

**AIX/RT SNA SERVICES,
NETWORK 3270-PLUS (SNA)
AND THE RT SYSTEM**

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Trademarks	1
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TRADEMARKS

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3270-PLUS is a trademark of the Rabbit Corp.

RT, RT PC and RT Personal Computer are trademarks of IBM Corp.

PART A.
FEATURES

FEATURES OF NETWORK 3270-PLUS (SNA)

- **Multisession 3270**
- **Suspend/Resume**
- **Local Password Security**
- **File Transfer between RT System and Host**
- **Local Screen-To-File**

FEATURES OF NETWORK 3270-PLUS (SNA) (continued)

- Local Screen-To-Printer
- On-Line Browse Facility
- Read Ahead
- Record/Replay Option
- Print-To-Spooler or File

FEATURES OF NETWORK 3270-PLUS (SNA) (continued)

- **Help System**

- **Programmer Interface Modules (Application Program Interface)**

DEVICE EMULATION WITH NETWORK 3270-PLUS (SNA)

Emulation of IBM 3274 Controller Model 51C

- Up to 32 Concurrent Sessions
- Switched or Non-switched Communications Links

Emulation of IBM 327X Display Stations

- Allows RT user (console or ASCII Terminal) to interact with existing 3270 host applications
- Can be "tailored" to use different ASCII terminals

Emulation of IBM 328X Printer Devices

- Allows RT System supported printers to be accessed by existing host applications

