

What's new in NetMaster r12.1

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CA Technologies
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Session Number 12776



Agenda



- What's new in R12.1
- Advanced VIPA support
- Questions

CA NetMaster R12.1 – GA January 2012



- SYSLOGD – Visibility of USS SYSLOGD message flow
- Sysplex Distributor – Improved visibility of Sysplex Distributor workload balancing activities across the network
- OSA – Improved displays, multiport support tweaked
- Technical Currency - Further exploitation of the z/OS Communications Server Network Management API to replace, or complement existing network displays
 - EZBNMIFR API for interface and VIPA details
 - Update NETSTAT command support
- Scalability – Further exploitation of the z/OS Communications Server Network Management API to replace, or complement existing network displays
- Enhancement Requests
- Chorus – V3.0 CA Chorus™ Infrastructure Management for Networks and Systems



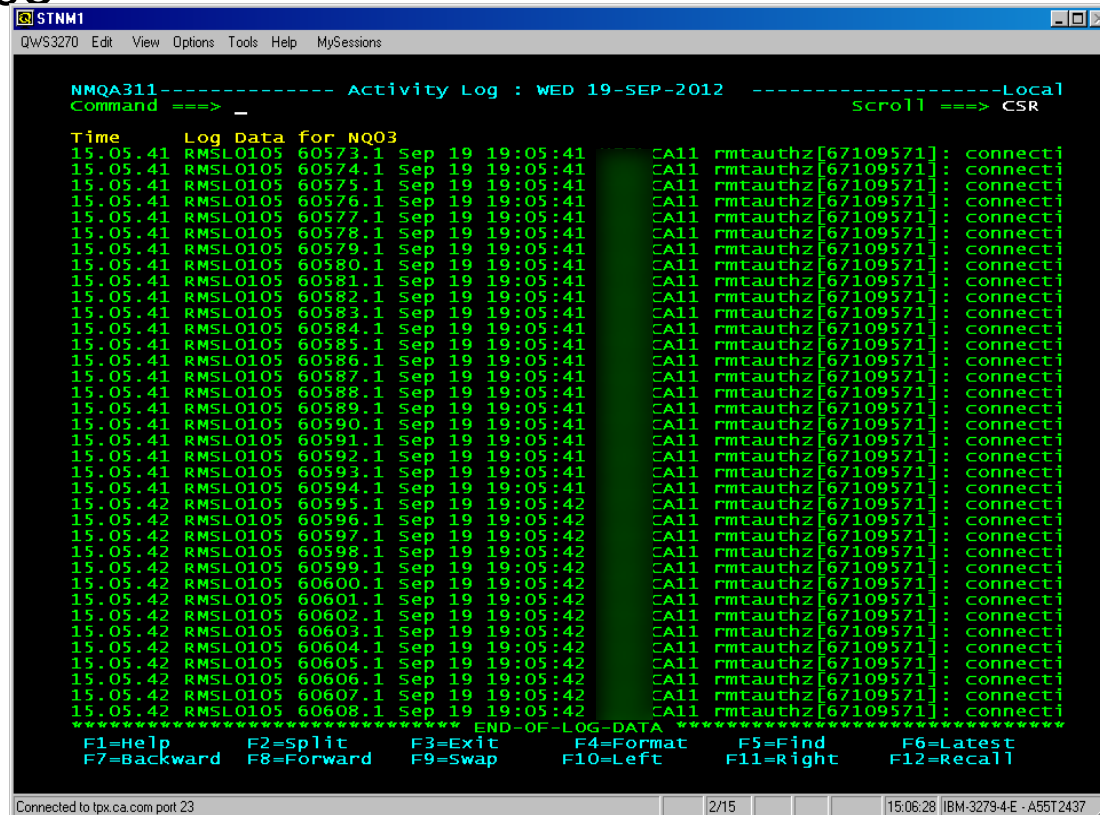
New Feature - SYSLOGD



- SYSLOGD message Event Detector
- Useful for receiving network related USS events – IPSEC, IDS
- /PARMS SYSLOGD to define message receipt
- /EDETECT SYSLOGD to process messages
- More detail in SYSLOGD module

SYSLOGD

- Dictate which SYSLOGD Messages are delivered
 - NCLLOG
 - Prefixed with RMSL0105
- Event Detector
 - Type=SYSLOGD
 - Alert and/or Action on messages



```
STNM1
QW53270 Edit View Options Tools Help MySessions

NMQA311----- Activity Log : WED 19-SEP-2012 -----Local
Command ==> _ Scroll ==> CSR

Time Log Data for NQ03
15.05.41 RMSL0105 60573.1 Sep 19 19:05:41 CA11 rmtauthz [67109571] : connecti
15.05.41 RMSL0105 60574.1 Sep 19 19:05:41 CA11 rmtauthz [67109571] : connecti
15.05.41 RMSL0105 60575.1 Sep 19 19:05:41 CA11 rmtauthz [67109571] : connecti
15.05.41 RMSL0105 60576.1 Sep 19 19:05:41 CA11 rmtauthz [67109571] : connecti
15.05.41 RMSL0105 60577.1 Sep 19 19:05:41 CA11 rmtauthz [67109571] : connecti
15.05.41 RMSL0105 60578.1 Sep 19 19:05:41 CA11 rmtauthz [67109571] : connecti
15.05.41 RMSL0105 60579.1 Sep 19 19:05:41 CA11 rmtauthz [67109571] : connecti
15.05.41 RMSL0105 60580.1 Sep 19 19:05:41 CA11 rmtauthz [67109571] : connecti
15.05.41 RMSL0105 60581.1 Sep 19 19:05:41 CA11 rmtauthz [67109571] : connecti
15.05.41 RMSL0105 60582.1 Sep 19 19:05:41 CA11 rmtauthz [67109571] : connecti
15.05.41 RMSL0105 60583.1 Sep 19 19:05:41 CA11 rmtauthz [67109571] : connecti
15.05.41 RMSL0105 60584.1 Sep 19 19:05:41 CA11 rmtauthz [67109571] : connecti
15.05.41 RMSL0105 60585.1 Sep 19 19:05:41 CA11 rmtauthz [67109571] : connecti
15.05.41 RMSL0105 60586.1 Sep 19 19:05:41 CA11 rmtauthz [67109571] : connecti
15.05.41 RMSL0105 60587.1 Sep 19 19:05:41 CA11 rmtauthz [67109571] : connecti
15.05.41 RMSL0105 60588.1 Sep 19 19:05:41 CA11 rmtauthz [67109571] : connecti
15.05.41 RMSL0105 60589.1 Sep 19 19:05:41 CA11 rmtauthz [67109571] : connecti
15.05.41 RMSL0105 60590.1 Sep 19 19:05:41 CA11 rmtauthz [67109571] : connecti
15.05.41 RMSL0105 60591.1 Sep 19 19:05:41 CA11 rmtauthz [67109571] : connecti
15.05.41 RMSL0105 60592.1 Sep 19 19:05:41 CA11 rmtauthz [67109571] : connecti
15.05.41 RMSL0105 60593.1 Sep 19 19:05:41 CA11 rmtauthz [67109571] : connecti
15.05.41 RMSL0105 60594.1 Sep 19 19:05:41 CA11 rmtauthz [67109571] : connecti
15.05.42 RMSL0105 60595.1 Sep 19 19:05:42 CA11 rmtauthz [67109571] : connecti
15.05.42 RMSL0105 60596.1 Sep 19 19:05:42 CA11 rmtauthz [67109571] : connecti
15.05.42 RMSL0105 60597.1 Sep 19 19:05:42 CA11 rmtauthz [67109571] : connecti
15.05.42 RMSL0105 60598.1 Sep 19 19:05:42 CA11 rmtauthz [67109571] : connecti
15.05.42 RMSL0105 60599.1 Sep 19 19:05:42 CA11 rmtauthz [67109571] : connecti
15.05.42 RMSL0105 60600.1 Sep 19 19:05:42 CA11 rmtauthz [67109571] : connecti
15.05.42 RMSL0105 60601.1 Sep 19 19:05:42 CA11 rmtauthz [67109571] : connecti
15.05.42 RMSL0105 60602.1 Sep 19 19:05:42 CA11 rmtauthz [67109571] : connecti
15.05.42 RMSL0105 60603.1 Sep 19 19:05:42 CA11 rmtauthz [67109571] : connecti
15.05.42 RMSL0105 60604.1 Sep 19 19:05:42 CA11 rmtauthz [67109571] : connecti
15.05.42 RMSL0105 60605.1 Sep 19 19:05:42 CA11 rmtauthz [67109571] : connecti
15.05.42 RMSL0105 60606.1 Sep 19 19:05:42 CA11 rmtauthz [67109571] : connecti
15.05.42 RMSL0105 60607.1 Sep 19 19:05:42 CA11 rmtauthz [67109571] : connecti
15.05.42 RMSL0105 60608.1 Sep 19 19:05:42 CA11 rmtauthz [67109571] : connecti
***** END-OF-LOG-DATA *****
F1=Help F2=Split F3=Exit F4=Format F5=Find F6=Latest
F7=Backward F8=Forward F9=Swap F10=Left F11=Right F12=Recall

Connected to tpx.ca.com port 23 2/15 15:06:28 IBM-3279-4-E - A55T2437
```

