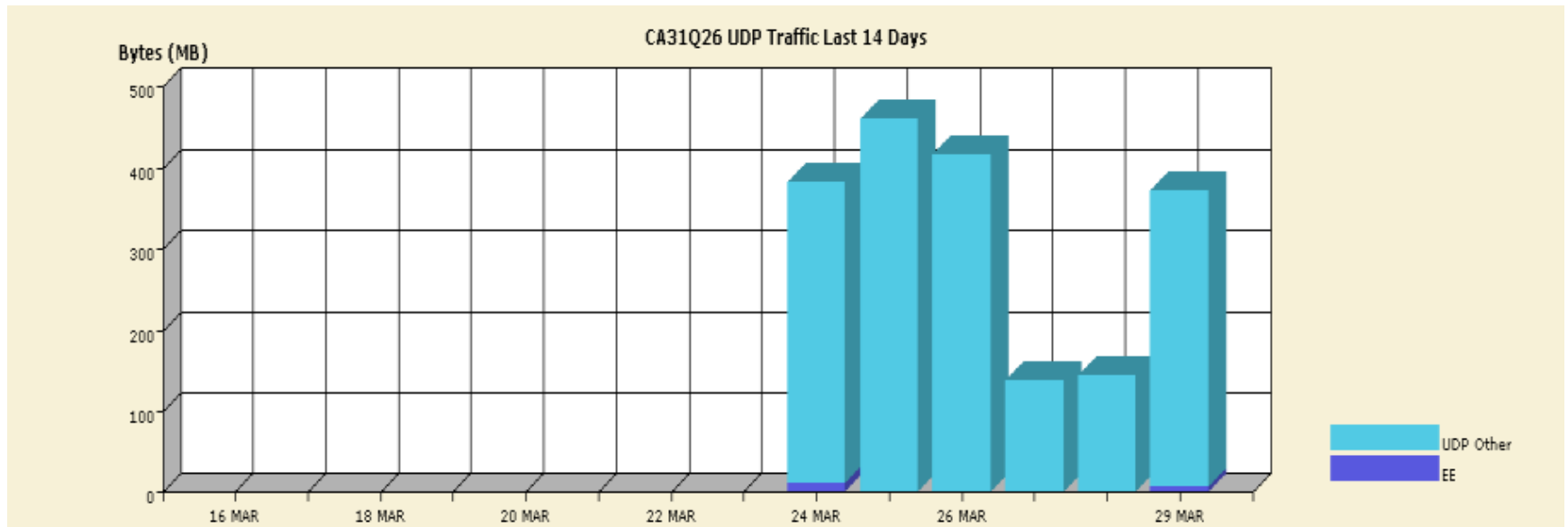
TCP traffic by server



TCP connections by duration



total UDP traffic



Predicting Growth

Problem quotes

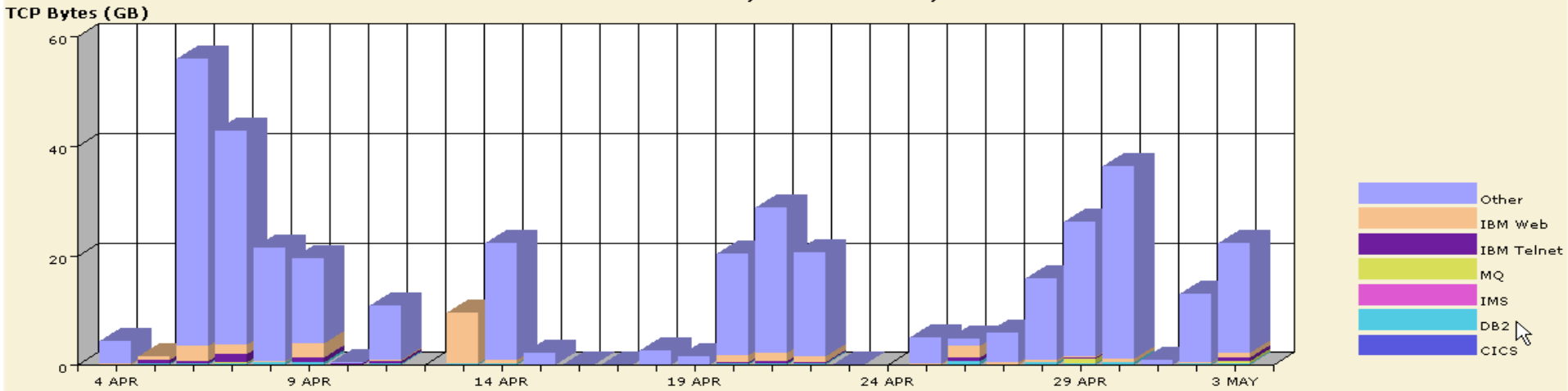
- *“Our SNA sessions to DB2 haven’t changed much for years... but surely DB2 remote access is growing? If I can show that, I can get more resources for my DB2 group.”*
- *“Maybe the growth is with users coming in with TCP/IP?”*

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/Seattle-Eval



Where to find it

```

NMMSC----- 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 Administration XADMIN
  
```