DEVICES EMULATED

Display Stations

- **IBM 3277 Model 2**
- **IBM 3278 Model 2**
- **IBM 3279 Model 2A**

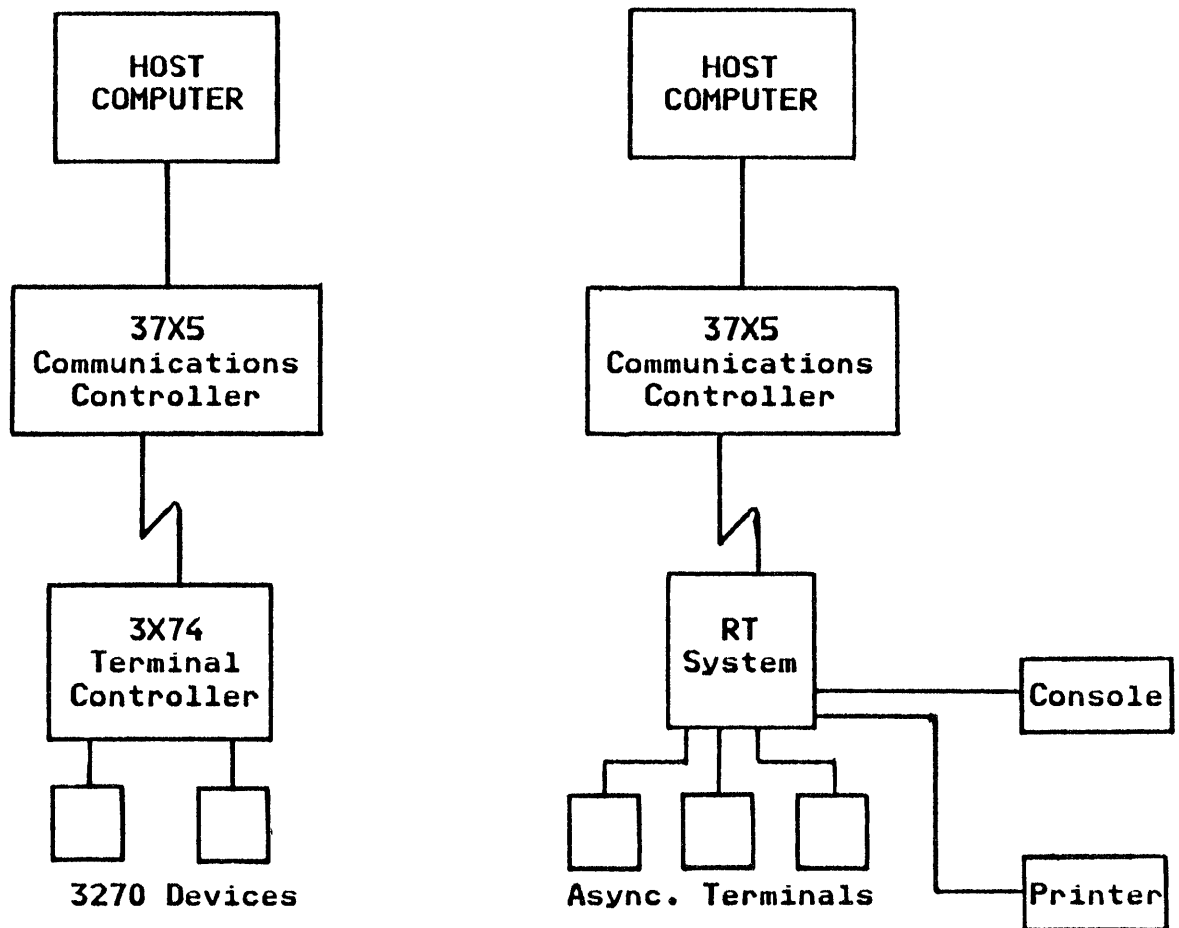
Printer Devices

- **IBM 3286 Models 1 and 2**
- **IBM 3287 Models 1 and 2**

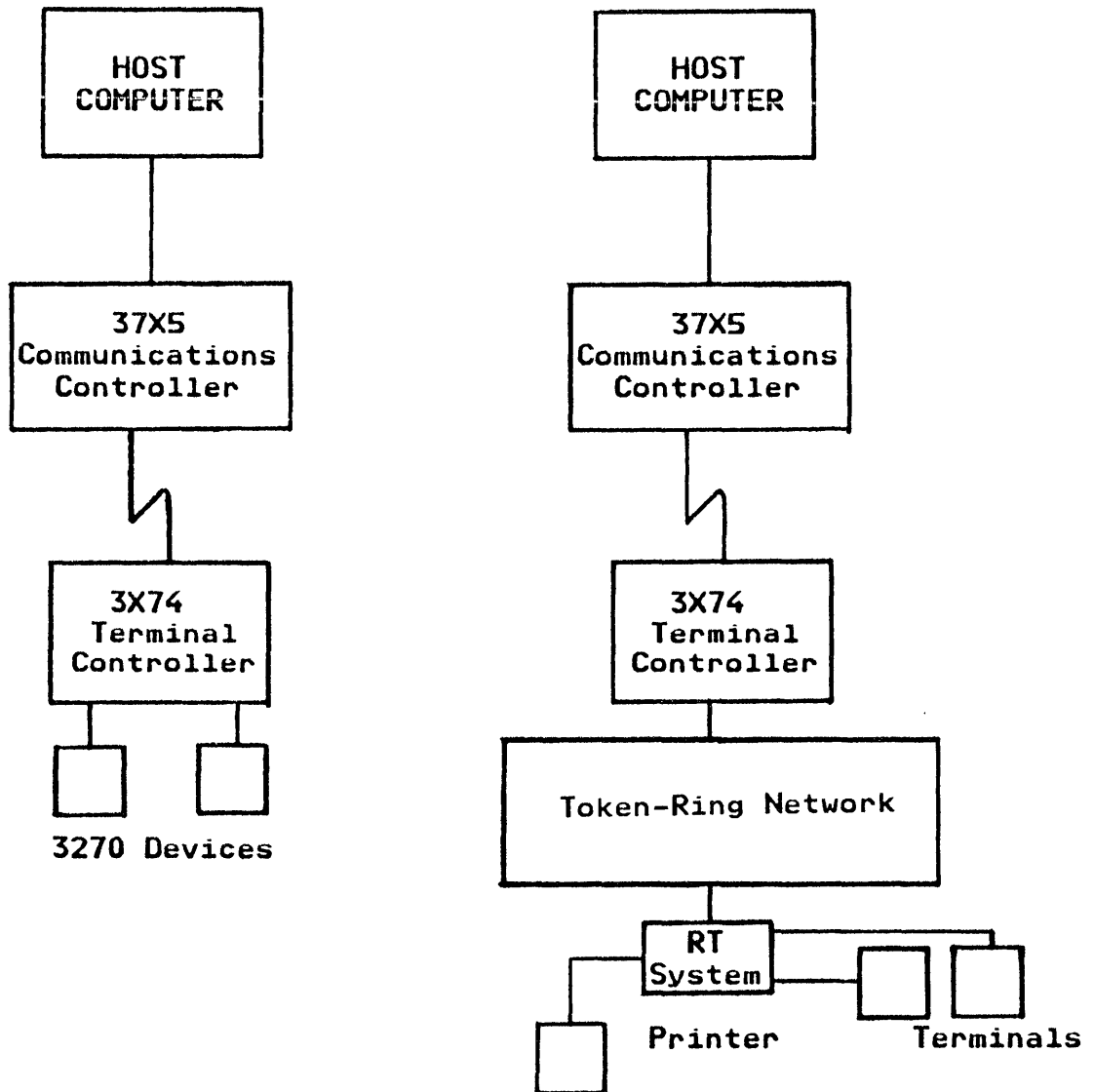
Control Unit

- **IBM 3274 Model 51C**

FUNCTIONAL COMPARISON (SDLC)



FUNCTIONAL COMPARISON (TR)



PART B.
PREPARATION

1. Wide Area Network (WAN)

- **EIA RS232C SDLC**

2. Local Area Network

- **Token-Ring**
- **Standard Ethernet**
- **IEEE 802.3 Ethernet**

3. Data Network

- **CCITT X.21 SDLC**
- **CCITT X.25**

HARDWARE REQUIREMENTS (Single User)**— SDLC**

- **RT System**

Minimum of 70MB of DASD

Minimum of 2MB of RAM

- **Multiprotocol Adapter**

P/N 08F3193 (FTR 4762)

- **RT PC Modem Cable RS-232C (16 pin)**

P/N 6294813 (FTR 4812)

- **Synchronous Modem**

5812 Mod 1

- **Mouse**

HARDWARE REQUIREMENTS (Single User)

— Token-Ring

- RT System

Minimum of 70MB of DASD

Minimum of 2MB of RAM

- **RT PC Token-Ring Adapter**

P/N 69X8142 (FTR 3797)

- **RT PC Token-Ring Cable**

P/N 6339088 (FTR 3390)

- Mouse

HARDWARE REQUIREMENTS

— **Host**

- **SDLC**
 - a) **37X5 Controller**
 - b) **Integrated Communications Adapter (4300 or 9370)**

- **Token-Ring**
 - a) **37X5 Controller with Token-Ring Interface Connector**

 - b) **3X74 Controller with Token-Ring Card**

SOFTWARE REQUIREMENTS**— SDLC****• AIX****Virtual Resource Manager (VRM) Version 2.2.1****AIX/RT Operating System Version 2.2.1****RT PC SNA Services Version 2.2.1****Usability Services Version 2.2.1****Text Editor of Choice****VRM Multiprotocol Adapter Device Drivers****Updates to AIX Operating System****SNA Services Corrective Service Diskettes (If available)**

