



Maximize Application and Network Availability.

Diagnose and Fix Issues Faster.

Keeping z/OS mainframe applications and networks up is critical to your business.

Pinpointing the source of problems quickly lets you get back to business fast.

THE SITUATION

DOWNTIME – NOT AN OPTION

For many companies, operational success is inextricably linked to network stability and application availability. Application failures and network downtime lead to:

- Loss of revenue
- Loss of commercial credibility with suppliers and customers
- Loss of business to competitors.

In today's complex network environment, locating the cause of an outage or application failure is an increasingly difficult and time-consuming task. As the demands for network computing increase, so do the needs for tools that help Network Management personnel satisfy ever-higher service level demands.

The cost of downtime

INDUSTRY	AVERAGE COST PER HOUR OF DOWNTIME
Package Shipping.....	\$30,000
Cellular Services	\$45,000
Telephone Ticket Sales	\$70,000
Airline Reservations	\$85,000
Catalog Services	\$85,000
Home Shopping	\$120,000
Pay Per View.....	\$150,000
800 Number Services	\$200,000
Credit Card Processing	\$2,600,000
Brokerage.....	\$6,500,000

Source: Datamation

IDENTIFYING THE PROBLEM...FAST

A trace provides the best source of information for isolating and resolving problems caused by mainframe network and application service interruptions. Usually this means running the default Generalized Trace Facility (GTF) or C Trace utility, and analyzing the results using Interactive Problem Control System (IPCS). Without a trace, the ability to minimize network and application downtime is limited. However, GTF and C Traces are typically only invoked as a last resort because they:

- Are cumbersome and time consuming to use
- Impose significant system overheads
- Are difficult to read
- Are difficult to interpret
- Require staff with specialized skills.

The challenge of locating a fault where network applications run across multiple systems or logical partitions (LPARs) is even greater. It may be necessary to take and analyze multiple traces simultaneously, which is not practical with the GTF or C Traces because each trace must be individually defined, started and stopped. The likelihood of successfully tracing problems in these environments is remote. Unless the process of taking and analyzing network and application traces is simplified – and accelerated – business could be, literally, lost without a trace.

Today it's simple and efficient to diagnose and solve issues, small and large, faster

with ZEN TRACE & SOLVE - EXIGENCE.

To remedy this high-stakes challenge, William Data Systems, experts in z/OS network management tools, developed ZEN TRACE & SOLVE – EXIGENCE, also known as ZEN TRACE & SOLVE.

ZEN TRACE & SOLVE

ZEN TRACE & SOLVE empowers businesses by allowing them to identify network and application problems early and quickly. It enables z/OS network or application traces to be taken and analyzed simply, efficiently and without disrupting the production environment. It enables faults to be identified and corrected in the shortest timeframe, and is the reason that many of the world's leading 'Blue Chip' companies are able to meet stringent network service level agreements required by their users.

ZEN TRACE & SOLVE:

- Accelerates network problem determination and resolution
- Reduces the cost of network and application failure
- Maximizes the performance of skilled network technicians
- Minimizes the impact of network skills shortages
- Improves network service levels
- Maintains user confidence
- Does all the above across the Systems Complex (Sysplex)

THE SOLUTION

LJname = P17TCP06		William Data Systems		Date : 06/07/2008	
USER = SW		Trace Data Management		Time : 15:42	
Number	Status	Resource	Trace Type	Description	Userid
0017	Imported		TCP/IP packet	EXIGENCE.V4.EE.TRACE	JOHNB
0018	Imported		TCP/IP packet	EXIGENCE.V4.EE.WITH.FR	JOHNB
0019	Imported	U08232	VTAM buffer	FMH Prob	EXI-1651
0020	Imported		TCP/IP packet	EXIGENCE.V4.FTP.TRACE	JOHNB
0021	Taken	B5N	Generalised PIU	gpt	TIUJTE
0022	Imported		TCP/IP packet	EXIGENCE.V4.GRE.NONCAS	JOHNB
0023	Imported		TCP/IP packet	EXIGENCE.V4.GRE.TRACE	JOHNB
0024	Imported		TCP/IP packet	EXIGENCE.V4.GRECASA.TR	JOHNB
0025	Imported	R0530012	Comms SubSystem	DOI Session Drop	EB205
0026	Imported		TCP/IP packet	EXIGENCE.V4.KEEPALIV.C	JOHNB
0027	Imported	MQMMQADA	VTAM buffer	mq buffer trace lu6.2	SYSU
0028	Taken	J00280F9	NCP line	NTRI trace sample	WJW
0029	Imported		TCP/IP packet	EXIGENCE.V4.OSPF.TRACE	JOHNB
0030	Imported		TCP/IP packet	EXIGENCE.V4.OSPF.TRACE	JOHNB
0031	Imported		TCP/IP packet	EXIGENCE.V4.OSPF.TRACE	JOHNB
0032	Imported		TCP/IP packet	EXIGENCE.V4.P2P.TRACE	JOHNB