New Feature – XSCAN enabled /IPTRS



- Traffic Statistics Summary that uses a new PA facility called XSCAN
 - Sorting and Filtering performed in the PA
 - Limited number of records returned
 - F10/F11 to view Bytes and packets for 1m, 5m, Hour, Total, Connection durations counts, Connection counts
- /IPTRS is multistack, /STACK.TRS is single stack
- Useful commands
 - SORT ? – all 42 fields ascending or descending
 - FILTER key field – Job name, Remote address etc
 - LIMIT nnn – Change maximum number
 - Setting remembered in user profile

New Feature - /IPTRS



```
NMDE76----- TCP/IP : Traffic Statistics -----  
Command ==> Scroll ==> CSR
```

Use 'S' to select the required display

```
Type of Traffic Statistics  
___ Address Space  
___ Application  
___ Application by Interface  
___ Stack Home Address  
___ Stack Interface  
___ Protocol  
___ Protocol by Stack Home Address  
___ Protocol by Stack Interface  
___ Remote Address  
___ Remote Network  
___ TCP Port (All)  
___ TCP Port (Server)  
**END**
```

Scalability – Handle large amounts of data



```

STNM1
QWS3270 Edit View Options Tools Help MySessions

NMQA311----- TCP/IP : Remote Address Traffic -----Stack: TCPIP11
Command ==> _ scroll ==> CSR

Sort Order: Last 1min Bytes (Descending) Filter: None
Line 1 of 48 (from 766 matching records, 2125 total records)

s=Traffic Statistics NL=Name Lookup DT=Duration Times C=Connections
----- Last Minute -----
Remote Address Packets Pkts In Pkts Out Bytes Bytes In Bytes Out
-----
2.66.204 8706 2420 6286 9.34M 125840 9.22M
2.176.118 9654 4033 5621 2.613M 198063 2.414M
19.134.85 3887 2196 1691 984366 165048 819318
.0.1 924 462 462 479594 239797 239797
00.83.10 506 174 332 452928 8310 444618
02.200.154 270 26 244 338256 1802 336454
2.176.89 1238 516 722 287153 25650 261503
02.65.31 924 497 427 232430 195255 37175
00.79.160 206 103 103 146688 4583 142105
4.39.159 272 137 135 48268 14754 33514
2.152.152 89 41 48 21937 15027 6910
19.190.12 24 8 16 18616 416 18200
2.32.181 24 12 12 14051 545 13506
00.77.145 36 15 21 12696 10059 2637
2.157.51 45 24 21 12264 9375 2889
02.65.61 115 62 53 12154 8401 3753
02.113.83 56 30 26 10954 3182 7772
2.0.212 36 15 21 9537 6900 2637
2.4.222 45 18 27 8730 5796 2934
02.107.159 36 16 20 7066 1884 5182
19.141.136 52 29 23 6287 3683 2604
2.32.68 10 4 6 5880 176 5704
02.65.2 37 19 18 5392 3038 2354
9.8.65 108 72 36 4680 3096 1584
0.228.215 15 8 7 4168 3596 572
2.214.54 15 8 7 4155 3583 572
02.36.111 56 28 28 3752 1876 1876
2.152.205 28 14 14 3192 1792 1400
2.207.29 14 0 14 1400 0 1400
2.171.130 14 0 14 1400 0 1400
19.135.103 24 12 12 1248 624 624
02.27.92 7 3 4 1096 528 568

F1=Help F2=Split F3=Exit F4=Return F5=Find F6=Refresh
F7=Backward F8=Forward F9=Swap F10=Left F11=Right
    
```


