



IPCS for Networkers Gaining Insight from Gigabytes of TCPIP Dump Data

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Thursday, August 13, 2015

10:00 AM – 11:00 AM

*Walt Disney World Dolphin Orlando, Europe 1
Session 17296*



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IPCS for Networkers - Session 17296

The Problem – High CPU in TN3270

- TN3270 Server is using excessive CPU cycles
 - All sessions are SSL secured
 - Nothing has changed in the configuration of the server
 - Production LPAR (16k clients) at 100% CPU



Complete your session evaluations online at www.SHARE.org/Orlando-Eval

The Problem Documentation

- A Dump of TN3270, TCPIP and OMVS
 - TN3270 SYSTCPIP CTRACE OPT=(TELNET)
 - Shows interaction between TN3270 and VTAM
 - Shows interaction between TN3270 and SSL
 - Shows interaction between TN3270 and TCP
 - TCPIP SYSTCPIP CTRACE OPT=(TCP)
 - Shows interaction between TCP and TN3270

The Root Cause

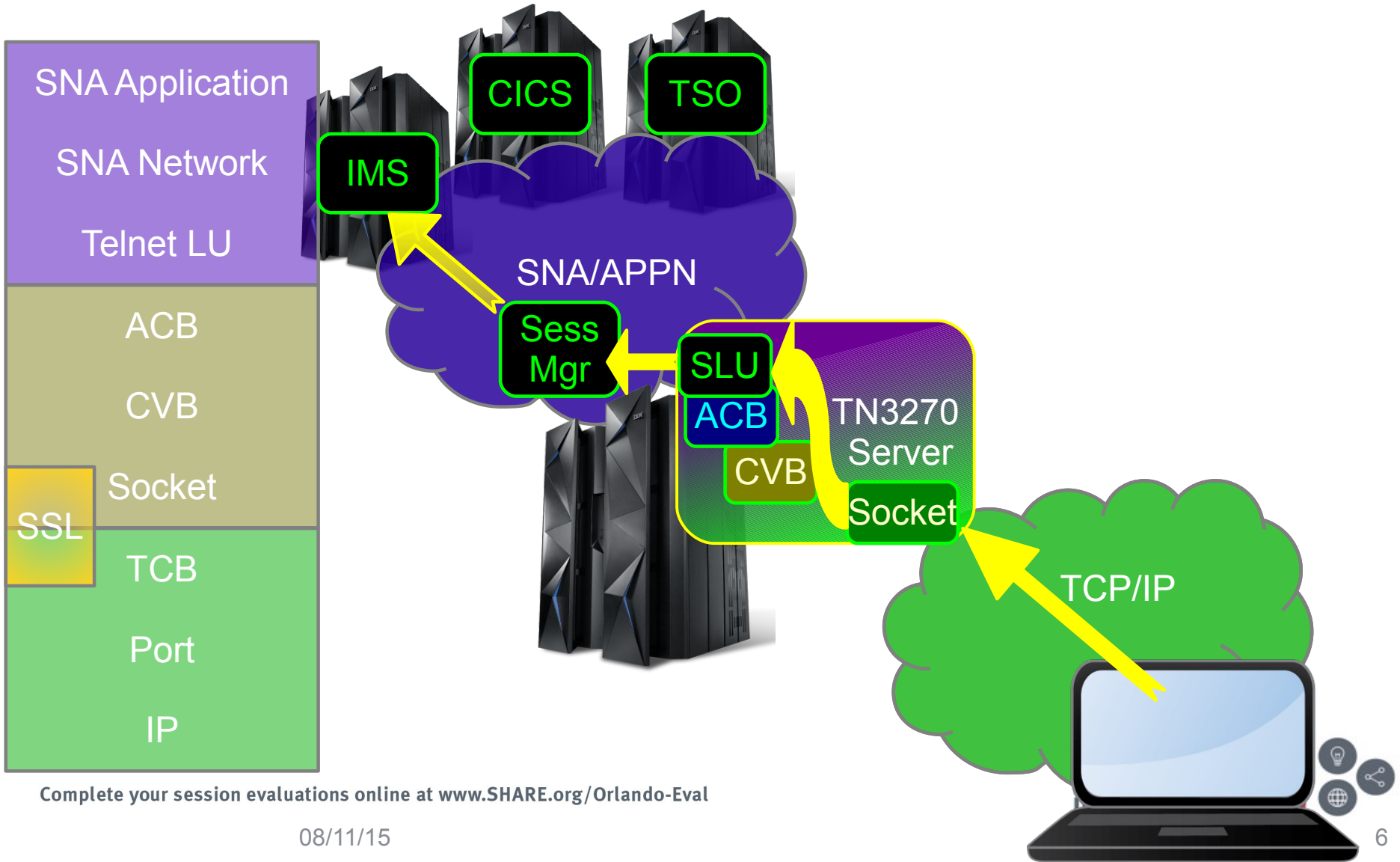
- LUMAP/PRTMAP statements were configured in Telnet Profile
 - Every workstation should get 1 Terminal and 1 Printer only
 - Some end users configured more than two sessions
 - Auto-Reconnect was configured
 - TN3270 Clients (PComm) were upgraded from 5.09 to V6
 - A pop-up window used to appear when TN3270 negotiation failed, asking for “Retry”
 - With V6 the “Retry” was automatically and infinitely