Number	Status	Stacks/LU Names	Type	Description	User ID	Cached
0001	Imported	TCPIP	TCP/IP Packet	rbc.sasp.pktrc	JOHNB	
0002	Imported	TCPIP	TCP/IP Packet	exigence.v4.cisco.sasp.trace	JOHNB	
0003	Imported	TCPIP	TCP/IP Packet	RBC.EXOSASP.DEC20.TRACE	JOHNB	
0004	Imported	TCPI	TCP/IP Packet	EXIGENCE.V4.ALLSORTS.TRA...	JOHNB	
0005	Imported	TCPIP	TCP/IP Packet	EXIGENCE.V4.ALLSORT2.TRA...	JOHNB	
0006	Imported	NLAAB10B	VTAM Buffer	Large APPN trace	WJW	
0007	Imported	SSCPSF	VTAM Buffer	Small APPN trace	XAME	
0008	Imported	TCPIP	TCP/IP Packet	EXIGENCE.V4.CASA.NONGRE...	JOHNB	
0013	Imported	R001P101	VTAM Buffer	DLUR/DLUS APPN Trace	SYE72	
0014	Imported	TCP3	TCP/IP Packet	EXIGENCE.V4.EE.DLUR.DLUS...	JOHNB	
0015	Imported	TCPIP	TCP/IP Packet	EXIGENCE.V4.EE.DLUR.DLUS...	JOHNB	
0016	Imported	TCPI	TCP/IP Packet	EXIGENCE.V4.EE.OSPF.TRACE	JOHNB	
0017	Imported	TCPIP	TCP/IP Packet	EXIGENCE.V4.EE.TRACE	JOHNB	
0018	Imported		TCP/IP Packet	EXIGENCE.V4.EE.WITH.FRAG...	JOHNB	
0019	Imported	U08232	VTAM Buffer	FMH Prob	EX-16...	
0020	Imported	TCPI	TCP/IP Packet	EXIGENCE.V4.FTP.TRACE	JOHNB	
0022	Imported	TCPIP	TCP/IP Packet	EXIGENCE.V4.GRE.NONCASA...	JOHNB	
0023	Imported	TCPI	TCP/IP Packet	EXIGENCE.V4.GRE.TRACE	JOHNB	
0024	Imported	TCPIP	TCP/IP Packet	EXIGENCE.V4.GRECASA.TRA...	JOHNB	
0026	Imported	TCPIP	TCP/IP Packet	EXIGENCE.V4.KEEPALIV.CTR...	JOHNB	
0027	Imported	MQMMQADA	VTAM Buffer	mq buffer trace lu6.2	SYSU	
0029	Imported	TCPIP	TCP/IP Packet	EXIGENCE.V4.OSPF.TRACE	JOHNB	
0030	Imported	TCPI	TCP/IP Packet	EXIGENCE.V4.OSPF.TRACE2	JOHNB	
0031	Imported	TCPIP	TCP/IP Packet	EXIGENCE.V4.OSPF.TRACE3	JOHNB	
0032	Imported	TCPI	TCP/IP Packet	EXIGENCE.V4.P2P.TRACE	JOHNB	
0033	Imported	TCPIP	TCP/IP Packet	EXIGENCE.V4.RRC.FFMH51	JOHNB	

