

AS/400 Communication Definition Examples III

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Abstract

This document contains a number of communication scenarios all involving the AS/400 system in one way or another. It is intended to give the communication system specialist some real-world examples of configuration as a basis for setting up links between the AS/400 and many other systems.

Connectivity to S/390, other AS/400s, remote work stations like the 3174 and 5x94, PS/2s, RS/6000s, and OEM systems like DEC MicroVAX, HP 9000-720; via protocols like SDLC, X.25, ISDN, TRLAN, X.21, SNA/APPN, and TCP/IP, all make for a wide range of connectivity solutions at your finger tips.

By using these sample scenarios which are complete with configuration details you can set up connections with your AS/400 very quickly. After establishing a connection using these definitions, you can customize your network to meet your particular needs. This can save both time and money.

(297 pages)

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Special Notices

This publication is intended to provide AS/400 customers, business partners and systems engineers with example scenarios related to AS/400 communication networks. The information in this publication is not intended as the specification of any programming interfaces that are provided by OS/400.

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Preface

The information in this document is based on a specific network. This means that definitions documents can be different from a specific customer situation.

The purpose of the document is to have an installation guide available for setting up connections with an AS/400 system quickly. After establishing a connection using these definitions, you can customize your network. This task is easier with an already working link.

Knowledge of AS/400 and other systems' communications is a prerequisite. No explanation is provided with the definitions in this book.

The document is organized as follows:

- Part 1 - Overview

This section describes the hardware and software included in the test network. It also describes the available connections.

- Part 2 - Communications with System/390

In this section, connections between AS/400 and System/390 are documented. Available communications facilities are described.

- Part 3 - Communications with Peer Systems

This section includes LU 6.2 connections between AS/400s and applications using these connections.

- Part 4 - Communications with Remote Workstation Controllers

This sections includes AS/400 connections to IBM 5394, IBM 5494, and IBM 3174.

- Part 5 - TCP/IP

This section documents AS/400 TCP/IP definitions in the TS MVI network.

- Part 6 - Communications API's

This sections includes examples programs using Common Programmer Interface for Communications and User Defined Communications X.25.

A complete list of International Technical Support Organization publications, with a brief description of each, may be found in:

Bibliography of International Technical Support Organization Technical Bulletins, GG24-3070.

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Customers may order hardcopy redbooks individually or in customized sets, called GBOFs, which relate to specific functions of interest. IBM employees and customers may also order redbooks in online format on CD-ROM collections, which contain the redbooks for multiple products.

Below is a list of ITSO publications that are currently available which relate to the AS/400.

AS/400 redbooks are also available on CD-ROM, by adding feature code #8053 to your OS/400 software profile.

- *System/36 to AS/400 System Migration*, GG24-3249-01
- *System/36 to AS/400 Application Migration*, GG24-3250-01
- *AS/400: System/38 Application Migration to AS/400*, GG24-3251-00
- *AS/400 Communication Migration*, GG24-3253--00
- *AS/400 Office in a DIA/SNADS Network*, GG24-3268-00
- *Converting S/36 Environment Application to Native*, GG24-3304-01
- *AS/400 Communications Problem Determination*, GG24-3305-00
- *SQL/400: A Guide for Implementation OS/400 V2R2*, GG24-3321-03
- *AS/400 - S/370 Connectivity*, GG24-3336-00
- *AS/400, S/38 and PS/2 as T2.1 Nodes in a Subarea Network*, GG24-3420-00
- *Writing SAA Applications for AS/400*, GG24-3438-00
- *IBM AS/400 TCP/IP Operation and Configuration*, GG24-3442-02
- *IBM AS/400 in Large Networks: A Case Study*, GG24-3447-00
- *AS/400 Communications Definitions Examples*, GG24-3449-00
- *AS/400 Object Distribution Facility and SNA RSCS PROFS*, GG24-3479-00
- *IBM AS/400 ISDN Connectivity*, GG24-3517-00
- *OfficeVision/400 and AS/400 Query Applications in a Multilingual Environment*, GG24-3579--00
- *Managing Multiple AS/400s in a Peer Network*, GG24-3614-02
- *OfficeVision/400 in a DIA/SNADS Network*, GG24-3625-00
- *AS/400 Audit and Security Enhancements in OS/400*, GG24-3639-00
- *WAF/400 5363 Optical Subsystem Configuration and Installation*, GG24-3680-00
- *OfficeVision/400 Printing*, GG24-3697-00
- *AS/400 Printing II*, GG24-3704-00
- *AS/400 APPN with PS/2 APPN, 3174 APPN, 5394 and Subareas*, GG24-3717-00
- *AS/400 CPI Communications Selected Topics*, GG24-3722-00
- *AS/400 Performance Management V2R2*, GG24-3723-01
- *Multimedia Examples with the AS/400 Using AVC*, GG24-3743-00
- *Getting Started with AS/400 OSI*, GG24-3758-00
- *AS/400 Communication Definition Examples Volume 2*, GG24-3763-00
- *Installation Considerations for National Language*, GG24-3790-00
- *Artificial Intelligence and AS/400: Neural Networks and Knowledge Based Systems*, GG24-3793-00
- *Facsimile Support/400 Implementation*, GG24-3797-00
- *Application Development on the AS/400*, GG24-3806-00

- *PC Support/400 Asynchronous and SDLC Configuration Examples*, GG24-3808-00
- *5494 & OS/2 ES: Connecting Remote User Groups*, GG24-3828-00
- *AS/400 Automation Using NetView and SNA MS Transport*, GG24-3841-00
- *DOS PCS/400 in OS/2 V2 Virtual DOS Machine*, GG24-3856-00
- *WAF/400 Administration and User Examples*, GG24-3866-00
- *OfficeVision/400 Application Enabler*, GG24-3868-00
- *Cooperative Processing and GUI in an AS/400 Environment*, GG24-3877-00
- *OfficeVision/400 Application Programming Interfaces V2R2*, GG24-3885-00
- *OfficeVision/400 Integration with CallPath/400 and Fax Support*, GG24-3896-00
- *AS/400 Performance Capacity Planning V2R2*, GG24-3908-00
- *AS/400 System Availability and Recovery for V2R2*, GG24-3912-00
- *AS/400 Network Routing Facility*, GG24-3918-00
- *AD/CYCLE Code/400, ADM/400 and ADS/400*, GG24-3928-00
- *OfficeVision/400 V2 Technical Tips and Techniques*, GG24-3937-00
- *CICS/400 Migration from Mainframe CICS*, GG24-4006-00
- *Using DOS PC Support/400 with Novell NetWare 3.11 and NetWare for SAA 1.3*, GG24-4013-00
- *Ultimedia Video Delivery System/400*, GG24-4020-00
- *AS/400 Client Series - Products and Positioning*, GG24-4027-01
- *IBM AS/400 Printing III*, GG24-4028-00
- *Performance Benchmarking for the AS/400*, GG24-4030-00
- *AS/400 and RISC System/6000 Connectivity*, GG24-4039-00
- *Using V2R3 DOS and OS/2 PC Support/400 under OS/2 2.1*, GG24-4070-01
- *Apple Macintosh and the AS/400*, GG24-4071-00
- *OfficeVision/400 Application Enabler Version 2 Release 3*, GG24-4072-00
- *The IBM AS/400 as a TCP/IP Network File Server*, GG24-4092-00
- *ENVY/400 Hints and Tips*, GG24-4094-00
- *Introduction to ENVY/400*, GG24-4126-00
- *Managing Operations on AS/400s with IBM SAA SystemView OMEGAMON Services/400*, GG24-4136-00
- *AS/400 Integrated Language Environment*, GG24-4148-00
- *CICS/400 V2R3 Task Book*, GG24-4182-00
- *AS/400 V2R3 Software Life Cycle Mgmt with ADM/400*, GG24-4187-00
- *An Implementation Guide for AS/400 Security and Auditing including C2, Cryptography, Communications and PC Connectivity*, GG24-4200-00
- *IBM AS/400 APPN Problem Management*, GG24-4222-00
- *DB2/400 Advanced Database Functions*, GG24-4249-00
- *V2R3 PC Support/400 and Microsoft Windows 3.1 Advanced Topics*, GG24-4253-00
- *OfficeVision/400: Printer Setup in an OfficeVision Environment*, GG24-4283-00
- *AS/400 Client Series Handbook*, GG24-4285-00
- *Backup Recovery and Media Services/400 Implementation Tips and Techniques*, GG24-4300-00
- *IBM Current-OV/400 Workgroup Program V1 R1 Modification 0 Refresh 1*, GG24-4377-00
- *LAN Server/400 A Guide to Using AS/400 as a File Server*, GG24-4378-00
- *Client Access/400 Planning Guide*, GG24-4422-00
- *Implementing Hierarchical Storage on the AS/400*, GG24-4450-00

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The advisor for this project was:

Stephan Imhof
IBM Switzerland

We in the ITSO Rochester value Stephan's work and are proud to make this material available to the world wide technical community.

Brian R. Smith
ITSO, Rochester Center

Part 1. Overview

Chapter 1. IBM Technical Support (TS) Network

This document and *AS/400 Communications Definitions I*, GG24-3449 and *AS/400 Communications Definitions II*, GG24-3763 are a collection of AS/400 communications definition examples. Complete and consistent definition examples are usually very helpful when defining new connections. However they describe only a specific situation. Therefore, use these examples only in conjunction with the appropriate IBM manuals.

These documents do not replace any formal education. We assume that you have a good knowledge of AS/400 communications and that you know the partner systems too. We do not intend to guide you step-by-step through defining the communications link. Our objective is to provide compact, consistent documentation of specific connections with AS/400.

To work with these examples, we suggest you first copy them without any changes. Working in this manner minimizes the risk of failing definitions. After the connection is running, it will be less difficult to customize the definitions for your environment and naming conventions.

These documents describe AS/400 SNA communications capabilities with:

- System/390
- RISC/6000
- Personal System/2
- IBM 5294, IBM 5394, IBM 5494 and IBM 3174.

These SNA communication capabilities can run via various connection types if the partner system also supports them:

- SDLC switched and SDLC leased
- X.25 SVC or PVC
- Token-Ring LAN (TRLAN)
- Ethernet

Describing all communications capabilities of each connection type would result in a very large collection of mostly redundant examples. Therefore, we first describe possible connections, for example SDLC switched. Then, in a second section we describe communications capabilities for other connections using a previously described connection. Hopefully, you will find it easy to combine communications capabilities and connections not yet described in this document.

We added examples regarding non-SNA communications as well:

- BSC
- Native X.25
- ASYNC
- TCP/IP

1.1 Hardware and Software

The following systems are part of the IBM Technical Support Network at IBM Switzerland. Generally all available communications software is installed on our AS/400 systems and is not mentioned specifically.

1. IBM 5294 - SDLC

SDLC support (V.24, 19200 bps)

2. IBM 5294 - X.25

X.25 support (V.24, 19200 bps)

3. IBM 5394

SDLC and X.25 support (V.24, 19200 bps)

4. IBM 5494-2

SDLC, X.25 and TRLAN support (V.24, X.21 and V.35)

5. System/36 Model 5360

ELCA with four lines (V.24, 19200 bps)

TRLAN adapter (PC gateway)

SSP R5.1

ODF, 5799-CXF

X.25 Dynamic Call, 5799-CRA

LAN Support, 5727-LC1

PS/36, 5727-WP3

6. System/36 Model 5363

TRLAN adapter

SDLC adapter (V.24, 19200 bps)

SSP R6

ODF, 5799-CXG

LAN Support, 5727-LC6

PS/36, 5727-WP8

7. AS/400, Model B20

The following communication adapters are installed:

- V.24, X.21, V.35
- TRLAN, 4 Mbps
- ASCII WSC, 18 ports

OS/400, 5738-SS1, V2R1.1

Communications Utilities, TCP/IP, NetView FTP, OSI/CS, OSI/MS, OSI/FS, and PC Support/400

8. AS/400, Model C25

The following communication adapters are installed:

- V.24, X.21, V.35
- TRLAN, 16/4 Mbps

OS/400, 5738-SS1, V2R2

TCP/IP and PC Support/400

9. AS/400, Model E45

The following communication adapters are installed:

- V.24, X.21, V.35
- TRLAN, 4 Mbps
- Ethernet, 10 Mbps
- ASCII WSC, 18 ports

OS/400, 5738-SS1, V2R2

Communications Utilities, TCP/IP, NetView FTP, OSI/CS, OSI/MS, OSI/FS, and PC Support/400

10. S/390 Systems

IBM 3720, IBM 3725, IBM 3745 with SDLC leased, SDLC switched, X.25, TRLAN and Ethernet interfaces and adapters

IBM 3174L as TRLAN gateway

IBM 3172 with Ethernet and TRLAN adapters

VM/ESA 1.1.0

ACF/VTAM, 3.4.1

RSCS, 3.1.0

NetView, 2.2.0

NetView/Access, 1.3.2

TCP/IP, 2.2.0

MVS/ESA, 4.2.2

JES2, 4.2.2

TSO/E, 2.4.0

CICS/ESA, 3.3.0

IMS/ESA, 3.1.0

ACF/NCP, 4.3.0 (IBM 3725)

ACF/NCP, 6.1.0 (IBM 3720/45)

X.25 NPSI, 3.5.0

ACF/VTAM, 3.4.1
DISOSS/370, 3.4
OfficeVision/MVS, 1.1 and 1.2
DisplayWrite/370, 1.2.1 and 2.1
NetView/ESA, 2.3.0
NetView DM, 1.4.0
NetCenter, 2.2.0
NetView FTP, V2
NetView/Access, 1.3.2
NPM, 1.6.0
HCF/VTAM, 2.1.0
Samon, 1.1.3
TCP/IP, 2.1.1
NRF, 1.7.0
SNS/SNA Interlink, 1.2.0
A-Net

11. Multi-Vendor Network

The MVI part of the TS network includes various IBM and non-IBM systems and workstations such as RS/6000, DEC** MicroVAX** 3300, HP** 9000-720, Apple** PCs, PCs with DOS, Windows**, Netware** and OS/2, IBM 6611, IBM 8209, IBM 8240, IBM 8250, DEC Terminal Server

1.2 Communication Line Assignment

The following table shows how the different communication lines are used.

Sys- tem_1	Lin Nbr	Prodctive LIND	Int fce	Modem Type	Cble Nbr	Pat Pnl	Cble Nbr	Modem Type	Lin Nbr	Sys- tem_2	Remark
AS400BU3 (E45)											
	011	QESLINE	V24	5858	-	-	-	-	-	-	ECS
	021	X25LINE	V24	-	-	A9	-	-	-	Mod_1	47911140
	041	TRNLINE	TRN	-	-	-	-	-	-	-	400000009406
	051	-	X21	-	-	-	-	-	-	-	i/Modem Rack
	052	IX21LINE	X21	7820	-	-	-	-	-	SwNet	067 50 01 41
	061	-	V35	-	-	-	-	-	-	-	i/Modem Rack
	062	-	V35	-	-	-	-	-	-	-	i/Modem Rack
	071	T314L	TRN	-	-	-	-	-	-	3174L	400031740A4A
	081	-	V24	-	-	A11	-	-	-	-	-
	082	S4381LIN2	V24	5811	5169	-	5183	5812	12	ES9K	indep LU 6.2
	091	-	V24	-	-	A7	-	-	-	-	-
	092	-	V24	-	-	A8	-	-	-	-	-
	101	S400LINE	V24	5866	5163	-	3230	5866	.	ASBU1	i/Modem Rack
	102	NRFLINE	V24	5812	5161	-	5185	5812	.	ES9K	-
	111	S4381LINE	V24	5812	5160	-	5187	5812	8	ES9K	dep LUs
	112	S36LINE	V24	Datec	-	-	-	Datec	3	5363	-
	121	ETHLINE	ETH	-	-	-	-	-	-	-	-
	131	QTIPASLIN	V24	PMD24	-	-	-	-	-	-	CE Rem Supp
	132	-	V24	-	-	A3	-	-	-	-	-
	141	-	V24	-	-	A6	-	-	-	-	-
	142	-	V24	-	-	-	-	-	-	-	-
AS400BU4 (B20)											
	011	QESLINE	V24	PMD24	-	-	-	-	-	-	ECS
	021	FSC370LIN	V24	5812	5164	-	5063	5812	.	ES9K	-
	031	TRNLINE	TRN	-	-	-	-	-	-	-	400000009404
	041	-	V35	-	-	-	-	-	-	-	i/Modem Rack
	051	X25LINE	V24	-	-	A14	-	-	-	Mod_3	47971013
	071	IX21LINE	X21	7820	-	-	-	-	-	SwNet	067 50 01 42
CHIBMAS3 (C25)											
	011	QESLINE	V24	5858	-	-	-	-	-	-	ECS
	061	-	V24	-	-	-	-	-	-	-	-
	021	TRNLINE	TRN	-	-	-	-	-	-	-	400000009425
	031	-	X21	-	-	-	-	-	-	-	-
	041	-	V24	-	-	A1	-	-	-	-	-
	051	-	V35	-	-	-	-	-	-	-	-
5360	#1		V24	-	-	A4	-	-	-	-	-
	#2		V24	-	-	A2	-	-	-	-	-
	#3		V24	-	-	A5	-	-	-	-	-
	#4		V24	Datec	5167	-	5184	Datec	.	ES9K	-
	#9		TRN	-	-	-	-	-	-	-	400000005360
5363	#3		V24	Datec	-	-	-	Datec	-	ASBU3	-
	#9		TRN	-	-	-	-	-	-	-	400000005363
5X94	-		V24	Datec	5168	-	5181	Datec	.	ES9K	5X94 v/SNA SA T2.1

Figure 1. Communication Line Assignment

For permanent in-house connections IBM 5812 modems via IBM cabling system are used. In some cases non-IBM short-distance modems or modem compensators are used. Cable numbers are the ports of the in house cabling system.

V.24 modem cables reserved for flexible usage are connected into a patch panel (for example, E45 LIN031 available on patch panel port A3) where they can be connected to specific modems using patch cables.

1.3 Modems in the Network

The example network includes various modems, modem compensators and ISDN terminal adapters.

However for technical reference purposes we consider the following information as helpful.

- IBM Modems
 - IBM 5811-1, IBM 5812-1, IBM 5812-2
 - IBM 5858-01
 - IBM 5865-2, IBM 5865-3, IBM 5866-1, IBM 5866-2
 - IBM 7861-47
- Non-IBM Modems
 - PTT: Nokia PMD 9600, Racal-Milgo MPS 4827, ITT FM 300, ITT PMD 2400, Siemens PMD 2401, Schrack PFM 324, ITT BB 19200, Nokia PFM 2402, Siemens NAG 9600 (X.25), Gfeller GBM 9600 (X.25)
 - Non-PTT: Nokia ECM 9632, Datex LDM 24 T
- Modem Compensator
 - Retronika CO-1 up to 19200 bps, Retronika CO-1 up to 48 Kbps
- ISDN Terminal Adapters
 - IBM 7820-001, Zelcom TA-V.35 and TA-V.24 Swissnet

1.4 SNA/SDLC Network

A network of permanently established SDLC connections allows us to give support without time consuming preparation. Connection between AS/400 E45, B20 and C25 is TRLAN only.

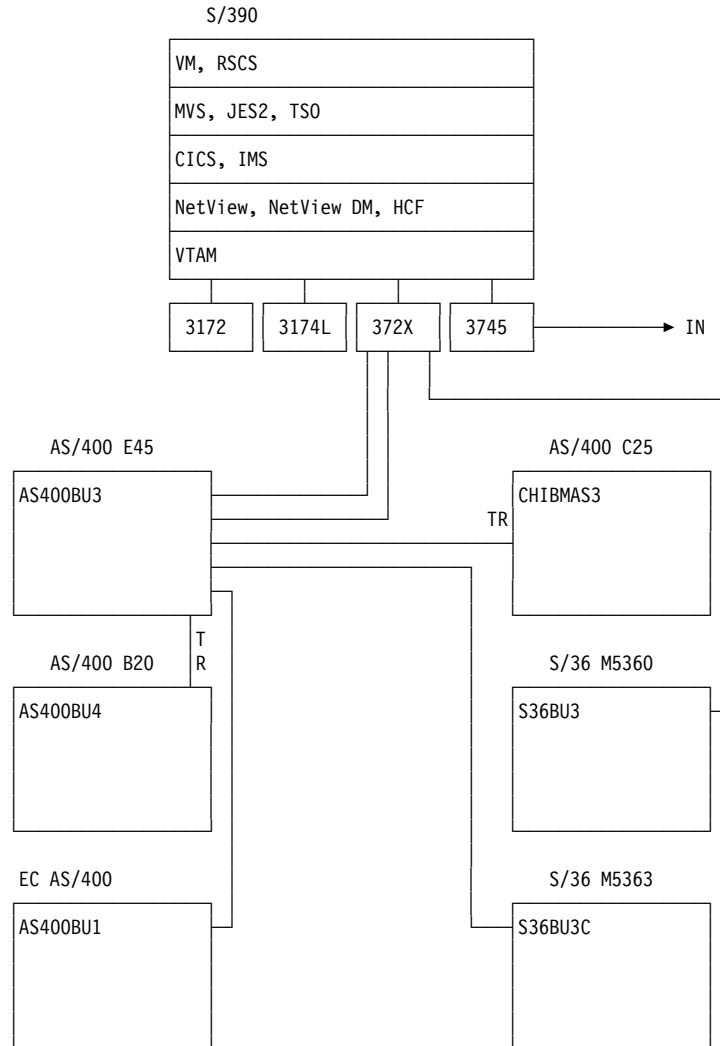


Figure 2. SDLC Leased Connections Network

There are two SDLC connections between the AS/400 E45 and the S/390. On one SDLC link, the AS/400 E45 is defined as SNA T2 node and on the other one as SNA T2.1 node. It is not necessary to have two separate links to support T2 node and T2.1 node on the AS/400. AS/400 defined as T2.1 node can support dependent and independent sessions concurrently.

1.5 TRLAN Network

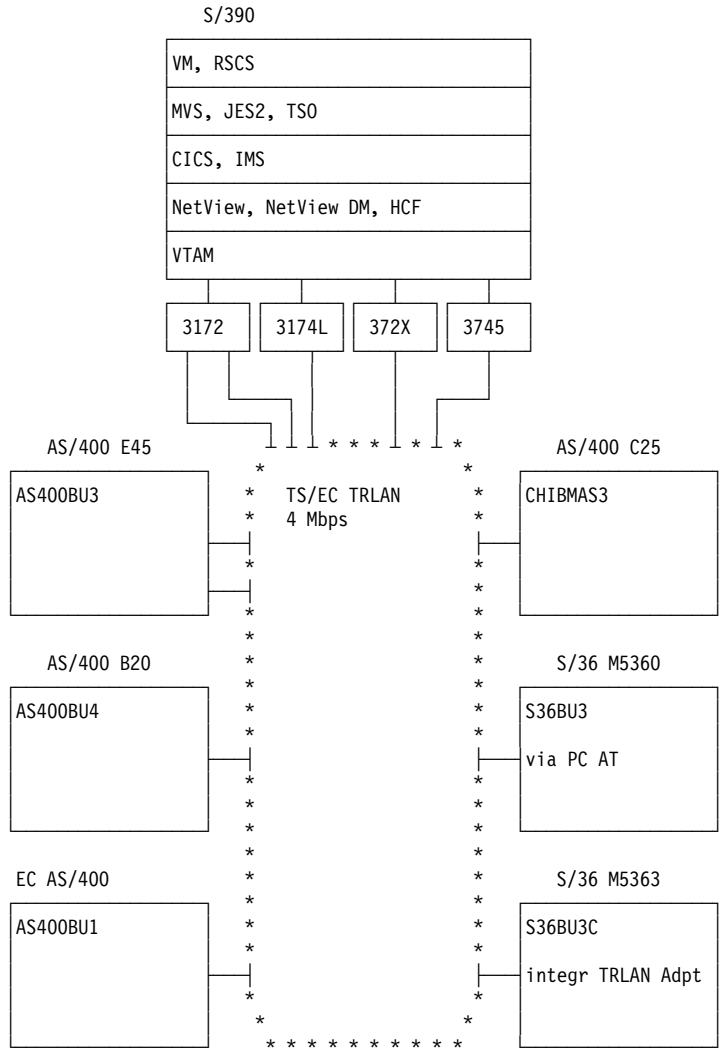


Figure 3. TS TRLAN Network, 4 Mbps

We have a 4 Mbps TRLAN which is connected with the EC TRLAN segment via a local TRLAN bridge. The TRLAN includes PS/2s and other systems as well.

AS/400 runs SNA and TCP/IP via TRLAN.

Our TRLAN is bridged via IDNX devices via two 512 Kbps links. 3174L is reached via this bridge.

1.6 X.25 Network

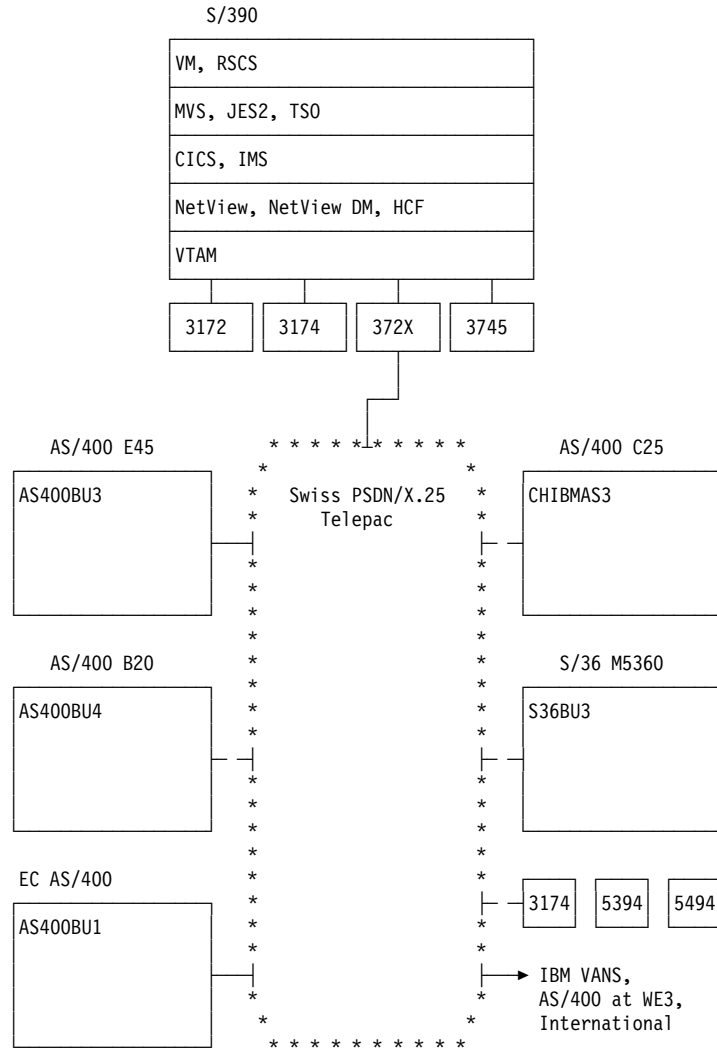


Figure 4. X.25 (Telepac) Network

The AS/400s, System/36s and IBM 5X94s share three Telepac links. The AS/400 'AS400BU3' permanently uses one of these three links for SNA, TCP/IP and OSI.

The EC AS/400 and the S/390 have separate Telepac links.

1.7 ISDN Network

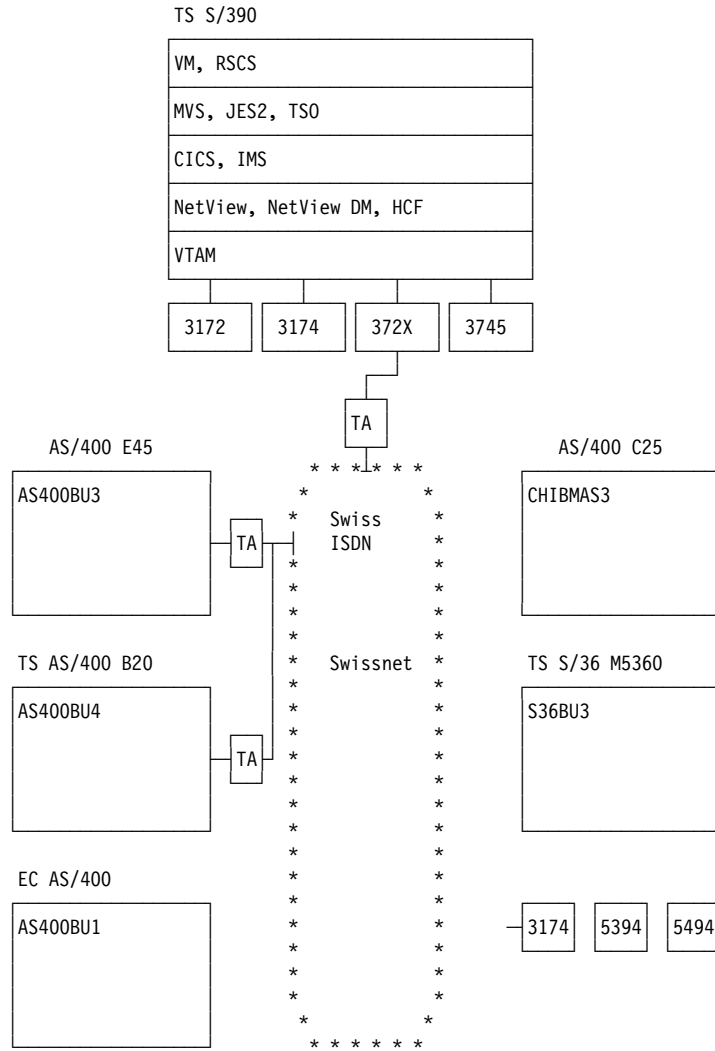


Figure 5. ISDN Network

One link is available for testing with the System/36 and AS/400 systems. A single basic rate ISDN access provides two 64 Kbps channels. To attach a *terminal* for example, AS/400, via an *old* interface like V.35, a terminal adapter is required. We use the IBM 7820 Terminal Adapter, which offers two interfaces. They act as two terminal adapters. With the AS/400 systems we use X.21 interfaces. V.24 and V.35 IBM 7820 modules are available to test these interfaces with AS/400, System/36, PS/2 and terminal controllers too.

AS/400 runs SNA/SDLC via the TA and SwissNet.

1.8 Documented Connections for SNA

Connections with AS/400	SDLC swt	SDLC 1sd	X.25 SVC	X.25 PVC	TRLAN	Ether-net	ASYNC	ISDN TA	v/SNA SA
DOS PCS/400	V1	.	-	-	V1	.	V2	.	V2
OS/2 ES CM	.	.	.	.	.	.	.	.	V2
IBM 5294	.	V1	V1	.	-	-	-	.	-
IBM 5394	V2	V2	V2	V2	-	-	-	.	V3
IBM 5494	.	V3	V3	V3	V3	-	-	.	V3
IBM 3174	V1	.	V1	.	V1	-	-	V3	-
AS/400	V1	V1	V1	.	V1	V2	V2	V3	V2
System/36	V1	V1	V1	.	V1	-	-	V2	V2
System/38	V1	V1	V1	.	-	-	-	.	.
S/390	V1	V1	V1	.	V1	.	-	V3	-

Note:

- V1 Documented in *AS/400 Communications Definitions I*, GG24-3449
- V2 Documented in *AS/400 Communications Definitions II*, GG24-3763
- V3 New in this edition, or updated from previous editions
- .
 Supported function, but not documented in a communications example book
- Not supported function

Figure 6. Documented Connections for SNA

Not included in this chart:

- AS/400 to S/390 via 3174L

1.9 Communications with Peer Systems

The following communications facilities were implemented using the SDLC leased connections.

	AS/400 to System/36	AS/400 to System/38	AS/400 to AS/400
5250 DSPT	V1	V1	V1
DDM	V1	V1	V1
SNADS Network	V1	V1	V1
ODF SNDNETF SBMNETJOB	V2 .	V1 .	V2 V3
FTS	V2	-	V2
NetView FTP	-	-	.
Office Distribution	.	.	.
Library Services	.	.	.
APPC File Transfer	V2	V2	V2
APPC Interactive	.	.	V2

Note:

- V1 Documented in *AS/400 Communications Definitions I*, GG24-3449
- V2 Documented in *AS/400 Communications Definitions II*, GG24-3763
- V3 New in this edition or updated from previous editions
- . Supported function, but not documented in a communications example book
- Not supported function

Figure 7. Communications with Peer Systems

1.10 Communications with System/390

The following communications facilities were implemented using mainly SDLC leased connections.

	AS/400 with System/390
3270 Device Emulation	
with CICS/VS	V1
with IMS/VS	V1
SNA Passthrough	V3
NRF	V3
SNA Primary LU Support	V3
Remote Job Entry	
JES2	V2
VSE/Power	V1
DDM with CICS/VS	V2
DISOSS	
Office Distribution	V1
Library Services	V1
IN Screenmail Service	V1
Program-to-Program	
LU 0 with CICS/VS	.
LU P with IMS/VS	.
LU 6.2 with CICS/VS	
Interactive	V2
File Transfer	.
HCF/DHCF	
including Auto Acquire	V1
NetView Distribution Manager	
Indirect Node Support	V1
Direct Node Support	V2
NetView FTP	V3
Alerts to NetView	V1
BSC RSCS Bridge	V1
BSC PROFS Bridge	V1
SNA VM/MVS Bridge	
with RSCS	V2
with JES2	V2
with OV/VM	V3

Note:

V1 Documented in *AS/400 Communications Definitions I*, 3449.

V2 Documented in *AS/400 Communications Definitions II*, GG24-3763

V3 New in this edition or updated from previous editions

. Supported function, but not documented in a communications example book

Figure 8. Communications with System/390

Part 2. Communications with System/390

Chapter 2. SNA/LEN with AS/400, Different NetID

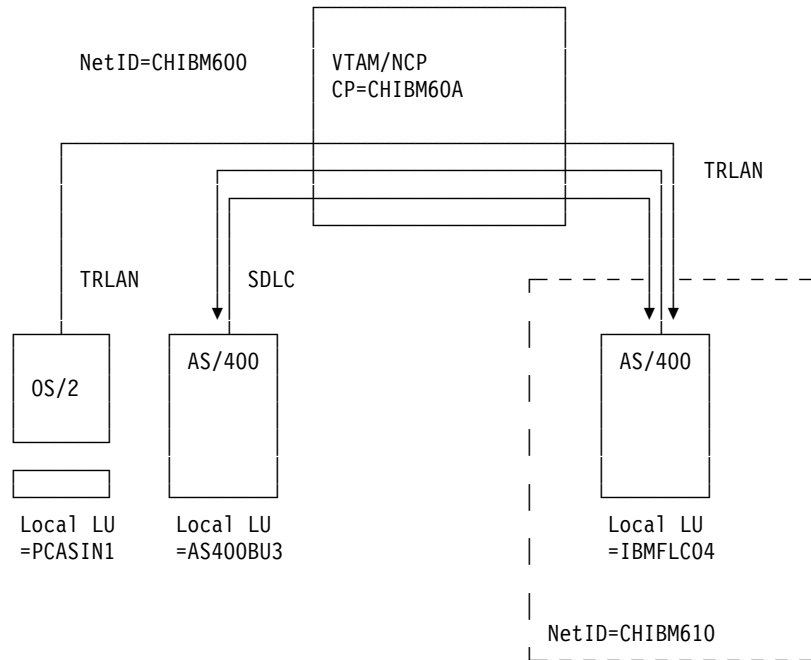


Figure 9. Overview of SNA/LEN with AS/400, Different NetID

In this example, PS/2 has OS/2 V2 installed, the AS/400s have OS/400 V2R2 installed, and VTAM has V4R1 installed.

2.1 Definitions on OS/2

2.1.1 SNA T2.1 in NDF File

```

DEFINE_LOCAL_CP FQ_CP_NAME(CHIBM600.PCASIN )
                DESCRIPTION(CP LU Definition 4.3.93)
                CP_ALIAS(PCASIN )
                NAU_ADDRESS(INDEPENDENT_LU)
                NODE_TYPE(NN)
                NODE_ID(X'29724')
                HOST_FP_SUPPORT(YES)
                HOST_FP_LINK_NAME(LINK0001);

DEFINE_CONNECTION_NETWORK FQ_CN_NAME(CHIBM600.TSTRN0)
                        ADAPTER_INFO(DLC_NAME(IBMTRNET) ADAPTER_NUMBER(0))
                        DESCRIPTION(TS-TR Connection Network TSTRN0);

...

DEFINE_LOGICAL_LINK LINK_NAME(LINK0001)
                    DESCRIPTION(Link über LWX zu 3720 Token Ring)
                    FQ_ADJACENT_CP_NAME(CHIBM600.CHIBM60A)
                    ADJACENT_NODE_TYPE(LEN)

```

```

DLC_NAME(IBMTRNET)
ADAPTER_NUMBER(0)
DESTINATION_ADDRESS(X'400014129800')
CP_CP_SESSION_SUPPORT(NO)
ACTIVATE_AT_STARTUP(YES)
LIMITED_RESOURCE(USE_ADAPTER_DEFINITION)
LINK_STATION_ROLE(USE_ADAPTER_DEFINITION)
SOLICIT_SSCP_SESSION(YES)
EFFECTIVE_CAPACITY(USE_ADAPTER_DEFINITION)
COST_PER_CONNECT_TIME(USE_ADAPTER_DEFINITION)
COST_PER_BYTE(USE_ADAPTER_DEFINITION)
SECURITY(USE_ADAPTER_DEFINITION)
PROPAGATION_DELAY(USE_ADAPTER_DEFINITION)
USER_DEFINED_1(USE_ADAPTER_DEFINITION)
USER_DEFINED_2(USE_ADAPTER_DEFINITION)
USER_DEFINED_3(USE_ADAPTER_DEFINITION);

DEFINE_LOCAL_LU LU_NAME(PCASIN1 )
DESCRIPTION(Alias = Case sensitive)
LU_ALIAS(INAUEEN )
NAU_ADDRESS(INDEPENDENT_LU);

...

DEFINE_PARTNER_LU FQ_PARTNER_LU_NAME(CHIBM610.IBMFLC04)
DESCRIPTION(AS/400 Test NETID)
PARTNER_LU_ALIAS(IBMFLC04)
PARTNER_LU_UNINTERPRETED_NAME(IBMFLC04)
MAX_MC_LL_SEND_SIZE(32767)
CONV_SECURITY_VERIFICATION(NO)
PARALLEL_SESSION_SUPPORT(YES);

...

DEFINE_PARTNER_LU_LOCATION FQ_PARTNER_LU_NAME(CHIBM610.IBMFLC04)
DESCRIPTION(AS/400 Test NETID)
WILDCARD_ENTRY(NO)
FQ_OWNING_CP_NAME(CHIBM600.CHIBM60A)
LOCAL_NODE_NN_SERVER(YES);

...

DEFINE_MODE MODE_NAME(QPCSUPP )
DESCRIPTION(For 5250 Emulation)
COS_NAME(#CONNECT)
DEFAULT_RU_SIZE(YES)
RECEIVE_PACING_WINDOW(4)
MAX_NEGOTIABLE_SESSION_LIMIT(32767)
PLU_MODE_SESSION_LIMIT(8)
MIN_CONWINNERS_SOURCE(4);

DEFINE_DEFAULTS IMPLICIT_INBOUND_PLU_SUPPORT(YES)
DESCRIPTION(Created on 02-03-93 at 19:00)
DEFAULT_MODE_NAME(BLANK)
MAX_MC_LL_SEND_SIZE(32767)
DIRECTORY_FOR_INBOUND_ATTACHES(C:\APPCTP)
DEFAULT_TP_OPERATION(NONQUEUED_AM_STARTED)
DEFAULT_TP_PROGRAM_TYPE(VIO_WINDOWABLE)
DEFAULT_TP_CONV_SECURITY_RQD(NO)

```

```
MAX_HELD_ALERTS(10);
```

```
...
```

2.1.2 5250 Session Assignment

5250 Session Selection	
Session Number	Session Type
1...	Terminal
2...	Terminal
3...	Terminal
4...	Not Configured
5...	Not Configured

5250 Terminal/Printer Session Assignment	
5250 Work Station Feature profile name	IN5250
APPC partner LU alias	IBMFLC04
APPC mode name	QPCSUPP
Short session ID	L
Enter Esc=Cancel F1=Help F4=List	

Figure 10. 5250 Session Assignment

2.2 On AS/400

2.2.1 Network Attributes

Display Network Attributes		System:	AS400BU3
Current system name	:	AS400BU3	
Pending system name	:		
Local network ID	:	CHIBM600	
Local control point name	:	AS400BU3	
Default local location	:	AS400BU3	
Default mode	:	MODLU62	
APPN node type	:	*NETNODE	
Maximum number of intermediate sessions	:	200	
Route addition resistance	:	128	
Server network ID/control point name	:	CHIBM600	AS400BU3

Figure 11. SNA/LEN with AS/400, Different NetID, AS/400 Network Attributes

2.2.2 Line, Controller Description

```

CRTLINS DLC LIND(S4381LIN2) RSRNAME(LIN062) +
      ONLINE(*YES) ROLE(*SEC) LINESPEED(19200) +
      TEXT('Leased, PP, to FSC 4381, dep & indep')

CRTCTHST CTLD(PC8CM1) LINKTYPE(*SDLC) ONLINE(*YES) +
      APPN(*YES) LINE(S4381LIN2) +
      RMTNETID(CHIBM600) RMTCPNAME(CHIBM60A) +
      SSCPID(05000000A0BE) STNADR(C1) CPSSN(*NO) +
      NODETYPE(*LENNODE) TEXT('PU(PC8CM1) to +
      FSC4381') AUT(*USE)

/* EMULATED SCREEN 3278/9-2 */
CRTDEVHOST DEVD(PC8SM101) LOCADR(01) RMTLOCNAME(FSC4381) +
      ONLINE(*YES) CTL(PC8CM1) APPTYPE(*EML) +
      EMLKBD(*LOWER) TEXT('3278 to FSC MVS') +
      AUT(*USE)
CRTDEVHOST DEVD(PC8SM102) LOCADR(02) RMTLOCNAME(FSC4381) +
      ONLINE(*YES) CTL(PC8CM1) APPTYPE(*EML) +
      EMLKBD(*LOWER) TEXT('3278 to FSC MVS') +
      AUT(*USE)
CRTDEVHOST DEVD(PC8SM103) LOCADR(03) RMTLOCNAME(FSC4381) +
      ONLINE(*YES) CTL(PC8CM1) APPTYPE(*EML) +
      EMLKBD(*LOWER) TEXT('3278 to FSC MVS') +
      AUT(*USE)

```

2.2.3 Remote APPN Configuration List

```

                                Display Configuration List
                                AS400BU3
                                15.06.93 10.09.01
Configuration list . . . . . : QAPPNRMT
Configuration list type . . . . . : *APPNRMT
Text . . . . . : Remote Configuration List
-----APPN Remote Locations-----
Remote   Remote   Local   Remote   Control   Secure
Location Network  Location Point   Net ID    Loc
IBMFLC04 CHIBM610 AS400BU3 CHIBM60A CHIBM600 *NO

```

Figure 12. SNA/LEN with AS/400, Different NetID, Remote APPN Configuration List

2.2.4 Auto-Created APPC Device Description

Display Device Description		Page	1
5738SS1 V2R2M0 920925		AS400BU3 15.06.93	10.12.28
Device description	DEVD	IBMFLC0400	
Option	OPTION	*ALL	
Category of device		*APPC	
Automatically created		YES	
Remote location	RMTLOCNAME	IBMFLC04	
Online at IPL	ONLINE	*NO	
Local location	LCLLOCNAME	AS400BU3	
Remote network identifier	RMTNETID	CHIBM610	
Attached controller	CTL	PC8CM1	
Message queue	MSGQ	QSYSOPR	
Library		*LIBL	
Local location address	LOCADR	00	
APPN-capable	APPN	*YES	
Single session	SNGSSN		
Single session capable		*NO	
Text	TEXT	AUTOMATICALLY CREATED	
Mode	MODE		
-----Mode-----			
*NETATR			

Figure 13. SNA/LEN with AS/400, Different NetID, APPC Device Description

2.2.5 Mode Description MODLU62

Display Mode Description		
Mode description	MODD	MODLU62
Class-of-service	COS	#CONNECT
Maximum sessions	MAXSSN	8
Maximum conversations	MAXCNV	8
Locally controlled sessions	LCLCTLSSN	4
Pre-established sessions	PREESTSSN	0
Inbound pacing value	INPACING	7
Outbound pacing value	OUTPACING	7
Maximum length of request unit	MAXLENRU	256
Text	TEXT	MODD of TS Network

Figure 14. SNA/LEN with AS/400, Different NetID, Mode Description

2.3 On IBMFLC04

2.3.1 Network Attributes

```

                                Display Network Attributes
                                System:  IBMFLC04
Current system name . . . . . :  IBMFLC04
  Pending system name . . . . . :
Local network ID . . . . . :  CHIBM610
Local control point name . . . . . :  IBMFLC04
Default local location . . . . . :  IBMFLC04
Default mode . . . . . :  BLANK
APPN node type . . . . . :  *ENDNODE
Maximum number of intermediate sessions . . . . . :  200
Route addition resistance . . . . . :  128
Server network ID/control point name . . . . . :

```

Figure 15. Network Attributes on IBMFLC04

2.3.2 Line, Controller Description

```

CRTLINTRN LIND(TRNLINE) RSRcname(LIN031) +
          MAXFRAME(1994) ADPTADR(400024129900) +
          EXCHID(05600000) TEXT('TRLAN environment')

CRTCTLHOST CTLD(TPCAkc04) LINKTYPE(*LAN) APPN(*YES) +
          SWTLINLST(TRNLINE) MAXFRAME(1994) +
          RMTNETID(CHIBM600) RMTCPNAME(CHIBM60A) +
          ADPTADR(400014129800) CPSSN(*NO) +
          TEXT('PU=PCAKC04, SWT MAJ Node=PCAJC04')

CRTDEVHOST DEVD(PCASLC02) LOCADR(02) +
          RMTLOCNAME(ZCHMVS6) CTL(TPCAkc04) +
          APPTYPE(*EML) TEXT('LU=PCASLC02')

```

2.3.3 Remote APPN Configuration List

```

                                Display Configuration List
Configuration list . . . . . :  QAPPNRMT
Configuration list type . . . . . :  *APPNRMT
Text . . . . . :  Remote APPN Cfg1

-----APPN Remote Locations-----
Remote      Remote      Remote      Control
Remote      Network    Local      Control    Point      Secure
Location    ID         Location   Point      Net ID     Loc
AS400BU3   CHIBM600   IBMFLC04  CHIBM60A  CHIBM600  *NO

```

Figure 16. Remote APPN Configuration List

2.3.4 Auto-Created APPC Device Description for AS400BU3

```

                                Display Device Description
5738SS1 V2R2M0  920925          IBMFLC04  15.06.93  09:52:56
Device description . . . . . : DEVD      AS400BU3
Option . . . . . : OPTION    *ALL
Category of device . . . . . :          *APPC
Automatically created . . . . . :          YES
Remote location . . . . . : RMTLOCNAME AS400BU3
Online at IPL . . . . . : ONLINE    *NO
Local location . . . . . : LCLLOCNAME IBMFLC04
Remote network identifier . . . . . : RMTNETID CHIBM600
Attached controller . . . . . : CTL      TPCAKC04
Message queue . . . . . : MSGQ      QSYSOPR
  Library . . . . . :          *LIBL
Local location address . . . . . : LOCADR  00
APPN-capable . . . . . : APPN      *YES
Single session . . . . . : SNGSSN
  Single session capable . . . . . :          *NO
Text . . . . . : TEXT      AUTOMATICALLY CREATED

Mode . . . . . : MODE
-----Mode-----
*NETATR

```

Figure 17. Auto-created APPC Device Description for AS/400

2.3.5 Auto-Created APPC Device Description for PCASIN1

```

                                Display Device Description
5738SS1 V2R2M0  920925          IBMFLC04  15.06.93  09:52:57
Device description . . . . . : DEVD      PCASIN
Option . . . . . : OPTION    *ALL
Category of device . . . . . :          *APPC
Automatically created . . . . . :          YES
Remote location . . . . . : RMTLOCNAME PCASIN
Online at IPL . . . . . : ONLINE    *NO
Local location . . . . . : LCLLOCNAME IBMFLC04
Remote network identifier . . . . . : RMTNETID CHIBM600
Attached controller . . . . . : CTL      TPCAKC04
Message queue . . . . . : MSGQ      QSYSOPR
  Library . . . . . :          *LIBL
Local location address . . . . . : LOCADR  00
APPN-capable . . . . . : APPN      *YES
Single session . . . . . : SNGSSN
  Single session capable . . . . . :          *NO
Text . . . . . : TEXT      AUTOMATISCH ERSTELLT

Mode . . . . . : MODE
-----Mode-----
*NETATR

```

Figure 18. Auto-created APPC Device Description for AS/400

2.3.6 Mode Description MODLU62

```
Display Mode Description                                IBMFLC04
15.06.93 09:54:04
Mode description . . . . . : MODLU62
Class-of-service . . . . . : #CONNECT
Maximum sessions . . . . . : 8
Maximum conversations . . . . . : 8
Locally controlled sessions . . . . . : 4
Pre-established sessions . . . . . : 0
Inbound pacing value . . . . . : 7
Outbound pacing value . . . . . : 7
Maximum length of request unit . . . : *CALC
Text . . . . . : TS Testing
```

Figure 19. Mode Description MODLU62

2.3.7 Mode Description QPCSUPP

```
Display Mode Description                                IBMFLC04 15.06.93 10:11:45
5738SS1 V2R2M0 920925
Mode description . . . . . : QPCSUPP
Class-of-service . . . . . : #CONNECT
Maximum sessions . . . . . : 8
Maximum conversations . . . . . : 8
Locally controlled sessions . . . . . : 4
Pre-established sessions . . . . . : 4
Inbound pacing value . . . . . : 7
Outbound pacing value . . . . . : 7
Maximum length of request unit . . . : *CALC
Text . . . . . : AS/400 PC Support Mode
```

Figure 20. Mode Description QPCSUPP

2.4 VTAM/NCP

```
*****
*
* MEMBER ATCSTROA VTAMLST
*
* VTAM STARTUP OPTIONS - SPEZIELLE START PARAMETER FUER
* HOST MVS1 (4381 CMP AS GWY-SSCP)
*
* 23.11.92 GMY: BEREINIGUNG ADJSSCP-BUSINESS: NO UNCONTROLLED REQS
* 19.05.92 IN DYNLU=YES DEFINIERT
* 01.07.92 IN INCLUDE 'TNSTAT' TO COLLECT VTAM TUNING STATISTICS
* 26.08.92 IN INCLUDE 'NCPBUFSZ=2048' FOR FASTER REMOTE NCP LOAD
* 28.04.93 IN ADDED XNETALS=YES
*
```

```

*****
*  BUFFER=(BASENO,BUFSIZE,SLOWPT,.,XPANNO,XPANPT,ADJVAL)
  CRPLBUF=(90,116,0,,6),    RPL-COPY POOL IN PAGEABLE OR VIRT STOR  *
  IOBUF=(110,256,5,,8,6),  MESSAGE POOL IN FIXED STOR  *
  LFBUF=(46,120,0,,2),    LARGE POOL IN FIXED STOR  *
  LPBUF=(12,1334,0,,3,),  LARGE POOL IN PAGEABLE OR VIRT STOR  *
  SFBUF=(51,64,0,,),      SMALL POOL IN FIXED STOR  *
  SPBUF=(32,96,0,,),      SMALL POOL IN PAGEABLE OR VIRT STOR  *
  WPBUF=(60,184,0,,4),    MSG-CONTROL POOL IN PAGEABLE OR VIRT STOR  *
  HOSTPU=PCAPUS,          NETNAME OF VTAM HOST SUBAREA PU  *
  HOSTSA=01,              HOST'S VTAM SUBAREA  *
  IOINT=1800,             PENDING RU-RESPONSE TIME (SEC)  *
  CSALIMIT=2400K,        CSA LIMIT  *
  MAXSUBA=15,            HIGHEST SUBAREA VALUE  *
  NETID=CHIBM600,        NAME (ID) OF NETWORK CONTAINING HOST  *
  NOPROMPT,              OPERATOR PROMPT FOR START OPTIONS  *
  NCPBUFSZ=2048,        PIU SIZE FOR STATIC LOAD OF REMOTE NCP  *
  SSCPNAME=CHIBM60A,    NAME OF THE VTAM SSCP  *
  SSCPORD=DEFINED,      SEARCH SSCP TABLE IN CODED ORDER  *
  SSCPDYN=NO,           DO NOT ADD UNKNOWN ENTRIES IN SSCPTABLE  *
  DYNASSCP=NO,         DO NOT ROUTE TO ALL ADJSSCPs  *
  GWSSCP=YES,          VTAM 3.2 REQUIRED PARAMETER FOR ALIAS  *
  CONFIG=0A,           LIST OF MAJNODES TO BE ACT (ATCCON..)  *
  PPOLOG=YES,
  DYNLU=YES,            DYNAMIC DEFINITIONS OF ILU'S  *
  TNSTAT,              COLLECTION OF VTAM TUNING STATISTICS  *
  XNETALS=YES,         ADJNET CAN HAVE DIFFERENT NETID  *
  SSCPID=41150         SSCP ID WHEN PU OR EXT CDRM CONTACTS VTAM
*  SSCPID OPTION IMMER AM SCHLUSS

```

2.4.1 For OS/2

```

*****
*
*****
*  OS/2 EE2.0 J. INAUEN                                MODEL 2,3,4,5 SCREENS  *
*****
PCAKIN  PU  ADDR=C1,          SDLC LINK STATION ADDR FOR PU  *
          CPNAME=PCASIN,     NAME OF T2.1 NODE  *
          DISCNT=(NO,F),     DISC PU IF LAST LU LOGS OFF  *
          DLOGMOD=DYNAMIC,   DEFAULT LOGMODE  *
          IRETRY=YES,        RETRY POLLING AFTER IDLE TIME OUT  *
          ISTATUS=ACTIVE,    VTAM INIT STATUS  *
          MAXDATA=521,       MAX AMOUNT (B) PU REC IN ONE TIME  *
          MAXPATH=1,        MAX MUN OF DIAL OUT PATHS TO PU  *
          MAXOUT=7,         MAX PIU'S SENT BEFORE RESPONSE  *
          MODETAB=PCADLMOD,  MODETAB  *
          PASSLIM=7,        NUM OF CONTIG PIU'S NCP -> PU  *
          PUTYPE=2,         PHYSICAL UNIT TYPE OF PU  *
          PACING=8,         VTAM PACING COUNT NCP->PU  *
          VPACING=2,        VTAM PACING COUNT VTAM->NCP  *
          USSTAB=PCAU$STB
*          STATOPT=' IN OS2'
*          NGFTXT=' J. INAUEN'
PCASIN  LU  LOCADDR=00                                INDEP LU 6.2
*
PCASIN2 LU  LOCADDR=02,USSTAB=PCAU$STB,
LOGAPPL=PCAZNVAS,ISTATUS=ACTIVE
PCASIN3 LU  LOCADDR=03,USSTAB=PCAU$STB,

```

```

LOGAPPL=PCAZNVAS, ISTATUS=ACTIVE
PCASIN4 LU LOCADDR=04, USSTAB=PCAUSSSTB, *
LOGAPPL=PCAZNVAS, ISTATUS=ACTIVE
PCASIN5 LU LOCADDR=05, USSTAB=PCAUSSSTB, *
LOGAPPL=PCAZNVAS, ISTATUS=ACTIVE
PCAPIN6 LU LOCADDR=06, DLOGMOD=SCS SCS PRINTER
PCAPIN7 LU LOCADDR=07, DLOGMOD=LU62, LU 6.2 *
SSCPFM=FSS
PCAPIN8 LU LOCADDR=08, DLOGMOD=LU62, LU 6.2 *
SSCPFM=FSS
*

```

2.4.2 Line, PU, LUs for FSC AS/400, AS400BU3

```

*
*****
*
* GROUP DEFINITIONS FOR NONDIALED BNN LINES PART 2 *
* AS/400 AND POS *
*
*****
PC8GRP12 GROUP DIAL=NO, SWITCHED LINE CONTROL SUPPORT *
LNCTL=SDLC, TYPE OF LINE CONTROL *
REPLYTO=1.5, RECOVERY AFTER POLL RESP NOT REC*
RNRLIMIT=3, MIN AFTER RNR BEFORE STATION INOP*
TYPE=NCP LINE OPERATION MODE
*
PC8L12 LINE ADDRESS=(12,HALF), REL. LINE ADDR, COMM OP MODE *
CLOCKNG=EXT, INTERNAL/EXTERNAL CLOCKING *
DUPLEX=FULL, RTS UP: FULL SEND/REC, HALF SEND*
ETRATIO=30, ERROR TO XMIT RATIO (PER MILLE) *
LPDATS=LPDA1, MODEM SUPPORTS LPDA *
LTRUNC=NO, LINE TRACE DATA COPY TRUNCATION *
MAXPU=1, MAX NUM OF PU ON LINK *
NRZI=YES, NO-RETURN-TO-ZERO-INVERTED MODE *
PAUSE=0.3, AV. DURATION OF POLLING CYCLE *
RETRIES=(7,3,5), RECOVERY: RETRIES, PAUSE, SEQ. *
SERVLIM=10, NUM OF REG SCANS BEFORE SOT SCAN*
SPEED=19200, LINE SPEED IN BPS *
SPAN=(PC8V43, LN, LAD012), *
ISTATUS=ACTIVE
* STATOPT=' LINE AS/400 NRZI'
**
SERVICE ORDER=(PC8CM1)
*
PC8CM1 PU ADDR=C1, POLLING ADDRESS *
ANS=CONTINUE, AUTO NETWORK SHUTDOWN *
IRETRY=NO, IMMED. RETRY A POLLING TO ON PU *
LPDA=ALLOW, BLOCK/ALLOW LPDA TESTS *
MAXDATA=265, MAX AMOUNT OF DATA TO PU (BYTES)*
MAXOUT=7, FRAMES SENT TO NCP BEF REQ RESP *
PASSLIM=7, NUM OF CONSEC PIU'S TO PU *
PUTYPE=2, PUTYPE OF SDLC DEVICE ON LINE *
DISCNT=NO, VTAM DISC SSCP-LU/PU SESS *
ISTATUS=ACTIVE, VTAM INITIAL STATUS *
SSCPFM=USSSCS, VTAM USS FORMAT *
MODETAB=PCADS400, VTAM DEFAULT LOGMODE TABLE *
PACING=7, VTAM PACING COUNT NCP-PU *

```

```

                VPACING=8,                VTAM PACING COUNT VTAM-NCP      *
                XID=YES                   INDEPENDENT LU AS/400
*                STATOPT=' PU AS/400'
*
...

*
AS400BU3 LU    LOCADDR=0,                LOCAL DEVICE ADDRESS   INDLU62 *
                MODETAB=PCADS400,        MODETABLE              *
                DLOGMOD=MODLU62,        VTAM LOGMODE          *
                ISTATUS=ACTIVE,         VTAM INITIAL STATUS   *
                RESSCB=20               NBR OF SESSIONS
*                STATOPT=' ILU AS/400 BU3'
*
...

*
PC8SM101 LU    LOCADDR=01,              LOCAL DEVICE ADDRESS   LU2 DSP *
                USSTAB=PCAUSSTB,        VTAM USS TABLE      *
                DLOGMOD=D4C32782,      VTAM DEFAULT LOGMODE *
                ISTATUS=ACTIVE          VTAM INITIAL STATUS
*                STATOPT=' LU AS400 M2 DSP'
*
PC8SM102 LU    LOCADDR=02,              LOCAL DEVICE ADDRESS   LU2 DSP *
                USSTAB=PCAUSSTB,        VTAM USS TABLE      *
                DLOGMOD=D4C32782,      VTAM DEFAULT LOGMODE *
                ISTATUS=ACTIVE          VTAM INITIAL STATUS
*                STATOPT=' LU AS400 M2 DSP'
*
PC8SM103 LU    LOCADDR=03,              LOCAL DEVICE ADDRESS   LU2 DSP *
                USSTAB=PCAUSSTB,        VTAM USS TABLE      *
                DLOGMOD=D4C32782,      VTAM DEFAULT LOGMODE *
                ISTATUS=ACTIVE          VTAM INITIAL STATUS
*                STATOPT=' LU AS400 M2 DSP'
*

```

2.4.2.1 Logon Mode Table PCADS400

Logon Mode Table entries are not used by independent LU 6.2 sessions passing through the SNA Subarea Network. The following table with its entries is not relevant.

```

*****
*      DSNAME   PCADS400  VTAMLST      *
*      USER DEFINED LOGON MODE TABLE FOR HOST PCA      *
*****
PCADS400 MODETAB
*****
...

*****
*      LOGICAL UNIT TYPE 6.2      *
*****
MODLU62  MODEENT LOGMODE=MODLU62,      *
          FMPROF=X'00', TSPROF=X'00',    1,2  *
          PRIPROT=X'00', SECPROT=X'00',  3,4,5,6 *
          RUSIZES=X'0000',              9,10  *
          PSNDPAC=X'00', SRCVPAC=X'00',  11,8,7 *
          SSNDPAC=X'00',

```

```

                                PSERVIC=X'000000000000000000000000'
                                01 03 05 07 09 11                                13-24
*                                BIND-BYTE NBR
*****
...
MODEEND
END

```

2.4.3 PU, LUs for IBMFLC04

```

*****
*SWITCHED MAJOR NODE FUER IBMFLC04, BU303 TEST SIMH/IN *
*
* IN TEST-NODE 08.06.93 IN *
*
*****
PCAJC04 VBUILD TYPE=SWNET, *
          MAXGRP=1,          MAX NUM OF GROUP NAMES IN PATH *
          MAXNO=20          MAX NUM OF DIAL NUMBERS
*****
PCAKC04 PU ADDR=01,          SDLC LINK STATION ADDR FOR PU *
          CPNAME=IBMFLC04, *
          DISCNT=(NO,F),    DISC PU IF LAST LU LOGS OFF *
          IRETRY=YES,      RETRY POLLING AFTER IDLE TIME OUT *
          ISTATUS=ACTIVE,  VTAM INIT STATUS *
          MAXDATA=1994,    MAX AMOUNT (B) PU REC IN ONE TIME *
          MAXPATH=1,      MAX MUN OF DIAL OUT PATHS TO PU *
          MAXOUT=7,       MAX PIU'S SENT BEFORE RESPONSE *
          NETID=CHIBM610,  NETID OF IBMFLC04 *
          MODETAB=PCADLMD, *
          PASSLIM=7,      NUM OF CONTIG PIU'S NCP -> PU *
          PUTYPE=2,       PHYSICAL UNIT TYPE OF PU *
          PACING=8,       VTAM PACING COUNT NCP->PU *
          VPACING=2,     VTAM PACING COUNT VTAM->NCP *
          USSTAB=PCAUSSTB
*          STATOPT=' SIMH C04'
*          NGFTXT=' SIMH TEST'
*
PATHLC4 PATH DIALNO=0004400024129900, *
          GRPNM=PC9GLT1, *
          CALL=INOUT
*
IBMFLC04 LU LOCADDR=00,          INDEP LU 6.2 *
          RESSCB=4, *
          DLOGMOD=#CONNECT
*
PCASLC02 LU LOCADDR=02,          DEPENDENT 3270 LU *
          DLOGMOD=DYNAMIC
*

```

2.5 Usage

To pass through from IBMFLC04 to AS400BU3, use the following CL command:

```
STRPASTHR RMTLOCNAME(AS400BU3) MODE(MODLU62) RMTNETID(CHIBM600)
```

To pass through from AS400BU3 to IBMFLC04, use the following CL command:

```
STRPASTHR RMTLOCNAME(IBMFLC04) MODE(MODLU62) RMTNETID(CHIBM610)
```

2.6 NetView/370 Session List

```
NLDM.SESS                SESSION LIST                PAGE 1
NAME: IBMFLC04                DOMAIN:  PCAZN
-----
      **** PRIMARY ****      **** SECONDARY ****
SEL#  NAME  TYPE  DOM   NAME  TYPE  DOM   START TIME  END TIME
( 1) PCASIN  ILU  PCAZN IBMFLC04 ILU  NNA  06/09 16:46.14 * ACTIVE *
( 2) PCASIN  ILU  PCAZN IBMFLC04 ILU  NNA  06/09 16:46.14 * ACTIVE *
( 3) IBMFLC04 ILU  NNA  AS400BU3 ILU  NNA  06/09 16:46.14 * ACTIVE *
( 4) IBMFLC04 ILU  NNA  AS400BU3 ILU  NNA  06/09 16:46.14 * ACTIVE *

ENTER TO VIEW MORE DATA
ENTER SEL# (CONFIG), SEL# AND CT (CONN. TEST), SEL# AND STR (TERM REASON)
CMD==>
```

Figure 21. NetView/370 Session List

NetView/370 Session Monitor shows four active sessions:

- Two from OS/2 to AS/400 IBMFLC04 (one with mode SNASVCMG and one with mode QPCSUPP)
- Two from AS/400 IBMFLC04 to AS/400 AS400BU3 (one with mode SNASVCMG and one with mode MODLU62).

Chapter 3. AS/400 SNPT: OS/2 and AS/400 via AS/400 to MVS

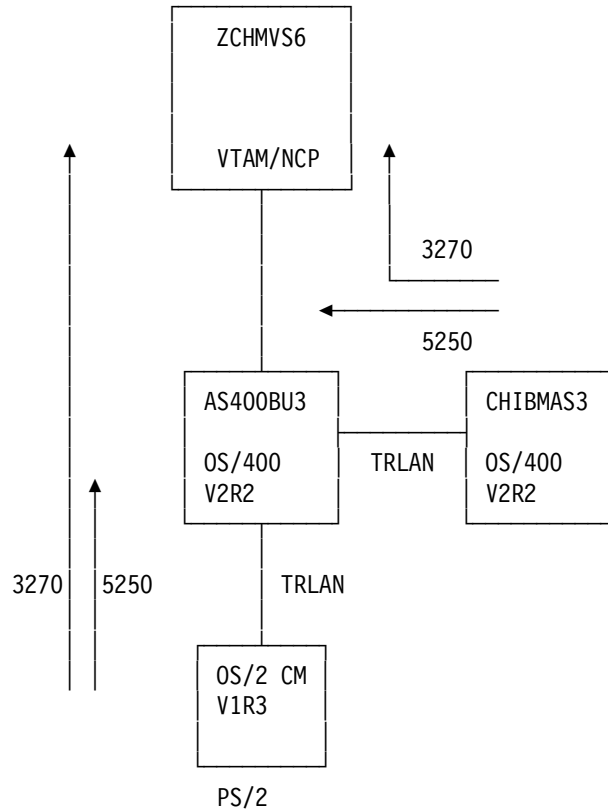


Figure 22. Overview of AS/400 SNPT: OS/2 and AS/400 via AS/400 to MVS

SNA Passthrough (SNPT) allows dependent LU-LU sessions from an SNA T2.1 or T2 node to pass through the AS/400 to a System/390.