```

NMMSC----- 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 ==>
  
```

```

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
- *      SMTP Jobname
- *      output class
- *      SMTPNODE
- *      hostname
- *      SMTPNODE
- *      hostname
- *      FROM
  &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

Outlook Web App interface showing a list of emails in the inbox. The selected email is:

- Stack (OSA): ifStatusOper is Down (CSNM9) - 7:42 PM

Other visible emails include:

- Monitoring for ASMON ... (CSNM9) - 7:43 PM
- IPNODE: NETSTATUS is ... (CSNM9) - 7:43 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

Screenshot of an email client window showing the content of the selected email:

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

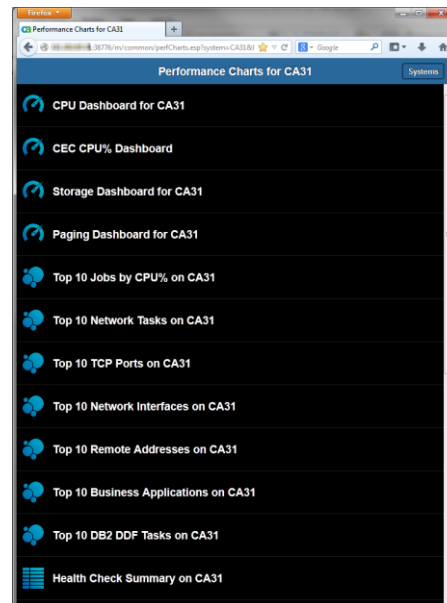
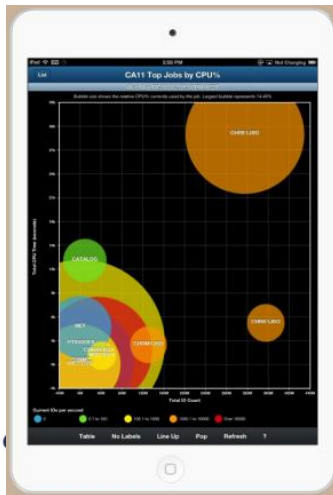
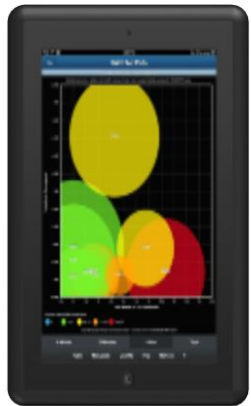


Complete your session evaluations online at www.SHARE.org/Seattle-Eval



Performance Charts/Alerts Mobility Post GA 12.1

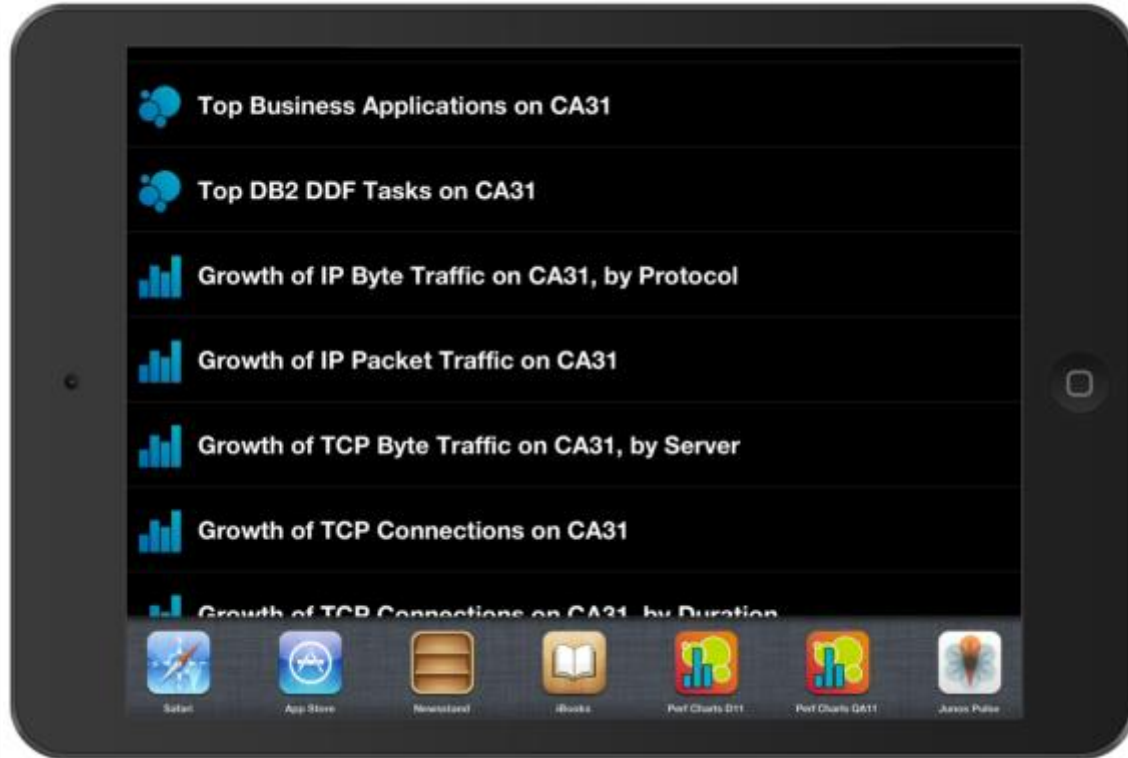
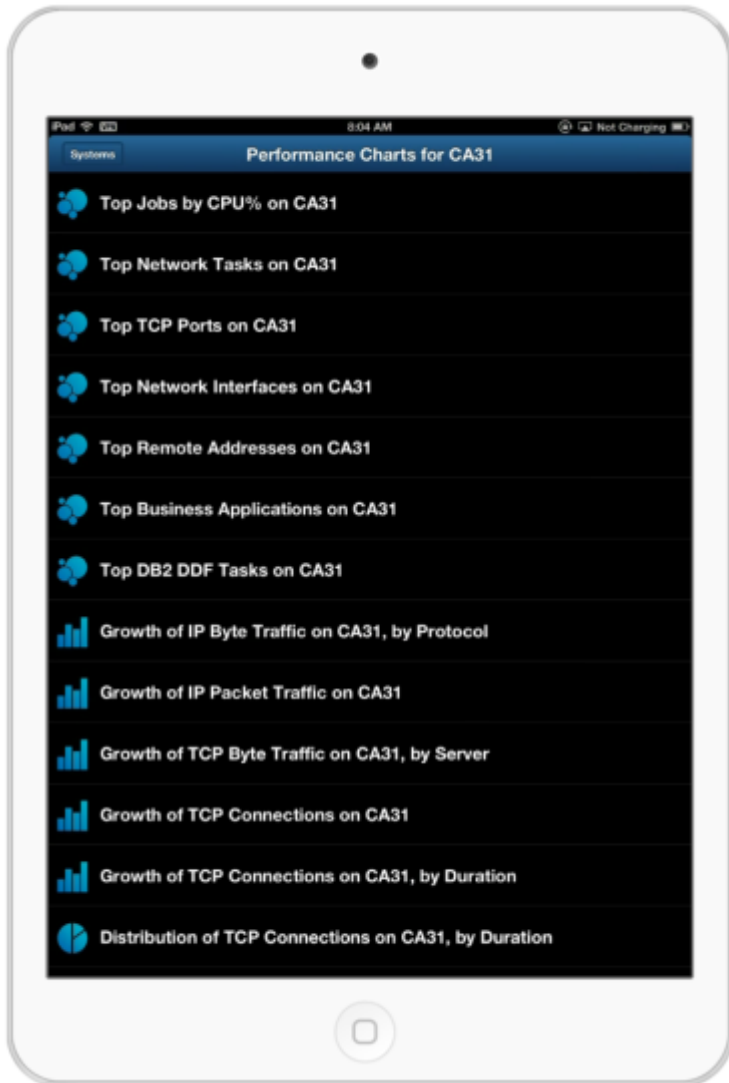
- Being truly mobile doesn't mean being tied to one device.
- Our solution works anywhere the user needs to be.