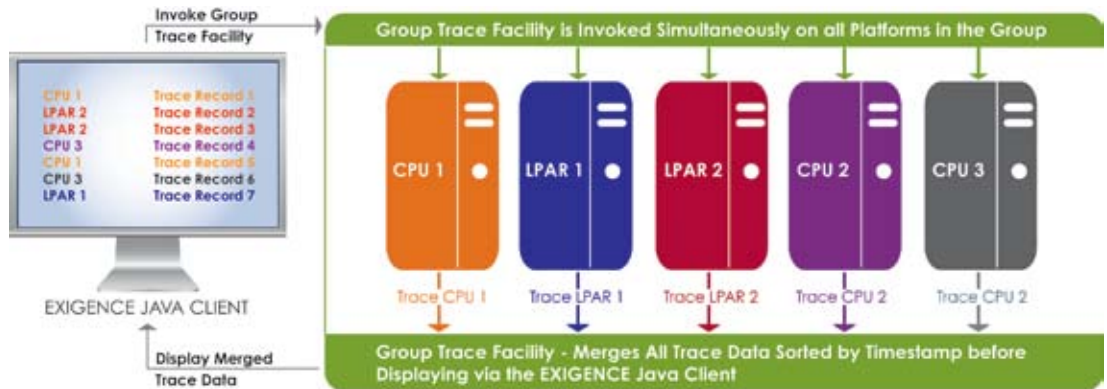
3270 Trace list (above) and Exigence client trace list (left)

TRACING ACROSS THE SYSPLEX

Tracing the root cause of a network-related problem in a complex environment could involve the capture and examination of multiple traces. As an example, the challenge of tracing a single client Internet Protocol (IP) address with many connections on several systems is compounded in an environment where an IP client connects to a service running on multiple systems using dynamic Virtual IP Address (VIPA). As IBM points out, in such an environment, it is impossible to be sure with which system the connection will be made. The ZEN TRACE & SOLVE Group Trace facility solves this problem.

With a Group Trace it does not matter where the connection is made since the trace can be initiated on all systems simultaneously. The trace results are then merged to provide a single trace view as if it had been taken for a single connection on a single system. ZEN TRACE & SOLVE is the only product of its type to offer tracing across the Sysplex.