Background: Telnet 3270 Server

A Relay between SNA Applications and IP clients

- Towards SNA the TN3270 Server communicates with a VTAM application (CICS, IMS, TSO, Session Managers)
 - Uses a VTAM **A**ccess Method **C**ontrol **B**lock (**ACB**)
 - Every Telnet Client is represented by a **L**ogical **U**nit (**LU**)
 - Single Session only, S(econdary)LU only (terminal/printer)
 - Every Client requires a unique SNA LUNAME
- Towards IP the TN3270 Server uses TCP protocol
 - Has a **L**istener for clients to connect to (Standard **P**ort **23**)
 - Creates new TCP sockets for every client session
 - Supports **S**ecure **S**ocket **L**ayer (**SSL**) or **T**ransport **L**ayer **S**ecurity (TLS)

Background Telnet 3270 Server Relay between SNA Applications and IP clients



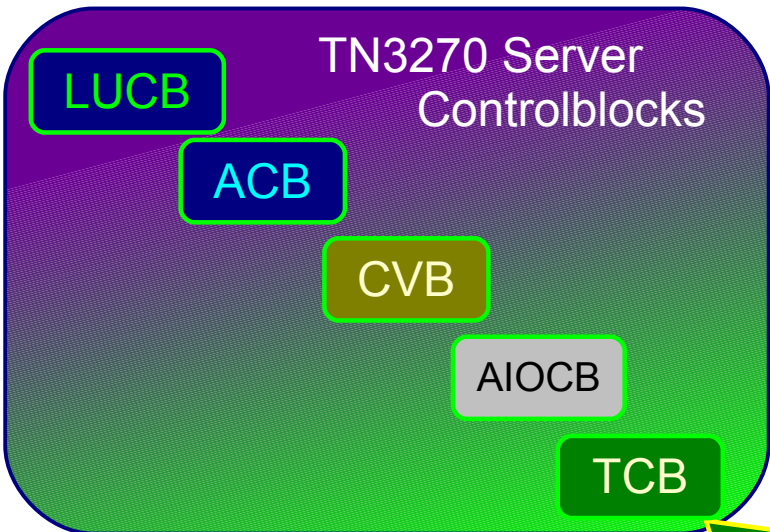
Complete your session evaluations online at www.SHARE.org/Orlando-Eval

IPCS analysis of a TCPIP / Telnet dump

- VERBX routines
- TCPIPCLIST
- CTRACE SYSTCPIP OPTIONS(TELNET)
- CTRACE SYSTCPIP OPTIONS((IPA(ipaddr)))

Dump and Trace(s) of the suspects ...

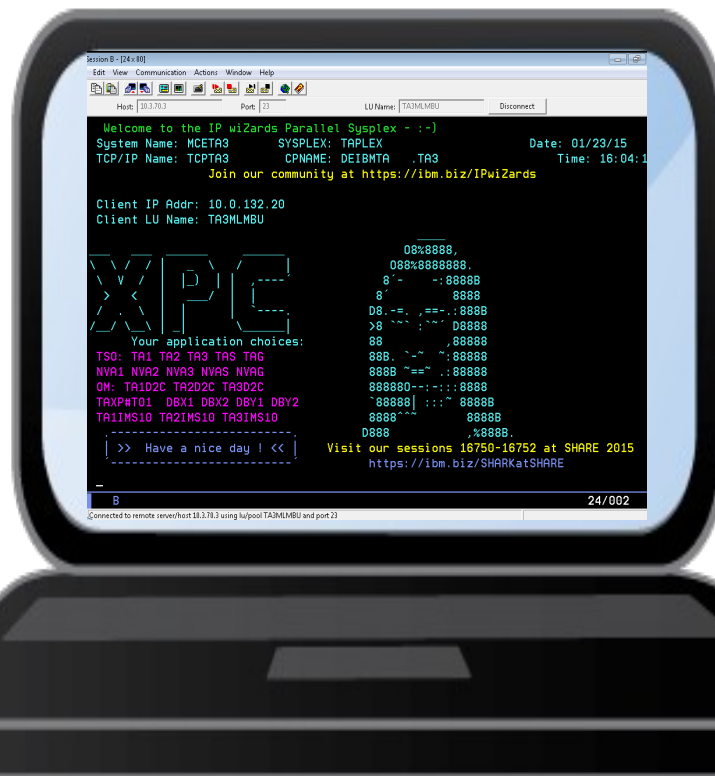
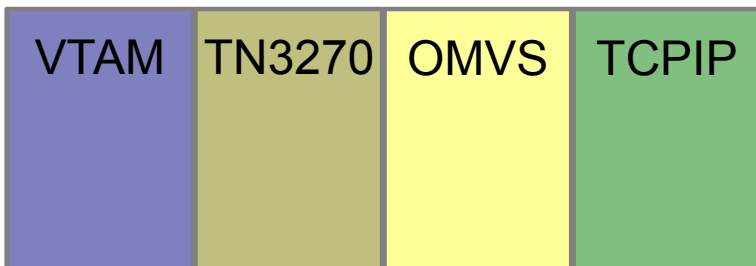
Who is involved?



Four Address Spaces in z/OS

- VTAM
- TN3270
- OMVS
- TCPIP

Address Spaces



Who is using my Telnet Server?