In the above environment:

- The OS/2 user gets 5250 sessions with the adjacent AS/400 AS400BU3 as well as transparent 3270 sessions with ZCHMVS6. Four 3270 sessions are configured.
- The users of AS/400 CHIBMAS3 get 5250 sessions with the adjacent AS/400 AS400BU3 as well as direct 3270 sessions with ZCHMVS6. Only one 3270 session is configured.

3.1 Software Used

- MVS/ESA V4R2.2
- VTAM V3R4.1
- NCP V5R4
- OS/400 V2R2

- OS/2 EE V1R3

3.2 OS/2 CM Definitions

```
Communication Configuration Menu

Configuration file name . . . . . : LENBU3
Configuration file status . . . . . :
Verified

Press F10 to go to the action bar or
select the type of profile you want to configure.

  1. Workstation profile (and auto-start options)...
  2. Asynchronous feature profiles
  3. 3270 feature profiles
  4. SNA feature profiles
  5. Server-Requester Programming
     Interface profile (SRPI)...
  6. LAN feature profiles
  7. 5250 Workstation Feature profiles
  8. X.25 feature profiles
  9. Configuration file utilities
```

Figure 23. AS/400 SNPT: OS/2 CM Definitions

3.2.1 SNA Feature Profiles

```
Display SNA Base Profile

Physical unit (PU) name . . . . . : PCASSIMO
Network name. . . . . : CHIBM600
Node ID (in hex). . . . . : 00000
Auto-activate APPC attach manager . . . . . : No
```

Figure 24. AS/400 SNPT: OS/2 CM Definitions, SNA Feature Profiles, Base Profile

```

Display IBM Token-Ring Network DLC Adapter Profile

Adapter number . . . . . : 0
Load DLC . . . . . : Yes
Maximum number of link stations. . . . . : 4
Percent of incoming calls. . . . . : 0%
Free unused link . . . . . : No
Congestion tolerance . . . . . : 080%
Maximum RU size. . . . . : 1920 bytes
Send window count. . . . . : 2
Receive window count . . . . . : 1
C&SM LAN ID. . . . . : PCAKSIM
Send alert for beaconing . . . . . : No

```

Figure 25. AS/400 SNPT: OS/2 CM Definitions, SNA Feature Profiles, DLC

```

Display Local APPC Logical Unit Profile

LU alias. . . . . : A5250LU
Comment . . . . . :
  5050 Local LU
LU name . . . . . : PCASSIMO
Default LU. . . . . : Yes
LU local address (NAU address). . . . . : 00
LU session limit. . . . . : 255
Maximum number of
  transaction programs. . . . . : 8

```

Figure 26. AS/400 SNPT: OS/2 CM Definitions, SNA Feature Profiles, Local LU

```

Display Partner LU Profile

Partner LU alias . . . . . : AS400BU3
Comment. . . . . :
  5250 Partner LU
Fully qualified partner LU name. . . . . : CHIBM600.AS400BU3
Partner LU uninterpreted name. . . . . :
LU alias . . . . . : 5250LU
DLC type . . . . . :
  IBM Token-Ring Network
Adapter number . . . . . : 0
Destination address (in hex) . . . . . : 400000009406
Partner LU session limit . . . . . : 64 sessions
Maximum mapped conversation
  logical record length. . . . . : 32767 bytes

LU-LU session security . . . . . : No
Conversation security. . . . . : Yes
Conversation security verified . . . . . : No
Permanent connection . . . . . : Yes
Solicit SSCP Session . . . . . : No

```

Figure 27 (Part 1 of 2). AS/400 SNPT: OS/2 CM Definitions, SNA Feature Profiles, Partner LU

```

Display Partner LU Profile

Mode Name                Initial Session Limit
QPCSUPP                  5250ISL

```

Figure 27 (Part 2 of 2). AS/400 SNPT: OS/2 CM Definitions, SNA Feature Profiles, Partner LU

```

Display Transmission Service Mode Profile

Mode name . . . . . : QPCSUPP
Comment . . . . . :
  Model Transmission Service Mode (model only)
Minimum RU size . . . . . : 256
Maximum RU size . . . . . : 1920
Receive pacing limit. . . . . : 7
Session limit . . . . . : 64

```

Figure 28. AS/400 SNPT: OS/2 CM Definitions, SNA Feature Profiles, Modes

```

Display Initial Session Limit Profile

Initial session limit profile. . . . . : 5250ISL
Comment. . . . . :
  5250 Session Limit
Minimum number of
  contention winners source. . . . . : 4
Minimum number of
  contention winners target. . . . . : 0
Number of automatically
  activated sessions . . . . . : 1

```

Figure 29. AS/400 SNPT: OS/2 CM Definitions, SNA Feature Profiles, Session Limits

3.2.2 LAN Feature Profiles

```

Display IEEE 802.2 Token-Ring Profile

Adapter number and version . . . . . : 0 - 16/4 /A
Load LAN support . . . . . : Yes
Adapter shared RAM address . . . . . :
Use universally
  administered address . . . . . : No
Adapter address. . . . . : 400000006824
Maximum number SAPs. . . . . : 5
Maximum link stations. . . . . : 12
Maximum number group SAPs. . . . . : 0
Maximum members per group SAP. . . . . : 0
Maximum number of users. . . . . : 4
Transmit buffer size . . . . . : 1944 bytes
Number of transmit buffers . . . . . : 2
Receive buffer size. . . . . : 96 bytes
Minimum receive buffers. . . . . : 47

```

Figure 30 (Part 1 of 2). AS/400 SNPT: OS/2 CM Definitions, LAN Feature Profiles

```

Display IEEE 802.2 Token-Ring Profile

Adapter number and version. . . . . : 0 - 16/A /A

Adapter "Open" options
  Wrap interface. . . . . : No
  Contender . . . . . : No
  Override token release default. . . . . : No
Group 1 response timer (T1) . . . . . : 015 x 40 ms.
Group 1 acknowledgement timer (T2). . . . . : 003 x 40 ms.
Group 1 inactivity timer (Ti) . . . . . : 255 x 40 ms.
Group 2 response timer (T1) . . . . . : 025 x 40 ms.
Group 2 acknowledgement timer (T2). . . . . : 010 x 40 ms.
Group 2 inactivity timer (Ti) . . . . . : 255 x 40 ms.
Number of queue elements. . . . . : 800
Number Global Descriptor
  Table selectors . . . . . : 30

```

Figure 30 (Part 2 of 2). AS/400 SNPT: OS/2 CM Definitions, LAN Feature Profiles

3.2.3 5250 WSF Profiles

```

5250 Terminal/Printer Session Assignment

5250 Workstation Feature profile name . . . . . : 5250D1
APPC partner LU alias . . . . . : AS400BU3
APPC mode name . . . . . : QPCSUPP
Short session ID . . . . . : F

```

Figure 31. AS/400 SNPT: OS/2 CM Definitions, 5250 WSF Profiles

3.2.4 3270 Feature Profiles

```
Display 3270 Profile

1. Connection      IBM Token-Ring network
2. Session...     A      Terminal
3. Session...     B      Terminal
4. Session...     C      Terminal
5. Session...     D      Terminal
6. Session...     Not Configured
```

Figure 32. AS/400 SNPT: OS/2 CM Definitions, 3270 Feature Profiles

```
Display Network Connection Profile

Adapter number . . . . . : 0
Destination address . . . . . : 400000009406
```

Figure 33. AS/400 SNPT: OS/2 CM Definitions, 3270 Feature Profiles, Destination

```
Display Logical Terminal

Session . . . . . : 1 2 3 4
Comment . . . . . :

Short session ID . . . . . : A B C H
AT keyboard profile name . . . . . : ACS3ATUK
Enhanced keyboard profile name . . . . . : ACS3ENSG
Presentation space size . . . . . :
  25 x 80 (3278/9 mod 2) 1
  33 x 80 (3278/9 mod 3) 2
Data transfer buffer size override (kb) . . . . . : 0
LU local address (NAU hex address) . . . . . : 02 03 04 05
Unsupported control codes . . . . . :
  Display hiphens
Activate presentation space print . . . . . : Yes
```

Figure 34. AS/400 SNPT: OS/2 CM Definitions, 3270 Feature Profiles, Logical Terminal

The above display includes the four configured 3270 terminal sessions. **1** is configured with session 1 through 3, **2** is configured with session 4.

3.3 Definitions on AS/400 CHIBMAS3

3.3.1 Token-Ring Line Description

```
CRTLINTRN LIND(TRNLIN) RSRNAME(LIN021) MAXCTL(64) +
MAXFRAME(1994) ADPTADR(40000009425) +
EXCHID(05690587) SSAP((04) (06) (AA)) +
TEXT('TS C25 TRLAN adapter LIN021') +
AUTOCRTCTL(*YES) AUTODLTCTL(7200)
```

3.3.2 APPC Controller and Device Descriptions

```
CRTCTLHOST CTLD(AS400BU3) LINKTYPE(*LAN) APPN(*YES) +
SWTLINLST(TRNLIN) RMTNETID(CHIBM600) +
RMTCPNAME(AS400BU3) LCLEXCHID(05600C25) +
ADPTADR(40000009406) CPSSN(*YES) +
NODETYPE(*NETNODE) TEXT('APPN and SNPT')
CRTDEVAPPC DEVD(AS400BU3) RMTLOCNAME(AS400BU3) +
LCLLOCNAME(CHIBMAS3) RMTNETID(CHIBM600) +
CTL(AS400BU3) MODE(*NETATR) TEXT('Created +
by SIMH') LOCADR(00)

CRTDEVHOST DEVD(PCASX405) LOCADR(01) +
RMTLOCNAME(ZCHMVS6) CTL(AS400BU3) +
APPTYPE(*EML) TEXT('SNPT/3270 to ZCHMVS6')
```

3.4 Definitions on AS/400 AS400BU3

3.4.1 For OS/2 and CHIBMAS3: Token-Ring Line Description

```
/* THE AS/400 TRN ADDRESS IS NOT THE BURNED-IN ONE */
```

```
CRTLINTRN LIND(TRNLIN) RSRNAME(LIN021) MAXCTL(64) +
MAXFRAME(1994) ADPTADR(40000009406) +
EXCHID(05600000) SSAP((04) (06) (AA)) +
TEXT('TS B45 TRLAN adapter LIN021') +
AUTOCRTCTL(*YES) AUTODLTCTL(7200)
```

3.4.2 For OS/2: APPC Controller and Device Descriptions

```
CRTCTLAPPC CTLD(PCAKSIM) LINKTYPE(*LAN) +
SWTLINLST(TRNLIN) RMTNETID(CHIBM600) +
RMTCPNAME(PCASSIMO) ADPTADR(40000006824) +
TEXT('SIMH's OS/2 for 5250 and 3270')

CRTDEVAPPC DEVD(PCASSIMO) RMTLOCNAME(PCASSIMO) +
ONLINE(*YES) LCLLOCNAME(AS400BU3) +
CTL(PCAKSIM) TEXT('ILU 6.2 for 5250') +
LOCADR(00)

CRTDEVDSP DEVD(PCASSIM2D) DEVCLS(*SNPT) TYPE(3278) +
MODEL(0) LOCADR(02) CTL(PCAKSIM) +
SNPTDEV(PCASSIM2U) TEXT('SNPT down to +
PCAKSIM')

CRTDEVDSP DEVD(PCASSIM3D) DEVCLS(*SNPT) TYPE(3278) +
MODEL(0) LOCADR(03) CTL(PCAKSIM) +
SNPTDEV(PCASSIM3U) TEXT('SNPT down to +
```

```

PCAKSIM')
CRTDEV DSP  DEVD(PCASSIM4D) DEVCLS(*SNPT) TYPE(3278) +
MODEL(0) LOCADR(04) CTL(PCAKSIM) +
SNPTDEV(PCASSIM4U) TEXT('SNPT down to +
PCAKSIM')
CRTDEV DSP  DEVD(PCASSIM5D) DEVCLS(*SNPT) TYPE(3278) +
MODEL(0) LOCADR(05) CTL(PCAKSIM) +
SNPTDEV(PCASSIM5U) TEXT('SNPT down to +
PCAKSIM')

```

3.4.3 For CHIBMAS3: APPC Controller and Device Descriptions

```

CRTCTLAPPC CTLD(CHIBMAS3) LINKTYPE(*LAN) APPN(*YES) +
SWTLINLST(TRNLINE) RMTNETID(CHIBM600) +
RMTCPNAME(CHIBMAS3) EXCHID(05600C25) +
ADPTADR(400000009425) NODETYPE(*NETNODE) +
TEXT('APPN and SNPT')

CRTDEVAPPC DEVD(CHIBMAS3) RMTLOCNAME(CHIBMAS3) +
LCLLOCNAME(AS400BU3) RMTNETID(CHIBM600) +
CTL(CHIBMAS3) TEXT('Created by SIMH')

CRTDEVSNPT DEVD(SNPTD32701) LOCADR(01) SNPTCLS(*DOWN) +
CTL(CHIBMAS3) SNPTDEV(SNPTU32701) +
TEXT('SNPT down to CHIBMAS3')

```

3.4.4 For MVS: X.25 Line Description

```

/**/
/* X.25 LINK 47911140, USED BY TS AS/400 E45 */
/**/

CRTLINX25 LIND(X25LINE) RSRNAME(LIN012) LGLCHLE((001 +
*PVC) (002 *SVCBOTH) (003 *SVCBOTH) (004 +
*SVCBOTH) (005 *SVCBOTH) (006 *SVCBOTH) +
(007 *SVCBOTH) (008 *SVCBOTH)) +
NETADR(47911140) CNNINIT(*LOCAL) +
ONLINE(*YES) EXCHID(056EEEE) +
DFTPCKT(128) MAXPKT(512) +
MODULUS(8) DFTWDS(2) TEXT('X25 link +
used by TS AS/400')

```

3.4.5 For MVS: Host Controller and Device Descriptions

```

/**/
/* TS 4381, 3270 */
/**/

CRTCTLHOST CTLD(XPCAKXAS4) LINKTYPE(*X25) ONLINE(*NO) +
SWITCHED(*YES) APPN(*NO) +
SWTLINLST(X25LINE) MAXFRAME(265) +
RMTNETID(CHIBM600) RMTCPNAME(CHIBM60A) +
SSCPID(05000000A0BE) CNNBR(45911061) +
NETLVL(1980) TEXT('PUT2.1 PCAKXAS4 via +
X.25 to FSC 4381')

/* ILU 6.2 IS NOT DEFINED HERE, SEE REMOTE APPN CFGD */

```



```

/* 3270 SCREENS */
    CRTDEVHOST DEVD(XPCASX401) LOCADR(01) +
        RMTLOCNAME(XFSC4381) ONLINE(*NO) +
        CTL(XPCAKXAS4) APPTYPE(*EML) +
        EMLKBD(*LOWER) TEXT('3278-2, PCASX401')
    CRTDEVHOST DEVD(XPCASX402) LOCADR(02) +
        RMTLOCNAME(XFSC4381) ONLINE(*NO) +
        CTL(XPCAKXAS4) APPTYPE(*EML) +
        EMLKBD(*LOWER) TEXT('3278-2, PCASX402')
    CRTDEVHOST DEVD(XPCASX403) LOCADR(03) +
        RMTLOCNAME(XFSC4381) ONLINE(*NO) +
        CTL(XPCAKXAS4) APPTYPE(*EML) +
        EMLKBD(*LOWER) TEXT('3278-2, PCASX403')
    CRTDEVHOST DEVD(XPCASX404) LOCADR(04) +
        RMTLOCNAME(XFSC4381) ONLINE(*NO) +
        CTL(XPCAKXAS4) APPTYPE(*EML) +
        EMLKBD(*LOWER) TEXT('3278-2, PCASX404')

/* FOLLOWING DEVICES USED AS SNPT DEVICES: */
    CRTDEVSNPT DEVD(SNPTU32701) LOCADR(05) SNPTCLS(*UP) +
        CTL(XPCAKXAS4) SNPTDEV(SNPTD32701) +
        TEXT(' SNPT 3270 DE for AS3 via BU3 to MVS')
    CRTDEVSNPT DEVD(PCASSIM2U) LOCADR(06) SNPTCLS(*UP) +
        CTL(XPCAKXAS4) SNPTDEV(PCASSIM2D) +
        TEXT('3270 DE for OS/2, PCASX406')
    CRTDEVSNPT DEVD(PCASSIM3U) LOCADR(07) SNPTCLS(*UP) +
        CTL(XPCAKXAS4) SNPTDEV(PCASSIM3D) +
        TEXT('3270 DE FOR OS/2, PCASX407')
    CRTDEVSNPT DEVD(PCASSIM4U) LOCADR(08) SNPTCLS(*UP) +
        CTL(XPCAKXAS4) SNPTDEV(PCASSIM4D) +
        TEXT('3270 DE FOR OS/2, PCASX408')
    CRTDEVSNPT DEVD(PCASSIM5U) LOCADR(09) SNPTCLS(*UP) +
        CTL(XPCAKXAS4) SNPTDEV(PCASSIM5D) +
        TEXT('3270 DE FOR OS/2, PCASX409')

```

3.5 Definition on MVS ZCHMVS6

3.5.1 VTAM Start Parameter List

```

*****
*      MEMBER ATCSTROA VTAMLST                               *
*      VTAM STARTUP OPTIONS - START PARAMETERS FOR HOST MVS1 *
*****
* BUFFER=(BASENO,BUFSIZE,SLOWPT,.,XPANNO,XPANPT,ADJVAL)
  CRPLBUF=(90,116,0,,6),   RPL-COPY POOL IN PAGEABLE OR VIRT STOR *
  IOBUF=(110,256,5,,8,6), MESSAGE POOL IN FIXED STOR             *
  LFBUF=(46,120,0,,2),    LARGE POOL IN FIXED STOR              *
  LPBUF=(12,1334,0,,3),   LARGE POOL IN PAGEABLE OR VIRT STOR   *
  SFBUF=(51,64,0,,),      SMALL POOL IN FIXED STOR              *
  SPBUF=(32,96,0,,),      SMALL POOL IN PAGEABLE OR VIRT STOR   *
  WPBUF=(60,184,0,,4),    MSG-CONTROL POOL IN PAGEABLE OR VIRT STOR *
  HOSTPU=PCAPUS,          NETNAME OF VTAM HOST SUBAREA PU       *
  HOSTSA=01,              HOST SUBAREA NUMBER (= DEFAULT)       *
  MAXSUBA=15,             MAX SUBAREA NUMBER IN NETWORK          *
  NETID=CHIBM600,        NETWORK IDENTIFIER                     *
  NOPROMPT,              OPERATOR PROMPT FOR START OPTIONS      *

```

```

SSCPNAME=CHIBM60A,      NAME OF VTAM SSCP      *
GWSSCP=YES,             VTAM 3.2 REQUIRED PARAMETER FOR ALIAS *
CONFIG=0A,              LIST OF MAJNODES TO BE ACT (ATCCON..) *
SSCPID=41150            SSCP ID WHEN PU OR EXT CDRM CONTACTS VTAM *

```

3.5.2 for AS400BU3

```

*****
*
*          VTAM ADAPTATION FOR X25/NPSI
*
*****
PCAJXS3X VBUILD TYPE=SWNET,
          MAXGRP=1,          MAX NUM OF GROUP NAMES IN PATH
          MAXNO=20          MAX NUM OF DIAL NUMBERS
*
*          ...
*
PCAKXAS4 PU  ADDR=C1,          SDLC LINK STATION ADDR FOR PU
              CPNAME=AS400BU3, AS400 CONTROL POINT NAME (SSCPNAME)
              IDBLK=056,      12 B BLK NUM ASSIGNED TO DEVICE
              IDNUM=FFFFFF,   20 B ID NUM ASSIGNED TO STATION
              DISCNT=(NO,F),  DISC PU IF LAST LU LOGS OFF
              IRETRY=NO,      RETRY POLLING AFTER IDLE TIME OUT
              ISTATUS=ACTIVE, VTAM INIT STATUS
              MAXDATA=1929,   MAX AMOUNT (B) PU REC IN ONE TIME
              MAXOUT=7,       MAX PIU'S SENT BEFORE RESPONSE
              MAXPATH=1,     NUM OF DIAL-OUT PATHS TO PU
              MODETAB=PCADS400, VTAM LOG MODE TABLE
              PASSLIM=7,     NUM OF CONTIG PIU'S NCP -> PU
              PUTYPE=2,       PHYSICAL UNIT TYPE OF PU
              SSCPFM=USSSCS,  VTAM USS FORMAT
              USSTAB=PCAUSSTB VTAM USS TABLE
*
X25PATH3 PATH DIALNO=4791114000101*08400, TELEFONE NUMBER*IDNUM
              GID=1,          PATH GROUP IDENTIFIER
              GRPNM=PC8GSVC2, NAME OF GROUP IN NCP MAJNODE
              PID=1,          PATH IDENTIFIER
              REDIAL=1,       NUM OF REDIAL BEFORE DIAL ERROR
              USE=YES         PATH INITIALLY USABLE
*
PCASX400 LU  LOCADDR=0,       INDEPENDANT LU FUER PU2.1
              DLOGMOD=MODLU62, DEFAULT LOG MODE TABLE ENTRY
              ISTATUS=ACTIVE,  VTAM INIT STATUS
              VPACING=1        1ST STAGE PACING VALUE
PCASX401 LU  LOCADDR=1,       LOCAL LU ADDR AT PU
              DLOGMOD=DYNAMIC, LOGON MODE ENTRY
              LOGAPPL=PCAZNVAS, LOGON APPL
              ISTATUS=ACTIVE,  VTAM INIT STATUS
              VPACING=1        1ST STAGE PACING VALUE
PCASX402 LU  LOCADDR=2,       LOCAL LU ADDR AT PU
              DLOGMOD=DYNAMIC, DEFAULT LOG MODE TABLE ENTRY
              ISTATUS=ACTIVE,  VTAM INIT STATUS
              VPACING=1        1ST STAGE PACING VALUE
PCASX403 LU  LOCADDR=3,       LOCAL LU ADDR AT PU
              DLOGMOD=D4C32782, DEFAULT LOG MODE TABLE ENTRY
              ISTATUS=ACTIVE,  VTAM INIT STATUS
              VPACING=1        1ST STAGE PACING VALUE

```

```

...
PCASX405 LU  LOCADDR=5,          LOCAL LU ADDR AT PU          *
              DLOGMOD=D4C32782,  DEFAULT LOG MODE TABLE ENTRY *
              ISTATUS=ACTIVE,    VTAM INIT STATUS            *
              VPACING=1          1ST STAGE PACING VALUE
PCASX406 LU  LOCADDR=6,          LOCAL LU ADDR AT PU          *
              MODETAB=PCADTR20,  VTAM LOG MODE TABLE       *
              DLOGMOD=RS32792,  DEFAULT LOG MODE TABLE ENTRY *
              LOGAPPL=PCAZNVAS,  LOGON APPL                  *
              ISTATUS=ACTIVE,    VTAM INIT STATUS            *
              VPACING=1          1ST STAGE PACING VALUE
...
PCASX408 LU  LOCADDR=8,          LOCAL LU ADDR AT PU          *
              MODETAB=PCADTR20,  VTAM LOG MODE TABLE       *
              DLOGMOD=RS32792,  DEFAULT LOG MODE TABLE ENTRY *
              LOGAPPL=PCAZNVAS,  LOGON APPL                  *
              ISTATUS=ACTIVE,    VTAM INIT STATUS            *
              VPACING=1          1ST STAGE PACING VALUE
PCASX409 LU  LOCADDR=9,          LOCAL LU ADDR AT PU          *
              MODETAB=PCADLMD,   VTAM LOG MODE TABLE       *
              DLOGMOD=LSX32703,  DEFAULT LOG MODE TABLE ENTRY *
              LOGAPPL=PCAZNVAS,  LOGON APPL                  *
              ISTATUS=ACTIVE,    VTAM INIT STATUS            *
              VPACING=1          1ST STAGE PACING VALUE

```

3.6 Matching Parameters

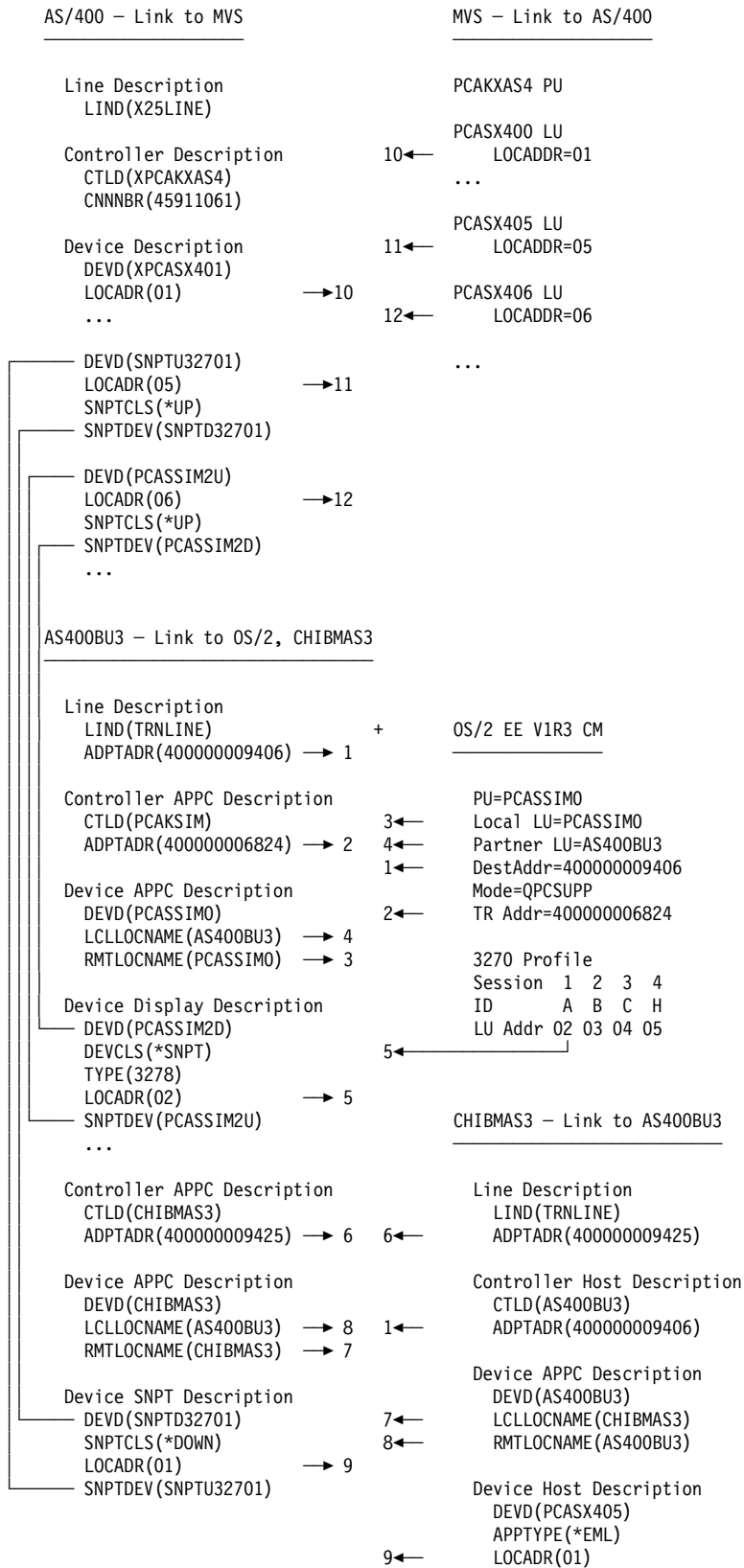


Figure 35. Matching Parameters, SNPT: OS/2 and AS/400

Chapter 4. AS/400 SNA Primary LU Support (SPLS)

AS/400 SNA Primary LU Support (SPLS) allows 3270 display stations and printers in the SNA Subarea network to directly communicate with an SNA Subarea attached AS/400.

With OS/400 V2R2 SPLS is a PRPQ. SPLS support will be included in OS/400 V2R3.

The SPLS function is similar to the Network Routing Facility (NRF), but SPLS does not require any additional software with VTAM/NCP.

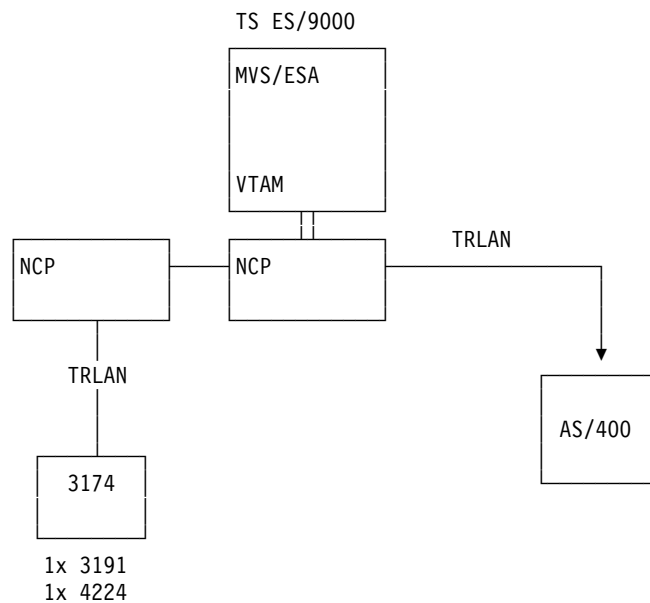


Figure 36. Overview: AS/400 SNA Primary LU Support

4.1 Software Used

- MVS/ESA V4R2.2
- VTAM V3R4.1
- NCP V4R3.1 (IBM 3725)
- OS/400 V2R2
- SPLS PRPQ, 5799-FBN, R1.0

4.2 VTAM/NCP Definitions

4.2.1 IBM 3174 Switched Major Node

```
*=====
*           VTAM SWITCHED MAJOR NODE   J. INAUEN/ ST. IMHOF
*
*           SPLS TESTS   30.03.93 STARTED
*=====
*
PCAJNRF  VBUILD TYPE=SWNET
*
*-----
* CONFIGURATION : 3174 --> SWITCHED --> 3720 --> MVS1
*           SWITCHED CAN BE: TOKENRING, SWITCHED LINE OR X.25
*
* DESCRIPTION   : THE 3174 IS A 51R MODEL BUT CONFIGURED AS A 53R
*           (ALTERNATE CONFIGURATION)
*-----
*
PCAKSPLS PU  ADDR=C1,           IGNORED FOR TOKENRING           *
              IDBLK=017,        IDENTIFICATION BLOCK             *
              IDNUM=41114,       IDENTIFICATION NUMBER           *
              PUTYPE=2,          PU TYPE 2.0                       *
              MAXDATA=265,       MAXIMUM PIU (RU+RH+TH) SIZE       *
              MAXOUT=7,         NUMBER OF PIU BEFORE ACKNOWLEDGE  *
              PASSLIM=7,        NUMBER OF PIU SEND AT ONCE FROM NCP *
              MODETAB=PCADNRF,   LOGON MODE TABLE NAME         *
              SSCPFM=USSSCS,     LU SUPPORTS CHARACTER CODED RU   *
              USSTAB=PCAUSSTB,   USS DEFINITION TABLE NAME      *
              PACING=0,          *
              VPACING=0,          *
              ISTATUS=ACTIVE     *
*              STATOPT='3174'   *
*              NGFTXT='3174'    *
*
PCASSPL1 LU  LOCADDR=02,        LU LOCAL ADDRESS (TERMINAL)   *
              DLOGMOD=SD82HD    MODEENT IN MODETAB
*
PCAPSPL4 LU  LOCADDR=03,        LU LOCAL ADDRESS (PRINTER)   LU1 *
              DLOGMOD=SCSPTR,   LOCAL PRINTER ON TERMINAL PORT 2 *
              USSTAB=ISTINCDT

```

4.2.2 AS/400 Switched Major Node

```
PCAJTEST VBUILD TYPE=SWNET, *
              MAXGRP=1,         MAX NUM OF GROUP NAMES IN PATH *
              MAXNO=25          MAX NUM OF DIAL NUMBERS
*****
* AS/400, SIMH                 3 X MODEL 2 SCREENS *
*****
PCAKTRIA PU  ADDR=C1,           SDLC LINK STATION ADDR FOR PU *
              IDBLK=056,        12 B BLK NUM ASSIGNED TO DEVICE *
              IDNUM=00E45,       20 B ID NUM ASSIGNED TO STATION *
              DISCNT=(NO,F),     DISC PU IF LAST LU LOGS OFF *
              IRETRY=YES,        RETRY POLLING AFTER IDLE TIME OUT *

```

```

          ISTATUS=ACTIVE,      VTAM INIT STATUS          *
          MAXDATA=1024,       MAX AMOUNT (B) PU REC IN ONE TIME *
          MAXOUT=7,          MAX PIU'S SENT BEFORE RESPONSE *
          MAXPATH=1,         MAX MUN OF DIAL OUT PATHS TO PU *
          PASSLIM=7,         NUM OF CONTIG PIU'S NCP -> PU *
          PUTYPE=2,          PHYSICAL UNIT TYPE OF PU *
          SSCPFM=USSSCS,     VTAM USS FORMAT          *
          PACING=1,          VTAM PACING COUNT NCP->PU *
          USSTAB=PCAUSSTB,   VTAM USS TABLE          *
          VPACING=2          VTAM PACING COUNT VTAM->NCP *
*          STATOPT=' NTRI AS/400'
*
TRPATHA  PATH  DIALNO=000440000009406,   DIAL NUMBER          *
          GID=1,PID=1,       PATH GROUP/DIAL IDENTIFIER *
          GRPNM=PC9GLT1,    GROUP LABEL IN NCP MAJNODE *
          REDIAL=1,USE=YES   REDIAL BEFORE ERROR / USE THIS NUM
*
SPLSBU3  LU    LOCADDR=00,          INDEPENDENT LU SPLS *
          RESSCB=16,        RESOURCES *
          ISTATUS=ACTIVE     VTAM INITIAL STATUS
*          STATOPT=' SPLS *DEVINIT'
*
PCASTIA0 LU    LOCADDR=01,          LOCAL DEVICE ADDRESS   AS/400 M2 *
          MODETAB=PCADTR20,DLOGMOD=RS32792,
          LOGAPPL=PCAZS,ISTATUS=ACTIVE
*          STATOPT=' NTRI AS/400 M2'
PCASTIA1 LU    LOCADDR=02,          LOCAL DEVICE ADDRESS   AS/400 M2 *
          MODETAB=PCADTR20,DLOGMOD=RS32792,
          LOGAPPL=PCAZS,ISTATUS=ACTIVE
*          STATOPT=' NTRI AS/400 M2'
PCASTIA2 LU    LOCADDR=03,          LOCAL DEVICE ADDRESS   AS/400 M2 *
          MODETAB=PCADTR20,DLOGMOD=RS32792,
          LOGAPPL=PCAZS,ISTATUS=ACTIVE
*          STATOPT=' NTRI AS/400 M2'
PCASTIA3 LU    LOCADDR=05,          LOCAL DEVICE ADDRESS   AS/400 M2 *
          MODETAB=PCADNRF,   MODETABLE *
          DLOGMOD=TRNHDO,    VTAM LOGMODE *
          PACING=1,          VTAM PACING COUNT NCP->PU *
          ISTATUS=ACTIVE
*          STATOPT=' SPLS *CTLSSN'
*

```

4.2.3 VTAM Logon Mode Table

```

*****
*
*          CREATED BY   :   JOSEF INAUEN      18/12/91          *
*          USED BY     :   AS/400 NRF AND SPLS *
*          OWNER       :   STEPHAN IMHOF / JOSEF INAUEN *
*
* IN  LAST CHANGE : 18.06.92  RUSIZES VON 8585 AUF 87C7 GEAEENDERT. *
*                               SD82, SD82HD *
* IN  LAST CHANGE : 25.06.92  SD82L,SD82HDL RUSIZE 8585 FOR 3174-01L *
* IN  LAST CHANGE : 29.04.93  TRNHDO ADDED FOR AS/400 SPLS *
*
*****
PCADNRF  MODETAB
*****
*          LOGMODE PAIR FOR 24X80 TERMINAL --PACING=0, 1024/1536 BYTE RU*

```

```

*****
SD82      MODEENT LOGMODE=SD82,          3270 LOGMODE          *
          FMPROF=X'03', TSPROF=X'03',          1,2 *
          PRIPROT=X' B1', SECPROT=X'90', COMPROT=X'3080', 3,4,5,6*
          RUSIZES=X'87C7',          9,10 *
          PSERVIC=X'020000000000185018507F00' 13-24
*          01 03 05 07 09 11          BIND-BYTE NBR
*
SD82HD    MODEENT LOGMODE=SD82HD,        3270 LOGMODE          *
          FMPROF=X'03', TSPROF=X'03',          1,2 *
          PRIPROT=X' B1', SECPROT=X'90', COMPROT=X'3081', 3,4,5,6*
          RUSIZES=X'87C7',          9,10 *
          SSNDPAC=X'01', SRCVPAC=X'01', PSNDPAC=X'01', *
          PSERVIC=X'020000000000185018507F00' 13-24
*          01 03 05 07 09 11          BIND-BYTE NBR
*
SD82L     MODEENT LOGMODE=SD82L,         3270 LOGMODE          *
          FMPROF=X'03', TSPROF=X'03',          1,2 *
          PRIPROT=X' B1', SECPROT=X'90', COMPROT=X'3080', 3,4,5,6*
          RUSIZES=X'8585',          9,10 *
          PSERVIC=X'020000000000185018507F00' 13-24
*          01 03 05 07 09 11          BIND-BYTE NBR
*
SD82HDL   MODEENT LOGMODE=SD82HDL,      AS/400 LOGMODE        *
          FMPROF=X'03', TSPROF=X'03',          1,2 *
          PRIPROT=X' B1', SECPROT=X'90', COMPROT=X'3081', 3,4,5,6*
          RUSIZES=X'8585',          9,10 *
          SSNDPAC=X'00', SRCVPAC=X'00', PSNDPAC=X'00', *
          PSERVIC=X'020000000000185018507F00' 13-24
*          01 03 05 07 09 11          BIND-BYTE NBR
*
TRNHDO    MODEENT LOGMODE=TRNHDO,       AS/400 PLU LOGMODE    *
          FMPROF=X'03', TSPROF=X'03',          1,2 *
          PRIPROT=X' B1', SECPROT=X' B0', COMPROT=X'3081', 3,4,5,6*
          RUSIZES=X' A8A8',          9,10 *
          PSNDPAC=X'01', SRCVPAC=X'01', SSNDPAC=X'01', 11,8,7 *
          PSERVIC=X'02800000000000000000200' 13-24
*          01 03 05 07 09 11          BIND-BYTE NBR
*
*****
*          LOGMODE PAIR FOR 328X PRINTER - PACING=1, 1024/1536 BYTE RU *
*****
SCSPTR    MODEENT LOGMODE=SCSPTR,       3270 LOGMODE          *
          FMPROF=X'03', TSPROF=X'03',          1,2 *
          PRIPROT=X' B1', SECPROT=X'90', COMPROT=X'3080', 3,4,5,6*
          RUSIZES=X'8585',          9,10 *
          SSNDPAC=X'01', SRCVPAC=X'01', PSNDPAC=X'01', *
          PSERVIC=X'01000000E100000000000000' 13-24
*          01 03 05 07 09 11          BIND-BYTE NBR
*
SCSPTRR   MODEENT LOGMODE=SCSPTRR,      AS/400 LOGMODE        *
          FMPROF=X'03', TSPROF=X'03',          1,2 *
          PRIPROT=X' B1', SECPROT=X'90', COMPROT=X'3081', 3,4,5,6*
          RUSIZES=X'8585',          9,10 *
          SSNDPAC=X'01', SRCVPAC=X'01', PSNDPAC=X'01', *
          PSERVIC=X'01000000E100000000000000' 13-24
*          01 03 05 07 09 11          BIND-BYTE NBR
*

```



```

***** 00328000
DYNAMIC MODEENT LOGMODE=DYNAMIC,FMPROF=X'03',TSPROF=X'03',      1,2 *00329000
          PRIPROT=X' B1',SECPROT=X'90',COMPROT=X'3080',      3,4,5,6*00329100
          RUSIZES=X'87C7',      9,10 *00329200
          PSNDPAC=X'01',SRCVPAC=X'03',SSNDPAC=X'00',      11,8,7 *00329300
          PSERVIC=X'02800000000000000000300'      13-24 00329400
*          01 03 05 07 09 11      BIND-BYTE NBR 00329500
*
*****
*      3X74 LOCAL SNA WITH 3279 MODEL 2 SCREEN (3179)      *
*      PRIMARY SCREEN 24 X 80 (1920)      *
*      ALTERNATE SCREEN N/A      *
*****
LS32792 MODEENT LOGMODE=LS32792,      *
          FMPROF=X'03',TSPROF=X'03',      1,2 *
          PRIPROT=X' B1',SECPROT=X'90',COMPROT=X'3080',      3,4,5,6*
          RUSIZES=X'87C7',      9,10 *
          PSNDPAC=X'01',SRCVPAC=X'00',SSNDPAC=X'00',      11,8,7 *
          PSERVIC=X'028000000000185000007E00'      13-24
*          01 03 05 07 09 11      BIND-BYTE NBR
*
*****
*      3X74 LOCAL SNA WITH 3279 MODEL 3 SCREEN (3179-G)      *
*      PRIMARY SCREEN 24 X 80 (1920)      *
*      ALTERNATE SCREEN 32 X 80 (2560)      *
*****
LS32793 MODEENT LOGMODE=LS32793,FMPROF=X'03',TSPROF=X'03',      1,2 *
          PRIPROT=X' B1',SECPROT=X'90',COMPROT=X'3080',      3,4,5,6*
          RUSIZES=X'87C7',      9,10 *
          PSNDPAC=X'01',SRCVPAC=X'03',SSNDPAC=X'00',      11,8,7 *
          PSERVIC=X'028000000000185020507F00'      13-24
*          01 03 05 07 09 11      BIND-BYTE NBR
*
MODEEND
END

```

4.3 AS/400 Definitions

PGM

```
CRTLINTRN LIND(TRNLINE) RSRNAME(LIN041) +
          ADPTADR(400000009406)
```

```
CRTCTHST CTLD(TPCAKTRIA) LINKTYPE(*LAN) APPN(*YES) +
          SWTLINLST(TRNLINE) RMTNETID(CHIBM600) +
          RMTCPNAME(CHIBM60A) SSCPID(05000000A0BE) +
          ADPTADR(400000000010) CPSSN(*NO) +
          NODETYPE(*LENNODE) TEXT('FSC 4381 via TRN +
          and 3720 PU=PCAKTRIA')
```

/* EMULATED SCREEN 3278/9-2 */

```
CRTDEVHOST DEVD(PCASTIA0) LOCADR(01) RMTLOCNAME(TFSC4381) +
          ONLINE(*YES) CTL(TPCAKTRIA) APPTYPE(*EML) +
          EMLKBD(*LOWER) TEXT('3278 to FSC MVS VIA TRN') +
          AUT(*USE)
CRTDEVHOST DEVD(PCASTIA1) LOCADR(02) RMTLOCNAME(TFSC4381) +
          ONLINE(*YES) CTL(TPCAKTRIA) APPTYPE(*EML) +
```

```

                                EMLKBD(*LOWER) TEXT('3278 to FSC MVS VIA TRN') +
                                AUT(*USE)
CRTDEVHOST DEVD(PCASTIA2) LOCADR(03) RMTLOCNAME(TFSC4381) +
ONLINE(*YES) CTL(TPCKAKTRIA) APPTYPE(*EML) +
EMLKBD(*LOWER) TEXT('3278 to FSC MVS VIA TRN') +
AUT(*USE)

/* SPLS */
/* *DEVINIT DEVICE FOR DISPLAY'S */
CRTDEVSP DEVD(SPLSBU3) DEVCLS(*RMT) TYPE(3277) +
MODEL(0) LOCADR(00) CTL(TPCKAKTRIA) +
DROP(*NO) APPTYPE(*DEVINIT) +
TEXT('SPLS/*DEVINIT device')

/* *DEVINIT DEVICE FOR PRINTER */
CRTDEVPRT DEVD(PCAPSPL4) DEVCLS(*RMT) TYPE(3287) +
MODEL(0) LOCADR(00) CTL(TPCKAKTRIA) +
APPTYPE(*APPINIT) INACTTMR(*SEC15) +
RMTLOCNAME(PCAPSPL4) LCLLOCNAME(SPLSBU3) +
TEXT('SPLS/*APPINIT, printer at 3174')

/* *CTLSSN DEVICE, TO WHICH 3270 USERS LOG ON */
CRTDEVSP DEVD(SPLSCTL) DEVCLS(*RMT) TYPE(3277) +
MODEL(0) LOCADR(05) CTL(TPCKAKTRIA) +
APPTYPE(*CTLSSN) LCLLOCNAME(SPLSBU3) +
TEXT('SPLS/*CTLSSN device')

                                ENDPGM

```

4.4 Parameter Overview and Relation

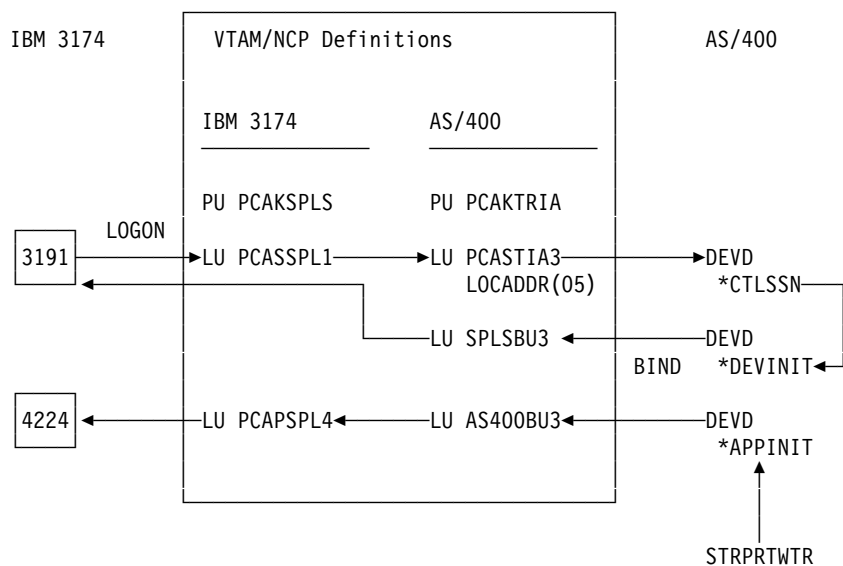


Figure 37. SPLS, IBM 3174 and AS/400 Parameter Overview and Relation

4.5 Operation and Status Display

4.5.1 Status after Activation

All components are powered on and all communication resources are activated:

- In VTAM/NCP: 3174 PU/LUs, AS/400 Line/PU/LUs
- With IBM 3174: IMPL is done, display and printer are powered on
- In AS/400: Line, controller and device descriptions are varied on

With NetView/370 the following status is displayed.

```
NCCF                                N E T V I E W   PCAZN SIMH   30/06/93 10:28:29
T ORIGIN  OPER/JOB
C PCAZN   SIMH   DISPLAY NET, ID=PCAKSPLS, SCOPE=ALL
  PCAZN   SIMH   IST097I DISPLAY ACCEPTED
' PCAZN   SIMH
IST075I  NAME = PCAKSPLS           , TYPE = PU_T2
IST486I  STATUS= ACTIV            , DESIRED STATE= ACTIV
IST136I  SWITCHED SNA MAJOR NODE = PCAJNRF
IST081I  LINE NAME = J0008061, LINE GROUP = PC8GTRL2, MAJNOD = PC8V43
IST654I  I/O TRACE = OFF, BUFFER TRACE = OFF
IST355I  LOGICAL UNITS:
IST080I  PCASSPL1 ACTIV           PCAPSPL4 ACTIV
IST314I  END
-----
???
```

Figure 38. Operation and Status Display for the IBM 3174

```
NCCF                                N E T V I E W   PCAZN SIMH   30/06/93 10:27:04
T ORIGIN  OPER/JOB
- PCAZN   SIMH   DSI020I OPERATOR SIMH LOGGED ON FROM TERMINAL PCASAN02
              USING PROFILE (DSIPROFM ), HCL ( )
- PCAZN   SIMH   DSI083I AUTOWRAP STOPPED
C PCAZN   SIMH   CNM357I PFKDEF : PF KEY SETTINGS NOW ESTABLISHED.
C PCAZN   SIMH   +           : "DISPFK" TO SEE YOUR PF KEY SETTINGS
- PCAZN   SIMH   DSI633I DEFAULTS COMMAND SUCCESSFULLY COMPLETED
C PCAZN   SIMH   DISPLAY NET, ID=PCAKTRIA, SCOPE=ALL
  PCAZN   SIMH   IST097I DISPLAY ACCEPTED
' PCAZN   SIMH
IST075I  NAME = PCAKTRIA           , TYPE = PU_T2.1
IST486I  STATUS= ACTIV            , DESIRED STATE= ACTIV
IST1043I CP NAME = AS400BU3, CP NETID = CHIBM600, DYNAMIC LU = YES
IST136I  SWITCHED SNA MAJOR NODE = PCAJTR20
IST081I  LINE NAME = J0008057, LINE GROUP = PC8GTRL2, MAJNOD = PC8V43
IST654I  I/O TRACE = OFF, BUFFER TRACE = OFF
IST355I  LOGICAL UNITS:
IST080I  PCASTIA0 ACTIV           PCASTIA1 ACTIV           PCASTIA2 ACTIV
IST080I  PCASTIA3 ACTIV
IST314I  END
-----
???
```

Figure 39. Operation and Status Display for AS/400 SPLS Environment

Using CL command WRKCFGSTS *CTL TPCAKTRIA

```

Work with Configuration Status                                AS400BU3
                                                           30.06.93 10.29.24
Position to . . . . . Starting characters
Type options, press Enter.
  1=Vary on   2=Vary off  5=Work with job  8=Work with description
  9=Display mode status ...
Opt  Description      Status      -----Job-----
    TPCAKTRIA        ACTIVE
    PCASTIA0        VARIED ON
    PCASTIA1        VARIED ON
    PCASTIA2        VARIED ON
    PCAZC1           ACTIVE
    PCAZC102        ACTIVE
    SPLSBU3         VARY ON PENDING
    PCAPSPL4        VARIED ON
    PCASTIA3        VARIED ON
                                                           Bottom
Parameters or command
==>
F3=Exit  F4=Prompt  F12=Cancel  F23=More options  F24=More keys

```

Figure 40. Status on AS/400

4.6 Usage

The next steps performed by the user are:

- LOGON from any 3270 screen to AS/400 using the following command:
LOGON APPLID(PCASTIA3)
- Start a spool writer for the printer attached to the IBM 3174, using the following CL command:
STRPRTWTR DEV(PCAPSPL4)

The changed status of the VTAM LUs and the AS/400 configuration objects follow:

```

NCCF                                N E T V I E W  PCAZN SIMH  30/06/93 10:35:16
T ORIGIN  OPER/JOB
C PCAZN   SIMH   DISPLAY NET, ID=PCAKSPLS, SCOPE=ALL
  PCAZN   SIMH   IST097I DISPLAY ACCEPTED
' PCAZN   SIMH
IST075I  NAME = PCAKSPLS           , TYPE = PU_T2
IST486I  STATUS= ACTIV             , DESIRED STATE= ACTIV
IST136I  SWITCHED SNA MAJOR NODE = PCAJNRF
IST081I  LINE NAME = J0008061, LINE GROUP = PC8GTRL2, MAJNOD = PC8V43
IST654I  I/O TRACE = OFF, BUFFER TRACE = OFF
IST355I  LOGICAL UNITS:
IST080I  PCASSPL1 ACT/S           PCAPSPL4 ACT/S
IST314I  END
-----
???
```

Figure 41. Changed Status for the IBM 3174

```

NCCF                                N E T V I E W   PCAZN SIMH   30/06/93 10:36:07
T ORIGIN  OPER/JOB
' PCAZN   SIMH
C PCAZN   SIMH   DISPLAY NET, ID=PCAKTRIA, SCOPE=ALL
  PCAZN   SIMH   IST097I DISPLAY ACCEPTED
' PCAZN   SIMH
IST075I  NAME = PCAKTRIA                , TYPE = PU_T2.1
IST486I  STATUS= ACTIV--L--, DESIRED STATE= ACTIV
IST1043I CP NAME = AS400BU3, CP NETID = CHIBM600, DYNAMIC LU = YES
IST136I  SWITCHED SNA MAJOR NODE = PCAJTR20
IST081I  LINE NAME = J0008057, LINE GROUP = PC8GTRL2, MAJNOD = PC8V43
IST654I  I/O TRACE = OFF, BUFFER TRACE = OFF
IST355I  LOGICAL UNITS:
IST080I  PCASTIA0 ACTIV                PCASTIA1 ACTIV        PCASTIA2 ACTIV
IST080I  PCASTIA3 ACTIV
IST080I  AS400BU3 ACT/S                SPLSBU3  ACT/S
IST314I  END

??? ***

```

Figure 42. Changed Status for AS/400

```

                                Work with Configuration Status                AS400BU3
                                                                30.06.93 10.35.50
Position to . . . . .                Starting characters
Type options, press Enter.
  1=Vary on  2=Vary off  5=Work with job  8=Work with description
  9=Display mode status ...
Opt  Description                Status                -----Job-----
  TPCAKTRIA                ACTIVE
  PCASTIA0                VARIED ON
  PCASTIA1                VARIED ON
  PCASTIA2                VARIED ON
  PCAZC1                ACTIVE
  PCAZC102                ACTIVE
  SPLSBU3                VARY ON PENDING
  PCAPSPL4                ACTIVE/WRITER                PCAPSPL4  QSPLJOB  131453
  PCASTIA3                VARIED ON
  PCASTIA                SIGNON DISPLAY

                                                                Bottom

Parameters or command
===>
F3=Exit  F4=Prompt  F12=Cancel  F23=More options  F24=More keys

```

Figure 43. Changed Status on AS/400

4.7 Session Termination with AS/400

After signing off AS/400, the SPLS user remains on the AS/400 signon screen. In order to release the SPLS session, the user may use the procedure we already introduced with NRF. It is CL command and CL program ENDNRF. See 5.5, "AS/400 NRF Device Release Program" on page 68. After the user signs off, a batch job is submitted, that varies off and on the 3270 device.

OS/400 V2R3 offers a new parameter with the CL command SIGNOFF ENDCNN(*YES).

Chapter 5. AS/400 Network Routing Facility (NRF) Support

AS/400 Network Routing Facility Support (NRF) is a SW product installed with NCP. It is a PRPQ on AS/400.

When appropriately configured, NRF support allows any SNA 3270 display station in the SNA network to access a NCP/VTAM attached AS/400. To the user, the attachment appears as though the AS/400 is the SNA host. NRF is a newer and better solution than HCF/DHCF. NRF also supports printed output transfer from an AS/400 to an 3270 SCS printer.

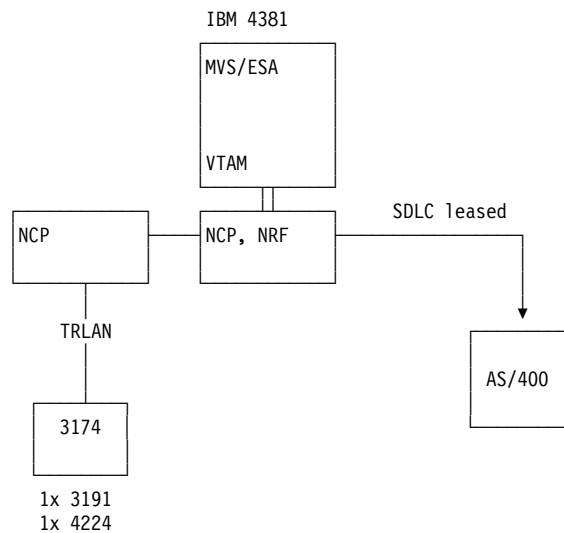


Figure 44. Passing Through a SNA Subarea Network to an AS/400

In our scenario, the 3174 attached 3270 screen is permanently assigned to a NRF LU. However any other 3270 screen in the SNA subarea network may logon to an available NRF LU.

The connection between the AS/400 and VTAM/NCP may be used for any other SNA based communications, for example 3270 DE. This connection is documented in our example as well.

5.1 Software Used

- MVS/ESA V4R2.2
- VTAM V3R4.1
- NCP V5R4
- NRF R6
- OS/400 V2R1.0

- NRF PRPQ, pre-release version

5.2 Definitions

5.2.1 VTAM/NCP

```

OPTIONS USERGEN=(CXRNRF,FNMNDFGN,X25NPSI),
NEWDEFN=(YES,ECHO,NOSUPP)
*-----*
* TITLE 'PC7V54X FUER 3720-11 MIT 2 CA TYPE5'
*****
* 3720-11 AT TS BU3 * * NEWNAME = PC7V54 *
*-----* * SUBAREA = 07 *
* ACF/NCP V5R4.0 - NPSI V3R4.0 * * MAXBFRU = 24 *
* ACF/SSP V3R6.0 - NRF R6 * * MAXSUBA = 15 *
*-----* * UNITSZ = 256 *
* CREATION-DATE : 20.03.92 IN * * VERSION = V5R4 *
*****
* NET = NET = NET =
* CHIBM600 CHIBM6X0 CHIBM000*
* 4381-T92
* +-----+ +-----+ +-----+
* | MVS2 | +-----007-----+ 3725 1.5M |S| |S| IBM-IN *
* | | | --009-----+ PC8V43 |A| --L32- |A| DCE *
* | PCM-SA07 | +-----006-----+ GW-NCP |1| |2| ENGINE *
* | | | +-----008-----+ PC8-SA08 |8| |8| DCE-SA19*
* | ZCHMVS7 | | | +-----+ +-----+
* | +-----+ | | | L8 | | |
* | MVS1 | +-----+ +-----+
* | PCA-SA01 | +-----+ | 3720 1M | | |
* | | | | PC9V54 | 4...10 +-----+
* | ZCHMVS6 | +-----028-----+ TR-GATEWAY +-----+ FSC-RING|
* | | | | PC9-SA09 | | |
* | +-----+ +-----+ +-----+
* | VM/XA | | | L6 | | |
* | | | +-----+ +-----+
* | PCE-SA10 | +-----+ | 3720 2M | | |
* | | | | PC7V54 | | |
* | ZCHVM6 | +-----048-----+ TEST-NCP | | |
* | | | | PC7-SA07 | | | EC-RING |
* | +-----+ +-----+ +-----+
*
*****
* LINE PROT SPEED MODE NRZI TYPE DATE RES-NAME
* 00 HDLC 4800 HDX NO PSDN . . PC7.00.. X.25 TCP/IP
* 01 HDLC 4800 HDX NO PSDN . . PC7.01.. X.25 SNA
*
...
*****
* BUILD DESCRIPTION OF 3720
*****
BLDPC7 BUILD ADDESS=150, INDEPENDENT LU-LU SESSION
AUXADDR=150, ADDRESSES FOR INDDP LUS
BFRS=128, NCP BUFFER SIZE (B)
BRANCH=100, D ENTRIES IN BRANCH TRACE TABLE
CWALL=26, D NCP-BUFFER RESERVES

```



```

DSABLT0=3.0,          D TIMEOUT FOR FAIL OF 'DS READY' *
ENABLT0=60.0,         D TIMEOUT FOR FAIL OF 'DS READY' *
LOADLIB=LOAD3725,    DDNAME OF NCP LOADLIB IN PROCLIB*
LTRACE=2,             MAX # LI TRACED CONCURRENT X25=2*
MAXSSCP=4,           MAX # HOST/TCU CONCURR. ACTIVE *
MAXSUBA=15,          UPPER LIM OF SUBAREA ADDRESSES *
MODEL=3720,          COMM CONTROLLER MODEL *
NETID=CHIBM600,      NETID *
NEWNAME=PC7V54,      LOADMOD NAME IN 15-1-92 *
NUMHSAS=5,           # HOSTS CONCURR COMM WITH NCP *
NPA=YES,             NPA (NPM) INCLUDED *
NRF.TRCTABL=1000,  NRF TRACE TABLE SIZE *
OLT=NO,              ONLINE TERM & LINE TEST FAC INCL*
PATHEXT=4,           EXTRA DEST SA'S FOR DYNAMIC PATH*
PRTGEN=(GEN),        D PRINT MACRO GENERATED STMTS *
SESSACC=(YES,ALL,100,256,64), NPM SESSION ACCOUNTING *
SLOWDOWN=12,         D MIN PERCENT NCP BFRS BEFORE SLO *
SUBAREA=07,          SUBAREA ADDRESS OF THIS NCP *
TGBXTRA=4,           EXTRA TG'S FOR DYNAMIC PATH *
TRACE=NO,            D ADDRESS TRACE OPTION INCLUDED *
TRANSFR=48,          NBR PIU'S NCP -> HOST *
TYPGEN=NCP,          NCP *
TYP SYS=MVS,         HOST OPERATING SYSTEM *
USGTIER=1,           D USAGE TIER *
VERSION=V5R4,        NCP VERSION FOR THIS COMC *
VRPOOL=(20,10),     # OF VIRTUAL ROUTE ENTRIES *
X25.IDNUMH=7,        1ST 2 BYTES OF IDNUM *
X25.MAXPIU=32640,   MAX PIU SIZE DEFAULT *
X25.MCHCNT=2,        NUM OF PHYSICAL CHANNELS *
X25.MWINDOW=7,      FRAME WINDOW SIZE DEFAULT *
X25.PREFIX=X,        D 1ST LETTER IN DEFAULT RES NAMING *
X25.SNAP=NO          SNAP FACILITY

```

*

...

5.2.1.1 SDLC Link to AS/400

```

*
*****
*
*   GROUP DEFINITIONS FOR NONDIALED BNN LINE   AS/400 NRF-TEST *
*
*****
PC7GRPN  GROUP DIAL=NO,          SWITCHED LINE CONTROL SUPPORT *
          OWNER=CHIBM60A,        VTAM CONTROLLING RESOURCE *
          LNCTL=SDLC,             TYPE OF LINE CONTROL *
          REPLYTO=1.0,           RECOVERY AFTER POLL RESP NOT REC*
          RNRLIMT=3,            MIN AFTER RNR BFORE STATION INOP*
          TYPE=NCP               LINE OPERATION MODE
*
*****
*
*   LINE, PU, LU DEFINITIONS FOR BNN LINKS   AS/400 NRF-TESTS *
*
*****
PC7L7    LINE ADDRESS=(7,HALF),   REL. LINE ADDR, COMM OP MODE *
          CLOCKNG=EXT,           INTERNAL/EXTERNAL CLOCKING *

```

```

          DUPLEX=FULL,          RTS UP: FULL SEND/REC, HALF SEND*
          ETRATIO=30,          ERROR TO XMIT RATIO (PER MILLE) *
          LPDATS=LPDA1,       MODEM SUPPORTS LPDA *
          LTRUNC=NO,          LINE TRACE DATA COPY TRUNCATION *
          MAXPU=1,            MAX NUM OF PU ON LINK *
          NRZI=YES,           NO-RETURN-TO-ZERO-INVERTED MODE *
          PAUSE=0.3,          AV. DURATION OF POLLING CYCLE *
          RETRIES=(7,3,5),    RECOVERY: RETRIES,PAUSE,SEQ. *
          SERVLIM=10,         NUM OF REG SCANS BEFORE SOT SCAN*
          SPEED=9600,         LINE SPEED IN BPS *
          ISTATUS=ACTIVE
*          STATOPT=' LINE AS400 NRF'
**
          SERVICE ORDER=(PC7CI1)
*
PC7CI1  PU ADDR=C1,          POLLING ADDRESS *
          ANS=CONTINUE,      AUTO NETWORK SHUTDOWN *
          IRETRY=NO,         IMMED. RETRY A POLLING TO ON PU *
          LPDA=ALLOW,       BLOCK/ALLOW LPDA TESTS *
          MAXDATA=265,       MAX AMOUNT OF DATA TO PU (BYTES)*
          MAXOUT=7,          FRAMES SENT TO NCP BEF REQ RESP *
          PASSLIM=7,         NUM OF CONSEC PIU'S TO PU *
          PUTYPE=2,          PUTYPE OF SDLC DEVICE ON LINE *
          DISCNT=NO,         VTAM DISC SSCP-LU/PU SESS *
          ISTATUS=ACTIVE,    VTAM INITIAL STATUS *
          SSCPFM=USSSCS,     VTAM USS FORMAT *
          MODETAB=PCADNRF,   VTAM DEFAULT LOGMODE TABLE *
          PACING=0,          VTAM PACING COUNT NCP-PU *
          VPACING=0          VTAM PACING COUNT VTAM-NCP *
*          STATOPT=' PU AS400 NRF'
*
PC7SI101 LU LOCADDR=01,     LOCAL DEVICE ADDRESS LU2 NRF *
          DLOGMOD=SD82HD,    VTAM DEFAULT LOGMODE *
          LOGAPPL=PC7NRA01,  VTAM DEFAULT APPLICATION *
          ISTATUS=ACTIVE     VTAM INITIAL STATUS
*          STATOPT=' LU AS400 NRF-BS'
*
PC7SI102 LU LOCADDR=02,     LOCAL DEVICE ADDRESS LU2 NRF *
          DLOGMOD=SD82HD,    VTAM DEFAULT LOGMODE *
          LOGAPPL=PC7NRA02,  VTAM DEFAULT APPLICATION *
          ISTATUS=ACTIVE     VTAM INITIAL STATUS
*          STATOPT=' LU AS400 NRF-BS'
*
PC7SI103 LU LOCADDR=03,     LOCAL DEVICE ADDRESS LU2 NRF *
          DLOGMOD=SD82HD,    VTAM DEFAULT LOGMODE *
          LOGAPPL=PC7NRA03,  VTAM DEFAULT APPLICATION *
          ISTATUS=ACTIVE     VTAM INITIAL STATUS
*          STATOPT=' LU AS400 NRF-BS'
*
PC7PI104 LU LOCADDR=04,     LOCAL DEVICE ADDRESS LU1 SCS *
          DLOGMOD=SCSPTRR,   VTAM DEFAULT LOGMODE *
          LOGAPPL=PC7NRA04,  VTAM DEFAULT APPLICATION *
          ISTATUS=ACTIVE     VTAM INITIAL STATUS
*          STATOPT=' NRF-PRT AS400 SCS'
*
PC7SI105 LU LOCADDR=05,     LOCAL DEVICE ADDRESS LU2 *
          DLOGMOD=DYNAMIC,   VTAM DEFAULT LOGMODE *
          LOGAPPL=PCAZNVAS,  VTAM DEFAULT APPLICATION *

```

```

                ISTATUS=ACTIVE          VTAM INITIAL STATUS
*                STATOPT=' LU AS400 BS'
*
PC7SI106 LU LOCADDR=06,                LOCAL DEVICE ADDRESS   LU2 NRF *
                DLOGMOD=SD82HD,        VTAM DEFAULT LOGMODE   *
                LOGAPPL=PC7NRA05,      VTAM DEFAULT APPLICATION *
                ISTATUS=ACTIVE          VTAM INITIAL STATUS
*                STATOPT=' LU AS400 NRF-BS'
*
PC7SI107 LU LOCADDR=07,                LOCAL DEVICE ADDRESS   LU2 NRF *
                DLOGMOD=SD82HD,        VTAM DEFAULT LOGMODE   *
                LOGAPPL=PC7NRA05,      VTAM DEFAULT APPLICATION *
                ISTATUS=ACTIVE          VTAM INITIAL STATUS
*                STATOPT=' LU AS400 NRF-BS'
*
PC7SI108 LU LOCADDR=08,                LOCAL DEVICE ADDRESS   LU2 NRF *
                DLOGMOD=SD82HD,        VTAM DEFAULT LOGMODE   *
                LOGAPPL=PC7NRA05,      VTAM DEFAULT APPLICATION *
                ISTATUS=ACTIVE          VTAM INITIAL STATUS
*                STATOPT=' LU AS400 NRF-BS'
*
PC7SI109 LU LOCADDR=09,                LOCAL DEVICE ADDRESS   LU2 NRF *
                DLOGMOD=SD82HD,        VTAM DEFAULT LOGMODE   *
                LOGAPPL=PC7NRA05,      VTAM DEFAULT APPLICATION *
                ISTATUS=ACTIVE          VTAM INITIAL STATUS
*                STATOPT=' LU AS400 NRF-BS'
*
...

