

Features of 2cIP® V1.B1

Purpose:

- TCP/IP and SNA diagnosis
- Trace-administration und analysis
- Automation of NETSTAT
- Retrieval of SNMP data by the MIB Browser
- EMCS Console Emulation
- Link State Checker
- Port Scanner
- Performance Panel
- Focal Point for NETSTAT and Performance Panel via FLXSRV Agents
- SNMP Trap Listener

Operating system:

From OS/390 CS V2R5 upwards as well as z/OS V1R1 upwards

Taking a trace:

- manually by console commands (using the integrated EMCS Console)
- automatically (trace-start, trace-stop, trace-status-display)
- from Non-EBCDIC Systems via import

Trace-status:

trace-status-display shows the number of the trace-records already captured on a continuous basis

Trace-formats:

- CTRACE (from OS/390 CS V2R5) by External Writer (IBM Standard) for the components
- SYSTPIP + SYSTCPDA
- GTF – for SNA [type = BUF, IO, LINE]
- GTF – for TCP/IP CCW Traces
- VIT (VTAM Internal Trace)
- CISCO SNASW format
- Enterprise Extender
- Toshiba Router Trace
- CISCO 76x ISDN Access Router
- OS/2 Warp TCP/IP Trace
- more on request

Trace-filter at create time:

- CTRACE SYSTCP/DA: protocol, DestIP + SubNetMask, Src- and DestPort, LinkName
- CTRACE SYSTCP/IP: ALL MINIMUM AFP ARP CLAW CONFIG CTC ENGINE FIREWALL ICMP
- INIT INTERNET IOCTL LCS MESSAGE OPCMDS OPMSGS PASAPI PFS QUEUE RAW
- SERIAL SNMP SOCKET STORAGE SYSCALL TCP TELNET TELNVTAM TIMER UDP VTAM
- VTAMDATA WORKUNIT XCF IPADDR(xx) PORT(xx)
- GTF/VTAM: BUF, IO, LINE

Trace-Management:

- standardized trace-format in PDS members after import is editable and browseable
- any number of trace-PDS's
- security via HLQ for trace-PDS and via security system (such as RACF)
- comments for each trace
- usage of GDG's for the Component Trace External Writer
- import of settings of the OPTIONS-Panel

Transparent Operation:

detailed description of trace-creation and related topics in the appendix of the manual
automatic trace-start and trace-stop processes are not proprietary and can be observed
description of NETSTAT usage
description of MIB Browser usage

Trace-Status

trace status display which gives information about the number of captured trace records

Display:

classic ISPF Dialog Manager application with help-panels and context-sensitive field-level help
support for 3270 Models 2, 3, 4 and especially model 5
find. Repeat-Find, Scroll Up/Down + Left/Right (HALF, PAGE, CSR, numeric)
animated "0 - 100% Progress-Bar"
time Stamps: relative, absolute and Delta-Time-Stamp
out-of-the-ordinary Trace Records are highlighted
display of SMFID at the selection of trace-parameter or IP-stacks
customizable rows, columns and colors in the Integrated Traffic Display
display of sysplex and system name in all important panels

Design Technology:

no hooks – no danger for your system – FORGET SYSTEM DUMPS
no assembler – changes and corrections distributed faster
no self written VTAM application – behaves as you would expect
easy installation - no APF authorization, no VSAM, no VTAM application
80.000 lines of compiled REXX code

Analysis:

Integrated Traffic Sequence Display shows data flow
"wrapped" traces are shown in correct sequence (opposite to IPCS!)
"Find" also works within trace-records
"FILTER", "Remove" and "surrounding" shortcuts
several Hex-Modes
several Rec-Modes
several Interpret-Modes
columns and colors individually customizable in Traffic Display – 5 different configurations can be saved for each trace type (CTRACDA, CTRACIP, GTFVTAM)

Hex-Mode:

Display hexadecimal, decimal (Data and Offsets), ASCII and EBCDIC at the same time.