SYSTCPDA Packet Trace – SUMM

DP	Nr	hh:mm:ss.mmmmmmm	IpId	Seq num	Ack num	Wndw	Flags
IT	9658	11:12:02.140576	0AF6	362282668	0	8192	SYN
OT	9659	11:12:02.140717	19CC	3227678552	362282669	65535	ACK SYN
IT	9660	11:12:02.153006	0AF7	362282669	3227678553	256	ACK
IT	9661	11:12:02.155594	0AF8	362282669	3227678553	256	ACK PSH
				16030000	93010000		*....l... ..*
OT	9662	11:12:02.156299	19CD	3227678553	362282821	16379	ACK PSH
				16030005	32020000		*..... ..2...*
IT	9663	11:12:02.169987	0AF9	362282821	3227679888	251	ACK PSH
				16030000	44100000		*..... ..D...*
OT	9664	11:12:02.173543	19CE	3227679888	362282965	16379	ACK PSH
				14030000	0101		*..... ..*
OT	9665	11:12:02.173608	19CF	3227679894	362282965	16379	ACK PSH
				16030000	3CB4AA88		*.....h ..<...*
OT	9666	11:12:02.173778	19D0	3227679959	362282965	16379	ACK PSH
				17030000	170689BD		*.....i.*
IT	9667	11:12:02.185388	0AFA	362282965	3227679959	251	ACK
IT	9668	11:12:02.207679	0AFB	362282965	3227679987	251	ACK PSH
				17030000	177150C5		*.....&EqP.*
OT	9669	11:12:02.207854	19D1	3227679987	362282993	16383	ACK PSH
				17030000	1BDAB611		*..... ..*
IT	9670	11:12:02.223417	0AFC	362282993	3227680019	256	ACK PSH
				17030000	27E96223		*.....Z..'.b#*
OT	9671	11:12:02.223593	19D2	3227680019	362283037	16382	ACK PSH
				17030000	30B82423		*..... ..0.\$#*
IT	9672	11:12:02.235568	0AFD	362283037	3227680072	256	ACK PSH
				17030000	1E6367B5		*..... ..cg.*
OT	9673	11:12:02.235699	19D3	3227680072	362283072	16382	ACK PSH
				17030000	1E49262A		*..... ..I&**
OT	9674	11:12:02.240706	19D4	3227680107	362283072	16382	ACK FIN
IT	9675	11:12:02.253404	0AFE	362283072	3227680108	256	ACK

3-way Handshake

0
0
152

SSL/TLS Negotiation

6
65
28

TN3270 Negotiation

0
28
0
35
35
0
0

SYSTCPIP CTRACE – Big Data Analytics



IPCS OUTPUT STREAM -----

Command ==> **IP CTRACE COMP(SYSTCPIP) SUB((TCPIP))**

***** TOP OF DATA

Comp: SYSTCPIP Tcpi: TCPIP Parmlib: CTIEZB00
Fmt: EZBCTFM4 SSM: EZBCTSS4 Display:
Status: INACTIVE Xwriter: DISCONNECT
Bufsize: 255M Maxsize: 1024M

COMPONENT TRACE SHORT FORMAT
COMP(SYSTCPIP)SUBNAME((TCPIP))

**** 12/22/2014

SYSNAME	MNEMONIC	ENTRY ID	TIME STAMP	DESCRIPTION
OS01	TCP	40037D01	15:37:19.860846	Received msg triples
OS01	TCP	40037D00	15:37:19.860898	Start of Put procedure
OS01	TCP	40037D01	15:37:19.860898	Received msg triples
OS01	TCP	40037D01	15:37:30.235121	Received msg triples
OS01	TCP	40037D00	15:37:30.235224	Start of Put procedure
OS01	TCP	40037D01	15:37:30.235224	Received msg triples

SYSTCPIP CTRACE – Big Data Analytics

Filtering on what you know – here: Server Port



- OPTION((TCP PORT(7723)))
 - Found Listener TCB
 - TCTEL Connection Key
 - TCP close:Bypass

OS01	TCP	4003002F	15:37:19.861797	TCTEL Connection key
OS01	TCP	4003002F	15:37:19.863123	TCTEL Connection key
OS01	TCP	4003002F	15:37:19.864186	TCTEL Connection key
OS01	TCP	40037850	15:37:19.864992	Trace start of TCP close:Bypass
OS01	TCP	40037850	15:37:19.865396	Trace start of TCP close:Bypass
OS01	TCP	40037850	15:37:19.865580	Trace start of TCP close:Bypass
OS01	TCP	40037D1E	15:37:19.895484	Found Listener TCB
OS01	TCP	40037D1E	15:37:19.903506	Found Listener TCB
OS01	TCP	40037D1E	15:37:30.213621	Found Listener TCB

SYSTCPIP CTRACE – SUMMARY

Who is talking to us – follow the 'Listener' CID



- FOUND LISTENER TCB
 - IPADDR of remote client(s)
 - CID is the Listener's socket

COMPONENT TRACE SUMMARY FORMAT

```
COMP(SYSTCPIP)SUBNAME((TCPIP)) OPTIONS((CID(X'2D8F242D')))
```

```
**** 12/22/2014
```