```

5.2.1.2 NRF Definitions

```

*
*
*****
*   NRF (NETWORK ROUTING FACILITY) VIRTUAL DEFINITIONS   IN/SIMH   *
*****
*
*   GROUP DEFINITIONS FOR NRF                                     *
*
*****
PC7GNRF GROUP DIAL=NO,                LINE CONTROL TYPE IN THIS GRP *
                LNCTL=SDLC,            *
                ISTATUS=ACTIVE,        *
                OWNER=CHIBM60A,        VTAM CONTROLLING RESOURCE   *
                PACING=0,              NO PACING ON REX STAGE     *
                VIROWNER=CXRNRF,      *
                VIRTUAL=YES,          *
                VPACING=0              NO PACING ON VR STAGE
*
*=====
*   LINE DEFINITION FOR NRF                                     *
*=====
PC7LNRF LINE LINECB=CXRXLNK,          *
                LINEFVT=CXRXFVT,      *
                LUFVT=(CXRXFVT,CXRXFVT), *
                PUFVT=CXRXFVT
*
*-----
*   PU, LU STAEMENTS FOR NRF SESSION PARTNER ROUTING

```

```

*-----
* AS/400 PARTNER LU' S
*-----
PC7NRA  PU    PUTYPE=2
*
PC7NRA01 LU   NRF.SESSPART=PC7NRB01,LOCADDR=01
PC7NRA02 LU   NRF.SESSPART=PC7NRB02,LOCADDR=02
PC7NRA03 LU   NRF.SESSPART=PC7NRB03,LOCADDR=03
PC7NRA04 LU   NRF.SESSPART=PC7NRB04,LOCADDR=04,VPACING=1
PC7NRA05 LU   NRF.SESSPART=PC7NRB05,LOCADDR=05,NUMSESS=10
*-----
* 3270 PARTNER LU' S
*-----
PC7NRB  PU    PUTYPE=2
*
PC7NRB01 LU   NRF.SESSPART=PC7NRA01,LOCADDR=01
PC7NRB02 LU   NRF.SESSPART=PC7NRA02,LOCADDR=02
PC7NRB03 LU   NRF.SESSPART=PC7NRA03,LOCADDR=03,VPACING=2
PC7NRB04 LU   NRF.SESSPART=PC7NRA04,LOCADDR=04,VPACING=1,
*
NRF.AUTOINIT=(PCAPNRF4,SCSPTR)
PC7NRB05 LU   NRF.SESSPART=PC7NRA05,LOCADDR=05,NUMSESS=10
*
...

*****
GENEND
END

```

5.2.1.3 IBM 3174 Switched Major Node

```

*-----
*          VTAM SWITCHED MAJOR NODE  J. INAUEN/ ST. IMHOF
*
*          NRF TESTS      08.01.92
*-----
*
PCAJNRF  VBUILD TYPE=SWNET
*
*-----
* CONFIGURATION : 3174 --> SWITCHED --> 3720 --> MVS1
*
*          SWITCHED CAN BE: TOKENRING, SWITCHED LINE OR X.25
*
* LAST CHANGE   : CREATION                      DATE: 08.01.92
* LAST CHANGE   : CHANGE NAMING CONVENTION LOGAPPL  DATE: 13.01.92
*
* DESCRIPTION    : THE 3174 IS A 51R MODEL BUT CONFIGURED AS A 53R
*                  (ALTERNATE CONFIGURATION)
*-----
*
PCAKNRF  PU    ADDR=C1,          IGNORED FOR TOKENRING      *
          IDBLK=017,          IDENTIFICATION BLOCK          *
          IDNUM=41114,        IDENTIFICATION NUMBER            *
          PUTYPE=2,          PU TYPE 2.0                        *
          MAXDATA=265,        MAXIMUM PIU (RU+RH+TH) SIZE      *
          MAXOUT=7,          NUMBER OF PIU BEFORE ACKNOWLEDGE *
          PASSLIM=7,         NUMBER OF PIU SEND AT ONCE FROM NCP *
          MODETAB=PCADNRF,   LOGON MODE TABLE NAME           *
          SSCPFM=USSSCS,     LU SUPPORTS CHARACTER CODED RU    *
          USSTAB=PCAUSSTB,   USS DEFINITION TABLE NAME       *

```

```

          PACING=0,
          VPACING=0,
          ISTATUS=ACTIVE
*          STATOPT='3174'
*          NGFTXT='3174'
*
PCASNRF1 LU  LOCADDR=02,          LU LOCAL ADDRESS (TERMINAL)
              LOGAPPL=PC7NRB01,
              DLOGMOD=SD82        MODEENT IN MODETAB
*
PCAPNRF4 LU  LOCADDR=03,          LU LOCAL ADDRESS (PRINTER)   LU1
              DLOGMOD=SCSPTR,     LOCAL PRINTER ON TERMINAL PORT 2
              USSTAB=ISTINCDT

```

5.2.1.4 VTAM Logon Mode Table

```

*****
*
*   CREATED BY   :   JOSEF INAUEN      18/12/91
*   USED BY     :   AS/400 NRF SESSION PARTNER ROUTING
*   OWNER       :   STEPHAN IMHOF
*
*   LAST CHANGE :
*
*****
PCADNRF  MODETAB
*****
*   LOGMODE PAIR FOR 24X80 TERMINAL --PACING=0, 256 BYTE RU
*****
SD82     MODEENT LOGMODE=SD82,          3270 LOGMODE
          FMPROF=X'03', TSPROF=X'03',          1,2
          PRIPROT=X' B1', SECPROT=X'90', COMPROT=X'3080', 3,4,5,6*
          RUSIZES=X'8585',          9,10
          PSERVIC=X'020000000000185018507F00'          13-24
*           01 03 05 07 09 11          BIND-BYTE NBR
*
SD82HD   MODEENT LOGMODE=SD82HD,          AS/400 LOGMODE
          FMPROF=X'03', TSPROF=X'03',          1,2
          PRIPROT=X' B1', SECPROT=X'90', COMPROT=X'3081', 3,4,5,6*
          RUSIZES=X'8585',          9,10
          SSNDPAC=X'00', SRCVPAC=X'00', PSNDPAC=X'00',
          PSERVIC=X'020000000000185018507F00'          13-24
*           01 03 05 07 09 11          BIND-BYTE NBR
*
*****
*   LOGMODE PAIR FOR 328X PRINTER - PACING=1, 256 BYTE RU
*****
SCSPTR   MODEENT LOGMODE=SCSPTR,          3270 LOGMODE
          FMPROF=X'03', TSPROF=X'03',          1,2
          PRIPROT=X' B1', SECPROT=X'90', COMPROT=X'3080', 3,4,5,6*
          RUSIZES=X'8585',          9,10
          SSNDPAC=X'01', SRCVPAC=X'01', PSNDPAC=X'01',
          PSERVIC=X'01000000E100000000000000'          13-24
*           01 03 05 07 09 11          BIND-BYTE NBR
*
SCSPTRR  MODEENT LOGMODE=SCSPTRR,          AS/400 LOGMODE
          FMPROF=X'03', TSPROF=X'03',          1,2
          PRIPROT=X' B1', SECPROT=X'90', COMPROT=X'3081', 3,4,5,6*
          RUSIZES=X'8585',          9,10
          SSNDPAC=X'01', SRCVPAC=X'01', PSNDPAC=X'01',

```

```

                PSERVIC=X'01000000E100000000000000'          13-24
*                01 03 05 07 09 11          BIND-BYTE NBR
*
*****
DYNAMIC  MODEENT LOGMODE=DYNAMIC,FMPROF=X'03',TSPROF=X'03',      1,2 *
                PRIPROT=X' B1',SECPROT=X'90',COMPROT=X'3080',    3,4,5,6*
                RUSIZES=X'87C7',                                9,10 *
                PSNDPAC=X'03',SRCVPAC=X'03',SSNDPAC=X'00',      11,8,7 *
                PSERVIC=X'0280000000000000000000300'          13-24
*                01 03 05 07 09 11          BIND-BYTE NBR
*
*****
*          3X74 LOCAL SNA WITH 3279 MODEL 2 SCREEN (3179)      *
*          PRIMARY SCREEN 24 X 80 (1920)                       *
*          ALTERNATE SCREEN N/A                                *
*****
LS32792  MODEENT LOGMODE=LS32792,
                FMPROF=X'03',TSPROF=X'03',                        1,2 *
                PRIPROT=X' B1',SECPROT=X'90',COMPROT=X'3080',    3,4,5,6*
                RUSIZES=X'87C7',                                9,10 *
                PSNDPAC=X'00',SRCVPAC=X'00',SSNDPAC=X'00',      11,8,7 *
                PSERVIC=X'028000000000185000007E00'          13-24
*                01 03 05 07 09 11          BIND-BYTE NBR
*
*****
*          3X74 LOCAL SNA WITH 3279 MODEL 3 SCREEN (3179-G)  *
*          PRIMARY SCREEN 24 X 80 (1920)                       *
*          ALTERNATE SCREEN 32 X 80 (2560)                     *
*****
LS32793  MODEENT LOGMODE=LS32793,FMPROF=X'03',TSPROF=X'03',      1,2 *
                PRIPROT=X' B1',SECPROT=X'90',COMPROT=X'3080',    3,4,5,6*
                RUSIZES=X'87C7',                                9,10 *
                PSNDPAC=X'03',SRCVPAC=X'03',SSNDPAC=X'00',      11,8,7 *
                PSERVIC=X'028000000000185020507F00'          13-24
*                01 03 05 07 09 11          BIND-BYTE NBR
*
MODEEND
END

```

5.2.2 AS/400 Definitions

```

PGM

VRYCFG      CFGOBJ(NRFLINE) CFGTYPE(*LIN) STATUS(*OFF)

DLTLIND     LIND(NRFLINE)
MONMSG      MSGID(CPF0000)
DLTCTLD     CTLD(NRFCTL)
MONMSG      MSGID(CPF0000)
DLTDEVD     DEVD(NRFDEVO*)
MONMSG      MSGID(CPF0000)

CRTLINS DLC LIND(NRFLINE) RSRNAME(LIN082) ROLE(*SEC) +
            TEXT(' PC7L7 Leased, PP, to TS4381 for NRF +
            only')

CRTCTLHOST CTLD(NRFCTL) LINKTYPE(*SDLC) APPN(*NO) +
            LINE(NRFLINE) STNADR(C1) TEXT(' PU PC7C11 +
            of TS4381')

```

```

/* NRF DEVICES */
CRTDEV DSP  DEVD(NRFDEV01) DEVCLS(*RMT) TYPE(3279) +
MODEL(0) LOCADR(01) CTL(NRFCTL) +
APPTYPE(*NRF) TEXT('NRF PC7SI101')
CRTDEV DSP  DEVD(NRFDEV02) DEVCLS(*RMT) TYPE(3279) +
MODEL(0) LOCADR(02) CTL(NRFCTL) +
APPTYPE(*NRF) TEXT('NRF PC7SI102')
CRTDEV DSP  DEVD(NRFDEV03) DEVCLS(*RMT) TYPE(3279) +
MODEL(0) LOCADR(03) CTL(NRFCTL) +
APPTYPE(*NRF) TEXT('NRF PC7SI103')
CRTDEV PRT  DEVD(NRFDEV04) DEVCLS(*RMT) TYPE(3287) +
MODEL(0) LOCADR(04) CTL(NRFCTL) +
APPTYPE(*NRF) LOGON('LOGON +
APPLID(PC7NRA04) LOGMODE(SCSPTRR)') +
TEXT('NRF PC7PI104')

/* 3270 DEVICE EMULATION */
CRTDEV HOST  DEVD(NRFDEV05) LOCADR(05) RMTLOCNAME(NRFMVS) +
CTL(NRFCTL) APPTYPE(*EML) TEXT('PC7SI105, +
3270DE via NRF Link')

/* NRF DEVICES USED WITH MULTI-SESSION SUPPORT */
CRTDEV DSP  DEVD(NRFDEV06) DEVCLS(*RMT) TYPE(3279) +
MODEL(0) LOCADR(06) CTL(NRFCTL) +
APPTYPE(*NRF) TEXT('NRF PC7SI106')
CRTDEV DSP  DEVD(NRFDEV07) DEVCLS(*RMT) TYPE(3279) +
MODEL(0) LOCADR(07) CTL(NRFCTL) +
APPTYPE(*NRF) TEXT('NRF PC7SI107')
CRTDEV DSP  DEVD(NRFDEV08) DEVCLS(*RMT) TYPE(3279) +
MODEL(0) LOCADR(08) CTL(NRFCTL) +
APPTYPE(*NRF) TEXT('NRF PC7SI108')
CRTDEV DSP  DEVD(NRFDEV09) DEVCLS(*RMT) TYPE(3279) +
MODEL(0) LOCADR(09) CTL(NRFCTL) +
APPTYPE(*NRF) TEXT('NRF PC7SI109')

VRYCFG      CFGOBJ(NRFLINE) CFGTYPE(*LIN) STATUS(*ON)

ENDPGM

```

5.3 Parameter Overview and Relation

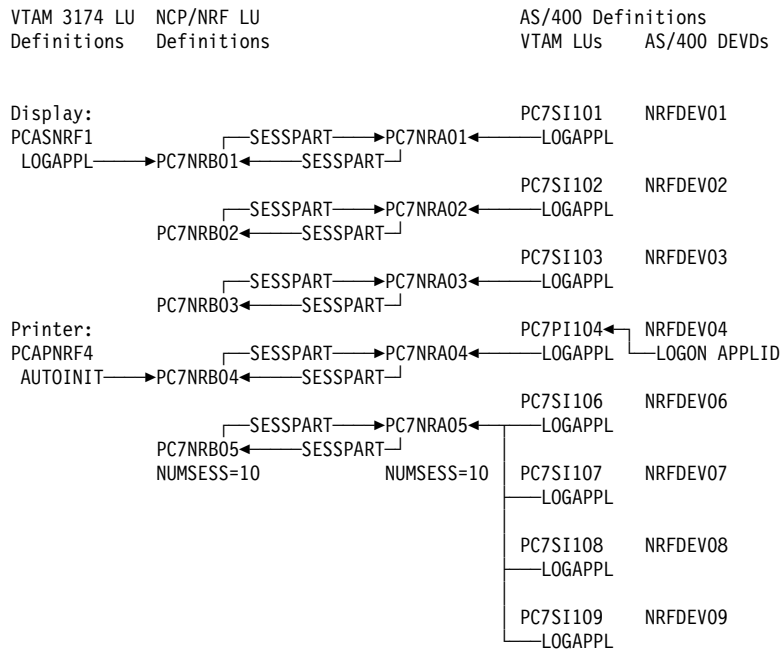


Figure 45. IBM 3174, NCP/NRF, AS/400 Parameter Overview and Relation

5.4 Status

5.4.1 After Activation

All components are powered on and all communication resources are activated:

- In VTAM/NCP: 3174 PU/LUs, NRF Line/PU/LUs, AS/400 Line/PU/LUs
- With IBM 3174: IMPL is done, display and printer are powered on
- In AS/400: Line, controller and device descriptions are varied on

Since the VTAM LU of the first and only 3174 display has a LOGAPPL parameter, this display immediately displays the AS/400 signon screen.


```

NCCF          N E T V I E W          PCAZN SIMH          05/04/92 13:41:21
C PCAZN      DISPLAY NET,ID=PCAKNRF,SCOPE=ALL
  PCAZN      IST097I DISPLAY ACCEPTED
' PCAZN
IST075I NAME = PCAKNRF          , TYPE = PU_T2
IST486I STATUS= ACTIV          , DESIRED STATE= ACTIV
IST136I SWITCHED SNA MAJOR NODE = PCAJNRF
IST081I LINE NAME = J000901F, LINE GROUP = PC9GLT1 , MAJNOD = PC9V54
IST654I I/O TRACE = OFF, BUFFER TRACE = OFF
IST355I LOGICAL UNITS:
IST080I PCASNRF1 ACT/S          PCAPNRF4 ACTIV
IST314I END

```

Figure 46. NetView/370 Status for IBM 3174

```

NCCF          N E T V I E W          PCAZN SIMH          05/04/92 13:40:30
C PCAZN      DISPLAY NET,ID=PC7LNRF,SCOPE=ALL
  PCAZN      IST097I DISPLAY ACCEPTED
' PCAZN
IST075I NAME = PC7LNRF          , TYPE = LINE
IST486I STATUS= ACTIV----T, DESIRED STATE= ACTIV
IST087I TYPE = LEASED          , CONTROL = SDLC
IST134I GROUP = PC7GNRF , MAJOR NODE = PC7V54
IST084I NETWORK NODES:
IST089I PC7NRA TYPE = PHYSICAL UNIT , ACTIV----T
IST089I PC7NRA01 TYPE = LOGICAL UNIT , ACT/S----T
IST089I PC7NRA02 TYPE = LOGICAL UNIT , ACT/S----T
IST089I PC7NRA03 TYPE = LOGICAL UNIT , ACT/S----T
IST089I PC7NRA04 TYPE = LOGICAL UNIT , ACTIV----T
IST089I PC7NRA05 TYPE = LOGICAL UNIT , ACT/S----T
IST089I PC7NRB TYPE = PHYSICAL UNIT , ACTIV----T
IST089I PC7NRB01 TYPE = LOGICAL UNIT , ACT/S----T
IST089I PC7NRB02 TYPE = LOGICAL UNIT , ACTIV----T
IST089I PC7NRB03 TYPE = LOGICAL UNIT , ACTIV----T
IST089I PC7NRB04 TYPE = LOGICAL UNIT , ACTIV----T
IST089I PC7NRB05 TYPE = LOGICAL UNIT , ACTIV----T
IST314I END

```

Figure 47. NetView/370 Status for the NRF Environment within NCP

```

NCCF          N E T V I E W          PCAZN SIMH          05/04/92 13:41:55
C PCAZN      DISPLAY NET,ID=PC7L7,SCOPE=ALL
  PCAZN      IST097I DISPLAY ACCEPTED
' PCAZN
IST075I NAME = PC7L7          , TYPE = LINE
IST486I STATUS= ACTIV      , DESIRED STATE= ACTIV
IST087I TYPE = LEASED      , CONTROL = SDLC
IST134I GROUP = PC7GRPN , MAJOR NODE = PC7V54
IST084I NETWORK NODES:
IST089I PC7CI1  TYPE = PHYSICAL UNIT , ACTIV
IST089I PC7SI101 TYPE = LOGICAL UNIT , ACT/S
IST089I PC7SI102 TYPE = LOGICAL UNIT , ACT/S
IST089I PC7SI103 TYPE = LOGICAL UNIT , ACT/S
IST089I PC7PI104 TYPE = LOGICAL UNIT , ACTIV
IST089I PC7SI105 TYPE = LOGICAL UNIT , ACTIV
IST089I PC7SI106 TYPE = LOGICAL UNIT , ACT/S
IST089I PC7SI107 TYPE = LOGICAL UNIT , ACTIV
IST089I PC7SI108 TYPE = LOGICAL UNIT , ACTIV
IST089I PC7SI109 TYPE = LOGICAL UNIT , ACTIV
IST314I END

```

Figure 48. NetView/370 Status for AS/400 NRF Environment

Using the CL command WRCFGSTS *LIN NRFLINE, you get this status on AS/400:

```

                                Work with Configuration Status          AS400BU1
                                04.05.92 13:38:28
Position to . . . . .          Starting characters

Type options, press Enter.
  1=Vary on  2=Vary off  5=Work with job  8=Work with description
  9=Display mode status ...

Opt  Description      Status      -----Job-----
      NRFLINE         ACTIVE
      NRFCTL         ACTIVE
      NRFDEV01       SIGNON DISPLAY
      NRFDEV02       VARY ON PENDING
      NRFDEV03       VARY ON PENDING
      NRFDEV04       VARIED ON
      NRFDEV05       VARIED ON
      NRFDEV06       VARY ON PENDING
      NRFDEV07       VARY ON PENDING
      NRFDEV08       VARY ON PENDING
      NRFDEV09       VARY ON PENDING

Parameters or command
===>
F3=Exit  F4=Prompt  F12=Cancel  F23=More options  F24=More keys

                                Bottom

```

Figure 49. Status on AS/400 using the CL command WRCFGSTS *LIN NRFLINE

The next steps performed by the user are:

- Sign on to AS/400 at the first IBM 3174 screen
- Log on from any other 3270 screen to NRF and AS/400 using the following command:

```
LOGON APPLID(PC7NRB05)
```

Usage of Logmode Table Entry SD82 is required if you do not establish a session with the usual logmode table entry.

- Start a spool writer for the printer attached to the IBM 3174, using the following CL command:

```
STRPRTWTR DEV(NRFDEV04)
```

The following screens show the changed status of the NRF LUs and the AS/400 configuration objects:

```
NCCF          N E T V I E W          PCAZN SIMH          05/04/92 13:59:20
C PCAZN      DISPLAY NET,ID=PC7LNRF,SCOPE=ALL
  PCAZN      IST097I DISPLAY ACCEPTED
' PCAZN
IST075I NAME = PC7LNRF          , TYPE = LINE
IST486I STATUS= ACTIV----T, DESIRED STATE= ACTIV
IST087I TYPE = LEASED          , CONTROL = SDLC
IST134I GROUP = PC7GNRF , MAJOR NODE = PC7V54
IST084I NETWORK NODES:
IST089I PC7NRA  TYPE = PHYSICAL UNIT , ACTIV----T
IST089I PC7NRA01 TYPE = LOGICAL UNIT , ACT/S----T
IST089I PC7NRA02 TYPE = LOGICAL UNIT , ACT/S----T
IST089I PC7NRA03 TYPE = LOGICAL UNIT , ACT/S----T
IST089I PC7NRA04 TYPE = LOGICAL UNIT , ACT/S----T
IST089I PC7NRA05 TYPE = LOGICAL UNIT , ACT/S----T
IST089I PC7NRB  TYPE = PHYSICAL UNIT , ACTIV----T
IST089I PC7NRB01 TYPE = LOGICAL UNIT , ACT/S----T
IST089I PC7NRB02 TYPE = LOGICAL UNIT , ACTIV----T
IST089I PC7NRB03 TYPE = LOGICAL UNIT , ACTIV----T
IST089I PC7NRB04 TYPE = LOGICAL UNIT , ACT/S----T
IST089I PC7NRB05 TYPE = LOGICAL UNIT , ACT/S----T
IST314I END
```

Figure 50. Changed Status of NRF LUs AS/400 configuration objects

```

Work with Configuration Status                                AS400BU1
                                                           04.05.92 14:01:40
Position to . . . . . Starting characters

Type options, press Enter.
 1=Vary on   2=Vary off  5=Work with job  8=Work with description
 9=Display mode status ...

Opt  Description      Status      -----Job-----
NRFLINE      ACTIVE
NRFCTL      ACTIVE
NRFDEV01     ACTIVE      NRFDEV01  SIMH      604707
NRFDEV02     VARY ON PENDING
NRFDEV03     VARY ON PENDING
NRFDEV04     ACTIVE/TARGET     NRFDEV04  QSPLJOB   604751
NRFDEV05     VARIED ON
NRFDEV06     VARY ON PENDING
NRFDEV07     VARY ON PENDING
NRFDEV08     VARY ON PENDING
NRFDEV09     VARY ON PENDING

Parameters or command
===>
F3=Exit  F4=Prompt  F12=Cancel  F23=More options  F24=More keys
Bottom

```

Figure 51. Changed Status of NRF LUs AS/400 configuration objects

5.5 AS/400 NRF Device Release Program

After signing off from AS/400 the NRF user remains on the AS/400 signon screen. In order to release the NRF session the user may use the following AS/400 CL program by entering CL command ENDNRF.

Note: OS/400 V2R3 offers a new parameter with the CL command SIGNOFF ENDCNN(*YES) that does the same thing as our sample program.

CMD source of command ENDNRF:

```
CMD          PROMPT(' End AS/400 NRF Session')
```

CLP source of CL program ENDNRF:

```

BEGPGM:      PGM

DCL          VAR(&JOB) TYPE(*CHAR) LEN(10)
MONMSG      MSGID(CPF0000) EXEC(GOTO CMDLBL(ENDPGM))

RTVJOBA     JOB(&JOB)
SBMJOB      CMD(CALL PGM(CMNLIB/VOFFON) PARM(&JOB)) +
              JOB(CYCLDEV) JOBD(*LIBL/QBATC) +
              JOBQ(*LIBL/QBATC) OUTQ(*USRPRF)

SIGNOFF

ENDPGM:      ENDPGM

```

CLP source of CL program VOFFON:

```

/*****/
/*  VOFFON - Varies the device, whose name is received as a      */
/*              parameter, off and then on. The intent of this   */
/*              program is to allow the SNA Session to be        */
/*              terminated thus allowing VTAM to re-allocate     */
/*              the device.                                       */
/*              */
/*  INPUT - 1 Parameter                                          */
/*              A. DEV      - Device Name                        */
/*              */
/*  OUTPUT - The named device is varied off and then back on.   */
/*              */
/*  CHANGE HISTORY:                                             */
/*  DATE      BY              REASON                            */
/*  -----*-----*-----*-----*-----*-----*-----*-----*-----*-----*/
/*  2/06/92              Sent to ITSC - sample program          */
/*****/
BEGPGM:      PGM          PARM(&DEV)
             DCL          VAR(&DEV) TYPE(*CHAR) LEN(10)
             DCL          VAR(&STATUS) TYPE(*DEC) LEN(5 0)
             DCL          VAR(&COUNTER) TYPE(*DEC) LEN(3 0) VALUE(0)
             MONMSG       MSGID(CPF0000) EXEC(GOTO CMDLBL(ENDPGM))

/*-----*-----*/
/*  BEGIN EXECUTABLE CODE                                       */
/*  Delay starting any processing to allow the interactive jobs  */
/*  an opportunity to terminate.                                  */
/*-----*-----*/
             DLYJOB      DLY(10) /* Delay this job 10 seconds */
/*-----*-----*/
/*  Retrieve the status of the device . Valid STATUS values are: */
/*  0 - Varied Off          70 - Held                               */
/*  10 - Vary Off Pending   80 - RCYPND                           */
/*  20 - Varied On Pending  90 - RCYCNL                           */
/*  30 - Varied On          100 - Failed                           */
/*  40 - Connect Pending    110 - Diagnostic Mode                 */
/*  50 - Signon Display     111 - Damaged                          */
/*  60 - Active              112 - Locked                           */
/*              113 - Unknown                                     */
/*-----*-----*/
DEACT:      RTVCFGSTS   CFGD(&DEV) CFGTYPE(*DEV) STSCDE(&STATUS)
/*-----*-----*/
/*  Check if the device STATUS is Varied Off or Vary Off Pending. */
/*  If so, jump to label REACT.                                     */
/*-----*-----*/
             IF          COND(&STATUS *LE 10) THEN(GOTO CMDLBL(REACT))
/*-----*-----*/
/*  The device is in Vary On Pending STATUS or above. Attempt to  */
/*  Vary Off the device. Variable JOB contains the device name.   */
/*-----*-----*/
             VRYCFG     CFGOBJ(&DEV) CFGTYPE(*DEV) STATUS(*OFF) +
                    RANGE(*OBJ)
/*-----*-----*/
/*  Update the Retry Counter, COUNTER, and determine if the      */
/*  retry limit has been exceeded.                                 */
/*-----*-----*/
             CHGVAR     VAR(&COUNTER) VALUE(+1)
             IF          COND(&COUNTER *GE 10) THEN(GOTO CMDLBL(ENDPGM))
/*-----*-----*/
/*  Delay processing for 2 seconds to allow the Vary Off to      */

```

```

/* complete. Re-check the status by going to label DEACT */
/*-----*/
          DLYJOB      DLY(2)
          GOTO        CMDLBL(DEACT)
/*-----*/
/* When processing reaches here, the device should be either */
/* Varied Off or Vary Off Pending STATUS. If the device is   */
/* in Vary Off Pending Status, wait for the device to complete */
/* the Vary Off processing.                                   */
/*-----*/
REACT:    CHGVAR      VAR(&COUNTER) VALUE(0)
REACT1:   IF          COND(&STATUS *EQ 0) THEN(GOTO CMDLBL(REACT2))
          CHGVAR      VAR(&COUNTER) VALUE(+1)
          IF          COND(&COUNTER *GE 10) THEN(GOTO CMDLBL(ENDPGM))
          DLYJOB      DLY(2)
          RTVCFGSTS   CFGD(&DEV) CFGTYPE(*DEV) STSCDE(&STATUS)
          GOTO        CMDLBL(REACT1)
/*-----*/
/* When processing reaches here, the device should be Varied */
/* Off. Issue a Vary On request for the device to allow the  */
/* next connection to occur.                                   */
/*-----*/
REACT2:   VRYCFG      CFGOBJ(&DEV) CFGTYPE(*DEV) STATUS(*ON)
ENDPGM:   ENDPGM

```

Chapter 6. NetView File Transfer Program for OS/400

The AS/400 NetView File Transfer Program (NFTP) allows file transfer with the MVS version of NetView FTP as well as with another AS/400. NFTP uses an LU 6.2 session.

File transfer requests are prepared and queued. File transfer is asynchronous. The two basic transfer types are SEND and RETRIEVE. AS/400 and MVS NetView FTP users have the same level of support; both are able to request a file transfer. Functions like compression and restart checkpoints provide a high-performance file transfer.

In this chapter, we document all required definitions and a few basic file transfer requests.

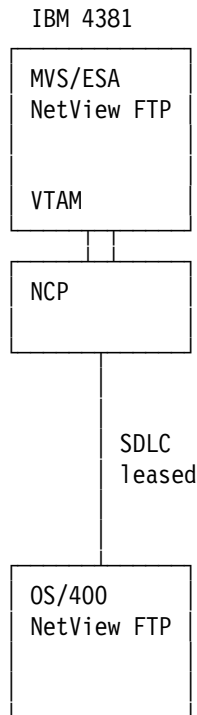


Figure 52. Overview of MVS and OS/400 NetView FTP Environment

NetView FTP MVS and OS/400 support dependent and independent LU 6.2 session types. We used independent ones.

6.1 Software Used

- MVS/ESA 4.2.2
- ISPF 3.3
- MVS NetView FTP V2
- VTAM V3R4.1
- NCP V5R4
- OS/400 V2R1.1
- NetView FTP for OS/400 V1R1

6.2 Network Definitions

6.2.1 VTAM/NCP, Link to AS/400

```
*
*          ...
*****
*
*          GROUP DEFINITIONS FOR NONDIALED BNN LINES PART 2
*          AS/400 AND POS
*
*****
PC8GRP12 GROUP DIAL=NO,                SWITCHED LINE CONTROL SUPPORT *
                LNCTL=SDLC,            TYPE OF LINE CONTROL        *
                REPLYTO=1.5,          RECOVERY AFTER POLL RESP NOT REC*
                RNRLIMIT=3,          MIN AFTER RNR BFORE STATION INOP*
                TYPE=NCP              LINE OPERATION MODE        *
*
PC8L12  LINE  ADDRESS=(12,HALF),      REL. LINE ADDR, COMM OP MODE  *
                CLOCKNG=EXT,          INTERNAL/EXTERNAL CLOCKING    *
                DUPLEX=FULL,          RTS UP: FULL SEND/REC, HALF SEND*
                ETRATIO=30,           ERROR TO XMIT RATIO (PER MILLE) *
                LPDATS=LPDA1,         MODEM SUPPORTS LPDA          *
                LTRUNC=NO,            LINE TRACE DATA COPY TRUNCATION *
                MAXPU=1,              MAX NUM OF PU ON LINK        *
                NRZI=YES,             NO-RETURN-TO-ZERO-INVERTED MODE *
                PAUSE=0.3,            AV. DURATION OF POLLING CYCLE  *
                RETRIES=(7,3,5),      RECOVERY: RETRIES,PAUSE,SEQ.  *
                SERVLIM=10,           NUM OF REG SCANS BEFORE SOT SCAN*
                SPEED=19200,          LINE SPEED IN BPS            *
                SPAN=(PC8V43,LN,LAD012),
                ISTATUS=ACTIVE        *
*          STATOPT=' LINE AS/400 NRZI'
**
                SERVICE ORDER=(PC8CM1)
*
PC8CM1  PU    ADDR=C1,                POLLING ADDRESS                *
                ANS=CONTINUE,         AUTO NETWORK SHUTDOWN         *
                IRETRY=NO,            IMMED. RETRY A POLLING TO ON PU *
                LPDA=ALLOW,          BLOCK/ALLOW LPDA TESTS        *
                MAXDATA=1929,        MAX AMOUNT OF DATA TO PU (BYTES)*
                MAXOUT=7,            FRAMES SENT TO NCP BEF REQ RESP *
                PASSLIM=7,           NUM OF CONSEC PIU'S TO PU      *
                PUTYPE=2,            PUTYPE OF SDLC DEVICE ON LINE  *
                DISCNT=NO,           VTAM DISC SSCP-LU/PU SESS     *
```



```

..
..
MODEEND
END

```

6.2.3 VTAM APPL for MVS NetView FTP

```

*****
*
*          MEMBER   PCAAFTP   VTAMLST
*
*  NETVIEW FTP APPLICATIONS MAJOR NODES IN HOST PCA
*
*                                     SALOGNI, 12.12.91
*****
PCAAFTP  VBUILD TYPE=APPL
PCAZFTP1 APPL  AUTH=(ACQ,PASS),VPACING=16,ACBNAME=PCAZFTP1,APPC=YES,  C
          DLOGMOD=FTPBIND,MODETAB=NETVFTP,PARSESS=YES,              C
          AUTOSSES=0,DSESLIM=32,SECACPT=CONV
PCAZFTP2 APPL  AUTH=(ACQ,PASS),VPACING=16,ACBNAME=PCAZFTP2,APPC=YES,  C
          DLOGMOD=FTPBIND,MODETAB=NETVFTP,PARSESS=YES,              C
          AUTOSSES=0,DSESLIM=32,SECACPT=CONV

```

6.2.4 AS/400 Network Attributes

```

                                     Display Network Attributes
                                     System:  AS400BU3
Current system name . . . . . : AS400BU3
Pending system name . . . . . :
Local network ID . . . . . : CHIBM600
Local control point name . . . . . : AS400BU3
Default local location . . . . . : AS400BU3
Default mode . . . . . : MODLU62
Maximum number of conversations for a remote
location . . . . . : 64
APPN node type . . . . . : *NETNODE
Maximum number of intermediate sessions . . . . . : 200
Route addition resistance . . . . . : 128

```

Figure 53. NetView File Transfer Program, AS/400 Network Attributes

6.2.5 AS/400 APPN Remote Location List

```

Define APPN Remote Locations

Type new/changed information, press Enter.
Remote   Remote   Local   Control   Control
Location Network  Location Point   Point   Location   Secure
Name     ID         Name    Name     Net ID   Password   Loc
PCAZFTP* CHIBM600  AS400BU3 CHIBM60A CHIBM600
          *NETATR  *NETATR          *NETATR          *NO
          *NETATR  *NETATR          *NETATR          *NO
          *NETATR  *NETATR          *NETATR          *NO
          *NETATR  *NETATR          *NETATR          *NO

F3=Exit   F11=Additional information   F12=Previous
F17=Top of list   F18=Bottom of list

```

Figure 54. NetView File Transfer Program, AS/400 APPN Remote Location List

6.2.6 AS/400 Mode Description FTPBIND

```

Display Mode Description

Mode description name . . . . . : MODD      FTPBIND
Class-of-service . . . . . : COS        #CONNECT
Maximum number of sessions . . . . . : MAXSSN    8
Maximum conversations . . . . . : MAXCNV     8
Locally controlled sessions . . . . . : LCLCTLSSN 4
Pre-established sessions . . . . . : PREESTSSN 0
Inbound pacing value . . . . . : INPACING   7
Outbound pacing value . . . . . : OUTPACING   7
Max length of request unit . . . . . : MAXLENRU  256
Text . . . . . : TEXT          NFTP with MVS

```

Figure 55. NetView File Transfer Program, AS/400 Mode Description FTPBIND

6.2.7 AS/400 Configuration Objects as Linked to TS 4381

Only the dependent LU's for 3270 Device Emulation are listed here.

```

CRTLINSDLC LIND(S4381LIN2) RSRNAME(LIN052) ONLINE(*NO) +
           ROLE(*SEC) LINESPEED(19200) MAXFRAME(2057) +
           MODEM(*IBMLPDA1) DUPLEX(*FULL) +
           TEXT('Leased, PP, to FSC 4381 for LEN +
           Support')

CRTCTLHOST CTLD(PC8CM1) LINKTYPE(*SDLC) ONLINE(*NO) +
           APPN(*YES) LINE(S4381LIN2) MAXFRAME(2057) +
           RMTNETID(CHIBM600) RMTCPNAME(CHIBM60A) +
           SSCPID(05000000A0BE) STNADR(C1) CPSSN(*NO) +
           NODETYPE(*LENNODE) TEXT('PU(PC8SM1) to +
           FSC4381')

CRTDEVHOST DEVD(PC8SM101) LOCADR(01) RMTLOCNAME(PCASSIMO)+
           ONLINE(*NO) CTL(PC8CM1) APPTYPE(*EML) +
           EMLKBD(*LOWER) TEXT('3278 to FSC MVS')

CRTDEVHOST DEVD(PC8SM102) LOCADR(02) RMTLOCNAME(FSCMVS) +

```

```

        ONLINE(*NO) CTL(PC8CM1) APPTYPE(*EML)      +
        EMLKBD(*LOWER) TEXT('3278 to FSC MVS')
CRTDEVHOST DEVD(PC8SM103) LOCADR(03) RMTLOCNAME(FSCMVS) +
        ONLINE(*YES) CTL(PC8CM1) APPTYPE(*EML)      +
        EMLKBD(*LOWER) TEXT('3278 to FSC MVS')

```

6.2.8 AS/400 ILU/APPC Device Descriptions

APPC device descriptions PCAZFTP1 and PCAZFTP2 are created automatically. Find here the device description of PCAZFTP1.

```

Device description . . . . . : DEVD          PCAZFTP1
Remote location name . . . . . : RMTLOCNAME  PCAZFTP1
Online at IPL . . . . . : ONLINE          *NO
APPN-capable . . . . . : APPN             *YES
Attached controller . . . . . : CTL         PC8CM1
Local location name . . . . . : LCLLOCNAME  AS400BU3
Remote network identifier . . . . . : RMTNETID *NETATR
Mode . . . . . : MODE
*NETATR
Message queue . . . . . : MSGQ           QSYSOPR
Library . . . . . :                      *LIBL
Local location address . . . . . : LOCADR    00
APPN-capable . . . . . : APPN            *YES
Single session:
  Single session capable . . . . . : SNGSSN   *NO
  Number of conversations . . . . . :
Locally controlled session . . . . . : LCLCTLSSN
Pre-established session . . . . . : PREESTSSN
Secure location . . . . . : SECURELOC     *NO
Text . . . . . : TEXT                   AUTOMATICALLY CREATED BY QLUS

```

6.2.9 AS/400 Subsystem Communications Entry

NetView FTP runs in a separate subsystem, named DVGSBS. We suggest that you have a specific communications entry to direct requests into the NFTP subsystem.

```

ADDCMNE SBSD(DVG001/DVGSBS) RMTLOC(PCAZFTP1) JOBD(DVG001/DVGJOB) +
        DFTUSR(*SYS) MODE(FTPBIND)

```

```

ADDCMNE SBSD(DVG001/DVGSBS) RMTLOC(PCAZFTP2) JOBD(DVG001/DVGJOB) +
        DFTUSR(*SYS) MODE(FTPBIND)

```

6.3 NetView FTP Definitions

6.3.1 MVS NetView FTP, Server Table

```

*****
* GROUP TABLE / FIND ORIGINAL ON NVFTP.V210.JCL(DVGSVGRP) *
*          >>>> ALL BYTES AFTER BYTE 28 ARE READ AS COMMENT *
*****
*SERVER OP   LU-NAME      COMMENT *
*GROUP  SYS                RUNNING *
*NAME                                *
*****
* -- LOCAL SYSTEM:

```

```

FTPSRV1 MVS PCAZFTP1      C 01. LOCAL SERVER CLASS 1
FTPSRV2 MVS PCAZFTP2      C 02. LOCAL SERVER CLASS 2
*
* -- REMOTE SYSTEMS:
*VMNODE VM  LUNAME1        1. REMOTE SERVER VM
*VSENOB VSE  LUNAME2        2. REMOTE SERVER VSE
OS400N  OS4  AS400BU3      REMOTE SERVER AS/400

```

6.3.2 AS/400 NetView FTP LU Directory Entry

```

DVG326                Display an LU Directory Entry
Nickname. . . . . : MVSNFTP
Remote location name. . . . . : PCAZFTP1
Operating system. . . . . : MVS
Local location name . . . . . : *LOC
Remote network identifier . . . : *LOC
Communication mode. . . . . : FTPBIND
Text. . . . . : TS MVS NetView FTP
Date of last update . . . . . : 92/04/01
Last update by user . . . . . : SIMH

F3=Exit  F12=Cancel

```

Figure 56. AS/400 NetView FTP LU Directory Entry

An entry for PCAZFTP2 is required only if requests are addressed to this LU as well.

6.4 NetView FTP Access Security

Valid user IDs and passwords are required on the target system. Users need access to the manipulated files. This is true for both the MVS and AS/400 environments.

6.5 Matching Parameters

AS400BU3	TS 4381
Network Attributes CPNAME(AS400BU3) NETID(CHIBM600) →1 LCLLOCNAME(AS400BU3) →10	VTAM Start Parameter 1← NETID=CHIBM600 8← SCCPNAME=CHIBM60A
Controller Description CTLD(PC8CM1) RMTNETID(CHIBM600) →1 RMTCPNAME(CHIBM60A) →8	VTAM/NCP for MVS NFTP <hr/> VTAM Applications 3← PCAZFTP1 APPL PCAZFTP2 APPL
ILU/APPC Device Description (auto configuration) DEVD(PCAZFTP1) RMTLOCNAME(PCAZFTP1) →3 CTL(PC8CM1) LCLLOCNAME(AS400BU3) →10	VTAM/NCP for AS/400 <hr/> Mode Description FTPBIND →12
APPN RMTLOCLIST RMTLOCNAME(PCAZFTP1) →3 RMTNETID(CHIBM600) →1 LCLLOCNAME(AS400BU3) →10 RMTCPNAME(CHIBM60A) →8	VTAM/NCP PC8L12 LINE PC8CM1 PU ADDR=C1 10← AS400BU3 LU LOCADDR=0
NFTP LU Directory RMTLOCNAME(PCAZFTP1) →3 NICKNAME(MVSFTP) →11	VTAM Logon Mode Table <hr/> 12← FTPBIND Mode Entry
NFTP Request NICKNAME(MVSFTP) →11	

Figure 57. Matching Parameters

6.6 Operation Status

To start the NetView FTP subsystem on AS/400:

1. Enter CL command STRFTP.
2. Select option 3 from the main menu.
3. Select option 9 from the administrator functions to start subsystem DVGSBS.

To start the agent and server jobs on AS/400:

1. Select option 1 from the administration functions.
2. Press F13. Acknowledge by pressing ENTER.

To start NetView FTP on MVS, in TSO SDSF/LOG enter: "/S NETVFTP".

To access the interactive interface on MVS, in TSO ISPF enter: FTP.

6.6.1 Status Checking

Enter the following CL command to check the configuration objects:

```
WRKCFGSTS CFGTYPE(*DEV) CFGD(*LOC) RMTLOCNAME(PCAZFTP*)
```

Line, controller, and devices must be active. However an active LU 6.2 session is *not* required before you start using NetView FTP.

In AS/400 NetView FTP, you can check the active agent and server jobs in the following manner:

1. Select option 1 of the administrator functions.
2. See the following display:

```
DVG310                Work with local Components
Number of servers that can be started:  20      Number of started servers:    2
Type options, press Enter
  1=Stop  2=Start Trace  3=Stop Trace
Option Agent/Server Activity status  ----Active request---- Trace
      DVG44A0004    ACTIVE              OFF
      DVGSRV01     WAITING              OFF
      DVGSRV02     WAITING              OFF

F3=Exit  F4=Prompt  F5=Refresh  F12=Cancel  F13=Start Agent  F14=Start Server
```

Figure 58. Operation Status Checking

6.7 FTP Requests - Interactive

Show request parameters, log, completion codes.

6.7.1 To Send Files From AS/400 to MVS

```
GUEST/NFTP.NFTP *SRCF to NVFTP.USER.FROMAS4
```

Request Name is SNDFTOMVS1.

```

DVG130          Change a Request to Send a File
Request/User:   SNDFTOMVS1 SIMH          Remote LU:  MVSNFTP
Sending File:   GUEST/NFTP(*FIRST)
Type choices, press Enter.
Nickname of remote LU . . . . . MVSNFTP      Name
Remote check. . . . . *NO                *NO, *YES
Sending File Parameters
Library . . . . . GUEST                  Name
File. . . . . NFTP                      Name
Member. . . . . *FIRST                  *FIRST, Name, *ALL
File type . . . . . *SRCF                *DTAF, *SAVF, *SRCF
APPC Conversation Security
User ID . . . . .                        Name
Password. . . . .                        Name

F3=Exit  F4=LU Directory  F12=Cancel  F17=Change Request

```

Figure 59 (Part 1 of 5). FTP Interactive Requests to Send Files from AS/400 to MVS

```

DVG145          Change a Request to Send a File
Request/User:   SNDFTOMVS1 SIMH          Remote LU:  MVSNFTP
Sending File:   GUEST/NFTP(*FIRST)
Specify additional transfer parameters.
Compression . . . . . *ADAPT              *ADAPT, *NONE
Restart from interruption . . . *NO                *NO, *YES
Automatic retry . . . . . *YES              *NO, *YES
Running mode of remote server . *CONT              *CONT, *SINGLE
Recipient of Report (remote)
User ID . . . . .                        Name
Location name . . . . .                  Name

F3=Exit  F12=Cancel  F17=Change Request

```

Figure 59 (Part 2 of 5). FTP Interactive Requests to Send Files from AS/400 to MVS

```

DVG146          Change a Request to Send a File
Request/User:   SNDFTOMVS1 SIMH          Remote LU:  MVSNFTP
Sending File:   GUEST/NFTP(*FIRST)
Specify receiving file parameters.
Receiving File Parameters
Data set name . . . . . NVFTP.USER.FROMAS4
DD name . . . . .                        Name
Data set type . . . . . *PS                *PS, *PO, *LAB, *UNLAB, *VSAM
Security parameters
User ID . . . . . SIMH                  Name
Password. . . . . hhhhhh                Name
Group ID. . . . .                        Name

F3=Exit  F12=Cancel  F17=Change Request  F20=Get Restart Data
F21=User Exit Routine

```

Figure 59 (Part 3 of 5). FTP Interactive Requests to Send Files from AS/400 to MVS


```

DVG151          Change a Request to Send a File
Request/User:   SNDFTOMVS1 SIMH          Remote LU:  MVSNFTP
Sending File:   GUEST/NFTP(*FIRST)
Specify receiving file parameters for a PS data set.
Disposition . . . . . *OLD          *NEW, *OLD, *SHR, *CTG
Device type . . . . .                Name
Volume serial numbers . . . . .

F3=Exit  F12=Cancel  F17=Change Request  F19=SMS Parameters

```

Figure 59 (Part 4 of 5). FTP Interactive Requests to Send Files from AS/400 to MVS

```

DVG010          Display Logs
Transfer mode:  SEND          Request:  SNDFTOMVS1      User:  SIMH
Log ID  Log Data
DVG4212 Request changed and held by user SIMH on 92/04/30 at 11:10:11
DVG4192 Request released by user SIMH on 92/04/30 at 11:10:21
DVG4452 File transfer SNDFTOMVS1 from local system started on 92/04/30 at 11
DVG4453 File transfer SNDFTOMVS1 from local system finished on 92/04/30 at 1

Press Enter to continue.
F3=Exit  F5=Refresh  F11=Complete View  F12=Cancel  F18=End of List

```

Figure 59 (Part 5 of 5). FTP Interactive Requests to Send Files from AS/400 to MVS

6.7.2 Retrieve Files from MVS to AS/400

NVFTP.USER.TESTDATA to GUEST/RTVFROMMVS.MBR001 *DTAF

Request Name is FROMMVS01.

```

DVG278          Display a Request to Retrieve a File
Main Transfer Parameters
Request name. . . . . : FROMMVS01
User ID . . . . . : SIMH
Nickname of remote LU . . . : MVSNFTP
Remote check. . . . . : *NO
APPC Conversation Security
User ID . . . . . :
Password. . . . . :

Press Enter to continue.
F3=Exit  F12=Cancel

```

Figure 60 (Part 1 of 5). FTP Interactive Requests to Retrieve Files from MVS to AS/400

```

DVG270          Display a Request to Retrieve a File
Request/User:   FROMMVS01  SIMH          Remote LU:  MVSNFTP
Sending File:   NVFTP.USER.TESTDATA
Sending file parameters
Data set name . . . . . :  NVFTP.USER.TESTDATA
DD name . . . . . :
Data set type . . . . . :  *PS
Security parameters
User ID . . . . . :  SIMH
Password. . . . . :
Group ID. . . . . :

Press Enter to continue.
F3=Exit  F12=Cancel  F21=User Exit Routine

```

Figure 60 (Part 2 of 5). FTP Interactive Requests to Retrieve Files from MVS to AS/400

```

DVG274          Display a Request to Retrieve a File
Request/User:   FROMMVS01  SIMH          Remote LU:  MVSNFTP
Sending File:   NVFTP.USER.TESTDATA
Device type . . . . . :
Volume serial numbers . . . . . :

Press Enter to continue.
F3=Exit  F12=Cancel

```

Figure 60 (Part 3 of 5). FTP Interactive Requests to Retrieve Files from MVS to AS/400

```

DVG273          Display a Request to Retrieve a File
Request/User:   FROMMVS01  SIMH          Remote LU:  MVSNFTP
Sending File:   NVFTP.USER.TESTDATA
Compression . . . . . :  *ADAPT
Restart from interruption . . :  *NO
Automatic retry . . . . . :  *YES
Running mode of remote server :
Recipient of Report (remote)
  User ID . . . . . :  SIMH
  Location name . . . . . :  ZCHMVS6
Creation date of request. . . :  92/04/01
Date of last update . . . . . :  92/04/30
Last update by user . . . . . :  SIMH

Press Enter to continue.
F3=Exit  F12=Cancel

```

Figure 60 (Part 4 of 5). FTP Interactive Requests to Retrieve Files from MVS to AS/400

```

DVG276                Display a Request to Retrieve a File
Request/User:         FROMMVS01  SIMH                Remote LU:  MVSNFTP
Sending File:         NVFTP.USER.TESTDATA
Receiving File Parameters
Library . . . . . :  GUEST
File. . . . . :  RTVFROMMVS
Member. . . . . :  MBR001
File type . . . . . :  *DTAF
Receiving File Options
File option . . . . . :  *OLD
Member option . . . . . :  *REPLACE
Expiration date for member. :
Press Enter to continue.
F3=Exit  F12=Cancel

```

Figure 60 (Part 5 of 5). FTP Interactive Requests to Retrieve Files from MVS to AS/400

To obtain the request log, select option 9 from the request main menu.

```

DVG200                Requests to Retrieve Files
Type options, press Enter.
1=Create  2=Change  3=Copy  4=Delete  5=Display  6=Release
7=Rename  8=Report  9=Log   11=Hold
Request
Option Name      User      Nickname of Remote LU  Sending File      Request Status
9   FROMMVS01    SIMH     MVSNFTP  NVFTP.USER.TESTDATA  FINISHED
   FROMAS401    SIMH     AS400BU4  CMNLIB/QCLSRC      HELD
F3=Exit  F5=Refresh  F12=Cancel  F15=Limit Scope  F16=Sort by Date/Name

```

Figure 61 (Part 1 of 2). Request Log

```

DVG010                Display Logs
Transfer mode:  RETRIEVE      Request:  FROMMVS01      User:  SIMH
Log ID  Log Data
DVG4212 Request changed and held by user SIMH on 92/04/30 at 11:22:25
DVG4192 Request released by user SIMH on 92/04/30 at 11:22:31
DVG4452 File transfer FROMMVS01 from local system started on 92/04/30 at 11:
DVG4591 Member MBR001 cleared in File RTVFROMMVS in library GUEST by DVGSRV
DVG4453 File transfer FROMMVS01 from local system finished on 92/04/30 at 11
Press Enter to continue.
F3=Exit  F5=Refresh  F11=Complete View  F12=Cancel  F18=End of List

```

Figure 61 (Part 2 of 2). Request Log

6.7.3 To Send Files from MVS to AS/400

Request name is TO_AS4X
 NVFTP.USER.TESTDATA to GUEST/FROMMVS.MBR333

Request Summary of sending file from AS/400

```

Transfer mode ..... T           Remote server group .....
Remote LU name ..... AS400BU3   Remote operating system .... OS400
Remote check ..... Y           APPC user ID ..... GUEST
Automatic transfer restart N     Restart from checkpoint .... Y
Compression method ..... A     Hold request ..... N
Local LU Name ..... PCAZFTP2    Data encryption label .....
Server class ..... 1           Request priority ..... 1
Sending server run mode .... C   Receiving server run mode... C
Sending report      at          Receiving report      at
Not-before 91 / 12 / 18   14 : 48   Not-after   /   /   :
I1 ...
I2 ...                        (first 35 chars. only)
Sending PDS containing jobs .....
  If successful 1 2 3 (first 3 only)
  If unsuccessful 1 2 3 (first 3 only)
Receiving PDS containing jobs ...
  If successful 1 2 3 (first 3 only)
  If unsuccessful 1 2 3 (first 3 only)
Data Set Name ... NVFTP.USER.TESTDATA
DD name .....
Type ..... PS

User ID .....
Group ID .....

Volume serial numbers .....1 2 3 (first 3 only)
Device type .....
Data set sequence number ...

Record format .....
Logical record length .....
Physical block size .....
Library name ..... GUEST
File name ..... FROMMVS
Member name ..... MBR333
File type ..... D
File options ..... 0
Member options .... A

Maximum members per file .....
Initial number of records .....
Increment number of records ....
Maximum increments .....
Maximum number of records .....

Public access authority .....
Record length .....
Expiration date .....
File text ...

```

6.7.4 To Retrieve Files from AS/400 to MVS

Request name is FROM_AS4

GUEST/NFTP.NFTP *SRCF to NVFTP.USER.FROMAS4

```

Transfer mode ..... F           Remote server group .....
Remote LU name ..... AS400BU3  Remote operating system .... OS400
Remote check ..... Y           APPC user ID ..... GUEST
Automatic transfer restart  N     Restart from checkpoint .... Y
Compression method ..... A     Hold request ..... N
Local LU Name ..... PCAZFTP1    Data encryption label .....
Server class ..... 1           Request priority ..... 1
Sending server run mode .... C   Receiving server run mode... C
Sending report          at       Receiving report          at
Not-before 92 / 03 / 31  14 : 55 Not-after   /   /           :
I1 ...
I2 ...                          (first 35 chars. only)
Sending PDS containing jobs .....
  If successful  1           2           3           (first 3 only)
  If unsuccessful 1           2           3           (first 3 only)
Receiving PDS containing jobs ...
  If successful  1           2           3           (first 3 only)
  If unsuccessful 1           2           3           (first 3 only)
Library name ... GUEST
File name ..... NFTP
Member name .... NFTP
File type ..... R
Data Set Name .. NVFTP.USER.FROMAS4
DD name ..          Type .. PS    User ID ..          Group ID ..
Volume serial numbers ...1      2      3      (first 3 only)
Disposition .... OLD          KSDS option ....          PDS option ...
Model name .....
Data name .....
Index name .....
Catalog name ...
Data organization .....        Device type .....
Key length .....              Key offset .....
Average record size .....      Maximum record size .....
Expiration date .....          Retention period .....
Average block length .....     Directory blocks .....
Primary space quantity ...     Secondary space quantity ....
Space units .....             Volume count .....          Tape density .....
Record format ...             Log. record length ...       Phys. block size...
Model DSCB .....

```

Chapter 7. AS/400 SNA/APPN SOC via SNA/Subarea Network

7.1 Network

In an SNA/APPN network the sphere of control (SOC) specifies the entry points managed by a focal point. Entry point systems send alerts to the focal point system.

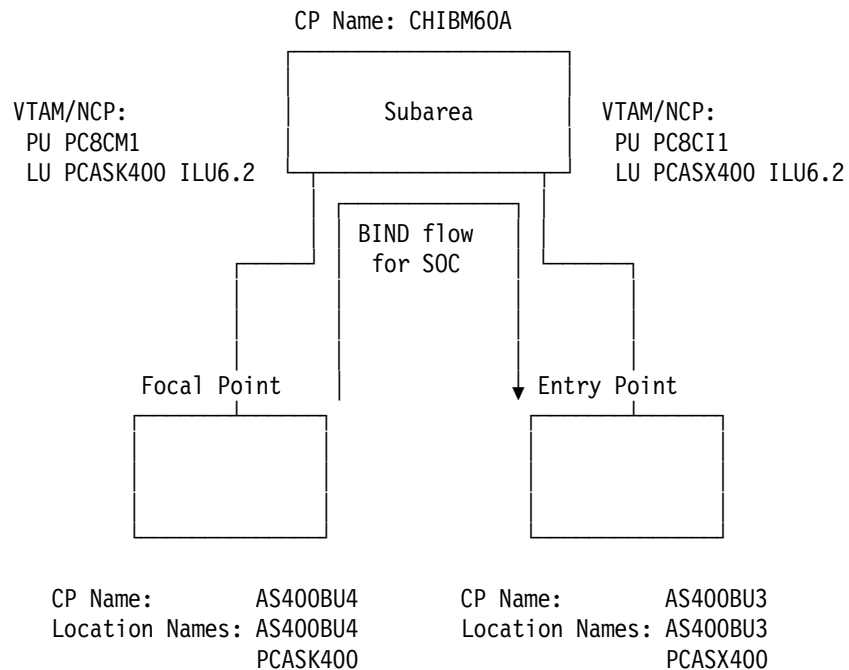
The focal point defines SNA/APPN network nodes (NN) belonging to its SOC. SNA/APPN end nodes (EN) forward alerts to the NN where they have a CP-CP session. ENs are not subject to the SOC.

Within a SOC, alerts are forwarded using an independent LU 6.2 session. The LU names are the NN CP names.

The SOC may also use the SNA/Subarea network for its LU 6.2 sessions. Since LU naming conventions within VTAM/NCP are very essential, you must abide by VTAM/NCP naming rules for AS/400 CP names when the SOC requires links via SNA/Subarea network.

The following figure shows the test network with two AS/400s and the SNA/Subarea network.

Network Identification: CHIBM600



Location names are independent LU 6.2 names in the AS/400. The first one, AS400BU4, is the default, configured in the AS/400 network attributes. Additional ones are defined in the local APPN configuration list.

With the above network, you may:

- Have independent LU 6.2 sessions via the SNA Subarea network, using the VTAM/NCP defined LU names - PCASK400 and PCASX400
- **NOT** have a session for SOC alert forwarding via the SNA/Subarea network, since the CP names - AS400BU3 and AS400BU4 - are not defined as independent LU 6.2 within VTAM/NCP.

In order to allow SOC alert forwarding we had AS400BU3 and AS400BU4 added as independent LU 6.2 within VTAM/NCP of our test network. Please note, that in a real network you may be forced to accept the VTAM/NCP naming. You have to change CP names to PCASK400 and PCASX400.

7.2 Configurations

7.2.1 AS400BU4 (Focal Point)

7.2.1.1 Network Attributes

```

                                Display Network Attributes
Current system name . . . . . : AS400BU4
  Pending system name . . . . . :
Local network ID . . . . . : CHIBM600
Local control point name . . . . . : AS400BU4
Default local location . . . . . : AS400BU4
Default mode . . . . . : MODLU62
Maximum number of conversations for a remote
  location . . . . . : 96
APPN node type . . . . . : *NETNODE
Maximum number of intermediate sessions . . . . . : 200
Route addition resistance . . . . . : 128
Server network ID/control point name . . . . . :
Alert status . . . . . : *OFF
Alert primary focal point . . . . . : *YES
Alert default focal point . . . . . : *NO
Alert logging status . . . . . : *NONE
Alert controller description . . . . . : *NONE
Alert hold count . . . . . : 0
Message queue . . . . . : QSYSOPR
  Library . . . . . : QSYS
Output queue . . . . . : QPRINT
  Library . . . . . : QGPL
Job action . . . . . : *SEARCH
Maximum hop count . . . . . : 16
DDM request access . . . . . : *OBJAUT
PC Support request access . . . . . : *OBJAUT

```

Figure 62. AS400BU4 (Focal Point) Network Attributes

7.2.1.2 APPN Local Configuration List

```

                                Display Configuration List

Configuration list . . . . . : QAPPNLCL
Configuration list type . . . . . : *APPNLCL
Text . . . . . : Local Location List

-----APPN Local Locations-----          -----APPN Local Locations-----
Local                                         Local
Location Text                               Location Text
PCASK400 LU for SA

```

Figure 63. AS400BU4 (Focal Point) APPN Local Configuration List

LU PCASK400 is not used for the alert support, since we were allowed to add AS400BU4 to our test to VTAM/NCP network. In a real network, you may be forced to accept the VTAM/NCP naming since you may not have any control.

7.2.1.3 APPN Remote Configuration List

```

                                Display APPN Remote Locations

Configuration list . . . . . : QAPPNRMT

Remote      Remote      Local      Control      Control
Location    Network    Location   Point        Point        Secure
Name        ID           Name       Name         Net ID      Loc
PCASX400    CHIBM600    AS400BU4  CHIBM60A    CHIBM600    *NO
AS400BU3    CHIBM600    AS400BU4  CHIBM60A    CHIBM600    *NO

```

Figure 64. AS400BU4 (Focal Point) APPN Remote Configuration List

7.2.1.4 Line, Controller and Device Descriptions

Refer to the APPN chapter of *AS/400 Communications Definitions I*, GG24-3449.

7.2.1.5 Sphere of Control (WRKSOC)

As soon as the focal point gets in touch with its observed system, the following status appears on the sphere of control screen.

```

                                Work with Sphere of Control (SOC)

Position to . . . . . _____ Control Point
Network ID . . . . . _____

Type options, press Enter.
1=Add 4=Remove

Control
Opt Point Network ID Current Status
_ _____ *NETATR
_ AS400BU3 CHIBM600 Active - in sphere of control

```

Figure 65. AS400BU4 (Focal Point) Sphere of Control

7.2.2 AS400BU3

7.2.2.1 Network Attributes

```
Current system name . . . . . : AS400BU3
  Pending system name . . . . . :
Local network ID . . . . . : CHIBM600
Local control point name . . . . . : AS400BU3
Default local location . . . . . : AS400BU3
Default mode . . . . . : MODLU62
APPN node type . . . . . : *NETNODE
Maximum number of intermediate sessions . . . . . : 200
Route addition resistance . . . . . : 128
Server network ID/control point name . . . . . :
Alert status . . . . . : *UNATTEND
Alert primary focal point . . . . . : *NO
Alert default focal point . . . . . : *NO
Alert logging status . . . . . : *NONE
Alert controller description . . . . . : *NONE
Alert hold count . . . . . : 0
Message queue . . . . . : QSYSOPR
  Library . . . . . : QSYS
Output queue . . . . . : QPRINT
  Library . . . . . : QGPL
Job action . . . . . : *FILE
Maximum hop count . . . . . : 16
DDM request access . . . . . : *OBJAUT
PC Support request access . . . . . : *OBJAUT
Default ISDN network type . . . . . :
Default ISDN connection list . . . . . : QDCCNNLANY
```

Figure 66. AS400BU3 Network Attributes

7.2.2.2 APPN Local Configuration List

```
Display Configuration List

Configuration list . . . . . : QAPPNLCL
Configuration list type . . . . . : *APPNLCL
Text . . . . . : Local Location List

-----APPN Local Locations-----
Local
Location Text
PCASX400 LU for SA

-----APPN Local Locations-----
Local
Location Text
```

Figure 67. AS400BU3 APPN Local Configuration List

LU PCASK400 is not used for the alert support, since we were allowed to add AS400BU4 to our test to VTAM/NCP network. In a real network, you may be forced to accept the VTAM/NCP naming since you may not have any control.

