NetView for z/OS V6.1: Needles in the Haystacks and Other Fun Chores Made Easy

Larry Green
IBM

August 8, 2011
Session Number 9241
Related Sessions

- **Wednesday, August 10, 1:30, Session 9917**
  - “Top 10 Tips for Performance Monitoring with OMEGAMON (Ernie Gilman (IBM))”

- **Thursday, August 11, 9:30 Session 9914**
  - “Canzlog in NetView for z/OS 6.1: User Experience” (Dale Carter (Bank of America) and Tom Howe (IBM))

- **Thursday, August 11, 11:00, Session 9918**
  - “Revise, Acquire, Automate: NetView for z/OS V6.1’s Edit Language” (Tom Howe (IBM))

- **Thursday, August 11, 4:30, Session 9666**
  - “Beyond Disaster Recovery: Taking Your Enterprise from High Availability to Continuous Availability” (Karen Durward (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

<table>
<thead>
<tr>
<th>Service Point/Stack</th>
<th>Proc</th>
<th>Domain</th>
<th>Status/Owner</th>
<th>Start</th>
<th>For</th>
<th>Writer</th>
</tr>
</thead>
<tbody>
<tr>
<td>FKXX2A01</td>
<td>TCPIP</td>
<td>LOCAL</td>
<td>CTRACE</td>
<td>N/A</td>
<td>N/A</td>
<td><em>NONE</em></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>PKTRACE</td>
<td>N/A</td>
<td>N/A</td>
<td><em>NONE</em></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>OSATRACE</td>
<td>N/A</td>
<td>N/A</td>
<td><em>NONE</em></td>
</tr>
</tbody>
</table>

**Command ====>**

F1=Help  F2=Main Menu  F3=Return  F5=Refresh  F6=Roll
F7=Backward  F8=Forward  F12=Cancel
Select what to collect

![Screenshot of a session interface]

- **Service Point/Stack:** NMP101  TCPNAME: TCPIP
- **PKTS:** ACTIVE  On Task: TCPPAUTO  GTF: NO
- **Start Time:** 2010-03-31 09:51:55
- **Options:** 1-START/ADD 2-STOP 3-VIEW PACKETS

<table>
<thead>
<tr>
<th>Infc/Link</th>
<th>Stat</th>
<th>Prot</th>
<th>IP Address/Prefix</th>
<th><em><strong><strong>Ports</strong></strong></em></th>
<th>Record</th>
</tr>
</thead>
<tbody>
<tr>
<td>LOOPBACK</td>
<td>ON</td>
<td>TCP</td>
<td>*</td>
<td>* * * * * *</td>
<td>0</td>
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<tr>
<td>LOOPBACK6</td>
<td>ON</td>
<td>TCP</td>
<td>*</td>
<td>* * * * * *</td>
<td>0</td>
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<td>TCPIPLINK</td>
<td>ON</td>
<td>TCP</td>
<td>*</td>
<td>* * * * * 61</td>
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<td>LVIPA1</td>
<td>ON</td>
<td>TCP</td>
<td>*</td>
<td>* * * * * *</td>
<td>0</td>
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<td>TCPIPLINKB</td>
<td>ON</td>
<td>TCP</td>
<td>*</td>
<td>* * * * * *</td>
<td>0</td>
</tr>
<tr>
<td>TCPIPLINK6</td>
<td>ON</td>
<td>TCP</td>
<td>*</td>
<td>* * * * * *</td>
<td>0</td>
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</table>

**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

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Set filter options
List of packets meeting filter criteria