Scalability – Handle large amounts of data



```

tpx.ca.com
QWS3270 Edit View Options Tools Help
----- TCP/IP : Remote Address Traffic -----
Command ==> sort ca                               Scroll ==> CSR

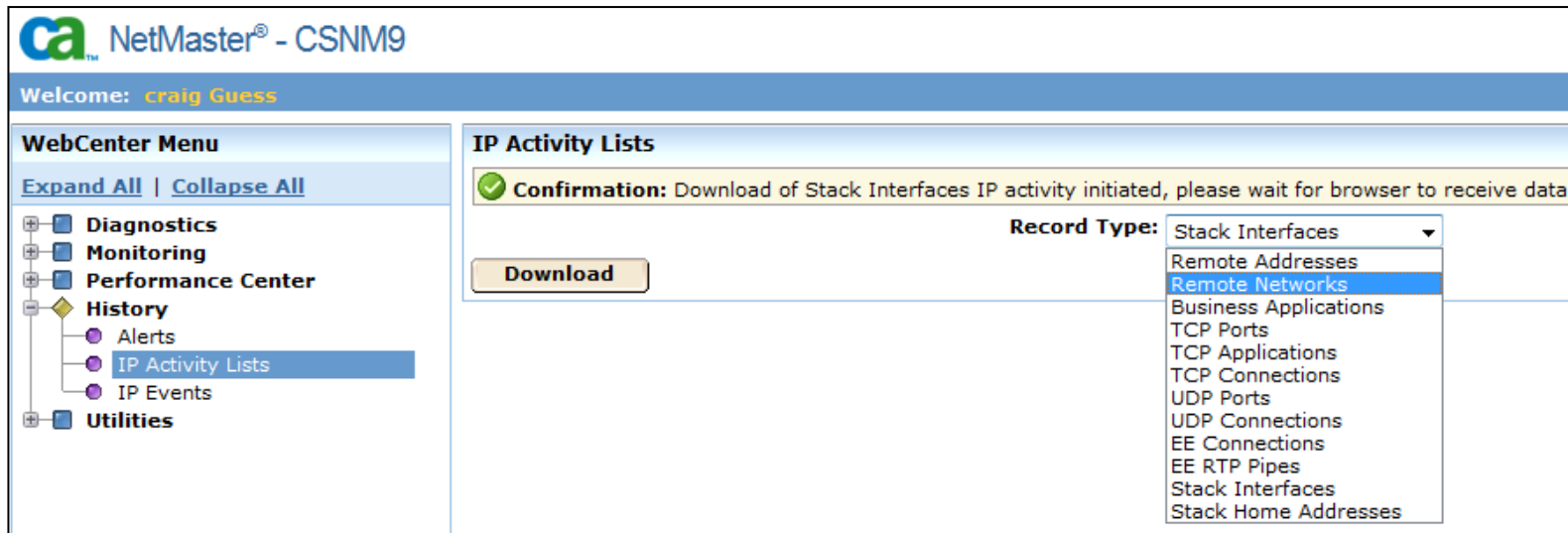
Sort Order: Connections Active (Descending)      Filter: None
Line 1 of 100 (from 771 matching records, 771 total records)

S=Traffic Statistics NL=Name Lookup DT=Duration Times C=Connections
Remote      ----- TCP Connections ----- IP
Address      Active      Total Started      Ended Sec Last Activity
-----
02.65.31      69      34384      34384      34315 NO WED 06-FEB-2013 23:18
02.65.11      46      105888      105888      105842 NO WED 06-FEB-2013 23:18
.0.1          14      3184       3184       3170 NO WED 06-FEB-2013 23:18
02.65.61      12      2451       2451       2439 NO WED 06-FEB-2013 23:18
02.36.88      8        8          8          0 NO WED 06-FEB-2013 14:57
4.39.124      6        7          7          1 NO WED 06-FEB-2013 23:18
02.36.150     4        16         16         12 NO WED 06-FEB-2013 23:18
00.83.10      4        500        500        496 NO WED 06-FEB-2013 23:18
7.232.22     4        218        218        214 NO WED 06-FEB-2013 23:18
2.91.29      4        3200       3200       3196 NO WED 06-FEB-2013 23:17
2.23.169     3        38         38         35 NO WED 06-FEB-2013 23:18
<a85:1::31   2        2          2          0 NO WED 06-FEB-2013 23:17
02.65.31      2        2          2          0 NO WED 06-FEB-2013 23:18

F1=Help      F2=Split      F3=Exit      F4=Return      F5=Find      F6=Refresh
F7=Backward  F8=Forward    F9=Swap      F11=Right
    
```

New Feature – WebCenter IP Activity Lists

- IP Activity Lists appear under the History option
- Download in .CSV format of PA data



NetMaster® - CSNM9
Welcome: craig Guess

WebCenter Menu
Expand All | Collapse All

- Diagnostics
- Monitoring
- Performance Center
- History
 - Alerts
 - IP Activity Lists
 - IP Events
- Utilities

IP Activity Lists

Confirmation: Download of Stack Interfaces IP activity initiated, please wait for browser to receive data

Record Type: Stack Interfaces

- Remote Addresses
- Remote Networks
- Business Applications
- TCP Ports
- TCP Applications
- TCP Connections
- UDP Ports
- UDP Connections
- EE Connections
- EE RTP Pipes
- Stack Interfaces
- Stack Home Addresses

Download

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
1	DYNAMIC LOOPBA	DVIPA	XCF	ACTIV	QDID	IPV6	DEVT	KEY.STAC	KEY.INTE	STACKTYPE	TOTALRT	TOTALRT	TOTALRT	TOTALRT	TOTALRT	TOTALRT	TOTALRT	STATS.MI	STATS.MI
2	NO	NO	NO	NO	YES	NO	NO	0	SNSWILM	CLAW1A3	TCPACCESS	0	0	0	0	0	0	6	13
3	NO	NO	NO	NO	YES	NO	NO	0	SNSWILM	CLAW1A3	TCPACCESS	0	0	0	0	0	0	6	13
4	NO	NO	NO	NO	YES	NO	NO	0	SNSWILM	CLAW1B3	TCPACCESS	0	0	0	0	0	0	6	13
5	NO	YES	NO	NO	YES	NO	NO	0	SNSWILM	LOOPBA	TCPACCESS	0	0	0	0	0	0	6	13
6	NO	NO	NO	NO	YES	NO	NO	0	SNSWILM	VIPA	TCPACCESS	0	0	0	0	0	0	6	13
7	NO	YES	NO	NO	YES	NO	NO	34	TCPGEN1	LOOPBA	IBM	0	0	0	0	0	0	6	13
8	NO	YES	NO	NO	YES	NO	YES	51	TCPGEN1	LOOPBA	IBM	0	0	0	0	0	0	6	13
9	NO	NO	NO	NO	YES	NO	NO	0	TCPGEN1	OSA1	IBM	0	0	0	0	0	0	6	13

New Feature – USS command

- USS command is used to invoke UNIX commands
- Provided by one SSI per LPAR with UNIX=YES
- Function is not new – the EQUATE is
- -USS+ GLBL START \$CAPKCAL \$UTUSS OCSCOMMAND +

```
CSNM9----- USS Command - Help -----Page 1 of 1
Command ==> _

Function: Issues a UNIX System Services (USS) command.

Syntax:  USS command_text

Use:     Issues a USS command and returns the response.

Operands: command_text
           Specifies the command to be issued.

Examples: USS hostname

Notes:   The USS command is only available if the region is connected to a
           SOLVE SSI region, and this or another SOLVE SSI on the same system is
           running with UNIX=YES.
```