7.2.2.3 APPN Remote Configuration List

```

Configuration list . . . : QAPPNRMT
Configuration list type : *APPNRMT
Text . . . . . : Remote Configuration List

Type changes, press Enter.

-----APPN Remote Locations-----
Remote      Remote      Local      Remote      Control
Location    Network    Location   Control    Point      Location    Secure
ID          ID          Location   Point      Net ID     Password    Loc
AS400BU4   CHIBM600   AS400BU3   CHIBM60A   CHIBM600   _____ *NO_

```

Figure 68. AS400BU3 APPN Local Configuration List

7.2.2.4 Line, Controller and Device Descriptions

Refer to the APPN chapter of AS/400 Communications Definitions I, GG24-3449.

7.2.2.5 Sphere of Control (WRKSOC)

There is no entry in the sphere of control on the entry point system.

```

Work with Sphere of Control (SOC)

Position to . . . . . _____ Control Point
Network ID . . . . . _____

Type options, press Enter.
4=Remove

Control
Opt Point Network ID Current Status

(No entries in sphere of control)

```

Figure 69. AS400BU3 Sphere of Control (WRKSOC)

7.2.2.6 Creating Alerts from AS/400 Messages

Each message sent to the QSYSOPR message queue can be forwarded as an alert to a focal point. The message description has a keyword called ALROPT. If this parameter is set to *UNATTEND, *IMMED or *DEFER, the focal point gets the message depending on the network attributes on the entry point system.

As soon as this message is received in the QSYSOPR message queue, an alert is sent to the focal point.

Chapter 8. AS/400 MVS Bridge (NJE), Job and Spool File

See AS/400 Communications Definitions II, GG24-3763 for documentation of the link between AS/400 and JES2, and the exchange of files between TSO and AS/400 users. For file transfer, use the ODF CL command SNDNETF/RCVNETF and the MVS/TSO commands transmit and receive.

In this chapter you will find how to:

- Submit jobs from AS/400 to MVS or MVS to AS/400.
- Send print spool files from AS/400 to MVS or MVS to AS/400.

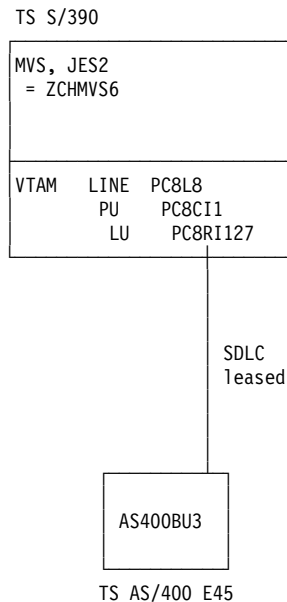


Figure 70. TS Network, MVS Bridge Environment

Addressing: The AS/400 represents an NJE node. However store-and-forward mechanism is based on SNADS within AS/400. MVS users are addressed with user at node, for example, SIMH at ZCHMVS6. In the AS/400 the users are addressed with user.qualifier at node (DEN.DGN at REN), for example, SIMH.FSC400 at AS400BU3.

From MVS, users in AS/400 are addressed with DEN at DGN, for example, SIMH at FSC400.

8.1 Submit a Job from AS/400 to MVS

As with RJE, prepare the MVS batch job. For example, prepare a source member of type TXT.

```
//SIMHNJE JOB 0,  
//          '▶▶SIMH,FSC,BU4◀◀', CLASS=A,PASSWORD=ABCDEF,  
//          MSGLEVEL=(1,1),MSGCLASS=Q,USER=SIMH,NOTIFY=SIMH  
//INIT EXEC PGM=IEBGENER  
//SYSPRINT DD SYSOUT=*  
//SYSIN DD DUMMY
```

```
//SYSUT2 DD SYSOUT=B,DCB=(RECFM=FB,LRECL=80,BLKSIZE=80),
//          DEST=(FSC400,SIMH)
//SYSUT1 DD *
ERSTE TESTKARTE
ZWEITE TESTKARTE Jetzt ist es genau 11:14:06
DRITTE UND IN DIESEM FALLE LETZTE TESTKARTE MFG
/*
```

Use CL command SBMNETJOB to send the batch job to MVS for execution.

```
SBMNETJOB FILE(CMNLIB/QCLSRC) TOUSRID((SIMH ZCHMVS6)) MBR(FSCNJE01)
```

The following messages report the successful execution of the submitted job:

```

                                     Display Messages
                                     System:   AS400BU3
Queue . . . . . : SIMH                 Program . . . . : *DSPMSG
Library . . . . : QUSRSYS              Library . . . . :
Severity . . . . : 00                  Delivery . . . . : *NOTIFY

Type reply (if required), press Enter.
From . . . . : SYSTEM ZCHMVS6          23.03.93 15.51.46
JOB04777 $HASPI22 SIMHNJE (JOB00001 FROM FSC400 ) RECEIVED AT ZCHMVS6
From . . . . : SYSTEM ZCHMVS6          23.03.93 15.51.52
JOB04777 $HASPI65 SIMHNJE (JOB00001 FROM FSC400 ) ENDED AT ZCHMVS6
Spooled file JES2 received and placed on output queue PRT01 in library
QUSRSYS.
Spooled file JES2 received for user SIMH FSC400.
Spooled file JES2 received and placed on output queue PRT01 in library
QUSRSYS.
Spooled file JES2 received for user SIMH FSC400.
Spooled file JES2 received and placed on output queue PRT01 in library
QUSRSYS.
Spooled file JES2 received for user SIMH FSC400.
Spooled file INIT received and placed on output queue PRT01 in library
QUSRSYS.
Spooled file INIT received for user SIMH FSC400.
File INIT member SIMH number 19 received from user SIMH FSC400.
File INIT member SIMH number 19 received for user SIMH FSC400.
```

Figure 71. QSYSOPR Message Queue, Job Submitted to MVS

The job logs received from MVS follows:

J E S 2 J O B L O G " S Y S T E M M V S 1 " N O D E Z C H M V S 6

15.48.34 JOB04777 ICH70001I SIMH LAST ACCESS AT 15:46:19 ON TUESDAY, MARCH 23, 1993
 15.48.34 JOB04777 \$HASP373 SIMHNJE STARTED - INIT 1 - CLASS A - SYS MVS1
 15.48.35 JOB04777 - ""TIMINGS (MINS.)""""PAGING COUNTS""""
 15.48.35 JOB04777 -JOBNAME STEPNAME PSTEP RC EXCP CONN CPU SRB CLOCK SER V PG PAGE
 15.48.35 JOB04777 -SIMHNJE 00 37 104 .00 .00 .0 73 6 1 0
 15.48.35 JOB04777 -SIMHNJE ENDED. NAME"SIMH,FSC,BU4" TOTAL CPU TIME= .00
 15.48.35 JOB04777 \$HASP395 SIMHNJE ENDED

JES2 JOB STATISTICS

23 MAR 93 JOB EXECUTION DATE
 13 CARDS READ
 42 SYSOUT PRINT RECORDS
 3 SYSOUT PUNCH RECORDS
 2 SYSOUT SPOOL KBYTES
 0.02 MINUTES EXECUTION TIME

```

1 //SIMHNJE JOB 0, JOB04777
// 'SIMH,FSC,BU4', CLASS=A,PASSWORD=,
// MSGLEVEL=(1,1),MSGCLASS=Q,USER=SIMH,NOTIFY=SIMH
2 //INIT EXEC PGM=IEBGGENER
3 //SYSPRINT DD SYSOUT=*
4 //SYSIN DD DUMMY
5 //SYSUT2 DD SYSOUT=B,DCB=(RECFM=FB,LRECL=80,BLKSIZE=80),
// DEST=(FSC400,SIMH)
6 //SYSUT1 DD *
    
```

ICH70001I SIMH LAST ACCESS AT 15:46:19 ON TUESDAY, MARCH 23, 1993
 IEF236I ALLOC. FOR SIMHNJE INIT
 IEF237I JES2 ALLOCATED TO SYSPRINT
 IEF237I DMY ALLOCATED TO SYSIN
 IEF237I JES2 ALLOCATED TO SYSUT2
 IEF237I JES2 ALLOCATED TO SYSUT1
 IEF142I SIMHNJE INIT - STEP WAS EXECUTED - COND CODE 0000
 IEF285I SIMH.SIMHNJE.JOB04777.D0000102.? SYSOUT
 IEF285I SIMH.SIMHNJE.JOB04777.D0000103.? SYSOUT
 IEF285I SIMH.SIMHNJE.JOB04777.D0000101.? SYSIN
 IEF373I STEP /INIT / START 93082.1548
 IEF374I STEP /INIT / STOP 93082.1548 CPU OMIN 00.04SEC SRB OMIN 00.00SEC
 IEF375I JOB /SIMHNJE / START 93082.1548
 IEF376I JOB /SIMHNJE / STOP 93082.1548 CPU OMIN 00.04SEC SRB OMIN 00.00SEC

DATA SET UTILITY - GENERATE

PROCESSING ENDED AT EOD

Figure 72. MVS Job Log

```

Work with Network Files
AS400BU3
23.03.93 16.00.18
User . . . . . : SIMH
User ID/Address . . . . . : SIMH FSC400

Type options, press Enter.
  1=Receive network file  3=Submit job  4=Delete network file
  5=Display physical file member

Opt File      Member      File      From      Arrival
  Opt File      Member      Number  User ID  Address  Date      Time
  INIT          SIMH          19     SIMH     FSC400  23.03.93 15.52

Parameters or command
==>
F3=Exit  F4=Prompt  F5=Refresh  F9=Retrieve  F11=Display type/records
F12=Cancel

```

Figure 73. Punched/Received File from MVS

```

Display Physical File Member
File . . . . . : INIT          Library . . . . . : *N
Member . . . . . : SIMH        Record . . . . . : 1
Control . . . . .          Column . . . . . : 1
Find . . . . .
*...+...1...+...2...+...3...+...4...+...5...+...6...+...7...+...8
ERSTE TESTKARTE
ZWEITE TESTKARTE Jetzt ist es genau 11:14:06
DRITTE UND IN DIESEM FALLE LETZTE TESTKARTE MFG
***** END OF DATA *****

F3=Exit  F12=Cancel  F19=Left  F20=Right  F24=More keys

```

Figure 74. Received File, Display PF Member

8.2 Submit Job from MVS to AS/400

8.2.1 AS/400 Definitions

AS/400 Network Attribute parameter 'Job Action' has to be set to *SEARCH to allow job submission from remote.


```

                                Display Network Attributes
                                System:  AS400BU3
Current system name . . . . . : AS400BU3
  Pending system name . . . . . :
Local network ID . . . . . : CHIBM600
Local control point name . . . . . : AS400BU3
Default local location . . . . . : AS400BU3
Default mode . . . . . : MODLU62
APPN node type . . . . . : *NETNODE
Maximum number of intermediate sessions . . . . . : 200
Route addition resistance . . . . . : 128
Server network ID/control point name . . . . . : CHIBM600   AS400BU3
Alert status . . . . . : *ON
Alert logging status . . . . . : *ALL
Alert primary focal point . . . . . : *YES
Alert default focal point . . . . . : *NO
...

Output queue . . . . . : QPRINT
  Library . . . . . : QGPL
Job action . . . . . : *SEARCH

```

Figure 75. AS/400 Network Attributes, Job Action

NETJOB entries are required to allow submission of jobs by specific remote users, in this case by user SIMH at ZCHMVS6.

```

                                Change Network Job Entry (CHGNETJOBE)

Type choices, press Enter.

User ID:
  User ID . . . . . ► 'SIMH'           Character value
  User ID qualifier . . . . . ► 'ZCHMVS6' Character value
Network job action . . . . . *SUBMIT     *SAME, *FILE, *REJECT...
User profile . . . . . SIMH             Name, *SAME
Message queue . . . . . QSYSOPR        Name, *SAME, *USRPRF, *NONE
  Library . . . . . QSYS                Name, *LIBL, *CURLIB
Job queue . . . . . QBATCH             Name, *SAME
  Library . . . . . QGPL                Name, *LIBL, *CURLIB

                                Bottom
F3=Exit  F4=Prompt  F5=Refresh  F12=Cancel  F13=How to use this display
F24=More keys

```

Figure 76. AS/400 Network Job Entries

8.2.2 Job Submission on MVS

Job, prepared in MVS.

```

EDIT —— SIMH.TSO.CLIST(AS4JOB) - 01.01 —— COLUMNS 001 072
COMMAND ==> SCROLL ==> PAGE
***** ***** TOP OF DATA *****
==MSG> -CAUTION- PROFILE CHANGED TO "CAPS ON" (FROM "CAPS OFF") BECAUSE THE
==MSG> DATA DOES NOT CONTAIN ANY LOWER CASE CHARACTERS.
==MSG> -WARNING- THE UNDO COMMAND IS NOT AVAILABLE UNTIL YOU CHANGE
==MSG> YOUR EDIT PROFILE USING THE COMMAND "RECOVERY ON".
000001 //SIMHAS4 JOB 0,
000002 // '▶▶SIMH,FSC,BU4◀◀', CLASS=A,PASSWORD=SIM426,
000003 // MSGLEVEL=(1,1),MSGCLASS=Q,USER=SIMH,NOTIFY=SIMH
000004 /*XMIT FSC400.SIMH
000005 //BCHJOB
000006 DSPLIB GUEST
000007 //ENDBCHJOB
000008 /*
000009 //
***** ***** BOTTOM OF DATA *****

F13=HELP F14=SPLIT F15=END F16=RETURN F17=RFIND F18=RCHANGE
F19=UP F20=DOWN F21=SWAP F22=LEFT F23=RIGHT F24=RETRI TSO

```

Figure 77. Job for AS/400, Prepared on MVS

To submit the job to AS/400, enter command SUBMIT.

```

EDIT —— SIMH.TSO.CLIST(AS4JOB) - 01.01 —— COLUMNS 001 072
COMMAND ==> submit SCROLL ==> PAGE
***** ***** TOP OF DATA *****
==MSG> -CAUTION- PROFILE CHANGED TO "CAPS ON" (FROM "CAPS OFF") BECAUSE THE
==MSG> DATA DOES NOT CONTAIN ANY LOWER CASE CHARACTERS.
==MSG> -WARNING- THE UNDO COMMAND IS NOT AVAILABLE UNTIL YOU CHANGE
==MSG> YOUR EDIT PROFILE USING THE COMMAND "RECOVERY ON".
000001 //SIMHAS4 JOB 0,
000002 // '▶▶SIMH,FSC,BU4◀◀', CLASS=A,
000003 // MSGLEVEL=(1,1),MSGCLASS=Q,USER=SIMH,NOTIFY=SIMH
000004 /*XMIT FSC400.SIMH
000005 //BCHJOB
000006 DSPLIB GUEST
000007 //ENDBCHJOB
000008 /*
000009 //
***** ***** BOTTOM OF DATA *****

IKJ56250I JOB SIMHAS4(JOB04789) SUBMITTED
***

TSO
*****

```

Figure 78. Job Submitted to AS/400

Following the message on MVS, you see the screen showing successful job submission.

```

16.18.06 JOB04789 $HASP526 SIMHAS4 TRANSMITTED FOR EXECUTION AT FSC400 CN(INTE
RNAL)
          SIMH   Input stream file SIMHAS4 member SIMH received for us
er SIMH FSC400. 1 j CN(INTERNAL)
          SIMH   bs submitted. 0 jobs not submitted. CN(INTERNAL)
***

```

Figure 79. MVS Job Submission Message

8.2.3 Job Execution on AS/400

```

                                Display Messages
Queue . . . . . : QSYSOPR                System: AS400BU3
Library . . . . : QSYS                   Program . . . . : *DSPMSG
Severity . . . . : 45                    Library . . . . :
Delivery . . . . : *HOLD
Type reply (if required), press Enter.
An adapter has inserted or left the token-ring on line TRNLINE.
An adapter has inserted or left the token-ring on line T3174L.
Device DSP08 no longer communicating.
An adapter has inserted or left the token-ring on line TRNLINE.
An adapter has inserted or left the token-ring on line T3174L.
An adapter has inserted or left the token-ring on line T3174L.
An adapter has inserted or left the token-ring on line TRNLINE.
Input stream file SIMHAS4 member SIMH received from user SIMH ZCHMVS6. 1
jobs submitted. 0 jobs not submitted
Bottom
F3=Exit      F11=Remove a message      F12=Cancel
F13=Remove all  F16=Remove all except unanswered  F24=More keys

```

Figure 80. Message on AS/400, Showing Job Submission from MVS

Use CL command DSPLOG to check successful execution of the submitted job.

```

                                Display History Log Contents
Input stream file SIMHAS4 member SIMH received from user SIMH ZCHMVS6. 1 jobs
Job 093355/QPGMR/QBATC started on 23.03.93 at 16.20.48 in subsystem QBATCH i
Job 093355/QPGMR/QBATC ended on 23.03.93 at 16.21.04; 2 seconds used; end co
Bottom
F3=Exit  F10=Display all  F12=Cancel

```

Figure 81. Display History Log

8.3 Send Print Spoolfile from AS/400 to MVS

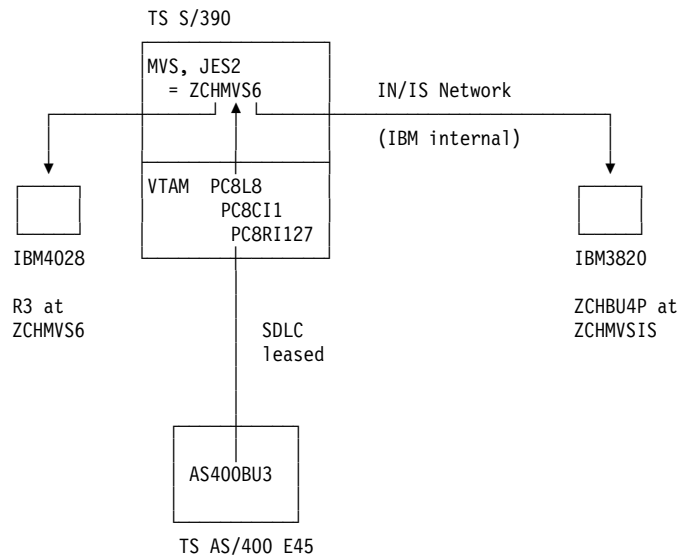


Figure 82. TS Network, MVS Bridge, Spool Files to MVS

No additional definitions are required to allow the sending of spool files to JES2 controlled printers.

Spool files are addressed to printers. Each printer has an identification like human users: ID at node. In addition you have to ask which is the from type to be provided and what queueing class is to be specified.

In this example, we show two printers:

- An IBM 4028, R3 at ZCHMVS6, requires class P, form type STD
- An IBM 3820, ZCHBU4P at ZCHMVSIS, requires class N, form type STD

Before sending the spool file, change the form type with the CL command Change Spool File Attributes:

```
CHGSPLFA FILE(QPDSPLIB) JOB(094296/SIMH/DSP03) SPLNBR(0001) FORMTYPE(STD)
```

To send the spool file to the IBM 4028 use the commands:

```
SNDNETSPLF FILE(QPDSPLIB) TOUSRID((R3 ZCHMVS6)) JOB(094296/SIMH/DSP03) SPLNBR(0001) CLASS(P)
File QPDSPLIB sent to 1 users. Not sent to 0 users.
```

To send the same spool file to the IBM 3820 use the commands:

```
SNDNETSPLF FILE(QPDSPLIB) TOUSRID((ZCHBU4P ZCHMVSIS)) JOB(094296/SIMH/DSP03) SPLNBR(0001) CLASS(N)
File QPDSPLIB sent to 1 users. Not sent to 0 users.
```

Successful transmission of the spool file to the target JES2 is confirmed with a message to the originating AS/400 user:

```

                                Display Messages
                                System:  AS400BU3
Queue . . . . . :  SIMH                Program . . . . . :  *DSPMSG
Library . . . . . :  QUSRSYS           Library . . . . . :
Severity . . . . . :  00                Delivery . . . . . :  *NOTIFY

Type reply (if required), press Enter.
From . . . . . :  SYSTEM  ZCHMVS6      25.03.93  14.02.23
JOB05236 $HASP546 AS400001 (JOB00001 FROM FSC400 ) SYSTEM OUTPUT
RECEIVED AT ZCHMVS6

F3=Exit          F11=Remove a message      F12=Cancel
F13=Remove all   F16=Remove all except unanswered  F24=More keys
Already at top of area.

```

Figure 83. Message Indicating Successful Transmission of Spool File

8.4 Send Print Spool File from MVS to AS/400

The objective of this section is to show how a print spool file queued by JES2 is transmitted to AS/400. There are many different ways that print output can be produced on an MVS system. However it is not the objective of this chapter to investigate these alternatives.

We used MVS command PRINTDS - print a dataset.

Print spool files are sent to a user ID at a node. On the AS/400 the profile of the addressed user includes information into which output queue the received spool file has to be placed.

```

                                Display User Profile - Basic
User profile . . . . . :  SIMH
Previous sign-on . . . . . :  23.03.93  14.22.35
Sign-on attempts not valid . . . . . :  0
Status . . . . . :  *ENABLED
Date password last changed . . . . . :  02.02.93
Password expiration interval . . . . . :  *SYSVAL
Set password to expired . . . . . :  *NO
...

Message queue . . . . . :  SIMH
Library . . . . . :  QUSRSYS
Message queue delivery . . . . . :  *NOTIFY
Message queue severity . . . . . :  00
Output queue . . . . . :  PRT01
Library . . . . . :  QUSRSYS
Printer device . . . . . :  *WRKSTN
...

```

Figure 84. On the AS/400, DSPUSRPRF (Display User Profile)

In order to print an MVS dataset, enter the following command:

```

----- TSO COMMAND PROCESSOR -----
ENTER TSO COMMAND, CLIST, OR REXX EXEC BELOW:

===> printds da(' ipol.*rmlib(jes2parm)') dest(fsc400.simh)

```

Figure 85. To Print an MVS Dataset

```

SIMH    Spooled file TSOISPF received for user SIMH FSC400. C
N(INTERNAL)
***

```

Figure 86. Successful Transmission of Spool File to AS/400

```

Work with All Spooled Files

Type options, press Enter.
 1=Send  2=Change  3=Hold  4=Delete  5=Display  6=Release  7=Messages
 8=Attributes      9=Work with printing status

Opt  File      User      Device or  User Data  Sts  Total  Cur  Copy
     TS0ISPF   SIMH     PRT01     TS0ISPF   HLD   16    Page  1
                                           Bottom

Parameters for options 1, 2, 3 or command
===>
F3=Exit  F10=View 3  F11=View 2  F12=Cancel  F22=Printers  F24=More keys

```

Figure 87. Received Spool File from MVS

Chapter 9. OfficeVision/VM Bridge

The VM/MVS Bridge, previously called PROFS/RSCS Bridge, allows VM/CMS, MVS/TSO and AS/400 users to exchange data files.

OfficeVision/400 and OfficeVision/VM users may exchange messages, notes and documents as well. The example network includes an IBM 9370 with VM, RSCS and OfficeVision/VM.

The SNA link between the IBM 9370 and the AS/400 is SNA/SDLC to the IBM 4381.

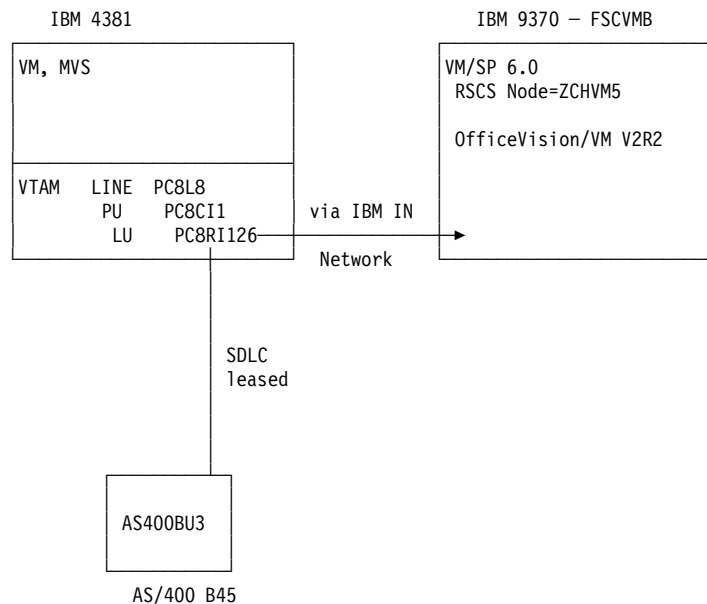


Figure 88. Network, OfficeVision/VM Bridge Environment

This chapter covers the AS400BU3 to ZCHVM5 connection used by the OfficeVision/VM (OV/VM) Bridge.

Addressing: The AS/400 represents an RSCS node. However, the store-and-forward mechanism is based on SNADS within AS/400. VM users are addressed with user at node, for example SIMH at ZCHVM5. AS/400 users are addressed with user.qualifier at node (DEN.DGN at REN), for example SIMH.FSC400 at AS400BU3.

As long as DGN and REN of an AS/400 are the same, there is no additional effort required.

Users might want to take advantage of the SNADS capabilities and introduce the DGN. This requires that each DGN of an AS/400 is defined as a node within RSCS.

With AS400BU3, the DGN normally used for local users is FSC400. In our example, where we look at ZCHVM5 and AS400BU3, RSCS of ZCHVM5 has to define FSC400 as AS/400 nodes.

9.1 Definitions

9.1.1 RSCS

```

*****
*                               RSCS LOCAL NODEID SPECIFICATION                               *
*****
*                               LOCAL      GMT                                         *
*                               NODEID    OFFSET COMMENTS                             *
*                               -----
*                               LOCAL      ZCHVM5      0
*****
*                               RSCS OPERATOR FORM NAME SPECIFICATION                   *
*****
*                               OPERATOR
*                               FORM NAME
*                               -----
*                               OPFORM      *
*****
*                               RSCS CHANNEL RESERVATION SPECIFICATION                 *
*****
*                               RESERVE THESE
*                               CHANNELS
*                               -----
*                               CHANNELS      F
*****
*                               RSCS LINK, ROUTE, PARM, AND AUTH SPECIFICATIONS         *
*****
*                               LINK  VIRT TIME SPOOL KEEP  QUEUE DISP  LU-   LOGMODE
*                               LINKID TYPE ADDR ZONE CLASS SLOTS  TYPE PRI  NAME  NAME
*                               -----
LINK ZCHVM1  SNANJE  *   0   *   *   *   *   DCQZRSCS RSCSNJEO
LINK ZCHVM4  SNANJE  *   0   *   *   *   *   MCAZRSCS RSCSNJEO
LINK ZCHVM6  SNANJE  *   0   *   *   *   *   PCEZRSCS RSCSNJEO AST
LINK ZCHVM7  SNANJE  *   0   *   *   *   *   MCGZRSCS RSCSNJEO
*LINK ZCHVM8  SNANJE  *   0   *   *   *   *   MCHZRSCS RSCSNJEO
LINK ZCHVM8  NJE      600
LINK ZCHVM9  NJE      610
LINK ZCHVSE4 SNANJE  *   0   *   *   *   *   MCCZPNET RSCSNJEO
LINK ZCHVSE5 SNANJE  *   0   *   *   *   *   MCDZPNET RSCSNJEO
* DIS MAILGATE R. LAEUFFER
LINK DISLAN  NJE
*
LINK AS400BU3 SNANJE *   0   *   *   *   *   PC8RI126 *   AST
*
LINK MCASX011 SNANJE  *   0   *   *   *   *   *   RJE AST
LINK MCASX021 SNANJE  *   0   *   *   *   *   *   RJE AST
LINK MCASX031 SNANJE  *   0   *   *   *   *   *   RJE AST
...
LINK HP      3270P  OAE
* 3270 TERMINAL PRINTERS IN FSCH560 NETWORK 17.10.1990 GMY
LINK MC2SEA48 SNA3270P *   *   *   *   2   *   *   *   *   AST
LINK MC2SEA49 SNA3270P *   *   *   *   2   *   *   *   *   AST

```


...

PARM MC2SEA48 L=72 P=132 VFC=YES SEP=NO

...

PARM MCBSX07F L=72 P=132 VFC=YES SEP=NO

```

*
*   LINKID   PARM TEXT
*   -----
PARM HP      LPAGE=72 VFC=YES SEP=NO COMP=NO
*
*   NODEID   LINKID   COMMENTS
*   -----
*ROUTE SYSTEM2 SYSTEM1 PASS FILES FOR SYSTEM2 TO SYSTEM1
ROUTE ZCHHLP1 ZCHVM1
ROUTE ZCHMVS1 ZCHVM1
...
ROUTE CHVM1   ZCHVM1
ROUTE CHVM2   ZCHVM1
ROUTE FSC400 AS400BU3

```

```

* REROUTE FILES FOR DISLAN TO DISMGWB INST. DIS R. LAEUFFER
REROUTE ALL FOR DISLAN ANY TO * DISMGWB
* REROUTE 3270 TERMINAL PRINTERS TO IS NETWORK
REROUTE ALL FOR DCDPXA01 ANY TO CHVM1 DCDPXA01
REROUTE ALL FOR DCDPXA09 ANY TO CHVM1 DCDPXA09

```

...

REROUTE ALL FOR FCNPKI31 ANY TO CHVM1 FCNPKI31

```

*           GIVE COMPLETE RSCS AUTHORIZATION TO OPERATOR           *
*****
*           LINKID   USERID   NODEID   CP
*           -----
AUTH *           ADMIN   *           CP
AUTH *           MAINT   *           CP

```

...

```

*           RSCS SUPERVISOR SPECIFICATIONS           *
*****

```

```

*           COMMENTS
*           -----
TAGS      1000      NUMBER OF TAG SLOTS TO GENERATE
DUMP      VM      OPERATNS DUMP TYPE AND USERID TO SEND IT TO
MSGNOH
*           SPECIFY NO HEADER (THE RSCS VIRTUAL
*           MACHINE MUST BE PRIVILEGE CLASS B
*           (OR EQUIVALENT USER DEFINED CLASS)
*           TO USE THIS)
*****

```

9.1.2 RSCS Remloc File

```

          1   1   2   2   3   3   4
1...5...0...5...0...5...0...5...0

```

```

DEMO9370PROMAIL PROT
ZCHVM5 PROMAIL FSCU
ZCHVM5 PRUMAIL FSUU
ZCHVM7 PROMAIL CSCT
ZCHVM2 PROFMAILPROT
ZHDISOSSSYSTEM D9ARDZCHMVS1 DCUZCIDPZCP
ZHDISOSTSYSTEM D9BRDZCHMVS1 DCUZCIDTZCT
ZHDISOSASYSTEM D9CRDZCHMVS1 DCUZCIDAZCA
CHIBMFSCSYSTEM NLSRDZCHMVS6 CICST5 DSV
FSC400 SYSTEM SIMTSFSC400 AS/400 SIM

```

```

S38BU3 SYSTEM D4ARDZCHMVS1 DCUZCIDPZCP
S36BU3 SYSTEM D3ARDZCHMVS1 DCUZCIDPZCP
OAC36 SYSTEM D3BRDZCHMVS1 DCUZCIDPZCP
CHVM1 CH2MAIL CH2T
OVCSC SYSTEM OV2RDZCHMVS1 DCUZCIDPZCP

```

9.1.3 VTAM/NCP on IBM 4381

```

*****
*
*          LINE, PU, LU  DEFINITIONS FOR BNN LINKS                      AS/400  *
*
*****
PC8L8   LINE ADDRESS=(8,HALF),          REL. LINE ADDR, COMM OP MODE  *
        CLOCKNG=EXT,                    INTERNAL/EXTERNAL CLOCKING  *
        DUPLEX=FULL,                     RTS UP: FULL SEND/REC, HALF SEND*
        ETRATIO=30,                      ERROR TO XMIT RATIO (PER MILLE) *
        LPDATS=LPDA1,                   MODEM SUPPORTS LPDA        *
        LTRUNC=NO,                      LINE TRACE DATA COPY TRUNCATION *
        MAXPU=1,                         MAX NUM OF PU ON LINK      *
        NRZI=YES,                       NO-RETURN-TO-ZERO-INVERTED MODE *
        PAUSE=0.3,                      AV. DURATION OF POLLING CYCLE *
        RETRIES=(7,3,5),                RECOVERY: RETRIES,PAUSE,SEQ. *
        SERVLIM=10,                    NUM OF REG SCANS BEFORE SOT SCAN*
        SPEED=9600,                    LINE SPEED IN BPS          *
        SPAN=(PC8V43,LN,LAD008),
        ISTATUS=ACTIVE
        STATOPT=' LI AS4 NRZI'
*
**
        SERVICE ORDER=(PC8C11)
*
PC8C11  PU ADDR=C1,                   POLLING ADDRESS            *
        ANS=CONTINUE,                  AUTO NETWORK SHUTDOWN     *
        IRETRY=NO,                     IMMED. RETRY A POLLING TO ON PU *
        LPDA=ALLOW,                    BLOCK/ALLOW LPDA TESTS    *
        MAXDATA=265,                   MAX AMOUNT OF DATA TO PU (BYTES)*
        MAXOUT=7,                      FRAMES SENT TO NCP BEF REQ RESP *
        PASSLIM=7,                     NUM OF CONSEC PIU'S TO PU  *
        PUTYPE=2,                      PUTYPE OF SDLC DEVICE ON LINE *
        DISCNT=NO,                     VTAM DISC SSCP-LU/PU SESS  *
        ISTATUS=ACTIVE,                VTAM INITIAL STATUS       *
        SSCPFM=USSSCS,                 VTAM USS FORMAT           *
        MODETAB=PCADS400,              VTAM DEFAULT LOGMODE TABLE *
        PACING=7,                      VTAM PACING COUNT NCP-PU   *

```

```

                SPAN=(MAJ0100,MIN04,BID400,PC8V43,PC8L8,PU),          *
                VPACING=8                VTAM PACING COUNT VTAM-NCP
*                STATOPT=' PU AS400 C1 LPDA'
*
                ...

*
PC8RI126 LU LOCADDR=26,                LOCAL DEVICE ADDRESS      LU0    *
                DLOGMOD=RSCSNJE,        VTAM DEFAULT LOGMODE      *
                SPAN=(MIN04,BID400,PC8V43,PC8L8,PC8C11,LU),        *
                ISTATUS=ACTIVE           VTAM INITIAL STATUS
*                STATOPT=' NJE/RSCS AS400'

```

9.1.3.1 Logmode Table Entry

```

*****
*
*      DSNAME   PCADS400  VTAMLST
*
*              USER DEFINED LOGON MODE TABLE FOR HOST PCA
*
*****
PCADS400 MODETAB
    ...

RSCSNJE  MODEENT LOGMODE=RSCSNJE,
          FMPROF=X'03',TSPROF=X'03',
          PRIPROT=X'72',SECPROT=X'72',COMPROT=X'4020',
          RUSIZES=X'0000',
          PSNDPAC=X'00',SRCVPAC=X'00',SSNDPAC=X'00',
          PSERVIC=X'00',ENCR=0,TYPE=1
    ...

    MODEEND
    END

```

9.1.3.2 Cross Domain Resource Definitions

```

*      CDRSC FUER NETID=CHIBM500          HOHLSTR.560          *
*****
CHIBM500 NETWORK NETID=CHIBM500
*-----*
    ...

MCBZRSCS CDRSC ISTATUS=ACTIVE          APPL RSCS
    ...

```

9.1.3.3 Further VTAM/NCP

Further VTAM/NCP, VM and RSCS definitions in the target IBM 9370 are transparent to the AS/400 implementation. It is assumed that the appropriate systems programmers will provide the required resource definitions.

9.1.4 AS/400

9.1.4.1 Line, Controller, Device Description

```
CRTLINSDLC LIND(FSC370LINE) RSRCNAME(LIN031) +
  ONLINE(*YES) ROLE(*SEC) LINESPEED(19200) +
  MODEM(*IBMLPDA1) DUPLEX(*FULL) +
  TEXT('Leased, PP, Connection to FSC 4381') +
  AUT(*USE)
```

```
CRTCTLHOST CTLD(PC8CI1) LINKTYPE(*SDLC) ONLINE(*YES) +
  APPN(*NO) LINE(FSC370LINE) +
  SSCPID(05000000A0BE) STNADR(C1) +
  TEXT('PU(PC8CI1) to FSC4381') AUT(*USE)
```

...

```
/* RSCS NJE */
```

```
CRTDEVSNUF DEVD(PC8RI126) LOCADR(1A) RMTLOCNAME(ZCHVM5) +
  CTL(PC8CI1) APPID(MCBZRSCS) TEXT('RSCS NJE')
```

9.1.4.2 Network Attributes

```
Display Network Attributes

System: AS400BU3
Current system name . . . . . : AS400BU3
  Pending system name . . . . . :
Local network ID . . . . . : CHIBM600
Local control point name . . . . . : AS400BU3
Default local location . . . . . : AS400BU3
Default mode . . . . . : MODLU62
Maximum number of conversations for a remote
  location . . . . . : 64
APPN node type . . . . . : *NETNODE
Maximum number of intermediate sessions . . . . : 200
Route addition resistance . . . . . : 128
Server network ID/control point name . . . . . : *LCLNETID S36APPN
```

Figure 89. Network Attributes, AS400BU3

AS/400 system name has to correspond with the RSCS link name.

9.1.4.3 Routing Table Entry

```

Display Details of Routing Table Entry

Destination system
name/Group . . . . . : ZCHVM5
Description . . . . . : VM/RSCS of TS on 9370
Service level:
Fast:
Queue name . . . . . : ZCHVM5
Maximum hops . . . . : *DFT
Status:
Queue name . . . . . : ZCHVM5
Maximum hops . . . . : *DFT
Data high:
Queue name . . . . . : ZCHVM5
Maximum hops . . . . : *DFT
Data low:
Queue name . . . . . : ZCHVM5
Maximum hops . . . . : *DFT

```

Figure 90. Routing Table Entry, ZCHVM5

9.1.4.4 Distribution Queue

```

Display Details of Distribution Queue                                     Page 1 of 2

Queue . . . . . : ZCHVM5
Queue type . . . . . : *RPDS
Remote location name . . . : ZCHVM5
Mode . . . . . : *NETATR
Remote net ID . . . . . : *LOC
Local location name . . . . : *LOC
Normal priority:
Send time:
From/To . . . . . :      :
Force . . . . . :      :
Send depth . . . . . : 1
High priority:
Send time:
From/To . . . . . :      :
Force . . . . . :      :
Send depth . . . . . : 1

```

Figure 91 (Part 1 of 2). Distribution Queue, ZCHVM5

```

Display Details of Distribution Queue                                     Page 2 of 2

Number of retries . . . . . : 3
Number of minutes
between retries . . . . . : 5
To ignore time/depth values
while receiving:
Send queue . . . . . : N                                     Y=Yes, N=No

```

Figure 91 (Part 2 of 2). Distribution Queue, ZCHVM5

9.1.4.5 VM Destination Entry

```
Work with VM Destinations                                DSP20

Type options, press Enter.
  2=Change  4=Remove  5=Display details

Opt      VM Destination      OfficeVision/VM      OfficeVision/VM      VM/RSCS
          Node ID            OfficeVision/VM      Distribution Manager  Code Page
          ZCHVM5             YES                  PROMAIL
          -----

F3=Exit  F5=Refresh  F6=Add destination  F12=Cancel  F17=Top  F18=Bottom
          -----
          Bottom
          -----
```

Figure 92. VM Destination Entry

9.1.4.6 System Directory

To allow routing to any user at node ZCHVM5, we added the following system directory entry:

```
ADDDIRE USRID(*ANY ZCHVM5) USRD('Generic Entry for ZCHVM5') SYSNAME(ZCHVM5)
```

After the connection is established successfully, the RSCS node sends a message to user SYSTEM.AS400BU3 at AS400BU3. To receive this message correctly, we created a user profile SYSTEM and added an appropriate user:

```
CRTUSRPRF USRPRF(SYSTEM) TEXT('General VM bridge user') MSGQ(QSYS/QSYSOPR)
```

```
ADDDIRE USRID(SYSTEM AS400BU3) USRD('General VM bridge user') SYSNAME(AS400BU3)
```

9.2 Operation

9.2.1 Starting the VM Bridge

If the VM bridge does not come up automatically when VM and AS/400 are started, start the bridge as follows:

1. Restart subsystem QSNADS or take option 5 - Send Queue - on the WRKDSTQ screen. While attempting to establish the connection, the distribution queue status is SENDING and the following message is sent to the QSYSOPR message queue:

```
VM/MVS bridge processes started for *RPDS gateway sender serving the
ZCHVM5 distribution queue.
```

2. Next, start the RSCS link with AS/400. At the VM console, enter the following command:

```
SMSG RSCS START AS400BU3
```

Messages at the VM console document the successful establishment of the connection with the AS/400. The following message indicates that RSCS link to AS/400 has been activated.

```
DMTVXT700I Activating link AS400BU3 SNANJE LUNAME PC8RI126 ...
DMTSNE151I Link AS400BU3 LUNAME PC8RI126 ready for session initiation
DMTSNE152I Link AS400BU3 LUNAME PC8RI126 session established
DMTNCR905I Signon of link AS400BU3 complete, buffer size=1024
```

Enter the following VM console command to get the RSCS link status:

```
SMSG RSCS Q AS400BU3
```

If you get the following link status, the connection between AS/400 and RSCS is successfully established:

```
DMTCMQ652I Link AS400BU3 connected ...
DMTCMQ637I Link AS400BU3 class=* hold=no drain=no ...
```

3. The AS/400 QSYSOPR message queue receives the following message indicating the successful establishment of the connection with RSCS.

```
Sign-on complete on VM/MVS bridge to remote location ZCHVM5.
From . . . : SYSTEM ZCHVM5 25.11.91 15:24:55
DMTNCR905I Signon of link AS400BU3 complete, buffer size=1024
```

Only after this point is data exchanged between AS/400, RSCS and OfficeVision/VM. In our example, subsystem QSNADS maintains three jobs: LDZCHVM5, RCZCHVM5 and ZCHVM5. LDZCHVM5 is the communicating job, that is attached to the SNUF device PC8RI126.

9.3 Usage

This VM bridge can be used by VM/CMS and AS/400 ODF users to exchange data files. Consult AS/400 Communications Definitions II, GG24-3763 for further details.

Users enrolled with OfficeVision/VM or OfficeVision/400 use this VM bridge to exchange messages, notes and documents.

On OfficeVision/VM we have user SIMH at ZCHVM5, on OfficeVision/400 we have user SIMH.FSC400 at AS400BU3. Both users are enrolled.

To show the interaction between these two OfficeVision products we documented the exchange of notes.

9.3.1 Sending Note from OV/400 to OV/VM

```

+NOTE P:12                               Edit Req'd Carrier Ret   Pg:1   DSP11
◀...T.2..T...T.3..T...T.4..T...Tv5..T...T.6..T...T.7..T...T.8..T▶....9.
F
TO:          SIMH      ZCHVM5   Generic entry for TS PROFS VM

FROM:        SIMH      FSC400   S. Imhof on AS400BU3

DATE:        date
SUBJECT:     Testing OV/VM Bridge
REFERENCE:
F

This is to test the AS/400 - OV/VM Bridge.
Regards,

F

F1=Copy      F10=Send      F16=Adjust/Paginate  F21=Nondisplay keys
F2=Move      F12=Cancel    F17=Functions        F22=Spell functions
F3=Exit/Save F13=Edit options F18=Search/Replace   F23=Word spell aid
F6=Find      F14=Get options F19=Print/View       F24=More keys

START TYPING YOUR NOTE HERE.

```

Figure 93. Typing Note with OfficeVision/400

```

                                In-Basket:Stephan Imhof                DSP11

Press a PF-key to see the note.
---SENDER---      -----TO-----      TYPE      DUE DATE  DOCUMENT-DATE
PF1 SIMH  --FSC400  SIMH  --ZCHVM5      NOTE      18/09/91  16:29
      Subject: Testing OV/VM Bridge
PF2 SIMH  --FSC400  SIMH  --ZCHVM5      NOTE      18/09/91  15:06
      Subject: No Subject
PF3 SIMH  --FSC400  SIMH  --ZCHVM5      NOTE      18/09/91  14:56
      Subject: No Subject
PF4 SIMH  --FSC400  SIMH  --ZCHVM5      NOTE      03/05/91  11:25
      Subject: No Subject

                                Page      1 of      1
PF9 Help   PF10 Next Page   PF11 Previous Page   PF12 Cancel

```

Figure 94. Receiving Note with OfficeVision/VM


```

NOTE
DSP11
FROM: SIMH --FSC400 Date and Time: 18/09/91 16:29:31
TO: SIMH ZCHVM5 Generic entry for TS PROFS VM

FROM: SIMH FSC400 S. Imhof on AS400BU3

DATE: SEPTEMBER 18, 1991
SUBJECT: Testing OV/VM Bridge

This is to test the AS/400 - OV/VM Bridge.
Regards,

* * END OF NOTE * *

PF1 Altern.-PF PF2 File Note PF3 Keep PF4 Delete PF5 Forward PF6 Reply
PF7 Resend PF8 Print PF9 Help PF10 Next Page PF11 Previous Page PF12 Cancel

```

Figure 95. Viewing Received Note with OfficeVision/VM

9.3.2 Sending Note from OV/VM to OV/400

```

SEND A NOTE
DSP11
Send to: fsc400(simh)
From:
Subject: Testing OV/VM Bridge

This is to test the OV/VM - OV/400 Bridge.
Many regards,

PF1 Top PF2 Bottom PF3 Delete line PF4 Add line PF5 Join PF6 Format
PF7 Send PF8 Proof PF9 Help PF10 Next Page PF11 Previous Page PF12 Cancel

```

Figure 96. Typing Note with OfficeVision/VM

```

Work with Mail
DSP11

Working with mail for . . . . . : SIMH   FSC400   User ID/Address...

Type options, press Enter.
 2=Revise a copy  4=Delete    5=View    6=Print    8=Change details
 9=Print options 10=Forward 11=Reply 12=File remote 13=File local
14=Authority

-----From-----
Opt  Status      User ID  Address  Description  Date
     NEW        SIMH    ZCHVM5  Testing OV/VM Bridge  18.09.91
     OPENED     SIMH    ZCHVM5  No Subject           18.09.91
     OPENED     QGATE   AS400BU3 Undeliverable Mail   13.09.91
     OPENED     QGATE   AS400BU3 Undeliverable Mail   13.06.91
     OPENED     ROOT    EFSCRS53 Test de Communication 24.05.91

Bottom

F3=Exit  F5=Refresh  F6=Work with outgoing mail status
F10=Display new mail  F12=Cancel  F13=More tasks  F24=More keys

```

Figure 97. Receiving Note with OfficeVision/400

```

MAIL P:12          VIEW          Pg:1   DSP11
◀.:...2...T:...T3...T:...T4...T:...T5...vT:...T6...T:...T7...T:...T8...T:...T9.
From: SIMH   --ZCHVM5          Date and time: 18.09.91 16:35:14
An: SIMH   --FSC400

Von:
Betreff: Testing OV/VM Bridge

This is to test the OV/VM - OV/400 Bridge.
Many regards,

F3=Exit      F7=Window    F12=Cancel   F16=File remote
F4=Find char F8=Reset     F13=Edit option F17=Function
F5=Goto      F10=Forward  F14=Delete mail F19=Print
F6=Find      F11=Reply    F15=File local F21=Nondisplay keys

```

Figure 98. Viewing Received Note with OfficeVision/400

9.4 Matching Parameters

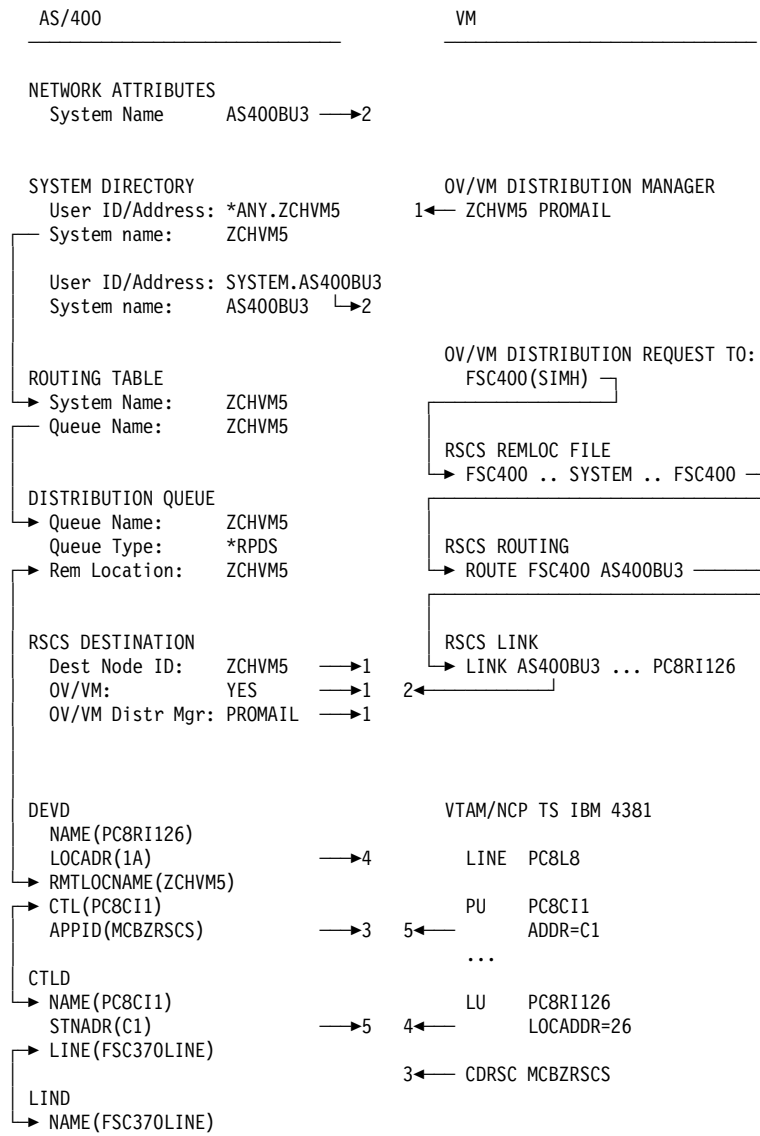


Figure 99. OfficeVision/VM Bridge, Matching Parameters

Chapter 10. VM/MVS Bridge Monitor Program

10.1 Situation

The VM/MVS Bridge allows transfer of files between System/390 and AS/400 users. The AS/400 represents an SNA/NJE node. For communications an SNA LU TYPE session is used.

Since it is a dependent SNA session, AS/400 has to request the session establishment.

After the AS/400 subsystem QSNADS is started, the VM/MVS Bridge jobs try to establish the connection.

- If there are not objects in the distribution queue, there is only a single attempt to get the connection.
- If there are objects in the distribution queue, the VM/MVS Bridge jobs retry based on the definitions given when the distribution queue was created.

If the SNA connection with the System/390 is not up and running at the moment, the VM/MVS Bridge jobs try to communicate. They make only a single attempt. The connection will work if the device has the status VARIED ON.

There is the same situation in the case where the connection has been established successfully and the was interrupted afterwards.

10.2 Approaches to Solve

Since the restart capabilities of the VM/MVS Bridge jobs do not cover all situations, we see a need for a higher-level monitor program.

With OS/400 V2R2, you can accomplish a monitor function using the alert filtering and routing function. However, for a single case, we find it easier not to use this latest enhancement.

Technical remark: The VM/MVS Bridge for a specific remote node, for example ZCHVM1, consists of three jobs: ZCHVM1 (the main job), RDZCHVM1 (the communicating job) and job LDZCHVM1.

We selected a CL program to monitor the device status.

This monitor CL program is started with subsystem QSNADS. It checks periodically to see if the VM/MVS bridge is active, that is whether the RD... job is attached to the SNUF device and whether the status of this device is ACTIVE. If the RD... job is not attached to the SNUF device, the device status is not ACTIVE, the CL command SNDDSTQ is used to re-start the VM/MVS Bridge.

If the main job, in our case ZCHVM1, is still active and if there are no objects in the distribution queue, CL command SNDDSTQ has no effect.

Sending a dummy message to an existing or non-existing VM or MVS user ID is the best option. This message is queued in the distribution queue and invokes

the retries. After the CL program sends the dummy message, CL command SNDDSTQ is required to start the process.

The main job can be terminated with the CL command ENDJOB. We find this approach may show negative consequences.

Termination and restart of subsystem QSNADS is another approach. On an AS/400 system with multiple SNADS connections this approach is not acceptable.

10.3 VM/MVS Bridge Monitor Program

To follow the solution based on the discussion in the previous chapter you must implement the following components:

- CL Program WUPRPDS
- Add Autostart Job Entry to Subsystem QSNADS
- Add Routing Entry to Subsystem QSNADS
- Create Job Description WUPRPDS
- Configure Distribution Queue

The changes to subsystem QSNADS can only be made when it is inactive. After you make the changes and restart subsystem QSNADS, the VM/MVS Bridge will restart automatically.

10.3.1 CL Program WUPRPDS

```

                                PGM

                                DCL      VAR(&DEVSTS) TYPE(*DEC) LEN(5 0)
                                DCL      VAR(&LSTCHK) TYPE(*CHAR) LEN(1)
/*                                &LSTCHK = S, SUCCESSFUL                */
/*                                &LSTCHK = F, DEVICE WAS NOT ACTIVE    */

                                CHGVAR   VAR(&LSTCHK) VALUE(' S')
                                DLYJOB   DLY(120)

START:
                                RTVCFGSTS CFGD(PC8RI128) CFGTYPE(*DEV) STSCDE(&DEVSTS)
/* 1                                *****                               */

/* BRIDGE IS ACTIVE OR AT LEAST TRYING */
                                IF      COND(&DEVSTS *EQ 60) THEN(DO)
                                CHGVAR   VAR(&LSTCHK) VALUE(' S')
                                DLYJOB   DLY(720)
                                GOTO     CMDLBL(START)
                                ENDDO

/* BRIDGE NOT ACTIVE, IF IT WAS ACTIVE AT LAST CHECK                */
/* SEND DUMMY MESSAGE TO PUSH                                        */
                                IF      COND(&LSTCHK *EQ ' S') THEN(SNDNETMSG +
                                MSG(' R') TOUSRID((ICCCSFBO CHAIBMO0)))
                                SNDDSTQ  DSTQ(ZCHVM1) PTY(*HIGH)
/* .rk.2                                *****                               */
                                CHGVAR   VAR(&LSTCHK) VALUE(' F')
                                DLYJOB   DLY(720)

```

```
GOTO      CMDLBL(START)

ENDPGM
```

Required changes to the above CL program:

- **1** Name of your device description, leading to RSCS or JES2
- **2** Name of your distribution queue you defined for RSCS or JES2

This documented example runs with IBM VANS RSCS. As long as the content and address of the dummy message is not changed, IBM VANS will not charge this traffic.

Create the CL program in library QGPL.

10.3.2 Autostart Job Entry

```
ADDAJE SBSB(QSNADS) JOB(WUPRPDS) JOBD(QGPL/WUPRPDS)
```

Figure 100. Autostart Job Entry

10.3.3 Routing Entry

```
ADDRTGE SBSB(QSNADS) SEQNBR(9998) PGM(QGPL/WUPRPDS) CLS(QGPL/QSNADS) +
      CMPVAL('WUPRPDS')
```

Figure 101. Routing Entry

10.3.4 Job Description

```
CRTJOBQ (QGPL/WUPRPDS) JOBQ(QGPL/QSNADS) USER(SYSTEM) RTGDTA('WUPRPDS')
```

Figure 102. Job Description

USER SYSTEM must be a local user authorized to use the CL program WUPRPDS. USER SYSTEM must be included in the local distribution directory (WRKDIR). In this example, user is SYSTEM.AS400BU3 AS400BU3.

10.3.5 Configuration of Distribution Queue

The objective is that this monitor program represents a higher-level monitor above the retries already defined in the SNADS distribution queue. This means that distribution queue retries should be done within the the wait/inactivity time of this monitor program.

Change your distribution queue with CL command CFGDSTSRV so that the SNADS automatic retries fall within the DLYJOB number of seconds as defined in WUPRPDS.

Part 3. AS/400 Peer Communications

Chapter 11. Submit Network Job via SNADS

The CL command Submit Network Job (SBMNETJOB) sends a job stream to another system user in the SNADS network. At the receiving system, the job may be submitted immediately, filed for placement by the receiving user, or rejected. It is governed by the value JOBACN in the network attributes, or by the value specified on the ACTION parameter of the Add Network Job Entry (ADDNETJOB) or Change Network Job Entry (CHGNETJOB) CL commands.

The CL command SBMNETJOB can only be used to send a batch job stream to a user on a remote system.

11.1 AS/400 Definitions

On the target system, set the NETA parameter Job Action to value *SEARCH.

5738SS1 V2R1M0 910524 Network Attributes		
Current system name	: SYSNAME	AS400BU3
Pending system name	:	
Local network ID	: LCLNETID	CHIBM600
Local control point name	: LCLCPNAME	AS400BU3
Default local location	: LCLLOCNAME	AS400BU3
Default mode	: DFTMODE	MODLU62
APPN node type	: NODETYPE	*NETNODE
Maximum number of intermediate sessions	: MAXINTSSN	200
Route addition resistance	: RAR	128
Network node servers:	NETSERVER	
Server network ID/control point name	:	
Alert status	: ALRSTS	*ON
Alert primary focal point	: ALRPRIFP	*YES
Alert default focal point	: ALRDFTFP	*NO
Alert logging status	: ALRLOGSTS	*ALL
Alert controller description	: ALRCTLD	*NONE
Alert hold count	: ALRHLCNT	0
Message queue	: MSGQ	QSYSOPR
Library	:	QSYS
Output queue	: OUTQ	QPRINT
Library	:	QGPL
Job action.	: JOBACN	*SEARCH
Maximum hop count	: MAXHOP	16
DDM request access	: DDMACC	*OBJAUT
PC Support request access	: PCSACC	*OBJAUT
Default ISDN network type	: DFTNETTYPE	
Default ISDN connection list	: DFTCNLST	QDCCNNLANY

Figure 103. SNADS AS/400 Definitions Network Attributes

The following CL commands support the network job table function:

```

Work with Network Job Entries
System: AS400BU3
Network job action . . . . . : *SEARCH
Position to . . . . . User ID/Address
Type options, press Enter.
1=Add network job entry 2=Change network job entry
4=Remove network job entry
Opt User ID Address Action User ----Message Queue-----
CMN FSCB20 *SUBMIT CMN *USRPRF

```

Figure 104 (Part 1 of 2). SNADS AS/400 Definitions Network Job Entries

```

Add Network Job Entry (ADDNETJOBE)
Type choices, press Enter.
User ID:
User ID . . . . . ► CMN Character value
User ID qualifier . . . . . ► FSCB20 Character value
Network job action . . . . . ► *SUBMIT *FILE, *REJECT, *SUBMIT
User profile . . . . . CMN Name
Message queue . . . . . *USRPRF Name, *USRPRF, *NONE
Library . . . . . Name, *LIBL, *CURLIB
Job queue . . . . . QBATCH Name
Library . . . . . *LIBL Name, *LIBL, *CURLIB

```

Figure 104 (Part 2 of 2). SNADS AS/400 Definitions Network Job Entries

11.2 Batch Job

The following job stream lists a library and resends the output back to the requester on the source system.

```

SOURCE FILE . . . . . CMNLIB/QCLSRC
MEMBER . . . . . ODFBATCH03
SEQNBR*...+... 1 ...+... 2 ...+... 3 ...+... 4 ...+... 5 ...+... 6 ...+... 7 ...
100 //BCHJOB JOB(ODFJOB) JOBQ(QGPL/CMNJOBQ) JOBQ(*JOBQ) OUTQ(*JOBQ) +
200 LOG(*JOBQ *JOBQ *MSG) MSGQ(CMNLIB/ODFJOBMSGQ)
300 DSPLIB LIB(GUEST) OUTPUT(*PRINT)
400 SNDNETSPLF FILE(QPDSPLIB) TOUSRID((CMN FSCB20)) JOB(*) DTAFMT(*ALLDATA)
500 //ENDBCHJOB

```

Figure 105. SNADS Batch Job

11.3 Operations

Use the following CL command to send a job stream to user CMN.FSC400 at the remote system AS400BU3.

The SNADS environment is documented in *AS/400 Communications Definitions I*, GG24-3449.

```

                                Submit Network Job (SBMNETJOB)
Type choices, press Enter.
File . . . . . ▶ QCLSRC           Name
Library . . . . . ▶ CMNLIB        Name, *LIBL, *CURLIB
User ID:
User ID . . . . . ▶ CMN           Character value
Address . . . . . ▶ FSC400        Character value
                                + for more values
Member . . . . . ▶ ODFBATCH03     Name, *FIRST

```

Figure 106. SNADS - Send a Job Stream

11.4 Job Control

The following messages prove that the job stream was submitted on the remote system.

Submitting user on the source system is CMN.FSCB20

```

                                Additional Message Information
Message ID . . . . . : CPC8056           Severity . . . . . : 00
Message type . . . . . : INFO
Date sent . . . . . : 20/11/91           Time sent . . . . . : 10:29:07
From program . . . . . : QUOCMD           Instruction . . . . . : 0000
To program . . . . . : QUOMAIN           Instruction . . . . . : 0000
Message . . . . . : Input stream in file QCLSRC in CMNLIB member ODFBATCH03
sent to 1 users. Not sent to 0 users.
Cause . . . . . : The input stream was sent to 1 users, using the Submit
Network Job (SBMNETJOB) command. The input stream was not sent to 0 users
because they had distributions that were not correct.
Recovery . . . . . : See the previously listed messages in the job log to
determine the cause of the error. Correct the error and try the request
again.

```

Figure 107 (Part 1 of 3). SNADS - Messages to the Submitting User

```

                                Additional Message Information
Message ID . . . . . : CPI8073           Severity . . . . . : 00
Message type . . . . . : INFO
Job . . . : QNFTP           User . . . : QSNADS           Number . . . : 031761
Date sent . . . . . : 20/11/91           Time sent . . . . . : 10:29:48
From program . . . . . : QNFDSTRB         Instruction . . . . . : 0000
Message . . . . . : Job stream file QCLSRC member ODFBATCH03 received for user
CMN FSC400. 1 jobs submitted. 0 jobs not submitted.
Cause . . . . . : The job stream was sent by user CMN FSCB20 to user CMN
FSC400 at 20/11/91 10:29:06 and received at 20/11/91 10:27:37. The job
stream was submitted to a job queue.

```

Figure 107 (Part 2 of 3). SNADS - Messages to the Submitting User

```

Additional Message Information
Message ID . . . . . : CPI8052          Severity . . . . . : 00
Message type . . . . . : INFO
Job . . . : QNFTP          User . . . : QSNADS          Number . . . : 031761
Date sent . . . . . : 20/11/91          Time sent . . . . . : 10:29:58
From program . . . . . : QNFDSTRB       Instruction . . . . . : 0000
Message . . . . . : Spooled file QPDSPLIB received and placed on output queue
                    PRT01 in library QUSRSYS.
Cause . . . . . : The spooled (processed later) file that was sent by user
                    CMN FSC400 to user CMN FSCB20 at 20/11/91 10:27:57 was received at 20/11/91
                    10:29:54.

```

Figure 107 (Part 3 of 3). SNADS - Messages to the Submitting User

On the target system, user CMN.FSC400 receives the following messages in his message queue.

```

Additional Message Information
Message ID . . . . . : CPI8053          Severity . . . . . : 00
Message type . . . . . : INFO
Job . . . : QNFTP          User . . . : QSNADS          Number . . . : 036429
Date sent . . . . . : 22.11.91          Time sent . . . . . : 10:58:57
From program . . . . . : QNFDSTRB       Instruction . . . . . : 0000
Message . . . . . : Input stream file QCLSRC member ODFBATCH03 received from
                    user CMN FSCB20. 1 jobs submitted. 0 jobs not submitted
Cause . . . . . : The input stream that was sent by user CMN FSCB20 to user
                    CMN FSC400 at 22.11.91 11:00:37 was received at 22.11.91 10:58:52. The
                    input stream was submitted to a job queue. If any jobs in the input stream
                    were not submitted, a previously displayed message identifies the jobs that
                    were not submitted. Also, the job logs for those jobs indicate the reason
                    the jobs were not submitted.

```

Figure 108 (Part 1 of 2). SNADS - Messages on the Target System

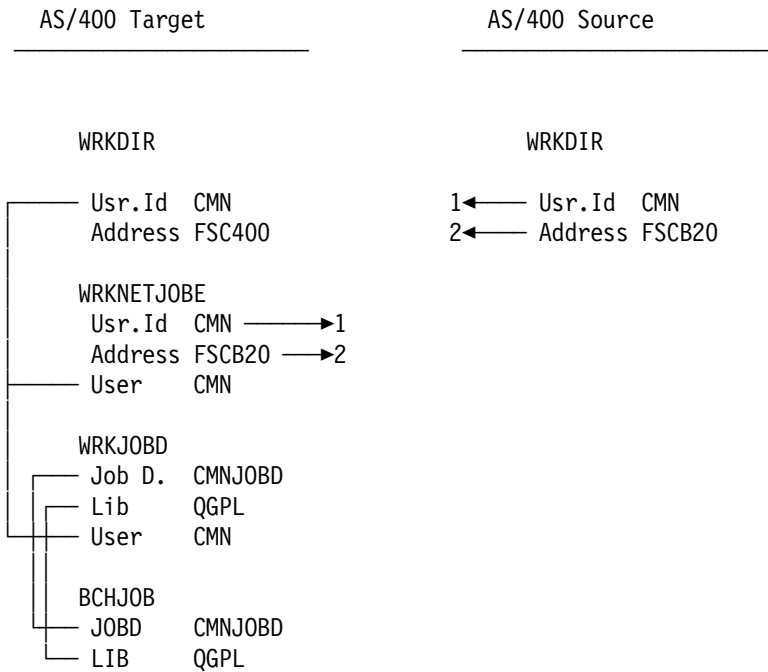
```

Additional Message Information
Message ID . . . . . : CPI8072          Severity . . . . . : 00
Message type . . . . . : INFO
Job . . . : QNFTP          User . . . : QSNADS          Number . . . : 036429
Date sent . . . . . : 22.11.91          Time sent . . . . . : 10:59:20
From program . . . . . : QNFDSTRB       Instruction . . . . . : 0000
Message . . . . . : Spooled file QPDSPLIB received for user CMN FSCB20.
Cause . . . . . : The spooled (processed later) file was sent by user CMN
                    FSC400 to user CMN FSCB20. It has been placed on output queue PRT01 in
                    QUSRSYS. The file was sent at 22.11.91 10:59:06 and was received at 22.11.91
                    11:01:01.

```

Figure 108 (Part 2 of 2). SNADS - Messages on the Target System

11.5 Matching Parameters



11.6 Completion Message

If the job stream fails on the target system, the sender does not receive any messages.

To avoid this problem, use the MSGQ parameter on the BCHJOB command to specify the name of the message queue where you want a completion message sent when the job ends.