SYSNAME	MNEMONIC	ENTRY ID	TIME STAMP	DESCRIPTION
OS01	TCP	40037D1E	15:37:19.895484	Found Listener TCB
HASID..0034		PASID..0034	SASID..0034	USER...TCP3270A
TCB...00000000		MODID..EZBTCPCN	REG14..2C458B06	DUCB...57000416
CID... 2D8F242D		PORT...7723	CPUA...00	
IPADDR. 10.6.10.7				

SYSTCPIP CTRACE – SUMMARY

Who is talking to us – follow a client

- TCTEL Connection key indicates a new client connecting
 - IPADDR of remote client(s)
 - CID is the session id of a single TCP connection

```
IPCS OUTPUT STREAM -----
Command ==> ip ctrace comp(systcpip) sub((tcpip)) opt((ipa(10.1.56.37))) summ
OS01      TCP      4003002F  15:37:20.149536  TCTEL Connection key
HASID..0210      PASID..0034      SASID..0010      USER...TCP3270A
TCB....009AF4A0  MODID..EZBTCICT  REG14..2C4F1630  DUCB...F3000035
CID....3095FBA9  PORT...7723      CPUA...00
IPADDR. 10.1.56.37

OS01      TCP      40037850  15:37:20.150732  Trace start of TCP
close:Bypass
HASID..0210      PASID..0034      SASID..0010      USER...TCP3270A
TCB....009AF4A0  MODID..EZBTCSTR  REG14..2C4C6B36  DUCB...1200005C
CID....3095FBA9  PORT...7723      CPUA...01
IPADDR. 10.1.56.37
```

TCPIP dump – TCPIPICS TCB

Who is connected to us – 'netstat'

- TCP connections active in the system
 - IPADDR/Port of both, local and remote socket
 - ResrcCID is the session id of a single TCP connection

```
IPCS OUTPUT STREAM -----  
Command ==> ip tcpipcs tcb  
IPv4 TCB ResrcID ResrcNm TcpState AppName LuName IPAddr/Port  
7B5A8B10 2DCA36A0 TCP3270A Established BPETPX1 0815XWL Local 192.168.120.71..7723  
Remote 10.42.56.37..1339  
7C45EB10 2DCA5208 TCP3270A Established CXTERM 0815XWLR Local 192.168.120.71..7723  
Remote 10.42.56.37..1341
```

TN3270 Negotiation: What's flowing?

TCP Data (Hex)	Description (short)
SYN	<--- S MSS=1460
SYN_ACK	---> SA MSS=1460
3-way handshake complete	<--- A
FFFD27	---> DO NewEnvironment (ELF)
FFFD28	---> AP DO TN3270E
FFFB28	<--- AP WILL TN3270E
FFFA280802FFF0	---> AP Send Device-Type End Subopt
FFFA28020749424D2D333237382D322D	<--- AP Device-Type req IBM-3278-2-E
FFFA28020449424D2D333237	---> AP Device-Type is IBM-3278-2-E
FFFA280307000204FFF0	<--- AP Functions req Bind-Image Resp
FFFA280304000204FFF0	---> AP Functions is Bind-Image Resp
030000000031010303919030	---> AP BIND-Image Seq(0000) BIND_IMAGE
000000000005C21D60E2C5E2	---> AP USSMSG 10
00000000007DC1D811C1D1A397A78785	<--- AP 3270-Data Seq(0000) RU(ENTER)FMD

If everything is fine, TN3270 Negotiation is done after 8 packets max

SUMM FORMAT JOBNAME(TCP3270A)

```
JOB TCP3270A
  SELECTED BY: JOBNAME
  ASCB: 00F5E400
    +0000  ASCB..... ASCB          FWDP..... 00FCCB80  BWDP..... 00F79B80

    +0020  R020..... 00000000  ASID..... 0210          R026..... 00
    +002A  DPH..... 00FE          TCBE..... 00000000  LDA..... 7FF18E10
    +0038  CSCB..... 2D56EB00  TSB..... 00000000
    +0040  EJST..... 0000153C  BE839A3E
    +0048  EWST..... CE3E03B6  93E07908          JSTL..... 000141DE
    +0054  ECB..... 809FD718  UBET..... CE3D753B  TLCH..... 00000000
    . . .
    +00C8  SRBT..... 0000034A  932E2A60          LTCB..... 00000000
  - - - - -
TCB: 009CFCF0
    +0138  STCB..... 7F4B2518  TTIME.... 000000DB  9EBAC7E6
  - - - - -
TCB: 009CA4D0
    +0138  STCB..... 7F432948  TTIME.... 0000005D  E31C382A
```

CPU Time is being tracked in the ASCB: SRB and TCB time in TOD format

Every TCB keeps track of the CPU time spent under this TCB

Complete your session evaluations online at www.SHARE.org/Orlando-Eval

SUMM REGI JOBNAME(TCP3270A)

TCB: 009CFCF0

CMP..... 00000000 PKF..... 60 LMP..... FF

General purpose register values

0-3 00000001 809D7740 7F628000 7F4E7AE4

4-7 7F4B4010 00000000 7F628000 2D8302E0

8-11 00000000 00000000 00000000 00000000

12-15 2D80E230 7F6287B8 7F628940 809CFC68

TSFLG.... 00 STAB..... 009AD770 NDSP..... 00002000

JSCB..... 009FC7AC BITS..... 00000000 DAR..... 00

RTWA..... 00000000 FBYT1.... 00

PRB: 009CFC68

WLIC..... 00020001 OPSW..... 076C1400 AD80DE1C

LINK..... 019CFCF0

GPR0-3... 7F4B4104 7F4E82A0 7F4E7000 00000000

GPR4-7... 00000000 2D768540 00000002 7F4B4010

GPR8-11.. 7F4B4010 7F4B410C 00000000 0134C288

GPR12-15. 2D768360 00009F68 7F4E7AE4 7F4E8218

EP..... EZBTSSL ENTPT.... AD803100

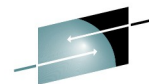
The biggest CPU burner is the TCB executing SSL code