Group Trace Facility



Sample output from a Group Trace

Rec.	Real Record	Time (GMT+00)	IP Address 1	Port 1	Direction	IP Address 2	Port 2
9	ZPLEX Trace 0017 Record 000004	12:41:11.197	192.168.1.8	ftp	← ftp-Ready	192.168.100.10	1033
11	ZPLEX Trace 0089 Record 000008	12:41:11.249	192.168.100.10	1033	→ ftp-Ready	192.168.1.8	ftp
12	ZPLEX Trace 0017 Record 000008	12:41:11.454	192.168.1.8	ftp	← ftp-User	192.168.100.10	1033
15	ZPLEX Trace 0017 Record 000008	12:41:16.121	192.168.1.8	ftp	← ftp-User	192.168.1.8	ftp
16	ZPLEX Trace 0089 Record 000009	12:41:16.124	192.168.100.10	1033	→ ftp-Pwd needed	192.168.1.8	ftp
17	ZPLEX Trace 0089 Record 000009	12:41:16.136	192.168.100.10	1033	→ ftp-Pwd needed	192.168.100.10	1033
19	ZPLEX Trace 0017 Record 000009	12:41:16.139	192.168.1.8	ftp	← ftp-Password	192.168.100.10	1033
21	ZPLEX Trace 0017 Record 000011	12:41:18.514	192.168.1.8	ftp	← ftp-Password	192.168.100.10	1033
22	ZPLEX Trace 0089 Record 000011	12:41:18.516	192.168.100.10	1033	→ ftp-Loaded in	192.168.1.8	ftp
25	ZPLEX Trace 0089 Record 000013	12:41:19.034	192.168.100.10	1033	→ ftp-Loaded in	192.168.1.8	ftp
26	ZPLEX Trace 0017 Record 000013	12:41:19.038	192.168.1.8	ftp	← ftp-Type	192.168.100.10	1033
29	ZPLEX Trace 0017 Record 000015	12:41:23.041	192.168.1.8	ftp	← ftp-Type	192.168.1.8	ftp
30	ZPLEX Trace 0089 Record 000015	12:41:23.044	192.168.100.10	1033	→ ftp-OK	192.168.1.8	ftp
31	ZPLEX Trace 0089 Record 000016	12:41:23.050	192.168.100.10	1033	→ ftp-OK	192.168.1.8	ftp
32	ZPLEX Trace 0017 Record 000016	12:41:23.055	192.168.1.8	ftp	← ftp-Port	192.168.100.10	1033
35	ZPLEX Trace 0017 Record 000018	12:41:52.400	192.168.1.8	ftp	← ftp-Port	192.168.1.8	ftp
36	ZPLEX Trace 0089 Record 000019	12:41:52.403	192.168.100.10	1033	→ ftp-OK	192.168.1.8	ftp
37	ZPLEX Trace 0089 Record 000019	12:41:52.406	192.168.100.10	1033	→ ftp-OK	192.168.100.10	1033
38	ZPLEX Trace 0017 Record 000019	12:41:52.410	192.168.1.8	ftp	← ftp-Retrieve	192.168.100.10	1033
39	ZPLEX Trace 0017 Record 000020	12:41:52.412	192.168.1.8	ftp	← ftp-Retrieve	192.168.1.8	ftp
40	ZPLEX Trace 0089 Record 000020	12:41:52.414	192.168.100.10	1033	→ TCP connect	192.168.100.10	1034
41	ZPLEX Trace 0089 Record 000021	12:41:52.433	192.168.100.10	1034	→ TCP connect	192.168.100.10	1034
42	ZPLEX Trace 0017 Record 000021	12:41:52.436	192.168.1.8	ftp-data	← TCP connect	192.168.1.8	ftp-data
43	ZPLEX Trace 0017 Record 000022	12:41:52.437	192.168.1.8	ftp-data	← TCP connect	192.168.100.10	1034
44	ZPLEX Trace 0089 Record 000022	12:41:52.439	192.168.100.10	1034	→ TCP connect	192.168.1.8	ftp-data
47	ZPLEX Trace 0089 Record 000024	12:41:52.540	192.168.100.10	1033	→ ftp-User starting	192.168.1.8	ftp
48	ZPLEX Trace 0017 Record 000024	12:41:52.543	192.168.1.8	ftp	← ftp-User starting	192.168.100.10	1033
49	ZPLEX Trace 0089 Record 000025	12:41:52.563	192.168.100.10	1034	→ TCP disconnect	192.168.1.8	ftp-data
50	ZPLEX Trace 0017 Record 000025	12:41:52.568	192.168.1.8	ftp-data	← TCP disconnect	192.168.100.10	1034
51	ZPLEX Trace 0089 Record 000026	12:41:52.614	192.168.100.10	1034	→ TCP disconnect	192.168.1.8	ftp-data
52	ZPLEX Trace 0017 Record 000026	12:41:52.617	192.168.1.8	ftp-data	← TCP disconnect	192.168.100.10	1034
55	ZPLEX Trace 0017 Record 000028	12:41:52.681	192.168.1.8	ftp-data	← TCP disconnect	192.168.100.10	1034
56	ZPLEX Trace 0089 Record 000029	12:41:52.684	192.168.100.10	1034	→ TCP disconnect	192.168.1.8	ftp-data
61	ZPLEX Trace 0089 Record 000031	12:41:52.791	192.168.100.10	1033	→ ftp-Req. complete	192.168.1.8	ftp
62	ZPLEX Trace 0017 Record 000031	12:41:52.793	192.168.1.8	ftp	← ftp-Req. complete	192.168.100.10	1033

IP Flow Display as Seen from the 3270

Number	Address	TCP/IP	Address
000037	192.168.200.190	←EXTender-Xid→	192.168.1.150
000038	192.168.200.190	←EXTender-Xid→	192.168.1.150
000039	192.168.1.8	←(p3011+5646)→	192.168.1.17
000040	127.0.0.1	←(p5557+3011)→	127.0.0.1
000041	192.168.1.8	←(p3011+5646)→	192.168.1.17
000042	192.168.1.8	←(p5557+3011)→	192.168.1.17
000044	192.168.1.8	←TCP retransmit/out-of-sequence→	192.168.1.17
000045	192.168.1.8	←TCP retransmit/out-of-sequence→	192.168.1.17
000048	192.168.1.80	←(p6522+2717)→	192.168.1.17
000050	192.168.5.150	←TCP connect→	192.168.1.17
000051	192.168.1.235	←3270(PF3)→	192.168.1.17
000052	192.168.1.235	←3270(EWA)→	192.168.1.17
000053	192.168.1.235	←(p3750+telnet)→	192.168.1.17
000055	192.168.1.235	←Devstat/rspinfo→	192.168.1.17
000057	192.168.1.235	←3270(PF3)→	192.168.1.17
000058	192.168.1.235	←3270(Write)→	192.168.1.17

