

Finding Those Needles in the Haystacks with NetView for z/OS V6.1

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IBM

March 12, 2012
Session 10716



Related Sessions

- Thursday, March 15, 9:30, Session 10713
 - “Problem Solving with Consolidated Logs” (Larry Green (IBM))
- Thursday, March 15, 1:30, Session 10833
 - “Intelligent Load Balancing with IBM MultiSite Workload Lifeline” (Mike Fitzpatrick (IBM))

Agenda

- **Timeline**
- Smart Packet Collection
- Packet Trace on the fly
- Expanded Log Browse
- NetView Web Application
- Enterprise Integration
- Serviceability
- GDPS Active/Active

Timeline

- NetView for z/OS V6.1
 - Generally available: May 27, 2011
- NetView for z/OS V5.1 and V5.2
 - End of Support announced: February 1, 2011
 - Effective: March 31, 2012

Agenda

- Timeline
- Smart Packet Collection
- Packet Trace on the fly
- Expanded Log Browse
- NetView Web Application
- Enterprise Integration
- Serviceability
- GDPS Active/Active

Smart Packet Collection

- Analyze packet trace data to allow for easier problem determination

Getting Started

```

Session A - [24 x 80]
File Edit View Communication Actions Window Help
[Icons]
FKXK2A01          IPTrace Control Center          NTVF9

Service Point/Stack: NMP101          Proc: TCPIP          Domain: LOCAL

                Status/Owner      Start          For          Writer
_  CTRACE      SYSTCPIP  NONE/NA       NA           NA           *NONE*
x_ PKTRACE     SYSTCPDA  NONE/NA       NA           NA           *NONE*
_  OSATRACE    SYSTCPOT  ACTIVE/NA     NA           NA           *NONE*

Command ==>
F1=Help      F2=Main Menu  F3=Return    F5=Refresh   F6 =Roll
F7=Backward  F8=Forward    F12=Cancel

MA a
11/004
Connected to remote server/host RALVMR.RALEIGH.IBM.COM using port 23
  
```

Select what to collect

```

Session A - [24 x 80]
File Edit View Communication Actions Window Help
FKXK2A22  PKTTRACE Control SYSTCPDA ACTIVE for NVDomain: LOCAL

Service Point/Stack: NMP101  TCPNAME: TCPIP
PKTS: ACTIVE On Task: TCPPAUTO  GTF: NO

Start Time: 2010-03-31-09:51:55  Writer: *NONE*

Options: 1-START/ADD 2-STOP 3-VIEW PACKETS

Infc/Link      Stat Prot IP Address/Prefix  Ports      Record
                Src Portnm  Dest      Count
3 ALL          *      *
- LOOPBACK     ON  TCP  *                *      *      0
- LOOPBACK6    ON  TCP  *                *      *      0
- TCPIPLINK    ON  TCP  *                *      *      61
- LVIPA1       ON  TCP  *                *      *      0
- TCPIPLINKB   ON  TCP  *                *      *      0
- TCPIPLINK6   ON  TCP  *                *      *      0

Command ==>
F1=Help      F2=Main Menu  F3=Return  F4=Stop SYSTCPDA  F5=Refresh  F6=Roll
F7=Backward  F8=Forward    F9=Assist  F10=PKTS Management  F12=Cancel

MA  a  12/002
Connected to remote server /host RALVMR.RALEIGH.IBM.COM using port 23
  
```


Set filter options

Session A - [24 x 80]

File Edit View Communication Actions Window Help

FKXK2A24 Display Packet Control LOCAL

Service Point/Stack: NMP101 Proc: TCPIP Infc Name: ALL

LAddr * _____

RAddr * _____

PORTNUM * _____ LPort: * _____ RPort: * _____ Protocol 1 1-ALL
 2-TCP
 3-UDP
 4-OSPF
 5- _____ (Number)

Time: Start * _____
 End * _____

MaxRecs: 1 1-Last 100 Truncate: 65535
 2-First

Command ==>

F1=Help F3=Return **F4=View Packets** F6=Roll
 F8=Extended Options F10=Analyze F12=Cancel

MA a 03/060

Connected to remote server/host RALVMR.RALEIGH.IBM.COM using port 23

List of packets meeting filter criteria

```

Session A - [24 x 80]
File Edit View Communication Actions Window Help
FKXK2A26      PKTTRACE  SUMMARY                                     NTVF9
More!+ -

DP  Nr hh:mm:ss.mmmmm IpId   Seq_num   Ack_num   Wndw  Flags
OT  446 08:49:23.561921 03CC  1410079474 3763187835 32768 ACK
IT  445 08:49:23.561819 1E58  3763187834 1410079474 32768 ACK SYN
OT  444 08:49:23.550635 03CB  1410079473           0 32768 SYN
IU  443 08:49:23.537161 0000  protocol=UDP
      2FC58580 00010000 *.Ee..... /.....*
OU  442 08:49:23.536551 03CA  protocol=UDP
      2FC50100 00010000 *.E..... /.....*
OT  441 08:49:16.053717 03C9  709066085 1516932319 32764 ACK PSH RST
OT  440 08:49:08.937043 03C8  2606649455 2804974280 32768 PSH RST
OT  439 08:48:56.842212 03C7  709066085 1516932319 32764 ACK PSH

Command ==>
F1=Help           F3=Return  F4=Details  F5=Refresh   F6=Roll
F7=Backward      F8=Forward F9=Commands F11=Right    F12=Cancel

MA a 14/002
Connected to remote server/host RALVMR.RALEIGH.IBM.COM using port 23
  
```

Packet detail

```

Session A - [24 x 80]
File Edit View Communication Actions Window Help
CNMKWIND OUTPUT FROM Packet Detail LINE 0 OF 48
*----- Top of Data -----*
z/OS TCP/IP Packet Trace Formatter, Copyright IBM Corp. 2000, 2009; 2009.028

**** 2010/03/16
RcdNr Sysname Mnemonic Entry Id Time Stamp Description
-----
441 NMP101 PACKET 00000004 08:49:16.053717 Packet Trace
To Interface : TCPIPLINK Device: QDIO Ethernet Full=52
Tod Clock : 2010/03/16 08:49:16.053715 Intfx: 5
Segment # : 0 Flags: Out
Source : 9.42.45.101
Destination : 9.42.45.196
Source Port : 1028 Dest Port: 23 Asid: 002F TCB: 006B59D0
IpHeader: Version : 4 Header Length: 20
Tos : 00 QOS: Routine Normal Service
Packet Length : 52 ID Number: 03C9
Fragment : Offset: 0
TTL : 64 Protocol: TCP CheckSum: 097F F
Source : 9.42.45.101
TO SEE YOUR KEY SETTINGS, ENTER 'DISPFK'
CMD==> _
M& a 24/009
Connected to remote server/host RALVMR.RALEIGH.IBM.COM using port 23
  
```

Back to summary listing

```

Session A - [24 x 80]
File Edit View Communication Actions Window Help
FKXK2A26      PKTTRACE  SUMMARY                                     NTVF9
More:+ -

DP  Nr hh:mm:ss.mmmmm IpId   Seq_num  Ack_num  Wndw  Flags
OT  446 08:49:23.561921 03CC  1410079474 3763187835 32768 ACK
IT  445 08:49:23.561819 1E58  3763187834 1410079474 32768 ACK SYN
OT  444 08:49:23.550635 03CB  1410079473          0 32768 SYN
IU  443 08:49:23.537161 0000  protocol=UDP
      2FC58580 00010000 *.Ee..... /.....*
OU  442 08:49:23.536551 03CA  protocol=UDP
      2FC50100 00010000 *.E..... /.....*
OT  441 08:49:16.053717 03C9  709066085 1516932319 32764 ACK PSH RST
OT  440 08:49:08.937043 03C8  2606649455 2804974280 32768 PSH RST
OT  439 08:48:56.842212 03C7  709066085 1516932319 32764 ACK PSH

Command ==>
F1=Help          F3=Return      F4=Details    F5=Refresh    F6=Roll
F7=Backward     F8=Forward    F9=Commands   F11=Right     F12=Cancel

M@ a                                                    14/002
Connected to remote server/host RALVMR.RALEIGH.IBM.COM using port 23
  
```

Session Report

```

Session A - [24 x 80]
File Edit View Communication Actions Window Help
FKXK2A28      PKTRACE  SUMMARY  COMMANDS      NTVF9
DP  Nr hh:mm:ss.mmmmm IpId *****
OT  446 08:49:23.561921 03CC 1  7_ Command
IT  445 08:49:23.561819 1E58 3      1. Ping      (RAddr)
OT  444 08:49:23.550635 03CB 1      2. TraceRte (RAddr)
IU  443 08:49:23.537161 0000 p      3. Hostnames
OU  442 08:49:23.536551 03CA p      4. Connections
      2FC585      5. SNMP      (RAddr)
      2FC501      6. SNMP      (Stack)
      2FC501      7. IP Trace Session
OT  441 08:49:16.053717 03C9      Report w/Maxrecs 100
OT  440 08:49:08.937043 03C8 2      F1=Help      F3=Return
      F6=Roll      F12=Cancel
OT  439 08:48:56.842212 03C7 709066085 1516932319 32764 ACK PSH
  
```

New

MA a

04/036

Connected to remote server/host RALVMR.RALEIGH.IBM.COM using port 23

Summary analysis for that session

Session A - [24 x 80]

File Edit View Communication Actions Window Help

FKXK2B51 Session Analysis LOCAL

Local IP 9.42.45.101
 Port 1028 Host Name nmp101.tivlab.raleigh.ibm.com

Remote IP 9.42.45.196
 Port 23 Host Name nmp196.tivlab.raleigh.ibm.com

Total Packets Summarized 78 Status CLOSED (ACTIVE RESET)

Flags	Inbound	Outbound	Window Size	Inbound	Outbound
Retransmissions	0	0	Largest	32768	32768
Duplicate Acks	0	2	Average	32741	32746
Reset	0	1	Smallest	32637	32592
Window Size 0	0	0			
Window Probes	0	0			
Delay Ack	1	14			

Command ==> _

F1=Help F3=Return F6=Roll
 F8=Packets F9=Actions F10=Report F12=Cancel

MA a 22/015

Connected to remote server/host RALVMR.RALEIGH.IBM.COM using port 23

Individual packets for the session

duplicate
ack

delayed
ack

Session A - [24 x 80]

FKXX2B53 Session Analysis Packets LOCAL
More!+

Packet Summary

Proto	IO	F	Seq	Ack	RcvWnd	Data	Delta	Time	TimeStamp
S	0	.	709065838	0	32768	0	0.000000	08:48:32.554268	
A	S	I	1516924025	709065839	32768	0	0.000793	08:48:32.555061	
A	0	u	709065839	1516924026	32768	0	0.000044	08:48:32.555105	
AP	I	.	1516924026	709065839	32768	3	0.001814	08:48:32.556919	
A	0	d	709065839	1516924029	32765	0	0.236337	08:48:32.793256	
AP	0	.	709065839	1516924029	32765	3	0.630173	08:48:33.423429	
AP	0	.	709065842	1516924029	32765	3	0.000363	08:48:33.423792	
AP	I	+	1516924029	709065842	32765	3	0.000590	08:48:33.424382	
AP	0	d	709065845	1516924032	32765	0	0.270321	08:48:33.694703	
AP	I	+	1516924032	709065845	32765	6	0.000804	08:48:33.695507	
AP	0	+	709065845	1516924038	32762	18	0.000195	08:48:33.695702	
AP	I	+	1516924038	709065863	32750	3	0.000683	08:48:33.696385	
AP	0	+	709065863	1516924041	32765	3	0.000065	08:48:33.696450	
AP	0	.	709065866	1516924041	32765	3	0.000073	08:48:33.696523	
AP	I	+	1516924041	709065869	32762	9	0.000502	08:48:33.697025	
AP	0	+	709065869	1516924050	32759	3	0.000093	08:48:33.697118	

Command ==>

F1=Help F3=Return F4=Packet Detail F6=Roll
F7=Backward F8=Forward F11=Right F12=Cancel

MA a 05/002

Connected to remote server/host RALVMR.RALEIGH.IBM.COM using port 23

Go to packet details

Session A - [24 x 80]

File Edit View Communication Actions Window Help

FKXK2B54 Session Analysis Packets LOCAL
More: -

Packet Summary

RcdNr	State	Inf	Ip_id	Rtt	TimeStmpV	TimeStmpE	UrPtr	CgWnd
427	ESTABLISHED	5	1E51	0.68	3275787.175	3275787.094	0	964
428	ESTABLISHED	5	03C1	0.68	3275787.175	3275787.459	0	750
429	ESTABLISHED	5	1E52	0.68	3275787.459	3275787.459	0	1018
430	ESTABLISHED	5	03C2	0.68	3275787.459	3275787.759	0	750
431	ESTABLISHED	5	03C3	0.68	3275787.459	3275789.462	0	750
432	ESTABLISHED	5	1E53	0.63	3275789.489	3275789.462	0	1072
433	ESTABLISHED	5	03C4	0.63	3275789.489	3275789.763	0	804
434	ESTABLISHED	5	1E54	0.63	3275789.764	3275789.763	0	1125
435	ESTABLISHED	5	03C5	0.63	3275789.764	3275790.063	0	804
436	ESTABLISHED	5	1E55	0.63	3275792.503	3275790.063	0	1179
437	ESTABLISHED	5	03C6	0.63	3275792.503	3275792.769	0	804
438	ESTABLISHED	5	1E56	0.63	3275792.769	3275792.769	0	1232
439	ESTABLISHED	5	03C7	0.63	3275792.769	3275793.069	0	804
441	CLOSED	5	03C9	0.63	3275792.769	3275812.281	0	804

Command ==>

F1=Help F3=Return **F4=Packet Detail** F6=Roll
 F7=Backward F8=Forward F10=Left F12=Cancel

MA a 18/002

Connected to remote server/host RALVMR.RALEIGH.IBM.COM using port 23

Packet Details

```

Session A - [24 x 80]
File Edit View Communication Actions Window Help
[Icons]
CNMKWIND OUTPUT FROM Packet Detail LINE 0 OF 48
*----- Top of Data -----*
z/OS TCP/IP Packet Trace Formatter, Copyright IBM Corp. 2000, 2009; 2009.028

**** 2010/03/16
RcdNr Sysname Mnemonic Entry Id Time Stamp Description
-----
441 NMP101 PACKET 00000004 08:49:16.053717 Packet Trace
To Interface : TCPIPLINK Device: QDIO Ethernet Full=52
Tod Clock : 2010/03/16 08:49:16.053715 Intfx: 5
Segment # : 0 Flags: Out
Source : 9.42.45.101
Destination : 9.42.45.196
Source Port : 1028 Dest Port: 23 Asid: 002F TCB: 006B59D0
IpHeader: Version : 4 Header Length: 20
Tos : 00 QOS: Routine Normal Service
Packet Length : 52 ID Number: 03C9
Fragment : Offset: 0
TTL : 64 Protocol: TCP CheckSum: 097F F
Source : 9.42.45.101
TO SEE YOUR KEY SETTINGS, ENTER 'DISPFK'
CMD==> _
M& a 24/009
Connected to remote server/host RALVMR.RALEIGH.IBM.COM using port 23
  
```

Back to Summary Analysis

Session A - [24 x 80]

File Edit View Communication Actions Window Help

FKXK2B51 Session Analysis LOCAL

Local IP 9.42.45.101
 Port 1028 Host Name nmp101.tivlab.raleigh.ibm.com

Remote IP 9.42.45.196
 Port 23 Host Name nmp196.tivlab.raleigh.ibm.com

Total Packets Summarized 78 Status CLOSED (ACTIVE RESET)

Flags	Inbound	Outbound	Window Size	Inbound	Outbound
Retransmissions	0	0	Largest	32768	32768
Duplicate Acks	0	2	Average	32741	32746
Reset	0	1	Smallest	32637	32592
Window Size 0	0	0			
Window Probes	0	0			
Delay Ack	1	14			

Command ==> _

F1=Help F3=Return F6=Roll
 F8=Packets F9=Actions F10=Report F12=Cancel

MA a 22/015

Connected to remote server/host RALVMR.RALEIGH.IBM.COM using port 23

Session Report

```

Session A - [24 x 80]
File Edit View Communication Actions Window Help
[Icons]
CNMKWIND OUTPUT FROM Session Report LINE 0 OF 213
*----- Top of Data -----*
BNH773I NUMBER OF PACKETS: 78 , MISSED BUFFERS: 0 , TCPNAME: TCPIP
z/OS TCP/IP Packet Trace Formatter, Copyright IBM Corp. 2000, 2009; 2009.028

**** 2010/03/16
      No packets required reassembly

=====
Interface Table Report
Index Count Link          Address
      5    78 TCPIPLINK    9.42.45.101
=====

Tcp Sessions Report
      1 sessions found
-----

78 packets summarized

Local Ip Address:          9.42.45.101
Remote Ip Address:        9.42.45.196

TO SEE YOUR KEY SETTINGS, ENTER 'DISPFK'
CMD==> _

MA a 24/009
Connected to remote server/host RALVMR.RALEIGH.IBM.COM using port 23
  
```

Session Report (cont.)

```

Session A - [24 x 80]
File Edit View Communication Actions Window Help
CNMKWIND OUTPUT FROM Session Report LINE 20 OF 213

Host:                Local,           Remote
Client or Server:   SERVER,         CLIENT
Port:               1028,          23
Application:        ,             telnet
Link speed (parm):  10,             10 Megabits/s

Connection:
First timestamp:    2010/03/16 08:48:32.554268
Last timestamp:     2010/03/16 08:49:16.053717
Duration:           00:00:43.499449
Average Round-Trip-Time: 0.042 sec
Final Round-Trip-Time: 0.627 sec
Final state:        CLOSED (ACTIVE RESET)
Out-of-order timestamps: 0

Data Quantity & Throughput:  Inbound,      Outbound
Application data bytes:    8293,         245
Sequence number delta:     8294,         247
Total bytes Sent:          8293,         246
TO SEE YOUR KEY SETTINGS, ENTER 'DISPFK'
CMD==> _

M&A a 24/009
Connected to remote server/host RALVMR.RALEIGH.IBM.COM using port 23
  
```

Session Report (cont.)

```

Session A - [24 x 80]
File Edit View Communication Actions Window Help
[Icons]
CNMKWIND OUTPUT FROM Session Report LINE 40 OF 213
Total bytes Sent:          8293,          246
Bytes retransmitted:       0,           0
Throughput:                0.186,          0.005 Kilobytes/s
Bandwidth utilization:     0.01%,          0.00%
Delay ACK Threshold:       200,          200 ms
Minimum Ack Time:         0.000686,      0.000045
Average Ack Time:         0.000686,      0.000077
Maximum Ack Time:         0.000686,      0.000152

Data Segment Stats:
                          Inbound,      Outbound
Number of data segments:  37,          16
Maximum segment size:    536,          536
Largest segment size:    524,          131
Average segment size:    224,          15
Smallest segment size:   3,           3
Segments/window:         1.5,          1.0
Average bytes/window:    345,          15
Most bytes/window:       2414,         131

Window Stats:
                          Inbound,      Outbound
Number of windows:       24,          16
TO SEE YOUR KEY SETTINGS, ENTER 'DISPFK'
CMD==> _
MA a
24/009
Connected to remote server/host RALVMR.RALEIGH.IBM.COM using port 23
  