- NSD Software Defect Support ... 1-800-237-5511**

◆ OBTAIN ALL KNOWN FIXES FROM IBM NSD DEFECT SUPPORT ... 1-800-237-5511

- Network 3270-PLUS (SNA)**

◆ OBTAIN ALL KNOWN FIXES FROM RABBIT SOFTWARE ... 1-800-RABBITC

SOFTWARE REQUIREMENTS

– Token-Ring

- AIX

- Virtual Resource Manager (VRM) Version 2.2.1

- AIX/RT Operating System Version 2.2.1

- RT PC SNA Services Version 2.2.1

- Usability Services Version 2.2.1

- Text Editor of Choice

- VRM Token-Ring Adapter Device Drivers**

- Updates to AIX Operating System

- SNA Services Corrective Service Diskettes (If available)

- ◆ OBTAIN ALL KNOWN FIXES FROM IBM NSD DEFECT SUPPORT ... 1-800-237-5511

- NETWORK 3270-PLUS) (SNA)

- ◆ OBTAIN ALL KNOWN FIXES FROM RABBIT SOFTWARE ... 1-800-RABBITC

SOFTWARE REQUIREMENTS

— **Host**

- **3270-PC File Transfer Program (IND\$FILE) for:**

VSE/SP 2.1 (Program Number 5666-316)

MVS/TSO (Program Number 5665-311)

VM/SP (Program Number 5664-281)

CICS/VS (Program Number 5798-DQH)

PART C.
INSTALLATION

RT SYSTEM HARDWARE

SDLC

- **Multiprotocol Adapter**

Slot Positions	(6150) 2, 4, 5, 7, 8
	(6151) 2 - 5
I/O Addresses	Primary, 0510 - 052F
	Alternate, 0910 - 092FM
DMA Channel	Primary, 1
	Alternate, 5
Interrupt levels	10, 11 (shared)
Maximum Number	2

POTENTIAL DMA CHANNEL CONFLICT

SDLC

- **Multiprotocol Adapter**

DMA Channel Primary 1, Alternate 5

- **EESDI Magnetic Media Adapter**

**DMA Channel Diskette Drive, 2
Fixed Disk Drive, 0, 1 (Software)**

1. **Use "setdma" command to change EESDI adapter DMA Channel**
2. **Change DMA on Multiprotocol Adapter by moving jumper**

RT SYSTEM HARDWARE

TOKEN_RING

- Token-Ring Adapter

Slot Positions (6150) 2, 4, 5, 7, (also 8 with address ranges 1, 2, 4)

(6151) 2, 3, 4, (also 5 with address ranges 1, 2, 4)

I/O Addresses Address range 1, 01C0 - 01CF (Early Version, Primary)

Address range 2, 0140 - 014F (Early Version, Alternate)

Address range 3, 11C0 - 11CF

Address range 4, 11D0 - 11DF

DMA Channel	Address range 1, Channel 5 (Early Version, Primary)
	Address range 2, Channel 6 (Early Version, Alternate)
	Address range 3, Channel 7
	Address range 4, Channel 3
Interrupt levels	11, 12 (both shared)(Early Version uses level 12 shared)
Maximum Number	4, (Early Version,2)

Use IBM RT PC Diagnostics to ensure the following:

1. All adapters are installed in the correct slot
2. There are no interrupt conflicts
3. There are no DMA Channel conflicts
 - Load diagnostics
 - Select "Utilities"
 - Select "Show Installed Options Utility"
4. All components of the RT System are functioning properly
 - Select "Advanced Diagnostic Routines"
 - Select "System Checkout"
 - Select "Run Test One Time"
5. Replace any malfunctioning option

Use the planning materials contained in:

- **IBM RT System Planning Guide (GC23-0782-3)**

- **Installing and Customizing the AIX Operating System (SC23-2013)**

SOFTWARE INSTALLATION

- Install AIX Operating System
- Install LPPs of choice
- Install VRM Device Drivers
 - Token-Ring Adapter Device Drivers
 - Multiprotocol Adapter Device Drivers
- Install SNA Services
- Install Updates to the Operating System
 - Use "updatep -ac"
- INSTALL ALL KNOWN CORRECTIVE SERVICE DISKETTES

SOFTWARE INSTALLATION (continued)

- Install Network 3270-PLUS (SNA)

- INSTALL ALL KNOWN CORRECTIVE SERVICE DISKETTES
 - Use "restore -xv"

PART D.

AIX CUSTOMIZATION

MULTIPROTOCOL ADAPTER

1. Type "devices"
2. Select "add"
3. Select "adapters"
 - Multiprotocol Adapter
 - Select "mpd"
 - Select a port (1 or 2)
 - Ensure DMA Channel and Interrupt Level match adapter
4. Add the device

TOKEN-RING ADAPTER

1. Type "devices"
2. Select "add"
3. Select "adapters"
 - Token-Ring Adapter
 - Select "token"
 - Ensure DMA Channel and Interrupt Level match adapter
 - Select "nodrh"
 - 400013
 - Select "nodrl"
 - 2200c2
4. Add the device

DATALINKS

1. Type "devices"
2. Select "add"
3. Select "datalinks"
4. Select Datalink Type
 - Multiprotocol Adapter
 - Select "sdlc0"
 - Change "devname" to match adapter name (mpd0 or mpd1)
 - Token-Ring Adapter
 - Select "tr0"
 - Change "devname" to match adapter name (token0 or token1)
5. Add the device