Part 4. Remote Workstation Controller

Chapter 12. IBM 5394 via SNA/X.25 SVC, Called by AS/400

The IBM 5394 usually establishes the connection with the AS/400 host by dialing the PSTN number or by submitting an X.25 call.

Note: AS/400 does not have a means to establish implicitly the connection from the AS/400 to the IBM 5394. It does with the IBM 5494.

With a short CL program and the appropriate configuration of the IBM 5394, you can create and automatically control the connection from an AS/400 to the IBM 5394 in auto-answer status. This process is documented in this chapter.

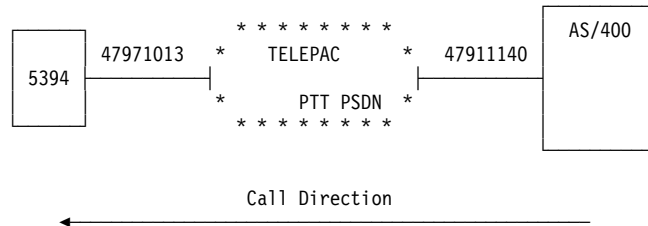


Figure 109. IBM 5394, using multiple X.25 links to AS/400

12.1 IBM 5394 Setup

	0	1	2	3	4	5	6
0/	D	.	.	.	.	.	.
1/	P	.	.	.	.	.	.
2/	.	.	.	.	.	.	.

AA→ 1	BB→ 0						
1→ 2A --	2→ C1	4→ 0 2 7	5→ 1 2 0 0 0	6→ 0 0 1 0 1 1 2			
7→ 0A03							
						P→ 1 0	

Figure 110. IBM 5394 Setup Screen for X.25

A display station is on port 0 address 0 of the IBM 5394. We used an IBM 3180, with a Swiss German multinational keyboard. Therefore, we had a value of "2A" for parameter 1. On port 1 address 0, we attached an IBM 5224 printer.

The LOCADR parameter of the display has to be '00'. Because the printer is attached to port 1 address 0, the LOCADR has to be '07'.

12.2 AS/400 Definitions

12.2.1 TELEPAC Link

The following CL program defines the X.25 line as registered in TELEPAC by the Swiss PTT.

```
...  
CRTLINX25 LIND(X25LINE) RSRNAME(LIN071) LGLCHLE((001 +  
*PVC) (002 *SVCBOTH) (003 *SVCBOTH) (004 +  
*SVCBOTH) (005 *SVCBOTH) (006 *SVCBOTH) +  
(007 *SVCBOTH) (008 *SVCBOTH)) +  
NETADR(47911140) CNNINIT(*LOCAL) +  
ONLINE(*NO) EXCHID(056FFFFF) +  
DFTPKTSIZE(128) MAXPKTSIZE(512) MODULUS(8) +  
DFTWDWSIZE(2) TEXT('X.25 link, 47911140')  
...
```

12.2.2 IBM 5394 Controller

The following CL program will create the controller, display station, and printer device description for the remote IBM 5394.

```
...  
CRTCTLRWS CTLD(XRWS5394) TYPE(5394) MODEL(1) +  
LINKTYPE(*X25) ONLINE(*NO) SWITCHED(*YES) +  
SWTLINLST(X25LINE) +  
EXCHID(05F000C1) INLCNN(*DIAL) +  
CNNNBR(47971013) NETLVL(1984) +  
CNNPWD(P5394) TEXT('Rem 5394 via X.25/SVC')  
  
CRTDEV DSP DEVD(XRWS5394) DEVCLS(*RMT) TYPE(3180) +  
MODEL(2) LOCADR(00) ONLINE(*NO) +  
CTL(XRWS5394) DROP(*NO) TEXT('IBM 3180-2 +  
an IBM 5394')  
  
CRTDEVPRT DEVD(XRWS5394PP) DEVCLS(*RMT) TYPE(5224) +  
MODEL(2) LOCADR(07) ONLINE(*NO) +  
CTL(XRWS5394) TEXT('IBM 5224-2 an IBM 5394')
```

12.2.3 Mechanism to Activate

12.2.3.1 Display File RWSCALL

Edit the following DDS source member. In our example, we used RWSCALLR in CMNLIB.QDDSSRC.

```
A          R RWSCALLR  
A                                     10 20' TEXT'
```

Create the display file using the following CL command:

```
CRTDSPF FILE(CMNLIB/RWSCALL) SRCFILE(CMNLIB/QDDSSRC) DEV(XRWS5394)
```

Note: The DEV parameter value is *REQUESTER. This value indicates that the display station is attached to the remote workstation controller with which we want to establish a connection.

12.2.3.2 CL Programs AUTORWS and RWSCALL

CL program AUTORWS is a simple monitor program that periodically (every 120 seconds) checks the status of the remote workstation controller. If the workstation controller has status VARY ON PENDING, this CL program varies the controller OFF and ON. It also calls program RWSCALL to automatically re-establish the connection.

Note: These two CL programs represent only a basic sample of automated operation. If you intend to use these programs as a base, carefully watch your operation. You may need to add appropriate statements to these CL programs to manage the situation you observe in your network.

CL Program AUTORWS

```
PGM

DCL      VAR(&DEVSTS) TYPE(*DEC) LEN(5 0)
/*              20 = VARY ON PENDING              */

START:
DLYJOB   DLY(120)
RTVCFGSTS CFGD(XRWS5394) CFGTYPE(*CTL) STSCDE(&DEVSTS)

/* CONTROLLER IS NOT CONNECTED */
IF      COND(&DEVSTS *EQ 20) THEN(DO)

VRYCFG   CFGOBJ(XRWS5394) CFGTYPE(*CTL) STATUS(*OFF) +
RANGE(*NET)
VRYCFG   CFGOBJ(XRWS5394) CFGTYPE(*CTL) STATUS(*ON) +
RANGE(*NET)

CALL     PGM(CMNLIB/RWSCALL)
ENDDO

GOTO     CMDLBL(START)

ENDPGM
```

CL Program RWSCALL.

```
PGM

DCLF     FILE(CMNLIB/RWSCALL)

SNDF     DEV(XRWS5394B) RCDfmt(RWSCALLR)
/* IN CASE CONNECTION CAN'T BE ESTABLISHED          */
MONMSG   MSGID(CPF4128)

ENDPGM
```

12.3 Operation

12.3.1 On the IBM 5394

Power on the display station, printer, and controller.

12.3.2 On the AS/400

Activate the X.25 line, the remote workstation controller, the display station, and the printer device descriptions.

The X.25 line will get status 'VARIED ON'. The remote workstation controller and the devices will get status 'VARY ON PENDING'.

12.3.3 Connection Establishment

To establish the connection from AS/400 to the IBM 5394, call CL program AUTORWS:

```
CALL CMNLIB/AUTORWS
```

You can call CL program AUTORWS in batch job.

After a successful call, the status of the configuration objects on the AS/400 will change to the following status:

Work with Configuration Status		
Opt	Lin/Ctl/Dev/Mod	Status
	X25LINE	ACTIVE
	XRWS5394	ACTIVE
	XRWS5394	SIGNON DISPLAY
	XRWS5394P	VARIED ON

Figure 111. Final Status after Connection Establishment

The terminal and the printer are now ready to use.

12.4 Matching Parameters

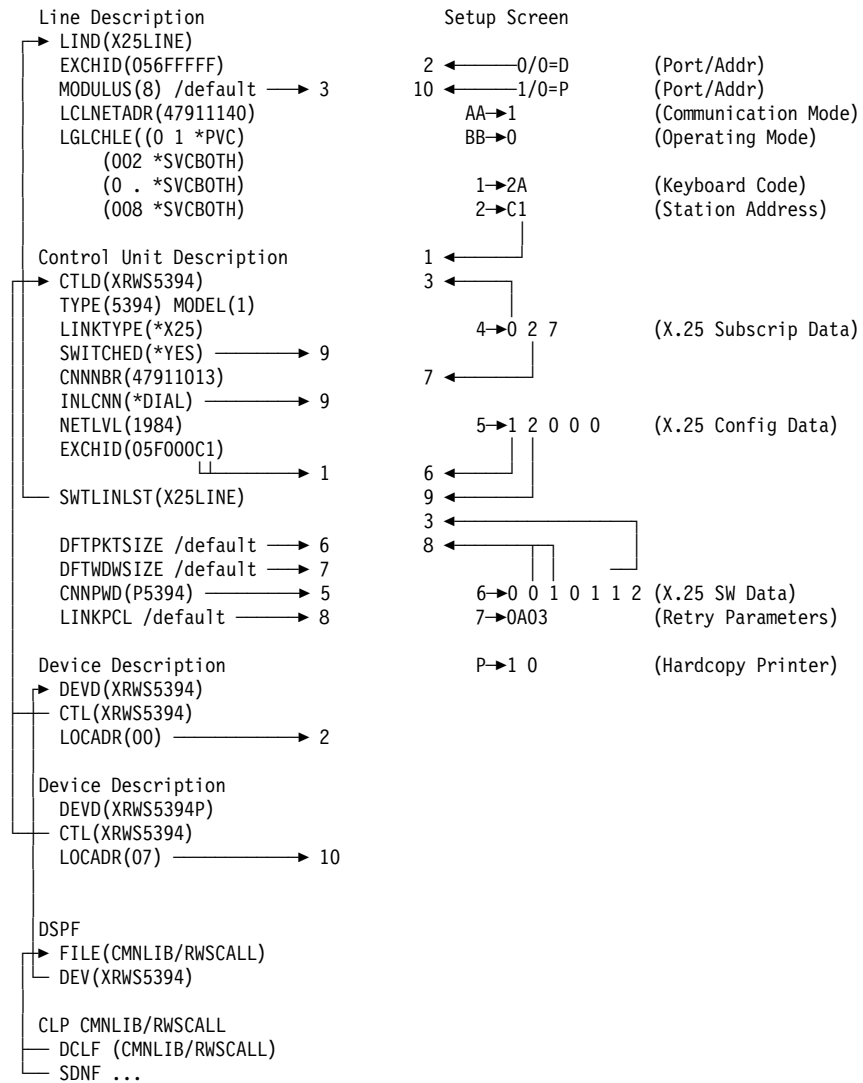


Figure 112. Matching Parameters, AS/400 calling IBM 5394 using X.25/SVC

Chapter 13. IBM 5394 via SNA/X.25 SVC, AS/400 with Double X.25 Access

IBM 5394 remote workstation controller must communicate with a single AS/400 that has two links with the PSDN.

When establishing the connection with the AS/400, the IBM 5394 user may chose either address of the target AS/400 without loading a different configuration diskette on the IBM 5394. On the AS/400, there is only one CTLD and one associated set of DEVDs for this IBM 5394.

Manually selecting either AS/400 address is not discussed in this chapter. The PSDN can re-direct the X.25 call request from the 5394 to either AS/400 address as part of the its service.

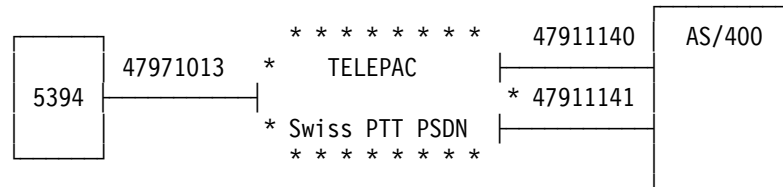


Figure 113. IBM 5394, using multiple X.25 links of AS/400

13.1 IBM 5394 Setup

	0	1	2	3	4	5	6
0/	D	.	.	.	.	.	.
1/	P	.	.	.	.	.	.
2/	.	.	.	.	.	.	.

AA→	1	BB→	0
1→	2A	--	2→ C1
4→	0 2 7	5→	1 0 0 0 0
6→	0 0 1 0 1 1 2		
7→	0A03		
		P→	1 0

Figure 114. IBM 5394 Setup Screen for X.25

A display station is on port 0 address 0 of the IBM 5394. We used an IBM 3180, with Swiss German multinational keyboard. Therefore we had a value of "2A" for parameter 1. On port 1 address 0, we attached an IBM 5224 printer.

The LOCADR parameter of the display must be '00'. Because the printer is attached on port 1 address 0, the LOCADR has to be '07'.

13.2 AS/400 Definitions

On the AS/400, we created one X.25 line description for each of the two links. One remote workstation controller description is required with the appropriate device descriptions.

13.2.1 TELEPAC Link 1

The following CL program defines the first X.25 line.

```
CRTLINX25 LIND(X25LINE) RSRNAME(LIN051) LGLCHLE((001 +
*PVC) (002 *SVCBOTH) (003 *SVCBOTH) (004 +
*SVCBOTH) (005 *SVCBOTH) (006 *SVCBOTH) +
(007 *SVCBOTH) (008 *SVCBOTH)) +
NETADR(47911140) CNNINIT(*LOCAL) +
ONLINE(*NO) EXCHID(056FFFFF) +
DFTPFSIZE(128) MAXPKTSIZE(512) MODULUS(8) +
DFTWDWSIZE(2) TEXT('X.25 link, 47911140')
```

13.2.2 TELEPAC Link 2

This CL program defines the second X.25 link.

```
CRTLINX25 LIND(X25LIN2) RSRNAME(LIN052) LGLCHLE((001 +
*PVC) (002 *SVCBOTH) (003 *SVCBOTH) (004 +
*SVCBOTH) (005 *SVCBOTH) (006 *SVCBOTH) +
(007 *SVCBOTH) (008 *SVCBOTH)) +
NETADR(47911141) CNNINIT(*LOCAL) +
ONLINE(*NO) EXCHID(056EEEEEE) +
DFTPFSIZE(128) MAXPKTSIZE(512) MODULUS(8) +
DFTWDWSIZE(2) TEXT('X.25 link, 47911141')
```

13.2.3 IBM 5394 Controller

This CL program creates the controller, display station, and printer device description for the remote IBM 5394.

```
CRTCTLRWS CTLD(XRWS5394) TYPE(5394) MODEL(1) +
LINKTYPE(*X25) ONLINE(*NO) SWITCHED(*YES) +
SWTLINLST(X25LINE X25LIN2) +
EXCHID(05F000C1) INLCNN(*ANS) +
CNNNBR(47971013) NETLVL(1984) +
CNNPWD(P5394) TEXT('Rem 5394 via X.25/SVC')
```

```
CRTDEV DSP DEVD(XRWS5394) DEVCLS(*RMT) TYPE(3180) +
MODEL(2) LOCADR(00) ONLINE(*NO) +
CTL(XRWS5394) DROP(*NO) TEXT('IBM 3180-2 +
an IBM 5394')
```

```
CRTDEVPRT DEVD(XRWS5394PP) DEVCLS(*RMT) TYPE(5224) +
MODEL(2) LOCADR(07) ONLINE(*NO) +
CTL(XRWS5394) TEXT('IBM 5224-2 an IBM 5394')
```

13.3 Operation

To activate the X.25 lines and the remote workstation controller perform these steps:

1. Activate the X.25 lines by entering WRKCFGSTS *LIN X25LIN*. Then select option 1 on both lines to activate.

After about 20 to 30 seconds, the line status will change from 'VARIED OFF' to 'VARY ON PENDING' to 'VARIED ON'. This status indicates that the AS/400 is communicating on a link level.

2. Activate the controller by entering WRKCFGSTS *CTL XRWS5394. Then select option 1 for the controller.

After a few seconds, the controller and the device status will change to 'VARY ON PENDING'.

Work with Configuration Status		
Opt	Lin/Ctl/Dev/Mod	Status
	XRWS5394	VARY ON PENDING
	XRWS5394	VARY ON PENDING
	XRWS5394P	VARY ON PENDING

Figure 115. Status of Controller XRWS5394

3. Using the IBM 5394

- Power on the display station, printer, and controller.
- From master terminal, press SYS REQ. Refer to the *IBM 5394 User's Guide*, Appendix F (Key Sequences) for other keyboards.
- Enter: c,n47911140,xP5394
 - c means call.
 - n determines the X.25 address field.
 - 47911140 is the X.25 address of the AS/400.
 - You can chose either 47911140, the first AS/400 address or 47911141, the second AS/400 address.
 - x determines the password field. P5394 is the connection password. It is case sensitive.

4. After a successful call, the line status at the AS/400 changes to:

Work with Configuration Status		
Opt	Lin/Ctl/Dev/Mod	Status
	X25LINE	ACTIVE
	XRWS5394	ACTIVE
	XRWS5394	SIGNON DISPLAY
	XRWS5394P	VARIED ON

Figure 116. Final Status, using the first X.25 Line

The terminal and printer are now ready to use.

13.4 Matching Parameters

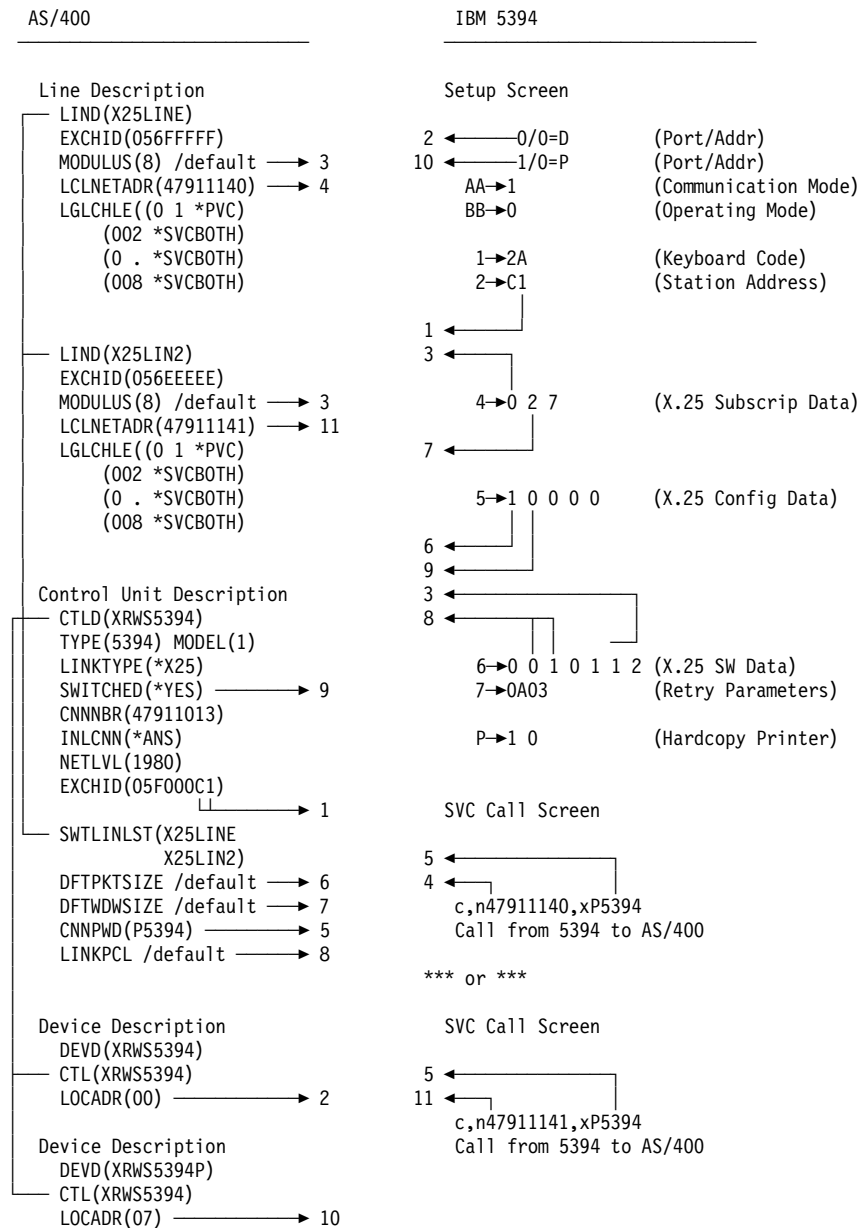


Figure 117. Matching Parameters, AS/400 and IBM 5394 using X.25/SVC

Chapter 14. IBM 5394 Configuration Quick-Reference

This table should only be used for general information purposes. To configure your IBM 5394, please use the appropriate IBM 5394 reference manuals.

SDLC USES FIELDS AA,BB,1,2,3, AND FOR RELEASE 2 FIELDS 8 AND P

X.21 USES FIELDS AA,BB,1,2,A,B,C, AND FOR RELEASE 2 FIELD P

X.25 USES FIELDS AA,BB,1,2,4,5,6,7, AND FOR RELEASE 2 FIELD P

FIELD	FORMAT	FUNCTION	OPTIONS
AA	1 DIGIT	COMMUNICA- TION MODE	0= SDLC, 1= X.25, 2= X.21
BB	1 DIGIT	OPERATING MODE	0= IBM 5394 MODE (FOR AS400) 1= IBM 5294 EMULATION MODE (FOR S/36, S/38)
1	4 DIGITS	KEYBOARD CODE	1&2 D: KEYBOARD CODE 3 D: DISPLAY STATION PORT 4 D: DISPLAY STATION ADDRESS
2	2 DIGITS	CONTROLUNIT ADDRESS	STATION ADDRESS OF IBM 5394 HEX NUMBER
3 (SDLC)	7 DIGITS	MODEM CONFIG. DATA	1 D: 0= NONSWITCHED, 1= SWITCHED 2= V.25 AUTO DIAL SWITCHED 2 D: 0= HALFDUPLEX , 1= DUPLEX 3 D: 0= MULTIPOINT , 1= PT-PT 4 D: 0= NRZI , 1= NRZ 5 D: 0= DTR , 1= CDSTL 6 D: 0= LEADING PAD NOT REQ. 1= LEADING PAD 7 D: 0= NO LOCAL LOOPBACK 1= LOCAL LOOPBACK
8	3 DIGITS	V.25 BIS AUTO-DIAL OPTION INFO.	1&2 D: V.25 BIS TIMEOUT (IN SECONDS) 01 TO FF 3 D: V.25 BIS CALL INFO SAVED TO DISKETTE (0: NOT SAVED, 1: SAVED)
P	2 DIGITS	PRINTER ADDRESS	1 D: PORT ADDRESS (0,1,OR 2) 2 D: STATION ADDRESS (0 - 6)
4 (X.25)	3 DIGITS	X.25 SUBSCRIPTION DATA	1 D: PACKET LEVEL SEQUENCE NUM 0= MODULO 8, 1= MODULO 128 2 D: PACKET WINDOW SIZE 2 TO 7 = MODULO 8 2 TO F = MODULO 128 3 D: LINK WINDOW SIZE (1 TO 7)
5 (X.25)	5 DIGITS	X.25 CONFIG. DATA	1 D: PACKET SIZE (BYTES) 0= 64, 1= 128, 2= 256 (3= 512 RELEASE 2 ONLY)

			<p>2 D: CIRCUIT TYPE 0= MULTIPLE PVCs, MULTIPLE SVCs, OR SVC CALL 1= SINGLE PVC 2= SINGLE SVC ANSWER ONLY WITH RELEASE 2</p> <p>3 D: FLOW CONTROL NEGO. ALLOW 0= YES, 1= NO</p> <p>4 D: ALL MANUAL OPTIONS ALLOWED 0= YES, 1= NO</p> <p>5 D: LOCAL LOOP BACK SUPPORTED 1= YES, 0= NO</p>
6 (X.25)	7 DIGITS	X.25 SOFTWARE DATA	<p>1 D: REVERSE CHARGING ACCEPTED 1= YES, 0= NO</p> <p>2&3 D: LOGICAL LINK CONTROL 00= PSH, 01= QLLC, 10= ELLC</p> <p>4 D: SPECIAL NETWORK ATTACHMENT 0= YES, 1= NO</p> <p>5 D: LINK INITIALIZATION CONTROL 0= NETWORK OR IBM 5394 1= NETWORK ONLY</p> <p>6 D: NETWORK SUBSCRIPTION 0= CCITT X.25 1980 1= CCITT X.25 1984</p> <p>7 D: DIAGNOSTICS CODE 0= SNA 1984 1= ISO 1984 2= SNA 1980</p>
7 (X.25)	4 DIGITS HEXADECI.	RETRY PARAMETERS	<p>1&2 D: NUMBER OF RETRIES HEX. 00 TO FF</p> <p>3&4 D: SECOND BETWEEN RETRIES HEX. 01 TO 3C</p>
A (X.21)	1 TO 15 DECIMAL DIGITS	NETWORK ID #	IBM 5394 TELEPHONE NUMBER (1 - 15 DECIMALS)
B (X.21)	4 DIGITS HEXADECI.	X.21 SHM RETRY-PARAMETER	<p>1&2 D: NUMBER OF RETRIES HEX. 00 TO FF</p> <p>3 D: DELAY BETWEEN RETRIES HEX. 1 TO F</p> <p>4 D: DIRECT CALL SUPPORT IN SHM 1= YES, 0= NO</p>
C (X.21)	2 DIGITS HEXADECI.	OPTIONAL CALL PROGRESS SIGNAL	DURING SHM REESTABLISHMENT, UP TO 8 OPTIONAL CO-PROGRESS CAN BE CHOSEN TO CAUSE 5394 REENTRY OPERATION.

Chapter 15. IBM 5394 as Node T2.1 via SNA Subarea Network

This chapter describes the IBM 5250 Twinax Terminals connection via SNA Subarea Network to AS/400. The IBM 5394 T2.1 RPQ is a microcode enhancement feature for the IBM 5394 Remote Control Unit. This enhancement allows the IBM 5394 to connect to the AS/400 directly as a LEN node, or through a SNA subarea network. IBM 5394 T2.1 RPQ supports SDLC leased link connections.

This RPQ allows you to use the corporate backbone network or connect remote control units via the IBM IN network.

RPQ title/number: 8Q0775 - "LIC" Type 2.1 Support. Specific IBM 5394 Remote Control Units need a HW extension. See RPQ text for more information.

SW requirements: VTAM V3R2 or later, OS/400 V2R1.1.

This test was done with an early version of the RPQ code. Your final configuration may be different due to changes in the level of code from the time of our test until now.

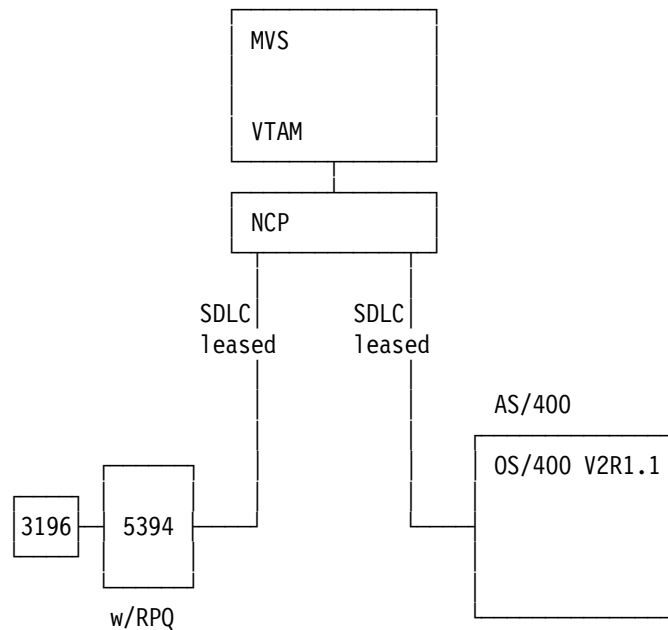


Figure 118. IBM 5394 with T2.1 RPQ via SNA Subarea to AS/400

15.1 Software required

- OS/400 V2R1.1
- MVS/ESA V4R2.2
- VTAM V3R4.1
- NCP V5R4

15.2 IBM 5394 Set Up

```
      0      1      2      3      4      5      6
-----
0/   D      .      .      .      .      .      .
1/   .      .      .      .      .      .      .
2/   .      .      .      .      .      .      .

AA-> 1  BB-> 2  CC-> 77-826BE
1-> 2A -- 2-> C1  3-> 0 1 1 0 0 0 0      8-> 3C 0
10-> 0A 06                                P-> _ _
```

Figure 119 (Part 1 of 2). IBM 5394 T2.1 Setup Screen

```
11-> CHIBM600  12->PC8SRWS0  13->PC8CRWS_  14->MODLU62_
15-> CHIBM600  16->AS400BU4

P-> _ _
```

Figure 119 (Part 2 of 2). IBM 5394 T2.1 Setup Screen

The display station is on port 0 address 0 of the IBM 5394. We used an IBM 3196, with Swiss German multinational keyboard. Therefore we had a value of "2A" for parameter 1.

15.3 AS/400 Definitions

15.3.1 Network Attributes

```

                                     Display Network Attributes
                                     System:  AS400BU3
Current system name . . . . . : AS400BU4
  Pending system name . . . . . :
Local network ID . . . . . : CHIBM600
Local control point name . . . . . : AS400BU4
Default local location . . . . . : AS400BU4
Default mode . . . . . : MODLU62
Maximum number of conversations for a remote
  location . . . . . : 64
APPN node type . . . . . : *NETNODE
Maximum number of intermediate sessions . . . . : 200
Route addition resistance . . . . . : 128

```

Figure 120. IBM 5394 T2.1 AS/400 Definition, Network Attributes

15.3.2 Link with VTAM/NCP

The dependent LU's for 3270 Device Emulation are defined:

```

CRTLINSDLC LIND(FSC370LINE) RSRNAME(LIN021) +
  ONLINE(*YES) ROLE(*SEC) LINESPEED(19200) +
  MODEM(*IBMLPDA1) DUPLEX(*FULL) +
  TEXT('Leased, PP, Connection to FSC +
  4381') AUT(*USE)

CRTCTHHOST CTLD(PC8CM2) LINKTYPE(*SDLC) ONLINE(*YES) +
  APPN(*YES) LINE(FSC370LINE) +
  RMTNETID(CHIBM600) RMTCPNAME(CHIBM60A) +
  SSCPID(05000000A0BE) STNADR(C1) +
  CPSSN(*NO) NODETYPE(*LENNODE) +
  TEXT('PU(PC8CM2) to FSC4381') AUT(*USE)

/* EMULATED SCREEN 3278/9-2 */
CRTDEVHOST DEVD(PC8SI201) LOCADR(01) RMTLOCNAME(FSC4381) +
  ONLINE(*YES) CTL(PC8CM2) APPTYPE(*EML) +
  EMLKBD(*LOWER) TEXT('3278 to FSC MVS') +
  AUT(*USE)

```

...

15.3.2.1 Auto-Created DEVD PC8SRWS0

```

                                Display Device Description
                                AS400BU4
                                05-05-92 10:32:44
Device description . . . . . : PC8SRWSO
Option . . . . . : *BASIC
Category of device . . . . . : *APPC
Remote location . . . . . : PC8SRWSO
Online at IPL . . . . . : *NO
Local location . . . . . : AS400BU4
Remote network identifier . . . . . : *NETATR
Attached controller . . . . . : PC8CM2
Message queue . . . . . : QSYSOPR
  Library . . . . . : *LIBL
Local location address . . . . . : 00
APPN-capable . . . . . : *YES
Single session:
  Single session capable . . . . . : *NO
Text . . . . . : AUTOMATICALLY CREATED BY QLUS
Device description . . . . . : PC8SRWSO
Option . . . . . : *MODE
Category of device . . . . . : *APPC
-----Mode-----
MODLU62
                                Bottom

Press Enter to continue.
F3=Exit  F11=Display keywords  F12=Cancel

```

Figure 121. IBM 5394 T2.1 AS/400 Definition, Auto-created Device Description

15.3.3 IBM 5394 Controller, Device

```

CRTCTRLWS  CTLD(T215394RWS) TYPE(5394) MODEL(1) +
            LINKTYPE(*NONE) ONLINE(*NO) +
            RMTLOCNAME(PC8SRWSO) LCLLOCNAME(AS400BU4) +
            RMTNETID(CHIBM600) TEXT('5394 via SNA SA')

CRTDEVDSP  DEVD(T21319600) DEVCLS(*RMT) TYPE(3196) +
            MODEL(A1) LOCADR(00) ONLINE(*NO) +
            CTL(T215394RWS) TEXT('3196 at 5394 T2.1')

```

15.3.4 Mode MODLU62

```

                                Display Mode Description
Mode description name . . . . . : MODD          MODLU62
Class-of-service . . . . . : COS             #CONNECT
Maximum number of sessions . . . . . : MAXSSN      8
Maximum conversations . . . . . : MAXCNV        8
Locally controlled sessions . . . . . : LCLCTLSSN  4
Pre-established sessions . . . . . : PREESTSSN    1
Inbound pacing value . . . . . : INPACING       7
Outbound pacing value . . . . . : OUTPACING      7
Max length of request unit . . . . . : MAXLENRU   *CALC
Text . . . . . : TEXT                TS Environment

```

Figure 122. IBM 5394 T2.1 AS/400 Definition, Mode MODLU62

15.3.5 Remote APPN Configuration List

Define APPN Remote Locations						
Type new/changed information, press Enter.						
Remote Location Name	Remote Network ID	Local Location Name	Control Point Name	Control Point Net ID	Location Password	Secure Loc
PC8SRWSO	CHIBM600	AS400BU4	CHIBM60A	CHIBM600		*NO
	*NETATR	*NETATR		*NETATR		*NO

F3=Exit F11=Additional information F12=Previous
F17=Top of list F18=Bottom of list

Figure 123. IBM 5394 T2.1 AS/400 Definition, Remote APPN Configuration List

15.4 VTAM/NCP Definitions

15.4.1 Link with AS/400

```

*
*****
*
*          LINE, PU, LU  DEFINITIONS FOR BNN LINKS AS400 BU4
*
*****
PC8L9  LINE ADDRESS=(9,HALF),          REL. LINE ADDR, COMM OP MODE
        CLOCKNG=EXT,                  INTERNAL/EXTERNAL CLOCKING
        DUPLEX=FULL,                  RTS UP: FULL SEND/REC, HALF SEND*
        ETRATIO=30,                  ERROR TO XMIT RATIO (PER MILLE) *
        LPDATS=LPDA1,                MODEM SUPPORTS LPDA
        LTRUNC=NO,                   LINE TRACE DATA COPY TRUNCATION *
        MAXPU=1,                      MAX NUM OF PU ON LINK
        NRZI=YES,                    NO-RETURN-TO-ZERO-INVERTED MODE *
        PAUSE=0.3,                   AV. DURATION OF POLLING CYCLE
        RETRIES=(7,3,5),             RECOVERY: RETRIES,PAUSE,SEQ.
        SERVLIM=10,                  NUM OF REG SCANS BEFORE SOT SCAN*
        SPEED=19200,                 LINE SPEED IN BPS
        ISTATUS=ACTIVE
        STATOPT=' LINE AS/400 BU4 '
*
*          SERVICE ORDER=(PC8CM2)
*
PC8CM2  PU ADDR=C1,                 POLLING ADDRESS
        ANS=CONTINUE,                AUTO NETWORK SHUTDOWN
        IRETRY=NO,                    IMMED. RETRY A POLLING TO ON PU
        LPDA=ALLOW,                  BLOCK/ALLOW LPDA TESTS
        MAXDATA=1929,                MAX AMOUNT OF DATA TO PU (BYTES)*
        MAXOUT=7,                    FRAMES SENT TO NCP BEF REQ RESP
        PASSLIM=7,                   NUM OF CONSEC PIU'S TO PU
        PUTYPE=2,                    PUTYPE OF SDLC DEVICE ON LINE
        DISCNT=NO,                   VTAM DISC SSCP-LU/PU SESS
        ISTATUS=ACTIVE,              VTAM INITIAL STATUS
        SSCPFM=USSSCS,               VTAM USS FORMAT
        MODETAB=PCADS400,           VTAM DEFAULT LOGMODE TABLE

```

```

                PACING=7,          VTAM PACING COUNT NCP-PU      *
                VPACING=8,        VTAM PACING COUNT VTAM-NCP   *
                XID=YES           INDEPENDENT LU AS/400        *
*                STATOPT=' PU AS/400 BU4'
*
AS400BU4 LU LOCADDR=0,          LOCAL DEVICE ADDRESS  INDLU62 *
                MODETAB=PCADS400,  MODETABLE              *
                DLOGMOD=MODLU62,   VTAM LOGMODE          *
                ISTATUS=ACTIVE,     VTAM INITIAL STATUS   *
                RESSCB=20           ANZAHL SESSIONS        *
*                STATOPT=' ILU AS/400 BU4'
*
PC8SI201 LU LOCADDR=01,        LOCAL DEVICE ADDRESS  LU2 DSP *
                USSTAB=PCAUSSTB,   VTAM USS TABLE       *
                DLOGMOD=SNX32702,  VTAM DEFAULT LOGMODE *
                LOGAPPL=PCAZNVAS,  VTAM DEFAULT APPLICATION *
                ISTATUS=ACTIVE     VTAM INITIAL STATUS   *
                STATOPT=' LU ASBU4 M2 DSP'
*
*
                ...
*
*

```

15.4.2 Link with IBM 5394

```

*****
*
*                LINE, PU, LU  DEFINITIONS FOR BNN LINK - SIMH 5394 T2.1 NODE *
*
*****
PC8L69  LINE ADDRESS=(69,HALF),  REL. LINE ADDR, COMM OP MODE *
                CLOCKNG=EXT,      INTERNAL/EXTERNAL CLOCKING  *
                DUPLEX=FULL,      RTS UP: FULL SEND/REC, HALF SEND*
                MAXPU=1,          MAX NUM OF PU ON LINK      *
                NRZI=YES,        NO-RETURN-TO-ZERO-INVERTED MODE *
                PAUSE=0.5,       AV. DURATION OF POLLING CYCLE *
                RETRIES=(7,3,5),  RECOVERY: RETRIES,PAUSE,SEQ. *
                SPEED=9600,      LINE SPEED IN BPS          *
                ISTATUS=INACTIVE
*                STATOPT=' LINE 5394 T2.1 NODE'
*
PC8CRWS  PU ADDR=C1,           POLLING ADDRESS          *
                ANS=CONTINUE,    AUTO NETWORK SHUTDOWN    *
                DLOGMOD=MODLU62,  VTAM DEFAULT LOGMODE    *
                IRETRY=YES,      IMMED. RETRY A POLLING TO ON PU *
                MAXOUT=7,        FRAMES SENT TO PU BEF REQ RESP *
                MAXDATA=265,     MAX PIU TO PHYS. UNIT    *
                MODETAB=PCADLMD,  VTAM LOGON MODE TABLE  *
                PACING=0,        BNN TO LU PACING         *
                PUTYPE=2,        PUTYPE OF SDLC DEVICE ON LINE *
                VPACING=5,       VTAM TO BNN PACING       *
                XID=YES          FOR T2.1 NODE SUPPORT
*                STATOPT=' PU 5394 T2.1 NODE'
**
PC8SRWSO LU LOCADDR=0,        LOCAL DEVICE ADDRESS     ILU *
                RESSCB=32
*                STATOPT=' LU 5394 T2.1 NODE'

```

```

*
PC8SRWS1 LU   LOCADDR=0,                LOCAL DEVICE ADDRESS   ILU   *
              RESSCB=32
*              STATOPT=' LU 5394 T2.1 NODE'
*

```

15.4.3 VTAM Logmode Table Entry MODLU62

```

...

*****
*          LOGICAL UNIT TYPE 6.2 / LEN (ILU) WITH COS ACCORDING INS      *
*****
MODLU62  MODEENT LOGMODE=MODLU62,
          COS=#CONNECT                                           MEDIUM
*****

```

15.4.4 VTAM COS Table

```

ISTSDCOS COSTAB
*-----*
* - COS ENTRIES   ( customer nw )                                     *
*-----*
          TITLE 'COMBINED COS TABLE EMEA CCDN STF'
*****
*
*          CLASS OF SERVICE TABLE - ISTSDCOS COSTAB FUER MVS PCA      *
*
* IN 24.03.92 Add cos #connect,#inter,#batch for ilu (ins standard) *
*****
*
*          VR0 = SSCP & CDRM TRAFFIC                                   *
*          VR1 = APPLICATION TRAFFIC - PRIMARY ROUTE                  *
*          VR2 = APPLICATION TRAFFIC - ALTERNATE ROUTE                *
*          VR3 = APPLICATION TRAFFIC - 2ND ALTERNATE ROUTE            *
*          VR4 = APPLICATION TRAFFIC - 3RD ALTERNATE ROUTE            *
*          VR5 = APPLICATION TRAFFIC - 4TH ALTERNATE ROUTE            *
*
*****
*
*          DISPLAYS/NCCF (HIGH PRIORITY)                               *
*
*****
INTERACT COS  VR=((1,2),(2,2),(3,2),(4,2),(5,2),(6,2),(7,2),(0,0))
INIT       COS  VR=((1,2),(2,2),(3,2),(4,2),(5,2),(6,2),(7,2),(0,0))
NCCF      COS  VR=((1,2),(2,2),(3,2),(4,2),(5,2),(6,2),(7,2),(0,0))
APPL      COS  VR=((1,2),(2,2),(3,2),(4,2),(5,2),(6,2),(7,2),(0,0))
VTC       COS  VR=((1,2),(2,2),(3,2),(4,2),(5,2),(6,2),(7,2),(0,0))
VAMP      COS  VR=((1,2),(2,2),(3,2),(4,2),(5,2),(6,2),(7,2),(0,0))
TSO       COS  VR=((1,2),(2,2),(3,2),(4,2),(5,2),(6,2),(7,2),(0,0))
IMS       COS  VR=((1,2),(2,2),(3,2),(4,2),(5,2),(6,2),(7,2),(0,0))
#INTER    COS  VR=((1,2),(2,2),(3,2),(4,2),(5,2),(6,2),(7,2),(0,0))
*****
*
*          PRINTERS/ISC (MEDIUM PRIORITY)                             *
*

```

```

*****
PRINTER COS VR=((1,1),(2,1),(3,1),(4,1),(5,1),(6,1),(7,1),(0,0))
NCCFP COS VR=((1,1),(2,1),(3,1),(4,1),(5,1),(6,1),(7,1),(0,0))
APPLP COS VR=((1,1),(2,1),(3,1),(4,1),(5,1),(6,1),(7,1),(0,0))
VTCP COS VR=((1,1),(2,1),(3,1),(4,1),(5,1),(6,1),(7,1),(0,0))
TSOP COS VR=((1,1),(2,1),(3,1),(4,1),(5,1),(6,1),(7,1),(0,0))
IMSP COS VR=((1,1),(2,1),(3,1),(4,1),(5,1),(6,1),(7,1),(0,0))
IMSISC COS VR=((1,1),(2,1),(3,1),(4,1),(5,1),(6,1),(7,1),(0,0))
#CONNECT COS VR=((1,1),(2,1),(3,1),(4,1),(5,1),(6,1),(7,1),(0,0))
*****
*
* BATCH (LOW PRIORITY)
*
*****
BATCH COS VR=((1,0),(2,0),(3,0),(4,0),(5,0),(6,0),(7,0),(0,0))
TPNS COS VR=((1,0),(2,0),(3,0),(4,0),(5,0),(6,0),(7,0),(0,0))
CJN COS VR=((1,0),(2,0),(3,0),(4,0),(5,0),(6,0),(7,0),(0,0))
NJE COS VR=((1,0),(2,0),(3,0),(4,0),(5,0),(6,0),(7,0),(0,0))
RJE COS VR=((1,0),(2,0),(3,0),(4,0),(5,0),(6,0),(7,0),(0,0))
VIBTS COS VR=((1,0),(2,0),(3,0),(4,0),(5,0),(6,0),(7,0),(0,0))
IBMINNJE COS VR=((1,0),(2,0),(3,0),(4,0),(5,0),(6,0),(7,0),(0,0))
#BATCH COS VR=((1,0),(2,0),(3,0),(4,0),(5,0),(6,0),(7,0),(0,0))
*****
*
* APPLFB (USED BY ZURICH)
* APPLFBP (USED BY ZURICH)
*
*****
APPLFB COS VR=((5,2),(4,2),(3,2),(2,2),(1,2),(0,2),(0,0))
APPLFBP COS VR=((5,1),(4,1),(3,1),(2,1),(1,1),(0,1),(0,0))
*****
*
* SSCP'S/CDRM'S AND FSC CLASS OF SERVICE
*
*****
HIGH COS VR=((0,2),(1,2),(2,2),(3,2))
MED COS VR=((0,1),(1,1),(2,1),(3,1))
LOW COS VR=((0,0),(1,0),(2,0),(3,0))
HIGH10 COS VR=((1,2),(0,2),(2,2),(3,2))
MED10 COS VR=((1,1),(0,1),(2,1),(3,1))
LOW10 COS VR=((1,0),(0,0),(2,0),(3,0))
*-----*
* - COS ENTRIES (hi priority) national / international
*-----*
ROUTH001 COS VR=((0,2),(1,2),(2,2),(3,2),(4,2),(5,2),(6,2),(7,2))
ROUTH002 COS VR=((0,2),(1,2),(2,2),(3,2),(4,2),(5,2),(6,2),(7,2))
ROUTH003 COS VR=((0,2),(1,2),(2,2),(3,2),(4,2),(5,2),(6,2),(7,2))
*-----*
* - COS ENTRIES (medi priority) national / international
*-----*
ROUTM001 COS VR=((0,1),(1,1),(2,1),(3,1),(4,1),(5,1),(6,1),(7,1))
ROUTM002 COS VR=((0,1),(1,1),(2,1),(3,1),(4,1),(5,1),(6,1),(7,1))
ROUTM003 COS VR=((0,1),(1,1),(2,1),(3,1),(4,1),(5,1),(6,1),(7,1))
*-----*
* - COS ENTRIES (low priority) national / international
*-----*
ROUTL001 COS VR=((0,0),(1,0),(2,0),(3,0),(4,0),(5,0),(6,0),(7,0))
ROUTL002 COS VR=((0,0),(1,0),(2,0),(3,0),(4,0),(5,0),(6,0),(7,0))
ROUTL003 COS VR=((0,0),(1,0),(2,0),(3,0),(4,0),(5,0),(6,0),(7,0))

```

```

*-----*
* - SSCPS/CDRMS ( HI PRIORITY ) *
*-----*
ISTVTCOS COS VR=((0,2),(1,2),(2,2),(3,2),(4,2),(5,2),(6,2),(7,2))
COS VR=((0,2),(1,2),(2,2),(3,2),(4,2),(5,2),(6,2),(7,2))
COSEND
END

```

15.5 Operation and Status

To activate the environment:

- Activate link AS/400 to VTAM/NCP.
- Activate IBM 5394 controller and device descriptions within the AS/400.
- Activate resources for AS/400 and IBM 5394 within VTAM/NCP.
- Insert appropriately configured system diskette into IBM 5394 diskette drive.
- Power on display station and IBM 5394 controller.

If everything is defined properly working correctly, the AS/400 displays the signon screen on the IBM 5394 attached display station.

You will get this status information:

15.5.1 AS/400 Configuration Objects

```

Work with Configuration Status AS400BU4
                                05-05-92 10:25:36
Position to . . . . . Starting characters
Type options, press Enter.
 1=Vary on  2=Vary off  5=Work with job  8=Work with description
 9=Display mode status ...
Opt Description      Status      -----Job-----
   FSC370LINE        ACTIVE
   PC8CM2             ACTIVE
   PC8SRWS0          ACTIVE
   MODLU62           ACTIVE/TARGET   PC8SRWS0  QUSER      044649
                                           Bottom
Parameters or command
===>
F3=Exit  F4=Prompt  F11=Display types  F12=Cancel  F23=More options
F24=More keys

```

Figure 124 (Part 1 of 3). IBM 5294 T2.1 AS/400 Configuration Objects

```

AS400BU4
Display Mode Status
System: AS400BU4
Device . . . . . : PC8SRWS0
Device status . . . . . : ACTIVE
Type options, press Enter.
5=Display details
Mode
-----Conversations-----
Opt Mode Status Total Source Target Detached
SNASVCMG Started 0 0 0 0
MODLU62 Started 2 1 1 0
Bottom
F3=Exit F5=Refresh F11=Display sessions F12=Cancel

```

Figure 124 (Part 2 of 3). IBM 5294 T2.1 AS/400 Configuration Objects

```

AS400BU4
Work with Configuration Status AS400BU4
05-05-92 10:27:01
Position to . . . . . Starting characters
Type options, press Enter.
1=Vary on 2=Vary off 5=Work with job 8=Work with description
9=Display mode status ...
Opt Description Status -----Job-----
T215394RWS ACTIVE
T21319600 SIGNON DISPLAY
Bottom
Parameters or command
==>
F3=Exit F4=Prompt F11=Display types F12=Cancel F23=More options
F24=More keys

```

Figure 124 (Part 3 of 3). IBM 5294 T2.1 AS/400 Configuration Objects

15.5.2 NetView/370


```

NCCF          N E T V I E W          PCAZN SIMH          05/05/92 11DSP01
C PCAZN      DISPLAY NET,ID=PC8L69,SCOPE=ALL
  PCAZN      IST097I DISPLAY ACCEPTED
' PCAZN
IST075I NAME = PC8L69          , TYPE = LINE
IST486I STATUS= ACTIV        , DESIRED STATE= ACTIV
IST087I TYPE = LEASED          , CONTROL = SDLC
IST134I GROUP = PC8GRP        , MAJOR NODE = PC8V43
IST084I NETWORK NODES:
IST089I PC8CRWS TYPE = PHYSICAL UNIT    , ACTIV--L--
IST089I PC8SRWSO TYPE = LOGICAL UNIT    , ACT/S
IST314I END
-----

???
```

Figure 125 (Part 1 of 2). IBM 5294 T2.1 NetView/370

```

NLDM.SESS                                DSP01
                                SESSION LIST
NAME: PC8SRWSO                                DOMAIN: PCAZN
-----
      ***** PRIMARY *****      ***** SECONDARY *****
SEL#  NAME  TYPE  DOM  NAME  TYPE  DOM  START TIME  END TIME
( 1) AS400BU4  ILU  PCAZN  PC8SRWSO  ILU  PCAZN  05/05 11:01:43  *** ACTIVE ***
( 2) PC8SRWSO  ILU  PCAZN  AS400BU4  ILU  PCAZN  05/05 11:01:30  *** ACTIVE ***
( 3) PC8SRWSO  ILU  PCAZN  AS400BU4  ILU  PCAZN  05/05 11:01:27  05/05 11:01:30
      REASON CODE OF
( 4) AS400BU4  ILU  PCAZN  PC8SRWSO  ILU  PCAZN  05/05 09:27:47  05/05 10:36:28
      REASON CODE 08  SENSE 80200007
( 5) PC8SRWSO  ILU  PCAZN  AS400BU4  ILU  PCAZN  05/05 09:27:38  05/05 10:36:28
      REASON CODE 08  SENSE 80200007
( 6) PC8SRWSO  ILU  PCAZN  AS400BU4  ILU  PCAZN  05/05 09:27:35  05/05 09:27:37
      REASON CODE OF
( 7) AS400BU4  ILU  PCAZN  PC8SRWSO  ILU  PCAZN  05/05 09:11:03  05/05 09:22:30
      REASON CODE OF  SENSE 08010000
( 8) PC8SRWSO  ILU  PCAZN  AS400BU4  ILU  PCAZN  05/05 09:10:52  05/05 09:16:06
      REASON CODE OF

ENTER TO VIEW MORE DATA
ENTER SEL# (CONFIG), SEL# AND CT (CONN. TEST), SEL# AND STR (TERM REASON)
CMD==>
```

Figure 125 (Part 2 of 2). IBM 5294 T2.1 NetView/370

15.6 Matching Parameters

IBM 5394, T2.1		VTAM Startup	
O/O = 0	→10	1← NetID=CHIBM600	
AA = 1		2← SSCPName=CHIBM60A	
BB = 2			
CC = 77-826BE		VTAM Logon Mode Table	
1 = 2A		3← Table Entry=MODLU62	
2 = C1	→5		
3 = 011 0000	→4	VTAM/NCP for IBM 5394	
8 = 3C 0		4← PC8L69 LINE DUPLEX=FULL	
10 = 0A 06		4← NRZI=YES	
11 = CHIBM600	→1	5← PC8CRWS PU ADDR=C1	
12 = PC8SRWSO	→6	PUTYPE=2	
13 = PC8CRWS	→5	XID=YES	
14 = MODLU62	→3		
15 = CHIBM600	→1	6← PC8SRWSO LU LOCADDR=0	
16 = AS400BU4	→9		
AS/400 NETA		VTAM/NCP for AS/400	
NETID(CHIBM600)	→1	PC8L9 LINE DUPLEX=FULL	
LCLCPNAME(AS400BU4)		NRZI=YES	
LCLLOCNAME(AS400BU4)	→9	7← PC8CM2 PU ADDR=C1	
		8← PUTYPE=2	
Remote APN Config List		8← XID=YES	
REMLOCNAME(PC8SRWSO)	→5	9← AS400BU4 LU LOCADDR=0	
REMNETID(CHIBM600)	→1		
LCLLOCNAME(AS400BU4)	→9		
REMCPCNAME(CHIBM60A)	→2		
REMNETID(CHIBM600)	→1		
AS/400 for IBM 5394			
CTLRWS CTLD(T215394RWS)			
RMTLOCNAME(PC8SRWSO)	→5		
LCLLOCNAME(AS400BU4)	→9		
RMTNETID(CHIBM600)	→1		
DEV DSP LOCADR(00)	→10		
AS/400 for VTAM/NCP			
LINS DLC LIND(FSC370LINE)			
CTLHOST CTLD(PC8CM2)			
NODETYPE(*LENNODE)	→8		
RMTNETID(CHIBM600)	→1		
RMTCPNAME(CHIBM60A)	→2		
DEV APPC REMLOCNAME(PC8SRWSO)	→5		
LCLLOCNAME(AS400BU4)	→9		
MODE(MODLU62)	→3		
LOCADR(00)	→9		

Figure 126. Matching Parameters, VTAM/NCP, AS/400 and 5394 T2.1

Chapter 16. IBM 5494 V.24 via SNA/SDLC Leased to AS/400

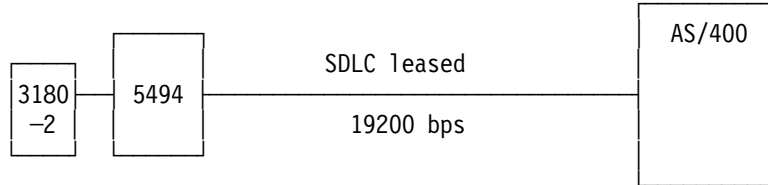


Figure 127. IBM 5494 via SNA/SDLC Leased

16.1 IBM 5494 Setup

	0	1	2	3	4	5	6
0/	2A	2A	2A	2A	2A	2A	2A
1/	2A	2A	2A	2A	2A	2A	2A
2/	2A	2A	2A	2A	2A	2A	2A
3/	2A	2A	2A	2A	2A	2A	2A

AA→	0				DD→	0					
1→	2A	-	-	2→	C1	3→	0 1 1 0 0 0 0	8→	060		
									P→	-	-

Figure 128 (Part 1 of 2). IBM 5494 V.24 via SNA/SDLC Leased to AS/400 Setup Screen

```

11-> CHIBM600 12-> RWS5494_ 13-> RWS5494_ 14-> MOD5494_
15-> _____ 16-> 010 06 17-> 77-FB011

H1:1-> AS400BU3 H1:2-> CHIBM600 H1:3-> CHIBM600 H1:4-> MOD5494
H1:5-> _____
H1:6-> _____ H1:7-> _ H1:8-> _ H1:9-> _ H1:10-> _

H2:1-> _____ H2:2-> _____ H2:3-> _____ H2:4-> _____
H2:5-> _____
H2:6-> _____ H2:7-> _ H2:8-> _ H2:9-> _ H2:10-> _

H3:1-> _____ H3:2-> _____ H3:3-> _____ H3:4-> _____
H3:5-> _____
H3:6-> _____ H3:7-> _ H3:8-> _ H3:9-> _ H3:10-> _

H4:1-> _____ H4:2-> _____ H4:3-> _____ H1:4-> _____
H4:5-> _____
H4:6-> _____ H4:7-> _ H4:8-> _ H4:9-> _ H4:10-> _

```

Figure 128 (Part 2 of 2). IBM 5494 V.24 via SNA/SDLC Leased to AS/400 Setup Screen

A display station is on port 0, address 0 of the IBM 5494. We used an IBM 3180-2, with Swiss German multinational keyboard. Therefore, we had a value of "2A" for parameter 1.

16.2 AS/400 Definitions

16.2.1 Network Attributes

```

                                Display Network Attributes
                                System: AS400BU3

Current system name . . . . . : AS400BU3
  Pending system name . . . . . :
Local network ID . . . . . : CHIBM600
Local control point name . . . . . : AS400BU3
Default local location . . . . . : AS400BU3
Default mode . . . . . : MODLU62
Maximum number of conversations for a remote
  location . . . . . : 64
APPN node type . . . . . : *NETNODE
Maximum number of intermediate sessions . . . . . : 200
Route addition resistance . . . . . : 128

```

Figure 129. IBM 5494 via SNA/SDLC Leased, AS/400 Definitions, DSPNETA

16.2.2 SDLC Line and APPC Controller Description

Source PF CMNLIB/QCLSRC member SRWS5494.

The APPC device description is created automatically.

```
CRTLINS DLC LIND(SRWSLINE) RSRNAME(LIN092) ONLINE(*NO) +
          ROLE(*PRI) LINESPEED(19200) MAXFRAME(521) +
          DUPLEX(*FULL)
CRTCTLAPPC CTLD(SRWSCTL) LINKTYPE(*SDLC) ONLINE(*NO) +
          APPN(*YES) LINE(SRWSLINE) +
          RMTCPNAME(RWS5494) ROLE(*SEC) STNADR(C1) +
          NODETYPE(*LENNODE) TEXT('5494 via SDLC +
          leased')
```

16.2.2.1 Auto-Created DEVD RWS5494

```
Display Device Description                                AS400BU3
                                                         05-09-92 10:32:44
Device description . . . . . : RWS5494
Option . . . . . : *BASIC
Category of device . . . . . : *APPC
Remote location . . . . . : RWS5494
Online at IPL . . . . . : *NO
Local location . . . . . : AS400BU3
Remote network identifier . . . . . : *NETATR
Attached controller . . . . . : SRWSCTL
Message queue . . . . . : QSYSOPR
  Library . . . . . : *LIBL
Local location address . . . . . : 00
APPN-capable . . . . . : *YES
Single session:
  Single session capable . . . . . : *NO
Text . . . . . : AUTOMATICALLY CREATED BY QLUS
Device description . . . . . : RWS5494
Option . . . . . : *MODE
Category of device . . . . . : *APPC
-----Mode-----
*NETATR
                                                         Bottom
Press Enter to continue.
F3=Exit  F11=Display keywords  F12=Cancel
```

Figure 130. IBM 5494 via SNA/SDLC Leased, AS/400 definitions, Device Description

16.2.3 IBM 5494 Controller and Device Description

Source PF CMNLIB/QCLSRC, member RWS5494

```
CRTCLRWS CTLD(RWS5494) TYPE(5494) MODEL(2) +
          LINKTYPE(*NONE) ONLINE(*NO) +
          RMTLOCNAME(RWS5494) LCLLOCNAME(AS400BU3) +
          RMTNETID(CHIBM600) TEXT('5494 RWS Ct1')

CRTDEV DSP DEVD(RWS549400) DEVCLS(*RMT) TYPE(3180) +
          MODEL(2) LOCADR(00) ONLINE(*NO) +
          CTL(RWS5494) TEXT('3180 at 5494')
```

16.2.4 Mode MOD5494

Display Mode Description		
Mode description name	MODD	MOD5494
Class-of-service	COS	#CONNECT
Maximum number of sessions	MAXSSN	64
Maximum conversations	MAXCNV	64
Locally controlled sessions	LCLCTLSSN	4
Pre-established sessions	PREESTSSN	0
Inbound pacing value	INPACING	7
Outbound pacing value	OUTPACING	7
Max length of request unit	MAXLENRU	512
Text	TEXT	MODD for 5494

Figure 131. IBM 5494 via SNA/SDLC Leased, AS/400 Definitions, Mode Description

16.3 Operation and Status

To activate the environment:

- Insert the diskette into the 5494.
- Power on the 3180-2 and the 5494.
- Vary on the SDLC line and the APPC controller description.
- Vary on the 5494 controller and the display station description.

If everything is defined correctly and all components are working as expected, AS/400 displayed the signon screen on the IBM 5494 attached display station.

You get the status information:

Work with Configuration Status		AS400BU3	
		19-08-92	10:25:36
Position to	Starting characters		
Type options, press Enter.			
1=Vary on 2=Vary off 5=Work with job 8=Work with description			
9=Display mode status ...			
Opt	Description	Status	-----Job-----
	SRWSLINE	ACTIVE	
	SRWSCTL	ACTIVE	
	RWS5494	ACTIVE	
	MOD5494	ACTIVE/TARGET	RWS5494 QUSER 044649
			Bottom
Parameters or command			
==>			
F3=Exit F4=Prompt F11=Display types F12=Cancel F23=More options			
F24=More keys			

Figure 132 (Part 1 of 2). IBM 5494 via SNA/SDLC Leased to AS/400, Configuration Status

```

Work with Configuration Status
AS400BU3
19-08-92 10:27:01
Position to . . . . . Starting characters
Type options, press Enter.
1=Vary on 2=Vary off 5=Work with job 8=Work with description
9=Display mode status ...
Opt Description Status -----Job-----
RWS5494 ACTIVE
RWS549400 SIGNON DISPLAY
Bottom
Parameters or command
==>
F3=Exit F4=Prompt F11=Display types F12=Cancel F23=More options
F24=More keys

```

Figure 132 (Part 2 of 2). IBM 5494 via SNA/SDLC Leased to AS/400, Configuration Status

16.4 Matching Parameters

AS/400	IBM 5494
SDLC Line Description → 8	Setup Screen
LIND(SRWSLINE)	10 ← 0/0 = 3180-2
ROLE(*PRI)	
MAXFRAME(521)	
DUPLEX(*FULL) → 9	8 ← AA = 0
NRZI(*YES) → 12	DD = 0 (no TRLAN Gateway)
CNN(*NONSWTPP) → 11	
APPC Controller Description	1 = 2A
CTLD(SRWSCTL)	7 ← 2 = C1
STNADR(C1) → 7	3 = 0 1 1 0 0 0 0
NODETYPE(*LEN)	11 ←
ROLE(*SEC)	9 ←
APPN(*YES)	11 ←
RMTCPNAME(RWS5494) → 2	12 ←
RMTNETID(*NETATR) → 1	8 = 060
MAXFRAME(521)	
APPC Device Description	1 ← 11 = CHIBM600
(auto-created)	3 ← 12 = RWS5494
DEVD(RWS5494)	2 ← 13 = RWS5494
CTL(SRWSCTL)	6 ← 14 = MOD5494
RMTLOCNAME(RWS5494) → 3	15 =
LCLLOCNAME(AS400BU3) → 4	16 = 010 06
RMTNETID(*NETATR) → 1	17 = 77-FB011
MODE(*NETATR)	4 ← H1:1 = AS400BU3
RWS Controller Description	5 ← H1:2 = CHIBM600
CTLD(RWS5494) → 11	1 ← H1:3 = CHIBM600
TYPE(5494)	6 ← H1:4 = MOD5494
MODEL(2)	H1:5 =
LINKTYPE(*NONE)	
RMTLOCNAME(RWS5494) → 3	
LCLLOCNAME(*NETATR) → 4	
RMTNETID(*NETATR) → 5	
Display Device Description	
DEVD(RWS549400)	
TYPE(3180)	
MODEL(2)	
LOCADR(00) → 10	
CTLD(RWS5494) → 11	
AS/400 NETA	
NETID(CHIBM600) → 5	
LCLCPNAME(AS400BU3)	
LCLLOCNAME(AS400BU3) → 4	
MODNAME(MODLU62)	
Mode Description	
MODD(MOD5494) → 6	
MAXSSN(64)	

Figure 133. Matching Parameters, 5494 via SNA/SDLC Leased

Chapter 17. IBM 5494 V.35 via SNA/SDLC Leased to AS/400

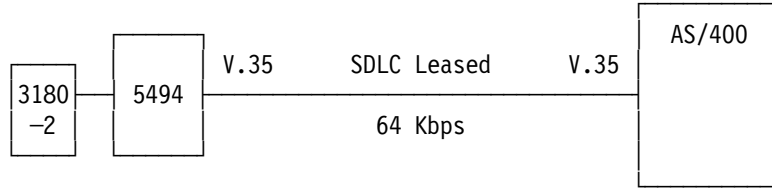


Figure 134. IBM 5494 V.35 via SNA/SDLC Leased

17.1 IBM 5494 Setup

IBM 5494 V.35 has the same set up as the IBM 5494 V.24 SDLC leased described in Chapter 16, "IBM 5494 V.24 via SNA/SDLC Leased to AS/400" on page 155

	0	1	2	3	4	5	6
0/	2A	2A	2A	2A	2A	2A	2A
1/	2A	2A	2A	2A	2A	2A	2A
2/	2A	2A	2A	2A	2A	2A	2A
3/	2A	2A	2A	2A	2A	2A	2A

AA→ 0	DD→ 0
1→ 2A - -	2→ C1
3→ 0 1 1 0 0 0 0	8→ 060
P→ - -	

Figure 135 (Part 1 of 2). IBM5494 V.35 via SNA/SDLC Leased to AS/400, Setup Screen

```

11-> CHIBM600 12-> RWS5494_ 13-> RWS5494_ 14-> MOD5494_
15-> _____ 16-> 010 06 17-> 77-FB011

H1:1-> AS400BU3 H1:2-> CHIBM600 H1:3-> CHIBM600 H1:4-> MOD5494
H1:5-> _____
H1:6-> _____ H1:7-> _ H1:8-> _ H1:9-> _ H1:10-> _

H2:1-> _____ H2:2-> _____ H2:3-> _____ H2:4-> _____
H2:5-> _____
H2:6-> _____ H2:7-> _ H2:8-> _ H2:9-> _ H2:10-> _

H3:1-> _____ H3:2-> _____ H3:3-> _____ H3:4-> _____
H3:5-> _____
H3:6-> _____ H3:7-> _ H3:8-> _ H3:9-> _ H3:10-> _

H4:1-> _____ H4:2-> _____ H4:3-> _____ H1:4-> _____
H4:5-> _____
H4:6-> _____ H4:7-> _ H4:8-> _ H4:9-> _ H4:10-> _

```

Figure 135 (Part 2 of 2). IBM5494 V.35 via SNA/SDLC Leased to AS/400, Setup Screen

A display station is on port 0, address 0 of the IBM 5494. We used an IBM 3180-2, with Swiss German multinational keyboard. Therefore, we had a value of "2A" for parameter 1.