```

Session Report (cont.)

```

Session A - [24 x 80]
File Edit View Communication Actions Window Help
CNMKWIND OUTPUT FROM Session Report LINE 60 OF 213
Number of windows:                24,          16
Maximum window size:              65536,     65536
Largest window advertised:         32768,     32768
Average window advertised:         32741,     32746
Smallest window advertised:        32637,     32592
Window scale factor:               0,          0
Window frequency:                  0.5517,    0.3678 Windows/s
Time Stamp updates:               25,          34
Total Round Trip Time:             23.987200, 43.499520 (43.08%), (78.12%)
Average Round Trip Time:           0.000000,  0.000000
Maximum Data in Pipe:              2414,       131
Maximum retransmission:            0,          0

Number of:                          Inbound,      Outbound
Packets:                             40,           38
(x) Untraced Packets:                 0,           0
(.) In-order data:                    25,           12 (62.50%), (31.57%)
(a) Acknowledgments:                  1,           5 ( 2.50%), (13.15%)
(+) Data and ACK:                      12,          4 (30.00%), (10.52%)
(u) Duplicate ACKs:                   0,           2 ( 0.00%), ( 5.26%)
(w) Window size updates:              0,           0 ( 0.00%), ( 0.00%)

TO SEE YOUR KEY SETTINGS, ENTER 'DISPFK'
CMD==> _
MA a 24/009
Connected to remote server/host RALVMR.RALEIGH.IBM.COM using port 23
  
```

Session Report (cont.)

```

Session A - [24 x 80]
File Edit View Communication Actions Window Help
CNMKWIND OUTPUT FROM Session Report LINE 80 OF 213
(w) Window size updates:      0,      0 ( 0.00%), ( 0.00%)
(z) Zero window sizes:       0,      0 ( 0.00%), ( 0.00%)
(p) Window probes:           0,      0 ( 0.00%), ( 0.00%)
(k) Keepalive segments:      0,      0 ( 0.00%), ( 0.00%)
(r) Retransmissions:         0,      0 ( 0.00%), ( 0.00%)
(o) Out-of-order:            0,      0 ( 0.00%), ( 0.00%)
(d) Delayed ACKs:            1,     14 ( 2.50%), (36.84%)
(f) Fragments:                0,      0 ( 0.00%), ( 0.00%)
(!) Dropped:                  0,      0 ( 0.00%), ( 0.00%)

Time Spent on:
      Inbound,      Outbound
(.) In-order data:      00:00:02.812564, 00:00:17.003941 ( 5.05%), (30.53%)
(a) Acknowledgments:   00:00:00.000686, 00:00:00.000386 ( 0.00%), ( 0.00%)
(+) Data and ACK:      00:00:00.169316, 00:00:00.009662 ( 0.30%), ( 0.01%)
(u) Duplicate ACKs:    00:00:00.000000, 00:00:19.211549 ( 0.00%), (34.50%)
(w) Window size updates: 00:00:00.000000, 00:00:00.000000 ( 0.00%), ( 0.00%)
(z) Zero window sizes: 00:00:00.000000, 00:00:00.000000 ( 0.00%), ( 0.00%)
(p) Window probes:     00:00:00.000000, 00:00:00.000000 ( 0.00%), ( 0.00%)
(k) Keepalive segments: 00:00:00.000000, 00:00:00.000000 ( 0.00%), ( 0.00%)
(r) Retransmissions:   00:00:00.000000, 00:00:00.000000 ( 0.00%), ( 0.00%)
(o) Out-of-order:      00:00:00.000000, 00:00:00.000000 ( 0.00%), ( 0.00%)
TO SEE YOUR KEY SETTINGS, ENTER 'DISPFK'
CMD==> _
M&A a 24/009
Connected to remote server/host RALVMR.RALEIGH.IBM.COM using port 23
  
```

Session Report (cont.)

```

Session A - [24 x 80]
File Edit View Communication Actions Window Help
[Icons]
CNMKWIND OUTPUT FROM Session Report LINE 100 OF 213
(o) Out-of-order: 00:00:00.000000, 00:00:00.000000 ( 0.00%), ( 0.00%)
(d) Delayed ACKs: 00:00:00.298475, 00:00:03.992077 ( 0.53%), ( 7.16%)
(f) Fragments: 00:00:00.000000, 00:00:00.000000 ( 0.00%), ( 0.00%)

Number of: Inbound, Outbound
( S ) SYN: 0, 1 ( 0.00%), ( 2.63%)
( A S ) ACK SYN: 1, 0 ( 2.50%), ( 0.00%)
( F ) FIN: 0, 0 ( 0.00%), ( 0.00%)
( A F ) ACK FIN: 0, 0 ( 0.00%), ( 0.00%)
( R ) RST: 0, 1 ( 0.00%), ( 2.63%)
( U ) URG: 0, 0 ( 0.00%), ( 0.00%)

Time Spent on: Inbound, Outbound
( S ) SYN: 00:00:00.000000, 00:00:00.000000 ( 0.00%), ( 0.00%)
( A S ) ACK SYN: 00:00:00.000793, 00:00:00.000000 ( 0.00%), ( 0.00%)
( F ) FIN: 00:00:00.000000, 00:00:00.000000 ( 0.00%), ( 0.00%)
( A F ) ACK FIN: 00:00:00.000000, 00:00:00.000000 ( 0.00%), ( 0.00%)
( R ) RST: 00:00:00.000000, 00:00:19.211505 ( 0.00%), (34.50%)
( U ) URG: 00:00:00.000000, 00:00:00.000000 ( 0.00%), ( 0.00%)

Messages:
I - Inbound packet
TO SEE YOUR KEY SETTINGS, ENTER 'DISPFK'
CMD==> _

M&A a 24/009
Connected to remote server/host RALVMR.RALEIGH.IBM.COM using port 23
  
```


Session Report (cont.)

```

Session A - [24 x 80]
File Edit View Communication Actions Window Help
CNMKWIND OUTPUT FROM Session Report LINE 120 OF 213
  I - Inbound packet
  O - Outbound packet

TcpHdr  IO F      Seq      Ack RcvWnd  Data Delta Time      TimeStamp  Rc
      S  0    709065838      0  32768    0   0.000000 08:48:32.554268
      A  S  I    1516924025  709065839  32768    0   0.000793 08:48:32.555061
      A  O  u    709065839  1516924026  32768    0   0.000044 08:48:32.555105
      AP I  .    1516924026  709065839  32768    3   0.001814 08:48:32.556919
      A  O  d    709065839  1516924029  32765    0   0.236337 08:48:32.793256
      AP O  .    709065839  1516924029  32765    3   0.630173 08:48:33.423429
      AP O  .    709065842  1516924029  32765    3   0.000363 08:48:33.423792
      AP I  +    1516924029  709065842  32765    3   0.000590 08:48:33.424382
      AP O  d    709065845  1516924032  32765    0   0.270321 08:48:33.694703
      AP I  +    1516924032  709065845  32765    6   0.000804 08:48:33.695507
      AP O  +    709065845  1516924038  32762   18   0.000195 08:48:33.695702
      AP I  +    1516924038  709065863  32750    3   0.000683 08:48:33.696385
      AP O  +    709065863  1516924041  32765    3   0.000065 08:48:33.696450
      AP O  .    709065866  1516924041  32765    3   0.000073 08:48:33.696523
      AP I  +    1516924041  709065869  32762    9   0.000502 08:48:33.697025
      AP O  +    709065869  1516924050  32759    3   0.000093 08:48:33.697118
      AP O  .    709065872  1516924050  32759    3   0.000065 08:48:33.697183

TO SEE YOUR KEY SETTINGS, ENTER 'DISPFK'
CMD==> _
MA a
24/009
Connected to remote server/host RALVMR.RALEIGH.IBM.COM using port 23
  
```

Session Report (cont.)

```

Session A - [24 x 80]
File Edit View Communication Actions Window Help
CNMKWIND OUTPUT FROM Session Report LINE 200 OF 213
  AP    0 d  709066085 1516932319 32764    0  0.299936 08:48:56.842212
  APR   0 u  709066085 1516932319 32764    0 19.211505 08:49:16.053717
32768 bytes of storage were used for the session report

=====
SYSTCPDA Trace Statistics
  78 ctrace records processed
    0 segmented trace records read
    0 segmented trace records were lost
  78 trace records read
    0 records could not be validated
  78 records passed filtering
  78 packet trace records processed
    0 data trace records processed

*----- Bottom of Data -----*

TO SEE YOUR KEY SETTINGS, ENTER 'DISPFK'
CMD==> _

MA a 24/009
Connected to remote server/host RALVMR.RALEIGH.IBM.COM using port 23
  
```

Summary Analysis for that session

Session A - [24 x 80]

File Edit View Communication Actions Window Help

FKXK2B51 Session Analysis LOCAL

Local IP 9.42.45.101
 Port 1028 Host Name nmp101.tivlab.raleigh.ibm.com

Remote IP 9.42.45.196
 Port 23 Host Name nmp196.tivlab.raleigh.ibm.com

Total Packets Summarized 78 Status CLOSED (ACTIVE RESET)

Flags	Inbound	Outbound	Window Size	Inbound	Outbound
Retransmissions	0	0	Largest	32768	32768
Duplicate Acks	0	2	Average	32741	32746
Reset	0	1	Smallest	32637	32592
Window Size 0	0	0			
Window Probes	0	0			
Delay Ack	1	14			

Command ==> _

F1=Help F3=Return F6=Roll
 F8=Pkts F9=Actions F10=Report F12=Cancel

MA a 22/015

Connected to remote server/host RALVMR.RALEIGH.IBM.COM using port 23

Commands Available for this Session

```

Session A - [24 x 80]
File Edit View Communication Actions Window Help
FKXK2B51 Session Analysis LOCAL

Local IP 9.42.45.101
Port 1028 Host Name nmp101.ti
Remote IP 9.42.45.196
Port 23 Host Name nmp196.t

Total Packets Summarized 78 Stat

Flags Inbound Outbound
-----
Retransmissions 0 0
Duplicate Acks 0 2
Reset 0 1
Window Size 0 0
Window Probes 0 0
Delay Ack 1 14

Command ==> _
F1=Help F3=Return F6=Roll
F8=Pkets F10=Report F12=Cancel

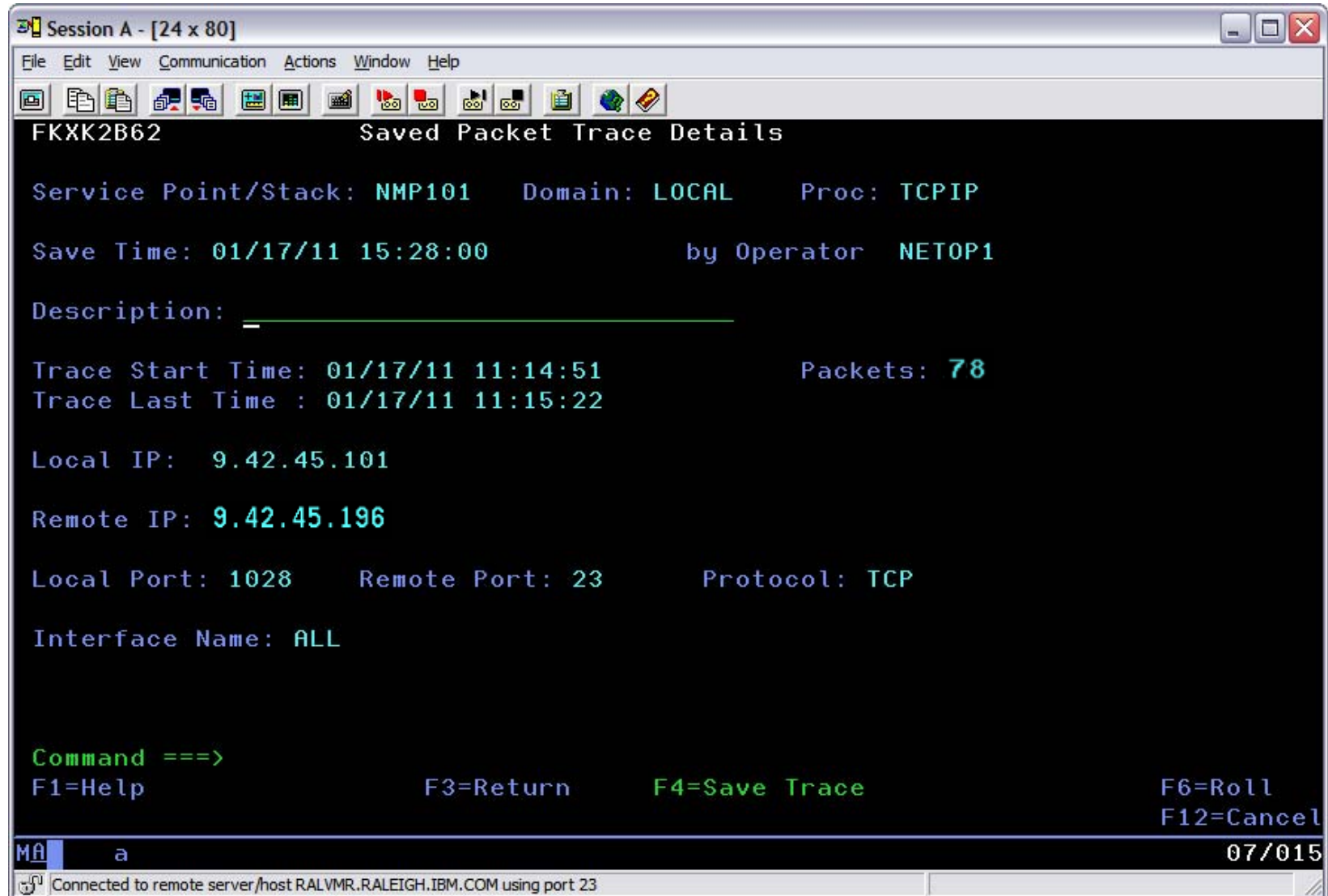
MA a 22/015
Connected to remote server/host RALVMR.RALEIGH.IBM.COM using port 23
  
```

Command

1. Drop Connection
2. Save Session Packets

F1=Help F3=Return
F6=Roll F12=Cancel

Save Session Packets



Session A - [24 x 80]

File Edit View Communication Actions Window Help

FKXK2B62 Saved Packet Trace Details

Service Point/Stack: NMP101 Domain: LOCAL Proc: TCPIP

Save Time: 01/17/11 15:28:00 by Operator NETOP1

Description: _____

Trace Start Time: 01/17/11 11:14:51 Packets: 78

Trace Last Time : 01/17/11 11:15:22

Local IP: 9.42.45.101

Remote IP: 9.42.45.196

Local Port: 1028 Remote Port: 23 Protocol: TCP

Interface Name: ALL

Command ==>

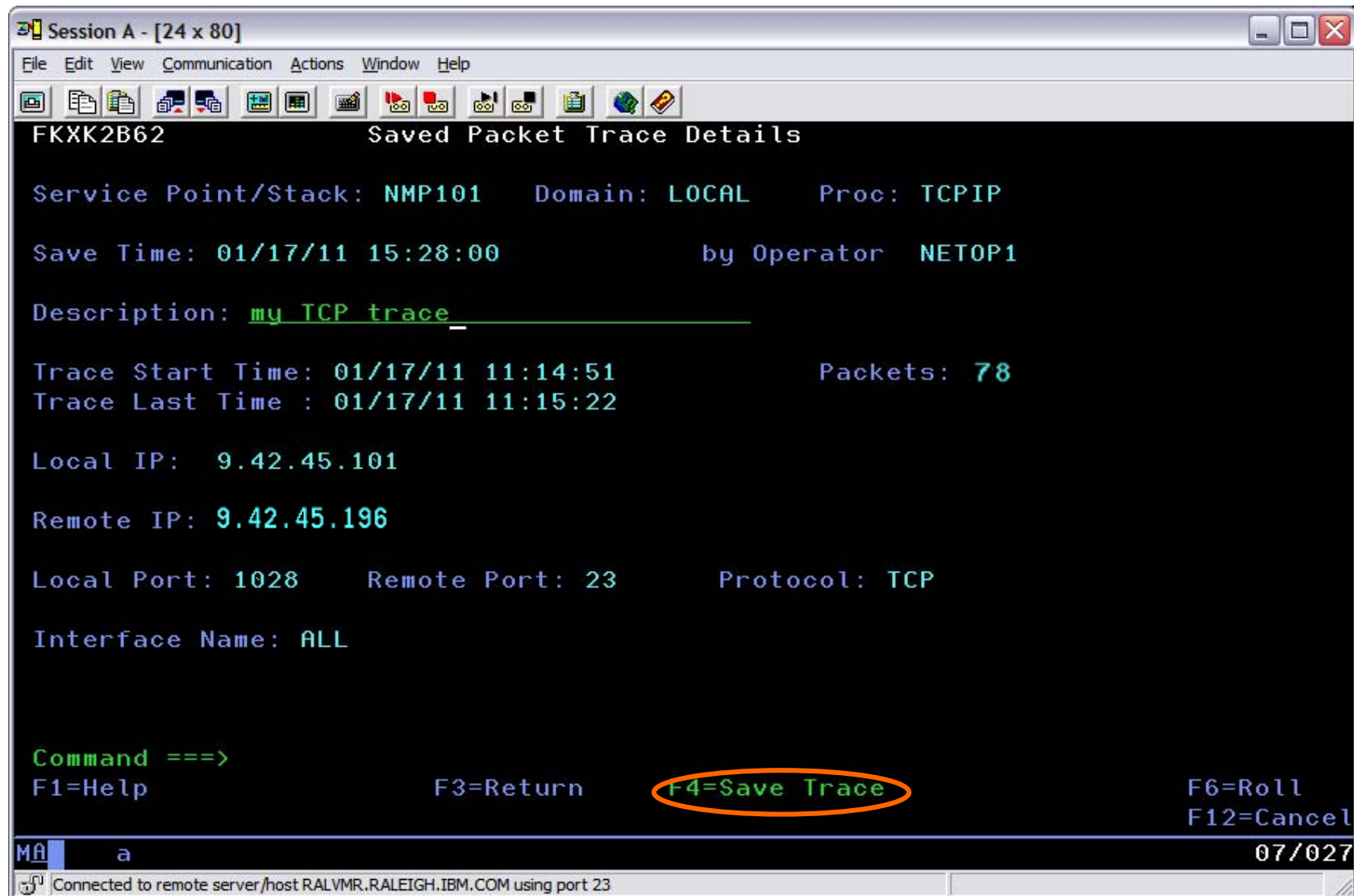
F1=Help F3=Return F4=Save Trace F6=Roll

F12=Cancel

MA a 07/015

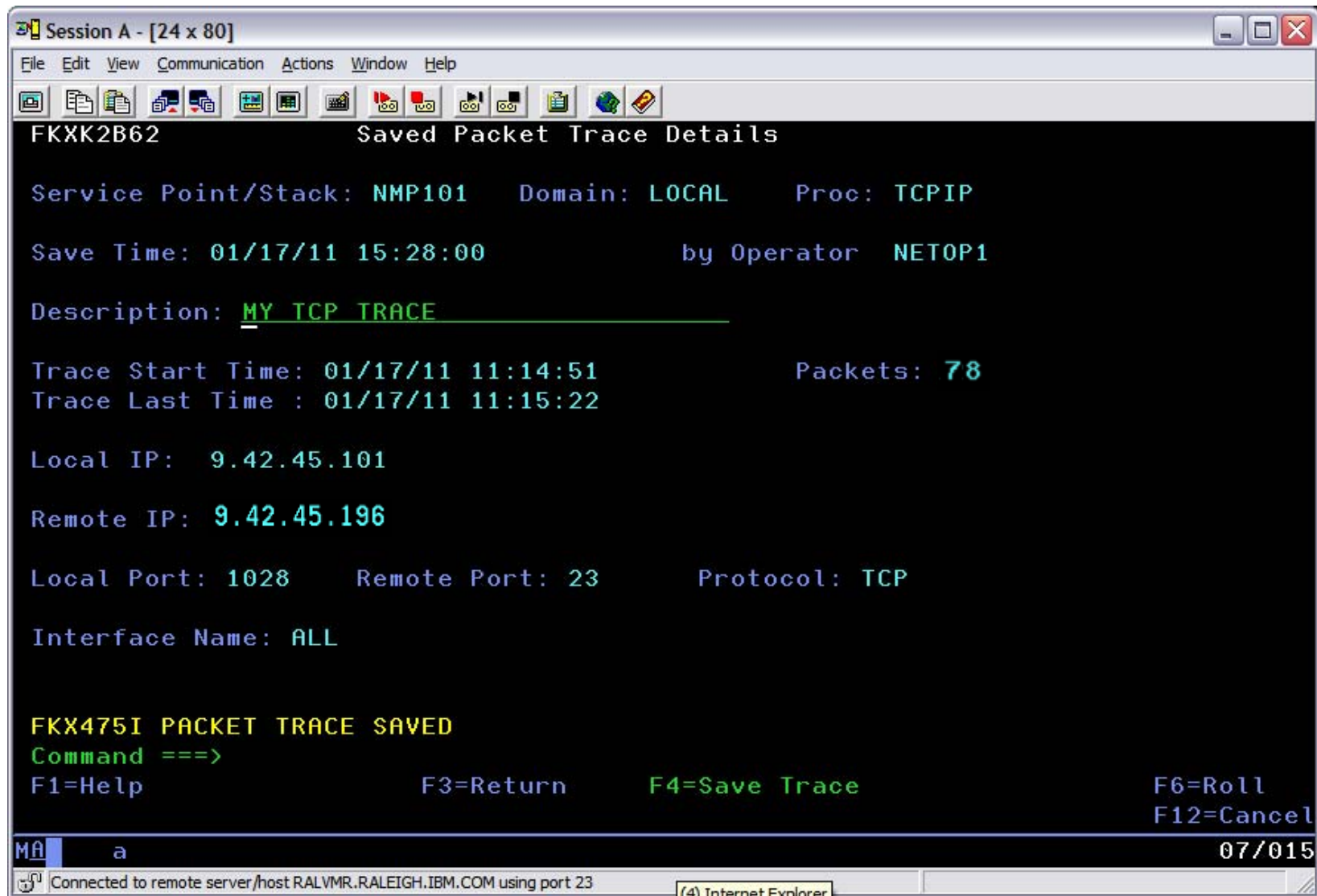
Connected to remote server/host RALVMR.RALEIGH.IBM.COM using port 23