<table>
<thead>
<tr>
<th>DP</th>
<th>Nr hh:mm:ss.mmmmm</th>
<th>IpId</th>
<th>Seq_num</th>
<th>Ack_num</th>
<th>Wndw</th>
<th>Flags</th>
</tr>
</thead>
<tbody>
<tr>
<td>OT</td>
<td>446 08:49:23.561921</td>
<td>03CC</td>
<td>1410079474</td>
<td>3783167835</td>
<td>32768</td>
<td>ACK</td>
</tr>
<tr>
<td>IT</td>
<td>445 08:49:23.561819</td>
<td>1E58</td>
<td>3763187834</td>
<td>1410079474</td>
<td>32768</td>
<td>ACK</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>SYN</td>
</tr>
<tr>
<td>OT</td>
<td>444 08:49:23.550635</td>
<td>03CB</td>
<td>1410079473</td>
<td>0</td>
<td>32768</td>
<td>SYN</td>
</tr>
<tr>
<td>IU</td>
<td>443 08:49:23.537161</td>
<td>0000</td>
<td>protocol=UDP</td>
<td>2FC58550</td>
<td>00019000</td>
<td><em>.E...... /........</em></td>
</tr>
<tr>
<td>OU</td>
<td>442 08:49:23.536551</td>
<td>03CA</td>
<td>protocol=UDP</td>
<td>2FC50100</td>
<td>00019000</td>
<td><em>.E...... /........</em></td>
</tr>
<tr>
<td>OT</td>
<td>441 08:49:16.053717</td>
<td>03C9</td>
<td>7090666085</td>
<td>1516932319</td>
<td>32764</td>
<td>ACK</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>PSH</td>
</tr>
<tr>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>RST</td>
</tr>
<tr>
<td>OT</td>
<td>440 08:49:08.937043</td>
<td>03C8</td>
<td>2606649455</td>
<td>2804974280</td>
<td>32768</td>
<td>PSH</td>
</tr>
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<td></td>
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<td></td>
<td>RST</td>
</tr>
<tr>
<td>OT</td>
<td>439 08:48:56.842212</td>
<td>03C7</td>
<td>7090666085</td>
<td>1516932319</td>
<td>32764</td>
<td>ACK</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>PSH</td>
</tr>
</tbody>
</table>

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

```
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  : 6028  Dest Port: 23  Asid: 002F TCB: 006B59D0
IpHeader: Version : 4  Header Length: 20
Tos          : 0  QOS: Routine Normal Service
Packet Length : 52  ID Number: 03C9
Fragment     : 0  Offset: 0
TTL          : 64  Protocol: TCP  CheckSum: 097F F
Source       : 9.42.45.101
```

TO SEE YOUR KEY SETTINGS, ENTER 'DISPFK'

CMD==> _
Back to summary listing

```
DP  Nr  hh:mm:ss.mmmmmm  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
     2FC58500  00010000  *.Ee....../.*/.*
OU  442  08:49:23.536551  03CA  protocol=UDP
     2FC50100  00010000  *.Ee....../.*/.*
OT  441  08:49:16.053717  03C9  709066085  1516932319  32764  ACK  PSH  RST
OT  440  08:49:08.937043  03C8  2606649455  2804974280  32768  PSN  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
Session Report

**New Command**

1. Ping (RAddr)
2. TraceRte (RAddr)
3. Hostnames
4. Connections
5. SNMP (RAddr)
6. SNMP (Stack)
7. IP Trace Session Report w/Maxrecs 100

Fl=Help  F3=Return  F6=Roll  F12=Cancel
Summary analysis for that session

```
FKXX2851    Session Analysis    LOCAL

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

Remote IP 9.42.45.198
         Port 23  Host Name  nmp196.tivlab.raleigh.ibm.com

Total Packets Summarized 78  Status CLOSED (ACTIVE RESET)

<table>
<thead>
<tr>
<th>Flags</th>
<th>Inbound</th>
<th>Outbound</th>
<th>Window Size</th>
<th>Inbound</th>
<th>Outbound</th>
</tr>
</thead>
<tbody>
<tr>
<td>Retransmissions</td>
<td>0</td>
<td>0</td>
<td>Largest</td>
<td>32768</td>
<td>32768</td>
</tr>
<tr>
<td>Duplicate Acks</td>
<td>0</td>
<td>2</td>
<td>Average</td>
<td>32741</td>
<td>32746</td>
</tr>
<tr>
<td>Reset</td>
<td>0</td>
<td>1</td>
<td>Smallest</td>
<td>32637</td>
<td>32592</td>
</tr>
<tr>
<td>Window Size 0</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Window Probes</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Delay Ack</td>
<td>1</td>
<td>14</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Command ===>
F1=Help         F3=Return
F8=Packets      F9=Actions F10=Report
```

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Individual packets for the session

- **Duplicate Ack**: Packet marked with 'u'
- **Delayed Ack**: Packet marked with 'd'
Go to packet details

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

Command ===> F1=Help F3=Return [F4=Packet Detail] F6=Roll F12=Cancel
F7=Backward F8=Forward F10=Left

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### Packet Details