Changed Feature – /OSA



- Browse panel replaced by interactive widget for CF, D, DL and OAT.
 - More detail in OSA module
- New option TRL

OSA Display – r12.0 (Display only)



```
STNM1
QWS3270 Edit View Options Tools Help MySessions

CSNM2----- TCP/IP : OSA Configuration -----Columns 00001 00079
Command ==> _                               Scroll ==> CSR

Channel Path ID (CHPID)    07
OSA Name                   OSA-07

***** TOP OF DATA *****

General information
Sysplex name              PLEXC1
System name               CA11
Channel sub-type          1000Base-T Ethernet
Current configuration mode QDIO
Hardware model            OSA-Direct Express3
Hardware level            4.00
Channel status            Online
Channel shared?           Yes
OSA processor code level  00.59
Channel node descriptor
  Type number             001730
  Model number            005
  Manufacturer            IBM
  Plant of manufacturer   02
  Sequence number         00000006F686
  Physical identifier      0700

Device information

Device number  Status          Allocated by
6700          online/Allocated NET
6701          online/Allocated NET
6702          online/Allocated NET
6703          online
6704          online
6705          online
6706          online
6707          online
6708          online
6709          online
670A          online
670B          online
F1=Help      F2=Split      F3=Exit      F4=Return    F5=Find
F7=Backward  F8=Forward    F9=Swap      F10=Left     F11=Right

13
Connected to tpx.ca.com port 23
2/15
15:25:24 IBM-3279-4-E - A55T2437
```

OSA Display – r12.1, exploiting IBM API's



```

@ STNM1
QWS3270 Edit View Options Tools Help MySessions

NMQA311----- TCP/IP : OSA Configuration -----
Command ==>                                     scroll ==> CSR

H=Performance History I=Interface Traffic .=Expand or Collapse ??=more actions
-----
OSA ..... OSA-07 ..... CHPID ..... 07 - online
Type ..... DIRECTEXPRESS
Description ..... OSA Direct Express
Monitoring Status ..... ACTIVE
Sysplex ..... PLEXCL ..... Channel sub-type 1000Base-T Ethernet
System ..... CA11 ..... Channel shared? Yes

-----
Hardware Details
Hardware model ..... OSA-Direct Express3
Model number ..... 005
Type number ..... 001730
Manufacturer ..... IBM
Plant of manufacturer ..... 02
Sequence number ..... 00000006F686
Physical identifier ..... 0700
OSA code level ..... 00.59
Hardware level ..... 4.00

-----
details for port 0 - OSD070
details for port 1 - OSD071

-----
Devices in Use
-----
LPAR      Stack      Interface      IP Address
-----
6700
  ◊- CA11      -            -              -
    CHP Status ... online
    Device Status ..... -
-----
6701
  ◻- CA11      -            -              -
-----
6702
  ◊- CA11      TCPIP11E OSA27LNK      141.202.88.11
    TRLE ..... DEV6710X DEV670 TRLE Status ..... ACTIV
    Port Name ..... OSA27LNK      Region Name ..... NMQA311
    CHP Status ... online         Device Status ..... Active
    VLAN ID ..... 88              VMAC Addr ..... -
-----
6710
  ◻- CA11      -            -              -
-----
6711
-----
F1=Help      F2=split    F3=Exit      F5=Find      F6=Refresh
F7=Backward  F8=Forward  F9=Swap      F12=Collapse
  
```

OSA Display – r12.1, exploiting IBM API's, combine data



```

STNM1
QWS3270 Edit View Options Tools Help MySessions

NMQA311----- TCP/IP : OSA Interface -----
Command ==> _ scroll ==> CSR

Interface ..... OSA1          Stack ..... TCPIP11 (CA11)
TRLE/Port name ..... AMF1G01X/OSA000  Port number ..... 00
CHPID ..... 00          Data device ..... 6002
Type ..... OSD (OSA-E3)  Media ..... Multimode Fiber
Speed ..... 1000 mb/sec full duplex
Connection mode ..... Layer 3
IP Version ..... IPV4    Jumbo frames ..... Yes

Interface Traffic Statistics

Application      Bytes      4702M 100% ---10--20--30--40--50--60--70--80--90---
FTP              4489M  95%
TELNET-1023     81.4M   2%
CH-Atlas        59.2M   1%
$Bank-Rural     21M    <1%
19 more...

Time      Packets In      Packets Out      Bytes In      Bytes Out
Stk%      Count          Stk% Count          Stk% Count      Stk% Count
-----
15.30    <1%          3      44%  6899      <1%  276      61%  5728k
15.29     0%           0      41%  9253      0%    0       60%  7180k
15.28     0%           0      66% 15109     0%    0       82%  16.6M
15.27     0%           0      53% 12234     0%    0       73%  12.8M
15.26     0%           0      51%  7378      0%    0       60%  5224k

15.30    <1%          3      51% 50873      <1%  276      70%  47.5M
15.25    <1%          3      46% 52533      <1%  852      60%  50.2M
15.20    <1%          3      17%  672k      <1%  276      26%  961M
15.15    <1%          3      52% 2280k     <1%  852      52%  3355M
15.10    <1%          3      30% 40979     <1%  276      48%  22.2M
15.05    <1%          3      41%  114k      <1%  852      42%  129M
15.00    <1%          3      33% 43040     <1%  276      49%  24.9M
14.55    <1%          3      41% 45993      <1%  852      51%  25.4M
14.50    <1%          3      35% 45889     <1%  276      39%  22.8M
14.45    <1%          3      38% 48122     <1%  852      12%  25.6M
14.40    <1%          3      14% 44059     <1%  276      30%  21.2M
14.35    <1%          3       7% 43124     <1%  852      16%  17M

***** Bottom of data *****
F1=Help      F2=Split    F3=Exit      F5=Find      F6=Refresh
F7=Backward  F8=Forward  F9=Swap      F12=Collapse
    
```