Save Session Packets



```
Session A - [24 x 80]
File Edit View Communication Actions Window Help
FKXX2B62 Saved Packet Trace Details
Service Point/Stack: NMP101 Domain: LOCAL Proc: TCPIP
Save Time: 01/17/11 15:28:00 by Operator NETOP1
Description: my TCP trace
Trace Start Time: 01/17/11 11:14:51 Packets: 78
Trace Last Time : 01/17/11 11:15:22
Local IP: 9.42.45.101
Remote IP: 9.42.45.196
Local Port: 1028 Remote Port: 23 Protocol: TCP
Interface Name: ALL
Command ==>
F1=Help F3=Return F4=Save Trace F6=Roll
F12=Cancel
MA a 07/027
Connected to remote server/host RALVMR.RALEIGH.IBM.COM using port 23
```

Save Session Packets



```

Session A - [24 x 80]
File Edit View Communication Actions Window Help
FKXK2B62          Saved Packet Trace Details

Service Point/Stack: NMP101      Domain: LOCAL      Proc: TCPIP
Save Time: 01/17/11 15:28:00      by Operator  NETOP1
Description: MY TCP TRACE
Trace Start Time: 01/17/11 11:14:51      Packets: 78
Trace Last Time : 01/17/11 11:15:22

Local IP: 9.42.45.101
Remote IP: 9.42.45.196

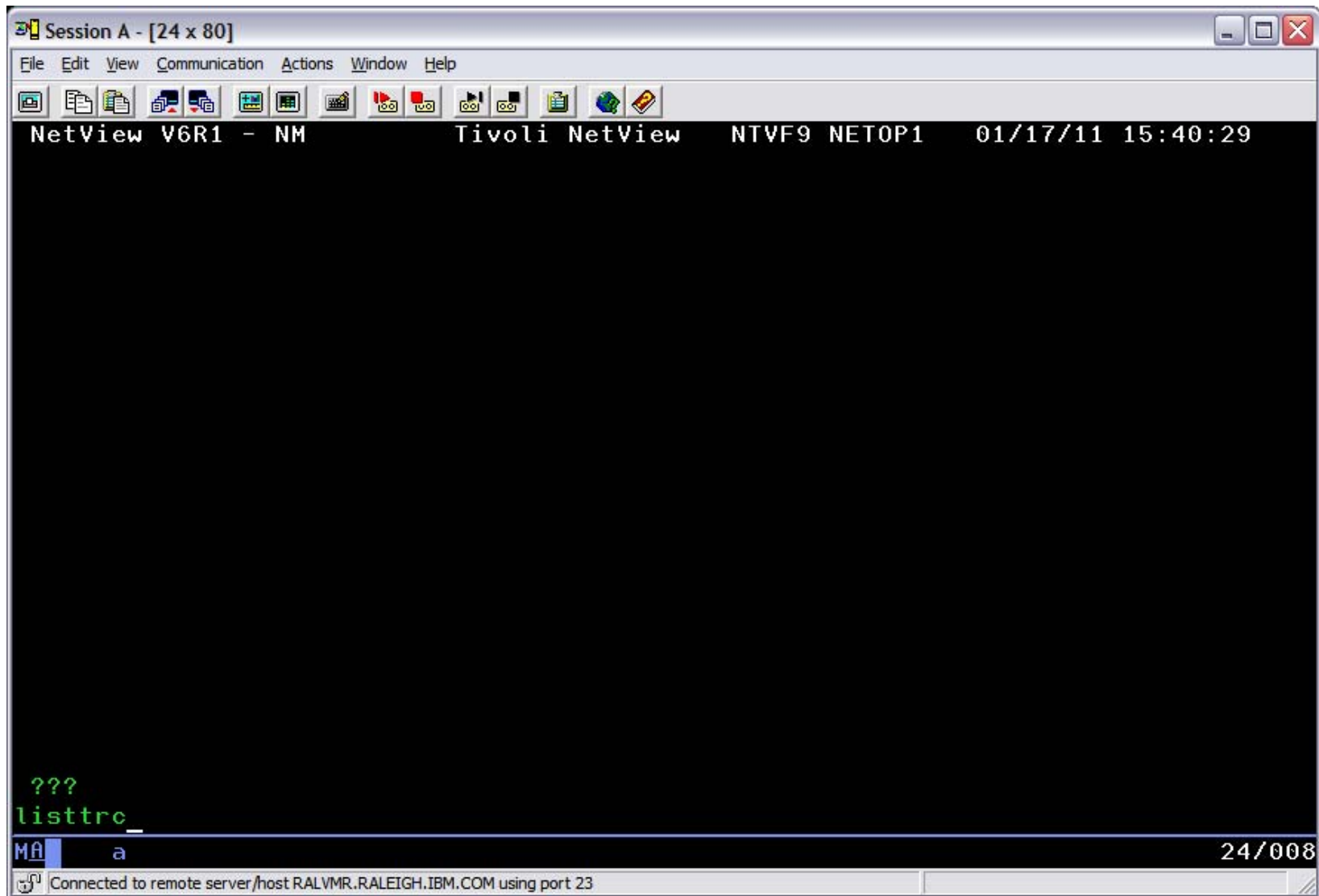
Local Port: 1028      Remote Port: 23      Protocol: TCP

Interface Name: ALL

FKX475I PACKET TRACE SAVED
Command ==>
F1=Help              F3=Return          F4=Save Trace      F6=Roll
                    F12=Cancel

MA a                                                         07/015
Connected to remote server /host RALVMR.RALEIGH.IBM.COM using port 23 (4) Internet Explorer
  
```


Recall Saved Traces



The screenshot shows a terminal window titled "Session A - [24 x 80]". The window has a menu bar with "File", "Edit", "View", "Communication", "Actions", "Window", and "Help". Below the menu bar is a toolbar with various icons. The main area of the terminal displays the following text:

```
NetView V6R1 - NM          Tivoli NetView          NTVF9 NETOP1          01/17/11 15:40:29
```

After a period of inactivity, the terminal shows a green prompt "???" and the command "listtrc_" entered. The cursor is positioned at the end of the command. At the bottom of the terminal, there is a status bar that reads "MA a" on the left and "24/008" on the right. Below the terminal window, a status bar indicates "Connected to remote server /host RALVMR.RALEIGH.IBM.COM using port 23".

Recall Saved Traces

Session A - [24 x 80]

File Edit View Communication Actions Window Help

FKXK2B61 Saved Packet Traces

Collect Time	Operator	Domain	Stack	Description
11/04/10 07:05:56	PHK	LOCAL	TCPIP	FTP SESSION
11/04/10 09:23:51	PHK	LOCAL	TCPIP	A UDP SESSION
11/12/10 09:57:45	PHK	LOCAL	TCPIP	TEST UDP CONNECTION
01/17/11 15:28:00	NETOP1	LOCAL	TCPIP	MY TCP TRACE

Command ==>

F1=Help F3=Return **F4=View Trace** F6=Roll
 F7=Backward F8=Forward F10=Details F11=Delete Trace F12=Cancel

MA a 09/002

Connected to remote server/host RALVMR.RALEIGH.IBM.COM using port 23

Trace Summary

Session A - [24 x 80]

File Edit View Communication Actions Window Help

FKXK2B51 Session Analysis LOCAL

Local IP 9.42.45.101
 Port 1028 Host Name nmp101.tivlab.raleigh.ibm.com

Remote IP 9.42.45.196
 Port 23 Host Name nmp196.tivlab.raleigh.ibm.com

Total Packets Summarized 78 Status CLOSED (ACTIVE RESET)

Flags	Inbound	Outbound	Window Size	Inbound	Outbound
Retransmissions	0	0	Largest	0	32768
Duplicate Acks	0	2	Average	0	32768
Reset	0	1	Smallest	0	32768
Window Size 0	0	0			
Window Probes	0	0			
Delay Ack	1	14			

Command ==> _

F1=Help F3=Return F6=Roll
 F8=Packets F10=Report F12=Cancel

MA a 22/015

Connected to remote server/host RALVMR.RALEIGH.IBM.COM using port 23

Recall Saved Traces

Session A - [24 x 80]

File Edit View Communication Actions Window Help

FKXK2B61 Saved Packet Traces

Collect Time	Operator	Domain	Stack	Description
11/04/10 07:05:56	PHK	LOCAL	TCPIP	FTP SESSION
11/04/10 09:23:51	PHK	LOCAL	TCPIP	A UDP SESSION
11/12/10 09:57:45	PHK	LOCAL	TCPIP	TEST UDP CONNECTION
01/17/11 15:28:00	NETOP1	LOCAL	TCPIP	MY TCP TRACE

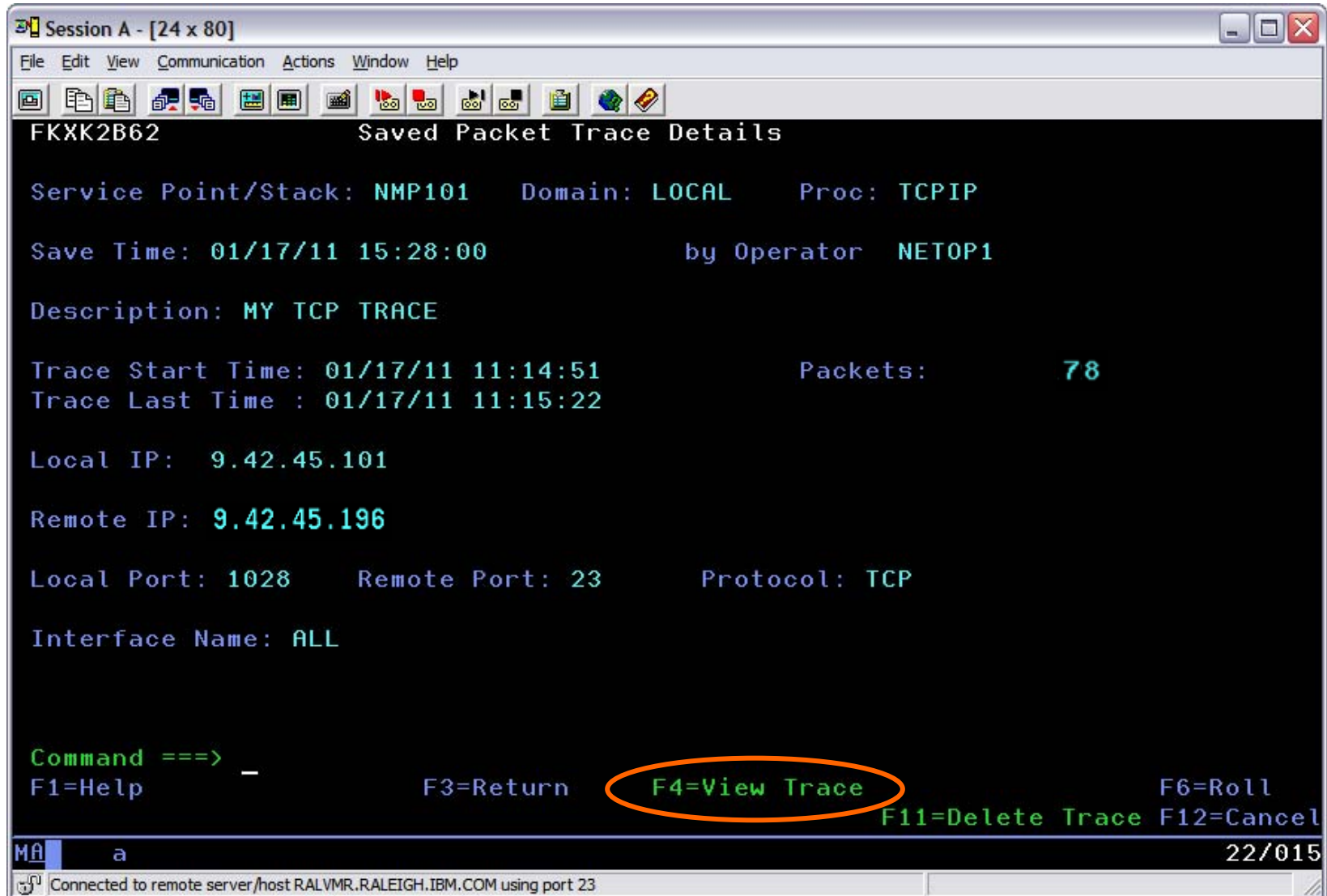
Command ==>

F1=Help F3=Return F4=View Traces F6=Roll
 F7=Backward F8=Forward F10=Details F11>Delete Trace F12=Cancel

MA a 09/002

Connected to remote server/host RALVMR.RALEIGH.IBM.COM using port 23

Details About the Trace



Session A - [24 x 80]

File Edit View Communication Actions Window Help

FKXK2B62 Saved Packet Trace Details

Service Point/Stack: NMP101 Domain: LOCAL Proc: TCPIP

Save Time: 01/17/11 15:28:00 by Operator NETOP1

Description: MY TCP TRACE

Trace Start Time: 01/17/11 11:14:51 Packets: 78

Trace Last Time : 01/17/11 11:15:22

Local IP: 9.42.45.101

Remote IP: 9.42.45.196

Local Port: 1028 Remote Port: 23 Protocol: TCP

Interface Name: ALL

Command ==> _

F1=Help F3=Return F4=View Trace F6=Roll

F11=Delete Trace F12=Cancel

MA a 22/015

Connected to remote server/host RALVMR.RALEIGH.IBM.COM using port 23

Atlanta

Trace Summary

Session A - [24 x 80]

File Edit View Communication Actions Window Help

FKXK2B51 Session Analysis LOCAL

Local IP 9.42.45.101
 Port 1028 Host Name nmp101.tivlab.raleigh.ibm.com

Remote IP 9.42.45.196
 Port 23 Host Name nmp196.tivlab.raleigh.ibm.com

Total Packets Summarized 78 Status CLOSED (ACTIVE RESET)

Flags	Inbound	Outbound	Window Size	Inbound	Outbound
Retransmissions	0	0	Largest	0	32768
Duplicate Acks	0	2	Average	0	32768
Reset	0	1	Smallest	0	32768
Window Size 0	0	0			
Window Probes	0	0			
Delay Ack	1	14			

Command ==> _

F1=Help F3=Return F6=Roll
 F8=Packages F10=Report F12=Cancel

MA a 22/015

Connected to remote server/host RALVMR.RALEIGH.IBM.COM using port 23

Returning to Trace Filter Screen

Session A - [24 x 80]

File Edit View Communication Actions Window Help

FKXK2A24 Display Packet Control LOCAL

Service Point/Stack: NMP101 Proc: TCPIP Infc Name: ALL

LAddr * _____

RAddr * _____

PORTNUM * _____ LPort: * _____ RPort: * _____ Protocol 1 1-ALL
 2-TCP
 3-UDP
 4-OSPF
 5- _____ (Number)

Time: Start * _____
 End * _____

MaxRecs: 1 1-Last 100 Truncate: 65535
 2-First

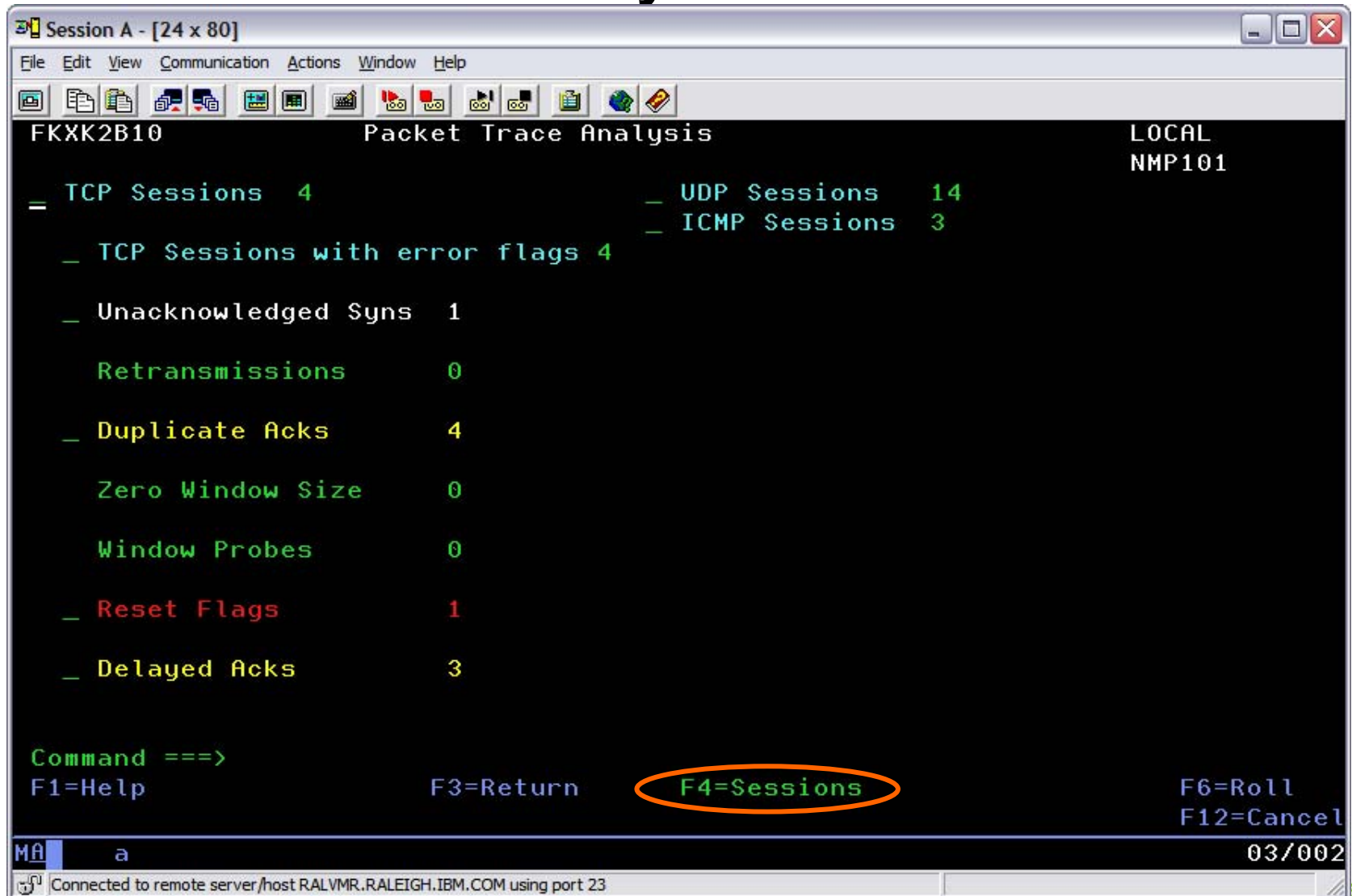
Command ==>

F1=Help F3=Return F4=View Packets F6=Roll
 F8=Extended Options F10=Analyze F12=Cancel

MA a 03/060

Connected to remote server/host RALVMR.RALEIGH.IBM.COM using port 23

Choose sessions to analyze



The screenshot shows a terminal window titled "Session A - [24 x 80]" with a menu bar (File, Edit, View, Communication, Actions, Window, Help) and a toolbar. The main content is a "Packet Trace Analysis" window for host "FKXX2B10" on "LOCAL NMP101". It displays a summary of session statistics:

Session Type	Count
TCP Sessions	4
UDP Sessions	14
ICMP Sessions	3
TCP Sessions with error flags	4
Unacknowledged Syms	1
Retransmissions	0
Duplicate Acks	4
Zero Window Size	0
Window Probes	0
Reset Flags	1
Delayed Acks	3

At the bottom, a command prompt shows "Command ==>" and "F1=Help". The text "F4=Sessions" is circled in orange. Other function key shortcuts include "F3=Return", "F6=Roll", and "F12=Cancel". The status bar at the bottom indicates "MA a" and "03/002".