```
**** 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: 006859D0
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==>
```

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Back to Summary Analysis

```
FKXK2851 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
Window Probes 0 0
Delay Ack 1 14

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

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Session Report

BNH773I NUMBER OF PACKETS: 78 , MISSED BUFFERS: 0 , TCPNAME: TCPIP

**** 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===
Session Report (cont.)

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==>

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### Session Report (cont.)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Inbound</th>
<th>Outbound</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total bytes sent</td>
<td>8293</td>
<td>246</td>
</tr>
<tr>
<td>Bytes retransmitted</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Throughput</td>
<td>0.166</td>
<td>0.005</td>
</tr>
<tr>
<td>Bandwidth utilization</td>
<td>0.01%</td>
<td>0.00%</td>
</tr>
<tr>
<td>Delay ACK Threshold</td>
<td>290 ms</td>
<td>200 ms</td>
</tr>
<tr>
<td>Minimum Ack Time</td>
<td>0.000686</td>
<td>0.000045</td>
</tr>
<tr>
<td>Average Ack Time</td>
<td>0.000686</td>
<td>0.000877</td>
</tr>
<tr>
<td>Maximum Ack Time</td>
<td>0.000686</td>
<td>0.000152</td>
</tr>
</tbody>
</table>

**Data Segment Stats:**

- 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:**

- Number of windows: 24, 16

To see your key settings, enter 'DISPK'.

CMD=>

24/009
Session Report (cont.)

Session Report

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: 23.987290, 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=>

Connected to remote server: host:RAVNR,RALEIGH.IBM.COM using port:23

24/009
Session Report (cont.)

The image shows a session report from a network monitoring tool, displaying various statistics and timings for inbound and outbound traffic. The report includes fields such as out-of-order packets, delayed ACKs, fragments, and time spent on different types of flows. The report also notes that to see your key settings, enter 'DISPFK'.
Session Report (cont.)

```
<table>
<thead>
<tr>
<th>TcpHdr</th>
<th>IO</th>
<th>F</th>
<th>Seq</th>
<th>Ack</th>
<th>RcvWnd</th>
<th>Data</th>
<th>Delta Time</th>
<th>TimeStamp</th>
<th>Rc</th>
</tr>
</thead>
<tbody>
<tr>
<td>S</td>
<td>0</td>
<td>0</td>
<td>709065838</td>
<td>0</td>
<td>32768</td>
<td>0</td>
<td>0.000000</td>
<td>08:48:32.554268</td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>S</td>
<td>I</td>
<td>1516924025</td>
<td>709065839</td>
<td>32768</td>
<td>0</td>
<td>0.000793</td>
<td>08:48:32.555061</td>
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<td>08:48:33.424382</td>
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<td>08:48:33.694703</td>
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<td>709065869</td>
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<td>0.000085</td>
<td>08:48:33.697183</td>
<td></td>
</tr>
</tbody>
</table>
```

To see your key settings, enter 'DISPFK.'

CMD=>

24/009

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Session Report (cont.)

```
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 ctrace records read
0 segmented ctrace records were lost
78 ctrace records read
0 records could not be validated
78 records passed filtering
78 packet trace records processed
0 data trace records processed
```

TO SEE YOUR KEY SETTINGS, ENTER 'DISPFK'

CMD=>

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Summary Analysis for that session

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)