TCPIPCS PROFILE TCP(TCP3270A)

```
TCPIPCS PROFILE TCP(TCP3270A)
Analysis of Telnet for TCP3270A.  Index: 9
TELNETPARMS
  SECUREPORT 7723
P  DEBUG      EXCEPTION CTRACE
P  CONNTYPE   SECURE
P  KEYRING SAF tcp3270
ENDTELNETPARMS
BEGINVTAM
  SECUREPORT 7723
  ALLOWAPPL A06TS0* DISCONNECTABLE
  ALLOWAPPL *
  LUGROUP LUIPCALB
  H050A6T
. . .
  USSTCP USFILT21 IPADDR,10.40.60.19
  LUMAP Q9304AC IPADDR,10.40.60.19
ENDVTAM
```

Telnet Profile indicates TN3270 is using its own SSL - not AT-TLS

CTRACE COMP(SYSTCPIP) SUB((TCP3270A))



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COMPONENT TRACE SHORT FORMA

COMP(SYSTCPIP)SUBNAME((TCP3270A))

*** 12/22/2014

SYSNAME	MNEMONIC	ENTRY ID	TIME STAMP	DESCRIPTION
OS01	MESSAGE	50030009	16:36:55.350721	Allocate MSGB/DATAB/data buffer
OS01	TELNET	700100A9	16:36:55.350722	Issue BPX1AIO
OS01	TELNET	700100AA	16:36:55.350738	Return from BPX1AIO
. . .				
OS01	TELNET	700100A9	16:37:42.645516	Issue BPX1AIO
OS01	TELNET	700100AA	16:37:42.645521	Return from BPX1AIO
OS01	TELNET	70010045	16:37:42.645522	Send SSL Data to Client
OS01	MESSAGE	5003000C	16:37:42.645523	Free MSGB/DATAB/data buffer
OS01	MESSAGE	5003000E	16:37:42.645523	Free MSGB
OS01	TELNET	700100C1	16:37:42.645523	TxRef count change

Quite some activity here, 1.13 million trace entries within 47 seconds!

Complete your session evaluations online at www.SHARE.org/Orlando-Eval



CTRACE COMP(SYSTCPIP) SUB((TCP3270A)) REPORT VIEW; X ALL ; F ' SK' ALL



```
8262 CHARS ' SK'  
OS01 TELNET 70010056 16:36:55.353637 SKCLOSE Issued  
OS01 TELNET 70010056 16:36:55.354294 SKCLOSE Issued  
OS01 TELNET 70010056 16:36:55.360855 SKCLOSE Issued  
OS01 TELNET 70010056 16:36:55.362084 SKCLOSE Issued  
OS01 TELNET 7001003E 16:36:55.386030 SKSOCINIT Succeeded  
OS01 TELNET 7001003E 16:36:55.393068 SKSOCINIT Succeeded  
OS01 TELNET 7001003E 16:36:55.393646 SKSOCINIT Succeeded  
OS01 TELNET 7001003E 16:36:55.393915 SKSOCINIT Succeeded  
OS01 TELNET 7001003E 16:36:55.394699 SKSOCINIT Succeeded  
OS01 TELNET 7001003E 16:36:55.399457 SKSOCINIT Succeeded  
OS01 TELNET 7001003E 16:36:55.406733 SKSOCINIT Succeeded
```

SKSOCINIT indicates TLS handshake went ok (after 3-way handshake)

SKCLOSE indicates the TLS 'session' is being terminated

CTRACE COMP(SYSTCPIP) SUB((TCP3270A)) OPT((TELNET)) SUMM



```
8262 CHARS ' SK'  
OS01      TELNET      7001003E  15:36:55.386030  SKSOCINIT Succeeded  
HASID..0210      PASID..0210      SASID..0210      USER...  
TCB...009ACC68  MODID..EZBTTSM  REG14..2D6AAAD6  DUCB...3200004D  
CID...3095844A  PORT...7723     CPUA...03  
IPADDR. 10.6.10.48
```

```
OS01      TELNET      70010056  15:36:55.547749  SKCLOSE Issued  
HASID..0210      PASID..0210      SASID..0210      USER...  
TCB...009AD108  MODID..EZBTTCCU  REG14..2D699B76  DUCB...87000830  
CID...3095844A  PORT...7723     CPUA...00  
IPADDR. 10.6.10.48
```

Way too many TLS sessions being established and terminated

TN3270 usually are long-lived ...