Summary analysis of selected session

```

Session A - [24 x 80]
File Edit View Communication Actions Window Help
FKXX2B51 Session Analysis LOCAL
NMP101
Local IP 9.42.45.101
Port 1028 Host Name nmp101.tivlab.raleigh.ibm.com
Remote IP 9.42.41.41
Port 23 Host Name 9.42.41.41
Total Packets Summarized 78 Status CLOSED (ACTIVE RESET)

```

Flags	Inbound	Outbound	Window Size	Inbound	Outbound
Retransmissions	0	0	Largest	32768	32768
Duplicate Acks	0	2	Average	32741	32746
Reset	0	1	Smallest	32637	32592
Window Size 0	0	0			
Window Probes	0	0			
Delay Ack	1	14			

```

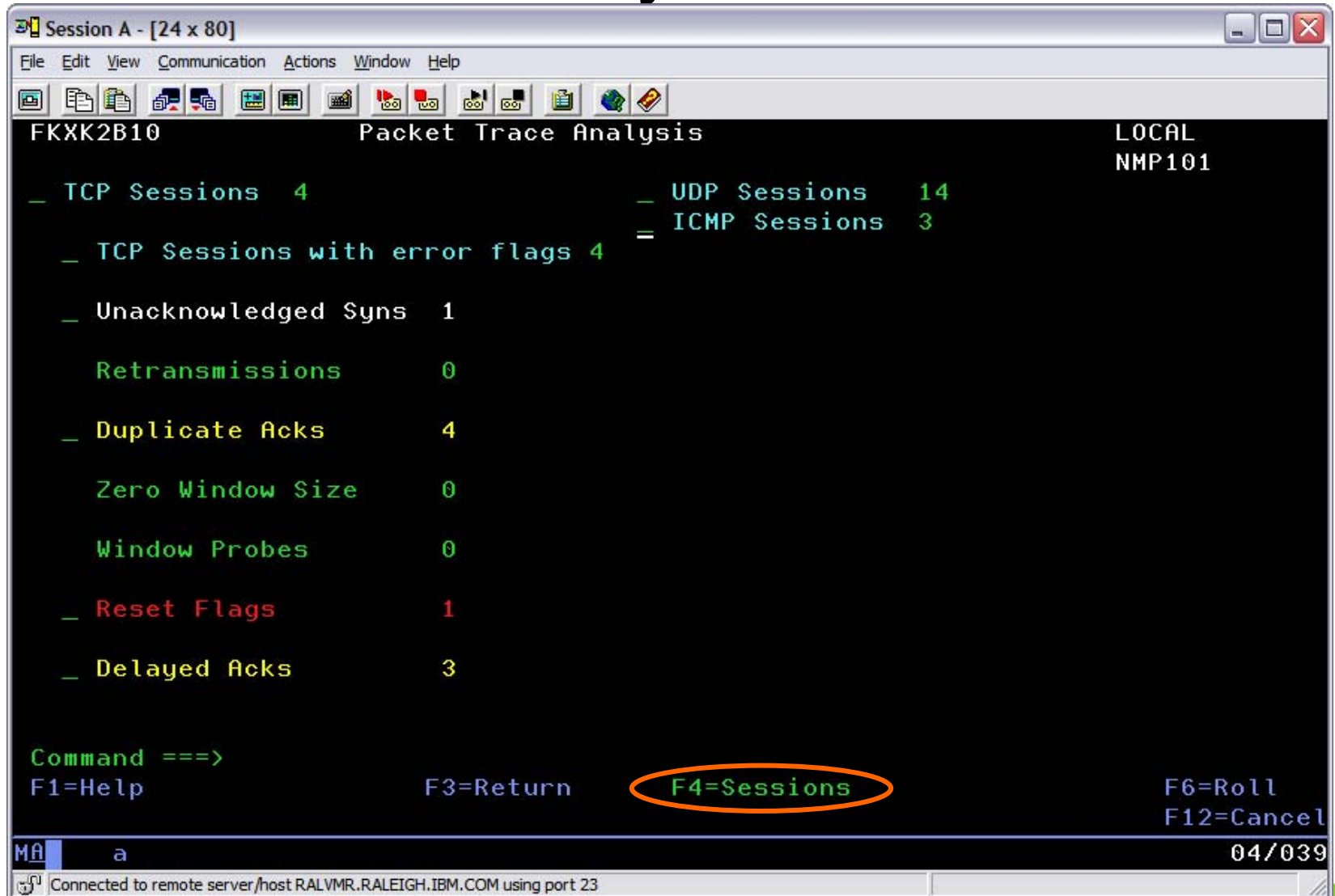
Command ==> _
F1=Help          F3=Return          F6=Roll
F8=Packets       F9=Actions         F10=Report        F12=Cancel
MA a                                                    22/015
Connected to remote server /host RALVMR.RALEIGH.IBM.COM using port 23

```

Choose sessions to analyze – UDP

```
Session A - [24 x 80]
File Edit View Communication Actions Window Help
FKXX2B10 Packet Trace Analysis LOCAL
NMP101
_ TCP Sessions 4 = UDP Sessions 14
_ TCP Sessions with error flags 4 - ICMP Sessions 3
_ Unacknowledged Syns 1
Retransmissions 0
_ Duplicate Acks 4
Zero Window Size 0
Window Probes 0
_ Reset Flags 1
_ Delayed Acks 3
Command ==>
F1=Help F3=Return F4=Sessions F6=Roll
F12=Cancel
MA a 03/039
Connected to remote server /host RALVMR.RALEIGH.IBM.COM using port 23
```

Choose sessions to analyze – ICMP



The screenshot shows a terminal window titled "Session A - [24 x 80]" with a menu bar (File, Edit, View, Communication, Actions, Window, Help) and a toolbar. The main content is a "Packet Trace Analysis" window for host "FKXX2B10" on "LOCAL NMP101". It displays a list of session statistics:

Category	Count
TCP Sessions	4
UDP Sessions	14
ICMP Sessions	3
TCP Sessions with error flags	4
Unacknowledged Syms	1
Retransmissions	0
Duplicate Acks	4
Zero Window Size	0
Window Probes	0
Reset Flags	1
Delayed Acks	3

At the bottom, a command prompt shows "Command ==>" and function key shortcuts: F1=Help, F3=Return, **F4=Sessions** (circled in orange), F6=Roll, and F12=Cancel. The status bar at the bottom indicates "MA a" and "04/039".

Scenario: Analyze a Specific TCP Session

The problem

A performance problem is reported against an FTP application

Actions

- The system programmer runs a packet trace against the application.
- He examines the summary packets list in IPTRACE.
- He sees a series of outbound packets, but no inbound packets for this application for a single host.
- The system programmer selects a packet and uses Trace Session Report (command option 7) to analyze the session.
- He sees that there is a large number of retransmissions on the outbound side, indicating a problem with the remote host.

Agenda

- Timeline
- Smart Packet Collection
- **Packet Trace on the fly**
- Expanded Log Browse
- NetView Web Application
- Enterprise Integration
- Serviceability
- GDPS Active/Active

Packet trace on the fly

- Why?
 - When monitoring a connection, you may find you need to trace the packets flowing on that connection.
- How?
 - IPSTAT function
 - Connection management and debugging capabilities for all connections through a given stack.
 - NEW → You can start the IPTRACE function from the IPSTAT screens. This means you can start the packet trace from an IP connection you've already selected.

Packet trace on the fly

```

Session B - [24 x 80]
File Edit View Communication Actions Window Help
[Icons]

FKXK2A22      PKTTRACE  Control  SYSTCPDA  NONE      for NVDomain: LOCAL

Service Point/Stack: NMP101      TCPNAME: TCPIP
PKTS: INACTIVE  On Task: TCPPAUTO      GTF: NO

Start Time:                                     = Start Writer
                                                Writer: PKTCP

Options:

  Infc/Link      Stat Prot IP Address/Prefix      Ports      Record
                   Src Portnm Dest Count

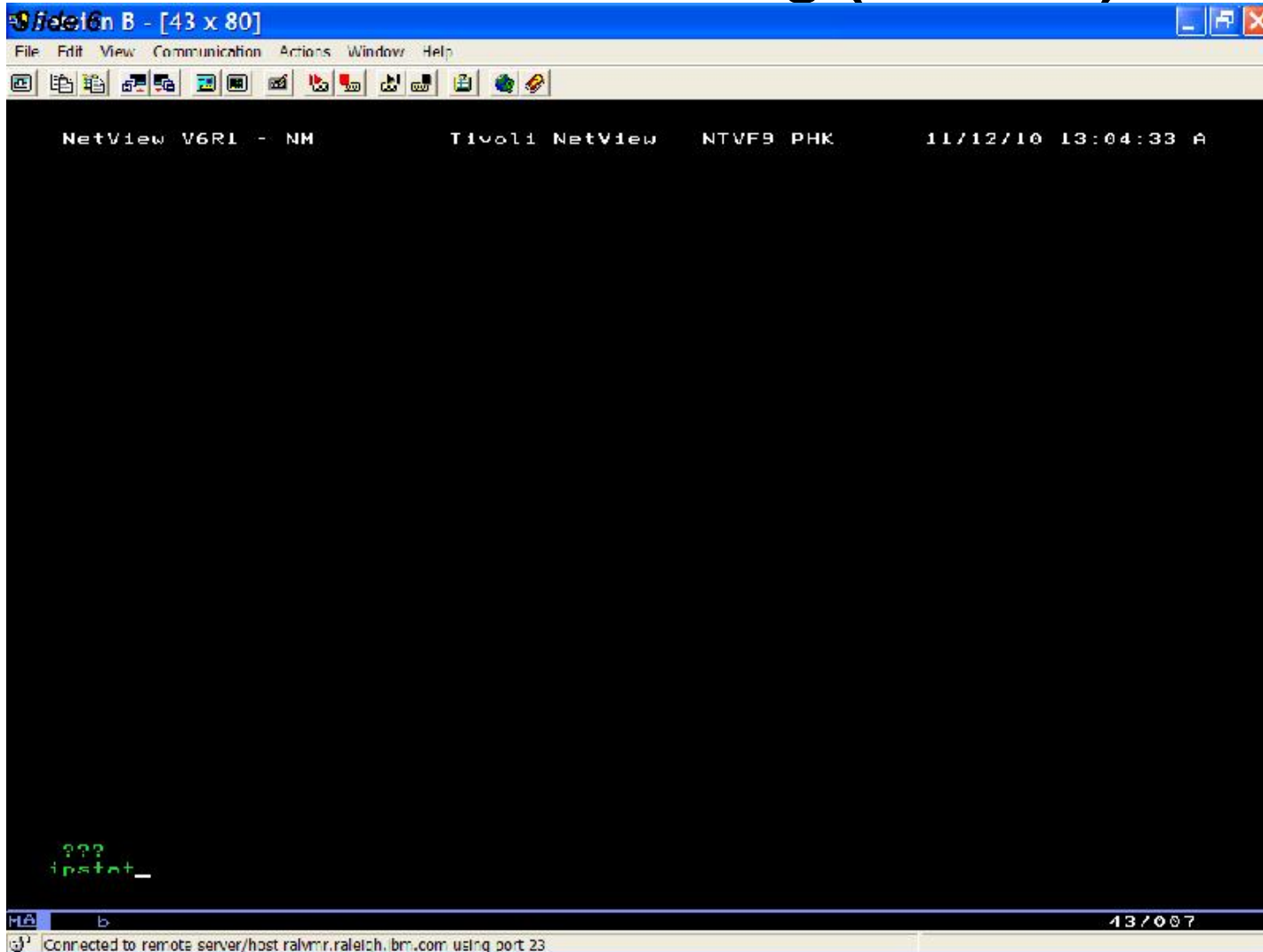
_ ALL            *      *      *      *      *
TCIPLINK        OFF *      *      *      *      0
TCIPLINKB       OFF *      *      *      *      0
TCIPLINK6       OFF *      *      *      *      0

Command ==>
F1=Help      F2=Main Menu  F3=Return  F4=Start SYSTCPDA  F5=Refresh  F6=Roll
F7=Backward  F8=Forward   F9=Assist  F10=PKTS Management  F12=Cancel

MR  b 05/055
Connected to remote server/host ralmr.ralegh.ibm.com using port 23
  
```

Packet trace initially inactive

Start Connection Monitoring (IPSTAT)



The screenshot shows a terminal window titled "NetView V6R1 - NM" with a menu bar (File, Edit, View, Communication, Actions, Window, Help) and a toolbar. The terminal content includes the following text:

```
NetView V6R1 - NM          Tivoli NetView    NTVF9 PHK          11/12/10 13:04:33 A
```



```
???
```

```
ipstat_
```

The status bar at the bottom of the terminal window displays "13/007" and a connection message: "Connected to remote server/host ralvmr.raleigh.ibm.com using port 23".

Select host and connections

```

FKXK2200          TCP/IP for z/OS Connection Status          NTVF9

Enter TCP/IP address or HOSTNAME:
*
-----
Service Point  System      IP Address      Host Name
_ NMPIPL10     TCP/IP       9.42.45.10     nmpi110.tivlab.raleigh.ibm.com
X NMP101       TCP/IP       9.42.45.101    nmp101.tivlab.raleigh.ibm.com
_ NMP217       TCP/IP       9.42.45.217    nmp217.tivlab.raleigh.ibm.com

Command ==>
F1=Help      F2=Main Menu  F3=Return      F6=Roll
F7=Backward  F8=Forward    F9=Filters     F10=Details   F12=Cancel

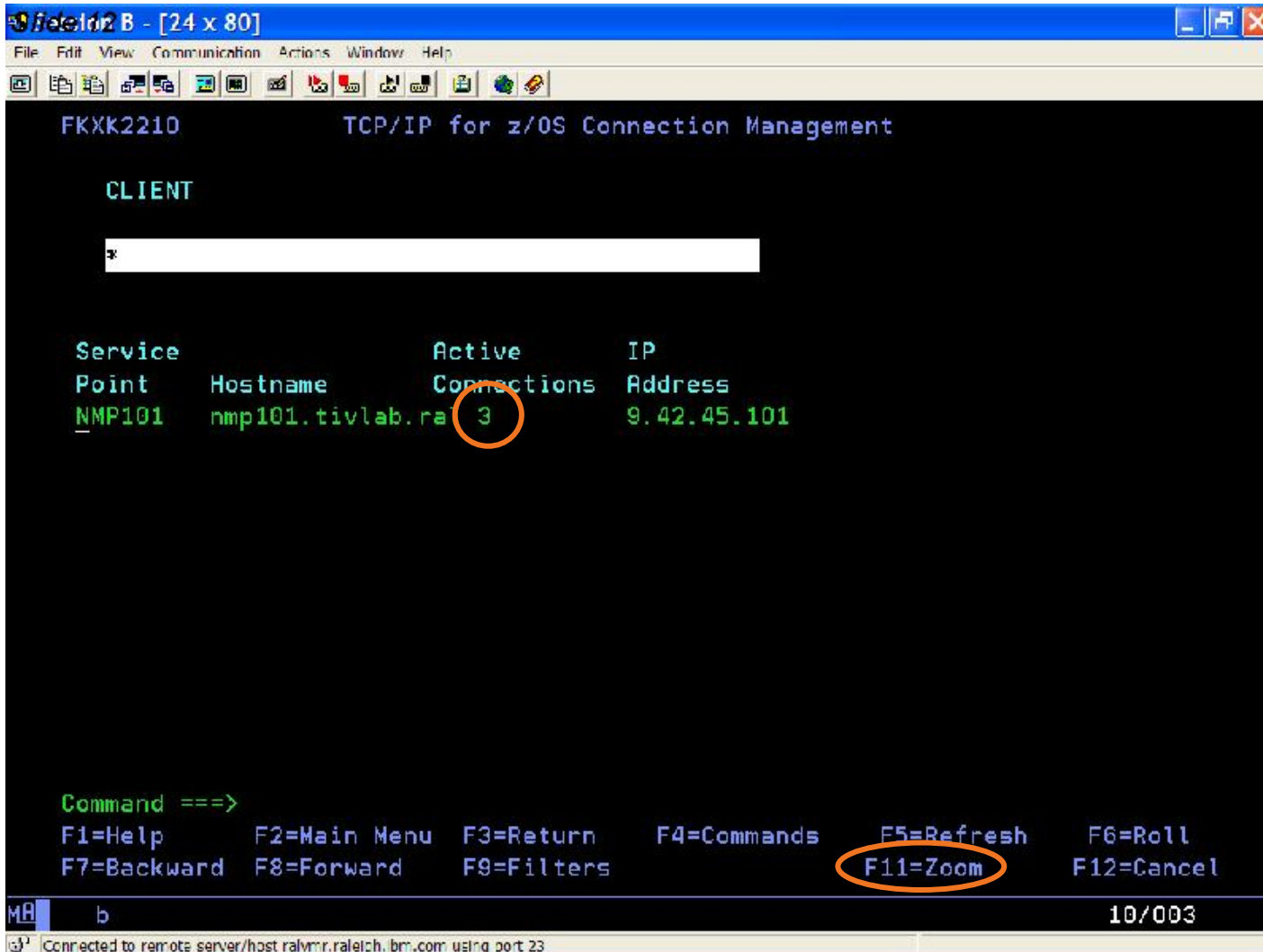
MR  b 10/003

```

Connected to remote server/host ralvmr.raleigh.ibm.com using port 23

Asterisk to view status of all connections.
 Select host.
 Press ENTER.