NoAcks-NoFrgs

PFkeys: 1-Help 3-Return 6-Pson 7-Bwd 8-Fwd 9-Flow 10-detail 11-Expand

Sun 06 Jul 03:45

SUPPORT FOR THE ENTIRE ORGANIZATION

ZEN TRACE & SOLVE is an invaluable tool for the organization – whether you are responsible for IT budgets, monitoring network activity or are simply a network user.

IT Management teams are able to drive down costs by ensuring that network and application outages are minimized and network service levels are met.

Applications Specialists can resolve and test network applications problems with ZEN TRACE & SOLVE by capturing all trace data, including the applications element.

...and the Equivalent Display as Viewed from the Java Client Showing the Filter Options

Rec.	Time	IP	Direction	IP Address 2	Port 2
17	10:52:50.236	192.1.1		192.168.1.17	5646
18	10:52:50.241	192.1.1		192.168.1.17	3011
19	10:52:50.264	192.1.1		192.168.1.34	snmp
20	10:52:50.266	192.1.1		192.168.1.34	
21	10:52:50.286	192.1.1	←	192.168.1.150	12003
22	10:52:50.289	192.1.1	←	192.168.1.150	12003
23	10:52:50.342	192.1.1	←	192.168.1.150	12003
24	10:52:50.343	192.1.1	←	192.168.1.150	12003
25	10:52:50.346	192.168.1.154	←	192.168.1.150	12003
26	10:52:50.358	192.168.1.154	←	192.168.1.150	12003
27	10:52:50.360	192.168.1.154	←	192.168.1.150	12003
28	10:52:50.373	192.168.1.154	←	192.168.1.150	12003
29	10:52:50.376	192.168.1.154	←	192.168.1.150	12003
30	10:52:50.395	192.168.1.154	←	192.168.1.150	12003
31	10:52:50.397	192.168.1.154	←	192.168.1.150	12003
32	10:52:50.407	192.168.1.154	←	192.168.1.150	12003
33	10:52:50.409	192.168.1.154	←	192.168.1.150	12003
37	10:52:51.063	192.168.200.190	←	192.168.1.150	12000
38	10:52:51.065	192.168.200.190	←	192.168.1.150	12000
39	10:52:51.558	192.168.1.8	←	192.168.1.17	5646
40	10:52:51.697	127.0.0.1	←	127.0.0.1	3011
41	10:52:51.707	192.168.1.8	←	192.168.1.17	5646
42	10:52:51.711	192.168.1.8	←	192.168.1.17	3011
44	10:52:52.261	192.168.1.8	←	192.168.1.17	5646
45	10:52:52.263	192.168.1.8	←	192.168.1.17	2717
48	10:52:52.441	192.168.1.80	←	192.168.1.17	6381
50	10:52:53.677	192.168.5.150	←	192.168.1.17	telnet
51	10:52:56.992	192.168.1.235	←	192.168.1.17	telnet
52	10:52:57.023	192.168.1.235	←	192.168.1.17	telnet
53	10:52:57.023	192.168.1.235	←	192.168.1.17	telnet
55	10:52:57.032	192.168.1.235	←	192.168.1.17	telnet
57	10:52:57.364	192.168.1.235	←	192.168.1.17	telnet
58	10:52:57.372	192.168.1.235	←	192.168.1.17	telnet
59	10:52:57.375	192.168.1.235	←	192.168.1.17	telnet

Network Specialists can accelerate problem resolution by short-circuiting the repetitive tasks associated with network trace analysis. The ZEN TRACE & SOLVE Expert System will point to the likely problem areas. Its automatic data formatting is user-friendly, and its powerful filtering capabilities remove superfluous data which may be clouding the problem.

Help Desk personnel are able to handle user queries with confidence. The comprehensive Knowledge Base and Explain functions in ZEN TRACE & SOLVE ensure that even the most obscure error messages are answered in seconds.