Complete your session

SHARE.org/Seattle-Eval

Mobility in the workplace



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

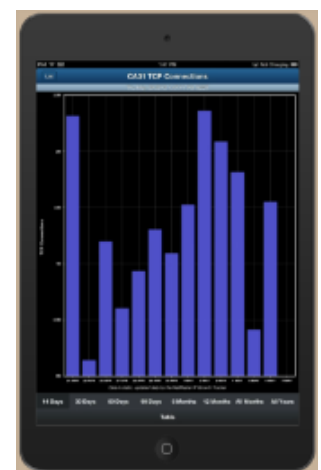
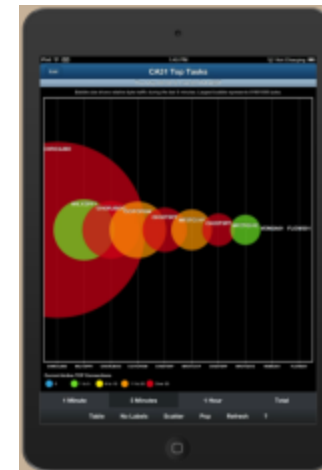
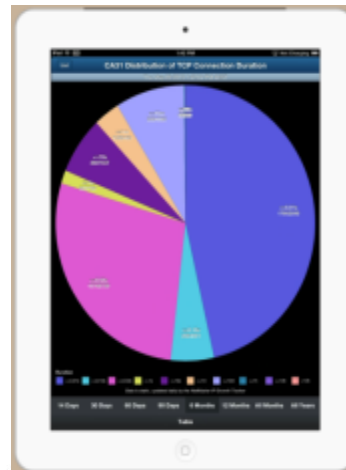
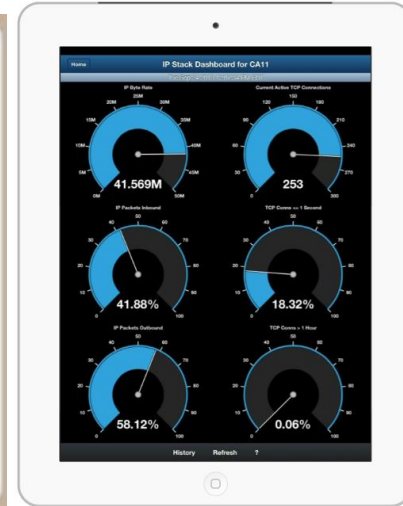
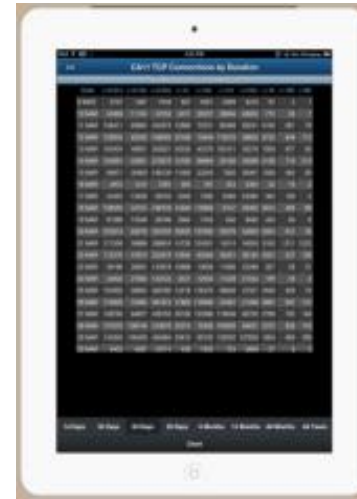
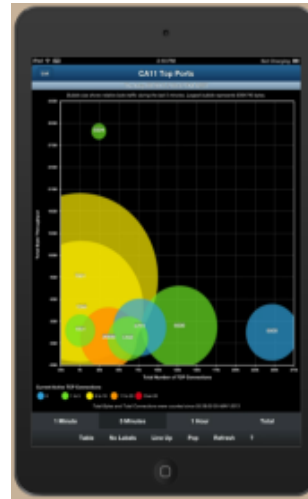
Performance Charts for Networks

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.



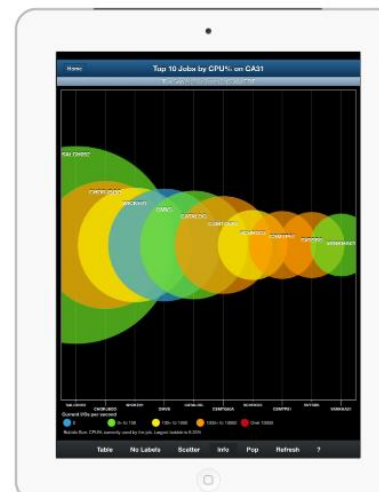
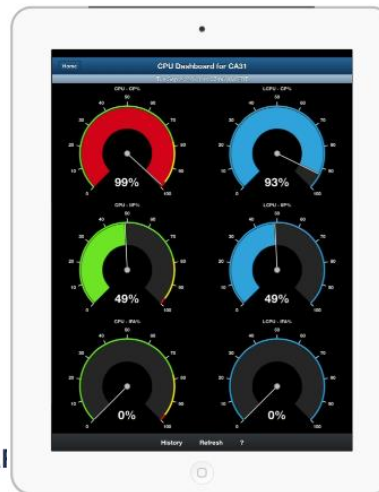
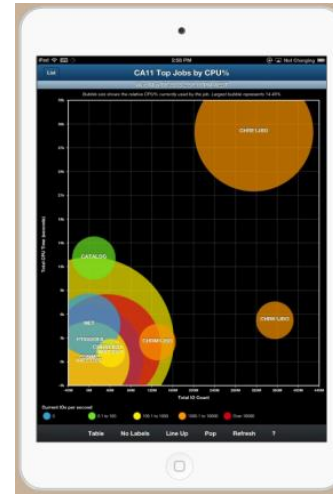
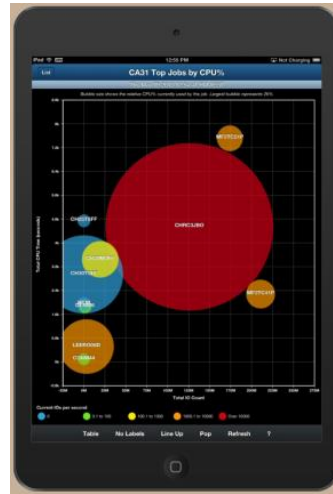
Performance Charts for Systems

What it does

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.