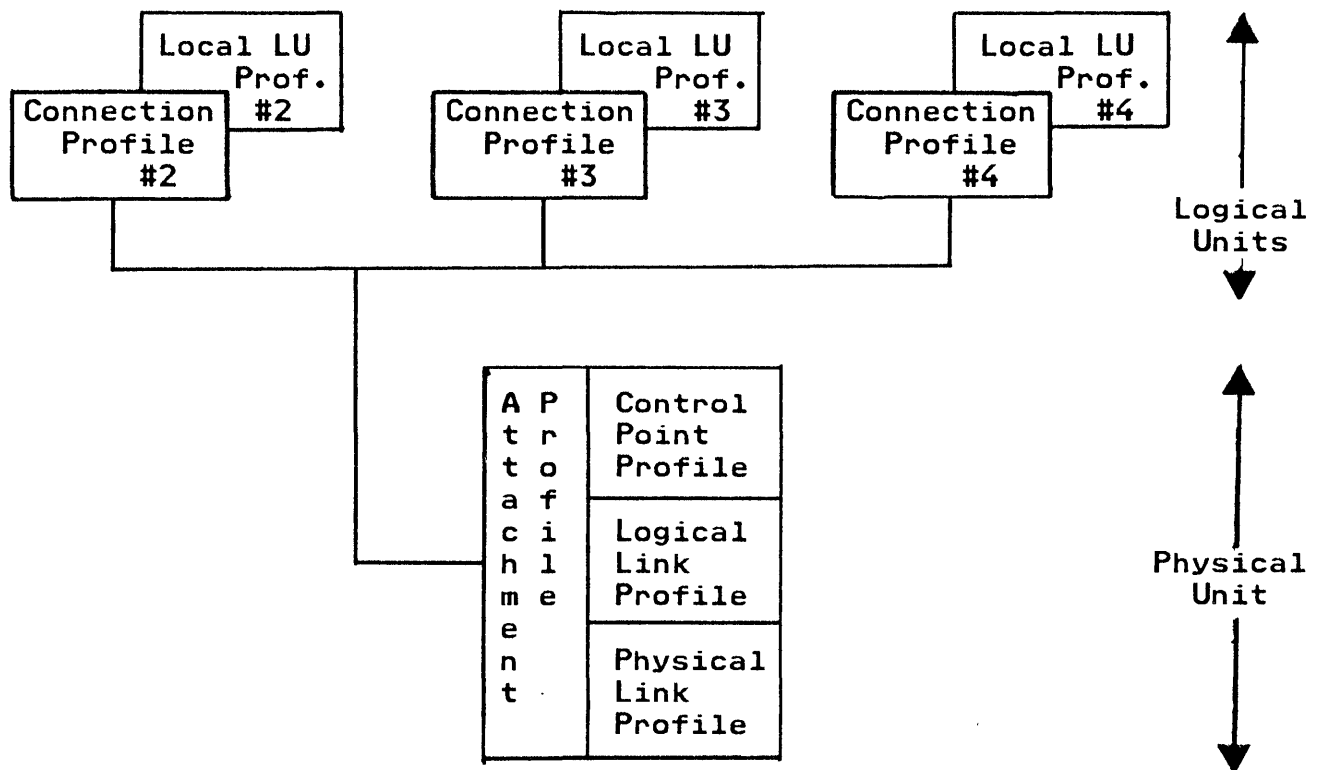
PART E.

SNA SERVICES PROFILES

SNA PROTOCOL PROFILE TYPES

- **System Network Architecture (SNA)**
- **Connection**
- **Local Logical Unit (LLU)**
- **Mode (LU 6.2 Only)**
- **Mode List (LU 6.2 Only)**
- **Transaction Program Name--TPN (LU 6.2 Only)**
- **Transaction Program Name List--TPNL (LU 6.2 Only)**
- **Remote TPN -- RTPN (LU 6.2 Only)**
- **Remote TPL-- RTPNL (LU 6.2 Only)**
- **Attachment**
- **Control Point**
- **Data Link**

SNA SERVICES PROFILE RELATIONSHIP



1. COMMAND LINE OPTIONS

- **Validate**
- **Close**
- **Print**
- **Change**
- **Copy**
- **Delete**
- **Browse**
- **Return**

2. POP-UP BOX OPTIONS

- **Quit**
- **Do**

DEFAULT PROFILES

- **SNA**
 - **SDEFAULT**

- **Connection**
 - **CDEFAULT**

- **Local Logical Unit (LLU)**
 - **LDEFAULT**

- **Attachment**
 - a) **RDEFAULT (SDLC)**
 - b) **TDEFAULT (Token-Ring)**

DEFAULT PROFILES (continued)

- **Control Point**
 - **CDEFAULT**

- **Data Link**
 - a) **Logical Link Type**
 - 1. **SDLC Logical Link**
 - **SDEFAULT**
 - 2. **Token Ring Logical Link**
 - **TDEFAULT**