And, the user community is supported with optimum speed thanks to ZEN TRACE & SOLVE.

FEATURES

- Enables online trace management – no batch set-up required
- Supports simultaneous capture of multiple IP and SNA traces
- Formats and translates all trace data prior to display
- Displays all data flows with meaningful annotation
- Enables display mode switching without loss of context
- Supports powerful filtering techniques enabling traces to be targeted at:
 - Defined Applications: Telnet, File Transfer Protocol (FTP), Enterprise Extender (EE) and Web
 - Defined Protocols: User Datagram Protocol (UDP), Internet Control Message Protocol (ICMP), Transmission Control Protocol (TCP), Server Application State Protocol (SASP) and specific numbered protocols
 - Defined Port numbers
 - Defined IP addresses
 - Logical Unit (LU) to LU sessions
 - LU to Application (e.g., Customer Information Control System (CICS) sessions, etc.)
- Allows individual trace file sizes to be minimized via the ZEN TRACE & SOLVE 'Wrap Mode' feature – particularly useful when tracing intermittent problems
- Simplifies import and evaluation of externally captured traces
- Simplifies export, in IBM-recognizable or LIBPCAP format, of traces captured by ZEN TRACE & SOLVE
- Supports trace printing, if required
- Provides an audit trail of who traced what and when
- Manages all trace types including:
 - IP Packet and Data Traces
 - EE Traces
 - Virtual Telecommunications Access Method (VTAM) buffer and I/O Traces
 - VTAM Extended Trace (XTD) – enabling network activity to be traced cross-domain for a user on one domain who may be accessing an application on another
 - VTAM Internal Trace (VIT)
 - NCP 3745 Trace including Scanner, Generalized Path Information Unit (PIU) & Transmission Group Traces
 - 3746/900 /950 Trace Import
- Incorporates a 3270 and/or Java client interface
- Is menu driven
- Provides comprehensive help on any IP, VTAM and/or 3270 terminology, message or sense code
- Supports IP Version 6

BENEFITS

- Accelerates problem identification for z/OS networks and applications
- Saves time and money by reducing the impact of an outage
- Simplifies network and application problem diagnosis
- Removes the limitations of the default trace utilities
- Supports tracing across the Sysplex
- Provides a consistent approach for reviewing all trace types
- Require a minimal level of tracing expertise to diagnose and solve issues
- Built-in Expert System frees up resource expertise
- Allows IT staff to focus on higher return activities
- Minimizes the use of resources: ZEN TRACE & SOLVE solution has a small foot-print
- Turns a network trace from a utility of last resort into a first-level diagnostic tool
- Includes exceptional customer support
- Developed by William Data Systems, experts in IBM z/OS network management solutions

```

LLname = P17TCP01      William Data Systems      Date : 07/07/2008
USER = SW              IP Detail                Time : 10:48

000044 192.168.1.17(p3011)→192.168.1.8(p5557)
IP 4500007C EFD20000 40060740 COA80111 COA80108
TCP 0BC315B5 96346ABF 7E407AD8 80187FB8      TCP retransmit/out-of-sequence
Data 00000048 00000005 D7F0F0E2 E2C3D700 00000000 E6C4E200 ..
000045 192.168.1.17(p5646)→192.168.1.8(p3011)
IP 4500007C EFD30000 4006073F COA80111 COA80108
TCP 160E0BC3 963518CB 7E503908 80187F7C      TCP retransmit/out-of-sequence
Data 00000048 00000005 E2E2C3D7 E2F0F1D7 00000000 E6C4E200 ..
000048 192.168.1.80(p6522)→192.168.1.17(p2717)
IP 45000035 96B40000 40065B5D COA80150 COA80111
TCP 197A0A9D 14B5EDD2 9E2FE2F7 80188000 00850000 0101080A 5CED25EA
Data 7D
000050 192.168.1.17(p6381)→192.168.5.150(p2001)
IP 4500003C EFD50000 400602EF COA80111 COA80596
TCP 18ED07D1 9F9D1971 00000000 A002B000 BD3B0000 02040518 0103 syn-sent
Data

NoAcks-NoFragS

PFKeys: 1-Help 3-Return 6-PSON 7-Bwd 8-Fwd 9-Flow 10-detail 11-Expand
Mon 07 Jul 10:47