<table>
<thead>
<tr>
<th>Flags</th>
<th>Inbound</th>
<th>Outbound</th>
<th>Window Size</th>
<th>Inbound</th>
<th>Outbound</th>
</tr>
</thead>
<tbody>
<tr>
<td>Retransmissions</td>
<td>0</td>
<td>0</td>
<td>Largest</td>
<td>32768</td>
<td>32768</td>
</tr>
<tr>
<td>Duplicate Acks</td>
<td>0</td>
<td>2</td>
<td>Average</td>
<td>32741</td>
<td>32746</td>
</tr>
<tr>
<td>Reset</td>
<td>0</td>
<td>1</td>
<td>Smallest</td>
<td>32637</td>
<td>32592</td>
</tr>
<tr>
<td>Window Size 0</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Window Probes</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Delay Ack</td>
<td>1</td>
<td>14</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Commands Available for this Session

Local IP: 9.42.45.101
Port: 1028
Host Name: nmp101.ti

Remote IP: 9.42.45.196
Port: 23
Host Name: nmp196.ti

Total Packets Summarized: 78

Flags

<table>
<thead>
<tr>
<th></th>
<th>Inbound</th>
<th>Outbound</th>
</tr>
</thead>
<tbody>
<tr>
<td>Retransmissions</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Duplicate Acks</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Reset</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Window Size 0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Window Probes</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Delay Ack</td>
<td>1</td>
<td>14</td>
</tr>
</tbody>
</table>

Command: ____________________________

Command ===>

F1=Help
F3=Return
F8=Packets
F10=Report

F6=Roll
F12=Cancel

1. Drop Connection
2. Save Session Packets

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Save Session Packets

```
Local IP: 9.42.45.101
  Port: 1028  Host Name: nmp101.ti

Remote IP: 9.42.45.196
  Port: 23   Host Name: nmp196.ti

Total Packets Summarized: 78

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

 Command ===>
 F1=Help       F3=Return
 F8=Packets    F12=Cancel
```

2. Command

1. Drop Connection
2. Save Session Packets

---

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Save Session Packets

Service Point/Stack: NMP101  Domain: LOCAL  Proc: TCPIP
Save Time: 01/17/11 15:28:00  by Operator NET0P1
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 ==>  F3=Return  F4=Save Trace  F6=Roll  F12=Cancel

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Save Session Packets

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: 1026  Remote Port: 23  Protocol: TCP
Interface Name: ALL

Command ===> F3=Return  F4=Save Trace  F6=Roll  F12=Cancel

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Save Session Packets

Service Point/Stack: NMP101  Domain: LOCAL  Proc: TCPIP
Save Time: 01/17/11 15:28:00  by Operator NET0P1
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
Recall Saved Traces

```
NetView V6R1 - NM  Tivoli NetView  NTVF9 NET0P1  01/17/11 15:40:29
```

```
???
listtro
```

```
Connected to remote server/host:RALVM,Raleigh.IBM.COM using port 23
```

© Copyright 2011 IBM Corp.
Recall Saved Traces

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

- **F4=View Trace**
Trace Summary

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

<table>
<thead>
<tr>
<th></th>
<th>Inbound</th>
<th>Outbound</th>
</tr>
</thead>
<tbody>
<tr>
<td>Retransmissions</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Duplicate Acks</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Reset</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Window Size 0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Window Probes</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Delay Ack</td>
<td>1</td>
<td>14</td>
</tr>
<tr>
<td>Window Size</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Largest</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Average</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Smallest</td>
<td>0</td>
</tr>
</tbody>
</table>

Command ==> -
F1=Help  F3=Return  F10=Report  F6=Roll  F12=Cancel

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## Recall Saved Traces

![Saved Packet Traces](image)

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

- **F10=Details**
- **F21=Delete Trace**
Details About the Trace

Service Point/Stack: NMP101  Domain: LOCAL  Proc: TCPIP
Save Time: 01/17/11 15:28:00  by Operator NET0P1
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 ==>  -  F3=Return  F4=View Trace  F6=Roll
F1=Help  F11=Delete Trace  F12=Cancel