What it looks like



Owner	Status	Description	Class	High	Mod
CA_322	EXCEPTION HIGH	CA_322	459	7	ED
CA_319	EXCEPTION HIGH	CA_319	166	1	ED
CA_318	EXCEPTION MEDIUM	CA_318	77	0	ED
BMAS0	EXCEPTION MEDIUM	BM UserSubstService	8	0	ED
CA_NM	EXCEPTION MEDIUM	CA_NuAlu	54	0	ED
CA_7	EXCEPTION MEDIUM	CA_7	0	0	ED
CA_301	EXCEPTION MEDIUM	CA_301	4	0	ED
CA_310M	EXCEPTION MEDIUM	CA_310M	97	0	ED
CA_310P	EXCEPTION MEDIUM	CA_310P	16	0	ED
CA_310R	EXCEPTION MEDIUM	CA_310R	1	0	ED
CA_310S	EXCEPTION MEDIUM	CA_310S	20	0	ED
BMAS1	EXCEPTION MEDIUM	BM UserSubstManager	9	0	ED
CA_310T	EXCEPTION LOW	CA_310T	46	0	ED
CA_310U	EXCEPTION LOW	CA_310U	166	0	ED
CA_310V	EXCEPTION LOW	CA_310V	2	0	ED
BMAS2	EXCEPTION LOW	BM UserSubstManager	23	0	ED
BMAS3	EXCEPTION LOW	BM UserSubstManager	4	0	ED
CA_310W	EXCEPTION LOW	CA_310W	10	0	ED
CA_310X	EXCEPTION LOW	CA_310X	19	0	ED
BMAS4	EXCEPTION LOW	BM UserSubstManager	1	0	ED
BMAS5	EXCEPTION LOW	BM UserSubstManager	13	0	ED
BMAS6	EXCEPTION LOW	BM UserSubstManager	18	0	ED
BMAS7	EXCEPTION LOW	BM UserSubstManager	22	0	ED
CA_310Y	EXCEPTION LOW	CA_310Y	0	0	ED
CA_310Z	EXCEPTION LOW	CA_310Z	1	0	ED