Active connections



FKXK2210 TCP/IP for z/OS Connection Management

CLIENT

Service Point Hostname Active Connections IP Address

Service Point	Hostname	Active Connections	IP Address
NMP101	nmp101.tivlab.ra	3	9.42.45.101

Command ==>

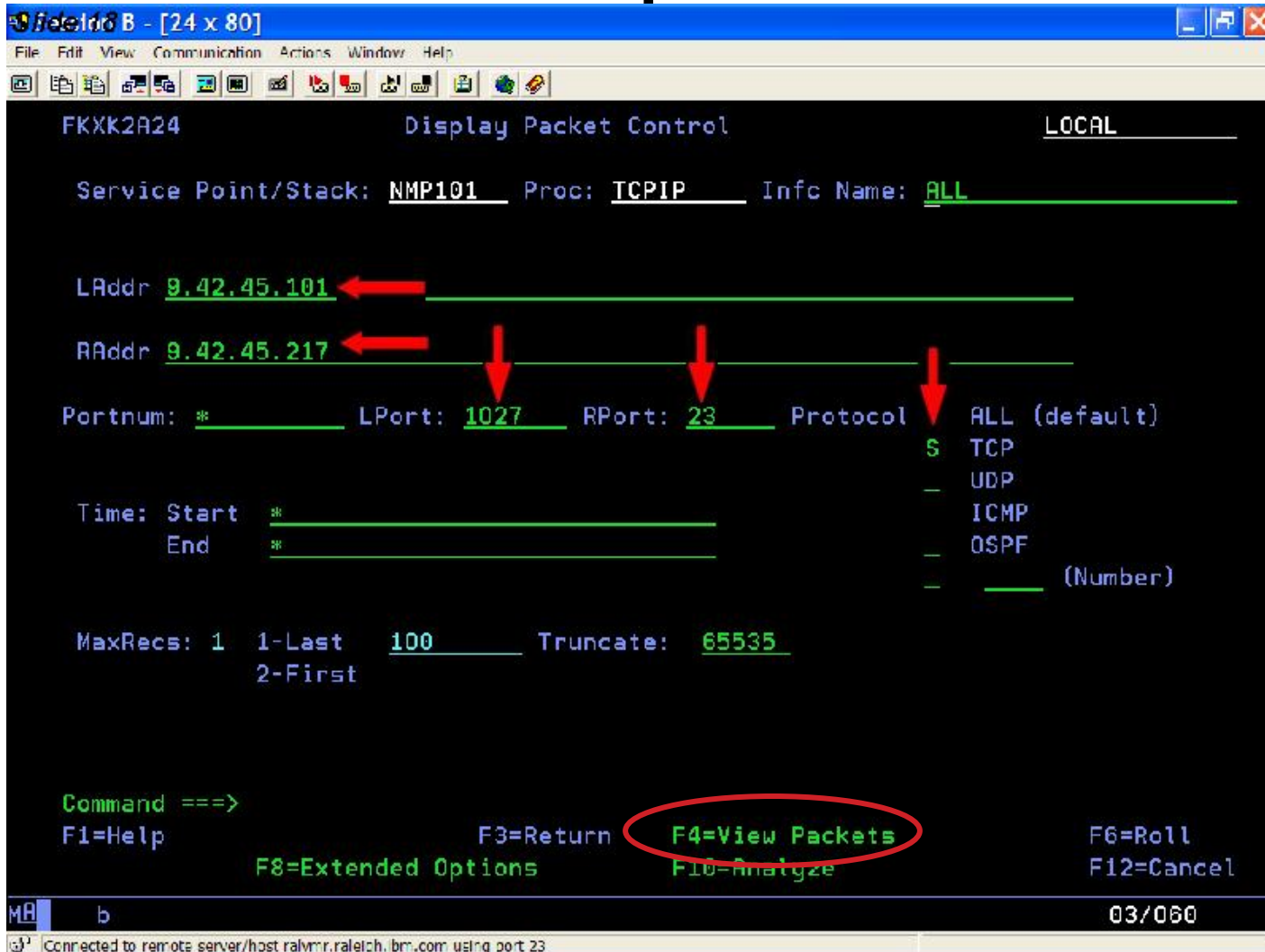
F1=Help F2=Main Menu F3=Return F4=Commands F5=Refresh F6=Roll

F7=Backward F8=Forward F9=Filters F11=Zoom F12=Cancel

MR b 10/003

Connected to remote server/host ralmr.raleigh.ibm.com using port 23

Control selections for packet trace



```

Telnet B - [24 x 80]
File Edit View Communication Actions Window Help
FKXK2A24          Display Packet Control          LOCAL
Service Point/Stack: NMP101  Proc: TCPIP  Info Name: ALL
LAddr 9.42.45.101
RAddr 9.42.45.217
Portnum: *  LPort: 1027  RPort: 23  Protocol  ALL (default)
                                                S TCP
                                                - UDP
                                                - ICMP
                                                - OSPF
                                                - (Number)
Time: Start *
      End   *
MaxRecs: 1  1-Last 100  Truncate: 65535
          2-First
Command ==>
F1=Help          F3=Return  F4=View Packets  F6=Roll
F8=Extended Options  F10=Analyze  F12=Cancel
MR b                                                    03/060
Connected to remote server/host ralvmr.raleigh.lm.com using port 23
  
```

List of packets

```

telnet B - [24 x 80]
File Edit View Communication Actions Window Help
FKXK2A26      PKTTRACE  SUMMARY                                     NTVF9

DP  Nr hh:mm:ss.mmmmm IpId   Seq_num  Ack_num  Wndw  Flags
OT 3509 13:08:08.409489 34C8 2279808012 2295814566 32760 ACK PSH
OT 3508 13:08:08.173555 34C7 2279808007 2295814558 32516 ACK PSH
      7DC37EFF EF      *'C'..  }.~..  *
OT 3507 13:08:07.408237 34C6 2279808007 2295814558 32516 ACK PSH
OT 3506 13:08:07.169573 34C5 2279808007 2295814306 32768 ACK PSH
OT 3505 13:08:07.128917 34C4 2279808002 2295813258 32768 ACK PSH
      7DC37DFF EF      *'C'..  }.).  *
OT 3504 13:08:05.127238 34C3 2279808002 2295813258 32768 ACK PSH
OT 3503 13:08:05.105907 34C2 2279807928 2295811029 32765 ACK PSH
      7DC44011 C37DF34B *'D .C'3. }.@..}.k*

Command ==>
F1=Help          F3=Return      F4=Details    F5=Refresh    F6=Roll
F7=Backward     F8=Forward    F9=Commands   F11=Right     F12=Cancel

MR  b                                                    04/002
Connected to remote server/host ralvmr.raleigh.ibm.com using port 23
  
```

Trace components started on the fly

```

telnet B - [24 x 80]
File Edit View Communication Actions Window Help
FXKK2A22  PKTRACE Control SYSTCPDA ACTIVE for NVDomain: LOCAL

Service Point/Stack: NMP101  TCPNAME: TCPIP
PKTS: ACTIVE On Task: TCPPAUTO  GTF: NO

Start Time: 2010-11-12-13:06:52  Writer: *NONE*

Options: 1-START/ADD 2-STOP 3-VIEW PACKETS

Infc/Link  S  t Prot IP Address/Prefix  Ports  Record
Src  Portnm Dest  Count

=  ALL
LOOPBACK  ON  TCP  9.42.45.217/32  1027  23  0
LOOPBACK6  ON  TCP  :::FFFF:9.42.45.217  1027  23  0
TCPIPLINK  ON  TCP  9.42.45.217/32  1027  23  0
LVIPA1  ON  TCP  9.42.45.217/32  1027  23  0
TCPIPLINKB  ON  TCP  9.42.45.217/32  1027  23  0
TCPIPLINK6  ON  TCP  :::FFFF:9.42.45.217  1027  23  0

Command ==>
F1=Help  F2=Main Menu  F3=Return  F4=Stop SYSTCPDA  F5=Refresh  F6=Roll
F7=Backward  F8=Forward  F9=Assist  F10=PKTS Management  F12=Cancel

MR  b  12/002

```


Display packet control

```

FKXK2A24          Display Packet Control          LOCAL
Service Point/Stack: NMP101  Proc: TCPIP  Info Name: ALL
LAddr  9.42.45.101
RAddr  9.42.45.217
Portnum: *  LPort: 1027  RPort: 23  Protocol  ALL (default)
                                                S  TCP
                                                -  UDP
Time: Start *
End         *
                                                -  ICMP
                                                -  OSPF
                                                -  _____ (Number)

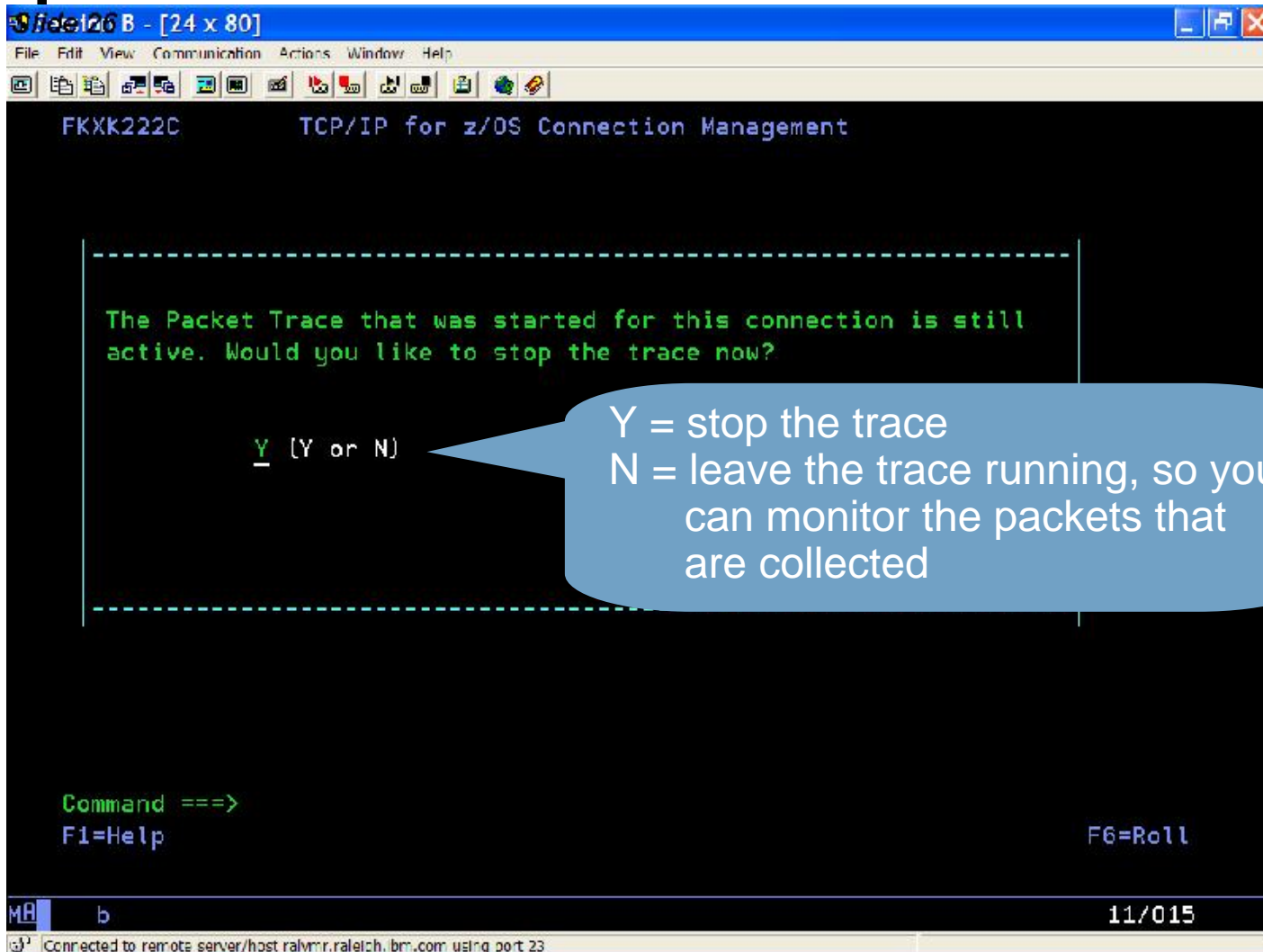
MaxRecs: 1  1-Last  100  Truncate: 65535
          2-First

Command ==>
F1=Help          F3=Return  F4=View Packets  F6=Roll
F8=Extended Options  F10=Analyze  F12=Cancel

MR  b  03/060
  
```

Connected to remote server/host ralvmr.raleigh.lm.com using port 23

Stop trace?



```
FKXK222C TCP/IP for z/OS Connection Management

-----
The Packet Trace that was started for this connection is still
active. Would you like to stop the trace now?

  Y [Y or N]

Command ==>
F1=Help                                     F6=Roll

MR b                                         11/015
Connected to remote server/host ralvmr.raleigh.ibm.com using port 23
```

Choose another connection or exit

```

FKXX2221      TCP/IP for z/OS Connection Management
  CLIENT  - - - - - > Service Point - - - - - > CONNECTION
                NMP101                23
          9.42.45.217          9.42.45.101          1027

.....
Client : IP Address      9.42.45.217
Port   : Port           23
23     : Connection ID   00002D28
1026   : LU
1029   : APPL
       : Send           247
       : Receive        5014
       : Send Window    32765
       : Conn ResourceName PHK
       :
       :
       :
       : F1=Help
       :
       :
.....
Command ==>
F1=Help      F2=Main Menu   F3=Return    F6=Roll
F7=Backward  F8=Forward    F9=Filters   F12=Cancel

MR  b                                           08/050

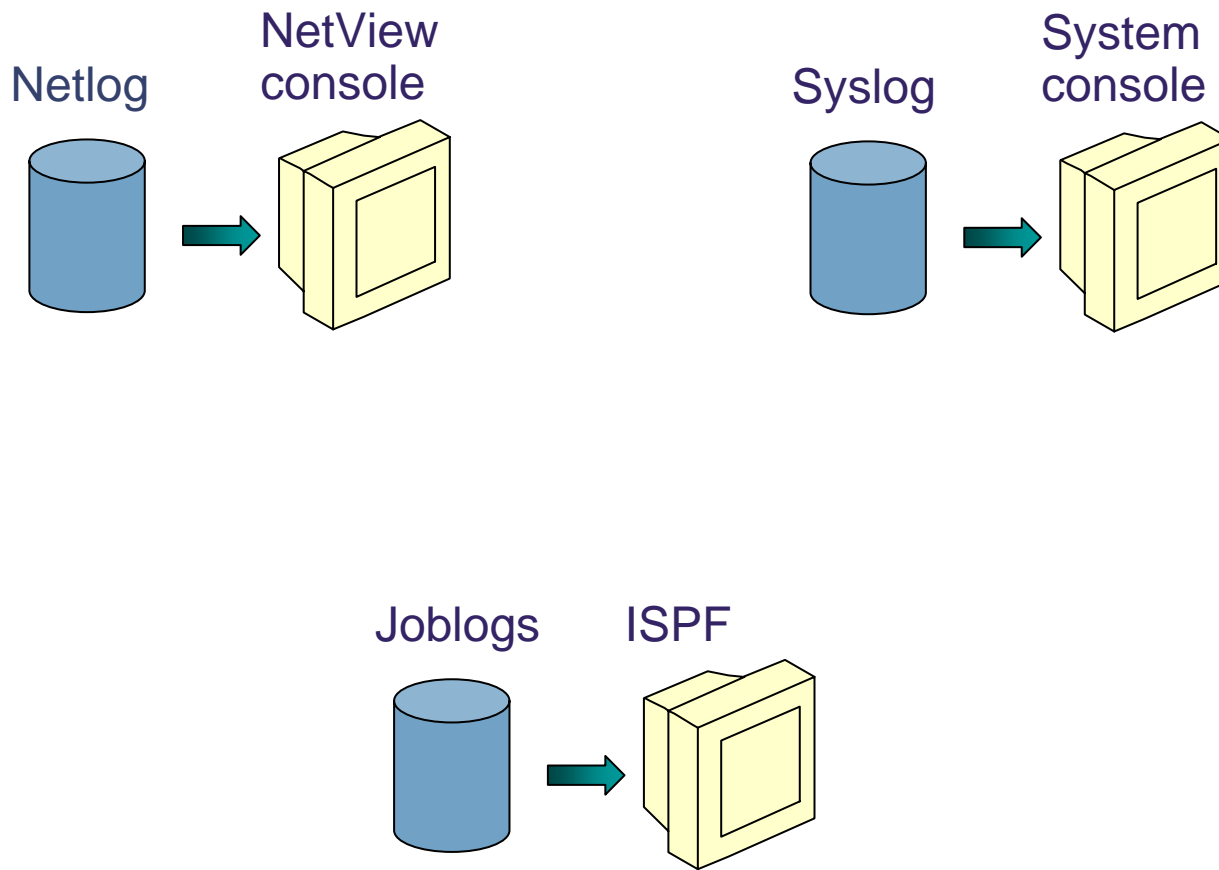
```

Connected to remote server/host ralmr.raleich.ibm.com using port 23

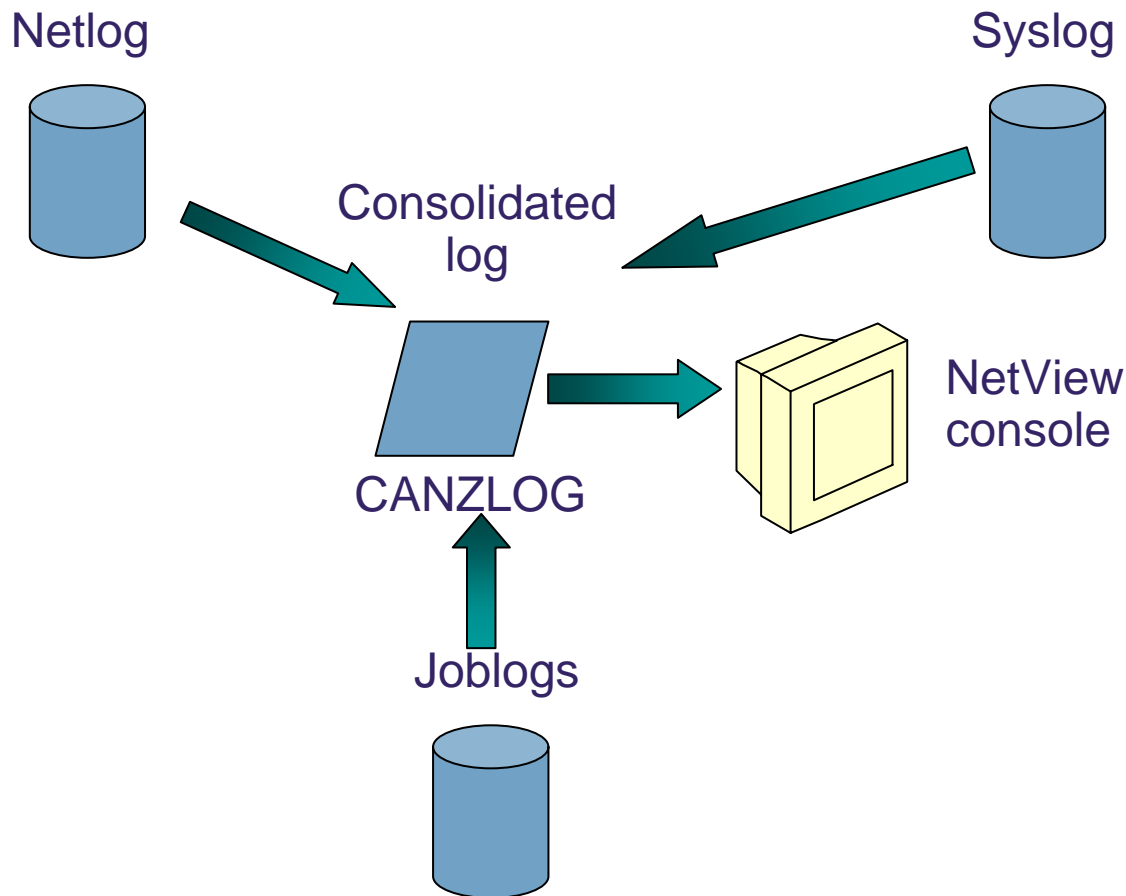
Agenda

- Timeline
- Smart Packet Collection
- Packet Trace on the fly
- **Expanded Log Browse**
- NetView Web Application
- Enterprise Integration
- Serviceability
- GDPS Active/Active

Browsing Logs Prior to NetView V6.1



Log Browse with NetView V6.1



CANZLOG = Consolidated Audit, NetView and z/OS Log

Highlights

- Existing netlog and all its UIs are preserved unchanged
- New, shared data space to capture messages
 - Includes normal NetView messages
 - Provides basis for browsing
 - All messages are available to automation
- Browse consolidated log
 - Filter by any message attribute or combination: msgID, jobname, route code, etc.
 - Define your own message attributes
 - Define and save sets of filter criteria, per operator or installation-wide
- Seamless archiving
- Export to Service

Some Message Attributes

- All messages
 - Tags: 8 user-defined tags (set in MRT or Automation Table)
 - Origin time: store clock value indicating when the message was created
 - Auto time: how long after the origin this message completed automation
 - DOM time: how long after the origin this message was matched by a DOM
 - ACTIONDL: type of DOM (if any) that matched this message
- MVS messages
 - ASID: Address Space ID
 - ASTYPE: type of address space issuing the message (started task, TSO user, USS procedure, etc.)
 - Job name: job name of originating address space
 - SYSID: system name of originating LPAR
 - DescCodes: descriptor codes
 - CHKEY: started task ID or (for batch) jobname
 - Cons Name: destination console name
 - Reply ID: for WTORs only, the ID used with the REPLY command
 - MCSFLAGS: MVS multiple console support flag field
- NetView messages
 - Domain: 1-to-5-character identifier of NetView instance that generated the message
 - HDRMTYPE: 1-character value indicating NetView message type
 - Sender ID: 8-character value indicating NetView OPID of originator of the message
- Customization attributes
 - UserChar: 16-character field; can be set in various installation exits or by MRT
 - UserFlag: 16-bit field; can be set in various installation exits or by MRT
 - AutoToken: 8-character field; can be set in MPF, in MRT, or various installation exits
- And more ...