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Trace Summary

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

<table>
<thead>
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<th></th>
<th>Inbound</th>
<th>Outbound</th>
<th>Window Size</th>
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<th>Outbound</th>
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</thead>
<tbody>
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<td>Retransmissions</td>
<td>0</td>
<td>0</td>
<td>Largest</td>
<td>0</td>
<td>32768</td>
</tr>
<tr>
<td>Duplicate Acks</td>
<td>0</td>
<td>2</td>
<td>Average</td>
<td>0</td>
<td>32768</td>
</tr>
<tr>
<td>Reset</td>
<td>0</td>
<td>1</td>
<td>Smallest</td>
<td>0</td>
<td>32768</td>
</tr>
<tr>
<td>Window Size 0</td>
<td>0</td>
<td>0</td>
<td></td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Window Probes</td>
<td>0</td>
<td>0</td>
<td></td>
<td>0</td>
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</tr>
<tr>
<td>Delay Ack</td>
<td>1</td>
<td>14</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

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Returning to Trace Filter Screen

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  F12=Cancel  
F8=Extended Options  F10=Analyze

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Choose sessions to analyze

<table>
<thead>
<tr>
<th>Type</th>
<th>Count</th>
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</thead>
<tbody>
<tr>
<td>TCP Sessions</td>
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<tr>
<td>UDP Sessions</td>
<td>14</td>
</tr>
<tr>
<td>ICMP Sessions</td>
<td>3</td>
</tr>
<tr>
<td>TCP Sessions with error flags</td>
<td>4</td>
</tr>
<tr>
<td>Unacknowledged Syns</td>
<td>1</td>
</tr>
<tr>
<td>Retransmissions</td>
<td>0</td>
</tr>
<tr>
<td>Duplicate Acks</td>
<td>4</td>
</tr>
<tr>
<td>Zero Window Size</td>
<td>0</td>
</tr>
<tr>
<td>Window Probes</td>
<td>0</td>
</tr>
<tr>
<td>Reset Flags</td>
<td>1</td>
</tr>
<tr>
<td>Delayed Acks</td>
<td>3</td>
</tr>
</tbody>
</table>

Command: F4=Sessions
Select a session to examine

![Packet Trace Analysis](image)

<table>
<thead>
<tr>
<th>IP Address</th>
<th>Packets</th>
<th>Retrans</th>
<th>Reset</th>
<th>DupAck</th>
<th>DelAck</th>
<th>ZeroWin</th>
<th>WinPro</th>
<th>Unack</th>
</tr>
</thead>
<tbody>
<tr>
<td>9.42.45.101-1028</td>
<td>5</td>
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<td>1</td>
<td>1</td>
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<td>0</td>
<td>0</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.42.45.101-21</td>
<td>19</td>
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<td>0</td>
<td>1</td>
<td>5</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
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<td>9.42.45.196-1028</td>
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<td>0</td>
<td>0</td>
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<td>5</td>
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<tr>
<td>9.42.45.101-23</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Command ===> F3=Return   **F4=Select**  F6=Roll  F12=Cancel

F1=Help   F7=Backward  F8=Forward

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Summary analysis of selected session

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)

<table>
<thead>
<tr>
<th>Flags</th>
<th>Inbound</th>
<th>Outbound</th>
<th>Window Size</th>
<th>Inbound</th>
<th>Outbound</th>
</tr>
</thead>
<tbody>
<tr>
<td>Retransmissions</td>
<td>0</td>
<td>0</td>
<td>Largest</td>
<td>32768</td>
<td>32768</td>
</tr>
<tr>
<td>Duplicate Acks</td>
<td>0</td>
<td>2</td>
<td>Average</td>
<td>32741</td>
<td>32746</td>
</tr>
<tr>
<td>Reset</td>
<td>0</td>
<td>1</td>
<td>Smallest</td>
<td>32637</td>
<td>32592</td>
</tr>
<tr>
<td>Window Size 0</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Window Probes</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Delay Ack</td>
<td>1</td>
<td>14</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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Choose sessions to analyze – UDP

TCP Sessions: 4
TCP Sessions with error flags: 4
Unacknowledged Syns: 1
Retransmissions: 0
Duplicate Acks: 4
Zero Window Size: 0
Window Probes: 0
Reset Flags: 1
Delayed Acks: 3

UDP Sessions: 14
ICMP Sessions: 3
Choose sessions to analyze – ICMP

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

Command ===> F3=Return F4=Sessions
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

Packet trace initially inactive
Start Connection Monitoring (IPSTAT)
Select host and connections