CA_310AA	EXCEPTION LOW	CA_310AA	0	0	ED
CA_310AB	EXCEPTION LOW	CA_310AB	1	0	ED
CA_310AC	EXCEPTION LOW	CA_310AC	1	0	ED
CA_310AD	EXCEPTION LOW	CA_310AD	0	0	ED
CA_310AE	EXCEPTION LOW	CA_310AE	0	0	ED
CA_310AF	EXCEPTION LOW	CA_310AF	0	0	ED
CA_310AG	EXCEPTION LOW	CA_310AG	0	0	ED
CA_310AH	EXCEPTION LOW	CA_310AH	0	0	ED
CA_310AI	EXCEPTION LOW	CA_310AI	0	0	ED
CA_310AJ	EXCEPTION LOW	CA_310AJ	0	0	ED
CA_310AK	EXCEPTION LOW	CA_310AK	0	0	ED
CA_310AL	EXCEPTION LOW	CA_310AL	0	0	ED
CA_310AM	EXCEPTION LOW	CA_310AM	0	0	ED
CA_310AN	EXCEPTION LOW	CA_310AN	0	0	ED

Complete your session evaluations online at www.SHAI

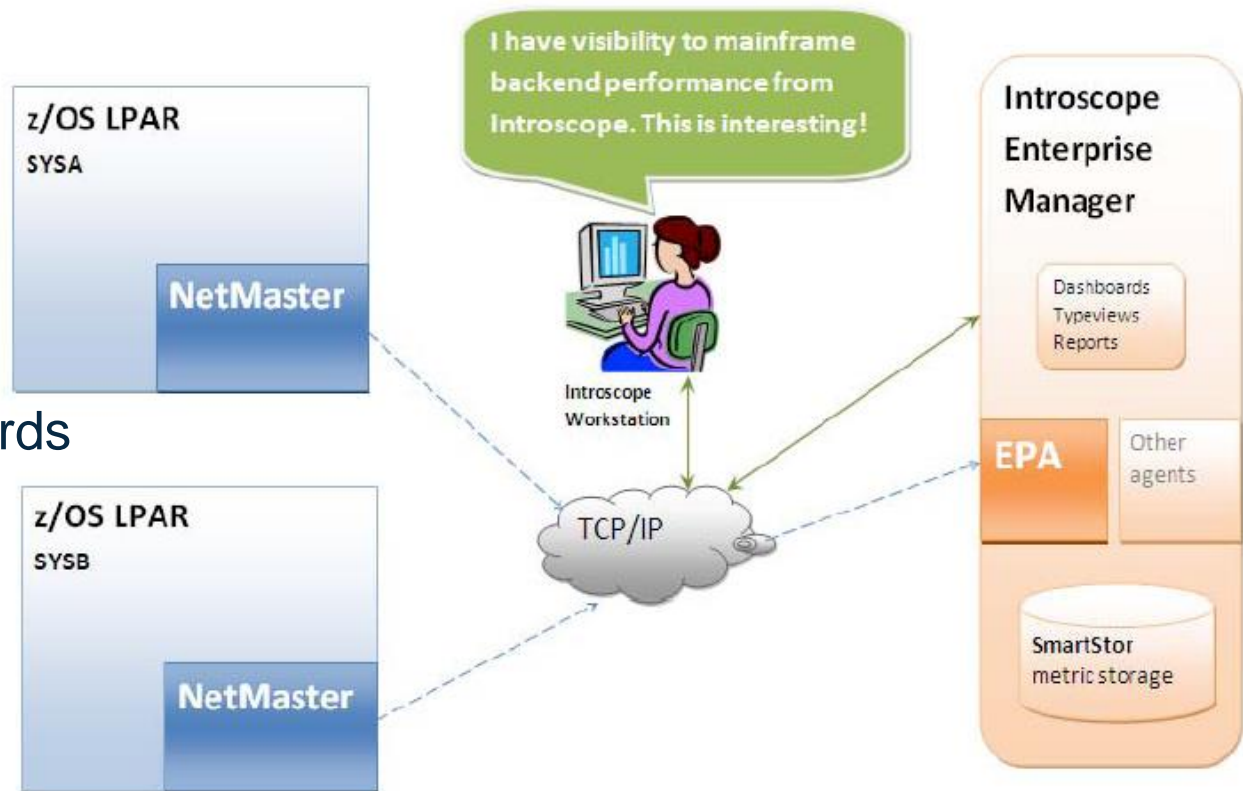
Integration to other CA Products

NetMaster – CA CE APM Integration

➤ Provides metric feeds from CA NetMaster®

➤ Viewed via Introscope Investigator

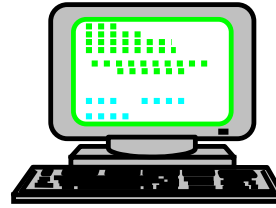
- Introscope dashboards
- Introscope reports



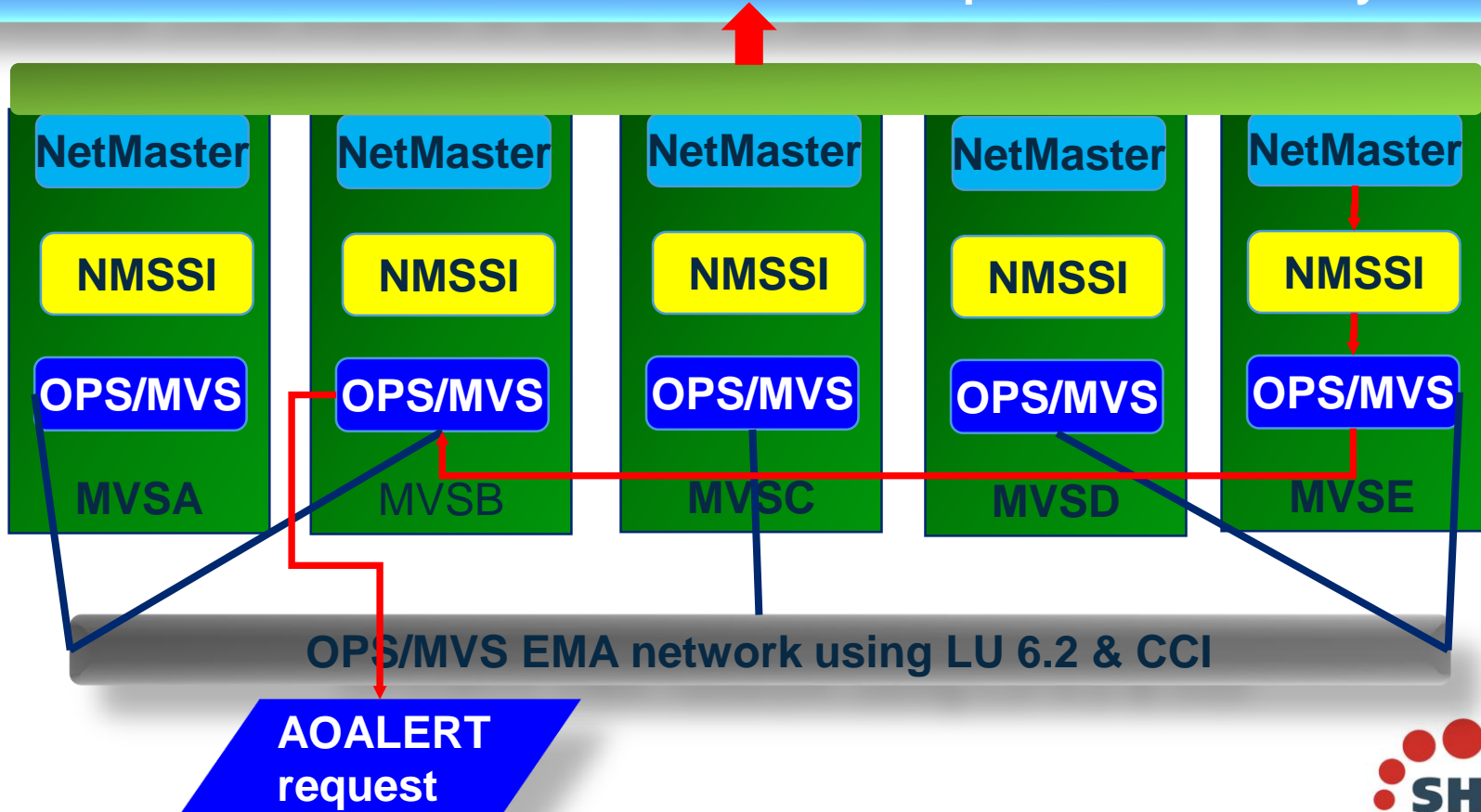
CA NetMaster® r12.1 and CA APM on Linux or Windows

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

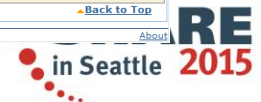
HdvrName IparName VaUserId HiperDep Interval