 - b) **Physical Link Type**
 - 1. **RS232C Physical Link**
 - **RDEFAULT**
 - 2. **Token Ring Physical Link**
 - **TDEFAULT**


```

*****
SDLC LINE SPECIFICATIONS FOR 3274-51C IN C3-205
*****
CHANGED TO HALF DUPLEX PER REQ 14701 SUBMITTED BY DAVE COOK * * CHANGED
TO NON-QUERY PER REQ 15255 SUBMITTED BY DAVE COOK *
*****
SDI:CLN32 LINE ADDRESS=(032,HALF), ONLY ONE SEND REC ADDRESS X
CLOCKNG=EXT, X
ATTACH=MODEM, X
DUPLEX=HALF, TWO WIRE TRANSMISSION FACILITY X
NEWSYNC=NO, X
SERVLIM=4, X
SPEED=19200, X
SRT=(4000,24), X
NRZ1=YES, IBM MODEMS X
TYPE=NCP
SERVICE ORDER=RTPCPU,MAXLIST=4 RTPCPU PU ADDR=C1,
X
PUTYPE=2, X
MAXDATA=265, X
MAXOUT=7, X
PASSLIM=7, X
PUDR=YES, X
MODETAB=DSVMODE, X
DLOGMOD=T3278NQ, X
SSCPFM=USSCS, X
VPACING=0, X
ISTATUS=ACTIVE, X
LOGAPPL=VM, X
PACING=0 RTPCLU2 LU LOCADDR=2 RTPCLU3 LU LOCADDR=3 RTPCLU4
LU LOCADDR=4 RTPCLU5 LU LOCADDR=5 RTPCLU6 LU LOCADDR=6 RTPCLU7 LU
LOCADDR=7 RTPCLU8 LU LOCADDR=8 RTPCLU9 LU LOCADDR=9 RTPCLU10 LU
LOCADDR=10 RTPCLU11 LU LOCADDR=11 RTPCLU12 LU LOCADDR=12 RTPCLU13 LU
LOCADDR=13 RTPCLU14 LU LOCADDR=14 RTPCLU15 LU LOCADDR=15 RTPCLU16 LU
LOCADDR=16 RTPCLU17 LU LOCADDR=17 RTPCLU18 LU LOCADDR=18 RTPCLU19 LU
LOCADDR=19 RTPCLU20 LU LOCADDR=20 RTPCLU21 LU LOCADDR=21 RTPCLU22 LU
LOCADDR=22 RTPCLU23 LU LOCADDR=23 RTPCLU24 LU LOCADDR=24 RTPCLU25 LU
LOCADDR=25 RTPCLU26 LU LOCADDR=26 RTPCLU27 LU LOCADDR=27 RTPCLU28 LU
LOCADDR=28 RTPCLU29 LU LOCADDR=29 RTPCLU30 LU LOCADDR=30 RTPCLU31 LU
LOCADDR=31 RTPCLU32 LU LOCADDR=32
*****
*
GENEND
END * END IS REQUIRED HERE. *
*****

```

VTAM List (Token-Ring)

Net.3270-PLUS (SNA)

Sun Mar 5 09:04:41 1989 vtam.lab Page 3

```
003429 THD42  LINE ADDRESS=042, *
      3430      OWNER=H2VTAM, *
003431      SPEED=19200, *
003432      DISCNT=NO, *
003433      DUPLEX=FULL, *
003434      CLOCKNG=EXT, *
003435      NEWSYNC=NO, *
003436      NRZI=YES, *
003437      RETRIES=(7), *
003438      SERVLIM=4, *
003439      TRANSFER=7, *
003440      SSCPFM=FSS, *
003441      SPAN=(5400), *
003442      USSTAB=USSHATS
003443      SERVICE ORDER=(THD42A,THD42B,THD42C,THD42D,THD42E,THD42F,THD42*
003444      G,THD42H,THD42I,THD42J,THD42K,THD42L)
003685 THD42B  PU PUTYPE=2, *
003686      ADDR=C2, *
003687      MAXDATA=521, *
003688      MAXOUT=7, *
003689      PASSLIM=7, *
003690      IRETRY=NO, *
003691      RETRIES=(,7,4), *
003692      PACING=1, *
003693      VPACING=2, *
003694      SSCPFM=USSSCS, *
003695      SPAN=(5400), *
003696      MODETAB=MT3174R, *
003697      DLOGMOD=D3270MOQ, <====should be d3270m2 as above *
003698      USSTAB=USSHATS
003699 THD42B02 LU LOCADDR=2, *
003700      SPAN=(5400)
003701 THD42B03 LU LOCADDR=3, *
003702      SPAN=(5400)
003703 THD42B04 LU LOCADDR=4, *
003704      SPAN=(5400)
003705 THD42B05 LU LOCADDR=5, *
003706      SPAN=(5400)
003707 THD42B06 LU LOCADDR=6, *
003708      SPAN=(5400)
003709 *
003710 *
```

PART F.
SNA CUSTOMIZATION

AN ASTERISK (*) NEXT TO A PARAMETER INDICATES THAT THE DEFAULT CANNOT BE USED AND THAT THE PARAMETER MUST BE CHANGED

CONNECTION PROFILE (SDLC)

*Connection Profile Name	LU2
*Attachment Profile Name	rabbit
*Local LU Profile Name	LU2
Network Name
*Remote LU Name/CP Name	RTPCLU2
*Stop Connection on Inactivity	No
*LU/Session Type	LU2
*Notify	Yes

*** indicates parameter must be changed**

CONNECTION PROFILE (Token-Ring)

*Connection Profile Name	LU2
*Attachment Profile Name	rabbit
*Local LU Profile Name	LU2
Network Name
*Remote LU Name/CP Name	THD42B02
*Stop Connection on Inactivity	No
*LU/Session Type	LU2
*Notify	Yes

LOCAL LOGICAL UNIT PROFILE (LLU)

*Local LU Profile Name	LU2
*LU Type	LU2
Network Name
*Local LU Name	LU2
*Number of Rows	24
*Number of Columns	80
*Local LU Address	2
*SSCP ID	*

ATTACHMENT PROFILE (SDLC)

*Attachment Profile Name	rabbit
*Control Point Profile Name	rabbit
*Logical Link Profile Name	rabbit
*Physical Link Profile Name	rabbit
Logical Link Type	SDLC
Station Type	Secondary
Physical Link Type	RS232
Stop Attachment on Inactivity	No
LU Address Registration	No

ATTACHMENT PROFILE (Token-Ring)