Robust filtering

- Any message attribute or combination
 - “What happened over the weekend?”
 - “Show me all the IEF123 messages.”
 - “I need to see all the ABC* and DEF* messages from jobs JOB1 and JOB2 during first shift last Tuesday with descriptor code 2.”
- Types
 - Common: available to all operators (subject to authorization check)
 - Task: available only to the operator who defined them
- Actions
 - Save: save filter to storage and on disk
 - Replace: replace an existing filter in storage and on disk
 - Delete: delete filter from storage and disk

Related Session

- Session 10713
 - “Problem Solving with Consolidated Logs” (Larry Green (IBM))
 - Thursday, March 15, 9:30

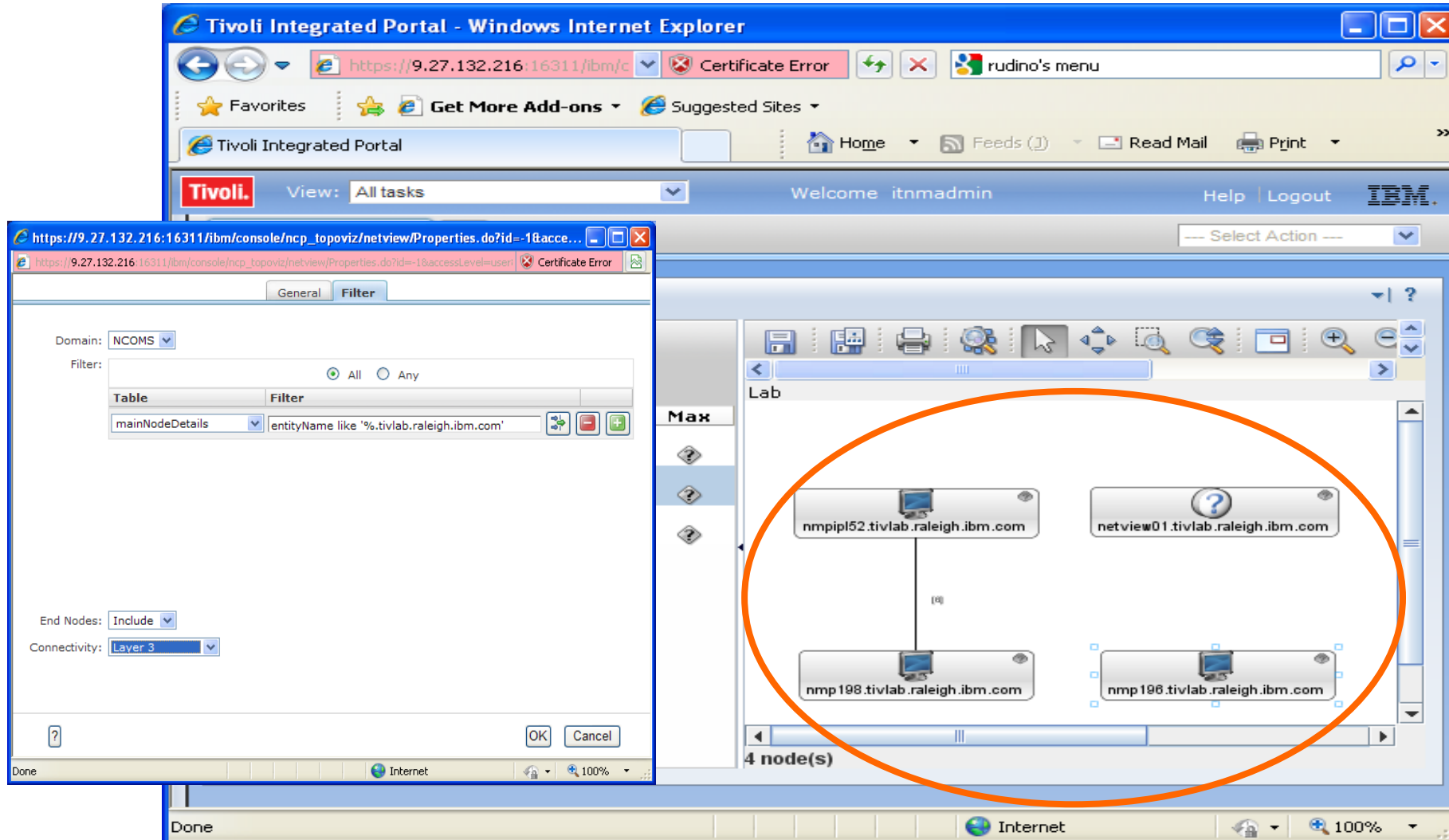
Agenda

- Timeline
- Smart Packet Collection
- Packet Trace on the fly
- Expanded Log Browse
- NetView Web Application
- **Enterprise Integration**
- Serviceability
- GDPS Active/Active

MultiSystem Manager updates

- MultiSystem Manager Tivoli Management Regions (TMR) agent is retired.
- MultiSystem Manager IP agent is retired.
 - NetView for Unix/Windows replaced by IBM Tivoli Network Manager
- MultiSystem Manager IBM Tivoli Network Manager (ITNM) agent is updated.

Views in ITNM



The screenshot displays the Tivoli Integrated Portal interface within a Windows Internet Explorer browser. The browser's address bar shows the URL `https://9.27.132.216:16311/ibm/c` and a "Certificate Error" warning. The portal's navigation bar includes "View: All tasks", "Welcome itnmadmin", and "Help | Logout".

The main content area shows a network diagram titled "Lab" with four nodes circled in orange:

- `nmpipl52.tivlab.raleigh.ibm.com`
- `netview01.tivlab.raleigh.ibm.com`
- `nmp198.tivlab.raleigh.ibm.com`
- `nmp196.tivlab.raleigh.ibm.com`

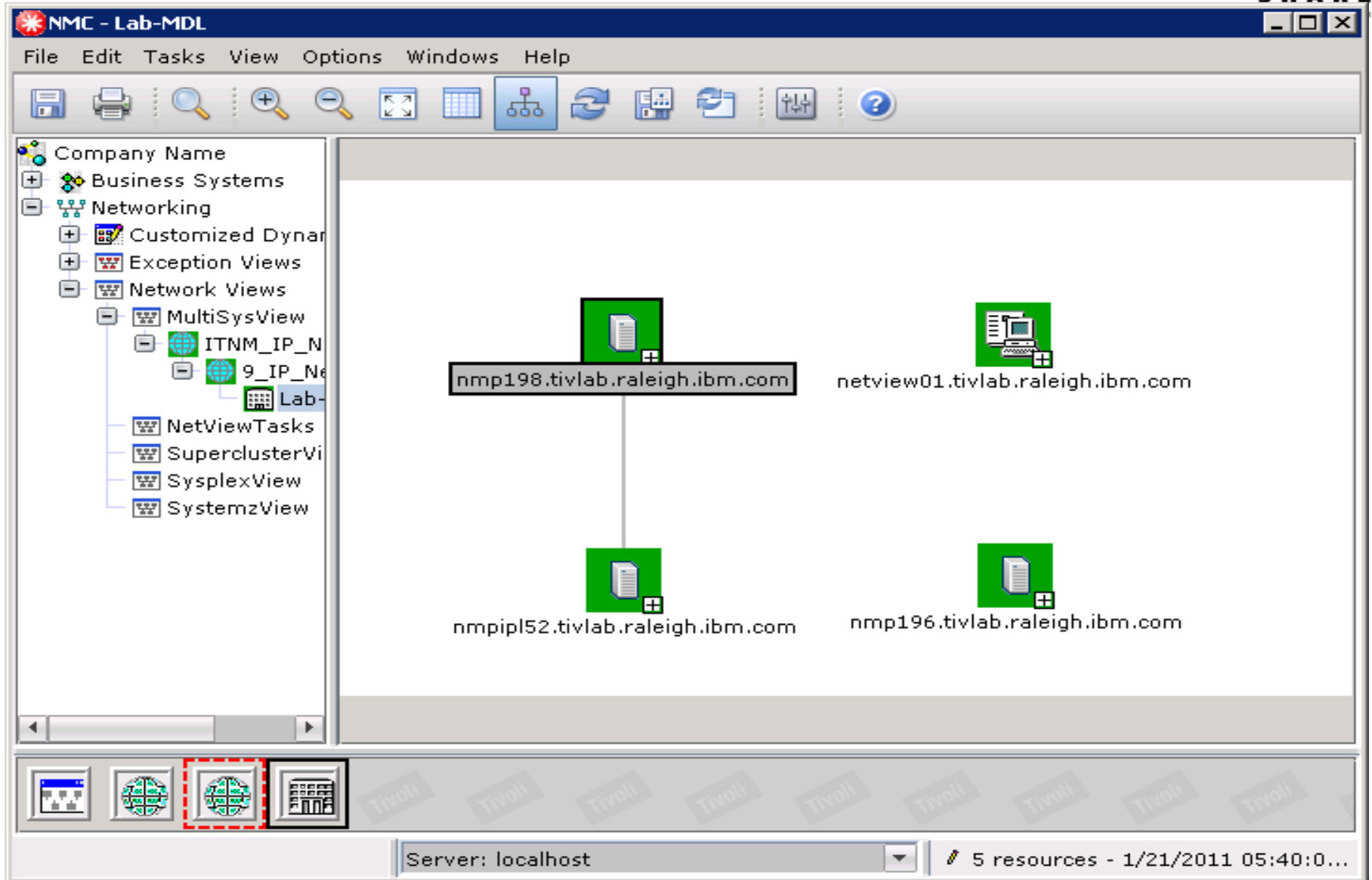
The nodes are connected in a network topology. A status bar at the bottom of the diagram indicates "4 node(s)".

An inset window titled "Filter" is open, showing the following configuration:

- Domain: NCOMS
- Filter: All (selected), Any
- Table: mainNodeDetails
- Filter: `entityName like '%tivlab.raleigh.ibm.com'`
- End Nodes: Include
- Connectivity: Layer 3

The inset window also includes "OK" and "Cancel" buttons.

Views in NMC



The screenshot displays the NMC - Lab-MDL application window. The title bar reads "NMC - Lab-MDL" and the menu bar includes "File", "Edit", "Tasks", "View", "Options", "Windows", and "Help". The toolbar contains icons for file operations, navigation, and refresh. The left sidebar shows a tree view under "Company Name" with the following structure:

- Business Systems
- Networking
 - Customized Dynar
 - Exception Views
 - Network Views
 - MultiSysView
 - ITNM_IP_N
 - 9_IP_Ne
 - Lab- (highlighted)
 - NetViewTasks
 - SuperclusterVi
 - SysplexView
 - SystemzView

The main workspace shows a network diagram with four nodes, each represented by a green document icon with a plus sign. The nodes are arranged in a 2x2 grid:

- Top-left: nmp198.tivlab.raleigh.ibm.com (highlighted with a black border)
- Top-right: netview01.tivlab.raleigh.ibm.com
- Bottom-left: nmpipl52.tivlab.raleigh.ibm.com
- Bottom-right: nmp196.tivlab.raleigh.ibm.com

A vertical line connects the top-left node to the bottom-left node. At the bottom of the window, there is a status bar with "Server: localhost" and "5 resources - 1/21/2011 05:40:0...".

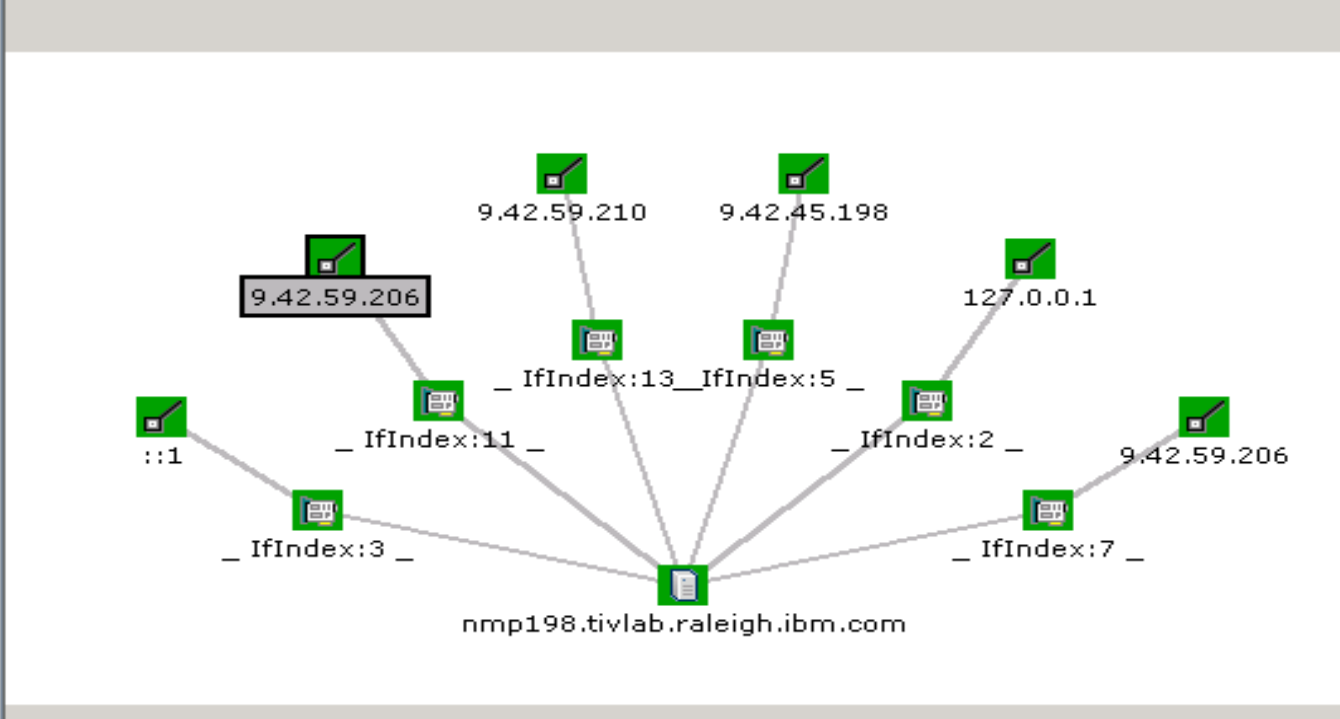
System Details Views

NMC - nmp198.tivlab.raleigh.ibm.co-MDL

File Edit Tasks View Options Windows Help

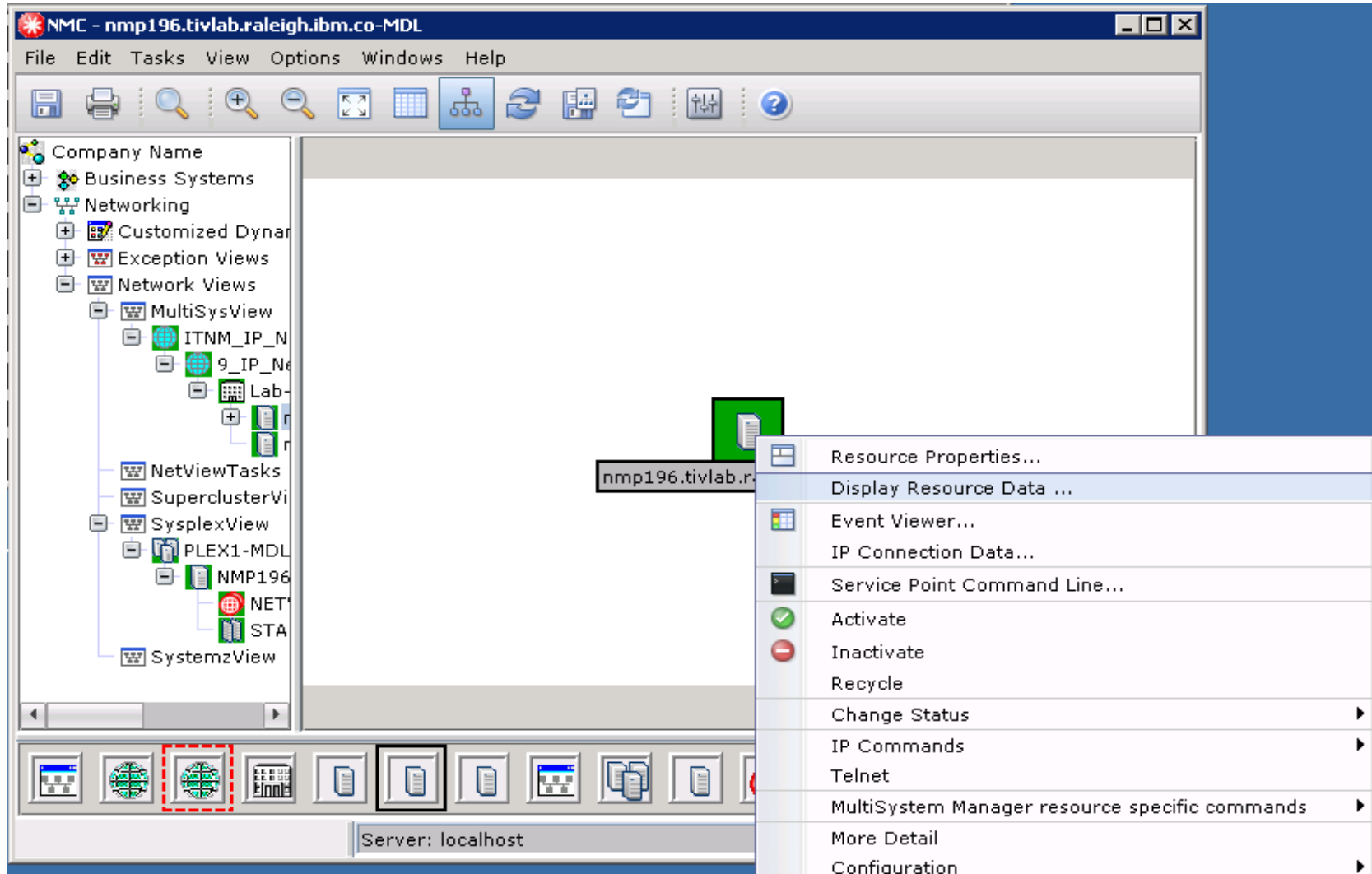
Company Name

- Business Systems
- Networking
 - Customized Dynar
 - Exception Views
 - Network Views
 - MultiSysView
 - ITNM_IP_N
 - 9_IP_Ne
 - Lab
 - NetViewTasks
 - SuperclusterVi
 - SysplexView
 - SystemzView



Server: localhost 25 resources - 1/21/2011 05:42:35...