17.2 AS/400 Definitions

17.2.1 Network Attributes

```

                                Display Network Attributes
                                System: AS400BU3

Current system name . . . . . : AS400BU3
  Pending system name . . . . . :
Local network ID . . . . . : CHIBM600
Local control point name . . . . . : AS400BU3
Default local location . . . . . : AS400BU3
Default mode . . . . . : MODLU62
Maximum number of conversations for a remote
  location . . . . . : 64
APPN node type . . . . . : *NETNODE
Maximum number of intermediate sessions . . . . . : 200
Route addition resistance . . . . . : 128

```

Figure 136. IBM 5494 V.35 via SNA/SDLC Leased, AS/400 Definitions, Network Attributes

17.2.2 SDLC Line and APPC Controller Description

Source PF CMNLIB/QCLSRC member VRWS5494.

The APPC device description is created automatically.

```
CRTLINS DLC LIND(VRWSLINE) RSRNAME(LIN061) ONLINE(*NO) +
        ROLE(*PRI) INTERFACE(*V35) +
        LINESPEED(64000) MAXFRAME(521) +
        DUPLEX(*FULL) TEXT('5494 via +
        V.35/SDLC/leased 64 Kbps')
CRTCTLAPPC CTLD(VRWSCTL) LINKTYPE(*SDLC) ONLINE(*NO) +
        APPN(*YES) LINE(VRWSLINE) +
        RMTCPNAME(RWS5494) ROLE(*SEC) STNADR(C5) +
        NODETYPE(*LENNODE) TEXT('5494 via SDLC +
        leased')
```

17.2.2.1 Auto-Created DEVD RWS5494

```
Display Device Description
AS400BU3
26-04-93 10:32:44
Device description . . . . . : RWS5494
Option . . . . . : *BASIC
Category of device . . . . . : *APPC
Remote location . . . . . : RWS5494
Online at IPL . . . . . : *NO
Local location . . . . . : AS400BU3
Remote network identifier . . . . . : *NETATR
Attached controller . . . . . : VRWSCTL
Message queue . . . . . : QSYSOPR
Library . . . . . : *LIBL
Local location address . . . . . : 00
APPN-capable . . . . . : *YES
Single session:
  Single session capable . . . . . : *NO
Text . . . . . : AUTOMATICALLY CREATED BY QJUS
Option . . . . . : *MODE
Category of device . . . . . : *APPC
-----Mode-----
*NETATR
Bottom
Press Enter to continue.
F3=Exit F11=Display keywords F12=Cancel
```

Figure 137. IBM 5494 V.35 via SNA/SDLC Leased, AS/400 Definitions, Device Description

17.2.3 IBM 5494 Controller and Device Description

Source PF CMNLIB/QCLSRC, member RWS5494

```
CRTCTLRWS CTLD(RWS5494) TYPE(5494) MODEL(2) +
        LINKTYPE(*NONE) ONLINE(*NO) +
        RMTLOCNAME(RWS5494) LCLLOCNAME(AS400BU3) +
        RMTNETID(CHIBM600) TEXT('5494 RWS Ct1')
CRTDEV DSP DEVD(RWS549400) DEVCLS(*RMT) TYPE(3180) +
        MODEL(2) LOCADR(00) ONLINE(*NO) +
        CTL(RWS5494) TEXT('3180 at 5494')
```

17.2.4 Mode MOD5494

Display Mode Description		
Mode description name	MODD	MOD5494
Class-of-service	COS	#CONNECT
Maximum number of sessions	MAXSSN	64
Maximum conversations	MAXCNV	64
Locally controlled sessions	LCLCTLSSN	4
Pre-established sessions	PREESTSSN	0
Inbound pacing value	INPACING	7
Outbound pacing value	OUTPACING	7
Max length of request unit	MAXLENRU	512
Text	TEXT	MODD for 5494

Figure 138. IBM 5494 V.35 via SNA/SDLC Leased, AS/400 Definitions, Mode Description

17.3 Operation and Status

To activate the environment:

- Insert the diskette into the 5494.
- Power on the 3180-2 and the 5494.
- Vary on the SDLC line and the APPC controller description.
- Vary on the 5494 controller and the display station description.

If everything is defined correctly and all components are working as expected, AS/400 displays the signon screen on the IBM 5494 attached display station.

17.3.1 AS/400 Configuration Objects

Work with Configuration Status		AS400BU3	
		26-04-93	10:25:36
Position to	Starting characters		
Type options, press Enter.			
1=Vary on 2=Vary off 5=Work with job 8=Work with description			
9=Display mode status ...			
Opt	Description	Status	-----Job-----
	VRWSLINE	ACTIVE	
	VRWSCTL	ACTIVE	
	RWS5494	ACTIVE	
	MOD5494	ACTIVE/TARGET	RWS5494 QUSER 044649
			Bottom
Parameters or command			
==>			
F3=Exit F4=Prompt F11=Display types F12=Cancel F23=More options			
F24=More keys			

Figure 139 (Part 1 of 2). IBM 5494 V.35 via SNA/SDLC Leased, AS/400 Configuration Objects

```

Work with Configuration Status                                AS400BU3
                                                           26-04-93 10:27:01
Position to . . . . . Starting characters
Type options, press Enter.
  1=Vary on  2=Vary off  5=Work with job  8=Work with description
  9=Display mode status ...
Opt  Description      Status      -----Job-----
      RWS5494         ACTIVE
      RWS549400      SIGNON DISPLAY
                                                           Bottom
Parameters or command
===>
F3=Exit  F4=Prompt  F11=Display types  F12=Cancel  F23=More options
F24=More keys

```

Figure 139 (Part 2 of 2). IBM 5494 V.35 via SNA/SDLC Leased, AS/400 Configuration Objects

17.4 Matching Parameters

AS/400	IBM 5494
SDLC Line Description → 8	Setup Screen
LIND(VRWSLINE)	10 ← 0/0 = 3180-2
ROLE(*PRI)	
MAXFRAME(521)	
DUPLEX(*FULL) → 9	8 ← AA = 0
NRZI(*YES) → 12	DD = 0 (no TRLAN Gateway)
CNN(*NONSWTPP) → 11	
APPC Controller Description	
CTLD(VRWSCTL)	1 = 2A
STNADR(C1) → 7	7 ← 2 = C1
NODETYPE(*LEN)	3 = 0 1 1 0 0 0 0
ROLE(*SEC)	
APPN(*YES)	11 ←
RMTCPNAME(RWS5494) → 2	9 ←
RMTNETID(*NETATR) → 1	11 ←
MAXFRAME(521)	12 ←
	8 = 060
APPC Device Description (auto-created)	
DEVD(RWS5494)	1 ← 11 = CHIBM600
CTL(VRWSCTL)	3 ← 12 = RWS5494
RMTLOCNAME(RWS5494) → 3	2 ← 13 = RWS5494
LCLLOCNAME(AS400BU3) → 4	6 ← 14 = MOD5494
RMTNETID(*NETATR) → 1	15 =
MODE(*NETATR)	16 = 010 06
	17 = 77-FB011
RWS Controller Description	
CTLD(RWS5494) → 11	4 ← H1:1 = AS400BU3
TYPE(5494)	5 ← H1:2 = CHIBM600
MODEL(2)	1 ← H1:3 = CHIBM600
LINKTYPE(*NONE)	6 ← H1:4 = MOD5494
RMTLOCNAME(RWS5494) → 3	H1:5 =
LCLLOCNAME(*NETATR) → 4	
RMTNETID(*NETATR) → 5	
Display Device Description	
DEVD(RWS549400)	
TYPE(3180)	
MODEL(2)	
LOCADR(00) → 10	
CTLD(RWS5494) → 11	
AS/400 NETA	
NETID(CHIBM600) → 5	
LCLCPNAME(AS400BU3)	
LCLLOCNAME(AS400BU3) → 4	
MODNAME(MODLU62)	
Mode Description	
MODD(MOD5494) → 6	
MAXSSN(64)	

Figure 140. Matching Parameters, 5494 via SNA/SDLC Leased

Chapter 18. IBM 5494 via SNA/TRLAN to AS/400

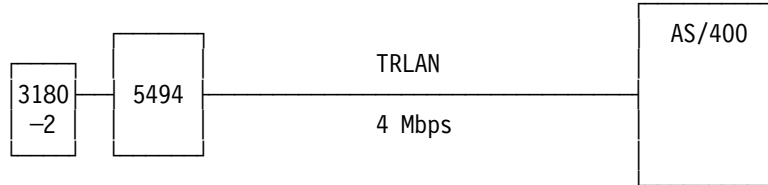


Figure 141. IBM 5494 via SNA/TRLAN

18.1 IBM 5494 Setup

	0	1	2	3	4	5	6
0/	2A	2A	2A	2A	2A	2A	2A
1/	2A	2A	2A	2A	2A	2A	2A
2/	2A	2A	2A	2A	2A	2A	2A
3/	2A	2A	2A	2A	2A	2A	2A

AA→ 4
 1→ 2A - -
 F→ 04 G→ 01 H→ 30 I→ 030 J→ 08
 P→ - -

Figure 142 (Part 1 of 2). IBM 5494 via SNA/TRLAN to AS/400 Setup Screen

```

11-> CHIBM600 12-> RWS5494_ 13-> RWS5494_ 14-> MOD5494_
15-> 400000005494__ 16-> 010 06 17-> 77-FB011

H1:1-> AS400BU3 H1:2-> CHIBM600 H1:3-> CHIBM600 H1:4-> MOD5494
H1:5-> 400000009406
H1:7-> 04 H1:8-> 2 H1:9-> 1

H2:1-> _____ H2:2-> _____ H2:3-> _____ H2:4-> _____
H2:5-> _____
H2:7-> _ H2:8-> _ H2:9-> _

H3:1-> _____ H3:2-> _____ H3:3-> _____ H3:4-> _____
H3:5-> _____
H3:7-> _ H3:8-> _ H3:9-> _

H4:1-> _____ H4:2-> _____ H4:3-> _____ H1:4-> _____
H4:5-> _____
H4:7-> _ H4:8-> _ H4:9-> _

```

Figure 142 (Part 2 of 2). IBM 5494 via SNA/TRLAN to AS/400 Setup Screen

A display station is on port 0, address 0 of the IBM 5494. We used an IBM 3180-2, with Swiss German multinational keyboard. Therefore, we had a value of "2A" for parameter 1.

18.2 AS/400 Definitions

18.2.1 Network Attributes

```

                                Display Network Attributes
                                System:  AS400BU3

Current system name . . . . . : AS400BU3
  Pending system name . . . . . :
Local network ID . . . . . : CHIBM600
Local control point name . . . . . : AS400BU3
Default local location . . . . . : AS400BU3
Default mode . . . . . : MODLU62
Maximum number of conversations for a remote
  location . . . . . : 64
APPN node type . . . . . : *NETNODE
Maximum number of intermediate sessions . . . . . : 200
Route addition resistance . . . . . : 128

```

Figure 143. IBM 5494 via SNA/TRLAN, AS/400 Definitions, Network Attributes

18.2.2 TRLAN Line Description

```
CRTLINTRN LIND(TRNLINE) RSRNAME(LIN041) MAXCTL(64) +
MAXFRAME(1994) ADPTADR(40000009406) +
EXCHID(05600000) SSAP((04) (06) (AA)) +
TEXT('TS E45 TRLAN adapter LIN041') +
AUTOCRTCTL(*YES) AUTODLTCTL(7200)
```

18.2.3 Auto-Created APPC Controller Description

Display Controller Description		
Controller description	CTLD	RWS549400
Option	OPTION	*ALL
Category of controller		*APPC
Link type	LINKTYPE	*LAN
Online at IPL	ONLINE	*NO
Active switched line		TRNLINE
Character code	CODE	*EBCDIC
Maximum frame size	MAXFRAME	16393
Remote network identifier	RMTNETID	CHIBM600
Remote control point	RMTCPNAME	RWS5494
Initial connection	INLCNN	*DIAL
Switched disconnect	SWTDSC	*YES
Data link role	ROLE	*NEG
LAN remote adapter address	ADPTADR	40000005494
LAN DSAP	DSAP	04
LAN SSAP	SSAP	04
Text	TEXT	AUTOMATICALLY CREATED BY QLUS
Switched line list	SWTLINLST	
-----Switched Lines-----		
TRNLINE		
Attached devices	DEV	
-----Attached Devices-----		
RWS549402		
APPN-capable	APPN	*YES
APPN CP session support	CPSSN	*YES
APPN node type	NODETYPE	*CALC
APPN transmission group number	TMSGRPNBR	*CALC
APPN minimum switched status	MINSWTSTS	*VRYONPND
Model controller description	MDLCTL	*NO
Control owner	CTLOWN	*SYS
Disconnect timer	DSCTMR	170
LAN frame retry	LANFRMRTY	10
LAN connection retry	LANCNRTY	10
LAN response timer	LANRSPTMR	10
LAN connection timer	LANCNTMR	70
LAN acknowledgement timer	LANACKTMR	1
LAN inactivity timer	LANINACTMR	100
LAN acknowledgement frequency	LANACKFRQ	1
LAN max outstanding frames	LANMAXOUT	2
LAN access priority	LANACCTY	0
LAN window step	LANWDWSTP	*NONE
Recovery limits	CMNRCYLMT	
Count limit		2
Time interval		5

Figure 144. IBM 5494 via SNA/TRLAN, AS/400 Definitions, Controller Description

18.2.4 Auto-Created APPC Device Description

Display Device Description		
Device description	DEVD	RWS549402
Option	OPTION	*ALL
Category of device		*APPC
Remote location	RMTLOCNAME	RWS5494
Online at IPL	ONLINE	*NO
Local location	LCLLOCNAME	AS400BU3
Remote network identifier	RMTNETID	*NETATR
Attached controller	CTL	RWS549400
Message queue	MSGQ	QSYSOPR
Library		*LIBL
Local location address	LOCADR	00
APPN-capable	APPN	*YES
Single session	SNGSSN	
Single session capable		*NO
Text	TEXT	AUTOMATICALLY CREATED BY QLUS
Mode	MODE	
-----Mode-----		
		*NETATR

Figure 145. IBM 5494 via SNA/TRLAN, AS/400 Definitions, Device Description

18.2.5 IBM 5494 Controller and Device Description

Source PF CMNLIB/QCLSRC, member RWS5494

```

CRTCTLRWS  CTLD(RWS5494) TYPE(5494) MODEL(2) +
            LINKTYPE(*NONE) ONLINE(*NO) +
            RMTLOCNAME(RWS5494) LCLLOCNAME(AS400BU3) +
            RMTNETID(CHIBM600) TEXT('5494 RWS Ct1')

CRTDEVDSP  DEVD(RWS549400) DEVCLS(*RMT) TYPE(3180) +
            MODEL(2) LOCADR(00) ONLINE(*NO) +
            CTL(RWS5494) TEXT('3180 at 5494')
  
```

18.2.6 Mode MOD5494

Display Mode Description		
Mode description name	MODD	MOD5494
Class-of-service	COS	#CONNECT
Maximum number of sessions	MAXSSN	64
Maximum conversations	MAXCNV	64
Locally controlled sessions	LCLCTLSSN	4
Pre-established sessions	PREESTSSN	0
Inbound pacing value	INPACING	7
Outbound pacing value	OUTPACING	7
Max length of request unit	MAXLENRU	512
Text	TEXT	MODD for 5494

Figure 146. IBM 5494 via SNA/TRLAN, AS/400 Definitions, Mode Description

18.3 Operation and Status

To activate the environment:

- Insert the diskette into the 5494.
- Power on the 3180-2 and the 5494.
- Vary on the TRLAN and APPC controller description.
- Vary on the 5494 controller and the display station description.

If everything is defined correctly and all components are working as expected, AS/400 displays the signon screen on the IBM 5494 attached display station.

You get the status information:

18.3.1 AS/400 Configuration Objects

```
Work with Configuration Status AS400BU3
                                19-08-92 10:25:36
Position to . . . . . Starting characters
Type options, press Enter.
  1=Vary on  2=Vary off  5=Work with job  8=Work with description
  9=Display mode status ...
Opt Description      Status      -----Job-----
      TRNLIN        ACTIVE
      RWS549400     ACTIVE
      RWS549402     ACTIVE
      MOD5494       ACTIVE/TARGET  RWS549402  QUSER      044649
                                           Bottom

Parameters or command
===>
F3=Exit  F4=Prompt  F11=Display types  F12=Cancel  F23=More options
F24=More keys
```

Figure 147 (Part 1 of 2). IBM 5494 via SNA/TRLAN to AS/400, Configuration Objects

```
Work with Configuration Status AS400BU3
                                19-08-92 10:27:01
Position to . . . . . Starting characters
Type options, press Enter.
  1=Vary on  2=Vary off  5=Work with job  8=Work with description
  9=Display mode status ...
Opt Description      Status      -----Job-----
      RWS5494        ACTIVE
      RWS549400     SIGNON DISPLAY
                                           Bottom

Parameters or command
===>
F3=Exit  F4=Prompt  F11=Display types  F12=Cancel  F23=More options
F24=More keys
```

Figure 147 (Part 2 of 2). IBM 5494 via SNA/TRLAN to AS/400, Configuration Objects

18.4 Matching Parameters

AS/400	IBM 5494
TRLAN Line Description → 8	Setup Screen
LIND(TRNLINE)	
ADPTADR(400000009406) → 12	10 ← 0/0 = 3180-2
SSAP(04) → 13	
	8 ← AA = A
	1 = 2A
	9 ← F = 04
APPC Controller Description	G = 01
(auto-created)	H = 30
CTLD(RWS549400)	I = 030
ADPTADR(400000005494) → 7	J = 08
DSAP(04) → 9	
APPN(*YES)	
RMTCPNAME(RWS5494) → 2	
RMTNETID(*NETATR) → 1	
	1 ← 11 = CHIBM600
APPC Device Description	3 ← 12 = RWS5494
(auto-created)	2 ← 13 = RWS5494
DEVD(RWS549402)	6 ← 14 = MOD5494
CTL(RWS549400)	7 ← 15 = 400000005494
RMTLOCNAME(RWS5494) → 3	16 = 010 06
LCLLOCNAME(AS400BU3) → 4	17 = 77-FB011
RMTNETID(*NETATR) → 1	
MODE(*NETATR)	4 ← H1:1 = AS400BU3
	5 ← H1:2 = CHIBM600
	1 ← H1:3 = CHIBM600
	6 ← H1:4 = MOD5494
RWS Controller Description	12 ← H1:5 = 400000009406
	13 ← H1:7 = 04
CTLD(RWS5494) → 11	
TYPE(5494)	
MODEL(2)	
LINKTYPE(*NONE)	
RMTLOCNAME(RWS5494) → 3	
LCLLOCNAME(*NETATR) → 4	
RMTNETID(*NETATR) → 5	
Display Device Description	
DEVD(RWS549400)	
TYPE(3180)	
MODEL(2)	
LOCADR(00) → 10	
CTLD(RWS5494) → 11	
AS/400 NETA	
NETID(CHIBM600) → 5	
LCLCPNAME(AS400BU3)	
LCLLOCNAME(AS400BU3) → 4	
MODNAME(MODLU62)	
Mode Description	
MODD(MOD5494) → 6	
MAXSSN(64)	

Figure 148. Matching Parameters, 5494 via SNA/TRLAN


```

11-> CHIBM600 12-> RWS5494_ 13-> RWS5494_ 14-> MOD5494_
15-> 47971013_____ 16-> 010 06 17-> 77-FB011

H1:1-> AS400BU3 H1:2-> CHIBM600 H1:3-> CHIBM600 H1:4-> MOD5494
H1:5-> 47911140
H1:6-> _____ H1:7-> _ H1:8-> _ H1:9-> _ H1:10-> _

H2:1-> _____ H2:2-> _____ H2:3-> _____ H2:4-> _____
H2:5-> _____
H2:6-> _____ H2:7-> _ H2:8-> _ H2:9-> _ H2:10-> _

H3:1-> _____ H3:2-> _____ H3:3-> _____ H3:4-> _____
H3:5-> _____
H3:6-> _____ H3:7-> _ H3:8-> _ H3:9-> _ H3:10-> _

H4:1-> _____ H4:2-> _____ H4:3-> _____ H1:4-> _____
H4:5-> _____
H4:6-> _____ H4:7-> _ H4:8-> _ H4:9-> _ H4:10-> _

```

Figure 150 (Part 2 of 2). IBM 5494 via SNA/X.25 SVC to AS/400 Setup Screen

The display station is on port 0, address 0 of the IBM 5494. We used an IBM 3180-2 with Swiss German multinational keyboard. Therefore, we had a value of "2A" for parameter 1.

19.3 AS/400 Definitions

19.3.1 Network Attributes

```

                                Display Network Attributes

                                System:  AS400BU3

Current system name . . . . . : AS400BU3
  Pending system name . . . . . :
Local network ID . . . . . : CHIBM600
Local control point name . . . . . : AS400BU3
Default local location . . . . . : AS400BU3
Default mode . . . . . : MODLU62
Maximum number of conversations for a remote
  location . . . . . : 64
APPN node type . . . . . : *NETNODE
Maximum number of intermediate sessions . . . . . : 200
Route addition resistance . . . . . : 128

```

Figure 151. IBM 5494 via SNA/X.25 SVC, AS/400 Definitions, Network Attributes

19.3.2 X.25 Line and APPC Controller Description

```
CRTLINX25 LIND(X25LINE) RSRNAME(LIN071) LGLCHLE((001 +
  *PVC) (002 *SVCBOTH) (003 *SVCBOTH) (004 +
  *SVCBOTH) (005 *SVCBOTH) (006 *SVCBOTH) +
  (007 *SVCBOTH) (008 *SVCBOTH)) +
  NETADR(47911140) CNNINIT(*LOCAL) +
  ONLINE(*NO) EXCHID(056FFFFFF) +
  DFTPKTSIZE(128) MAXPKTSIZE(512) MODULUS(8) +
  DFTWDWSIZE(2) TEXT('X.25 link')
```

Source PF CMNLIB/QCLSRC, member XRWS5494

The APPC device description is been created automatically.

```
CRTCTLAPPC CTLD(XRWSCTL) LINKTYPE(*X25) ONLINE(*NO) +
  SWITCHED(*YES) APPN(*YES) +
  SWTLINLST(X25LINE) MAXFRAME(521) +
  RMTCPNAME(RWS5494) EXCHID(073000C1) +
  CNNNBR(47971013) ROLE(*SEC) NETLVL(1984) +
  NODETYPE(*LENNODE) TEXT('5494 via X.25/SVC')
```

19.3.2.1 Auto-Created DEVD RWS549401

```

                                     Display Device Description
                                     AS400BU3
                                     05-09-92 10:32:44
Device description . . . . . : RWS549401
Option . . . . . : *BASIC
Category of device . . . . . : *APPC
Remote location . . . . . : RWS5494
Online at IPL . . . . . : *NO
Local location . . . . . : AS400BU3
Remote network identifier . . . . . : *NETATR
Attached controller . . . . . : XRWS5494
Message queue . . . . . : QSYSOPR
  Library . . . . . : *LIBL
Local location address . . . . . : 00
APPN-capable . . . . . : *YES
Single session:
  Single session capable . . . . . : *NO
Text . . . . . : AUTOMATICALLY CREATED BY QLUS
Device description . . . . . : RWS549401
Option . . . . . : *MODE
Category of device . . . . . : *APPC
-----Mode-----
*NETATR
                                     Bottom
```

Figure 152. IBM 5494 via SNA/X.25 SVC, AS/400 Definitions, Auto-created Device Description

19.3.3 IBM 5494 Controller and Device Description

```
CRTCTLRWS  CTLD(RWS5494) TYPE(5494) MODEL(2) +
            LINKTYPE(*NONE) ONLINE(*NO) +
            RMTLOCNAME(RWS5494) LCLLOCNAME(AS400BU3) +
            RMTNETID(CHIBM600) TEXT('5494 RWS Ct1')

CRTDEV DSP  DEVD(RWS549400) DEVCLS(*RMT) TYPE(3180) +
            MODEL(2) LOCADR(00) ONLINE(*NO) +
            CTL(RWS5494) TEXT('3180 at 5494')
```

19.3.4 Mode MOD5494

Display Mode Description		
Mode description name	MODD	MOD5494
Class-of-service	COS	#CONNECT
Maximum number of sessions	MAXSSN	64
Maximum conversations	MAXCNV	64
Locally controlled sessions	LCLCTLSSN	4
Pre-established sessions	PREESTSSN	0
Inbound pacing value	INPACING	7
Outbound pacing value	OUTPACING	7
Max length of request unit	MAXLENRU	512
Text	TEXT	MODD for 5494

Figure 153. IBM 5494 via SNA/X.25, AS/400 Definitions, Mode Description

19.4 Operation and Status

To activate the environment:

- Insert the diskette into the 5494.
- Power on the 3180-2 and the 5494.
- Vary on the X.25 line and the APPC controller description.
- Vary on the 5494 controller and the display station description.

From a display station of the 5494, press SYS REQ. Enter the following command to initialize the X.25 connection build-up:

```
H1,C
```

Press ENTER. The 5494 is calling the AS/400. Finally, the AS/400 displays the signon screen.

You will get the status information:

19.4.1 AS/400 Configuration Objects

```
Work with Configuration Status AS400BU3
19-08-92 10:25:36
Position to . . . . . Starting characters
Type options, press Enter.
  1=Vary on  2=Vary off  5=Work with job  8=Work with description
  9=Display mode status ...
Opt Description      Status      -----Job-----
  X25LINE           ACTIVE
  XRWSCTL           ACTIVE
  RWS549401         ACTIVE
  MOD5494           ACTIVE/TARGET      RWS549401  QUSER      044649
                                           Bottom
Parameters or command
===>
F3=Exit  F4=Prompt  F11=Display types  F12=Cancel  F23=More options
F24=More keys
```

Figure 154 (Part 1 of 2). IBM 5494 via SNA/X.25, AS/400 Configuration Status

```
Work with Configuration Status AS400BU3
19-08-92 10:27:01
Position to . . . . . Starting characters
Type options, press Enter.
  1=Vary on  2=Vary off  5=Work with job  8=Work with description
  9=Display mode status ...
Opt Description      Status      -----Job-----
  RWS5494           ACTIVE
  RWS5494           SIGNON DISPLAY
                                           Bottom
Parameters or command
===>
F3=Exit  F4=Prompt  F11=Display types  F12=Cancel  F23=More options
F24=More keys
```

Figure 154 (Part 2 of 2). IBM 5494 via SNA/X.25, AS/400 Configuration Status

19.5 Matching Parameters

AS/400	IBM 5494
X.25 Line Description → 8	Setup Screen
LIND(X25LINE)	
NETADR(47911140) →14	10 ← 0/0 = 3180-2
	8 ← AA = 1
	DD = 0 (no TRLAN Gateway)
	1 = 2A
APPC Controller Description	7 ← 2 = C1
CTLD(XRWSCTL)	4 = 0 02 7
CNNBR(47971013) →12	9 ←
EXCHID(073000C1) → 7	5 = 1 0 0 0 0
SWITCHED(*YES) →11	11 ←
APPN(*YES)	6 = 0 0 0 0 1 0
RMTCPNAME(RWS5494) → 2	
RMTNETID(*NETATR) → 1	1 ← 11 = CHIBM600
DFTWDWSIZE(2 2) → 9	3 ← 12 = RWS5494
	2 ← 13 = RWS5494
APPC Device Description	6 ← 14 = MOD5494
(auto-created)	12 ← 15 = 47971013
DEVD(RWS549401)	16 = 010 06
CTL(XRWSCTL)	17 = 77-FB011
RMTLOCNAME(RWS5494) → 3	4 ← H1:1 = AS400BU3
LCLLOCNAME(AS400BU3) → 4	5 ← H1:2 = CHIBM600
RMTNETID(*NETATR) → 1	1 ← H1:3 = CHIBM600
MODE(*NETATR)	6 ← H1:4 = MOD5494
	14 ← H1:5 = 47911140
RWS Controller Description	
CTLD(RWS5494) →11	
TYPE(5494)	
MODEL(2)	
LINKTYPE(*NONE)	
RMTLOCNAME(RWS5494) → 3	
LCLLOCNAME(*NETATR) → 4	
RMTNETID(*NETATR) → 5	
Display Device Description	
DEVD(RWS549400)	
TYPE(3180)	
MODEL(2)	
LOCADR(00) →10	
CTLD(RWS5494) →11	
AS/400 NETA	
NETID(CHIBM600) → 5	
LCLCPNAME(AS400BU3)	
LCLLOCNAME(AS400BU3) → 4	
MODNAME(MODLU62)	
Mode Description	
MODD(MOD5494) → 6	
MAXSSN(64)	

Figure 155. Matching Parameters, 5494 via SNA/X.25 SVC


```

11-> CHIBM600 12-> RWS5494_ 13-> RWS5494_ 14-> MOD5494_
15-> _____ 16-> 010 06 17-> 77-FB011

H1:1-> AS400BU3 H1:2-> CHIBM600 H1:3-> CHIBM600 H1:4-> MOD5494
H1:5-> _____
H1:6-> 001

H2:1-> _____ H2:2-> _____ H2:3-> _____ H2:4-> _____
H2:5-> _____
H2:6-> _____

H3:1-> _____ H3:2-> _____ H3:3-> _____ H3:4-> _____
H3:5-> _____
H3:6-> _____

H4:1-> _____ H4:2-> _____ H4:3-> _____ H1:4-> _____
H4:5-> _____
H4:6-> _____

```

Figure 157 (Part 2 of 2). IBM 5494 via SNA/X.25 PVC Setup Screen

The display station is on port 0, address 0 of the IBM 5494. We used an IBM 3180-2, with Swiss German multinational keyboard. Therefore, we had a value of "2A" for parameter 1.

20.2 AS/400 Definitions

20.2.1 Network Attributes

```

                                Display Network Attributes
                                System:  AS400BU3

Current system name . . . . . : AS400BU3
  Pending system name . . . . . :
Local network ID . . . . . : CHIBM600
Local control point name . . . . . : AS400BU3
Default local location . . . . . : AS400BU3
Default mode . . . . . : MODLU62
Maximum number of conversations for a remote
  location . . . . . : 64
APPN node type . . . . . : *NETNODE
Maximum number of intermediate sessions . . . . . : 200
Route addition resistance . . . . . : 128

```

Figure 158. IBM 5494 via SNA/X.25 PVC, AS/400 Definitions, Network Attributes

20.2.2 X.25 Line and APPC Controller Description

```
CRTLINX25 LIND(X25LINE) RSRNAME(LIN071) LGLCHLE((001 +
  *PVC) (002 *SVCBOTH) (003 *SVCBOTH) (004 +
  *SVCBOTH) (005 *SVCBOTH) (006 *SVCBOTH) +
  (007 *SVCBOTH) (008 *SVCBOTH)) +
  NETADR(47911140) CNNINIT(*LOCAL) +
  ONLINE(*NO) EXCHID(056FFFFFF) +
  DFTPFSIZE(128) MAXPKTSIZE(512) MODULUS(8) +
  DFTWDWSIZE(2) TEXT('X.25 link')
```

Source PF CMNLIB/QCLSRC, member XPRWS5494

The APPC device description is been created automatically.

```
CRTCTLAPPC CTLD(XPRWSCTL) LINKTYPE(*X25) ONLINE(*NO) +
  SWITCHED(*NO) APPN(*YES) +
  LINE(X25LINE) MAXFRAME(521) +
  RMTCPNAME(RWS5494) EXCHID(073000C1) +
  LGLCHLID(001) ROLE(*SEC) NETLVL(1984) +
  NODETYPE(*LENNODE) TEXT('5494 via X.25/PVC')
```

20.2.2.1 Auto-Created DEVD RWS549403

```

                                     Display Device Description
                                     AS400BU3
                                     05-09-92 10:32:44
Device description . . . . . : RWS549403
Option . . . . . : *BASIC
Category of device . . . . . : *APPC
Remote location . . . . . : RWS5494
Online at IPL . . . . . : *NO
Local location . . . . . : AS400BU3
Remote network identifier . . . . . : *NETATR
Attached controller . . . . . : XPRWS5494
Message queue . . . . . : QSYSOPR
  Library . . . . . : *LIBL
Local location address . . . . . : 00
APPN-capable . . . . . : *YES
Single session:
  Single session capable . . . . . : *NO
Text . . . . . : AUTOMATICALLY CREATED BY QLUS
Device description . . . . . : RWS549403
Option . . . . . : *MODE
Category of device . . . . . : *APPC
-----Mode-----
*NETATR
                                     Bottom
```

Figure 159. IBM 5494 via SNA/X.25 PVC, AS/400 Definitions, Auto-created Device Description

20.2.3 IBM 5494 Controller and Device Description

```
CRTCTRLWS CTLD(RWS5494) TYPE(5494) MODEL(2) +
LINKTYPE(*NONE) ONLINE(*NO) +
RMTLOCNAME(RWS5494) LCLLOCNAME(AS400BU3) +
RMTNETID(CHIBM600) TEXT('5494 RWS Ct1')
```

```
CRTDEVDSP DEVD(RWS549400) DEVCLS(*RMT) TYPE(3180) +
MODEL(2) LOCADR(00) ONLINE(*NO) +
CTL(RWS5494) TEXT('3180 at 5494')
```

20.2.4 Mode MOD5494

Display Mode Description		
Mode description name	MODD	MOD5494
Class-of-service	COS	#CONNECT
Maximum number of sessions	MAXSSN	64
Maximum conversations	MAXCNV	64
Locally controlled sessions	LCLCTLSSN	4
Pre-established sessions	PREESTSSN	0
Inbound pacing value	INPACING	7
Outbound pacing value	OUTPACING	7
Max length of request unit	MAXLENRU	512
Text	TEXT	MODD for 5494

Figure 160. IBM 5494 via SNA/X.25 PVC, AS/400 Definitions, Mode Description

20.3 Operation and Status

To activate the environment:

- Insert the diskette into the 5494.
- Power on the 3180-2 and the 5494.
- Vary on the X.25 line and the APPC controller description.
- Vary on the 5494 controller and the display description.

AS/400 will display the signon screen.

You will get the following information:

20.3.1 AS/400 Configuration Objects

```

Work with Configuration Status                               AS400BU3
                                                           19-08-92 10:25:36
Position to . . . . . Starting characters
Type options, press Enter.
  1=Vary on  2=Vary off  5=Work with job  8=Work with description
  9=Display mode status ...
Opt Description      Status      -----Job-----
      X25LINE        ACTIVE
      XPRWSCTL       ACTIVE
      RWS549403      ACTIVE
      MOD5494        ACTIVE/TARGET      RWS549401  QUSER      045649
                                                           Bottom

Parameters or command
===>
F3=Exit  F4=Prompt  F11=Display types  F12=Cancel  F23=More options
F24=More keys

```

Figure 161 (Part 1 of 2). IBM 5494 via SNA/X.25 PVC, AS/400 Configuration Objects

```

Work with Configuration Status                               AS400BU3
                                                           19-08-92 10:27:01
Position to . . . . . Starting characters
Type options, press Enter.
  1=Vary on  2=Vary off  5=Work with job  8=Work with description
  9=Display mode status ...
Opt Description      Status      -----Job-----
      RWS5494        ACTIVE
      RWS5494        SIGNON DISPLAY
                                                           Bottom

Parameters or command
===>
F3=Exit  F4=Prompt  F11=Display types  F12=Cancel  F23=More options
F24=More keys

```

Figure 161 (Part 2 of 2). IBM 5494 via SNA/X.25 PVC, AS/400 Configuration Objects

20.4 Matching Parameters

AS/400	IBM 5494
X.25 Line Description → 8	Setup Screen
LIND(X25LINE)	
LGLCHLE(001 *PVC) →13	10 ← 0/0 = 3180-2
	8 ← AA = 1
	DD = 0 (no TRLAN Gateway)
	1 = 2A
APPC Controller Description	7 ← 2 = C1
CTLD(XPRWSCCTL)	4 = 0 02 7
SWITCHED(*NO) →12	5 = 1 1 0 0 0
LGLCHLID(001) →13	12 ←
EXCHID(073000C1) → 7	6 = 0 0 0 0 1 0
APPN(*YES)	
RMTCPNAME(RWS5494) → 2	
RMTNETID(*NETATR) → 1	
	1 ← 11 = CHIBM600
	3 ← 12 = RWS5494
APPC Device Description (auto-created)	2 ← 13 = RWS5494
DEVD(RWS549403)	6 ← 14 = MOD5494
CTL(SRWSCCTL)	15 =
RMTLOCNAME(RWS5494) → 3	16 = 010 06
LCLLOCNAME(AS400BU3) → 4	17 = 77-FB011
RMTNETID(*NETATR) → 1	4 ← H1:1 = AS400BU3
MODE(*NETATR)	5 ← H1:2 = CHIBM600
	1 ← H1:3 = CHIBM600
RWS Controller Description	6 ← H1:4 = MOD5494
	H1:5 =
CTLD(RWS5494) →11	13 ← H1:6 = 001
TYPE(5494)	
MODEL(2)	
LINKTYPE(*NONE)	
RMTLOCNAME(RWS5494) → 3	
LCLLOCNAME(*NETATR) → 4	
RMTNETID(*NETATR) → 5	
Display Device Description	
DEVD(RWS549400)	
TYPE(3180)	
MODEL(2)	
LOCADR(00) →10	
CTLD(RWS5494) →11	
AS/400 NETA	
NETID(CHIBM600) → 5	
LCLCPNAME(AS400BU3)	
LCLLOCNAME(AS400BU3) → 4	
MODNAME(MODLU62)	
Mode Description	
MODD(MOD5494) → 6	
MAXSSN(64)	

Figure 162. Matching Parameters, 5494 via SNA/X.25 PVC

Chapter 21. IBM 5494 via SNA/X.25 SVC, Called by AS/400

Usually, the IBM 5494 establishes the connection with AS/400 host by dialing the PSTN number, or by submitting an X.25 call to AS/400.

Prior to OS/400 V2R2, you had to call a dummy program which acquired an AS/400 display station device. Because of this acquisition, AS/400 initiated a link from itself to the IBM 5494.

In V2R2, OS/400 has a new parameter on the CTLD. The parameter is called 'DIALINIT - Dial Initiation'. Set this to *IMMED to cause OS/400 to call the 5494 immediately after vary-on of the 5494/APPC controller description. You need to monitor for error messages and take appropriate actions, in case the call is not successful,

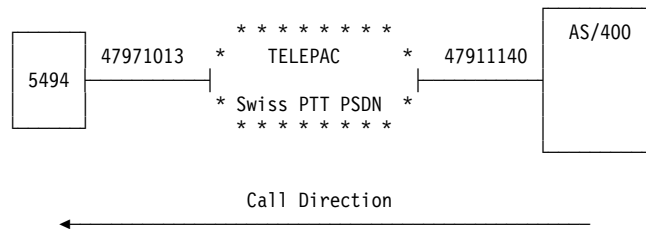


Figure 163. IBM 5494, using SNA/X.25 SVC, called by AS/400

21.1 IBM 5494 Setup

All 5494 setup parameters and AS/400 definitions are the same as for 5494 SNA/X.25 SVC, call initiated by 5494, with one exception.

Exception: IBM 5494 setup field 5 / subfield 2 must be changed to 2 - SVC answer only.

21.2 AS/400 Definition Changes

As explained above, parameter DIALINIT on the CTLD description has to be changed. The CL command to create the APPC controller description will look like the following:

```
CRTCTLAPPC CTLD(XRWSCTL) LINKTYPE(*X25) ONLINE(*NO) +
SWITCHED(*YES) APPN(*YES) +
DIALINIT(*YES) +
SWTLINLST(X25LINE) MAXFRAME(521) +
RMTCPNAME(RWS5494) EXCHID(073000C1) +
CNNNBR(47911141) ROLE(*SEC) NETLVL(1984) +
NODETYPE(*LENNODE) TEXT('5494 via X.25/SVC')
```

21.3 Operation

21.3.1 At the IBM 5494 Site

Power on the display station and the controller.

21.3.2 On the AS/400

Activate the X.25 line, the controller, and device descriptions as usual.

21.3.3 Connection Establishment

Immediately after you vary on the APPC controller description, XRWSCTL, AS/400 sends a CALL REQUEST to the 5494.

After a successful call, the status of the configuration objects on the AS/400 change to the status as shown in the SNA/X.25 SVC chapter.

5494 users get the AS/400 signon screen without any manual intervention.

Chapter 22. IBM 5494 as Node T2.1 via SNA Subarea Network

This section addresses the scenario where IBM 5250 Twinax terminals are attached to an IBM 5494 via an SNA Subarea Network to AS/400. The IBM 5494 T2.1 RPQ is a microcode enhancement feature for the IBM 5494 Remote Control Unit. This enhancement allows the IBM 5494 to connect to the AS/400 as a LEN node through the SNA subarea network. SDLC leased is the only link type supported by the IBM 5494 T2.1 RPQ.

This enhancement allows customers to use the corporate backbone network or connect remote control units via the IBM IN network.

RPQ title/number: 8Q0932 - Attachment to SNA Subarea Network.

SW requirements: VTAM V3R2 or later, OS/400 V2R1.1.

Note: Release 3.0 of the 5494 microcode includes the features provided by the RPQ 8Q0932; eliminating the need for this RPQ.

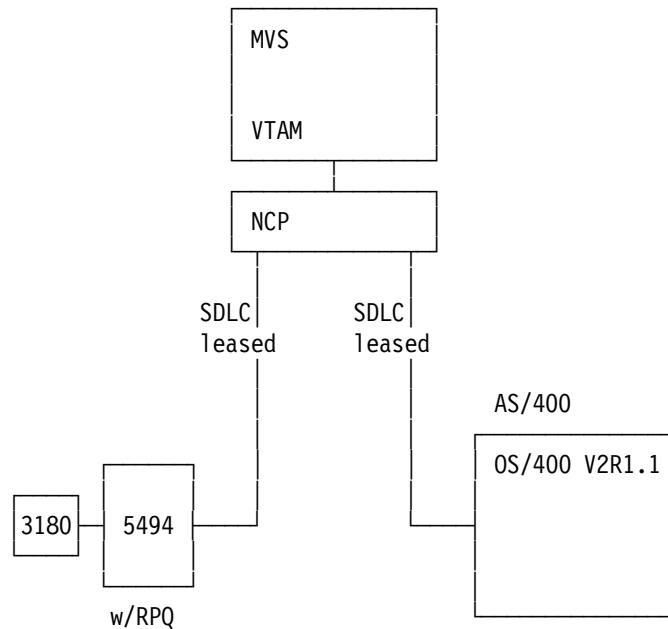


Figure 164. IBM 5494, with T2.1 RPQ via SNA Subarea to AS/400

22.1 Software Used

- OS/400 V2R1.1
- MVS/ESA V4R2.2
- VTAM V3R4.1
- NCP V5R4

22.3.1 Network Attributes

```
Display Network Attributes

System: AS400BU3

Current system name . . . . . : AS400BU3
Pending system name . . . . . :
Local network ID . . . . . : CHIBM600
Local control point name . . . . . : AS400BU3
Default local location . . . . . : AS400BU3
Default mode . . . . . : MODLU62
Maximum number of conversations for a remote
location . . . . . : 64
APPN node type . . . . . : *NETNODE
Maximum number of intermediate sessions . . . . : 200
Route addition resistance . . . . . : 128
```

Figure 166. IBM 5494 as Node T2.1 via SNA Subarea Network, AS/400 Definitions, Network Attributes

22.3.2 Link with VTAM/NCP

Just the dependent LU's, for 3270 Device Emulation, are defined.

```
CRTLINSDLC LIND(S4381LIN2) RSRNAME(LIN052) ONLINE(*NO) +
ROLE(*SEC) LINESPEED(19200) +
MODEM(*IBMLPDA1) DUPLEX(*FULL) +
TEXT('Leased, PP, to FSC 4381')
CRTCTHOST CTLD(PC8CM1) LINKTYPE(*SDLC) ONLINE(*NO) +
APPN(*YES) LINE(S4381LIN2) +
RMTNETID(CHIBM600) RMTCPNAME(CHIBM60A) +
SSCPID(05000000A0BE) STNADR(C1) CPSSN(*NO) +
NODETYPE(*LENODE) TEXT('PU(PC8CM1) to +
FSC4381')
/* EMULATED SCREEN 3278/9-2 */
CRTDEVHOST DEVD(PC8SM101) LOCADR(01) RMTLOCNAME(FSCMVS) +
ONLINE(*NO) CTL(PC8CM1) APPTYPE(*EML) +
EMLKBD(*LOWER) TEXT('3278 to FSC MVS')
...
```

22.3.2.1 Auto-Created DEVD PC8SRWS0

```

                                Display Device Description
                                AS400BU3
                                05-05-92 10:32:44
Device description . . . . . : PC8SRWSO
Option . . . . . : *BASIC
Category of device . . . . . : *APPC
Remote location . . . . . : PC8SRWSO
Online at IPL . . . . . : *NO
Local location . . . . . : AS400BU3
Remote network identifier . . . . . : *NETATR
Attached controller . . . . . : PC8CM1
Message queue . . . . . : QSYSOPR
  Library . . . . . : *LIBL
Local location address . . . . . : 00
APPN-capable . . . . . : *YES
Single session:
  Single session capable . . . . . : *NO
Text . . . . . : AUTOMATICALLY CREATED BY QLUS
Device description . . . . . : PC8SRWSO
Option . . . . . : *MODE
Category of device . . . . . : *APPC
-----Mode-----
*NETATR
                                Bottom

Press Enter to continue.
F3=Exit  F11=Display keywords  F12=Cancel

```

Figure 167. IBM 5494 as Node T2.1 via SNA Subarea Network, AS/400 Definitions, Device Description

22.3.3 IBM 5494 Controller, Device

```

CRTCTLRWS  CTLD(RWS5494B) TYPE(5494) MODEL(2) +
            LINKTYPE(*NONE) ONLINE(*NO) +
            RMTLOCNAME(PC8SRWSO) LCLLOCNAME(AS400BU3) +
            RMTNETID(CHIBM600) TEXT('5494 via SNA SA')

CRTDEVDSP  DEVD(RWS5494B00) DEVCLS(*RMT) TYPE(3180) +
            MODEL(2) LOCADR(00) ONLINE(*NO) +
            CTL(RWS5494B) TEXT('3180 at 5494 T2.1')

```

22.3.4 Mode MODLU62

```

                                Display Mode Description
Mode description name . . . . . : MODD          MODLU62
Class-of-service . . . . . : COS             #CONNECT
Maximum number of sessions . . . . . : MAXSSN      8
Maximum conversations . . . . . : MAXCNV        8
Locally controlled sessions . . . . . : LCLCTLSSN   4
Pre-established sessions . . . . . : PREESTSSN    1
Inbound pacing value . . . . . : INPACING        7
Outbound pacing value . . . . . : OUTPACING       7
Max length of request unit . . . . . : MAXLENRU   *CALC
Text . . . . . : TEXT              TS Environment

```

Figure 168. IBM 5494 as Node T2.1 via SNA Subarea Network, AS/400 Definitions, Mode Description

22.3.5 Remote APPN Configuration List

```

Define APPN Remote Locations

Type new/changed information, press Enter.
Remote      Remote      Local      Control   Control
Location    Network    Location   Point     Point     Location   Secure
Name        ID          Name       Name      Net ID    Password   Loc
PC8SRWSO    CHIBM600   AS400BU3  CHIBM60A CHIBM600  *NETATR    *NO
              *NETATR   *NETATR              *NETATR    *NO

F3=Exit  F11=Additional information  F12=Previous
F17=Top of list  F18=Bottom of list

```

Figure 169. IBM 5494 as Node T2.1 via SNA Subarea Network, AS/400 Definitions, Remote APPN Configuration List

22.4 VTAM/NCP Definitions

22.4.1 Link with AS/400

```

*
*          ...
*****
*
*          GROUP DEFINITIONS FOR NONDIALED BNN LINES PART 2
*          AS/400 AND POS
*
*****
PC8GRP12 GROUP DIAL=NO,                SWITCHED LINE CONTROL SUPPORT *
                LNCTL=SDLC,            TYPE OF LINE CONTROL          *
                REPLYTO=1.5,          RECOVERY AFTER POLL RESP NOT REC*
                RNRLIMIT=3,          MIN AFTER RNR BEFORE STATION INOP*
                TYPE=NCP              LINE OPERATION MODE
*
PC8L12  LINE ADDRESS=(12,HALF),        REL. LINE ADDR, COMM OP MODE  *
                CLOCKNG=EXT,          INTERNAL/EXTERNAL CLOCKING    *
                DUPLEX=FULL,          RTS UP: FULL SEND/REC, HALF SEND*
                ETRATIO=30,          ERROR TO XMIT RATIO (PER MILLE) *
                LPDATS=LPDA1,        MODEM SUPPORTS LPDA          *
                LTRUNC=NO,           LINE TRACE DATA COPY TRUNCATION *
                MAXPU=1,             MAX NUM OF PU ON LINK        *
                NRZI=YES,            NO-RETURN-TO-ZERO-INVERTED MODE *
                PAUSE=0.3,           AV. DURATION OF POLLING CYCLE  *
                RETRIES=(7,3,5),     RECOVERY: RETRIES,PAUSE,SEQ.  *
                SERVLIM=10,          NUM OF REG SCANS BEFORE SOT SCAN*
                SPEED=19200,         LINE SPEED IN BPS            *
                SPAN=(PC8V43,LN,LAD012),
                ISTATUS=ACTIVE
*
*          STATOPT=' LINE AS/400 NRZI'
**
*
*          SERVICE ORDER=(PC8CM1)
*
PC8CM1  PU  ADDR=C1,                POLLING ADDRESS                *
                ANS=CONTINUE,        AUTO NETWORK SHUTDOWN          *

```

```

                IRETRY=NO,                IMMED. RETRY A POLLING TO ON PU *
                LPDA=ALLOW,                BLOCK/ALLOW LPDA TESTS          *
                MAXDATA=265,                MAX AMOUNT OF DATA TO PU (BYTES)*
                MAXOUT=7,                    FRAMES SENT TO NCP BEF REQ RESP *
                PASSLIM=7,                    NUM OF CONSEC PIU'S TO PU      *
                PUTYPE=2,                    PUTYPE OF SDLC DEVICE ON LINE  *
                DISCNT=NO,                    VTAM DISC SSCP-LU/PU SESS      *
                ISTATUS=ACTIVE,                VTAM INITIAL STATUS            *
                SSCPFM=USSSCS,                VTAM USS FORMAT                *
                MODETAB=PCADS400,            VTAM DEFAULT LOGMODE TABLE    *
                PACING=7,                    VTAM PACING COUNT NCP-PU       *
                VPACING=8,                    VTAM PACING COUNT VTAM-NCP     *
                XID=YES                        INDEPENDENT LU AS/400          *
*
*      STATOPT=' PU AS/400'
*
AS400BU1 LU   LOCADDR=0,                    LOCAL DEVICE ADDRESS  INDLU62 *
                MODETAB=PCADS400,            MODETABLE                *
                DLOGMOD=MODLU62,            VTAM LOGMODE              *
                ISTATUS=ACTIVE,                VTAM INITIAL STATUS      *
                RESSCB=20                      NBR OF SESSIONS          *
*
*      STATOPT=' ILU AS/400 BU1'
*
AS400BU3 LU   LOCADDR=0,                    LOCAL DEVICE ADDRESS  INDLU62 *
                MODETAB=PCADS400,            MODETABLE                *
                DLOGMOD=MODLU62,            VTAM LOGMODE              *
                ISTATUS=ACTIVE,                VTAM INITIAL STATUS      *
                RESSCB=20                      NBR OF SESSIONS          *
*
*      STATOPT=' ILU AS/400 BU3'
*
*
*      ...
*

```

22.4.2 Link with IBM 5494

```

*****
*
*      LINE, PU, LU DEFINITIONS FOR BNN LINK - SIMH 5X94 T2.1 NODE *
*
*****
PC8L69  LINE ADDRESS=(69,HALF),            REL. LINE ADDR, COMM OP MODE *
                CLOCKNG=EXT,                INTERNAL/EXTERNAL CLOCKING    *
                DUPLEX=FULL,                RTS UP: FULL SEND/REC, HALF SEND*
                MAXPU=1,                    MAX NUM OF PU ON LINK        *
                NRZI=YES,                    NO-RETURN-TO-ZERO-INVERTED MODE *
                PAUSE=0.5,                    AV. DURATION OF POLLING CYCLE *
                RETRIES=(7,3,5),            RECOVERY: RETRIES,PAUSE,SEQ.  *
                SPEED=9600,                LINE SPEED IN BPS            *
                ISTATUS=INACTIVE
*
*      STATOPT=' LINE 5X94 T2.1 NODE'
*
PC8CRWS  PU ADDR=C1,                        POLLING ADDRESS              *
                ANS=CONTINUE,                AUTO NETWORK SHUTDOWN        *
                DLOGMOD=MODLU62,            VTAM DEFAULT LOGMODE        *
                IRETRY=YES,                    IMMED. RETRY A POLLING TO ON PU *
                MAXOUT=7,                    FRAMES SENT TO PU BEF REQ RESP *
                MAXDATA=265,                MAX PIU TO PHYS. UNIT        *
                MODETAB=PCADLMOD,            VTAM LOGON MODE TABLE      *
                PACING=0,                    BNN TO LU PACING            *
                PUTYPE=2,                    PUTYPE OF SDLC DEVICE ON LINE *

```



```

          VPACING=5,          VTAM TO BNN PACING          *
          XID=YES            FOR T2.1 NODE SUPPORT
*          STATOPT=' PU 5X94 T2.1 NODE'
**
PC8SRWS0 LU  LOCADDR=0,          LOCAL DEVICE ADDRESS  ILU  *
          RESSCB=32
*          STATOPT=' LU 5X94 T2.1 NODE'
*
PC8SRWS1 LU  LOCADDR=0,          LOCAL DEVICE ADDRESS  ILU  *
          RESSCB=32
*          STATOPT=' LU 5X94 T2.1 NODE'
*

```

22.4.3 VTAM Logmode Table Entry MODLU62

```

...
*****
*          LOGICAL UNIT TYPE 6.2 / LEN (ILU) WITH COS ACCORDING INS      *
*****
MODLU62  MODEENT LOGMODE=MODLU62,          *
          COS=#CONNECT                      MEDIUM
*****
...

```

22.5 Operation and Status

To activate the environment:

- Activate link AS/400 to VTAM/NCP.
- Activate IBM 5494 controller and device descriptions within the AS/40.
- Activate resources for AS/400 and IBM 5494 within VTAM/NCP.
- Insert appropriately configured system diskette into IBM 5494 diskette drive.
- Power on display station and IBM 5494 controller

If everything is defined and working correctly, AS/400 displays the signon screen on the IBM 5494 attached display station.

You get the status information:

22.5.1 AS/400 Configuration Objects

```

Work with Configuration Status
AS400BU3
19-08-92 10:25:36
Position to . . . . . Starting characters
Type options, press Enter.
  1=Vary on  2=Vary off  5=Work with job  8=Work with description
  9=Display mode status ...
Opt Description      Status      -----Job-----
   S4381LIN2        ACTIVE
   PC8CM1           ACTIVE
   PC8SRWS0        ACTIVE
   MODLU62         ACTIVE/TARGET      PC8SRWS0  QUSER      044649
                                           Bottom

Parameters or command
===>
F3=Exit  F4=Prompt  F11=Display types  F12=Cancel  F23=More options
F24=More keys

```

Figure 170 (Part 1 of 3). IBM 5494 as Node T2.1 via SNA Subarea Network, AS/400 Configuration Objects

```

Display Mode Status
System: AS400BU3
Device . . . . . : PC8SRWS0
Device status . . . . . : ACTIVE
Type options, press Enter.
  5=Display details
Opt Mode      Status      -----Conversations-----
   SNASVCMG   Started      Total  Source  Target  Detached
   MODLU62   Started      2      1      1      0
                                           Bottom

F3=Exit  F5=Refresh  F11=Display sessions  F12=Cancel

```

Figure 170 (Part 2 of 3). IBM 5494 as Node T2.1 via SNA Subarea Network, AS/400 Configuration Objects

```

Work with Configuration Status
AS400BU3
19-08-92 10:27:01
Position to . . . . . Starting characters
Type options, press Enter.
  1=Vary on  2=Vary off  5=Work with job  8=Work with description
  9=Display mode status ...
Opt Description      Status      -----Job-----
   RWS5494B        ACTIVE
   RWS5494B00     SIGNON DISPLAY
                                           Bottom

Parameters or command
===>
F3=Exit  F4=Prompt  F11=Display types  F12=Cancel  F23=More options
F24=More keys

```

Figure 170 (Part 3 of 3). IBM 5494 as Node T2.1 via SNA Subarea Network, AS/400 Configuration Objects

22.5.2 NetView/370

```
NCCF          N E T V I E W          PCAZN SIMH      08/19/92 11DSP01
C PCAZN      DISPLAY NET,ID=PC8L69,SCOPE=ALL
PCAZN        IST097I DISPLAY ACCEPTED
' PCAZN
IST075I NAME = PC8L69          , TYPE = LINE
IST486I STATUS= ACTIV        , DESIRED STATE= ACTIV
IST087I TYPE = LEASED         , CONTROL = SDLC
IST134I GROUP = PC8GRP       , MAJOR NODE = PC8V43
IST084I NETWORK NODES:
IST089I PC8CRWS TYPE = PHYSICAL UNIT    , ACTIV--L--
IST089I PC8SRWSO TYPE = LOGICAL UNIT    , ACT/S
IST314I END
-----
???
```

Figure 171 (Part 1 of 2). IBM 5494 as Node T2.1 via SNA Subarea Network, NetView/370

```
NLDM.SESS                                DSP01
                                SESSION LIST
NAME: PC8SRWSO                                DOMAIN: PCAZN
-----
      ***** PRIMARY *****      ***** SECONDARY *****
SEL#  NAME  TYPE  DOM   NAME  TYPE  DOM   START TIME   END TIME
( 1) AS400BU3 ILU  PCAZN PC8SRWSO ILU  PCAZN 08/19 11:01:43 *** ACTIVE ***
( 2) PC8SRWSO ILU  PCAZN AS400BU3 ILU  PCAZN 08/19 11:01:30 *** ACTIVE ***

ENTER TO VIEW MORE DATA
ENTER SEL# (CONFIG), SEL# AND CT (CONN. TEST), SEL# AND STR (TERM REASON)
CMD==>
```

Figure 171 (Part 2 of 2). IBM 5494 as Node T2.1 via SNA Subarea Network, NetView/370

22.6 Matching Parameters

IBM 5494, T2.1		VTAM Startup
0/0 = 3180-2	→10	1← NetID=CHIBM600
AA = 1		2← SSCPName=CHIBM60A
DD = 0		VTAM Logon Mode Table
1 = 2A		3← Table Entry=MODLU62
2 = C1	→5	VTAM/NCP for IBM 5494
3 = 011 0000	→4	4← PC8L69 LINE DUPLEX=FULL
8 = 06 0		4← NRZI=YES
11 = CHIBM600	→1	5← PC8CRWS PU ADDR=C1
12 = PC8SRWS0	→6	PUTYPE=2
13 = PC8CRWS	→5	XID=YES
14 = MODLU62	→3	6← PC8SRWS0 LU LOCADDR=0
15 =		
16 = 010 06		
17 = 77-FB011		
H1:1 = AS400BU3	→9	
H1:2 = CHIBM600	→1	
H1:3 = CHIBM600	→1	
H1:4 = MODLU62	→3	
H1:5 =		
AS/400 NETA		VTAM/NCP for AS/400
NETID(CHIBM600)	→1	PC8L12 LINE DUPLEX=FULL
LCLCPNAME(AS400BU3)		NRZI=YES
LCLLOCNAME(AS400BU3)	→9	
MODNAME(MODLU62)	→3	
Remote APPN Config List		7← PC8CM1 PU ADDR=C1
REMLOCNAME(PC8SRWS0)	→5	8← PUTYPE=2
REMNETID(CHIBM600)	→1	8← XID=YES
LCLLOCNAME(AS400BU3)	→9	9← AS400BU3 LU LOCADDR=0
REMCPCNAME(CHIBM60A)	→2	
REMNETID(CHIBM600)	→1	
AS/400 for IBM 5494		
CTLRWS CTLD(RWS5494B)		
RMTLOCNAME(PC8SRWS0)	→5	
LCLLOCNAME(AS400BU3)	→9	
RMTNETID(CHIBM600)	→1	
DEV DSP LOCADR(00)	→10	
AS/400 for VTAM/NCP		
LINSDLC LIND(S4381LIN2)		
CTLHOST CTLD(PC8CM1)		
NODETYPE(*LENNODE)	→8	
RMTNETID(CHIBM600)	→1	
RMTCPNAME(CHIBM60A)	→2	
DEVAPPC REMLOCNAME(PC8SRWS0)	→5	
LCLLOCNAME(AS400BU3)	→9	
MODE(*NETATR)	→3	
LOCADR(00)	→9	

Figure 172. Matching Parameters, VTAM/NCP, AS/400 and 5494 T2.1

Chapter 23. IBM 5494 as Node T2.1 via TRLAN to SNA Subarea Network

The IBM 5494 T2.1 RPQ is a microcode enhancement feature for the IBM 5494 Remote Control Unit. This enhancement allows the IBM 5494 to connect to the AS/400 as a LEN node through the SNA subarea network. SDLC leased is the only link type supported by the IBM 5494 T2.1 RPQ release 1.0. Release 1.1 allows switched connections: SDLC, X.21, X.25 and TRLAN.

This enhancement allows customers to use the corporate backbone network or to connect remote control units via the IBM IN network.

RPQ title/number: 8Q0932 - IBM 5494 Attachment to SNA Subarea Network.

SW requirements: VTAM V3R2 or later, OS/400 V2R2 or later.

Note: Release 3.0 of the 5494 microcode includes the features provided by the RPQ 8Q0932; eliminating the need for this RPQ.

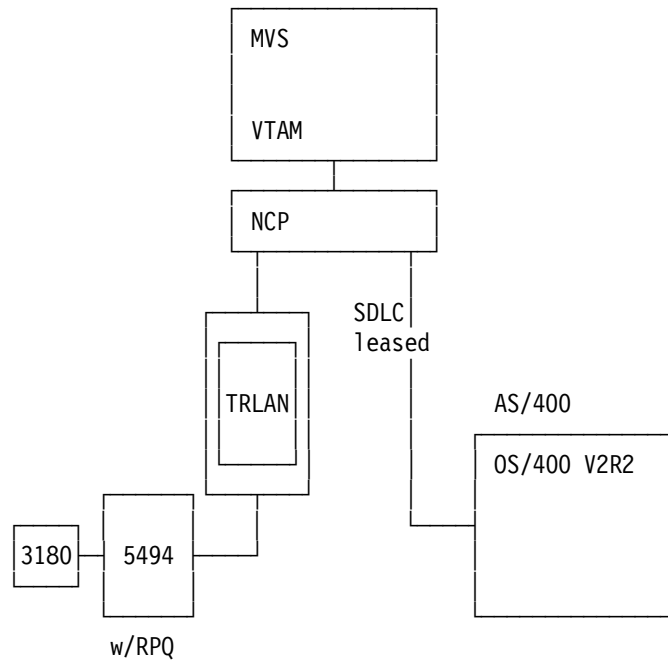


Figure 173. IBM 5494, with T2.1 RPQ via TRLAN to SNA Subarea and AS/400

23.1 IBM 5494 Setup

	0	1	2	3	4	5	6
0/	2A	2A	2A	2A	2A	2A	2A
1/	2A	2A	2A	2A	2A	2A	2A
2/	2A	2A	2A	2A	2A	2A	2A
3/	2A	2A	2A	2A	2A	2A	2A

AA-> 4
1-> 2A - -
F-> 04 G->01 H-> 30 I-> 030 J-> 08
P-> 0 0

Figure 174 (Part 1 of 2). IBM 5494 T2.1 Setup Screen

11->	CHIBM600	12->	PCASTICO	13->	PCAKTRIC	14->	MODLU62_
15->	400000005494__	16->	010 06	17->	XI-05494		
H1:1->	AS400BU3	H1:2->	CHIBM600	H1:3->	CHIBM600	H1:4->	MODLU62
H1:5->	400000000010__	H1:7->	04	H1:8->	2	H1:9->	1
H2:1->	_____	H2:2->	_____	H2:3->	_____	H2:4->	_____
H2:5->	_____	H1:7->	_	H1:8->	_	H1:9->	_
H3:1->	_____	H3:2->	_____	H3:3->	_____	H3:4->	_____
H3:5->	_____	H1:7->	_	H1:8->	_	H1:9->	_
H4:1->	_____	H4:2->	_____	H4:3->	_____	H1:4->	_____
H4:5->	_____	H1:7->	_	H1:8->	_	H1:9->	_

Figure 174 (Part 2 of 2). IBM 5494 T2.1 Setup Screen

A display station is on port 0, address 3 of the IBM 5494. We used an IBM 3180-2, with Swiss German multinational keyboard. This is value "2A" for parameter 1.

23.2 AS/400 Definitions

23.2.1 Network Attributes

```

                                Display Network Attributes
                                System:  AS400BU3
Current system name . . . . . : AS400BU3
  Pending system name . . . . . :
Local network ID . . . . . : CHIBM600
Local control point name . . . . . : AS400BU3
Default local location . . . . . : AS400BU3
Default mode . . . . . : MODLU62
Maximum number of conversations for a remote
  location . . . . . : 64
APPN node type . . . . . : *NETNODE
Maximum number of intermediate sessions . . . . : 200
Route addition resistance . . . . . : 128

```

Figure 175. IBM 5494 as Node T2.1 via TRLAN to SNA Subarea Network, AS/400 Definitions Network Attributes

23.2.2 Link with VTAM/NCP

Only the dependent LU's for 3270 Device Emulation are defined.

```

CRTLINSDLC LIND(S4381LIN2) RSRNAME(LIN052) ONLINE(*NO) +
  ROLE(*SEC) LINESPEED(19200) +
  MODEM(*IBMLPDA1) DUPLEX(*FULL) +
  TEXT(' Leased, PP, to FSC 4381')
CRTCTHHOST CTLD(PC8CM1) LINKTYPE(*SDLC) ONLINE(*NO) +
  APPN(*YES) LINE(S4381LIN2) +
  RMTNETID(CHIBM600) RMTCPNAME(CHIBM60A) +
  SSCPID(05000000A0BE) STNADR(C1) CPSSN(*NO) +
  NODETYPE(*LENODE) TEXT(' PU(PC8CM1) to +
  FSC4381')
/* EMULATED SCREEN 3278/9-2 */
CRTDEVHOST DEVD(PC8SM101) LOCADR(01) RMTLOCNAME(FSCMVS) +
  ONLINE(*NO) CTL(PC8CM1) APPTYPE(*EML) +
  EMLKBD(*LOWER) TEXT('3278 to FSC MVS')
...