Complete your session evaluations online at www.SHARE.org/Orlando-Eval



CTRACE COMP(SYSTCPIP) SUB((TCP3270A)) OPT((TELNET IPA(10.6.10.48))) SUMM



```
192 CHARS ' SK'  
OS01      TELNET      7001003E  15:36:55.386030  SKSOCINIT Succeeded  
CID....3095844A  PORT...7723      CPUA...03  
OS01      TELNET      70010056  15:36:55.547749  SKCLOSE Issued  
CID....3095844A  PORT...7723      CPUA...00  
OS01      TELNET      7001003E  15:36:55.796899  SKSOCINIT Succeeded  
CID....30958686  PORT...7723      CPUA...04  
OS01      TELNET      70010056  15:36:55.956536  SKCLOSE Issued  
CID....30958686  PORT...7723      CPUA...00  
OS01      TELNET      7001003E  15:36:56.296100  SKSOCINIT Succeeded  
CID....30958854  PORT...7723      CPUA...04  
OS01      TELNET      70010056  15:36:56.457326  SKCLOSE Issued  
CID....30958854  PORT...7723      CPUA...00  
. . .  
OS01      TELNET      7001003E  15:37:42.228562  SKSOCINIT Succeeded  
CID....30967419  PORT...7723      CPUA...04  
OS01      TELNET      70010056  15:37:42.392132  SKCLOSE Issued  
CID....30967419  PORT...7723      CPUA...03
```

CTRACE COMP(SYSTCPIP) SUB((TCP3270A)) OPT((CID(X'3095844A')) FULL



```
OS01      TELNET      70010079  15:36:55.546687  !Debug Conn
HASID..0210      PASID..0210      SASID..0210      USER...
TCB....00000000  MODID..EZBTZDBG  REG14..2D7E74A2  DUCB...A5000019
CID....3095844A  PORT...7723      CPUA...00
IPADDR. 10.6.10.48
  ADDR...00000000  00000000_7CB6BD20  LEN....000008  CVB Token
  +0000  01015DA7  A2000000      ! ..)xs...      !
  ADDR...00000000  00000000_7F52A089  LEN....000008  Module in error
  +0000  C5E9C2E3  E3D9C3E5      ! EZBTTRCV      !
  ADDR...00000000  00000000_7F529C76  LEN....000002  Error Code
  +0000  1001      ! ..      !
  ADDR...00000000  00000000_7F52A0D4  LEN....000030  Error Description
  +0000  C3938985  95A34084  89A28396  95958583  ! Client disconnec !
  +0010  A3858440  86999694  40A38885  40839695  ! ted from the con !
  +0020  958583A3  8996954B  40404040  40404040  ! nection.      !
OS01      TELNET      70010028  15:36:55.546690  Queue & Post to ConnMgr
OS01      TELNET      70010056  15:36:55.547749  SKCLOSE Issued
```

Client decided to disconnect - why?

Complete your session evaluations online at www.SHARE.org/Orlando-Eval



CTRACE COMP(SYSTCPIP) SUB((TCP3270A)) OPT((CID(X'3095844A')) FULL



```
OS01      TELNET      70010014  15:36:55.486455  Send Data to Client
+0000  FFFA2802  060506FF  F0                ! .....0                !
OS01      TELNET      70010083  15:36:55.486473  ÜTelnet Debug Flow
ADDR...00000000  00000000_7F558029  LEN....000008  Module in error
+0000  C5E9C2E3  D7C5D3E4                ! EZBTPELU                !
ADDR...00000000  00000000_7F557C5E  LEN....000002  Error Code
+0000  3003                ! ..                        !
OS01      TELNET      70010079  15:36:55.546687  ÜDebug Conn
ADDR...00000000  00000000_7F52A089  LEN....000008  Module in error
+0000  C5E9C2E3  E3D9C3E5                ! EZBTTRCV                !
ADDR...00000000  00000000_7F529C76  LEN....000002  Error Code
+0000  1001                ! ..                        !
ADDR...00000000  00000000_7F52A0D4  LEN....000030  Error Description
+0000  C3938985  95A34084  89A28396  95958583  ! Client disconnect      !
+0010  A3858440  86999694  40A38885  40839695  ! ted from the con       !
OS01      TELNET      70010056  15:36:55.547749  SKCLOSE Issued
```

Following a single TCP connection using the CID
Error 3003 - described in EZZ6034I - translates to All Lus in use

CTRACE TELNET: Filter on IP address

```
OS01      TELNET      70010014  15:36:55.486455  Send Data to Client
+0000    FFFA2802  060506FF  F0                ! .....0                !
```

Telnet Negotiation

```
FFFD27 DO      NewEnv (ELF)
FFFD2E DO      TLS
FFFC2E WONT    TLS
FFFD28 DO      TN3270E
FFFB28 WILL   TN3270E
FFFA28 SB     TN3270E
          00 Associate
          01 Connect
          02 Dev-Type
          03 Functions
          04 Is
          05 Reason
          06 Reject
          07 Request
          08 Send
```

Keepalive Probes

```
FFFB06 WILL   TIMEMARK
FFFC06 WONT   TIMEMARK
FFFD06 DO     TIMEMARK
```

Telnet Reject Reason Codes

```
RFC2355
CONN-PARTNER      00
DEVICE-IN-USE    01
INV-ASSOCIATE     02
INV-NAME          03
INV-DEVICE-TYPE  04
TYPE-NAME-ERROR  05
UNKNOWN-ERROR  06
UNSUPPORTED-REQ  07
```