MF01 CA31 n/a ENABLED 2.100

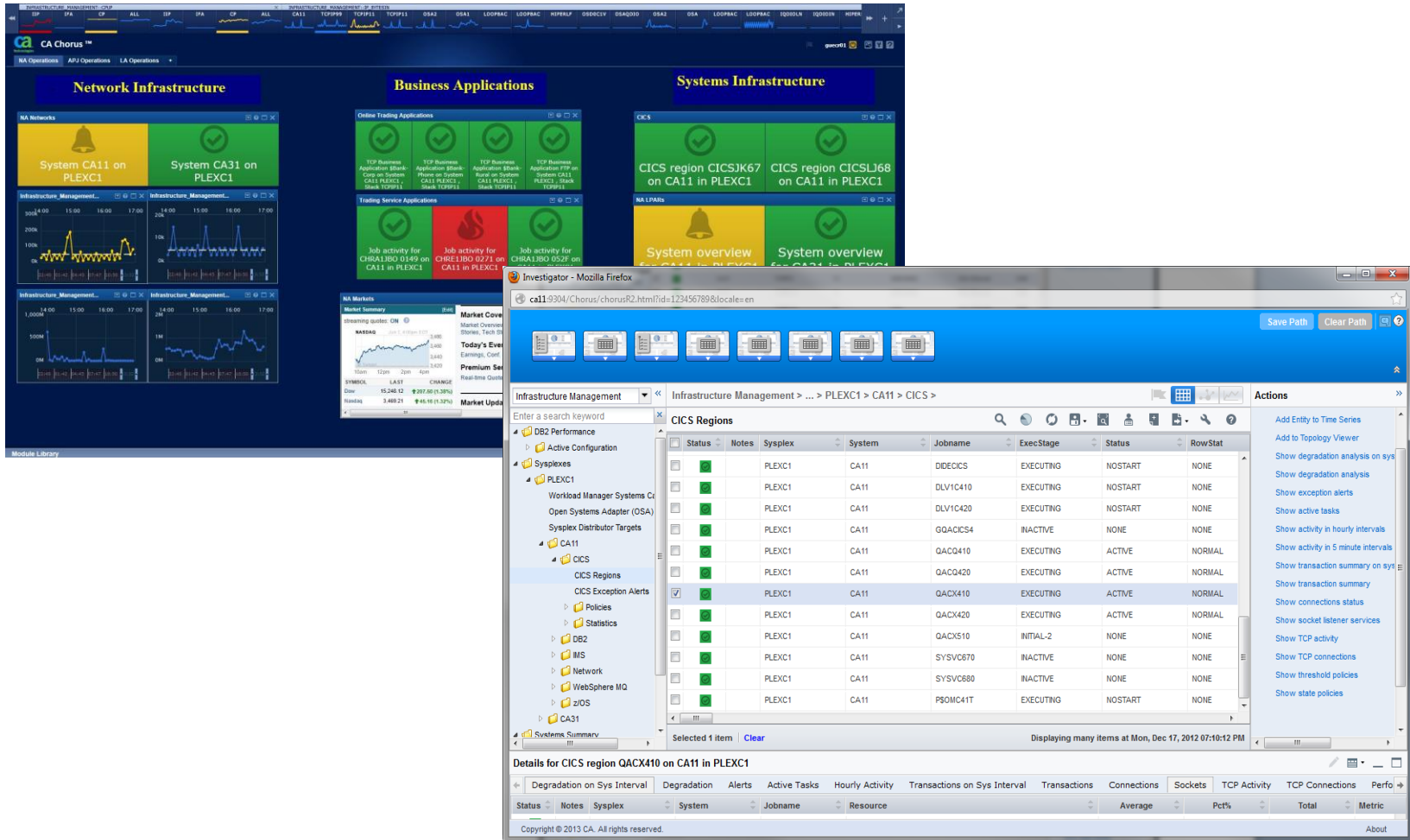
Cmd	Addr	Type	Status	Busy%	...	Pz	Onl	Par	Off	Unk	Tot	Mode	State	Ky	AM	ASC	PASN	PJobName	SASN	SJobName	HASN	HJobName	Module	Offset	Region	EXOPSW1	EXOPSW34	ASL	
ALL	ALL			49.9	*****		7	3	3		13																		
ALL	CP			68.5	*****		4	2	2		8																		
ALL	SP			25.1	*****		3	1	1		5																		
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																										

Copyright © 2012 CA. All rights reserved.

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



CA Chorus™ Infrastructure Management for Networks and Systems



The screenshot displays the CA Chorus Infrastructure Management dashboard, which is divided into three main sections: Network Infrastructure, Business Applications, and Systems Infrastructure. The Network Infrastructure section shows system status for CA11 and CA31 on PLEXC1. The Business Applications section displays online trading applications and trading service applications. The Systems Infrastructure section shows CICS regions and system overviews.