```

23.2.3 Remote APPN Configuration List

```

                                Define APPN Remote Locations

Type new/changed information, press Enter.
Remote   Remote   Local   Control   Control
Location Network  Location Point   Point   Location   Secure
Name     ID        Name    Name      Net ID   Password   Loc
PCASTICO CHIBM600  AS400BU3 CHIBM60A CHIBM600
          *NETATR *NETATR          *NETATR          *NO
          *NETATR          *NETATR          *NO

F3=Exit   F11=Additional information   F12=Previous
F17=Top of list   F18=Bottom of list

```

Figure 176. IBM 5494 as Node T2.1 via TRLAN to SNA Subarea Network, Remote Locations

23.2.3.1 Auto-Created DEVD PCASTICO

```

                                Display Device Description
                                AS400BU3
                                22-04-93 10:32:44

Device description . . . . . : PCASTICO
Option . . . . . : *BASIC
Category of device . . . . . : *APPC
Remote location . . . . . : PCASTICO
Online at IPL . . . . . : *NO
Local location . . . . . : AS400BU3
Remote network identifier . . . . . : *NETATR
Attached controller . . . . . : PC8CM1
Message queue . . . . . : QSYSOPR
  Library . . . . . : *LIBL
Local location address . . . . . : 00
APPN-capable . . . . . : *YES
Single session:
  Single session capable . . . . . : *NO
Text . . . . . : AUTOMATICALLY CREATED BY QLUS
Option . . . . . : *MODE
Category of device . . . . . : *APPC
-----Mode-----
*NETATR

                                Bottom

Press Enter to continue.
F3=Exit   F11=Display keywords   F12=Cancel

```

Figure 177. IBM 5494 as Node T2.1 via TRLAN to SNA Subarea Network, Device Description

23.2.4 IBM 5494 Controller, Device

```

CRTCTLRWS CTLD(RWS5494C) TYPE(5494) MODEL(2) +
           LINKTYPE(*NONE) ONLINE(*NO) +
           RMTLOCNAME(PCASTICO) LCLLOCNAME(AS400BU3) +
           RMTNETID(CHIBM600) TEXT('5494 via SNA SA')

CRTDEV DSP DEVD(RWS5494C00) DEVCLS(*RMT) TYPE(3180) +
           MODEL(2) LOCADR(03) ONLINE(*NO) +
           CTL(RWS5494C) TEXT('3180 at 5494 T2.1')

```



```

                IRETRY=NO,                IMMED. RETRY A POLLING TO ON PU *
                LPDA=ALLOW,              BLOCK/ALLOW LPDA TESTS          *
                MAXDATA=265,             MAX AMOUNT OF DATA TO PU (BYTES)*
                MAXOUT=7,                FRAMES SENT TO NCP BEF REQ RESP *
                PASSLIM=7,              NUM OF CONSEC PIU'S TO PU      *
                PUTYPE=2,                PUTYPE OF SDLC DEVICE ON LINE  *
                DISCNT=NO,              VTAM DISC SSCP-LU/PU SESS      *
                ISTATUS=ACTIVE,         VTAM INITIAL STATUS            *
                SSCPFM=USSSCS,          VTAM USS FORMAT                *
                MODETAB=PCADS400,        VTAM DEFAULT LOGMODE TABLE    *
                PACING=7,                VTAM PACING COUNT NCP-PU       *
                VPACING=8,                VTAM PACING COUNT VTAM-NCP     *
                XID=YES                  INDEPENDENT LU AS/400          *
*
*
                STATOPT=' PU AS/400'
*
AS400BU1 LU   LOCADDR=0,                LOCAL DEVICE ADDRESS   INDLU62 *
                MODETAB=PCADS400,        MODETABLE               *
                DLOGMOD=MODLU62,         VTAM LOGMODE           *
                ISTATUS=ACTIVE,          VTAM INITIAL STATUS    *
                RESSCB=20                 NBR OF SESSIONS        *
*
*
                STATOPT=' ILU AS/400 BU1'
*
AS400BU3 LU   LOCADDR=0,                LOCAL DEVICE ADDRESS   INDLU62 *
                MODETAB=PCADS400,        MODETABLE               *
                DLOGMOD=MODLU62,         VTAM LOGMODE           *
                ISTATUS=ACTIVE,          VTAM INITIAL STATUS    *
                RESSCB=20                 NBR OF SESSIONS        *
*
*
                STATOPT=' ILU AS/400 BU3'
*
*
                ...
*

```

23.3.2 Link with IBM 5494

TSO PDS/member: SYS1.VTAMLST(PCAJTR20).

```

PCAJTEST VBUILD TYPE=SWNET,                *
                MAXGRP=1,                  MAX NUM OF GROUP NAMES IN PATH *
                MAXNO=25                   MAX NUM OF DIAL NUMBERS        *
*****
                ...
*****
*  IBM 5494, SIMH                            *
*****
PCAKTRIC PU   ADDR=C1,                    SDLC LINK STATION ADDR FOR PU *
                IDBLK=073,                 ID BLOCK                       *
                IDNUM=05494,               ID NUM                          *
                CPNAME=PCAKTRIC,           T2.1 CP NAME                   *
                DISCNT=(NO,F),             DISC PU IF LAST LU LOGS OFF    *
                IRETRY=YES,                RETRY POLLING AFTER IDLE TIME OUT *
                ISTATUS=ACTIVE,            VTAM INIT STATUS               *
                MAXDATA=265,               MAX AMOUNT (B) PU REC IN ONE TIME *
                MAXOUT=7,                  MAX PIU'S SENT BEFORE RESPONSE *
                MAXPATH=4,                 MAX MUN OF DIAL OUT PATHS TO PU *
                PASSLIM=7,                 NUM OF CONTIG PIU'S NCP -> PU  *
                PUTYPE=2,                  PHYSICAL UNIT TYPE OF PU       *
                SSCPFM=USSSCS,            VTAM USS FORMAT                *
                PACING=0,                  VTAM PACING COUNT NCP->PU      *

```

```

                USSTAB=PCAUSSTB,    VTAM USS TABLE          *
                VPACING=0           VTAM PACING COUNT VTAM->NCP
*
                STATOPT=' NTRI 5494'
*
TRPATH54 PATH  DIALNO=000440000005494,    DIAL NUMBER          *
                GID=1,PID=1,           PATH GROUP/DIAL IDENTIFIER  *
                GRPNM=PC9GLT1,        GROUP LABEL IN NCP MAJNODE  *
                REDIAL=1,USE=YES      REDIAL BEFORE ERROR / USE THIS NUM
*
PCASTICO LU    LOCADDR=00,           INDEPENDENT LU 6.2    *
                MODETAB=PCADS400,    MODETABLE             *
                DLOGMOD=MODLU62,     VTAM LOGMODE         *
                ISTATUS=ACTIVE       VTAM INITIAL STATUS
*
                STATOPT=' NTRI 5494 INDEP'
*
*****

```

23.3.3 VTAM Logmode Table Entry MODLU62

```

...

*****
*          LOGICAL UNIT TYPE 6.2 / LEN (ILU) WITH COS ACCORDING INS      *
*****
MODLU62  MODEENT LOGMODE=MODLU62,                                         *
          COS=#CONNECT                                                    MEDIUM
*****

...

```

23.4 Operation and Status

To activate the environment:

- Activate link AS/400 to VTAM/NCP
- Activate IBM 5494 controller and device descriptions within the AS/400
- Activate resources for AS/400 and IBM 5494 within VTAM/NCP
- Insert appropriately configured system diskette into IBM 5494 diskette drive
- Power on display station and IBM 5494 controller

If everything is defined and working correctly, AS/400 displays the signon screen on the IBM 5494 attached display station.

You get the status information

23.4.1 AS/400 Configuration Objects

```

Work with Configuration Status
AS400BU3
22-04-93 10:25:36
Position to . . . . . Starting characters
Type options, press Enter.
  1=Vary on  2=Vary off  5=Work with job  8=Work with description
  9=Display mode status ...
Opt Description      Status      -----Job-----
   S4381LIN2        ACTIVE
   PC8CM1           ACTIVE
   PCASTICO         ACTIVE
   MODLU62         ACTIVE/TARGET      PCASTICO  QUSER      044649
                                           Bottom

Parameters or command
==>
F3=Exit  F4=Prompt  F11=Display types  F12=Cancel  F23=More options
F24=More keys

```

Figure 179 (Part 1 of 3). IBM 5494 as Node T2.1 via TRLAN to SNA Subarea Network, Status

```

Display Mode Status
System: AS400BU3
Device . . . . . : PCASTICO
Device status . . . . . : ACTIVE
Type options, press Enter.
  5=Display details
Opt Mode      Status      -----Conversations-----
   SNASVCMG Started      Total Source Target Detached
   MODLU62 Started      2      1      1      0
                                           Bottom

F3=Exit  F5=Refresh  F11=Display sessions  F12=Cancel

```

Figure 179 (Part 2 of 3). IBM 5494 as Node T2.1 via TRLAN to SNA Subarea Network, Status

```

Work with Configuration Status
AS400BU3
22-04-93 10:27:01
Position to . . . . . Starting characters
Type options, press Enter.
  1=Vary on  2=Vary off  5=Work with job  8=Work with description
  9=Display mode status ...
Opt Description      Status      -----Job-----
   RWS5494C         ACTIVE
   RWS5494C00      SIGNON DISPLAY
                                           Bottom

Parameters or command
==>
F3=Exit  F4=Prompt  F11=Display types  F12=Cancel  F23=More options
F24=More keys

```

Figure 179 (Part 3 of 3). IBM 5494 as Node T2.1 via TRLAN to SNA Subarea Network, Status

23.5 Matching Parameters

IBM 5494, T2.1		VTAM Startup	
0/3 = 3180-2	→10	1←	NetID=CHIBM600
AA = 4		2←	SSCPName=CHIBM60A
			VTAM Logon Mode Table
11 = CHIBM600	→1	3←	Table Entry=MODLU62
12 = PCASTICO	→6		
13 = PCAKTRIC	→5		
14 = MODLU62	→3		
15 = 400000005494			VTAM for IBM 5494
16 = 010 06		5←	PCAKTRIC PU
17 = XI-05494	→11		IDBLK=073
H1:1 = AS400BU3	→9	11←	IDNUM=05494
H1:2 = CHIBM600	→1	5←	CPNAME=PCAKTRIC
H1:3 = CHIBM600	→1		
H1:4 = MODLU62	→3	6←	PCASTICO LU LOCADDR=00
H1:5 = 400000000010	→12		
			NCP (PC8V43)
AS/400 NETA		12←	PC8L81 LINE ADDRESS=(81,FULL), LOCADD=400000000010
NETID(CHIBM600)	→1		
LCLCPNAME(AS400BU3)			PC8C81 PU
LCLLOCNAME(AS400BU3)	→9		PC8S81 LU
MODNAME(MODLU62)	→3		
			VTAM/NCP for AS/400
Remote APPN Config List			PC8L12 LINE DUPLEX=FULL NRZI=YES
REMLOCNAME(PCASTICO)	→6		
RENNETID(CHIBM600)	→1		
LCLLOCNAME(AS400BU3)	→9		PC8CM1 PU ADDR=C1
REMCPCNAME(CHIBM60A)	→2	8←	PUTYPE=2
RENNETID(CHIBM600)	→1	8←	XID=YES
		9←	AS400BU3 LU LOCADDR=0
AS/400 for IBM 5494			
CTLRWS CTLD(RWS5494C)			
RMTLOCNAME(PCASTICO)	→6		
LCLLOCNAME(AS400BU3)	→9		
RMTNETID(CHIBM600)	→1		
DEV DSP LOCADR(03)	→10		
AS/400 for VTAM/NCP			
LINSDLC LIND(S4381LIN2)			
CTLHOST CTLD(PC8CM1)			
NODETYPE(*LENNODE)	→8		
RMTNETID(CHIBM600)	→1		
RMTCPNAME(CHIBM60A)	→2		
STNADR(C1)	→7		
DEVAPP REMLOCNAME(PCASTICO)	→5		
LCLLOCNAME(AS400BU3)	→9		
MODE(*NETATR)	→3		
LOCADR(00)			
MODD MODLU62	→3		

Figure 180. Matching Parameters, VTAM/NCP, AS/400 and 5494 T2.1

TA PASSWORD: /	2/SPEED: 64000
FACILITIES: /	2/CALLING ID: NO
	2/INTERNETWORKING: NO

24.1.2 IBM 7820 attached to IBM 3174, Setup

CUSTOMIZE BASE	CUSTOMIZE INTERFACE 1	CUSTOMIZE INTERFACE 2
NETWORK TYPE: 30U		2/SP ATTACHED: NO
CURRENT LOOP DETECTOR: NO		2/TYPE (V.35): V.35
TEI MODE: AUTOMATIC		2/MODE: SWITCHED
TA CALL NBR:0675 00156		2/CALL NBR: 0675 00155
TA PASSWORD: /		2/DIRECT CALL: YES
FACILITIES: /		2/D-C NBR: 0675 00142
		2/SPEED: 64000
		2/MANUAL DIAL: NO
		2/INTERNETWORKING: NO

24.1.3 AS/400 Definitions

```
CRTLINS DLC LIND(IX21LINE) RSRNAME(LIN071) ONLINE(*NO) +
  ROLE(*PRI) INTERFACE(*X21) CNN(*SWTPP) +
  EXCHID(056FFFFF) NRZI(*NO) +
  LINESPEED(64000) AUTODIAL(*YES) +
  CALLNBR(067500142) MAXFRAME(265) +
  DUPLEX(*FULL) TEXT(' ISDN/Swissnet X.21 Swt')
```

```
CRTCLRWS CTLD(I3174) TYPE(3174) MODEL(0) +
  LINKTYPE(*SDLC) ONLINE(*NO) +
  SWITCHED(*YES) SWTLINLST(IX21LINE) +
  EXCHID(017EEEE) INLCNN(*ANS) STNADR(C1)
```

```
CRTDEV DSP DEV D(I317402) DEVCLS(*RMT) TYPE(3278) +
  MODEL(0) LOCADR(02) ONLINE(*NO) +
  CTL(I3174) TEXT('3278 at 3174 via ISDN/TA')
```


24.1.4 IBM 3174 Definitions

In this test we have connected one display station to the remote controller, an IBM 3174-61R.

```
----- Model / Attach -----  
  
098 - _____  
099 - CONFIG TS  
100 - 61R  
101 - 2  
  
PF: 3=Quit 4=Default 8=Fwd
```

Figure 182 (Part 1 of 5). 3174 Setup Screen

```
----- SDLC -----  
  
SDLC  
  
104 - C1      105 - 00      108 - 77T2315  110 - 0      116 - 2  
121 - 42      123 - 1        125 - 00001000 126 - 00000000 127 - 5 2  
132 - 0 0 0 0 136 - 1 1 0 1  137 - 0 0 0 0  138 - 0  
141 - A       150 - 0        165 - 1        166 - A      168 - 0  
173 - 00000000 175 - 000000  179 - 0 0 0  
213 - 1       215 - eeeee   220 - 1  
310 - 0       313 - 0       317 - 2        318 - 0      340 - 0  
365 - 0       370 - 0  
  
PF: 3=Quit 4=Default 7=Back 8=Fwd
```

Figure 182 (Part 2 of 5). 3174 Setup Screen

```
----- Common SNA -----  
  
C1/SDLC  
  
500 - 0      501 -      502 -  
  
PF: 3=Quit 4=Default 7=Back 8=Fwd 9=RtnH
```

Figure 182 (Part 3 of 5). 3174 Setup Screen

```

----- 117: Port Assignment -----
LT=                                     116=2          C1/SDLC
      Host addresses                    Host addresses
Port IS 1 2 3 4 5                    Port IS 1 2 3 4 5
26-00 002 ___ ___ ___ ___            26-01 ___ ___ ___ ___
26-02 ___ ___ ___ ___                26-03 ___ ___ ___ ___
26-04 ___ ___ ___ ___                26-05 ___ ___ ___ ___
26-06 ___ ___ ___ ___                26-07 ___ ___ ___ ___
26-08 ___ ___ ___ ___                26-09 ___ ___ ___ ___
26-10 ___ ___ ___ ___                26-11 ___ ___ ___ ___
26-12 ___ ___ ___ ___                26-13 ___ ___ ___ ___
.   .   .   .   .                    .   .   .   .   .
.   .   .   .   .                    .   .   .   .   .
26-28 ___ ___ ___ ___                26-29 ___ ___ ___ ___
26-30 ___ ___ ___ ___                26-31 ___ ___ ___ ___

PF: 3=Quit    4=Default    7=Back    8=Fwd    9=RtnH    11=PageFwd

```

Figure 182 (Part 4 of 5). 3174 Setup Screen

```

----- 128: RTM -----
                                     127 = 5 2          C1/SDLC
      F1 - 11100000
      B1 - 00 : 01 . 0
      B2 - 00 : 02 . 0
      B3 - 00 : 05 . 0
      B4 - 00 : 10 . 0

PF: 3=Quit    4=Default    7=Back    8=Fwd    9=RtnH

```

Figure 182 (Part 5 of 5). 3174 Setup Screen

Chapter 25. TCP/IP

In V3R1 of OS/400 IBM re-wrote and is shipping a new integrated TCP/IP with the operating system. This chapter does not deal with this new configuration and operation of TCP/IP on the AS/400. Please see *TCP/IP Configuration and Reference* (SC41-3420) for more information about the new integrated TCP/IP.

25.1 TCP/IP Network

25.1.1.1 Network and Host Addresses

An IP address is four bytes in length. It is made up of two parts, the network ID and the host ID. The host ID portion of the IP address can be further divided into sub-networks to allow locally administered groups (or Domains) logically break up a large network into smaller sub-networks.

Our IP addressing in IBM is based on the Class A TCP/IP internet address 9, registered for the entire IBM Corporation. This would leave the remaining three bytes to define unique host addresses.

The IBM Corporation has assigned sub-network 9.13 to IBM Switzerland. This allows IBM Switzerland to administer and further define the remaining two bytes of the IP address range.

In IBM Switzerland, we used 9.13 for the sub-network and further decided to use byte 3 for more subnetting.

This means that in our example Swiss network, byte 2 and 3 are also part of the network address. Consequently the subnet mask we use is 255.255.255.0.

The network addresses 9.13.32 through 9.13.47 are reserved.

The X.25 IP network for all hosts within IBM Switzerland has the address:

9.13.250 IBM Switzerland X.25 network

25.1.2 Domain, Host Names and Name Servers

Domain name given to IBM Switzerland is:

CH.IBM.COM

The domain name for the IBM Switzerland Technical Support (TS) is:

TS.CH.IBM.COM

The following hosts act as name server: OS2GW, FSCRS530, ZCHMVS6.

25.1.3 TCP/IP Network Topology

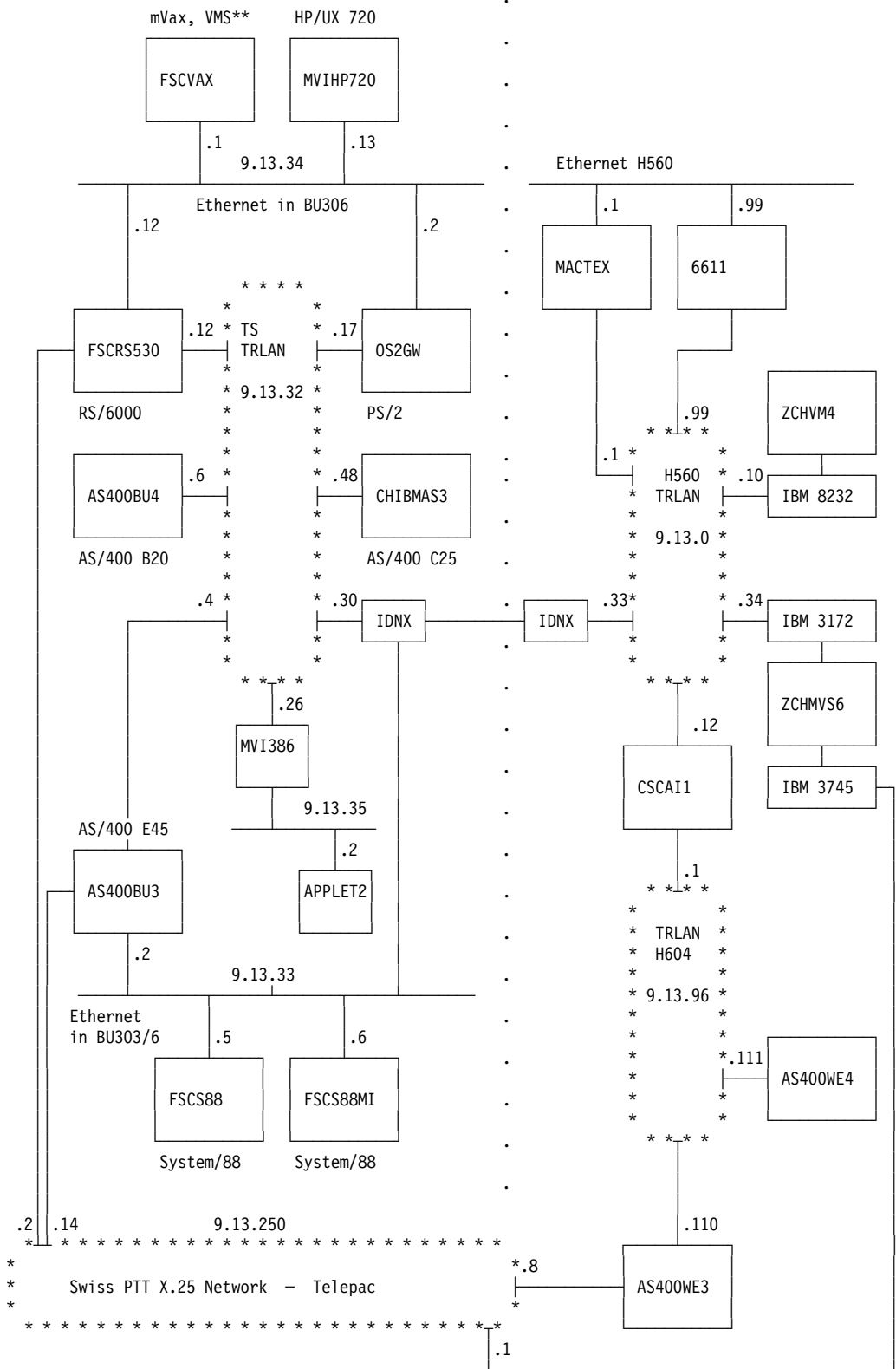


Figure 183. TS TCP/IP Network, Partial View

25.2 AS/400 Definitions

In this chapter we document the definitions which were needed on the AS/400 E45 (AS400BU3).

25.2.1 Line, Controller and Device Descriptions

The following CL commands only document TCP/IP access via Ethernet, TRLAN and X.25. The CTL and DEV description are created automatically. However, for problem determination purposes we think it is helpful to have these descriptions.

```
CRTLINTRN  LIND(TRNLINE) RSRNAME(LIN021) ONLINE(*YES) +
            ADPTADR(40000009406) EXCHID(05600000) +
            SSAP((04) (06) (08) (AA)) TEXT('TRLAN +
            adapter, LIN021')
```

```
CRTCTLNET  CTLD(TRNLINET) ONLINE(*NO) LINE(TRNLINE) +
            CNRSPTMR(170) TEXT('CREATED BY +
            AUTO-CONFIGURATION')
```

```
CRTDEVNET  DEVD(TRNLITCP) TYPE(*TCPIP) ONLINE(*NO) +
            CTL(TRNLINET) TEXT('CREATED BY +
            AUTO-CONFIGURATION')
```



```
CRTLINETH  LIND(ETHLINE) RSRNAME(LIN101) ONLINE(*YES) +
            ADPTADR(*ADPT) EXCHID(056A0004) +
            ETHSTD(*IEEE8023) SSAP((04 1496) (06 +
            1470) (08 1496) (AA 1470)) TEXT('Ethernet +
            adapter, LIN101')
```

```
CRTCTLNET  CTLD(ETHLINET) ONLINE(*NO) LINE(ETHLINE) +
            CNRSPTMR(170) TEXT('CREATED BY +
            AUTO-CONFIGURATION')
```

```
CRTDEVNET  DEVD(ETHLITCP) TYPE(*TCPIP) ONLINE(*NO) +
            CTL(ETHLINET) TEXT('CREATED BY +
            AUTO-CONFIGURATION')
```



```
CRTLINX25  LIND(X25LINE) RSRNAME(LIN012) LGLCHLE((001 +
            *PVC) (002 *SVCBOTH) (003 *SVCBOTH) (004 +
            *SVCBOTH) (005 *SVCBOTH) (006 *SVCBOTH) +
            (007 *SVCBOTH) (008 *SVCBOTH)) +
            NETADR(47911140) CNNINIT(*LOCAL) +
            ONLINE(*YES) EXCHID(056EEEE) +
            DFTPCKTSIZE(128) MAXPKTSIZE(512) +
            MODULUS(8) DFTWDWSIZE(2) TEXT('X25 link +
            used by FSC AS/400')
```

```
CRTCTLNET  CTLD(X25LINET) ONLINE(*NO) LINE(X25LINE) +
            CNRSPTMR(170) TEXT('CREATED BY +
            AUTO-CONFIGURATION')
```

```
CRTDEVNET  DEVD(X25LITCP) TYPE(*TCPIP) ONLINE(*NO) +
            CTL(X25LINET) TEXT('CREATED BY +
            AUTO-CONFIGURATION')
```

25.2.1.1 TCP/IP Hosts

In physical file QUSRSYS/QATMTCP(HOSTS)

Work with TCP/IP Host Table Entries		System: AS400BU3
Type options, press Enter.		
1=Add 2=Change 4=Remove 5=Display		
Opt	Internet Address	Host Name
	9.13.0.33	IDNXHL.TS.CH.IBM.COM
	9.13.0.34	ZCHMVS6.TS.CH.IBM.COM
	9.13.250.1	XZCHMVS6.TS.CH.IBM.COM
	9.13.250.14	XAS400BU3.TS.CH.IBM.COM
	9.13.250.2	XFSCRS530.TS.CH.IBM.COM
	9.13.250.5	XAS400BU1.TS.CH.IBM.COM
	9.13.250.8	XAS400WE3.CSC.CH.IBM.COM
	9.13.32.12	FSCRS530.TS.CH.IBM.COM
	9.13.32.17	OS2.TS.CH.IBM.COM
	9.13.32.26	MVI386.TS.CH.IBM.COM
	9.13.32.30	IDNXBU.TS.CH.IBM.COM
	9.13.32.4	AS400BU3.TS.CH.IBM.COM
	9.13.32.48	CHIBMAS3.TS.CH.IBM.COM
	9.13.32.5	AS400BU1.TS.CH.IBM.COM
	9.13.32.6	AS400BU4.TS.CH.IBM.COM
	9.13.33.2	EAS400BU3.TS.CH.IBM.COM
	9.13.33.5	FSCS88.TS.CH.IBM.COM
	9.13.33.6	FSCS88MI.TS.CH.IBM.COM
	9.13.34.1	FSCVAX.TS.CH.IBM.COM
	9.13.34.12	EFSCRS530.TS.CH.IBM.COM
	9.13.34.13	MVIHP720.TS.CH.IBM.COM
	9.13.34.2	EOS2.TS.CH.IBM.COM
	9.13.35.2	APPLET2.TS.CH.IBM.COM
	9.13.96.110	AS400WE3.CSC.CH.IBM.COM
	9.13.96.111	AS400WE4.CSC.CH.IBM.COM

Bottom

F3=Exit F5=Refresh F12=Cancel F15=Print list F17=Position to

Figure 184. TCP/IP Host Table

25.2.1.2 TCP/IP Link

In physical file QUSRSYS/QATMTCP(PROFILE)


```

Work with TCP/IP Links
System: AS400BU3
Type options, press Enter.
  1=Add  2=Change  4=Remove  5=Display  9=Start  10=End

  Opt   Line      Internet      Link
       Description  Address       Type

        ETHLINE   9.13.33.2    *ELAN
        TRNLINE   9.13.32.4    *TRLAN
        X25LINE   9.13.250.14 *X25

F3=Exit  F5=Refresh  F12=Cancel  F15=Print list  F17=Top  F18=Bottom
Bottom

```

Figure 185. AS/400 TCP/IP Link Definition

25.2.1.3 TCP/IP Routes

In physical file QUSRSYS/QATMTCP(PROFILE)

```

Work with TCP/IP Route Entries
System: AS400BU3
Type options, press Enter.
  1=Add  2=Change  4=Remove  5=Display

  Opt  Network      Line      First Hop      Maximum
       Description  Hop       Datagram Size

        9          X25LINE   *HOME         *CALC
        9          ETHLINE   *HOME         *CALC
        9          TRNLINE   *HOME         *CALC
        9          TRNLINE   9.13.32.17   *CALC
        9          X25LINE   9.13.250.8   *CALC
        9          TRNLINE   9.13.32.30   *CALC
        9          TRNLINE   9.13.32.26   *CALC

F3=Exit  F5=Refresh  F11=Display subnet information  F12=Cancel
F15=Print list  F17=Top    F18=Bottom
Bottom

```

Figure 186 (Part 1 of 2). TCP/IP Routes

```

Work with TCP/IP Route Entries
System: AS400BU3
Type options, press Enter.
  1=Add  2=Change  4=Remove  5=Display

Opt Network          Subnet Mask      Subnet Value
-----
   9 0.255.255.0      0.13.250.0
   9 0.255.255.0      0.13.33.0
   9 0.255.255.0      0.13.32.0
   9 0.255.255.0      0.13.34.0
   9 0.255.255.0      0.13.96.0
   9 0.255.255.0      0.13.0.0
   9 0.255.255.0      0.13.35.0

Bottom
F3=Exit  F5=Refresh  F11=Display lines/hops  F12=Cancel  F15=Print list
F17=Top  F18=Bottom

```

Figure 186 (Part 2 of 2). TCP/IP Routes

25.2.1.4 TCP/IP Local Domain Name

```

Change Local Domain Name
System: AS400BU3
Type choices, press Enter.

Local domain name . . . . TS.CH.IBM.COM

Local host name . . . . . AS400BU3

F3=Exit  F12=Cancel

```

Figure 187. TCP/IP Local Domain Name

25.2.1.5 TCP/IP Remote System Information

```

                                Work with TCP/IP Remote System Information
                                System:  AS400BU3
Type options, press Enter.
  1=Add  4=Remove

Opt      Internet      Network
        Address       Address
        9.13.250.1    45911062
        9.13.250.14   47911140
        9.13.250.2    47931377
        9.13.250.5    47971220
        9.13.250.8    47931145

                                Bottom
F3=Exit  F5=Refresh  F12=Cancel  F15=Print list  F17=Top  F18=Bottom

```

Figure 188. TCP/IP Remote System Information

25.2.1.6 Remote Name Server

Our TCP/IP network includes name servers. The usage of a name server is not defined on AS400BU3.

25.2.1.7 TCP/IP Attributes, AS400BU3 as Router

AS400BU3 acts as a basic IP datagram router. We changed the TCP/IP attributes accordingly. The default for IP datagram forwarding is *NO, so this must be changed to *YES if your AS/400 is going to route IP datagrams received from one host and sent to another.

```

                                Change TCP/IP Attributes (CHGTCPA)
Type choices, press Enter.

Checksum on incoming messages . *NO          *SAME, *YES, *NO
IP datagram forwarding . . . . . *YES       *SAME, *YES, *NO
TELNET inactivity timeout . . . 0            0-2147483647, *SAME
TELNET timemark timeout . . . . 30          0-2147483647, *SAME
TELNET default NVT type . . . . *VT100    *SAME, *VT100, *NVT
SMTP - outgoing mapping table . *DFT        Name, *SAME, *DFT
                                           Name, *LIBL, *CURLIB
SMTP - incoming mapping table . *DFT        Name, *SAME, *DFT
                                           Name, *LIBL, *CURLIB
FTP - outgoing mapping table . . *DFT        Name, *SAME, *DFT
                                           Name, *LIBL, *CURLIB
FTP - incoming mapping table . . *DFT        Name, *SAME, *DFT
                                           Name, *LIBL, *CURLIB
VT100 - outgoing mapping table  *SAME       Name, *SAME, *DFT
                                           Name, *LIBL, *CURLIB
VT100 - incoming mapping table  *SAME       Name, *SAME, *DFT
                                           Name, *LIBL, *CURLIB

                                Bottom
F3=Exit  F4=Prompt  F5=Refresh  F12=Cancel  F13=How to use this display
F24=More keys

```

Figure 189. TCP/IP Attributes

25.3 FTP

AS/400 Communications Definitions II, GG24-3763 documents interactive FTP sessions run from AS400BU3 with AS400BU4, ZCHMVS6, ZCHVM6 and mVAX.

The same ITSC redbook shows the required steps to run FTP in batch mode as well.

In this chapter, we show FTP sessions from AS/400 with RS/6000, HP, and OS/2. We also show FTP from TS mVAX with AS/400.

Each session includes the same steps:

1. Start FTP with remote FTP host
2. Login to remote FTP host
3. Transfer a file to remote host
4. List the remote directory
5. Receive a file from remote host
6. Terminate FTP

We include the entire FTP traffic as it is presented to the interactive AS/400 user. FTP subcommands entered by the AS/400 user are highlighted.

25.3.1 FTP with RS/6000

```
ftp fscrs530
```

This is the CL command the AS/400 user enters to start FTP on the RS/6000.

```
Connecting to host system FSCRS530 at address 9.13.32.12 at port 21.
220 fscrs530 FTP server (Version 4.1 Sat Nov 23 12:52:09 CST 1991) ready.
Enter your userid to log on the remote host system.
guest
>>>USER guest
331 Password required for guest.
>>>PASS *****
230 User guest logged in.
Enter an FTP command.
put guest/rln1000.rln1000 rln1000.as400
>>>PORT 9,13,32,4,3,233
200 PORT command successful.
>>>STOR rln1000.as400
150 Opening data connection for rln1000.as400.
226 Transfer complete.
100200 bytes transferred in 4.648 seconds. Transfer rate 21.558 KB/sec.
Enter an FTP command.
dir
>>>PORT 9,13,32,4,3,234
200 PORT command successful.
>>>LIST
150 Opening data connection for /bin/ls.
-rw-r--r--  1 usr          972 Sep 09 21:44 FAMFTP1
-rw-r----- 1 usr          188 Dec 17 11:51 FTPCP.DAT
drwxr-xr-x  4 usr          512 Sep 09 22:01 Mail
-rw-r--r--  1 system    10418 Sep 09 21:44 Mwm.rfre
-rwxr-xr-x  1 usr      12025 Sep 09 21:44 a.out
```

```

drwxr-xr-x  2 staff      512 Sep 09 22:01 bin
-rw-r--r--  1 usr       972 Sep 09 21:44 copytest.jcl
-rw-r--r--  1 usr     1134 Sep 09 21:44 ftpsub.jcl
-rw-r--r--  1 usr     8667 Oct 15 11:14 hosts
-rw-r--r--  1 usr       729 Jan 13 19:00 hosts.out
-rw-----  1 usr       970 Sep 09 21:44 netlog.0
-rw-r--r--  1 system   4658 Sep 09 21:44 restlog
-rw-r-----  1 usr    100100 Feb 02 13:49 rln1000.as400
-rw-r--r--  1 usr       140 Sep 09 21:44 xdtinitial.xde
226 Transfer complete.
Enter an FTP command.
get rln1000.as400 guest/rln1000.rln1000 (replace
>>>PORT 9,13,32,4,3,235
200 PORT command successful.
>>>RETR rln1000.as400
150 Opening data connection for rln1000.as400 (100100 bytes).
226 Transfer complete.
100200 bytes transferred in 8.242 seconds. Transfer rate 12.157 KB/sec.
Enter an FTP command.
quit
>>>QUIT
221 Goodbye.
Press ENTER to end terminal session.
End of terminal session.

```

25.3.2 FTP with OS/2

```
ftp os2
```

This is the CL command the AS/400 user enters to start FTP on an OS/2. This OS/2 does not allow the FTP subcommand PUT.

Start of terminal session.

```

Connecting to host system OS2 at address 9.13.32.17 at port 21.
220 os2gw FTP server (IBM OS/2 TCP/IP FTP Version 1.2) ready.
Enter your userid to log on the remote host system.

```

```

guest
>>>USER guest
331 Password required for guest.
>>>PASS *****
230 User guest logged in.
Enter an FTP command.

```

```

dir
>>>PORT 9,13,32,4,3,243
200 PORT command successful.
>>>LIST
150 Opening ASCII mode data connection for F:\.
      5          DIR   08-02-90  17:13  .
      5          DIR   08-02-90  17:13  ..
      0          DIR   08-03-90  10:14  CONFIG
3460    A          07-15-92  11:00  CONFIG.BA1
      0          DIR   05-13-92  13:18  DLL
      0    A          10-14-92  08:48  ftpc1.c
      0    A          12-28-92  11:36  FTPCP.DAT
      0          DIR   11-24-92  10:51  ftterm
      865    A          05-15-92  11:00  RESI.TXT
      0          DIR   12-30-91  13:24  temp

```

```

          3      A      08-03-90  15:34  THELP.HLP
        6948    A      08-13-90  12:07  TRACE.X25
        3437    A      08-06-90  11:27  vt200-sg.kbd
        11336   A      05-26-92  09:36  XIP.TRC
226 Transfer complete.
Enter an FTP command.
get resi.txt guest/resi.resi
>>>PORT 9,13,32,4,3,244
200 PORT command successful.
>>>RETR resi.txt
150 Opening ASCII mode data connection for resi.txt (865 bytes).
226 Transfer complete.
864 bytes transferred in 3.738 seconds. Transfer rate .231 KB/sec.
Enter an FTP command.
quit
>>>QUIT
221 Quit command received. Goodbye.
Press ENTER to end terminal session.
End of terminal session.

```

25.3.3 FTP with HP

```
ftp mvihp720
```

This is the CL command the AS/400 user enters to start FTP with an HP 720.

Usually when starting an FTP session with our HP and using subcommands like DIR, GET or PUT, we get the following error message:

```
530 Bad parameters for PORT command.
```

To toggle the port command usage, enter the following subcommand:

```
sendport
```

```
Start of terminal session.
```

```

Connecting to host system MVIHP720 at address 9.13.34.13 at port 21.
220 mvihp720 FTP server (Version 16.2 Wed Oct 16 23:04:42 GMT 1991) ready.
Enter your userid to log on the remote host system.

```

```
guest
```

```
>>>USER guest
```

```
331 Password required for guest.
```

```
>>>PASS *****
```

```
230 User guest logged in.
```

```
Enter an FTP command.
```

```
put guest/rln1000.rln1000 rln1000.as4
```

```
>>>STOR rln1000.as4
```

```
150 Opening ASCII mode data connection for rln1000.as4.
```

```
226 Transfer complete.
```

```
100200 bytes transferred in 4.218 seconds. Transfer rate 23.756 KB/sec.
```

```
Enter an FTP command.
```

```
dir
```

```
>>>PORT 9,13,32,4,3,254
```

```
200 PORT command successful.
```

```
>>>LIST
```

```
150 Opening ASCII mode data connection for /bin/ls.
```

```
-rw-r--r--  1 guest  guest      818 Aug 17 15:31 .cshrc
```

```
-rw-r--r--  1 guest  guest      347 Aug 17 15:31 .exrc
```

```
-rw-r--r--  1 guest  guest      367 Aug 17 15:31 .login
```

```
-rw-r--r--  1 guest  guest         0 Oct 13 16:29 .news_time
```

```

-rw-r--r-- 1 guest  guest      671 Aug 31 15:52 .profile
-rw-r--r-- 1 guest  guest      372 Aug 17 15:31 .profile.orig
-rw-rw-rw- 1 guest  guest      188 Jan 18 18:22 .rhosts
-rw----- 1 guest  guest     2032 Feb  3 10:48 .sh_history
drwxr-xr-x 7 guest  guest     1024 Jan 26 17:19 .vue
-rw-r--r-- 1 guest  guest     2582 Aug 31 16:00 .vueprofile
drwx----- 2 guest  mail        24 Jan 26 17:12 Mail
-rw----- 1 guest  mail         37 Feb  2 14:54 dead.letter
-rw-r----- 1 guest  guest         0 Feb  2 13:59 rln1000.as4
226 Transfer complete.
Enter an FTP command.
get rln1000.as4 guest/rln1000.rln1000 (replace
>>>RETR rln1000.as5
150 Opening ASCII mode data connection for rln1000.as4 (100100 bytes).
226 Transfer complete.
100200 bytes transferred in 4.910 seconds. Transfer rate 20.407 KB/sec.
Enter an FTP command.
quit
>>>QUIT
221 Quit command received. Goodbye.
Press ENTER to end terminal session.
End of terminal session.

```

25.3.4 FTP from mVax to AS/400

An example of an FTP session from mVax to AS/400 follows. TCPware is the TCP/IP software used on the mVax.

```
$ ftp
```

```
FTP> open as400bu3 guest
_Password:
```

```
FTP> cd guest
```

```
FTP> dir
```

SIMH	9728	AUTORWS	*PGM
GUEST	3072	FROMMVS.MBR001	*MEM
GUEST	3072	FROMMVS.MBR335	*MEM
SIMH	3072	NDM.TEST	*MEM
SIMH	3072	NFTP.NFTP	*MEM
SIMH	3072	NFTPDATA.NFTP	*MEM
SIMH	3072	RLNJES.ARLN001	*MEM
SIMH	3072	RLNJES.RLNJES	*MEM
SIMH	3072	RLN1000.RLN1000	*MEM
QDFTOWN	2560	RLN1000.RLN1002	*MEM
SIMH	3072	RTVFROMMVS.MBR001	*MEM
QDFTOWN	3072	WVMO.TXT	*MEM
GUEST	97792	FROMMVS	*FILE
SIMH	9728	NDM	*FILE
SIMH	17408	NFTP	*FILE
SIMH	17920	NFTPDATA	*FILE
SIMH	24064	RLNJES	*FILE
SIMH	246784	RLN1000	*FILE
SIMH	16896	RTVFROMMVS	*FILE
QDFTOWN	9216	WVMO	*FILE
QDFTOWN	1536	WVMOFTP	*FILE

```
FTP> get rln1000.rln1002 rln145100.rln1000
```

```
FTP> ldir
```

```
Directory FSC_USER__DISK:·SIMH^
AS400FILE.;3      AS400LIST.;5      CVTFCFC.COM;2
DISPLAY_ACTIVE_JJOBS.COM;1  DISPLAY_ACTIVE_JOBS.COM;4
FTPSERVER_DTP.LOG;22      FTPSERVER_DTP.LOG;21
HDI.HDI;6          HEUTENM.;1          IMHOF.JOU;2          LOGIN.COM;8
MAIL.MAI;1          MAP02.;2            NLS.TXT;1            NOV2393A.;1
OUTF.;1             OUTF.PRT;2          RLN080592.;1         RLN1000.;1
RLN1000.RLN1000;1    RLN110592.;1        RLN1111.RLN1000;1    RLN120592.;1
RLN145100.RLN1000;1  RLN1615.;1          RLN220493.RLN1002;1  RPGSRC.;5
SETKBDMAP.CL;2      SIM1456.;1          T.TMP;3              T1037.;1
TEILN.;1            TEST01.AS4;2        W251091.;1           WORKSHOP.;1
WORKSHOP.W050991;1  X25LINE.;2          ZUERICH.;1
```

Total of 38 files.

```
FTP> put mail.mai mail.mail0001
```

```
FTP> quit
```

25.3.4.1 AS/400 Directory Remarks

SIMH	3072	RLN1000.RLN1000	*MEM
...			
SIMH	246784	RLN1000	*FILE

Current library is library GUEST - see FTP subcommand 'cd guest'. When requesting a directory you get the current library object list.

A single file gets one line in the listed directory, indicated by *FILE at the end of the directory entry. Each member of this file is represented by one line in the directory again, with *MEM at the end of the line. The user ID at the beginning of the line indicates the owner of this object.

25.4 AS/400 TCP/IP: SMTP

25.4.1 AS/400 System Definitions

The following definitions are required:

- Subsystem QSNADS Routing Entry
- General System Directory Entries
- SNADS Distribution Queue
- SNADS Routing Table Entry
- Subsystem QSNADS Routing Entry

```
ADDRTGE SBSD(QSNADS) SEQNBR(1399) CMPVAL(SMTPRTGD) +
          PGM(QTCP/QTMRSTRBR) CLS(QGPL/QSNADS)
```

- General System Directory Entries

Make sure entries for users QSMTDPMY and QTCP exist on your AS/400. If not, use the following CL commands. AS400BU3 is the name of our local AS/400.

```
ADDIRE USRID(QTCP QTCP) USER(QTCP) SYSNAME(AS400BU3)
ADDIRE USRID(QSMTDPMY QSMTPSYS) SYSNAME(TCPIP)
```

- A SNADS distribution queue for TCP/IP SMTP has to be defined. The names used are required.

```

                                Display Details of Distribution Queue

Queue . . . . . : QSMT PQ
Queue type . . . . . : *RPDS
Remote location name . . . . . : TCPIPLOC
Mode . . . . . : *NETATR
Remote net ID . . . . . : *LOC
Local location name . . . . . : *LOC
Normal priority:
  Send time:
    From/To . . . . . :      :
    Force . . . . . :      :
  Send depth . . . . . : 1
High priority:
  Send time:
    From/To . . . . . :      :
    Force . . . . . :      :
  Send depth . . . . . : 1

Press Enter to continue.
F3=Exit    F12=Cancel

```

Figure 190. AS/400 SNADS Distribution Queue QSMT PQ

- A SNADS routing table entry is required to guide any SMTP mailing into the global distribution queue QSMT PQ.

```

                                Display Details of Routing Table Entry

Destination system
  name/Group . . . . . : TCPIP
Description . . . . . : TCP/IP SMTP Routing
Service level:
  Fast:
    Queue name . . . . . : QSMT PQ
    Maximum hops . . . . . : *DFT
  Status:
    Queue name . . . . . : QSMT PQ
    Maximum hops . . . . . : *DFT
  Data high:
    Queue name . . . . . : QSMT PQ
    Maximum hops . . . . . : *DFT
  Data low:
    Queue name . . . . . : QSMT PQ
    Maximum hops . . . . . : *DFT

Press Enter to continue.
F3=Exit    F12=Cancel

```

Figure 191. AS/400 SNADS Routing Table Entry for TCP/IP SMTP

25.4.2 TCP/IP SMTP Operation

To start the SMTP distribution environment, subsystem QTCP and QSNADS have to be started. We recommend that you start subsystem QTCP first and delay the start of subsystem QSNADS for a few minutes.

Part of our IPL start program QSTRUP:

```
...  
  
+   IF COND((&CTLSBSD = 'QCTL      QSYS      ') *AND (&CTLSBSD = -  
'QCTL      QGPL      ')) THEN(GOTO CMDLBL(DONE))  
   QSYS/STRSBS SBSD(QINTER)  
   MONMSG MSGID(CPF0000)  
   QSYS/STRSBS SBSD(QBATCH)  
   MONMSG MSGID(CPF0000)  
   QSYS/STRSBS SBSD(QCMN)  
   MONMSG MSGID(CPF0000)  
   ADDLIB LIB(QTCP)  
   MONMSG MSGID(CPF0000)  
   QSYS/STRSBS SBSD(QTCP)  
   MONMSG MSGID(CPF0000)  
   QSYS/STRSBS SBSD(QOSI/QOSI)  
   MONMSG MSGID(CPF0000)  
   QSYS/STRSBS SBSD(QDSNX)  
   MONMSG MSGID(CPF0000)  
   DLYJOB DLY(600)  
   QSYS/STRSBS SBSD(QSNADS)  
   MONMSG MSGID(CPF0000)  
   QSYS/STRSBS SBSD(QX400/QX400)  
   MONMSG MSGID(CPF0000)  
  
...
```

Use the following CL command to check successful start of subsystem TCP/IP and SMTP within subsystem QSNADS.

```
wrkactjob sbs(qsnads qtcp)
```

Work with Active Jobs						
CPU %:	36.3	Elapsed time:	00:01:29	Active jobs:	49	
Opt	Subsystem/Job	User	Type	CPU %	Function	Status
	QSNADS	QSYS	SBS	4.4		DEQW
	...					
	QDIA	QSNADS	BCH	.9		EVTW
	QOTCPILOC	QGATE	BCH	4.8		RUN
	...					
	TCPILOC	QGATE	BCH	.0		TIMW
	...					
	QTCP	QSYS	SBS	.0		DEQW
	FTPSRV1	QTCP	BCH	.0		DEQW
	FTPSRV2	QTCP	BCH	.0		DEQW
	FTPSRV3	QTCP	BCH	.0		DEQW
	QTCPIP	QTCP	BCH	2.4		DEQA
	QTCPSTART	QTCP	ASJ	.0		EVTW
	QTCPTIMER	QTCP	BCH	.6		INEL
	QTMSMTP	QGATE	BCH	5.7	PGM-QTMSTSMT	RUN
F3=Exit F5=Refresh F10=Restart statistics F11=Display elapsed data						
F12=Cancel F24=More keys						

Figure 192. TCP/IP Jobs in Subsystem QSNADS and QTCP

Subsystem QTCP needs these seven jobs being active. Subsystem QSNADS has to have job QOTCPILOC and job TCPILOC running.

25.4.3 SMTP Environment and User Enrollment

The example TCP/IP SMTP environment with AS/400 network:

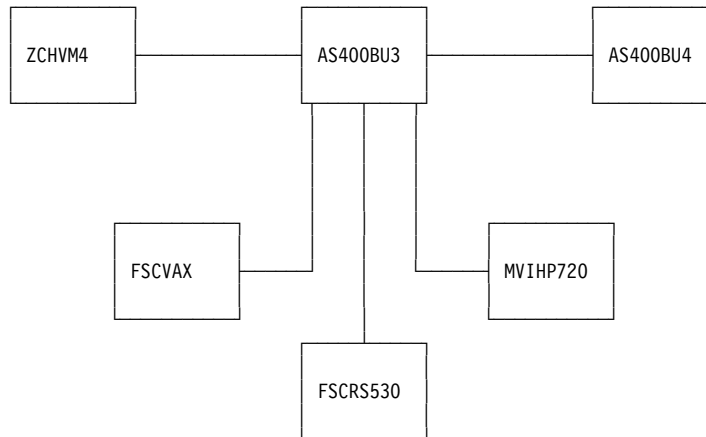


Figure 193. TS TCP/IP SMTP Environment

AS/400 users who want to send or receive mail via SMTP must be enrolled in the system directory and OfficeVision/400.

For SNADS-to-SMTP address mapping you must maintain the SMTP nickname file. It is recommended that you use the system wide file. In addition, each user can maintain a personal nickname file.

```

Work with Names for SMTP
System: AS400BU3
Alias table type . . . . . : System

Type options, press Enter.
  1=Add  2=Change  4=Remove  5=Display  6=Print

Opt      User ID      Address      SMTP Name
-----
*ANY     FSCRS530    @FSCRS530.TS.CH.IBM.COM
*ANY     FSCVAX      @FSCVAX.TS.CH.IBM.COM
*ANY     MVIHP720    @MVIHP720.TS.CH.IBM.COM
*ANY     ZCHVM4      @ZCHVM4.TS.CH.IBM.COM
GUEST    FSCB20      GUEST?FSCB20@AS400BU4.TS.CH.IBM.COM

F3=Exit  F5=Refresh  F12=Cancel  F15=Print list  F17=Position to
Bottom

```

Figure 194. System Wide SMTP Nickname File

This nickname file allows any user of AS400BU3 to send distributions to:

- Any user at TCP/IP SMTP host FSCRS530
- Any user at TCP/IP SMTP host MVIHP720
- Any user at TCP/IP SMTP host FSCVAX
- Any user at TCP/IP SMTP host ZCHVM4
- User GUEST.FSCB20 at AS400BU4 via SMTP

Appropriate system directory entries are required for all remote SMTP users also:

```

adddire usrid(*ANY FSCRS530) usrd('Users at FSCRS530') sysname(tcpip)
adddire usrid(*ANY MVIHP720) usrd('Users at MVIHP720') sysname(tcpip)
adddire usrid(*ANY FSCVAX) usrd('Users at FSCVAX') sysname(tcpip)
adddire usrid(*ANY ZCHVM4) usrd('Users at ZCHVM4') sysname(tcpip)
adddire usrid(GUEST FSCB20) usrd('GUEST.FSCB20 v/SMTP') sysname(tcpip)

```

25.4.4 Send Note from AS/400 to AS/400

User GUEST.FSC400 at AS400BU3 sends a note via TCP/IP SMTP to user GUEST.FSCB20 at AS400BU4. Both users are enrolled in OfficeVision/400 without any additional considerations regarding TCP/IP SMTP.

The nickname file of user GUEST.FSC400 at AS400BU3 is shown in Chapter 24, "IBM 3174 via IBM 7820 and Swissnet to AS/400" on page 207

This is the note entered by user GUEST.FSC400 at AS400BU3:

```

NOTE P:12                               Edit                               Pg:1       Ln:13
◀:..T.2..T:...T.3..T:...T.4..T:...Tv5..T:...T.6..T:...T.7..T:...T.8..T.▶.....9.
F
TO:      GUEST   FSCB20   GUEST at FSCB20 via TCP/IP SMTP
FROM:    GUEST   FSC400   User GUEST
DATE:    date
SUBJECT: E-Mail via TCP/IP SMTP
REFERENCE: For Documentation
        Start typing your note on the next line.
Dear Guest,
here, what I would like to tell you.
Regards,
Your Guest

F1=Copy           F13=Edit options      F19=Print/View
F2=Move           F14=Get options       F21=Spell options
F3=Exit/Save      F16=Adjust/Paginate  F22=Add to dictionary
F6=Find           F17=Functions        F23=Spell aid
F10=Send          F18=Search/Replace   F24=More keys

```

Figure 195. OfficeVision/400 Note, Editing

```

                                Work with Mail

Working with mail for . . . . . : GUEST   FSCB20

Type options, press Enter.
 2=Revise a copy      4=Delete              5=View                6=Print
 8=Change details    9=Print options       10=Forward            11=Reply
12=File remote       13=File local         14=Change authority

Opt  Status      -----From-----      Date
      NEW        GUEST   FSC400   E-Mail via TCP/IP SMTP      Received
                                      04/02/91

                                      Bottom

F3=Exit           F5=Refresh   F6=Outgoing mail status
F9=Action items  F12=Cancel   F24=More keys

```

Figure 196. OfficeVision/400, Work with Incoming Mail

```

Received from AS400BU3.CH.ZURICH.IBM.COM by AS400BU4.CH.ZURICH.IBM.
Received from AS400BU3 by AS400BU3.CH.ZURICH.IBM.COM (SMTP Version
Date: Mon, 04 Feb 91 16:17:43 .

From: GUEST?FSC400%AS400BU3@AS400BU3.CH.ZURICH.IBM.COM
To: GUEST?FSCB20@AS400BU4.CH.ZURICH.IBM.COM

Subject: E-Mail via TCP/IP SMTP
TO: GUEST FSCB20 GUEST at FSCB20 via TCP/IP SMTP
FROM: GUEST FSC400 User GUEST
DATE: FEBRUARY 4, 1991

SUBJECT: E-Mail via TCP/IP SMTP
REFERENCE: For Documentation

Dear Guest,
here, what I would like to tell you.
Regards,
Your Guest

```

Figure 197. OfficeVision/400, Received Note

25.4.5 Send Note from AS/400 to DEC mVAX

User GUEST.FSC400 at AS400BU3 sends a note via TCP/IP SMTP to user SIMH at FSCVAX.

25.4.5.1 Prepare Note on AS400BU3

```

Send Note

Type mailing information, press F6 to type note.
Subject . . . . . SMTP Test

Reference . . . . .

Type distribution list and/or addressees, press F10 to send.
Distribution list . . . . . F4 for list

-----Addressees-----
User ID      Address      Description
SIMH         FSCVAX      S. Imhof, on TS VAX, BU306

More...
F3=Exit  F6=Type note  F9=Attach memo slip  F10=Send  F11=Change details
F12=Cancel  F13=Change defaults  F14=Specify copy list  F24=More keys

```

Figure 198. OfficeVision/400 Note, Specify Recipient

```

NOTE P:12                               Edit Req'd Carrier Ret   Pg:1     Ln:12
◀...T.2..T...T.3..T...T.4..T...Tv5..T...T.6..T...T.7..T...T.8..T▶.....9.
F
TO:          SIMH      FSCVAX   S. Imhof, on TS VAX, BU306

FROM:        GUEST    FSC400   User on AS400BU3, for demo usage, mainly TCP/I

DATE:        date
SUBJECT:     SMTP Test
REFERENCE:
R

      Start typing your note on the next line.
Kind regards,
user GUEST on AS400BU3

F

F1=Copy      F10=Send      F16=Adjust/Paginate  F21=Nondisplay keys
F2=Move      F12=Cancel    F17=Functions        F22=Spell functions
F3=Exit/Save F13=Edit options F18=Search/Replace   F23=Word spell aid
F6=Find      F14=Get options F19=Print/View       F24=More keys

```

Figure 199. OfficeVision/400 Note, Editing

25.4.5.2 Receive Note on DEC mVAX

After the note has been sent to the DEC mVax, login as user SIMH on the VAX.

Enter the command 'mail' to evoke VMsmail.

```

$ mail You have 1 new message.
MAIL▶

```

Bottom

Enter command 'read' to read the note.

```

MAIL▶ read

```

```

To:      SIMH@FSCVAX.TS.CH.IBM.COM
CC:
Subj:    SMTP Test

Received: from AS400BU3.TS.CH.IBM.COM [9.13.32.4] by fscvax.ts.ch.ibm.com
        with SMTP-VMS via TCP/IP; Tue, 2 Feb 1993 14:21 UT
Received: from AS400BU3 by AS400BU3.TS.CH.IBM.COM (SMTP Version 2) Release 2.0 w
ith BSMTP id 0004.
Date: Tue, 02 Feb 93 14:21:50 .
From: GUEST?FSC400%AS400BU3@AS400BU3.TS.CH.IBM.COM
To:     SIMH@FSCVAX.TS.CH.IBM.COM
Subject: SMTP Test

TO:     SIMH      FSCVAX      S. Imhof, on TS VAX, BU306
FROM:   GUEST    FSC400      User on AS400BU3, for demo usage, mainly TCP/IP

DATE: February 2, 1993
SUBJECT: SMTP Test

Kind regards,
user GUEST on AS400BU3

```

Figure 200. VMSSmail, Note received from AS/400

25.4.6 Send Note from DEC mVAX to AS/400

Login as user SIMH to the mVAX. Enter command 'mail'. Then enter the command 'send' to prepare a note for distribution.

```

$ mail
MAIL▶ send
To:      smtp%"guest?fsc400@as400bu3"
Subj:    For Documentation
Enter your message below. Press CTRL/Z when complete, or CTRL/C to quit:
Here, what I wanted to tell you.
Kind regards,
Your user on FSC Vax

```

Figure 201. mVax Mail, Enter and Send Note to AS/400

Press Ctrl Z to complete and send the note.


```

MAIL P:12                                VIEW Instruction                Pg:1      Ln:7
<2.....3.....4.....5.....v.....6.....7.....8.....9>.....

Received: from fscvax.ts.ch.ibm.com by AS400BU3.TS.CH.IBM.COM (SMTP Versi
Date:      Fri, 15 Jan 1993 15:26 UT
From:      SIMH@fscvax.ts.ch.ibm.com
To:        guest?fsc400@as400bu3.ts.ch.ibm.com
Subject:   For Documentation

Here, what I wanted to tell you.
Kind regards,
Your user on FSC Vax

F3=Exit      F7=Window      F12=Cancel      F16=File remote
F4=Find char  F8=Reset       F13=Edit option  F17=Function
F5=Goto       F10=Forward    F14=Delete mail  F19=Print
F6=Find       F11=Reply      F15=File local   F21=Nondisplay keys
Press F19 to list errors.

```

Figure 202. mVax Mail, Enter and Send Note to AS/400

25.4.7 Send Note from AS/400 to RS/6000

User GUEST.FSC400 at AS400BU3 sends a note via TCP/IP SMTP to user GUEST at FSCRS530.

25.4.7.1 Prepare Note on AS/400

```

                                Send Note

Type mailing information, press F6 to type note.
Subject . . . . . SMTP Test

Reference . . . . .

Type distribution list and/or addressees, press F10 to send.
Distribution list . . . . . F4 for list

-----Addressees-----
User ID      Address      Description
GUEST        FSCRS530    Generic entry for TS RS/6000 via TCP/IP

More...
F3=Exit  F6=Type note  F9=Attach memo slip  F10=Send  F11=Change details
F12=Cancel  F13=Change defaults  F14=Specify copy list  F24=More keys

```

Figure 203. OfficeVision/400 Note, Specify Recipient

```

NOTE P:12                               Edit                               Pg:1      Ln:11
◀...T.2..T...T.3..T...T.4..T...Tv5..T...T.6..T...T.7..T...T.8..T▶....9.
F
TO:          GUEST   FSCRS530  Generic entry for TS RS/6000 via TCP/IP
FROM:        GUEST   FSC400    User on AS400BU3, for demo usage, mainly TCP/I

DATE:        date
SUBJECT:     SMTP Test
REFERENCE:
R

      Start typing your note on the next line.
Kind regards,
user GUEST on AS400BU3

F

F1=Copy      F10=Send      F16=Adjust/Paginate  F21=Nondisplay keys
F2=Move      F12=Cancel    F17=Functions        F22=Spell functions
F3=Exit/Save F13=Edit options F18=Search/Replace   F23=Word spell aid
F6=Find      F14=Get options F19=Print/View       F24=More keys

```

Figure 204. OfficeVision/400 Note, Editing

25.4.7.2 Receive Note on RS/6000

After the note has been sent to the RS/6000. Login as user GUEST on the RS/6000.

Enter command 'mail' to check for new messages.

mail

```

"/usr/spool/mail/guest": 1 message 1 new
▶N 1 GUEST?FSC400%AS400BU3@AS400BU3.TS.CH.IBM.COM Tue Feb 2 14:18 2 3/750 "SM"
& 1

```

And press ENTER again.

```

Message 1:
From root Tue Feb  2 14:18:07 1993
Date: Tue, 02 Feb 93 14:16:09 .
From: GUEST?FSC400%AS400BU3@AS400BU3.TS.CH.IBM.COM
To: GUEST@fscrs530
Subject: SMTP Test

TO: GUEST    FSCRS530  Generic entry for TS RS/6000 via TCP/IP

FROM: GUEST    FSC400   User on AS400BU3, for demo usage, mainly TCP/IP

DATE: February 2, 1993
SUBJECT: SMTP Test

Kind regards,
user GUEST on AS400BU3

```

Figure 205. OfficeVision/400 Note, Received on RS/6000

25.4.8 Send Note from RS/6000 to AS/400

Login as user GUEST to the RS/6000. Start entering a note by directly entering command 'mail'.

```

Welcome to IBM AIX Version 3.2!

Please see the README file in /usr/lpp/bos for information pertinent to
this release of the AIX Operating System.

unsuccessful login: Tue Jan 26 17:53:59 NPT 1993 on hft/0
login: Tue Feb  2 14:43:53 NPT 1993 on pts/1 from as400bu3.ts.ch.ibm.com
YOU HAVE NEW MAIL
fscrs530: guest: /usr/guest▶mail guest?fsc400@as400bu3
subject: SMTP Test
Kind regards,
user GUEST on FSCRS530

```

Figure 206. RS/6000 Mail, Enter and Send Note to AS/400

Press Ctrl C to complete and send the note.

```

MAIL P:12                                VIEW Instruction                Pg:1      Ln:7
<2.....3.....4.....5.....v.....6.....7.....8.....9>.....

Received: from fscrs530.ts.ch.ibm.com by AS400BU3.TS.CH.IBM.COM (SMTP Ver
Received: by fscrs530.ts.ch.ibm.com (AIX 3.2/UCB 5.64/4.03)
        id AA23492; Tue, 2 Feb 1993 15:22:12 +0100
Date: Tue, 2 Feb 1993 15:22:12 +0100
From: guest@fscrs530.ts.ch.ibm.com
Message-Id: <9302021422.AA23492@fscrs530.ts.ch.ibm.com>
To: guest?fsc400@as400bu3.ts.ch.ibm.com
Subject: SMTP Test

Kind regards,
user GUEST on FSCRS530

F3=Exit      F7=Window      F12=Cancel    F16=File remote
F4=Find char F8=Reset       F13=Edit option F17=Function
F5=Goto      F10=Forward    F14=Delete mail F19=Print
F6=Find      F11=Reply     F15=File local  F21=Nondisplay keys
Press F19 to list errors.

```

Figure 207. OfficeVision/400, View Note Received from RS/6000

25.4.9 Send Note from AS/400 to HP

User GUEST.FSC400 at AS400BU3 sends a note via TCP/IP SMTP to user GUEST at MVIHP720.

```

                                Send Note

Type mailing information, press F6 to type note.
Subject . . . . . SMTP Test

Reference . . . . .

Type distribution list and/or addressees, press F10 to send.
Distribution list . . . . . F4 for list

-----Addressees-----
User ID      Address      Description
GUEST       MVIHP720    Generic entry for MVI HP 720

More...
F3=Exit  F6=Type note  F9=Attach memo slip  F10=Send  F11=Change details
F12=Cancel  F13=Change defaults  F14=Specify copy list  F24=More keys

```

Figure 208. OfficeVision/400 Note, Specify Recipient

```

NOTE P:12                               Edit Req'd Carrier Ret   Pg:1       Ln:12
◀...T.2..T...T.3..T...T.4..T...Tv5..T...T.6..T...T.7..T...T.8..T▶.....9.
F
TO:          GUEST   MVIHP720  Generic entry for MVI HP 720

FROM:        GUEST   FSC400   User on AS400BU3, for demo usage, mainly TCP/I

DATE:        date
SUBJECT:     SMTP Test
REFERENCE:
R

      Start typing your note on the next line.
Kind regards,
user GUEST on AS400BU3

F

F1=Copy      F10=Send      F16=Adjust/Paginate  F21=Nondisplay keys
F2=Move      F12=Cancel    F17=Functions        F22=Spell functions
F3=Exit/Save F13=Edit options F18=Search/Replace   F23=Word spell aid
F6=Find      F14=Get options F19=Print/View       F24=More keys

```

Figure 209. OfficeVision/400 Note, Editing

25.4.9.1 Receive Note on HP

After the note has been sent to the HP, logon as user GUEST on the HP.