Changed/New Feature - /IPTRL

- /IPTRL is a QDIO only TRLE list
- /OSA menu option TRL
- Displays QDIO only TRLEs - OSA and Hipersocket

```
CSNM9----- NCS : Transport Resource List for QDIO -----
Command ==> _                               Scroll ==> CSR

S/=View TRLE D=Display TRLE DU=Display ULP Stack
--Upper Layer Protocol (ULP)--
TRL      MPC      MPC      HPDT      PU/Stack CP Name      TG
Entry    Ctrl    Status  Level    Usage
-----
AMF1C10X MPC    NEVAC   QDIO     SHARE    *NA*
AMF1C11X MPC    NEVAC   QDIO     SHARE    *NA*
AMF1C12X MPC    NEVAC   QDIO     SHARE    *NA*
AMF1C13X MPC    NEVAC   QDIO     SHARE    *NA*
AMF1F1EX MPC    NEVAC   QDIO     SHARE    *NA*
AMF1G01X MPC    ACTIV  QDIO     SHARE    YES     TCPIP99  -
AMF1G02X MPC    ACTIV  QDIO     SHARE    YES     TCPIP11V -
AMF1G14X MPC    NEVAC   QDIO     SHARE    *NA*
AMF1G15X MPC    NEVAC   QDIO     SHARE    *NA*
DEV6C00  MPC    NEVAC   QDIO     SHARE    *NA*
DEV6C10  MPC    ACTIV  QDIO     SHARE    YES     TCPIP11V -
DEV6200  MPC    ACTIV  QDIO     SHARE    YES     TCPIP11V -
DEV6700X MPC    INACT  QDIO     SHARE    *NA*
DEV6710X MPC    INACT  QDIO     SHARE    *NA*
IUTIQDFE MPC    ACTIV  QDIO     SHARE    YES     TCPIP11V -
IUTIQDIO MPC    ACTIV  QDIO     SHARE    YES     TCPIP11V -

F1=Help      F2=Split    F3=Exit      F5=Find      F6=Refresh
F7=Backward  F8=Forward  F9=Swap      F11=Right
```


Changed Feature - /APPNTRL



- Page 1 – ULP has ‘PU/Stack’
- Page 2 – MajNode displays VTAM major node
- Page 3 – Renamed ‘QDIO Details’ from ‘OSA Details’
 - New CHP field displays CHPID
 - New Type field has OSD, OSX, OSM , IQD
 - Port field replaces Linknum

Changed Feature – Ping/Tracerte



- Interface name can be specified to control the outbound physical interface used
- Useful for checking an interface is working
- Useful for checking a route exists from an interface to a remote node
- Ping command INTF= or INTERFACE= name
- /IPDIAG has prompt list
- /IPNODE Update has Interface Name field
- Independent of Source Address setting

Changed Feature - /PARMS SOCKETS



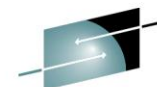
- USS is the new default TCP/IP Software Type
 - R12.0 used HPNS
- Required setting to use interface name on Ping/Tracerte
- Supports IPv4 and IPv6
 - TCPIP_IFINFO('IPVERS') = '6'
- Uses Job Name
 - SHOW ASINFO PRIVATE PGM=EZBTCPIP used to validate values
- TCPIP.DATA autofilled if blank

Changed Feature – Device Links display /OSA.DL



- Interface order is now physical interfaces, VIPAs, Hipersockets, IUTSAMEH, and LOOPBACK devices
- Instead of MPCIPA, the device type displays the following better known names:
 - OSA for IPAQENET and IPAQENET6
 - HiperSocket for IPAIQDIO and IPAIQDIO6

Changed Feature – Interface Display



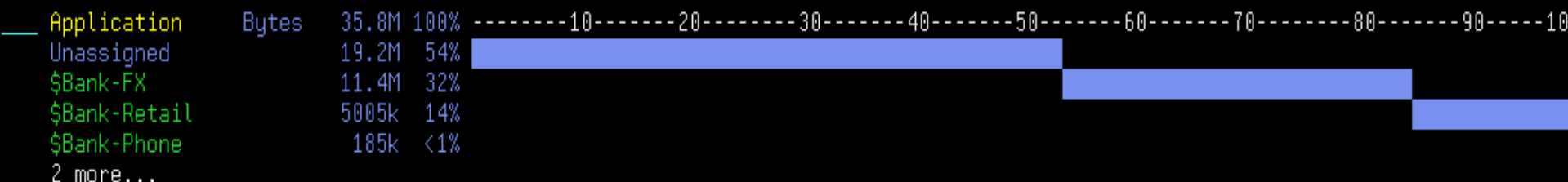
NMDE44----- TCP/IP : OSA Interface -----

Command ==> Scroll ==> CSR

```

Interface ..... OSA          Stack ..... TCPIP11V (CA11)
TRLE/Port name .... AMF1G02X/OSD010  Port number ..... 00
CHPID ..... 01             Data device ..... 6102
Type ..... OSD (OSA-E3)     Media ..... Multimode Fiber
Speed ..... 1000 mb/sec full duplex
Connection mode .... Layer 3     MAC address ..... 00145E79F116
IP Version ..... IPv4        Jumbo frames .... Yes
    
```

Interface Traffic Statistics



Time	Packets In			Packets Out			Bytes In			Bytes Out		
	Stk%	Count		Stk%	Count		Stk%	Count		Stk%	Count	
02.17	95%	336		97%	690		98%	56185		>99%	265k	
02.16	98%	865		98%	1004		>99%	389k		>99%	485k	
02.15	95%	305		96%	363		97%	33067		99%	66863	
02.14	77%	60		85%	97		77%	3733		93%	14365	
02.13	97%	577		97%	666		99%	107k		>99%	146k	
02.15	97%	5243		98%	6636		98%	1209k		>99%	2120k	
02.10	99%	11885		99%	12158		>99%	2180k		>99%	1952k	
02.05	98%	6650		98%	7417		99%	1632k		>99%	1736k	
02.00	97%	6192		98%	7047		99%	1322k		99%	1787k	
01.55	80%	2537		86%	3833		91%	710k		91%	1454k	

Changed Feature – NETSTATUS has PktLoss state



- Previously as long as 1 packet got through the status was Ok
- Now if any packets are dropped NETSTATUS is PktLoss
- IPNM0213 is written to transient log
 - IPNM0213 *nn* percent packet loss from *mm* ping requests
- IPNODE resource goes degraded regardless of alerts

Changed Feature – Actions without Alerts

- Event Detector and Data Sampling support alert severity 0
- Performs the actions for every event or sample

Field: Alert Type

Abbrev	Full Value	Description
AO	ACTIONONLY	Perform actions without an Alert
A	ALERT	Create an Alert
AR	ALERTREPLACE	Create an Alert To Replace old alert
AU	ALERTUPDATE	Create an Alert To Update old alert
C	CLEAR	Clear an Alert