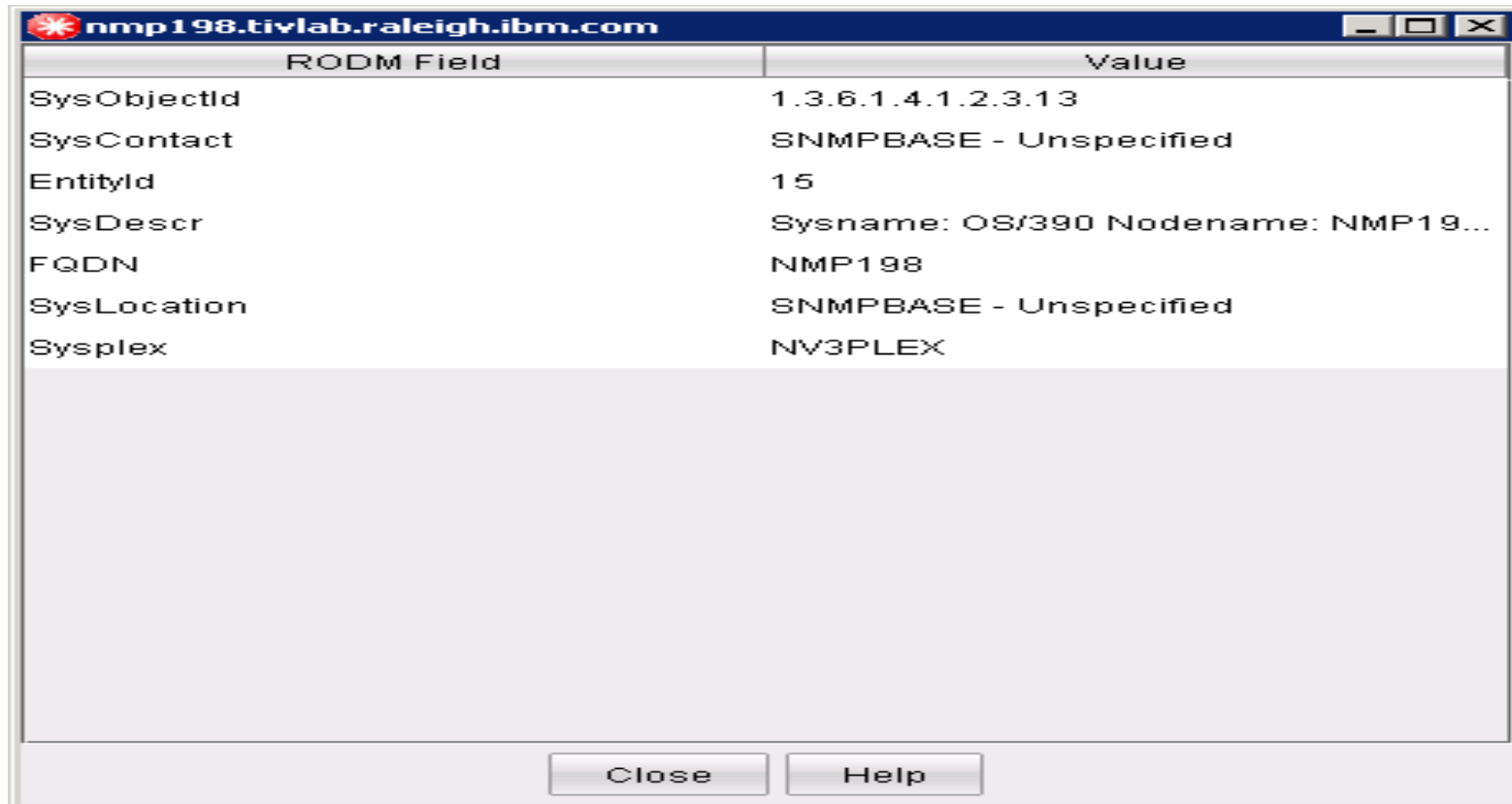
Display Resource Details



The screenshot shows the NMC (Network Management Console) interface. The title bar reads "NMC - nmp196.tivlab.raleigh.ibm.co-MDL". The menu bar includes "File", "Edit", "Tasks", "View", "Options", "Windows", and "Help". The toolbar contains various icons for file operations and navigation. The left pane shows a tree view of the network configuration, with "NMP196" selected under "MultiSysView". A context menu is open over a resource icon, listing the following options:

- Resource Properties...
- Display Resource Data ...
- Event Viewer...
- IP Connection Data...
- Service Point Command Line...
- Activate
- Inactivate
- Recycle
- Change Status
- IP Commands
- Telnet
- MultiSystem Manager resource specific commands
- More Detail
- Configuration

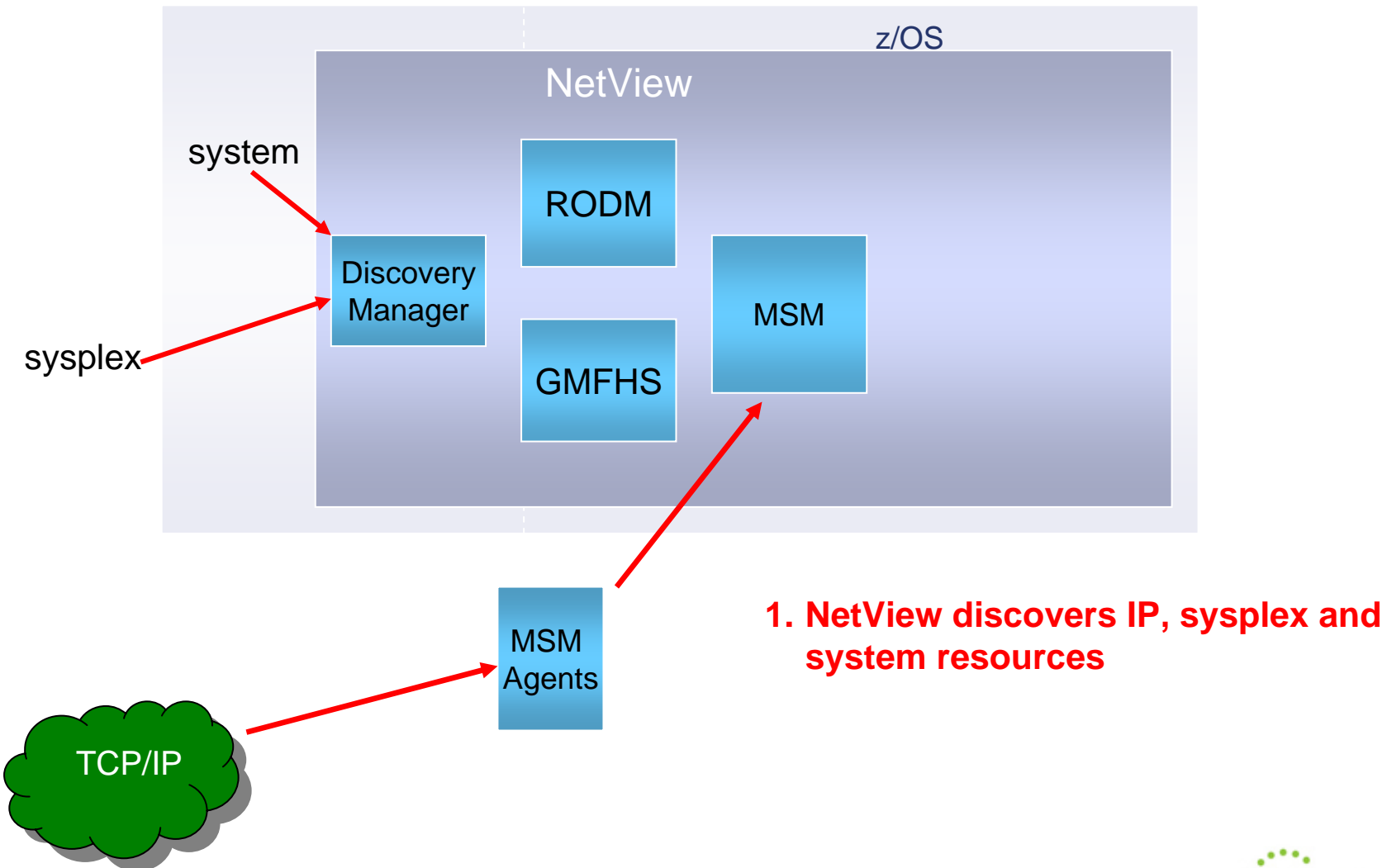
NMC Display Details



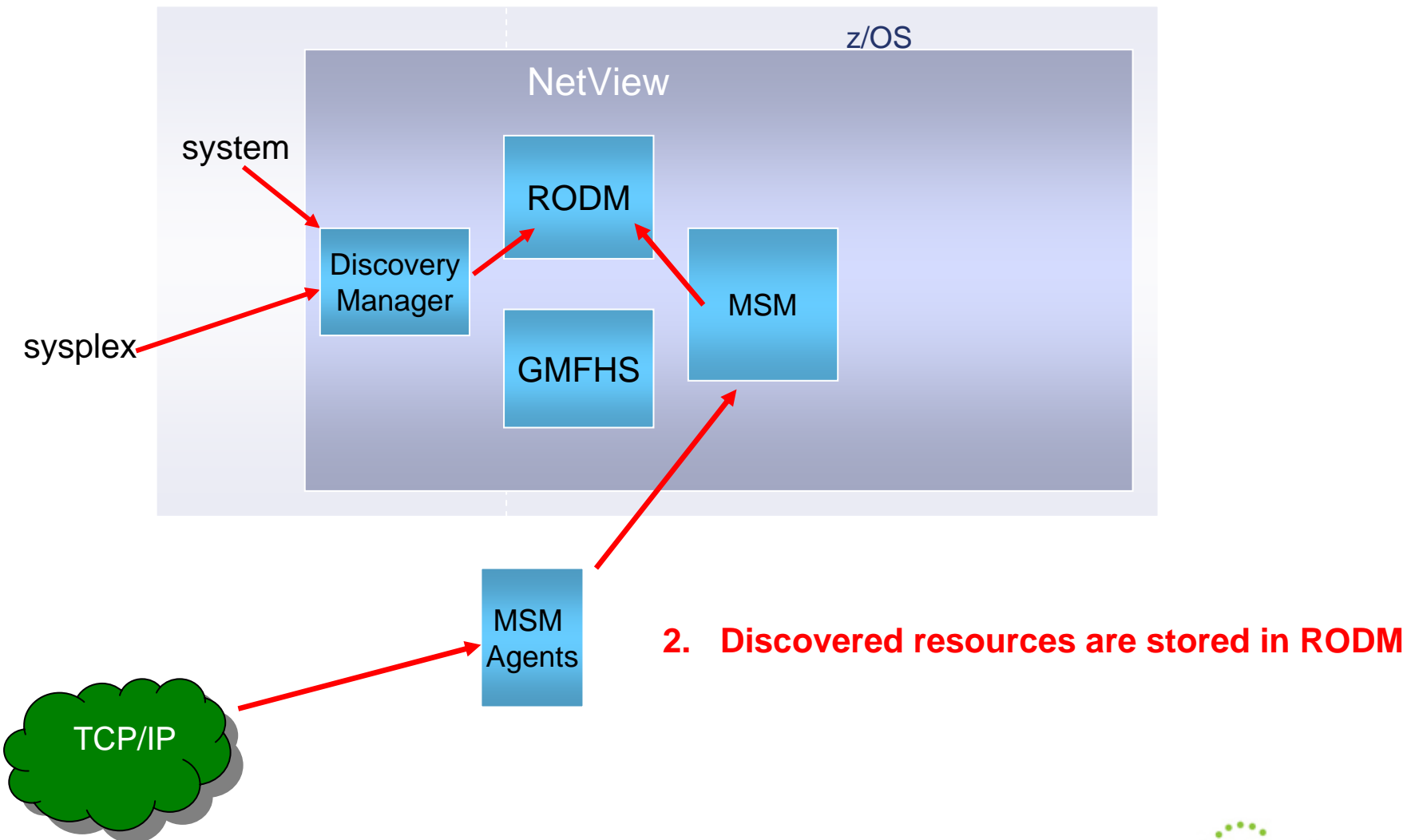
The screenshot shows a web browser window titled "nmp198.tivlab.raleigh.ibm.com". The main content is a table with two columns: "RODM Field" and "Value". The table lists several system parameters and their corresponding values. At the bottom of the window, there are two buttons: "Close" and "Help".

RODM Field	Value
SysObjectId	1.3.6.1.4.1.2.3.13
SysContact	SNMPBASE - Unspecified
EntityId	15
SysDescr	Sysname: OS/390 Nodename: NMP19...
FQDN	NMP198
SysLocation	SNMPBASE - Unspecified
Sysplex	NV3PLEX

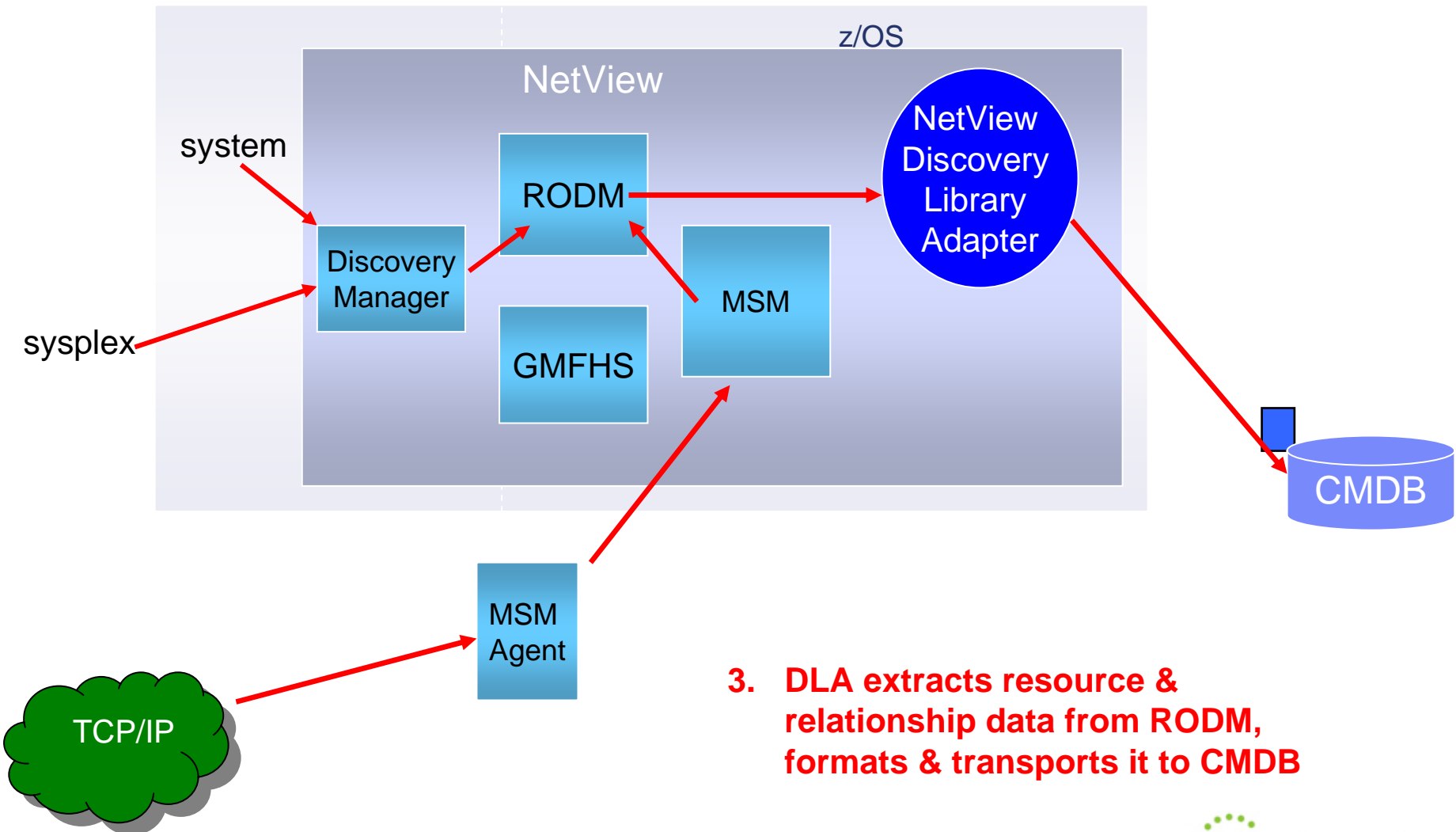
Discovery Library Adapter (DLA)



Discovery Library Adapter (DLA)