*Attachment Profile Name	rabbit
*Control Point Profile Name	rabbit
*Logical Link Profile Name	rabbit
*Physical Link Profile Name	rabbit
Logical Link Type	Token-Ring
*Call Type	Call
*Access Routing	Link Address
*Remote Link Address	4000132200C1
Remote SAP Address	04
Stop Attachment on Inactivity	No
LU Address Registration	No

CONTROL POINT PROFILE

*Control Point Profile Name	rabbit
*XID Node ID	0000000
Network Name
CP Name
CP Status (End Node)	No Bind
Locate GDS Support	No
Directory Services Supported	No
Resource Registration	No
Registration of Characteristics	No
Topology Database Update Support	No
Request/Reply CP-MSUs Supported	No
Unsolicited CP-MSUs Supported	No
Parallel CP-CP Sessions Supported	No

DATA LINK PROFILES (SDLC)

1. Logical Link Type

- **SDLC Logical Link Type**

2. Physical Link Type

- **RS232C Physical Link Type**

LOGICAL LINK PROFILE (SDLC)

*SDLC Logical Link Profile Name	rabbit
*Station Type	Secondary
*Local Secondary Station Address	193
Secondary Inactivity Timeout	30
Serial Encoding	NRZI
Transmit Window Count	7
Retransmit Count	10
Retransmit Threshold	10
Drop Link on Inactivity	Yes
Force Disconnect Timeout	120
*Link Trace	Trace On
*Trace Entry Size	Long

RS232C PHYSICAL LINK PROFILE

*Physical Link Profile Name	rabbit
Device Name	sdllc0
Request to Send	Controlled
Bit Clocking	External
Data Rate Select	Full
Switched Network Backup	No
*Network Type	Nonswitched
DTR Control	DTR

VALIDATE PROFILES

DATA LINKS PROFILES (Token-Ring)

1. Logical Link Type

- **Token-Ring Logical Link Type**

2. Physical Link Type

- **Token-Ring Physical Link Type**

LOGICAL LINK PROFILE (Token-Ring)

*Token-Ring Logical Link Profile Name	rabbit
Transmit Window Count	7
Dynamic Window Count	1
Retransmit Count	8
Receive Window Count	127
Ring Access Priority	0
Inactivity Timer	48
Drop Link on Inactivity	Yes
Response Timeout	2
Acknowledge Timeout	1
Force Disconnect Timeout	120
Maximum I-Field Size	Sys. Def.
*Link Trace	Yes
*Trace Entry Size	Long

PHYSICAL LINK PROFILE (Token-Ring)

*Physical Link Profile Name	rabbit
Device Name	trllc0
Local Link Name
Local SAP Address	04
Maximum Number of Logical Links	32

VALIDATE PROFILES

PART G.

3270-PLUS PROFILES

NETWORK 3270-PLUS (SNA) PROFILES

- **Configuration Profile**
 - `/usr/lpp/r/comm/sna/3270/profiles/sc3270.prof`

- **Terminal Option Set Profile**
 - `/usr/lpp/r/comm/sna/3270/profiles/TermOpts.prof`

- **Printer Option Set Profile**
 - `/usr/lpp/r/comm/sna/3270.profiles/PrtOpts.prof`

- **PH Parameters Profile**
 - `/usr/lpp/r/comm/sna/profiles/SNAParms.prof`

CONFIGURATION PROFILE

`/usr/lpp/r/comm/sna/3270/profiles/sc3270.prof`

- **Defines local configuration**
 - **Workstations or displays**
 - **Printers**
 - **3270 device type**
 - **Model number**
 - **Screen Size**
 - **Buffer size**

- **Up to 128 LU numbers**

```
# # @(#)sc3270.prof          1.3 #  
  
          System Configuration Profile for Rabbit SNA 3270-Plus  
  
:Protocol(SNA) :ControllerType(3274)  
  
:PH Parms("/usr/lpp/r/comm/sna/profiles/SNAParms")  
  
:DLC Parms("")  
  
Parms(32, 32, ON, 100)  
  
:Logging(Dev Data = OFF, PH Data = OFF, DH Errors = OFF, DH Timing = OFF,  
         PSErrors = OFF, PSData = OFF, PSTiming = OFF,  
         PEErrors = OFF, PEData = OFF, PETiming = OFF )
```

TERMINAL DEFINITIONS

```
:Terminal(DEFAULT, On, 3278, , 1920, 24, 80, 400,  
          "/usr/lpp/r/comm/sna/3270/profiles/TermOpts.prof",  
          "/usr/lpp/r/comm/sna/3270/profiles/KbdMap",  
          Validation Mode = 1)  
  
:Terminal(2, On, 3279)  
  
Terminal(3, On, 3279)  
  
Terminal(4, On, 3279)  
  
Terminal(5, On, 3279)  
  
:Terminal(6, On, 3279)  
  
Terminal(17, On, 3279, , 1920, 24, 80, 100,  
          "/usr/lpp/r/comm/sna/3270/profiles/TermOpts17.prof")
```

PRINTER DEFINITIONS

```
:PrinterParms(TIMEOUT = 15, SPOOLSIZE = 3)  
  
Printer(8, ON, 3287, 1, 1920,  
        "/usr/lpp/r/comm/sna/3270/profiles/PrtOpts.prof")  
  
Printer(9, ON, 3287, 1, 1920,  
        "/usr/lpp/r/comm/sna/3270/profiles/PrtOpts.prof")  
  
Printer(10, ON, 3287, 1, 1920,  
        "/usr/lpp/r/comm/sna/3270/profiles/PrtOpts.prof")
```

```
:End;
```

TERMINAL OPTION SET PROFILE

/usr/lpp/r/comm/sna/3270/profiles/TermOpts.prof

- **Defines runtime options**
 - **Screen destinations**
 1. **ScreenToPrinter**
 2. **ScreenToFile**

- **Specifications**
 1. **ReadAhead**
 2. **Record Input**
 3. **Record Output**
 4. **Browse**

PRINTER OPTION SET PROFILE

`/usr/lpp/r/comm/sna/3270/profiles/PrtOpts.prof`

- **Defines output paths for printers**
 - **File**

 - **Spooler File**

 - **Printer**

PH PARAMETERS PROFILE

`/usr/lpp/r/comm/sna/profiles/SNAParms.prof`

- **Defines whether logging is ON in Protocol Interface Process**

PART H.