END

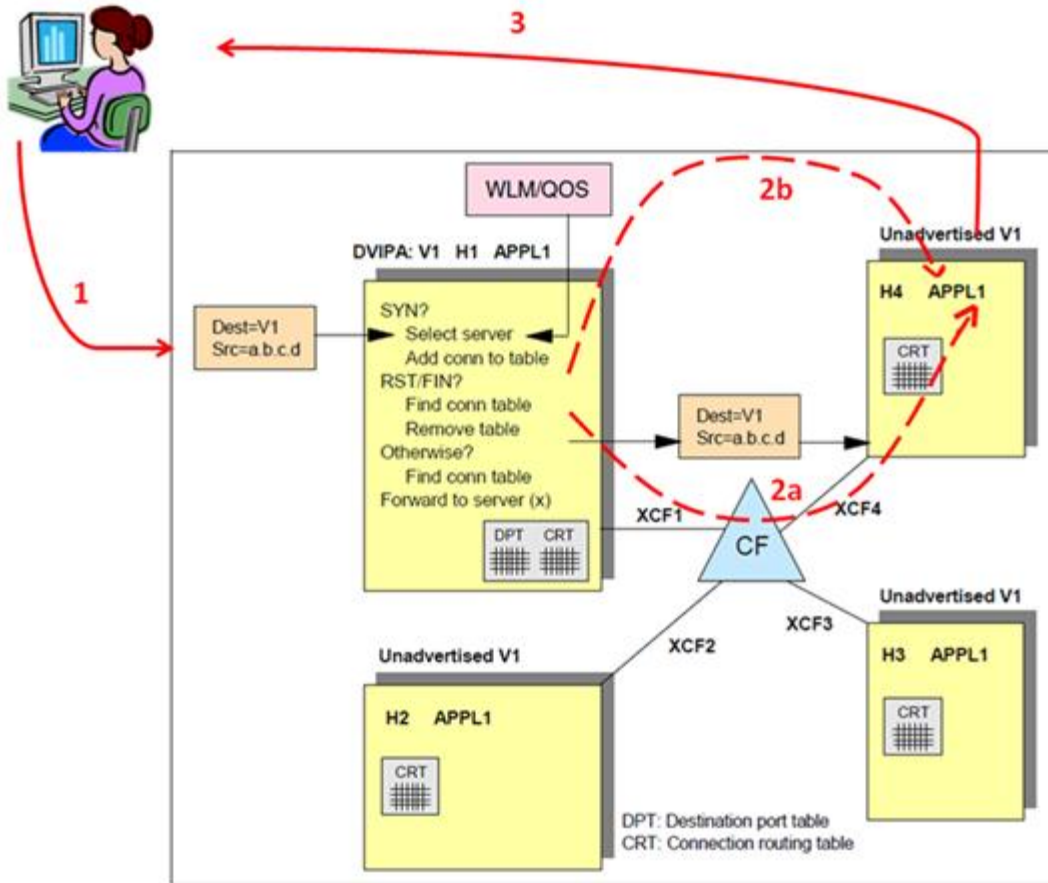
Changed Feature – /VIPA.D



- Browse panel replaced by interactive widget
- More WLM information
- Actions to drilldown
- Graphs to show effects of distribution policy
- DARS addressed for large customers
- More detail in Sysplex Distributor VIPA module

Overview

- What does Sysplex Distributor VIPA do?



1. Inbound packets to the DVIPA address flow to the distributing stack on H1.

2. Distributing stack decides that this TCP conversation will be distributed to H4. Conversation packet will be routed from H1 to H4 in one of the following ways:

- a) Via XCF - The packet is sent unchanged across XCF to the stack on H4 (This was the only option in earlier releases).
- b) Via the network (needs VIPAROUTE configuration statement). Routing is as per normal IP routing, usually hipsockets, or OSA to OSA routes would be defined. In this case the packet is encapsulated in GRE and treated as a normal packet.

3. Outbound packets from H4 go directly to the sender, NOT via H1.

Overview

- /VIPA Menu provides additional support for VIPAs

```
NMDE44----- TCP/IP : VIPA Management -----/VIPA
Select Option ==>

→ D   - VIPA Information                               -
→ CR  - Connection Routing Table                       -
IC    - IP Connections                                 -
ICF   - IP Connections (Advanced)                     -
IT    - Telnet Connections                             -
ITF   - Telnet Connections (Advanced)                 -
OV    - Performance Overview                          -
H     - Performance History                            -
M     - Modify VIPA Definition Using Obeyfile         -
MV    - Monitor VIPAs                                -
X     - Exit                                           -
                                           VIPAMON

System .....+ CA11_____ ( Required )

VIPA Name ...+ _____ ( Required D CR IC ICF IT ITF H M )
```

The D - VIPA information option has been enhanced

Connection Routing Table

This is an existing display that has been made available from the /VIPA menu.

```
NMDE44----- TCP/IP : VIPA Connection Routing Table List -----
Command ==> Scroll ==> CSR

  Dest      DestXCF or
  Port Foreign Host      Port Target Address      Stack      LPAR
  2608      .200.240 2641      .171.8              TCPIP      CA31
**END**
```

VIPA Detail Display - The OLD Display



NMDE44----- TCP/IP : VIPA Detail Display -----Columns 00001 00079
Command ==> Scroll ==> CSR

***** TOP OF DATA *****

VIPA 2.66.13
Link Name VIPL8DCA420D
Origin (CA11) VIPADEFINE
Active Since 09/23/2012 01:15:24

Sysplex Configuration:

Stack	LPAR	Status	Rank	Address Mask	Network Prefix	Dist
TCPIP11V	CA11	ACTIVE		255.255.255.066.0	BOTH
TCPIP	CA31	ACTIVE		255.255.255.0		DEST

Distribution Port Table on CA11:

DPort	Dest	XCF Addr	Rdy	Flgs	Active	Total	TSR	TCSR	CER	SEF	Ab	Health	WLM
601	02.171.9	1		0	0	100	100	100	100	0	100	6
601	02.171.8	1		0	0	100	100	100	100	0	100	9
2608	02.171.9	1		1	1	100	100	100	100	0	100	8
2608	02.171.8	1		0	0	100	100	100	100	0	100	14
1124	02.171.8	1		0	0	100	100	100	100	0	100	16

***** BOTTOM OF DATA *****

VIPA Detail Display - The NEW Display



NMDE44----- TCP/IP : VIPA Detail Display -----
 Command ==> Scroll ==> CSR

PC=Port Connections .=Expand or Collapse ??=more actions

```
VIPA..... 2.66.13
Interface Name ..... VIPL8DCA420D
Origin (CA11) ..... VIPADEFINE
Active Since ..... 09/23/2012 01:15:24
```

Sysplex Configuration

LPAR	Stack	Status	Rank	Dist	DestXCF	Address
CA11	TCPIP11V	ACTIVE		BOTH		2.171.9
CA31	TCPIP31V	ACTIVE		DEST		2.171.8

Distribution Port Table on CA11

LPAR	Stack	Listener	TSR	TCSR	CER	SEF	Total	%	Active	%	
WLM	Ab Hth	Flags	Weight	CP	zAAP	zIIP					
601	Dist Method: ServerWLM						0	0		0	0
└ CA11	TCPIP11V	DENM8	100	100	100	100	0	0	0	0	
└└ 6	0 100	-	25	28/4	0/0	17/20					
└ CA31	TCPIP31V	QANML31	100	100	100	100	0	0	0	0	
└└ 10	0 100	-	40	40/21	0/0	40/18					
2608	Dist Method: ServerWLM						1	100		1	100
└ CA11	TCPIP11V	DENM8	100	100	100	100	1	100	1	100	
└ CA31	TCPIP31V	QANML31	100	100	100	100	0	0	0	0	
1124	Dist Method: BaseWLM						0	0		0	0
└ CA31	TCPIP31V	TCPTN31V	100	100	100	100	0	0	0	0	