The detailed view of CICS Regions is shown in the following table:

Status	Notes	Sysplex	System	Jobname	ExecStage	Status	RowStat
✓		PLEXC1	CA11	DDEIC5	EXECUTING	NOSTART	NONE
✓		PLEXC1	CA11	DLV1C410	EXECUTING	NOSTART	NONE
✓		PLEXC1	CA11	DLV1C420	EXECUTING	NOSTART	NONE
✓		PLEXC1	CA11	GGACIS4	INACTIVE	NONE	NONE
✓		PLEXC1	CA11	QACQ410	EXECUTING	ACTIVE	NORMAL
✓		PLEXC1	CA11	QACQ420	EXECUTING	ACTIVE	NORMAL
✓		PLEXC1	CA11	QACX410	EXECUTING	ACTIVE	NORMAL
✓		PLEXC1	CA11	QACX420	EXECUTING	ACTIVE	NORMAL
✓		PLEXC1	CA11	QACX510	INITIAL-2	NONE	NONE
✓		PLEXC1	CA11	SYSVC670	INACTIVE	NONE	NONE
✓		PLEXC1	CA11	SYSVC680	INACTIVE	NONE	NONE
✓		PLEXC1	CA11	PS0MC41T	EXECUTING	NOSTART	NONE

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

Q&A

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

March 5th, 2015
Session 16738



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

Craig Guess
CA Technologies

March 5th, 2015
Session 16738



#SHAREorg



SHARE is an independent volunteer-run information technology association that provides **education, professional networking and industry influence.**