Enter TCP/IP address or HOSTNAME:

Service Point | System | IP Address | Host Name
--- | --- | --- | ---
NMPIPL10 | TCPIP | 9.42.45.10 | nmpipl10.tivlab.raleigh.ibm.com
NMP101 | TCPIP | 9.42.45.101 | nmp101.tivlab.raleigh.ibm.com
NMP217 | TCPIP | 9.42.45.217 | nmp217.tivlab.raleigh.ibm.com

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

TCP/IP for z/OS Connection Management

CLIENT

Service Point Hostname Connections Address
FKXk2210 NMP101 nmp101.tivlab.ra. 3 9.42.45.101

File=Zoom

F1=Help F2=Main Menu F3=Return F4=Commands F5=Refresh F6=Roll
F7=Backward F8=Forward F9=Filters F11=Zoom F12=Cancel

10/03
List of active connections

<table>
<thead>
<tr>
<th>Port</th>
<th>Client Address</th>
<th>Local Port</th>
<th>Send</th>
<th>Receive</th>
</tr>
</thead>
<tbody>
<tr>
<td>23</td>
<td>9.42.45.217</td>
<td>1027</td>
<td>247</td>
<td>5014</td>
</tr>
<tr>
<td>1026</td>
<td>9.42.45.10</td>
<td>23</td>
<td>9303</td>
<td>450</td>
</tr>
<tr>
<td>1029</td>
<td>9.42.45.196</td>
<td>23</td>
<td>9869</td>
<td>425</td>
</tr>
</tbody>
</table>

F4=Commands
Available commands

```
FKXk2221 TCP/IP for z/OS Connection Management

CLIENT -> Service Point -> CONNECTION

9.42.45.217 9.42.45.101

Client : IP Address 9.42.45.217
Port : 23
23 : Connection ID 00002028
1026 : LU
1029 : APPL
Send : 247
Receive : 5614
Send Window : 32765
Conn ResourceName : PHK

Commands

11. Ping
1. Tracert
2. Tracert
3. Drop
4. ARP Cache
5. SNMP Commands
6. Display Conn
7. Quiesce Port
8. Resume Port
9. Conn Details
10. Connection Status
11. Packet Trace

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

MP b 22/015
```

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Control selections for packet trace
List of packets

<table>
<thead>
<tr>
<th>DP</th>
<th>Nr</th>
<th>hh:mm:ss.mmmmm</th>
<th>IpId</th>
<th>Seq_num</th>
<th>Ack_num</th>
<th>Wndw</th>
<th>Flags</th>
</tr>
</thead>
<tbody>
<tr>
<td>OT</td>
<td>3509</td>
<td>13:08:08.409409</td>
<td>34C6</td>
<td>22798080012</td>
<td>2295814566</td>
<td>32760</td>
<td>ACK PSH</td>
</tr>
<tr>
<td>OT</td>
<td>3508</td>
<td>13:08:08.173555</td>
<td>34C7</td>
<td>22798080007</td>
<td>2295814558</td>
<td>32516</td>
<td>ACK PSH</td>
</tr>
<tr>
<td>OT</td>
<td>3507</td>
<td>13:08:07.408237</td>
<td>34C6</td>
<td>22798080007</td>
<td>2295814558</td>
<td>32516</td>
<td>ACK PSH</td>
</tr>
<tr>
<td>OT</td>
<td>3506</td>
<td>13:08:07.159573</td>
<td>34C5</td>
<td>22798080007</td>
<td>2295814306</td>
<td>32768</td>
<td>ACK PSH</td>
</tr>
<tr>
<td>OT</td>
<td>3505</td>
<td>13:08:07.128917</td>
<td>34C4</td>
<td>22798080002</td>
<td>2295813258</td>
<td>32768</td>
<td>ACK PSH</td>
</tr>
<tr>
<td>OT</td>
<td>3504</td>
<td>13:08:05.127138</td>
<td>34C3</td>
<td>22798080002</td>
<td>2295813258</td>
<td>32768</td>
<td>ACK PSH</td>
</tr>
<tr>
<td>OT</td>
<td>3503</td>
<td>13:08:05.105907</td>
<td>34C2</td>
<td>2279807928</td>
<td>2295811029</td>
<td>32765</td>
<td>ACK PSH</td>
</tr>
</tbody>
</table>