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

Improvements

- DestXCF Addresses moved from bottom of display to top and associated with LPAR and STACK.

```
NMDE44----- TCP/IP : VIPA Detail Display -----
Command ==>                                     Scroll ==> CSR

                PC=Port Connections .=Expand or Collapse ??=more actions
-----
VIPA..... 02.66.13
Interface Name ..... VIPL8DCA420D
Origin (CA11) ..... VIPADEFINE
Active Since ..... 09/23/2012 01:15:24

Sysplex Configuration
LPAR      Stack      Status  Rank  Dist  DestXCF Address
-----
CA11      TCPIP11V  ACTIVE  0     BOTH  02.171.9
Address Mask ... 255.255.255.0
Network Prefix .. 02.66.0
CA31      TCPIP31V  ACTIVE  0     DEST  02.171.8
```

Improvements

- Listener column replaces the Rdy column. Listener job name displayed, when a linked NM exists on the target system, instead of listener count. ★
- Distribution Method is displayed ★

```

Distribution Port Table on CA11
-----
LPAR      Stack      Listener  TSR  TCSR  CER  SEF      Total  %   Active  %
WLM      Ab Hth  Flags  Weight  CP    zAAP  zIIP
-----
601      Dist Method: ServerWLM ★
├── CA11  TCPIP11V DENM8 ★ 100  100  100  100      0  0     0  0
├── CA31  TCPIP31V QANML31 100  100  100  100      0  0     0  0
└── 2608  Dist Method: ServerWLM ★
    ├── CA11  TCPIP11V DENM8 ★ 100  100  100  100      1 100    1 100
    └── CA31  TCPIP31V QANML31 100  100  100  100      0  0     0  0
1124     Dist Method: BaseWLM ★
├── CA31  TCPIP31V TCPTN31V ★ 100  100  100  100      0  0     0  0

```

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

Improvements

- Full range of VIPA commands are available via ??

```
NMDE44----- TCP/IP : VIPA Detail Display -----
Command ==>                                     Scroll ==> CSR
PC=Port Connections .=Expand or Collapse ??=more actions
??  VIPA..... 141.202.66.13
    Interface Name ..... VIPL8DCA420D
    Origin (CA11) ..... VIPADEFINE
    Active Since ..... 09/23/2012 01:15:24
```

```
NMDE44----- Valid Line Commands for 141.202.66.13 -----
Command ==>                                     Scroll ==> CSR
S=Select Required Command ?=Command Help

Command      Description
___          _____
CR           Display Connection Routing Table
D            Display General Information
H            Display Performance History
IC           List IP Connections
ICF          List IP Connections (Advanced)
IT           List Telnet Connections
ITF          List Telnet Connections (Advanced)
M            Modify VIPA Definition (using Obeyfile)
OV           Display Performance Overview
S            Display General Information
UM           Update Resource Monitoring Definition
AL           Display Alerts for a Resource
ALF          Acknowledge a Link Failure
CHK          Request a Check of a Resource
CPY          Copy a Resource
DEL          Delete a Resource
EDR          Reset Extended Display Field
L            View a Resource's Transient Log
LR           Reset Transient Log
MAP          Update Availability/Monitoring Map
MI           Set Mode Override to Ignored
MPO         Set Map Override for a Resource
MPR          Reset Map Override for a Resource
MR           Reset Mode Override
RES          Reset All States, Modes and Overrides
SC           Display SAMPLECOLLECT
U            Update Resource Definition
UL           Display USER Log Entries
UMA         Update Monitoring Activity/Alerting
**END**
```



Improvements

- Full range of STACK commands are available via ??

```
NMDE44----- TCP/IP : VIPA Detail Display -----
Command ==>                                     Scroll ==> CSR

PC=I [redacted] actions .=Expand or Collapse ??=more actions
-----
VIPA..... 141.202.66.13
Interface Name ..... VIPL8DCA420D
Origin (CA11) ..... VIPADEFINE
Active Since ..... 09/23/2012 01:15:24

Sysplex Configuration
LPAR      Stack  Status  Rank  Dist  XCF  Address
?? CA11    TCPIP11V ACTIVE  BOTH  202.171.9
-----
Address Mask .... 255.255.255.0
Network Prefix .. 141.202.66.0
CA31     TCPIP31V ACTIVE  DEST  202.171.8
```



```
NMDE44----- Valid Line Commands for TCPIP11V -----
Command ==>                                     Scroll ==> CSR

S=Select Required Command  ?=Command Help
-----
Command      Description
-----
CL           Check Telnet LUs
CMD          Issue Modify to Stack
D           Display Resource Status
DL          Display Device Links
DP          Display Profile Configuration Libraries
DT          Graph TCP Connection Duration Times
H           Display Performance History
IC          List IP Connections
ICF         List IP Connections (Advanced)
IF          List FTP Connections
IL          List TCP Listeners
IP          Display Stack IP Performance History
IPM         Display IP Performance Metrics
IS          Display IPsec Performance History
ISD         List Dynamic Tunnels (IPsec)
ISF         List IP Filters (IPsec)
ISK         List IKE Tunnels (IPsec)
ISM         List Manual Tunnels (IPsec)
ISS         Display IPsec Summary
IST         IPsec Traffic Test
IT          List Telnet Connections
ITF         List Telnet Connections (Advanced)
IU          List IP UDP Connections
LA          List Applications with IP Connections
MIB         Display MIBinsight Browser
NS          Issue NetStat Command
O           Execute Obeyfile
OV          Display Performance Overview
PT          Activate Packet Trace
PTD         Inactivate and Delete Packet Trace
PTI         Inactivate Packet Trace
PTV         View Packet Trace
RI          List Remote IP Addresses
RT          Display Routing Table
S           Display Stack Performance Summary
SA          Display AT-TLS Summary
```