```

From the IP Flow Display Users Can Select the IP Detail Display...

the Expanded IP Detail Display and From Here...

```

LLname = P17TCP01      William Data Systems      Date : 07/07/2008
USER = SW              IP Detail -- Hex Display      Time : 10:51

000044 192.168.1.17(p3011)→192.168.1.8(p5557)
IP header
4500007C EFD20000 40060740 COA80111 COA80108
TCP header
0BC315B5 96346ABF 7E407AD8 80187FB8 21E70000 0101080A 5CF05F5F
5CED0339
TCP data
+0000 00000048 00000005 D7F0F0E2 E2C3D700 *.P00SSCP.*
+0010 00000000 E6C4E200 00000000 00000000 *...WDS.....*
+0020 C3D5D9F0 F0F0F1F2 00000000 C3D5D9F0 *CNR00012...CNR0*
+0030 F0F0F0F4 00000000 0F93B6F9 00010109 *0004...l.9....*
+0040 127DF2A2 000000B0 *. '2s.... *
***** End of trace record *****

Display mode commands:- Hex Ascii Formatted Translated Mn (n = 2 - 5)
NoAcks-NoFragS

PFKeys: 1-Help 3-Return 6-PSON 7-Bwd 8-Fwd 9-Flow 10-detail 11-Expand
Mon 07 Jul 10:50

```

```

LLname = P17TCP01      William Data Systems      Date : 07/07/2008
USER = SW              Expanded trace detail      Time : 10:53

Expansion for trace entry no. 000044

disp  ....value.....  ..translation.....
0000 0BC3      (3011)  Source Port
0002 15B5      (5557)  Destination Port
0004 96346ABF (2520017599) Sequence Number
0008 7E407AD8 (2118154968) Acknowledgement Number
000C 80        (8)     Length of TCP header in words (bits 0-3)
      ---- xxxx   Reserved for future use (bits 4-7)
000D 18        Code bits
      xx-- ----   Reserved for future use
      ---1 ----   (ACK) Acknowledgement field is relevant
      ---- 1---   (PSH) Don't wait for buffer full to send data
000E 7FB8      (32696) Most bytes receiver can accept
0010 21E7      TCP header checksum
0012 0000      (0)     Offset of end of urgent data

MORE >

PFKeys: 1-Help 3-Return 7-Bwd 8-Fwd 11-Expand
Mon 07 Jul 10:52

```

the Expanded IP Structure Display

Maximize Application and Network Availability.

Diagnose and Fix Issues Faster with ZEN TRACE & SOLVE.

SUPPORT

As confirmed through an independent survey of William Data Systems customers, we have built an exceptional reputation for outstanding customer support. We provide comprehensive, effective and highly responsive support for WDS products at all stages of their lifecycle.

In addition, a wide range of Professional Services and training programs are available dependent on user demand. These can be held at WDS offices, customer sites or can be managed remotely via web conferencing.

ZEN SOLUTIONS

ZEN TRACE & SOLVE is a prime component of ZEN, the William Data Systems suite of network management solutions. ZEN provides a comprehensive insight into z/OS network operations by offering targeted solutions, adapted to meet your unique business needs.

The suite consists of the ZEN Presentation Manager, a central interface that enables users to integrate and operate tools easily, and a selection of targeted solutions that provide IT performance management, network optimization, monitoring, tracing, automation, reporting and security. ZEN solutions are critical to maintaining business continuity and service levels of z/OS networks.

ABOUT WDS

WILLIAM DATA SYSTEMS

William Data Systems (WDS) is a pioneer of specialized z/OS network management solutions. Established in 1993, we are an independent global organization that provides innovative solutions to run mainframe networks efficiently and securely. ZEN, the WDS network management suite, offers a selection of user-friendly and cost-effective solutions to meet your unique needs. To overcome both business and technology challenges, WDS provides customers with licensing and pricing terms that are as flexible as our solutions.

WDS supports customers worldwide in sectors such as finance, banking and manufacturing, and our client list includes Fortune 100 companies and government agencies. WDS is an IBM Business Partner and a member of the IBM PartnerWorld for Developers program. We are committed to the global z/OS networking market and to leading the way with innovative solutions through the latest advances.

To learn more about
WDS ZEN solutions,
for support or to contact
our offices, visit
www.willdata.com
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