3270-PLUS CUSTOMIZATION

CONFIGURATION PROFILE CUSTOMIZATION

— `/usr/lpp/r/comm/sna/3270/profiles/sc3270.prof`

PARSING CONFIGURATION

Command

- **s3270admin parse configuration**
 - checks for errors
 - "compiles"
 - Parsed filename -
`/usr/lpp/r/comm/sna/3270/etc/sc3270`

- **Shutdown RT System**
 - Allows updated files to be loaded.

PART I.
HOST SESSION

STARTING SNA SERVICES

After system has restarted:

1. Login to system
2. open sh
3. start sna
4. start /attachment/rabbit
5. status -l sna

STARTING NETWORK 3270-PLUS (SNA)

After connection to host is established:

1. `s3270admin install`
2. `s3270 start 2 (LU name)`

Host login screen should appear

Login to host as usual

NETWORK 3270-PLUS MULTISESSION

LU	Status	Suspend Date/Time	Owner
2	Suspended	Thurs Jul 26 12:02	Smith
3	Suspended	Thurs Jul 26 12:30	Smith
4	Suspended	Thurs Jul 26 13:12	Smith
6	Active	Thurs Jul 26 14:07	Smith

PF1	PF2	PF3	PF4	PF5	PF6
Exit/ Suspend	Finish LU	Resume LU	Start New LU	Resume New LU	Finish All LUs

HELP Available

STOPPING NETWORK 3270-PLUS (SNA)

Logoff host

Finish all LUs (from Multisession Menu)

Exit/Suspend (from Multisession Menu)

s3270admin shutdown

stop -c sna

PART J.

PROBLEM DETERMINATION

HARDWARE PROBLEMS

Internal (checked with RT Diagnostics)

- Multiprotocol Adapter
- Token-Ring Adapter

External

- Modem Cable (Checked with RT Diagnostics)
- Modem
- Token-Ring Hardware

status COMMAND

Displays the status of a server or subserver

- Can be used to display the state of a:
 - Connection
 - Attachment

- Is used with one of two flags:
 - -s (short) - - status -s /attachment/rabbit
 - -l (long) - - status -l /attachment/rabbit

Documented in the SNA Services Guide and Reference

status SAMPLE

```
# start sna
  sna Program, Process ID 550 active
# start /attachment/rabbit
# status -1 sna
  sna Program, Process ID 550 active
rabbit          Attachment    - active
LU2             Connection    - active
LU3             Connection    - active
```

errpt COMMAND

Processes a report of logged errors

- Is used with the -a flag
- formats errors stored in:
 - /usr/adm/ras/errfile.0
 - /usr/adm/ras/errfile.1

Easiest to use as follows:

1. Delete /usr/adm/ras/errfile.0 and errfile.1
2. Shutdown and restart RT System
3. Attempt to establish 3270 session
4. After attempt, issue the following
 - `errpt -a >trouble`

ERROR LOG REPORT

Error log: /usr/adm/ras/errfile

Date/Time	Class	Subclass	Type	Device	Cause
Thu Jan 15 04:15:19	IPL/Shutdown	Soft IPL	Info		Info

State=Soft_IPL/Auto_IPL Diag_Status=3E Machine_Type=IBM_RT_PC_6151
NVRAM_Valid=Yes IPL_device=Fixed_Disk_0 IPL_time=Thu Jan 15 04:15:19 2009

Virtual_Machine=AIX node_name=Self release=2.1 version=2 machine=10915CF9

Date/Time	Class	Subclass	Type	Device	Cause
Thu Jan 15 04:15:59	Communications	SNA	Temp		Software

SNA_Process=LUXCR Cause=-746_(SNA)_CP_ID/DAF_not_found_in_Local_LU_Profiles
Error=-4206_(PFS)_Returned_from_Profile_Services Profile_Type=Local_LU
Name=050000000003/03 Function_Name=srmps.b.c Line_Number=132
Function_IODN_(hex)=Not_used

Date/Time	Class	Subclass	Type	Device	Cause
Thu Jan 15 04:15:59	Communications	SNA	Temp		Software

SNA_Process=LUXLNS Cause=-182_(SNA)_Resource_Not_Available
Sense_Data_(HEX)=084B0000 Description=Resource_Not_Available
Profile_Type=Not_used Additional_Information= Function_Name=luxstrt.c
Line_Number=394 Function_IODN_(hex)=Not_used

Date/Time	Class	Subclass	Type	Device	Cause
Thu Jan 15 04:15:59	Communications	SNA	Temp		Software

SNA_Process=LUXLNS Cause=-182_(SNA)_Resource_Not_Available
Sense_Data_(HEX)=084B0000 Description=Resource_Not_Available
Profile_Type=Not_used Additional_Information= Function_Name=luxaclu.c
Line_Number=224 Function_IODN_(hex)=Not_used

Date/Time	Class	Subclass	Type	Device	Cause
Thu Jan 15 04:15:59	Communications	SNA	Temp		Software