Improvements

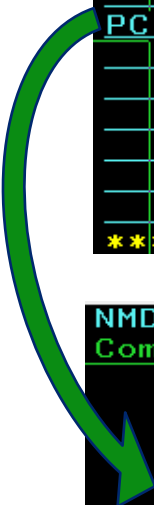
- PC command available against a Port to list connections

```

Distribution Port Table on CA11
-----
LPAR      Stack      Listener  TSR  TCSR  CER  SEF      Total  %    Active  %
WLM      Ab Hth  Flags  Weight  CP    zAAP  zIIP
601      Dist Method: ServerWLM      0    0      0    0
PC  CA11    TCPIP11V DENM8    100   100  100  100      0    0      0    0
   CA31    TCPIP31V QANML31  100   100  100  100      0    0      0    0
2608     Dist Method: ServerWLM      1  100      1  100
   CA11    TCPIP11V DENM8    100   100  100  100      1  100      1  100
   CA31    TCPIP31V QANML31  100   100  100  100      0    0      0    0
1124     Dist Method: BaseWLM        0    0      0    0
   CA31    TCPIP31V TCPTN31V 100   100  100  100      0    0      0    0
***** Bottom of data *****
    
```

```

NMDE44-----|----- TCP/IP : TCP Listeners -----Stack: TCPIP11V
Command ==> |----- Scroll ==> CSR
Line 1 of 2 | Refresh Every ... _____ Seconds
S=View I=Information CS=Statistics PT=Packet Trace Z=Drop ?=Actions
Local      Total Current
Host      LPort  TaskName  Active  Accepted  BackLog  Idle
-----
202.200.140 601  DENM8    0      0          0      0:00:22
*          601  DENM8    1      0          0      10:15:20
**END**
    
```



Improvements

- Provision of raw and proportional zIIP and zAAP figures ★
- Provision of a Total and Active Connection % for each port with a breakdown across each LPAR ★

```

Distribution Port Table on CA11
  LPAR      Stack      Listener  TSR  TCSR CER SEF      Total  %  Active  %
  WLM      Ab Hth  Flags  Weight  CP      zAAP  zIIP
-----
601      Dist Method: ServerWLM
  CA11      TCPIP11V  DENM8    100   100 100 100      0      0      0      0
   4      0 100    -    18   17/8    0/0  19/9  ★
  CA31      TCPIP31V  QANML31  100   100 100 100      0      0      0      0
   7      0 100    -    29   26/13   0/0  36/15  ★
2608     Dist Method: ServerWLM
  CA11      TCPIP11V  DENM8    100   100 100 100      1     100  ★      1     100
   8      0 100    -    35   35/17   0/0  29/17  ★
  CA31      TCPIP31V  QANML31  100   100 100 100      0      0      0      0
  16      0 100    -    64   59/30   0/0  54/34  ★
1124     Dist Method: BaseWLM
  CA31      TCPIP31V  TCPTN31V 100   100 100 100      0      0      0      0
***** Bottom of data *****
  
```

Improvements

- Provision of a graphical representation of the Total and Active Connections % (F11 to view)

```

NMDE44----- TCP/IP : VIPA Detail Display -----
Command ==>                                     Scroll ==> CSR
-----
                                PC=Port Connections .=Expand or Collapse ??=more actions
VIPA.....                               02.66.13
Interface Name ..... VIPL8DCA420D
Origin (CA11) ..... VIPADEFINE
Active Since ..... 09/09/2012 03:01:00

-----
Sysplex Configuration
LPAR      Stack      Status      Rank  Dist  DestXCF  Address
CA11      TCPIP11V  ACTIVE
CA31      TCPIP31V  BACKUP      1     DEST  141.202.171.8

-----
Distribution Port Table on CA11
LPAR      Stack      Listener  Total%
WLM      Ab Hth  Flags  Weight  ---1---2---3---4---5---6---7---8---9---10
601      Dist Method: ServerWL
  CA11    TCPIP11V  DENM8
  CA31    TCPIP31V  QANML31
2608     Dist Method: ServerWL
  CA11    TCPIP11V  DENM8
  CA31    TCPIP31V  QANML31
1124     Dist Method: BaseWLM
  CA31    TCPIP31V  TCPTN31V
***** Bottom of data *****
  
```

```

NMDE44----- TCP/IP : VIPA Detail Display -----
Command ==>                                     Scroll ==> CSR
-----
                                PC=Port Connections .=Expand or Collapse ??=more actions
VIPA.....                               02.66.13
Interface Name ..... VIPL8DCA420D
Origin (CA11) ..... VIPADEFINE
Active Since ..... 09/09/2012 03:01:00

-----
Sysplex Configuration
LPAR      Stack      Status      Rank  Dist  DestXCF  Address
CA11      TCPIP11V  ACTIVE
CA31      TCPIP31V  BACKUP      1     DEST  141.202.171.8

-----
Distribution Port Table on CA11
LPAR      Stack      Listener  Active%
WLM      Ab Hth  Flags  Weight  @  ---1---2---3---4---5---6---7---8---9---10
601      Dist Method: ServerWL
  CA11    TCPIP11V  DENM8
  CA31    TCPIP31V  QANML31
2608     Dist Method: ServerWL
  CA11    TCPIP11V  DENM8
  CA31    TCPIP31V  QANML31
1124     Dist Method: BaseWLM
  CA31    TCPIP31V  TCPTN31V
***** Bottom of data *****
  
```

Sysplex Distributor – r12.0



NMDE44----- TCP/IP : VIPA Detail Display -----Columns 00001 00079
 Command ==> Scroll ==> CSR

***** TOP OF DATA *****

VIPA 02.66.13
 Link Name VIPL8DCA420D
 Origin (CA11) VIPADEFINE
 Active Since 09/09/2012 03:01:00

Sysplex Configuration:

Stack	LPAR	Status	Rank	Address Mask	Network Prefix	Dist
TCPIP11V	CA11	ACTIVE		255.255.255.0	02.66.0	BOTH
TCPIP	CA31	BACKUP	1			DEST

Distribution Port Table on CA11:

DPort	DestXCF	Addr	Rdy	Flgs	Active	Total	TSR	TCSR	CER	SEF	Ab	Health	WLM
601		02.171.9	1		0	0	100	100	100	100	0	100	2
601		02.171.8	1		0	0	100	100	100	100	0	100	4
2608		02.171.9	1		0	0	100	100	100	100	0	100	4
2608		02.171.8	1		0	0	100	100	100	100	0	100	15
1124		02.171.8	1		0	0	100	100	100	100	0	100	5

***** BOTTOM OF DATA *****

Improvements

- Comprehensive Help is available via F1

```
CSNM9----- OSA Device Allocation by LPAR - Help -----Page 1 of 4
Command ==> _

Device Allocation by LPAR
    The display lists the devices by LPAR. The existence of
    multiple LPARs indicates that the OSA is shared. Only
    devices that are started and in use appear in the
    display.

    Dev# identifies the device. The device number is in the
    I/O configuration for the LPAR.

    Note: When embedded in the OSA Configuration display,
    only devices with IP addresses are listed. This list
    appears only for OSAs using OSASF.

    When you expand Dev#, IP addresses associated with this
    OAT entry are listed. An IP address that is prefixed
    with HOME indicates that this address is the current IP
    address used for QDIO traffic. A value of REG indicates
    that this address is registered on the card but is not

    F2=Split      F3=Exit      F4=Return      F6=HelpHelp
```

CA Mainframe Chorus & NetMaster r12.1



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