FFFA2802 060506

Translates to: Device Type, Reject, Reason, Unknown Error



CTRACE COMP(SYSTCPIP) SUB((TCP3270A)) OPT((CID(X'3095844A')) FULL



```
OS01      TELNET      70010014   15:36:55.386051   Send Data to Client
+0000     FFFD28
OS01      TELNET      70010013   15:36:55.436392   Receive Data from Client
+0000     FFFB28
OS01      TELNET      70010014   15:36:55.436397   Send Data to Client
+0000     FFFA2808   02FFF0
OS01      TELNET      70010013   15:36:55.486431   Receive Data from Client
+0000     FFFA2802   0749424D   2D333237   382D322D   45FFF0
OS01      TELNET      70010079   15:36:55.486452   ÜDebug Conn
+0000     C5E9C2E3   D7C7D3E4
ADDR...00000000   00000000_7F558326   LEN...000002   Error Code
+0000     3003
ADDR...00000000   00000000_7F55876C   LEN...000030   Error Description
+0000     D3E4A240   81998540   81939340   899540A4   ! LUs are all in u !
+0010     A2854B40   40404040   40404040   40404040   ! se.
OS01      TELNET      70010014   15:36:55.486455   Send Data to Client
+0000     FFFA2802   060506FF   F0
```

TN3270 negotiation fails causing the client to disconnect

What is PCOMM doing ?

Filter: Expression... Clear Apply

No.	Time	sPort	dPort	Suboption	Reason	Info
1	0.000000000	49268	23			49268-23 [SYN]
2	0.000621000	23	49268			23-49268 [SYN]
4	0.001895000	23	49268			Telnet Data ..
5	0.0057331000	49268	23			Telnet Data ..
7	0.008797000	23	49268	SEND,DEVICE-TYPE		Telnet Data ..
8	0.0053175000	49268	23	DEVICE-TYPE,REQUEST		Telnet Data ..
10	0.000773000	23	49268	DEVICE-TYPE,REJECT,REASON	UNKNOWN-ERROR	Telnet Data ..
11	0.0064266000	49268	23			49268-23 [FIN,
13	0.000952000	23	49268			23-49268 [FIN,
15	2.012657000	49269	23			49269-23 [SYN]
16	0.000720000	23	49269			23-49269 [SYN]
18	0.001605000	23	49269			Telnet Data ..
19	0.0052764000	49269	23			Telnet Data ..
21	0.001294000	23	49269	SEND,DEVICE-TYPE		Telnet Data ..
22	0.0055472000	49269	23	DEVICE-TYPE,REQUEST		Telnet Data ..
24	0.001214000	23	49269	DEVICE-TYPE,REJECT,REASON	UNKNOWN-ERROR	Telnet Data ..
25	0.0061048000	49269	23			49269-23 [FIN,
27	0.000922000	23	49269			23-49269 [FIN,
29	2.010730000	49270	23			49270-23 [SYN]
30	0.000882000	23	49270			23-49270 [SYN]
32	0.001911000	23	49270			Telnet Data ..
33	0.0053568000	49270	23			Telnet Data ..
35	0.001186000	23	49270	SEND,DEVICE-TYPE		Telnet Data ..

▼ Telnet

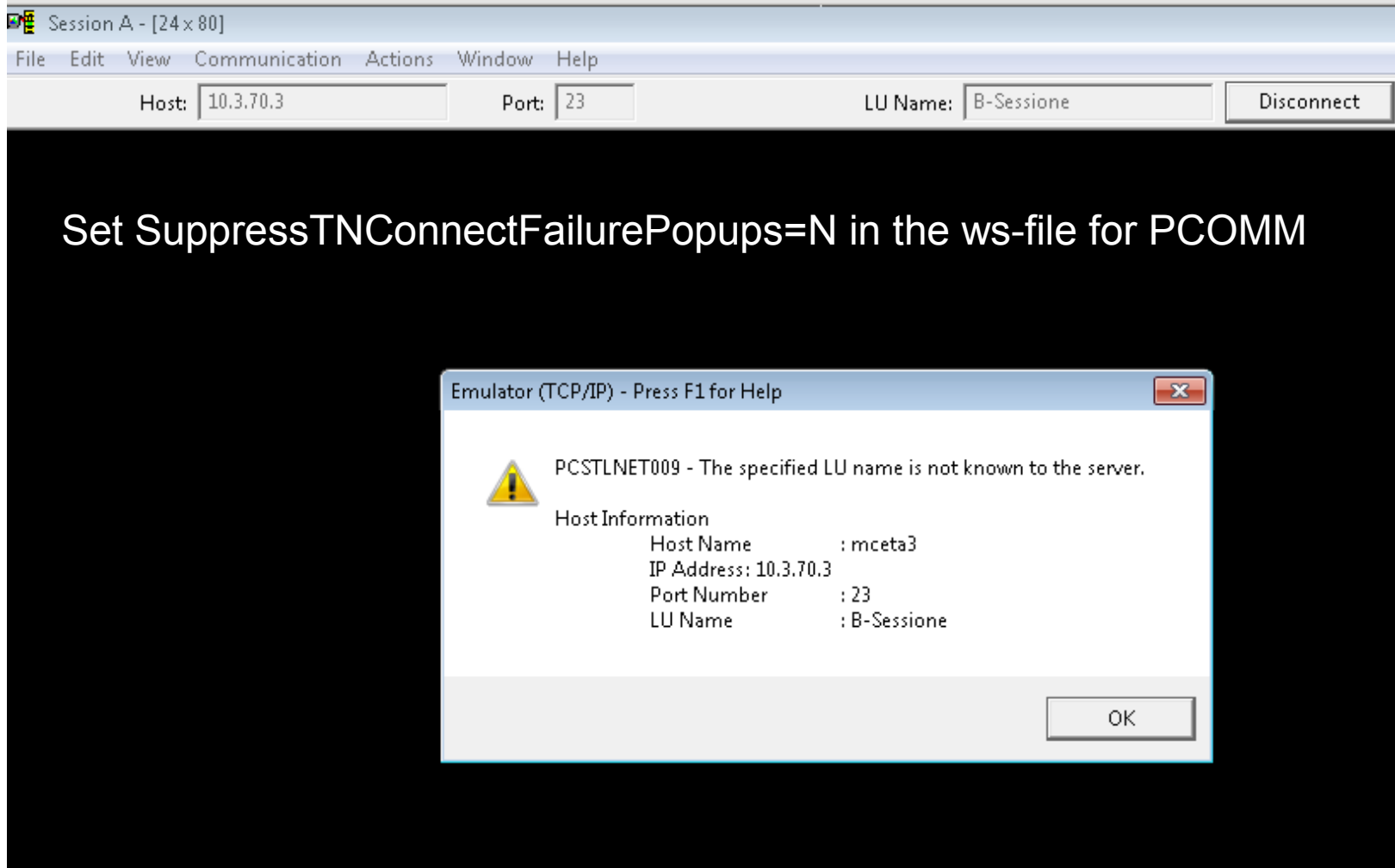
```

0000 00 16 3e 0f ee 5c 52 54 00 ea 74 b3 08 00 45 00  ..>..\RT ..t...E.
0010 00 31 a2 80 40 00 3e 06 0f 8b 0a 03 46 03 c0 a8  .1..@.>. ....F...
0020 7a 0d 00 17 c0 74 83 36 78 21 18 cc 37 eb 50 18  z....t.6 x!..7.P.
0030 0f ff e3 6b 00 00 ff fa 28 02 06 05 06 ff f0    ...k... (.....
    
```