Interpret-Mode:

display down to protocol level
intelligent but compact display of trace-data
unresolved objects shown in Hex-Mode
scroll over record-borders
scroll over more than one records
on demand, all known IP addresses also shown as reverse-DNS
IP options
TCP options
Well-Known Ports – Mapping of ports to "well-known-Ports" as well as globally as for each trace separately

Filters:

FILTER-Shortcuts
additive (or, nor), subtractive (and, nand)
any combination possible: protocol, IP addresses (with or without SubNet Mask), Portnumbers,
Portnames, any Find-strings, relative Record-surrounding
Filter as "Range Indicator"
command "SAVE" causes the filtered trace to be saved as a totally new trace
Filter at Import time also on a time range

Protocols/Formats:

PPP
ETHERNET
LAPD
CTRACE (SYSTCPDA)
 ARP (on request)
 RARP (on request)
 ICMP
 PING (via ICMP)
 TRACEROUTE (via ICMP)
TCP
 TELNET
 FTP
 HTTP
 DNS
 RIP
 OSPF
 LPR
UDP
 SNMP
 TFTP
 NTP
 ISAKMP
 IIOP/GIOP
 XOT (X.25 over TCP/IP)
 Enterprise Extender (SNA)
CTRACE (SYSTCPIP)
GTFVTAM (SNA)
 FID1, FID2, FID3, FID4, FID5, FIDF
 RH (Request and Response)
 RU Types
 LLC
 NLP
 THDR
 ANR
 CVs
 FMHs
 SESSION KEYS
 GDS Variables
 Sense Codes

More on request

Connection Analyzer

Errors in connections
Data Rates and overhead
Scrollable information about captured connections and their quality

Trace Statistics :

scrollable information about Send / Receive / Byte-Counts for each IP-address and port

Error Analyzer

Finds errors in SNA Traces automatically

Print:

what-you-can-see-you-can-print
ATTRIB and ALLOC can be defined as a print output prototype
problem-free print to VTAM printer
LPR print to postscript-enable workstation printer

Import:

any Component- or GTF-file can be imported
import of External Writer GDG-Files
import by merge of multiple External Writer files
SNIFFER
CISCO SNASW format
Import as a batch job
other import formats on request

Export:

export as CTRACE for further usage by IPCS
export in SNIFFER-Format to be imported into SNIFFER
other formats on request

Integrated NETSTAT Panel:

all NETSTAT commands available in menu form
interactive VTAM commands for all LU's shown in NETSTAT
usable independently from 2cIP©

Integrated MIB Browser:

display of all MIB variables via SNMP
usable independently from 2cIP©

Integrated SNMP Trap Listener:

Started Task
Conversion of incoming SNMP-Traps to console messages (WTOs) for automation purposes
usable independently from 2cIP©

Integrated EMCS Console Application:

EMCS segment protected by security system
usable for all actions related to tracing
commands retrievable from command-stack
integrated time stamps
scroll forwards / backwards / right / left
usable independently from 2cIP©

Integrated Port-Scanner-Application:

usable for all actions related to tracing
scroll forwards / backwards / right / left
usable independently from 2cIP©

Integrated Link State Checker

Started Task
Checks status of TCP/IP Links
produces ALARMS

Integrated Performance Panel

With focal point capability using FLXSRV Agents
All relevant TCP/IP Stack information via SNMP
LINKS, IP, ICMP, TCP, UDP, SNMP, OSPF
All information on connections via NETSTAT
Sortable, filterable
Information on protocols
Can show data rates

Integrated IP-DISCOVERY-Panel

Display of selectable systems according with detailed information
Attainable by primary command "SEL" and the command "DISCOVER"

AnSyNova (former : ANSYS):

IBM Development Partner
uses its own S/390 mainframe computer
distinctive TCP/IP Know-How
member of Guide/Share Europe
active in Telecommunication working group, OS/390 respectively z/OS (former MVS) and SSWG
(Software – Service – Working Group)
member of NaSPA (National System Programmers Association)