SNA_Process=LUXCR Cause=-746_(SNA)_CP_ID/DAF_not_found_in_Local_LU_Profiles
Error=-4206_(PFS)_Returned_from_Profile_Services Profile_Type=Local_LU
Name=050000000003/04 Function_Name=srmps.b.c Line_Number=132
Function_IODN_(hex)=Not_used

snaTRACE

Activates and deactivates trace function for SNA datalink attachments

- **used with 4 flags:**
 1. **-l (long version)**
 2. **-s (short version)**
 3. **-b (turns trace on)**
 4. **-e (turns trace off)**

- **Can be started using:**
 - **Data Link Logical Link Profile**
 - **Using snaTRACE command with -b flag:**

snaTRACE -b -l rabbit

snatrace (continued)

- Is stopped using -e flag:
 - snatrace -e rabbit

- To format trace:
 - a) cd /etc/lux

 - b) trcrpt rabbit > rabtrace

Documented in the SNA Services Guide and Reference

TRACE LOG REPORT

File: hostatt

Mon Jan 12 07:07:11 2009 System: AIX 2.1.2
10915CF9

Node: Self Machine:

```
TIME      SEQ  PID  IODN  IOCN TYPE      HOOK      DATA 07:07:12:05 0100 72199
13D7  0403 DLC,    OpenLink
      Link_Type=SDLC RS2.0C
      LS_Diagnostic_Tag=host1lp
      SAP_Diagnostic_Tag=hostplp 07:07:12:54 0200 72199    13D7    0403  SDLC
Receive
```

```
Receive_Trace_Data_Byte_Length=2
Address=C1
Control=Unnumbered_I_Frame SNRM
```

```
Packet=C1 93 07:07:12:54 0300 72199 13D7 0403 SDLC      Send
```

```
Send_Trace_Data_Byte_Length=2
Address=C1
Control=Unnumbered_I_Frame UA
```

```
Packet=73 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0 0 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 35 BF 9C 00 00 00 00 00 00 00 00 00 00
00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0 0 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 07:07:13:05 0400 72199 13D7
0403 SDLC      Receive
```

```
Receive_Trace_Data_Byte_Length=2
Address=C1
Control=Supervisory RR      Rcv_Seq_Number=0      Poll=1
```

```
Packet=C1 11 07:07:13:06 0500 72199 13D7 0403 SDLC      Send
```

```
Send_Trace_Data_Byte_Length=2
Address=C1
Control=Supervisory RR      Rcv_Seq_Number=0      Poll=1
```

```
Packet=C1 11 07:07:13:14 0600 72199 13D7 0403 SDLC      Receive
```

```
Receive_Trace_Data_Byte_Length=20
Address=C1
Control=I_Frame Rcv_Seq_Number=0      Poll=0      Send_Seq_Number=0
```

asciilog files

Files on which major Network 3270-PLUS events are recorded

- **files are in ascii format**

- **older asciilog files maintained up to 5 levels**
 - **/usr/lpp/r/comm/sna/3270/etc/asciilog.a**
 - **/usr/lpp/r/comm/sna/3270/etc/asciilog.b**
 - **/usr/lpp/r/comm/sna/3270/etc/asciilog.c**
 - **/usr/lpp/r/comm/sna/3270/etc/asciilog.d**
 - **/usr/lpp/r/comm/sna/3270/etc/asciilog.e**

Documented in the Network 3270-PLUS (SNA) manual

Log Opened (Sat Jan 10 06:58:13 2009)

<Sat Jan 10 06:58:13 2009> SNA GIP: NETWORK 3270-PLUS(tm) : SNA Gateway Interf
ace

Process : Version 1.7

Copyright 1986 by Rabbit Software Corporation

Copyright 1986 by International Business Machines Corporation

<Sat Jan 10 06:58:24 2009> SNA GIP: dhinitshut: Open failed, errno is 13 for de
vice

6

3270-PLUS SNA Installed (Sat Jan 10 06:58:24 2009)

NETWORK 3270-PLUS(tm) Device Handler P Version 1.7

Copyright 1986 by Rabbit Software Corporation

Copyright 1986 by International Business Machines Corporation

<Sat Jan 10 07:00:08 2009> SNA GIP: CHKGWIN: select fails due to Link Drop

<Sat Jan 10 07:00:08 2009> SNA GIP: CHKGWIN: select fails due to Link Drop

Sat Jan 10 07:00:11 2009 ProcCntl:ProcCntl : Detected exit of PH

3270-PLUS SNA Shutdown (Sat Jan 10 07:00:12 2009)

Log Closed (Sat Jan 10 07:00:14 2009)

3270-PLUS SNA Shutdown (Sat Jan 10 07:00:14 2009)SendPHMsg: chwrite failed 3

OTHER AIDS

SNA Sense Codes

- Listed in error report
 - Located in the SNA Reference Summary Manual

Numeric Error Codes

- SPC Messages (-8806)
- Link Status Messages (-907)
- SNA Error Messages (-703)

Located in SNA Services Guide and Reference

PART K.
REFERENCES

REFERENCES

1. **SNA Services Guide and Reference**
 - (SC23-2009)

2. **AIX Operating System Commands Reference Vol. 1**
 - (SC23-2011)

3. **AIX Operating System Commands Reference Vol. 2**
 - (SC23-2081)

4. **Network 3270-PLUS for the IBM RT PC (SNA)**
 - (SC23-0825)

5. **SNA Guide and Reference**
 - (GT00-2480)

6. **IBM RT PC Communications Cookbook Volume 2**
 - (GG24-1542)

END

Net.3270-PLUS (SNA)