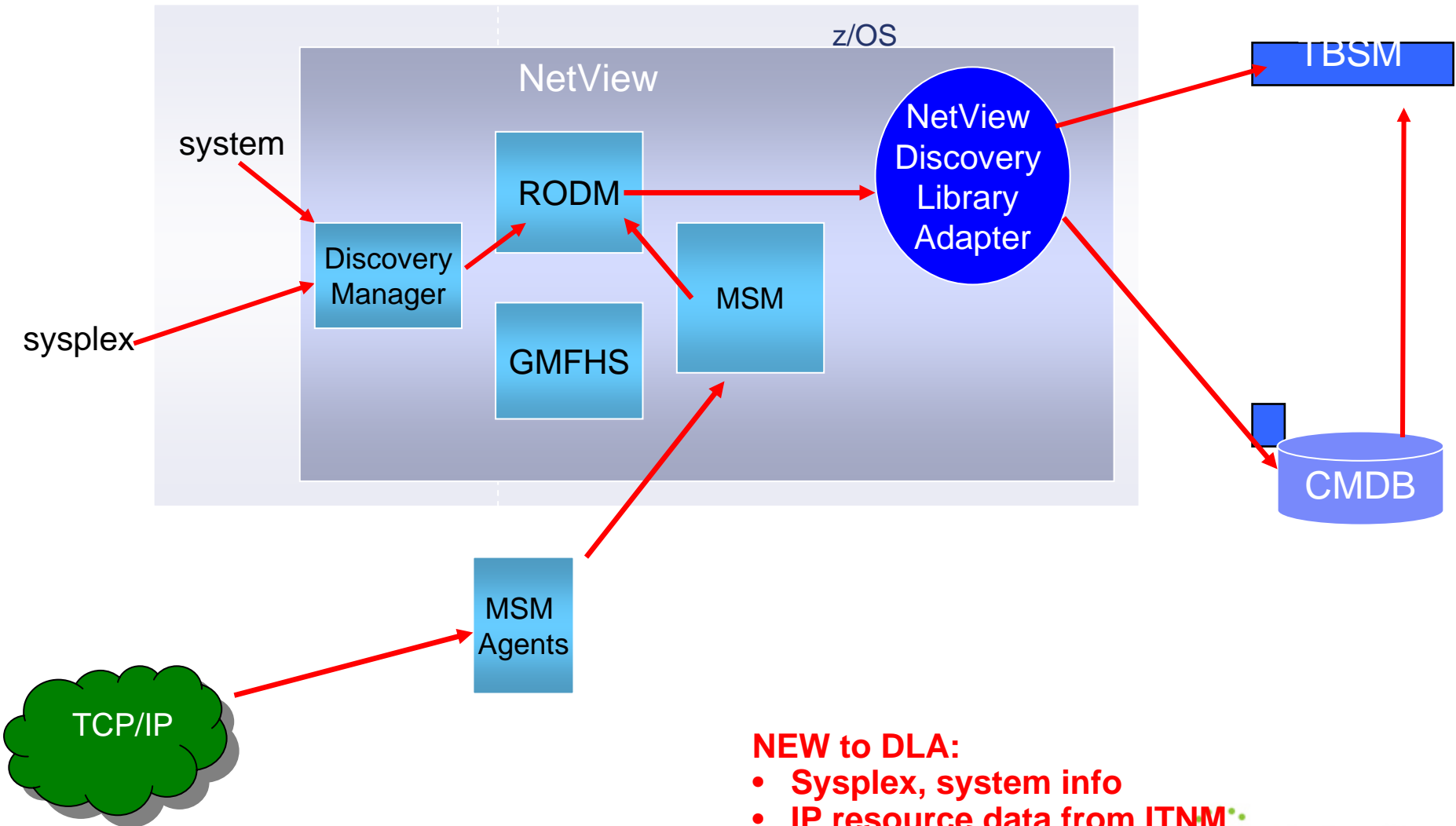


Discovery Library Adapter (DLA)



3. **DLA extracts resource & relationship data from RODM, formats & transports it to CMDB**

Discovery Library Adapter (DLA)



NEW to DLA:

- Sysplex, system info
- IP resource data from ITNM

Agenda

- Timeline
- Smart Packet Collection
- Packet Trace on the fly
- Expanded Log Browse
- NetView Web Application
- Enterprise Integration
- **Serviceability**
- GDPS Active/Active

Serviceability

- Trace changes in global variable values
 - Results in a message written to netlog, with variable's name, value, and info about what program changed it
 - Message available for automation
 - GLOBALV command

Agenda

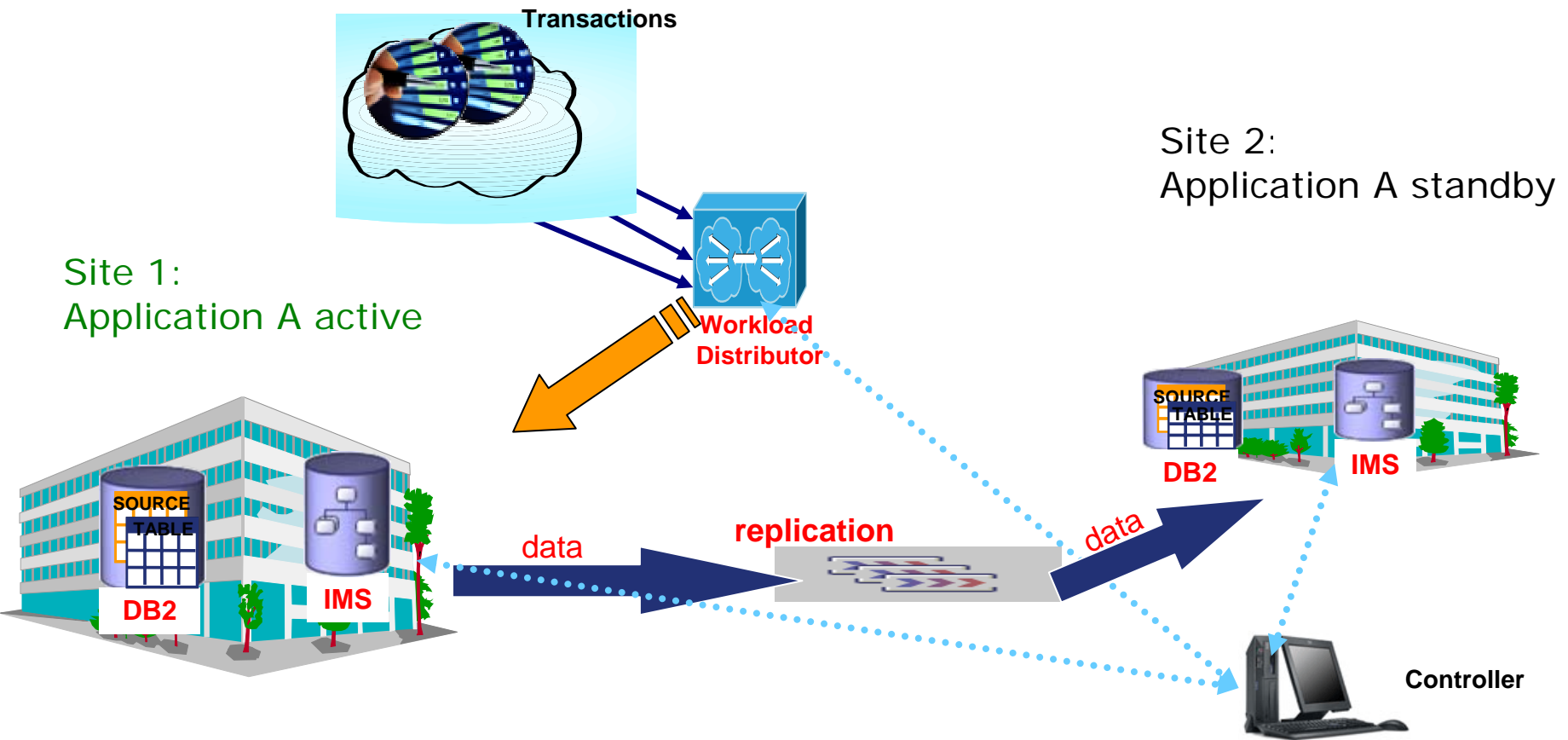
- Timeline
- Smart Packet Collection
- Packet Trace on the fly
- Expanded Log Browse
- NetView Web Application
- Enterprise Integration
- Serviceability
- GDPS Active/Active

GDPS Active/Active Continuous Availability solution

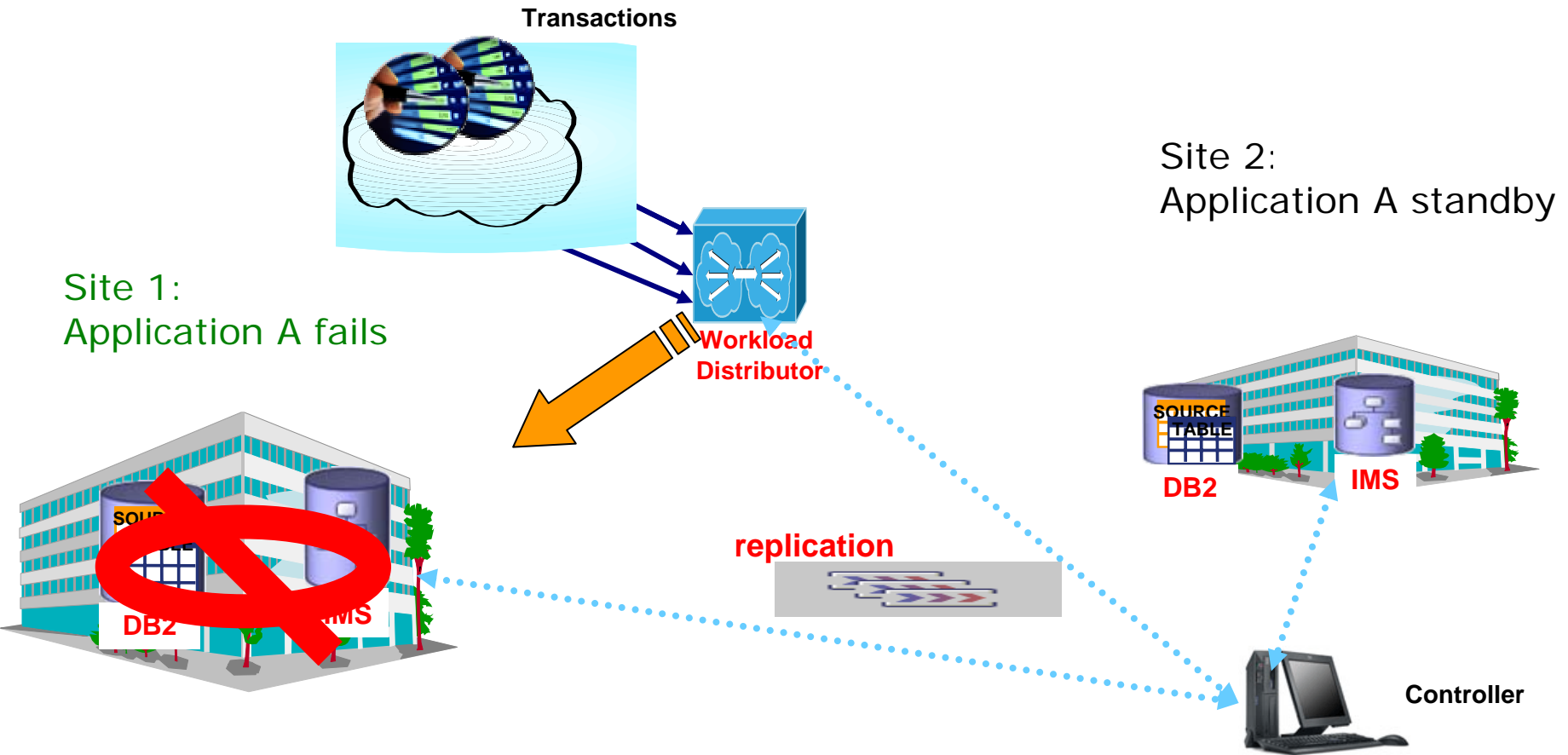


- Environment
 - Two or more sites, separated by *unlimited distances*, running the same applications and having the same data to provide cross-site workload balancing and Continuous Availability / Disaster Recovery
- Paradigm shift
 - Failover model → *near continuous availability model*
- Significantly increases site / system / workload resiliency
- Granularity down to the workload level
- Reduces time to recovery in disaster situations

Example: Initial Setup

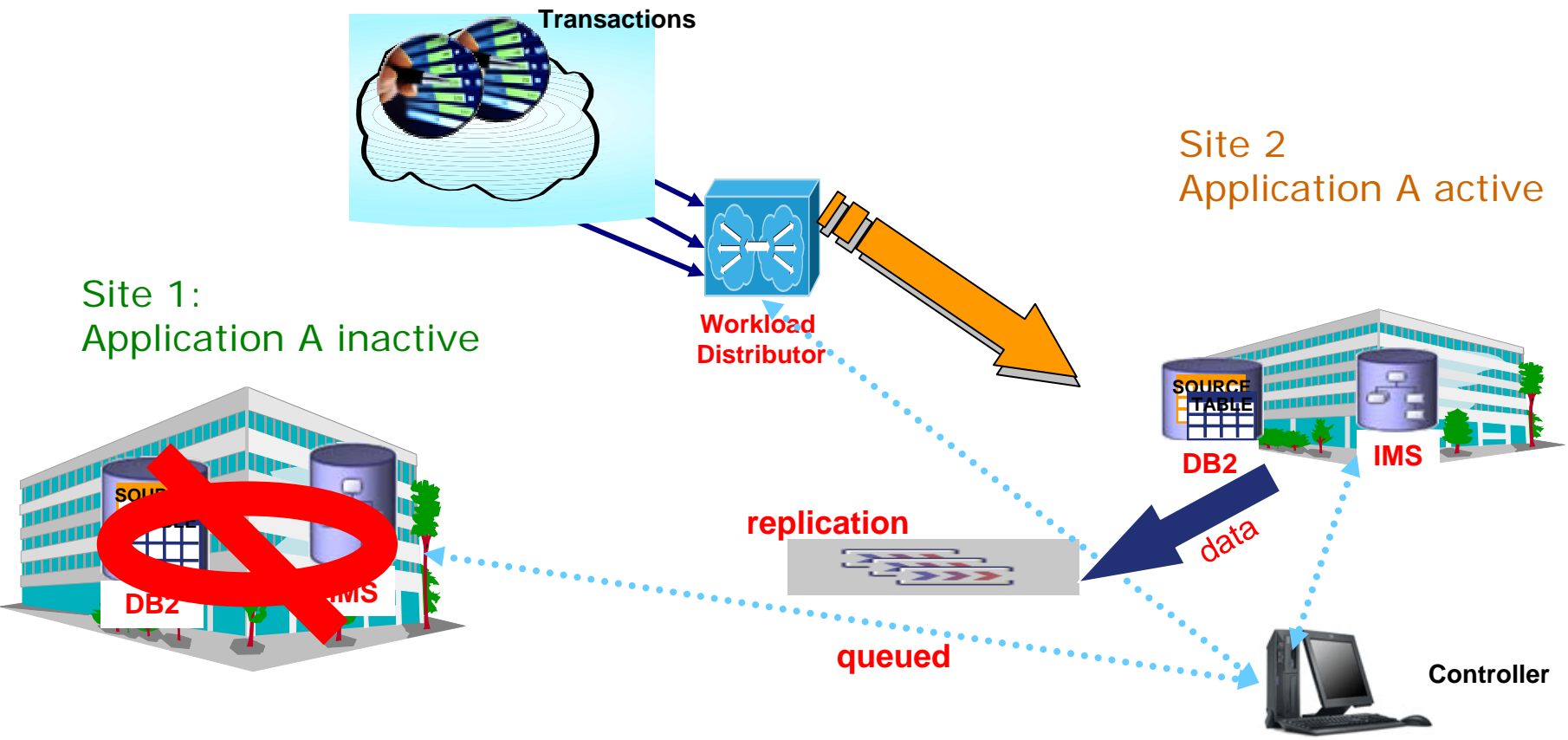


Example (cont.): “Active” Application Fails



Example (cont.): “Standby” Application Becomes “Active”

- Automatic workload switchover



GDPS Active/Active Continuous Availability solution

- Participating products
 - GDPS
 - NetView for z/OS
 - System Automation for z/OS
 - DB2
 - InfoSphere DB2 Replication Server
 - IMS
 - InfoSphere IMS Replication for z/OS
 - Multi-Site Workload Lifeline Advisor
- NetView monitors
 - Workload status
 - Workload servers
 - Workload replication
 - Load balancers
 - Other managed elements
 - Associations among them

Workload Servers Summary

Workload Servers - EDDIE - SYSADMIN

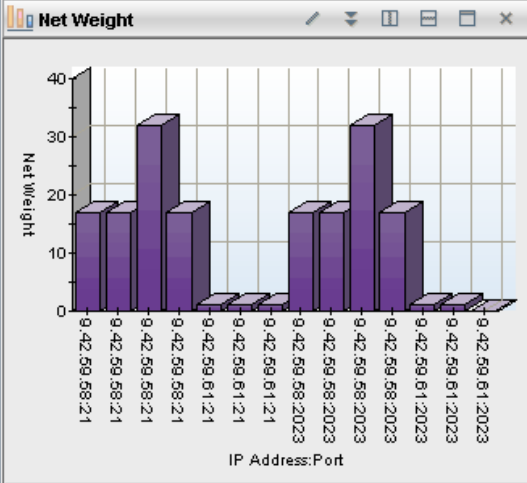
File Edit View Help

Navigator View: Physical

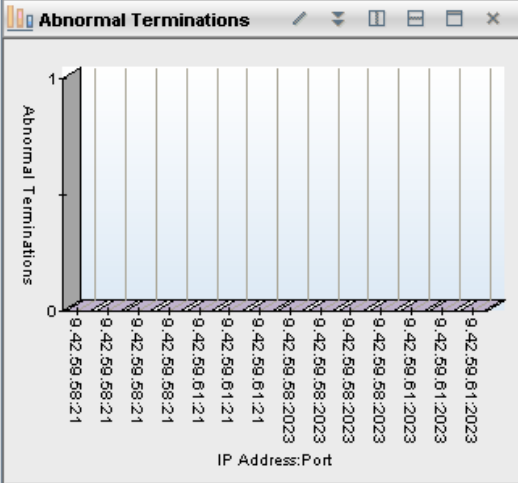
- z/OS Systems
 - 2012
 - NetView Agent
 - CANSNA:2012:KNAAGENT
 - Active/Active Sites
 - CANSNA:2012:ACTACT
 - Load Balancers
 - Replication Servers
 - Workload Lifeline Adv...
 - Workloads

Physical

Net Weight



Abnormal Terminations



Workload Servers Summary

	Collection Time	Job Name	IP Address	Port	zOS Image Name	Site Name	Server State	Net Weight	WLM Weight	Abnormal Terminations	Server Health	CPU Weight	zAAP Weight	zIIP Weight	Com Sei
	02/15/11 11:41:00	FTPD1	9.42.59.58	21	TVT2008	NVPLEX2	ACTIVE	17	33	0	100	33	0	0	
	02/15/11 11:41:00	FTPD1	9.42.59.58	21	TVT2007	NVPLEX2	ACTIVE	17	33	0	100	33	0	0	
	02/15/11 11:41:00	FTPD1	9.42.59.58	21	TVT2006	NVPLEX2	ACTIVE	32	64	0	100	64	0	0	
	02/15/11 11:41:00	FTPD1	9.42.59.58	21	TVT2002	NVPLEX2	ACTIVE	17	33	0	100	33	0	0	
	02/15/11 11:41:00	FTPD1	9.42.59.61	21	TVT2003	NETVIEW	ACTIVE	1	57	0	100	57	0	0	
	02/15/11 11:41:00	FTPD1	9.42.59.61	21	TVT2004	NETVIEW	ACTIVE	1	63	0	100	63	0	0	
	02/15/11 11:41:00	FTPD1	9.42.59.61	21	TVT2017	NETVIEW	ACTIVE	1	64	0	100	64	0	0	
	02/15/11 11:41:00	TN3270	9.42.59.58	2023	TVT2008	NVPLEX2	ACTIVE	17	34	0	100	34	0	0	
	02/15/11 11:41:00	TN3270	9.42.59.58	2023	TVT2007	NVPLEX2	ACTIVE	17	34	0	100	34	0	0	

Hub Time: Tue, 02/15/2011 11:40 AM Server Available Workload Servers - EDDIE - SYSADMIN

Related Session on GDPS Active/Active

- Session 10833
 - “Intelligent Load Balancing with IBM Multi-Site Workload Lifeline”
(Mike Fitzpatrick (IBM))
 - Thursday, March 15, 1:30

Questions?

More Information

- NetView website
<http://www.ibm.com/software/tivoli/products/netview-zos/>
- NetView customer forum
<http://tech.groups.yahoo.com/group/NetView/>
- NetView wiki
<https://www.ibm.com/developerworks/wikis/display/tivolidoccentral/Tivoli+NetView+for+zOS>
- NetView media gallery
<http://www.ibm.com/developerworks/wikis/display/tivolimedialogallery/Tivoli+NetView+for+zOS>

Thank you!