Command ===> 
F1=Help 
F7=Backward F8=Forward 
F9=Commands 
F11=Right 
F12=Cancel 

04/02/11

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Trace components started on the fly

```
FKXK2A22  PKTTRACE  Control  SYSTCPDA  ACTIVE for NVDomain: LOCAL

Service Point/Stack: NWP101   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  Start Prot IP Address/Prefix  Ports  Record
            Src PortNm Dest Count

= ALL
 Loopback  ON  TCP  9.42.45.217/32  1027     23  D
 Loopback6 ON  TCP  9.42.45.217/32  1027     23  D
 Tcpiplink ON  TCP  9.42.45.217/32  1027     23  D
 Lvipia1    ON  TCP  9.42.45.217/32  1027     23  D
 Tcpiplinkb ON  TCP  9.42.45.217/32  1027     23  D
 Tcpiplink6 ON  TCP  9.42.45.217/32  1027     23  D

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
```
Display packet control

Service Point/Stack: NMP101 Proc: TCP/IP Infc Name: ALL

LAddr 0.42.45.101

RAddr 0.42.45.217

Portnum: ** LPort: 1027 RPort: 23 Protocol ALL (default)
S TCP
   UDP
   ICMP
   OSPF
   ______ (Number)

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

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

Y = stop the trace
N = leave the trace running, so you can monitor the packets that are collected
Choose another connection or exit
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

Netlog → NetView console

Syslog → System console

Joblogs → ISPF
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

• 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
Canzlog display

Filters

Time covered by records displayed on this page
Related Session

• Session 9914
  • “Canzlog in NetView for z/OS 6.1: User Experience”
    (Dale Carter (Bank of America) and Tom Howe (IBM))
  • Thursday, August 11, 9:30
Agenda

- Timeline
- Smart Packet Collection
- Packet Trace on the fly
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- NetView Web Application
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- 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
Views in NMC
Display Resource Details
# NMC Display Details

<table>
<thead>
<tr>
<th>RODM Field</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>SysObjectid</td>
<td>1.3.6.1.4.1.2.3.13</td>
</tr>
<tr>
<td>SysContact</td>
<td>SNMPBASE - Unspecified</td>
</tr>
<tr>
<td>Entityld</td>
<td>15</td>
</tr>
<tr>
<td>SysDescr</td>
<td>Sysname: OS/390 Nodename: NMP19...</td>
</tr>
<tr>
<td>FQDN</td>
<td>NMP198</td>
</tr>
<tr>
<td>SysLocation</td>
<td>SNMPBASE - Unspecified</td>
</tr>
<tr>
<td>Sysplex</td>
<td>NV3PLEX</td>
</tr>
</tbody>
</table>

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1. NetView discovers IP, sysplex and system resources.
Discovery Library Adapter (DLA)

2. Discovered resources are stored in RODM
Discovery Library Adapter (DLA)

3. DLA extracts resource & relationship data from RODM, formats & transports it to CMDB
NEW to DLA:
• Sysplex, system info
• IP resource data from ITNM
Agenda

- Timeline
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- 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
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• 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

Site 1: Application A active

Site 2: Application A standby

Transactions

Workload Distributor

Controller

DB2

IMS

SOURCE TABLE

SOURCE TABLE

SOURCE TABLE

SOURCE TABLE

data

data

replication
Example (cont.): “Active” Application Fails

Site 1: Application A fails

Site 2: Application A standby

Site 2: Application A standby

Transactions

Workload Distributor

replication

Controller

IMS

DB2

Source Table

Table

Source Table

Table

Source Table

Table

Source Table

Table

Source Table

Table
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
Related Session on GDPS Active/Active

• Session 9666
  • “Beyond Disaster Recovery: Taking Your Enterprise from High Availability to Continuous Availability” (Karen Durward (IBM))
  • Thursday, August 11, 4:30
Questions?
More Information

- NetView website
- 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/tivolimediagallery/Tivoli+NetView+for+zOS
Thank you!