Complete your session evaluations online at www.SHARE.org/Orlando-Eval

PCOMM stubbornly reconnects causing the same scenario 24hX7

What was PCOMM doing in PCOMM V5.9 ?



The screenshot shows the PCOMM V5.9 interface. At the top, there is a menu bar with 'File', 'Edit', 'View', 'Communication', 'Actions', 'Window', and 'Help'. Below the menu bar, there are input fields for 'Host: 10.3.70.3', 'Port: 23', and 'LU Name: B-Sessione', along with a 'Disconnect' button. The main area of the window is black and contains the text 'Set SuppressTNConnectFailurePopups=N in the ws-file for PCOMM'. A dialog box titled 'Emulator (TCP/IP) - Press F1 for Help' is open in the foreground. It features a yellow warning icon and the message: 'PCSTLNET009 - The specified LU name is not known to the server.' Below this message, it lists 'Host Information' with the following details: Host Name : mceta3, IP Address: 10.3.70.3, Port Number : 23, and LU Name : B-Sessione. An 'OK' button is located at the bottom right of the dialog box.

Pre PCOMM V6.0 the user was presented a popup, informing about the TN3270 Negotiation problem. This has changed in PCOMM V6 !

Complete your session evaluations online at www.SHARE.org/Orlando-Eval

CTRACE TELNET: Filter on IP address

Using the FULL option you get every packet's details

Batch Job to format a CTRACE Telnet filtered on the client's IP address

```
//GESEIPCS JOB (7904,NCS),GESEEM8,MSGLEVEL=(1,1),MSGCLASS=K,CLASS=A,
//      NOTIFY=&SYSUID.,REGION=0M,TIME=150
//      SET INDUMP='ONTOP.TCPIP.DBUG2015.ORLANDO.TN3270.DUMP'
//      SET MIGLIB='TOP.ZOSR21.MIGLIB'
//IPCSBTCH EXEC PGM=IKJEFT01,DYNAMNBR=30
//STEPLIB DD DISP=SHR,DSN=&MIGLIB.
//IPCSDDIR DD DISP=SHR,DSN=&SYSUID..#BATCH.DIRECTRY
//IPCSDUMP DD *
//SYSTSPRT DD SYSOUT=*
//SYSPRINT DD SYSOUT=*
//INDMP DD DISP=SHR,DSN=&INDUMP.
//IPCSPRNT DD SYSOUT=*
//IPCSTOC DD SYSOUT=*
//SYSUDUMP DD SYSOUT=*
//SYSTSIN DD *
PROFILE MSGID
IPCS NOPARM
DROPD
SETD PRINT NOTERM LENGTH(160000) NOCONFIRM FILE(INDMP)
CTRACE COMP(SYSTCPIP) SUB((TCP3270A)) FULL -
      OPT((TELNET IPA(10.17.24.37)))
END
```



Thank You for attending this session!

Learn more about IPCS at the
IPCS Network Debugging
Workshop (ZONDE0DE)
Info at IBM developerWorks
<https://ibm.biz/IPCS4Networkers>



Your feedback is important:
This was session 17296 at
SHARE in Orlando 2015

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SocialBusiness
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