Enter command 'mail' to check for new messages. Having entered this command, new messages are displayed directly.

```

From GUEST?FSC400@AS400BU3.TS.CH.IBM.COM Tue Feb  2 14:15 MEZ 1993
Received: from as400bu3 by mvihp720 with SMTP
      (16.8/16.2) id AA03419; Tue, 2 Feb 93 14:15:56 +0100
Return-Path: <GUEST?FSC400@AS400BU3.TS.CH.IBM.COM>
Received: from AS400BU3 by AS400BU3.TS.CH.IBM.COM (SMTP Version 2) Release 2.0 .
Date: Tue, 02 Feb 93 14:17:18 .
From: GUEST?FSC400%AS400BU3@AS400BU3.TS.CH.IBM.COM
To: GUEST@mvihp720
Subject: SMTP Test

TO: GUEST   MVIHP720  Generic entry for MVI HP 720

FROM: GUEST   FSC400   User on AS400BU3, for demo usage, mainly TCP/IP

DATE: February 2, 1993
SUBJECT: SMTP Test

Kind regards,
user GUEST on AS400BU3

```

Figure 210. OfficeVision/400 Note, Received on HP

25.4.10 Send Note from HP to AS/400

```
(c)Copyright 1985, 1986, 1988 Massachusetts Institute of Technology
(c)Copyright 1986 Digital Equipment Corp.
(c)Copyright 1990 Motorola, Inc. All Rights Reserved.
      RESTRICTED RIGHTS LEGEND
Use, duplication, or disclosure by the U.S. Government is subject to
restrictions as set forth in sub-paragraph (c)(1)(ii) of the Rights in
Technical Data and Computer Software clause in DFARS 252.227-7013.
      Hewlett-Packard Company
      3000 Hanover Street
      Palo Alto, CA 94304 U.S.A.
Rights for non-DOD U.S. Government Departments and Agencies are as set
forth in FAR 52.227-19(c)(1,2).

Erase is Backspace
s <Shift> <Ctrl> <Reset> simultaneously to exit all windows.
mvihp720: guest: /users/guest>mail guest?fsc400@as400bu3
subject: SMTP Test
      regards,
      GUEST on MVIHP720
mvihp720: guest: /users/guest
```

Figure 211. HP, Edit Note

Enter Ctrl D to complete and send the message.

```
MAIL P:12                VIEW Instruction                Pg:1    Ln:7
<2.....3.....4.....5.....v.....6.....7.....8.....9>.....

Received: from mvihp720 by AS400BU3.TS.CH.IBM.COM (SMTP Version 2) Releas
Received: by mvihp720
(16.8/16.2) id AA03477; Tue, 2 Feb 93 15:13:00 +0100
Date: Tue, 2 Feb 93 15:13:00 +0100
From: guest@mvihp720
Subject: SMTP Test
Apparently-To: guest?fsc400@as400bu3

Kind regards,
user GUEST on MVIHP720

F3=Exit      F7=Window    F12=Cancel  F16=File remote
F4=Find char F8=Reset     F13=Edit option F17=Function
F5=Goto      F10=Forward  F14=Delete mail F19=Print
F6=Find      F11=Reply    F15=File local  F21=Nondisplay keys
Press F19 to list errors. +
```

Figure 212. OfficeVision/400, View Note Received from HP

25.4.11 Send Note from VM to AS/400

User SIMH on ZCHVM6 sends note to user SIMH.FSC400 on AS400BU3.

The following nickname file is on the VM-system ZCHVM6.

```
SIMH      NAMES      A0 V 255 Trunc=255 Size=4 Line=1 Col=1 Alt=0
====>
      Case M I,      Recfm V
00000 * * * Top of File * * *
00001 : nick.SIMHBU3 : userid.SIMH?FSC400 : node.AS400BU3
00002                : name.S. Imhof at AS400BU3 via TCP/IP SMTP
00003 : nick.GUESTBU3 : userid.GUEST?FSC400 : node.AS400BU3
00004                : name.User GUEST at AS400BU3 via TCP/IP SMTP
00005 * * * End of File * * *

PF-KEYS 1 - 2 - 3 END  4 -/2 5 -/2 6 SAVE  7 - 8 - 9 ? 10 - - 11 SP/JO 12 QQ
```

Figure 213. Nickname profile on the VM-System

```
Ready; T=0.40/0.47 09:42:16

note guestbu3

RUNNING ZCHVM6
```

Figure 214. Sending note to the user guest on the as/400

```
SIMH      NOTE      A0 V 132 Trunc=132 Size=13 Line=13 Col=1 Alt=6

Date: 22 November 1991, 09:42:29 CET
From: SIMH      at ZCHVM6
To:   GUEST?FSC400 at AS400BU3
Subject: Testing TCP/IP SMTP, VM to AS/400
This is to test VM to AS/400 SMTP electronic mailing.
Many regards,
Your ZCHVM6 partner
* * * End of File * * *

1= Help      2= Add line  3= Quit   4= Tab      5= Send      6= ?
7= Backward  8= Forward   9= =     10= Rgtright 11= Spltjoin 12= Power Input
====>

X E D I T 1 File
```

Figure 215. Editing note on the VM-system

```

Note SIMH      NOTE      A0 sent   to GUEST?FSC400 at AS400BU3 on 11/22/91 09:44:3
5
* From SMTP2: Received Spool File 0003
Note added to ALL NOTEBOOK A0.
Ready; T=1.10/1.27 09:44:36
*From SMTP2: Mail delivered to: <GUEST?FSC400@AS400BU3.CH.ZURICH.IBM.COM>

RUNNING      ZCHVM6

```

Figure 216. Confirmation for delivery

```

MAIL P:12          VIEW          Pg:1      Ln:2
<2.....3.....4.....5.....6v.....7.....8.....9.....
Received: from ZCHVM6.CH.ZURICH.IBM.COM by AS400BU3.CH.ZURICH.IBM.COM (SMTP Ve
Received: from ZCHVM6.CH.ZURICH.IBM.COM by ZCHVM6.CH.ZURICH.IBM.COM
  (IBM VM SMTP V2R1) with BSMTP id 0003; Fri, 22 Nov 91 09:44:37 CET
Date: Fri, 22 Nov 91 09:42:29 CET
From: SIMH@ZCHVM6.CH.ZURICH.IBM.COM
To:   GUEST?FSC400@AS400BU3
Subject: Testing TCP/IP SMTP, VM to AS/400

This is to test VM to AS/400 SMTP electronic mailing.
Many regards,
Already at top of area.
Your ZCHVM6 partner

```

Figure 217. Viewing the note on the AS/400

25.4.12 Send Note from AS/400 to VM

User GUEST.FSC400 on AS400BU3 sends a note to user SIMH on ZCHVM6.

```

NOTE P:12          Edit Req'd Carrier Ret   Pg:1      Ln:14
<:...T.2..T:...T.3..T:...T.4..T:...Tv5..T:...T.6..T:...T.7..T:...T.8..T.▶.....9.
F
TO:      SIMH      ZCHVM6      SIMH at ZCHVM6 via TCP/IP SMTP
FROM:    GUEST    FSC400      Handson users, for demo & test
DATE:    date
SUBJECT: TCP/IP SMTP, AS/400 to VM
REFERENCE: Testing
F
START TYPING YOUR NOTE HERE.
This is to test TCP/IP SMTP from AS/400 to VM.
Kind regards,
Your AS/400 partner

F

```

Figure 218. Editing note on the AS/400


```
Ready; T=0.52/0.64 10:00:14
RDR FILE 0003 SENT FROM SMTP2    PUN WAS 0005 RECS 0025 CPY  001 M NOHOLD NOKEEP

rdrlist

RUNNING  ZCHVM6
```

Figure 219. Message on the VM-system

```
SIMH      RDRLIST  A0  V 108  Trunc=108 Size=1 Line=1 Col=1 Alt=0
Cmd  Filename Filetype Class User  at Node   Hold Records Date    Time
      GUESTFSC MAIL    PUN M SMTP2   ZCHVM6  NONE      25 11/22  10:03:17

1= Help      2= Refresh  3= Quit      4= Sort(type) 5= Sort(date) 6= Sort(user)
7= Backward  8= Forward  9= Receive  10=           11= Peek      12= Cursor
====>

X E D I T  1 File
```

Figure 220. Note received on the VM-System

```

0003      PEEK      A0 V 80 Trunc=80 Size=25 Line=0 Col=1 Alt=0
File GUESTFSC MAIL from SMTP2 at ZCHVM6 Format is PUNCH.
* * * Top of File * * *
Received: from AS400BU3.CH.ZURICH.IBM.COM by ZCHVM6.CH.ZURICH.IBM.COM
        (IBM VM SMTP V2R1) with TCP; Fri, 22 Nov 91 10:03:16 CET
Received: from AS400BU3 by AS400BU3.CH.ZURICH.IBM.COM (SMTP Version 1) Release
        3.0 with BSMTMP id 0004.

Date: Fri, 22 Nov 91 10:03:55 .
From: GUEST?FSC400%AS400BU3@AS400BU3.CH.ZURICH.IBM.COM
To: SIMH@ZCHVM6.CH.ZURICH.IBM.COM
Subject: TCP/IP SMTP, AS/400 to VM"-

TO: SIMH      ZCHVM6      SIMH at ZCHVM6 via TCP/IP SMTP
FROM: GUEST   FSC400      Handson users, for demo & test

DATE: NOVEMBER 22, 1991

SUBJECT: TCP/IP SMTP, AS/400 to VM
REFERENCE: Testing

This is to test TCP/IP SMTP from AS/400 to VM.
Kind regards,
Your AS/400 partner

* * * End of File * * *

1= Help      2= Add line  3= Quit      4= Tab      5= Clocate   6= ?/Change
7= Backward  8= Forward   9= Receive 10= Rgtleft 11= Spltjoin 12= Cursor
====>

X E D I T 1 File

```

Figure 221. Viewing note on the VM-system

25.5 RS/6000 as NFS Client of AS/400 AS400BU3

For this function you will need the AS/400 licensed program TCP/IP File Server Support/400 (5798-RYW). For more information about this product order the redbook *The IBM AS/400 as a TCP/IP Network File Server* (GG24-4092).

Logon to RS/6000, via Telnet VT100.

IBM AIX Version 3 for RISC System/6000

(C) Copyrights by IBM and by others 1982, 1991.

login: simh

simh's Password:

```

*****
*                                                                 *
*                                                                 *
* Welcome to IBM AIX Version 3.2!                                *
*                                                                 *
*                                                                 *
* Please see the README file in /usr/lpp/bos for information pertinent to *
* this release of the AIX Operating System.                      *
*                                                                 *
*                                                                 *
*****

```

Last unsuccessful login: Tue Jun 1 16:36:16 NPT 1993 on hft/0

Last login: Thu Jul 1 14:29:09 NPT 1993 on pts/5 from as400bu3.ts.ch.ibm.com
fscrs530.simh./home/simh>

Verify the correct user ID value:

```
fscrs530.simh:/home/simh>id simh
uid=777(simh) gid=0(system)
```

Use TCP/IP PING function to check TCP/IP connection with NFS** server.

```
fscrs530.simh:/home/simh>ping as400bu3
PING as400bu3.ts.ch.ibm.com: (9.13.32.4): 56 data bytes
64 bytes from 9.13.32.4: icmp_seq=0 ttl=60 time=40 ms
64 bytes from 9.13.32.4: icmp_seq=1 ttl=60 time=30 ms
64 bytes from 9.13.32.4: icmp_seq=2 ttl=60 time=31 ms
----as400bu3.ts.ch.ibm.com PING Statistics----
3 packets transmitted, 3 packets received, 0% packet loss
round-trip min/avg/max = 30/33/40 ms
```

Check, whether NFS server is ready on AS400BU3.

```
fscrs530.simh:/home/simh>rpcinfo -n 2049 -u as400bu3 100003 2
program 100003 version 2
        ready and waiting
```

Display the directories exported for SIMH on AS400BU3.

```
fscrs530.simh:/home/simh>showmount -e as400bu3
export list for as400bu3:
/qd1s/guest      *all
/qsys.lib/guest.lib *all
```

Show current directories before mounting the AS/400 directories.

```
fscrs530.simh:/home/simh>mount
```

node	mounted	mounted over	vfs	date	options
	/dev/hd4	/	jfs	Jul 01 06:01	rw,log=/dev/hd8
	/dev/hd2	/usr	jfs	Jul 01 06:01	rw,log=/dev/hd8
	/dev/hd9var	/var	jfs	Jul 01 06:01	rw,log=/dev/hd8
	/dev/hd3	/tmp	jfs	Jul 01 06:01	rw,log=/dev/hd8
	/dev/hd1	/home	jfs	Jul 01 06:05	rw,log=/dev/hd8
	/dev/dk00	/usr/local	jfs	Jul 01 06:05	rw,log=/dev/hd8
	/dev/lv00	/usr/kinet	jfs	Jul 01 06:05	rw,log=/dev/hd8
	/dev/lv04	/usr/etc/hmp	jfs	Jul 01 06:05	rw,log=/dev/hd8
fscrs530 (pid14275)		/u/rfre/rhost	nfs	Jul 01 06:06	ro
fscrs530 (pid14533)		/u/trt/rhost	nfs	Jul 01 06:06	ro

```
fscrs530.simh:/home/simh
```

Mount AS/400 directories.

```
fscrs530.simh:/>mount as400bu3:/qsys.lib/guest.lib /home/simh/as400bu3/qsys
fscrs530.simh:/>mount as400bu3:/qd1s/guest /home/simh/as400bu3/qd1s
```

Show the directories after mounting.

fscrs530.simh: />mount

node	mounted	mounted over	vfs	date	options
	/dev/hd4	/	jfs	Jul 01 06:01	rw,log=/dev/hd8
	/dev/hd2	/usr	jfs	Jul 01 06:01	rw,log=/dev/hd8
	/dev/hd9var	/var	jfs	Jul 01 06:01	rw,log=/dev/hd8
	/dev/hd3	/tmp	jfs	Jul 01 06:01	rw,log=/dev/hd8
	/dev/hd1	/home	jfs	Jul 01 06:05	rw,log=/dev/hd8
	/dev/dk00	/usr/local	jfs	Jul 01 06:05	rw,log=/dev/hd8
	/dev/lv00	/usr/kinet	jfs	Jul 01 06:05	rw,log=/dev/hd8
	/dev/lv04	/usr/etc/hmp	jfs	Jul 01 06:05	rw,log=/dev/hd8
fscrs530 (pid14275)	/u/rfre/rhost		nfs	Jul 01 06:06	ro
fscrs530 (pid14533)	/u/trt/rhost		nfs	Jul 01 06:06	ro
as400bu3 /qdl/guest	/home/simh/as400bu3/qdl		nfs	Jul 01 14:48	rw
as400bu3 /qsys.lib/guest.lib	/home/simh/as400bu3/qsys		nfs	Jul 01 14:52	rw

Look into folder GUEST on AS400BU3.

fscrs530.simh: />cd /home/simh/as400bu3/qdl

fscrs530.simh:/home/simh/as400bu3/qdl>ls -l

```
-rwxr-xr-x 1 simh system 18 Jul 01 12:55 aixtext
-rwxrwxrwx 1 root system 0 Jun 29 12:53 foraix
-rwx--x--x 1 root system 0 May 21 09:56 ggzn4712.64
-rwxrwxrwx 1 simh system 1105 Jun 29 12:45 s38line
-rwxrwxrwx 1 root system 1555 Jul 01 12:52 text
-rwxrwxrwx 1 root system 0 Feb 10 13:10 textwim
-rwxrwxrwx 1 root system 0 Dec 15 1992 vonguest
```

Display PC file S38line.

fscrs530.simh:/home/simh/as400bu3/qdl pg s38line

```
PGM
DLTLIND LIND(S38LINE)
MONMSG MSGID(CPF0000)
DLTCTLD CTLD(S38SDLC)
MONMSG MSGID(CPF0000)
DLTDEVD DEVD(S38DEV*)
MONMSG MSGID(CPF0000)
CRTLINS DLC LIND(S38LINE) RSRNAME(LIN061) ONLINE(*YES) +
ROLE(*PRI) EXCHID(05600400) +
LINESPEED(19200) MODEM(*IBMLPDA1) +
DUPLEX(*FULL) TEXT('Leased, PP Connection +
to FSC /38')
CRTCTLAPPC CTLD(S38SDLC) LINKTYPE(*SDLC) ONLINE(*YES) +
APPN(*NO) LINE(S38LINE) RMTNETID(*NONE) +
EXCHID(02205381) ROLE(*SEC) STNADR(C1) +
TEXT('S/38 via leased, PP connection')
...
```

Look into library GUEST on AS400BU3.

```

fscrs530.simh: />cd /home/simh/as400bu3/qsys
fscrs530.simh: /home/simh/as400bu3/qsys>ls -l
total 59
-r-xr-xr-x 1 simh system 200 Jul 01 12:58 aixtext.pf
-r-xr-xr-x 1 root system 7144 Apr 23 09:15 cvtfcfc.pf
-r-xr-xr-x 1 root system 72000 Apr 22 13:47 frommvs.pf
-r-xr-xr-x 1 root system 4716 Apr 22 13:53 mail.pf
drwxrwxrwx 1 simh system 4096 Jul 01 12:58 ndm.file
drwxrwxrwx 1 simh system 4096 Jul 01 12:58 nftp.file
-r-xr-xr-x 1 simh system 8000 Apr 01 1992 nftpdta.pf
drwxrwxrwx 1 simh system 4096 Jul 01 12:58 qclsrc.file
-r-xr-xr-x 1 root system 100000 May 17 10:16 rln1000.pf
-r-xr-xr-x 1 simh system 0 May 18 1992 rlnjes.pf
-r-xr-xr-x 1 simh system 8000 Aug 18 1992 rtvfrommvs.pf
-r-xr-xr-x 1 simh system 5247 Jun 14 15:07 teiln14.pf
-r-xr-xr-x 1 simh system 308 Jun 15 13:25 testfile.pf
-r-xr-xr-x 1 root system 840 Mar 26 1992 wvmo.pf
-r-xr-xr-x 1 root system 0 Mar 26 1992 wvmoftp.pf

```

Unmount the AS/400 directories.

```

fscrs530.simh: /home/simh/as400bu3/qd1s>cd ..
fscrs530.simh: /home/simh/as400bu3>cd ..
fscrs530.simh: /home/simh>umount /home/simh/as400bu3/qd1s
fscrs530.simh: /home/simh>umount /home/simh/as400bu3/qsys
fscrs530.simh: /home/simh>mount

```

node	mounted	mounted over	vfs	date	options
	/dev/hd4	/	jfs	Jul 01 06:01	rw,log=/dev/hd8
	/dev/hd2	/usr	jfs	Jul 01 06:01	rw,log=/dev/hd8
	/dev/hd9var	/var	jfs	Jul 01 06:01	rw,log=/dev/hd8
	/dev/hd3	/tmp	jfs	Jul 01 06:01	rw,log=/dev/hd8
	/dev/hd1	/home	jfs	Jul 01 06:05	rw,log=/dev/hd8
	/dev/dk00	/usr/local	jfs	Jul 01 06:05	rw,log=/dev/hd8
	/dev/lv00	/usr/kinet	jfs	Jul 01 06:05	rw,log=/dev/hd8
	/dev/lv04	/usr/etc/hmp	jfs	Jul 01 06:05	rw,log=/dev/hd8
fscrs530 (pid14275)		/u/rfre/rhost	nfs	Jul 01 06:06	ro
fscrs530 (pid14533)		/u/trt/rhost	nfs	Jul 01 06:06	ro

```

Work with Authorized Users
Type options, press Enter.
 1=Add  2=Change  4=Remove
User    User
Opt     Profile    ID
       Q7FSOWN    *ROOT
       Q7FSUSER  -2
       SIMH     777

Bottom

Parameter for option 2 or command
===>
F3=Exit  F4=Prompt  F5=Refresh  F9=Retrieve  F12=Cancel

```

Figure 222. Authorization List on AS400BU3

```
Work with Export Table
Type options, press Enter.
  1=Add  2=Change  4=Remove  5=Display

Opt Path                               Client      Write  Root  User
      /QDLS/GUEST                       *ALL       *YES  *NO   777
      /QSYS.LIB/GUEST.LIB                *ALL       *YES  *NO   777

Bottom
F3=Exit  F5=Refresh  F11=Display additional path information  F12=Cancel
```

Figure 223. Export Table on AS400BU3

Part 6. Communications API's

Chapter 26. AS/400 User-Defined Communications (UDC) on X.25

User-defined communications is a set of AS/400 APIs. that allows you to write your own communications protocol stacks above the data link layer. Currently UDC supports Ethernet, TRLAN and X.25.

This sample program shows communications via X.25. In many cases, program-to-program communications in a heterogeneous network can be accomplished by writing programs that directly deal with the link layer. With this approach you do not need to use any higher layer network protocols like SNA/APPN, OSI or TCP/IP.

The Swiss PTT X.25 Network TELEPAC includes a publicly accessible test system. The test application is named 'MALLETTTE'. It has three different test functions: absorption, echoing and generation. The following sample program uses the echo function. Each function has a unique X.25 identification to be called. Communications is X.25 native with ASCII character set is used.

The MALLETTTE test tool is helpful to check the X.25 support of a system: Hardware, connection, definitions, user programming.

You could also use ITF to communicate with Mallette or you could write an ICF program. See AS/400 Communications Definitions II, GG24-3763 for more information about this approach.

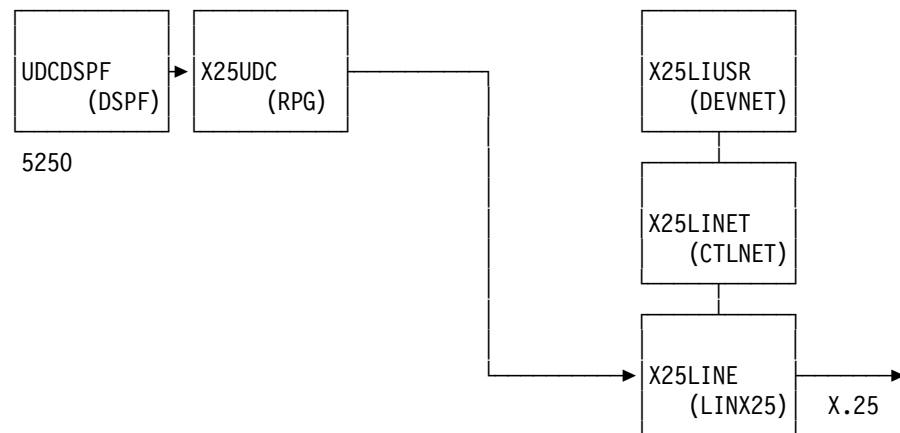


Figure 224. UDC Program via Native X.25 to Mallette

26.1 AS/400 Definitions

```
CRTLINX25 LIND(X25LINE) RSRNAME(LIN051) LGLCHLE((001 +
*PVC) (002 *SVCBOTH) (003 *SVCBOTH) +
(004 *SVCBOTH) (005 *SVCBOTH) (006 +
*SVCBOTH) (007 *SVCBOTH) (008 *SVCBOTH)) +
NETADR(47911140) CNNINIT(*LOCAL) +
ONLINE(*NO) EXCHID(056FFFFF) +
```

MAXPKTSIZE(512) TEXT('X.25 link, TELPAC Nbr +
47911140')

Device description X25LIUSR and controller description X25LINET are
automatically created.

26.2 Programming Example

26.2.1 Display File UDCDSPF

```
A*
A* PROGRAM: X25UDC
A* DESCRIPTION: PROMPT FOR CHARACTER STRING,
A*              SHOWS ECHOED CHARACTER STRING
A*
A              DSPSIZ(24 80 *DS3)
A              PRINT
A              INDARA
A              CF03
A          R TITLE
A*              LOCK
A*              FRCDTA
A              1 2' ECHO'
A              1 15' Swiss PTT - Telepac, Test-Tool "Ma-
A              llette""
A              DSPATR(HI)
A              DSPATR(UL)
A              1 70DATE
A              EDTCDE(Y)
A              3 29' Echo Function'
A          R PROMPT
A              OVERLAY
A              8 10' Enter the character string (64) to-
A              be sent as a data packet and'
A              COLOR(YLW)
A              24 10' Press CF 3 to terminate          -
A              '
A              9 10' to be echoed by the test-tool:'
A          FLD003      64A B 11 10CHECK(LC)
A              13 3' Echo:'
A          FLD004      64A 0 13 10
A          R UDCERR
A              OVERLAY
A              8 10' Error Received'
A              COLOR(RED)
A          MSGERR      60A 0 10 10COLOR(RED)
A              12 10' Reason Code          '
A          UDCRSN      4S 00 12 40COLOR(RED)
A              14 10' Return Code'
A          UDCRTN      4S 00 14 40COLOR(RED)
A              24 10' Press ENTER or CF 3 to terminate'
```

26.2.2 UDC X.25 Parameter Data Structures

```

I*****
I*Common parameters used on UDC calls:
I*
I* Field                               Where
I* Name  Description                   Used
I* -----
I* DAVL2  Data available (2 bytes)     QOLRECV
I* DAVL1  Data available (second byte) QOLRECV
I* DGNDTA Diagnostic data              QOLSEND
I*
I* DUNUM  Number of data units created QOLELINK
I* DUSZ   Data unit size                QOLELINK
I* EROFST Error data offset             QOLSETF
I* HANDLE Communications handle         QOLELINK
I*
I*
I*
I*
I* IBUF   User space name for input buffer (data units) QOLELINK
I* IBUFD  User space name for input buffer descriptors QOLELINK
I* KEYLEN Data queue key length         QOLELINK
I* KEYVAL Data queue key value          QOLELINK
I* LIND   Line Description               QOLELINK
I*
I* LUDSZ  LAN user data size             QOLELINK
I* NUCEP  New user connection end point ID QOLSEND
I* NPCEP  New provider connection end point ID QOLSEND
I*
I* NUMDU  Number of data units          QOLSEND
I*
I* OBUF   User space name for output data units QOLELINK
I* OBUFD  User space name for output descriptors QOLELINK
I* OPRTN  Operation (2-byte)            QOLSEND
I*
I* OPRTN1 Operation (first byte)        QOLSEND
I*
I* OPRTN2 Operation (second byte)       QOLSEND
I*
I* OPTN2  Vary option (2 bytes)         QOLDLINK
I* OPTN1  Vary option (right byte)      QOLDLINK
I* PCEP   Existing provider connection end point ID QOLSEND
I* RSNODE Reason Code                   A11
I* RTNODE Return Code                   A11
I* UCEP   Existing user connection end point ID QOLRECV
I* XUDSZ  X.25 user data size           QOLELINK
I*****
IUDCPRM      IDS
I
I              B  1  20DAVL2
I              2  2  DAVL1
I              10 49  DGNDTA
I              B 50 530DUNUM
I              B 54 570DUSZ
I              B 60 630EROFST
I              70 79  HANDLE
I              80 99  IBUF
I              100 119 IBUFD
I              B 120 1230KEYLEN

```

```

I          130 385 KEYVAL
I          390 399 LIND
I          B 400 4030LUDSZ
I          B 404 4070NUCEP
I          B 410 4130NPCEP
I          B 414 4170NUMDU
I          420 439 OBUF
I          440 459 OBUFD
I          470 471 OPRTN
I          B 470 4710OPRTNN
I          470 470 OPRTN1
I          471 471 OPRTN2
I          472 472 OPRTC1
I          473 473 OPRTC2
I          472 473 OPRTC
I          B 480 48100PTN2
I          481 481 OPTN1
I          B 490 4930PCEP
I          B 494 4970RSNCDE
I          B 500 5030RTNCDE
I          B 504 5070UCEP
I          B 510 5130XUDSZ

```

I/EJECT

I*Filter data structure

I*

I* Field

I* Name Description

I* -----

I* FFNCTN Function

I* FTYP Filter type X'00' = PID

I* FNUM Number of filters

I* FLEN Length of each filter

I* FPIDL Length of PID

I* FPID PID

I* FDTEL Calling DTE address length

I* FDTE Calling DTE address

I* FRDTA Additional routing data

IFILTER IDS

I 1 1 FFNCTN

I 2 2 FTYP

I B 3 40FNUM

I B 5 60FLEN

I 7 7 FPIDL

I 8 8 FPID

I 9 9 FDTEL

I 10 21 FDTE

I 22 22 FRDTA

I/EJECT

I*Initiate an SVC Call

I*

I* Field

I* Name Description

I* -----

I* IR01 1 A Reserved, must be X'02'

I* IR02 3 A Reserved, must be X'000000'

*

```

I* ITPSZ  2 B  Transmit Packet Size
I* ITWSZ  2 B  Transmit Window Size
I* IRPSZ  2 B  Receive Packet Size
I* IRWSZ  2 B  Receive Window Size
*
I* IR03   7 A  Reserved, must be all X'00'
I* IDTEL  1 B  DTE address length
I* IDTE   16 A DTE address
I* IR04   8 A  Reserved, must be all X'00'
I* IDBIT  1 A  D-Bit Support (Delivery conf)
I* IR05   7 A  Reserved, must be all X'00'
I* ICUGIN 1 A  CUD indicator
I* ICUGID 1 A  CUD identifier
I* IRCHRG 1 A  Reverse charge indicator
I* IFSEL  1 A  Fast select indicator
*
I* IFACL  1 B  X.25 Facilities Length
I* IFAC  109 A X.25 Facilities
I* IR06  48 A  Reserved, must be all X'00'
I* ICUDL  2 B  Call user data length
I* ICUD  128 A Call user data
I* IR07  128 A Reserved, must be all X'00'
I* ICTRI  1 A  Connection Control Information
I* IR08   3 A  Reserved, must be all X'00'
I* IMDTA  4 B  Max data unit assembly
I* IAUTOF 2 B  Auto Flow Control, 32 is recommended
I* IR09  30 A  Reserved, must be all X'00'
I*****
IISVC      IDS
I           1  1 IR01
I           2  4 IR02
I           5  6 ITPSZ
I           7  8 ITWSZ
I           9 10 IRPSZ
I          11 12 IRWSZ
I          13 19 IR03
I          20 20 IDTEL
I          21 36 IDTE
I          37 44 IR04
I          45 45 IDBIT
I          46 52 IR05
I          53 53 ICUGIN
I          54 54 ICUGID
I          55 55 IRCHRG
I          56 56 IFSEL
I          57 57 IFACL
I          58 166 IFAC
I          167 214 IR06
I          B 215 2160ICUDL
I          217 344 ICUD
I          345 472 IR07
I          473 473 ICTRI
I          474 476 IR08
I          B 477 4800IMDTA
I          B 481 4820IAUTOF
I          483 512 IR09
I/EJECT
I*****
I*Receive SVC Call Connect

```

```

I*
I* Field
I* Name Description
I* -----
I* CR01 2 A Reserved, not used
I* CLCI 2 A Logical Channel Id
I* CTPSZ 2 B Transmit Packet Size
I* CTWSZ 2 B Transmit Window Size
I* CRPSZ 2 B Receive Packet Size
I* CRWSZ 2 B Receive Window Size
I* CR02 32 A Reserved, not used
I* CDBIT 1 A D-Bit Support (Delivery Confirmation)
I* CR03 11 A Reserved, not used
I* CFACL 1 B X.25 Facilities Length
I* CFAC 109 A X.25 Facilities Data
I* CR04 48 A Reserved, not used
I* CCCUDL 2 B Call/clear User Data Length
I* CCCUD128 A Call/Clear User Data
I* CR05 168 A Reserved, not used
I*****
ICCDTA IDS
I 1 2 CR01
I 3 4 CLCI
I B 5 60CTPSZ
I B 7 80CTWSZ
I B 9 100CRPSZ
I B 11 120CRWSZ
I 13 44 CR02
I 45 45 CDBIT
I 46 56 CR03
I 57 57 CFACL
I 58 166 CFAC
I 167 214 CR04
I B 215 2160CCCUDL
I 217 344 CCCUD
I 345 512 CR05
I/EJECT
I*****
I*Send/Receive Clear Request
I*
I* Field
I* Name Description
I* -----
I* RR01 2 A Reserved, should be X'0000'
I* RCC 1 A X.25 Cause Code
I* RDC 1 A X.25 Diagnostic Code
I* RR02 4 A Reserved, should be X'00000000'
I* RFACL 1 B X.25 Facilities Length
I* RFAC 109 A X.25 Facilities
I* RR03 48 A Reserved, should be X'00..
I* RUDTAL 2 B Clear User Data Length, value 0-128
I* RUDTA128 A Clear User Data
I* RR04 216 A Reserved, should be X'00..
I*****
ICRDTA IDS
I 1 2 RR01
I 3 3 RCC
I 4 4 RDC
I 5 8 RR02

```

```

I          9  9 RFACL
I         10 118 RFAC
I         119 166 RR03
I         B 167 1680RUDTAL
I         169 296 RUDTA
I         296 512 RR04
I/EJECT
I*****
I*Input and Output Descriptor Structure
I*
I* Field
I* Name  Description
I* -----
I* DATAL Data Length
I* RSVD  Reserved
I*****
IIODSC      IDS
I          B  1  20DATAL
I          3  32 RSVD
I/SPACE
I*****
I*Data queue parameters
I*
I* Field
I* Name  Description
I* -----
I* DATAQ Data queue name and library
I* DATAQN Data queue name
I* DATAQL Data queue library
I* FLDLN  Number of characters to receive from data queue
I* FLD    Buffer to place data onto are remove data from queue
I* WAIT  Time to wait
I*****
IDQ          IDS
I          1  20 DATAQ
I          1  10 DATAQN
I          11 20 DATAQL
I          P 21 230FLDLN
I          24 103 FLD
I          P 104 1060WAIT
I/EJECT
I*****
I*Retrieve and Update user space parameters
I*
I* Field
I* Name  Description
I* -----
I* STRPOS Starting position in user space
I* USDTAL Number of bytes to copy to or from user space
I* USDTA  Data to copy to or from user space
I* FRCHG  Force changes to auxiliary storage
I*****
IUS          IDS
I          B  1  40STRPOS
I          B  5  80USDTAL
I* USDTA DESCRIBED IN PROGRAM AS 2X256 DS
I          521 521 FRCCHG
I*****

```

26.2.3 UDC X.25 RPG Program

```

H
FUDCDSPF CF E                                WORKSTN
*
* CALLING DTE ADDRESS
E          ADTE          16 1
E          X00           128 1
*
IUSDTA     DS
I          1 256 USDTA1
I          257 512 USDTA2
*
* CONSTANTS FOR USER SPACE AND DTAQ NAMES
I          0             C          CZERO
I          'IBUF        QTEMP'    C          CIBUF
I          'IBUFD       QTEMP'    C          CIBUFD
I          'OBUF        QTEMP'    C          COBUF
I          'OBUFD       QTEMP'    C          COBUFD
I          'UDCDTAQ    CMNLIB'    C          CDATAQ
I*****
I/EJECT
I/COPY CMNLIB/UDC,XUDCPARMS
C/EJECT
*
* INITIALIZATIONS
*   HEX00 IS A 128 CHAR FIELD, TO INIT VARIOUS FIELDS
C          BITOF'01234567'ALL00    1
C          Z-ADD1          Z          30
C          Z              DOWNE129
C          MOVE ALL00      X00,Z
C          ADD 1          Z
C          END
C          MOVEAX00       HEX00 128
*   HEXFF IS A 2 BYTE FIELD WITH ALL 'X' 'FF'
C          BITON'01234567'FF        1
C          MOVE LFF        HEXFF    2
C          MOVE FF         HEXFF
*
* WRITE TITLE TO SCREEN
C          WRITETITLE
*
* ENABLE THE LINK
C          EXSR ELINK
*
* SET THE FILTER TO RECEIVE INCOMING CALLS
* (SHOULD NOT BE NECESSARY IN THIS EXAMPLE)
C          EXSR SETF
*
* SEND CALL REQUEST
C          EXSR ESVC
*
* RECEIVE CALL CONNECT
C          EXSR CC
*
* USER DATA PROCESSING
C          ECHO          TAG
*
* GET DATA TO BE SENT FROM TERMINAL

```



```

C          EXFMTMPROMPT
C          *INKC      CABEQ'1'      ENDPGM
*
* SEND DATA TO BE ECHOED
C          EXSR SEND
*
* RECEIVE DATA FROM REMOTE DTE
C          EXSR RECV
C          MOVEUSDTA      FLD004
C          GOTO ECHO
*
* SEND CLEAR REQUEST
C          ENDPGM      TAG
C          EXSR CLEAR
*
* RECEIVE CLEAR CONFIRMATION
C          EXSR CLEARC
*
* DISABLE LINK
C          EXSR DLINK
C          SETON              LR
C/EJECT
*****
* Enable the Link
*****
C          ELINK      BEGSR
* X.25 user data size (512 TO 4096)
C          Z-ADD512      XUDSZ
* Copy 4 userspace names to parameter fields
C          MOVELCIBUF      IBUF
C          MOVELCIBUFD      IBUFD
C          MOVELCOBUF      OBUF
C          MOVELCOBUFD      OBUFD
* Copy data queue name to parameter field
C          MOVELCDATAQ      DATAQ
* DTAQ key length, 0=no key
C          Z-ADDO      KEYLEN
* Line description name = X25LINE
C          MOVEL'X25LINE'      LIND
C* Handle to be used on future calls = HANDLE
C          MOVEL'HANDLE'      HANDLE
*
* Call Enable Link UDC program
C          CALL 'QOLELINK'
C          PARM      RTNCDE
C          PARM      RSNODE
C          PARM      DUSZ
C          PARM      DUNUM
C          PARM      LUDSZ
C          PARM      XUDSZ
C          PARM      IBUF
C          PARM      IBUFD
C          PARM      OBUF
C          PARM      OBUFD
C          PARM      KEYLEN
C          PARM      KEYVAL
C          PARM      DATAQ
C          PARM      LIND
C          PARM      HANDLE

```

```

*
C          MOVE' QOLELINK' MSGERR
C          Z-ADDRSNCDE   UDCRSN
C          Z-ADDRSNCDE   UDCRTN
C          EXFMTUDCERR
C          RTNCDE      CABNECZERO   ENDPGM
*
* Receive data queue entry to get results
C          Z-ADD-1      WAIT
C          CALL 'QRCVDTAQ'
C          PARM          DATAQN
C          PARM          DATAQL
C          PARM          FLDLN
C          PARM          FLD
C          PARM          WAIT
C*
C          ENDSR
C/EJECT
*****
* SET THE FILTER TO RECEIVE CALLS ETC FOR PID X'AA'
*****
C          SETF      BEGSR
* FILTER FUNCTION = 01 (ACTIVATE FILTERS)
C          BITOF'01234567'FFNCTN
C          BITON'7'   FFNCTN
* FILTER TYPE = 00 (X.25 PID)
C          BITOF'01234567'FTYP
* NUMBER OF FILTERS IN LIST = 1
C          Z-ADD1      FNUM
* LENGTH OF EACH FILTER = 16
C          Z-ADD16     FLEN
*
* NOW X.25 SPECIFIC FILTER INFORMATION
C* PID LENGTH = 01 (ROUTE CALLS WITH PID IN CUD)
C          BITOF'01234567'FPIDL
C          BITON'7'   FPIDL
* FPID = X'AA'
C          BITOF'01234567'FPID
C          BITON'0246' FPID
* CALLING DTE ADDRESS LENGTH, X'00' FOR FILTER TYPE X'00'
C          BITOF'01234567'FDTEL
* CALLING DTE ADDRESS
* NEEDS TO BE X'00' WHEN WORKING WITH PID
C          MOVE'HEX00   FDTE
* ADDL X.25 ROUTING DATA
* X'CO' REVERSE CHARGE & FAST SELECT NOT ACCEPTED
C          BITOF'01234567'FRDTA
C          BITON'01'   FRDTA
* COPY FILTER INFORMATION TO DATA UNIT IN USER SPACE
* HEADER IS 6 BYTES, X.25 FILTER IS 16 BYTES
C          Z-ADD1      STRPOS
C          Z-ADD22     USDTAL
C          MOVE'FILTER  USDTA1
C          MOVE CZERO  FRCCHG
C          CALL 'QUSCHGUS'
C          PARM          OBUF
C          PARM          STRPOS
C          PARM          USDTAL
C          PARM          USDTA

```

```

C          PARM          FRCCHG
* CALL SET FILTER UDC PROGRAM
C          CALL 'QOLSETF'
C          PARM          RTNCDE
C          PARM          RSNCDE
C          PARM          EROFST
C          PARM          HANDLE
*
C          MOVE *BLANK   MSGERR
C          MOVE 'QOLSETF' MSGERR
C          Z-ADDRSNCDE  UDCRSN
C          Z-ADDRTNCDE  UDCRTN
C          EXFMTUDCERR
*
C          RTNCDE      CABNECZERO      ENDPGM
C          ENDSR
C/EJECT
*****
* Initiate an SVC Call
*****
C          ESVC      BEGSR
* PREPARE SVC CALL DATA
* IR01  1 A  Reserved, must be X'02'
C          BITOF'01234567'IR01
C          BITON'6'      IR01
* IR02  3 A  Reserved, must be X'000000'
C          MOVE HEX00    IR02
* ITPSZ  2 B  Transmit Packet Size
C          MOVE HEXFF    ITPSZ
* ITWSZ  2 B  Transmit Window Size
C          MOVE HEXFF    ITWSZ
* IRPSZ  2 B  Receive Packet Size
C          MOVE HEXFF    IRPSZ
* IRWSZ  2 B  Receive Window Size
C          MOVE HEXFF    IRWSZ
* IR03  7 A  Reserved, must be all X'00'
C          MOVE HEX00    IR03
* IDTEL  1 B  DTE address length, DTE address is 479100991
C          BITOF'01234567'IDTEL
C          BITON'47'      IDTEL
* IDTE  16 A  DTE address
C          MOVE HEX00    IDTE
C          MOVEA HEX00    ADTE
* 47
C          BITOF'01234567'ADTE,1
C          BITON'1567'      ADTE,1
* 91
C          BITOF'01234567'ADTE,2
C          BITON'037'      ADTE,2
* 00
C          BITOF'01234567'ADTE,3
* 99
C          BITOF'01234567'ADTE,4
C          BITON'0347'      ADTE,4
* 1
C          BITOF'01234567'ADTE,5
C          BITON'3'        ADTE,5
*
C          MOVEAADTE,1    IDTE

```

```

* IR04  8 A  Reserved, must be all X'00'
C          MOVELHEX00    IR04
* IDBIT  1 A  D-Bit Support (Delivery conf), X'00'=no
C          BITOF'01234567'IDBIT
* IR05  7 A  Reserved, must be all X'00'
C          MOVELHEX00    IR05
* ICUGIN 1 A  CUG indicator, X'00'=no cugid
C          BITOF'01234567'ICUGIN
* ICUGID 1 A  CUG identifier, X'00', when cugid=X'00'
C          BITOF'01234567'ICUGID
* IRCHRG 1 A  Reverse charge indicator, X'00'=no
C          BITOF'01234567'IRCHRG
* IFSEL  1 A  Fast select indicator, no fast select
C          BITOF'01234567'IFSEL
* IFACL  1 B  X.25 Facilities Length, no facilities
C          BITOF'01234567'IFACL
* IFAC  109 A  X.25 Facilities, no facilities
* IR06  48 A  Reserved, must be all X'00'
C          MOVELHEX00    IR06
* ICUDL  2 B  Call user data length, no CUD
C          Z-ADDO        ICUDL
* ICUD  128 A  Call user data, no CUD
* IR07  128 A  Reserved, must be all X'00'
C          MOVELHEX00    IR07
* ICTRI  1 A  Connection Control Information
*          Bit 0 = off, no rest support in this program
C          BITOF'01234567'ICTRI
* IR08  3 A  Reserved, must be all X'00'
C          MOVELHEX00    IR08
* IMDTA  4 B  Max data unit assembly (user data)
*          SEQUENCE OF PACKAGES
C          Z-ADD1024     IMDTA
* IAUTOF 2 B  Auto Flow Control, 32 is recommended
C          Z-ADD32       IAUTOF
* IR09  30 A  Reserved, must be all X'00'
C          MOVELHEX00    IR09
*
* Copy call data into DU of user data space
* Single data unit, no descriptor unit
C          Z-ADD1        STRPOS
C          Z-ADD512      USDTAL
C          MOVE CZERO     FRCCHG
C          MOVE LISVC     USDTA
*
C          CALL 'QUSCHGUS'
C          PARM           OBUF
C          PARM           STRPOS
C          PARM           USDTAL
C          PARM           USDTA
C          PARM           FRCCHG
*
* Initiate sending out the SVC Call
C          Z-ADD1        NUCEP
C          Z-ADD1        PCEP
* Operation is B000, initiate SVC Call
C          BITOF'01234567'OPRTN1
C          BITON'023'    OPRTN1
C          BITOF'01234567'OPRTN2
C          MOVE OPRTN    OPRTC

```

```

*      it is only one user space data unit
C          Z-ADD1          NUMDU
C          CALL 'QOLSEND'
C          PARM          RTNCDE
C          PARM          RSNCDE
C          PARM          DGNDTA
C          PARM          NPCEP
C          PARM          NUCEP
C          PARM          PCEP
C          PARM          HANDLE
C          PARM          OPRTN
C          PARM          NUMDU
*
C          MOVE *BLANK     MSGERR
C          MOVEL' QOLSEND' MSGERR
C          MOVE 'B000'     MSGERR
C          Z-ADDRSNCDE     UDCRSN
C          Z-ADDRTNCDE     UDCRTN
C          EXFMTUDCERR
*
C          RTNCDE         CABNECZERO     ENDPGM
C*
C          ENDSR
C/EJECT
*****
*      Receive SVC Call Connect
*****
C          CC          BEGSR
C* RECEIVE DATA QUEUE ENTRY
C          Z-ADD-1          WAIT
C          CALL 'QRCVDTAQ'
C          PARM          DATAQN
C          PARM          DATAQL
C          PARM          FLDLN
C          PARM          FLD
C          PARM          WAIT
*
C          CALL 'QOLRECV'
C          PARM          RTNCDE
C          PARM          RSNCDE
C          PARM          UCEP
C          PARM          NPCEP
C          PARM          OPRTN
C          PARM          NUMDU
C          PARM          DAVL1
C          PARM          DGNDTA
C          PARM          HANDLE
*
C          MOVE *BLANK     MSGERR
C          MOVEL' QOLRECV' MSGERR
C          BITON' 7'       OPRTC2
C          OPRTC          IFEQ OPRTN
C          MOVE 'B001'     MSGERR
C          ELSE
C          MOVE 'XXXX'     MSGERR
C          END
C          Z-ADDRSNCDE     UDCRSN
C          Z-ADDRTNCDE     UDCRTN
C          EXFMTUDCERR

```

```

C*
C          RTNCDE    CABNECZERO    ENDPGM
*
* Copy user's data from USRSPC data unit, no descriptor
C          Z-ADD1    STRPOS
C          Z-ADD512  USDTAL
*
C          CALL 'QUSRTVUS'
C          PARM      IBUF
C          PARM      STRPOS
C          PARM      USDTAL
C          PARM      USDTA
*
C          ENDSR
C/EJECT
*****
* Send USER DATA
*****
C          SEND      BEGSR
* COPY USER'S DATA TO DATA UNIT IN DATA SPACE
C          Z-ADD1    STRPOS
C          Z-ADD64   USDTAL
C          MOVEFLD003 USDTA
C          MOVE CZERO FRCCHG
*
C          CALL 'QUSCHGUS'
C          PARM      OBUF
C          PARM      STRPOS
C          PARM      USDTAL
C          PARM      USDTA
C          PARM      FRCCHG
*
* COPY TOTAL DATA LENGTH TO DESCRIPTOR UNIT IN USER SPACE
C          Z-ADD1    STRPOS
C          Z-ADD64   DATAL
C          Z-ADD2    USDTAL
C          MOVE CZERO FRCCHG
*
C          CALL 'QUSCHGUS'
C          PARM      OBUFD
C          PARM      STRPOS
C          PARM      USDTAL
C          PARM      DATAL
C          PARM      FRCCHG
* CALL UDC SEND PROGRAM
C          Z-ADD1    NUCEP
C          Z-ADD1    PCEP
* OPERATION=0000 (SEND USER DATA)
C          BITOF'01234567'OPRTN1
C          BITOF'01234567'OPRTN2
C          Z-ADD1    NUMDU
*
C          CALL 'QOLSEND'
C          PARM      RTNCDE
C          PARM      RSNCE
C          PARM      DGNDA
C          PARM      NPCEP
C          PARM      NUCEP
C          PARM      PCEP

```

```

C          PARM          HANDLE
C          PARM          OPRTN
C          PARM          NUMDU
*
C          MOVE *BLANK   MSGERR
C          MOVE 'QOLSEND' MSGERR
C          MOVE '0000'   MSGERR
C          Z-ADDRSNCDE  UDCRSN
C          Z-ADDRTCNDE  UDCRTN
C          EXFMTUDCERR
C*
C          RTNCDE      CABNECZERO   ENDPGM
C          ENDSR
C/EJECT
*****
* Receive Data
*****
C          RECV      BEGSR
* RECEIVE DATA QUEUE ENTRY
C          Z-ADD-1      WAIT
C          CALL 'QRCVDTAQ'
C          PARM          DATAQN
C          PARM          DATAQL
C          PARM          FLDLN
C          PARM          FLD
C          PARM          WAIT
* RECEIVE DATA
C          CALL 'QOLRECV'
C          PARM          RTNCDE
C          PARM          RSNCDE
C          PARM          UCEP
C          PARM          NPCEP
C          PARM          OPRTN
C          PARM          NUMDU
C          PARM          DAVL1
C          PARM          DGNDDTA
C          PARM          HANDLE
*
C          MOVE *BLANK   MSGERR
C          MOVE 'QOLRECV' MSGERR
C          OPRTNN      IFEQ 1
C          MOVE '0001'   MSGERR
C          ELSE
C          MOVE 'XXXX'   MSGERR
C          END
C          Z-ADDRSNCDE  UDCRSN
C          Z-ADDRTCNDE  UDCRTN
C          EXFMTUDCERR
C*
C          RTNCDE      CABNECZERO   ENDPGM
*
* COPY TOTAL DATA LENGTH FROM DESCRIPTOR UNIT IN USER SPACE
C          Z-ADD1      STRPOS
C          Z-ADD2      USDAL
C          CALL 'QUSRTVUS'
C          PARM          IBUFD
C          PARM          STRPOS
C          PARM          USDAL
C          PARM          DATAL

```

```

*
* COPY USER'S DATA FROM DATA UNIT IN USER SPACE
C          Z-ADD1          STRPOS
C          Z-ADDDATAL      USDTAL
C          CALL 'QUSRTVUS'
C          PARM            IBUF
C          PARM            STRPOS
C          PARM            USDTAL
C          PARM            USDTA
*
C          ENDSR
C/EJECT
*****
* SEND CLEAR REQUEST
*****
C          CLEAR          BEGSR
I* RR01  2 A  Reserved, should be X'0000'
C          MOVE HEX00     RR01
I* RCC   1 A  X.25 Cause Code - WAS WAERE RICHTIG?
C          BITOF'01234567'RCC
I* RDC   1 A  X.25 Diagnostic Code - WAS WAERE RICHTIG?
C          BITOF'01234567'RDC
I* RR02  4 A  Reserved, should be X'00000000'
C          MOVE HEX00     RR02
* RFACL  1 B  X.25 Facilities Length
C          BITOF'01234567'RFACL
* RFAC 109 A  X.25 Facilities
C          MOVE HEX00     RFAC
* RR03  48 A  Reserved, should be X'00..
C          MOVE HEX00     RR03
* RUDTAL 2 B  Clear User Data Length, value 0-128
C          Z-ADDO         RUDTAL
* RUDTA128 A  Clear User Data
C          MOVE HEX00     RUDTA
* RR04 216 A  Reserved, should be X'00..
C          MOVE HEX00     RR04
C          MOVE HEX00     RR04
*
* Copy call data into DU of user data space
* Single data unit, no descriptor unit
C          Z-ADD1          STRPOS
C          Z-ADD512        USDTAL
C          MOVE CZERO      FRCCHG
C          MOVELCRDTA      USDTA
*
C          CALL 'QUSCHGUS'
C          PARM            OBUF
C          PARM            STRPOS
C          PARM            USDTAL
C          PARM            USDTA
C          PARM            FRCCHG
*
* Initiate sending out the CLEAR REQUEST
C          Z-ADD1          NUCEP
C          Z-ADD1          PCEP
* Operation is B100, SEND CLEAR REQUEST
C          BITOF'01234567'OPRTN1
C          BITON'0237'     OPRTN1
C          BITOF'01234567'OPRTN2

```



```

C          MOVE OPRTN      OPRTC
*  it is only one user space data unit
C          Z-ADD1         NUMDU
C          CALL 'QOLSEND'
C          PARM           RTNCDE
C          PARM           RSNCDE
C          PARM           DGNDTA
C          PARM           NPCEP
C          PARM           NUCEP
C          PARM           PCEP
C          PARM           HANDLE
C          PARM           OPRTN
C          PARM           NUMDU
*
C          MOVE *BLANK     MSGERR
C          MOVE 'QOLSEND'  MSGERR
C          MOVE 'B100'     MSGERR
C          Z-ADDRSNCDE     UDCRSN
C          Z-ADDRTNCDE     UDCRTN
C          EXFMTUDCERR
*
C          RTNCDE         CABNECZERO     ENDPGM
C*
C          ENDSR
C/EJECT
*****
*  Receive CLEAR CONFIRMATION
*****
C          CLEARC         BEGSR
C* RECEIVE DATA QUEUE ENTRY
C          Z-ADD-1         WAIT
C          CALL 'QRCVDTAQ'
C          PARM           DATAQN
C          PARM           DATAQL
C          PARM           FLDLN
C          PARM           FLD
C          PARM           WAIT
*
C          CALL 'QOLRECV'
C          PARM           RTNCDE
C          PARM           RSNCDE
C          PARM           UCEP
C          PARM           NPCEP
C          PARM           OPRTN
C          PARM           NUMDU
C          PARM           DAVL1
C          PARM           DGNDTA
C          PARM           HANDLE
*
C          MOVE *BLANK     MSGERR
C          MOVE 'QOLRECV'  MSGERR
C          BITON' 7'       OPRTC2
C          OPRTC          IFEQ OPRTN
C          MOVE 'B101'     MSGERR
C          ELSE
C          MOVE 'XXXX'     MSGERR
C          END
C          Z-ADDRSNCDE     UDCRSN
C          Z-ADDRTNCDE     UDCRTN

```

```

C                               EXFMTUDCERR
C*
C           RTNCDE   CABNECZERO   ENDPGM
*
* Copy user's data from USRSPC data unit, no descriptor
C                               Z-ADD1   STRPOS
C                               Z-ADD512  USDTAL
*
C                               CALL 'QUSRTVUS'
C                               PARM       IBUF
C                               PARM       STRPOS
C                               PARM       USDTAL
C                               PARM       USDTA
*
C                               ENDSR
C/EJECT
*****
* Disable the link
*****
C           DLINK   BEGSR
* Disable type = 00, do not vary off NETWORK DEVD
C           Z-ADD0   OPTN2
* Call Disable Link UDC program
C           CALL 'QOLDLINK'
C           PARM     RTNCDE
C           PARM     RSNODE
C           PARM     HANDLE
C           PARM     OPTN1
*
C           MOVE *BLANK  MSGERR
C           MOVE 'QOLDLINK' MSGERR
C           Z-ADDRSNCDE  UDCRSN
C           Z-ADDRTNCDE  UDCRTN
C           EXFMTUDCERR
*
C                               ENDSR

```

26.3 Operation

Make sure line X25LINE is varied on. Then call the UDC program by entering:

```
call cmnlib/x25udc
```

After each UDC call, the program displays operation and return codes to the display station user. Press ENTER to continue.

```
ECHO          Swiss PTT - Telepac, Test-Tool "Mallette"          26.11.92
                                     Echo Function

Error Received

QOLSEND                                             B000

Reason Code          0000

Return Code          0000

Press ENTER or CF 3 to terminate
```

Figure 225. X.25 Call Request successfully submitted

```
ECHO          Swiss PTT - Telepac, Test-Tool "Mallette"          26.11.92
                                     Echo Function

Enter the character string (64) to be sent as a data packet and
to be echoed by the test-tool:

Guten Tag liebe Freunde

Echo: Guten Tag liebe Freunde

Press CF 3 to terminate
```

Figure 226. Entered user data successfully echoed by MALLETTTE

Chapter 27. CPI-C

With the announcement of OS/400 Version 2 Release 1, AS/400 has the ability to use the **SAA CPI-C** (Common Programming Interface for Communications) to support program-to-program communications via SNA LU 6.2 sessions.

Prior to the OS/400 V2 R1, OS/400 programs used the **ICF** (Intersystem Communications Function) to communicate with other programs over SNA LU 6.2 sessions.

27.1 Overview

The example documented in this chapter shows a file transfer between AS/400s.

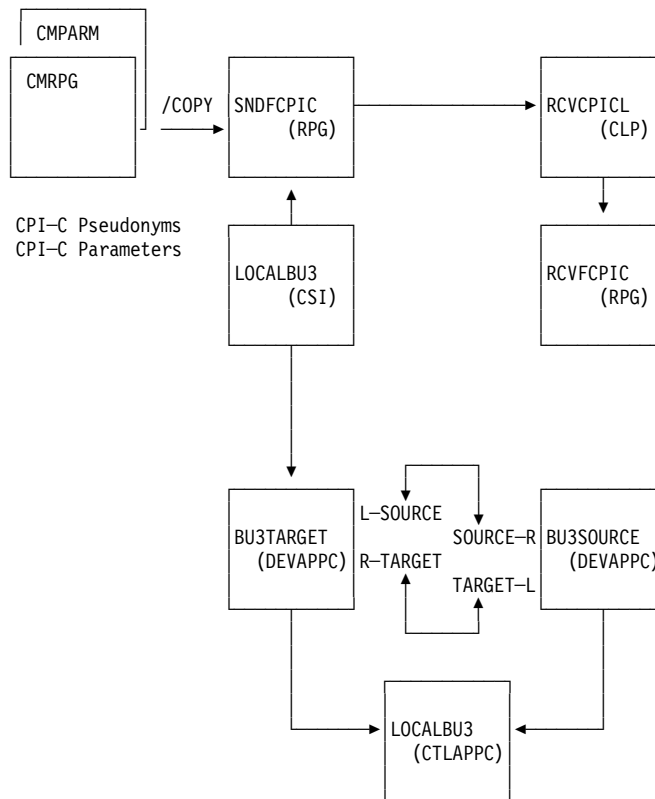


Figure 227. Send/Receive File CPI-C Sample Programs

27.2 AS/400 Definitions

27.2.1 Communications Side Information (CSI) LOCALBU3

CL command to create the Communications Side Information:

```
CRTCSI  CSI(QCMNLIB/LOCALBU3) RMTLOCNAME(TARGET)
        DEV(BU3TARGET) LCLLOCNAME(SOURCE)
```

CL command to work with the Communications Side Information:

```
WRKCSI  CSI(QCMNLIB/LOCALBU3)
```

```

                                Work with Communications Side Information                                DSP06

Type options, press Enter.
  1=Create  2=Change  4=Delete  5=Display  6=Print

      Side
Opt  Info      Library  Text
-----
  5  AS400BU4  CMNLIB   Generic CSI for AS400BU4
     LOCALBU3  CMNLIB   Local CSI for CPI-C Tests

                                                                Bottom

Parameters for options 1, 2 and 5 or command
===>
F3=Exit    F4=Prompt  F5=Refresh  F9=Retrieve  F11=Display names only
F12=Cancel F16=Repeat position to  F17=Position to

```

Figure 228 (Part 1 of 2). CPI-C, AS/400 Definitions, Communications Side Information

```

                                Communications Side Information

Side information . . . . . : LOCALBU3
  Library . . . . . : CMNLIB
Remote location . . . . . : TARGET
Transaction program . . . . . : CMNLIB/RCPICL
Device . . . . . : BU3TARGET
Local location . . . . . : SOURCE
Mode . . . . . : *NETATR
Remote network identifier . . . . . : *LOC
Text . . . . . : Local CSI for CPI-C Tests

```

Figure 228 (Part 2 of 2). CPI-C, AS/400 Definitions, Communications Side Information

27.2.2 Local APPC Controller and Devices

```

VRYCFG      CFGOBJ(LOCALBU3) CFGTYPE(*CTL) STATUS(*OFF)

DLTCTLD     CTLD(LOCALBU3)
MONMSG      MSGID(CPF0000)

DLTDEVD     DEVD(BU3SOURCE)
MONMSG      MSGID(CPF0000)

```

```

DLTDEVD    DEVD(BU3TARGET)
MONMSG     MSGID(CPF0000)

CRTCTLAPPC CTLD(LOCALBU3) LINKTYPE(*LOCAL) TEXT('Local +
          APPC Controller for CPI-C Tests')

CRTDEVAPPC DEVD(BU3SOURCE) RMTLOCNAME(SOURCE) +
          LCLLOCNAME(TARGET) CTL(LOCALBU3) +
          APPN(*NO) TEXT('Source Device for CPI-C +
          Test')

CRTDEVAPPC DEVD(BU3TARGET) RMTLOCNAME(TARGET) +
          LCLLOCNAME(SOURCE) CTL(LOCALBU3) +
          APPN(*NO) TEXT('Target Device for CPI-C +
          Test')

VRYCFG     CFGOBJ(LOCALBU3) CFGTYPE(*CTL) STATUS(*ON)

```

27.3 User Programs

27.3.1 Send File, RPG/400 CPI-C Program

```

*
* PROGRAM:      SNDFCPIC
*
* DESCRIPTION: PROGRAM SENDS A DB FILE RECORDS TO A TARGET PROGRAM
*
*
* STEPS TO BE PERFORMED:
*   A) INITIATE CONVERSATION (CMINIT)
*   B) SET TARGET TP NAME (CMSTPN)
*   C) START REMOTE TP (CMALLC)
*   D) READ RECORD FROM PF, IF EOF -----|
*       SEND RECORD TO TARGET SYSTEM (CMSEND)
*
*   E) SEND DETACH, END OF CONVERSATION (CMDEAL) --|
*
*
* FILE TO BE TRANSMITTED
FSNDPF  IF  E                      DISK
*   ERROR LOG PROTOCOL
FQPRINT 0  F    132                PRINTER
*
* INCLUDE SYSTEM-SUPPLIED CPIC PSEUDONYMS
*
I/COPY QRPG/QIRGINC,CMRPG
*
*
* CPIC CALL PARAMETER DEFINITIONS
*
I/COPY CMNLIB/QRPGSRC,COMPARM
*
* PROGRAM INFORMATION DATA STRUCTURE
IPGMDS   SDS
I
I
I
          *PROGRAM PGMNAM
          244 253 JOBNAM
          254 263 USERID

```

```

I                                     264 269 JOBNUM
I                                     276 2810JOBDE
I                                     282 2870JOBTME
*
* TARGET PROGRAM NAME
*
I           'CMNLIB/RCVFCPICL'      C           TRPGNM
*
* INITIATE CONVERSATION
C           MOVE 'LOCALBU3' SYMDST
*
C           CALL 'CMINIT'
C           PARM           CNVID
C           PARM           SYMDST
C           PARM           RTNCDE
*
C           MOVE 'CMINIT'  CPICFT  6
C           RTNCDE  CABNECMOK  ERROR
*
* SET TARGET TRANSACTION PROGRAM NAME
C           MOVE *BLANKS  TPN
C           Z-ADD16      TPNLEN
C           MOVE TRPGNM  TPN
*
C           CALL 'CMSTPN'
C           PARM           CNVID
C           PARM           TPN
C           PARM           TPNLEN
C           PARM           RTNCDE
*
C           MOVE 'CMSTPN'  CPICFT
C           RTNCDE  CABNECMOK  ERROR
*
* INITIATE TARGET PROGRAM
C           CALL 'CMALLC'
C           PARM           CNVID
C           PARM           RTNCDE
*
C           MOVE 'CMALLC'  CPICFT
C           RTNCDE  CABNECMOK  ERROR
*
* READ AND SEND UNTIL EOF REACHED
C           *IN90  DOWEQ'0'
C           READ DATAF           90
C           Z-ADD128  REQLEN
*
C N90           CALL 'CMSEND'
C           PARM           CNVID
C           PARM           DATA
C           PARM           REQLEN
C           PARM           REQTSR
C           PARM           RTNCDE
*
C           MOVE 'CMSEND'  CPICFT
C           RTNCDE  CABNECMOK  ERROR
C           END
*
* DETACH CONVERSATION
C           CALL 'CMDEAL'

```



```

C          PARM          CNVID
C          PARM          RTNCDE
*
C          MOVE 'CMDEAL' CPICFT
*
C          SETON          LR
C          RETRN
*
* ERROR SUBROUTINE
C          ERROR        TAG
C          EXCPTMMERR
C          SETON          LR
C          RETRN
*
QQPRINT  E  03          MMERR
0          5 'JOB: '
0          JOBNAM       15
0          16 '.'
0          USERID      26
0          27 '.'
0          JOBNUM      37
0          50 'PROGRAM: '
0          PGMNAM      61
*
QQPRINT  E  1          MMERR
0          10 'DATE: '
0          JOBDTEY     19
0          27 'TIME: '
0          JOBTME     36 ' : : '
0          58 'LAST CPI-C FUNCTION:'
0          CPICFT     65
*
QQPRINT  E  1          MMERR
0          26 'CONVERSATION-ID '
0          CNVID      40
QQPRINT  E  1          MMERR
0          26 'RETURN-CODE '
0          RTNCDE1    40
QQPRINT  E  1          MMERR
0          26 'TP-NAME '
0          TPN        92
QQPRINT  E  1          MMERR
0          26 'SYM-DEST-NAME '
0          SYMDST     40

```

27.3.2 Receive File, RPG/400 CPI-C Program

```

*
* PROGRAM:      RCVFCPIC
*
* DESCRIPTION:  THE PROGRAM RECEIVES DB-RECORDS FROM A SOURCE
*              PROGRAM, IN AN OTHER AS/400 OR IN THE OWN SYSTEM.
*
*
* STEPS TO BE PERFORMED:
*
* A) INITIATE THE CONVERSATION          (CMACCP)
* B) SET PREPARE_TO_RECEIVE_TYPE CALL  (CMSPTR)
* C) SET_SEND-TYPE CALL                 (CMSST)

```

```

*   D) WAITING FOR INCOMING DATA           (CMRCV)
*   E) WRITE DATA TO DB-FILE
*   F) DEALLOCATE SESSION                   (CMDEAL)
*
*   OUTPUTFILE WITH RECEIVED DATA
FRCVPF  0  E                               DISK
*
*   ERROR LOG PROTOCOL
FQPRINT 0  F   132                           PRINTER
*
*   INCLUDE SYSTEM-SUPPLIED CPIC PSEUDONYMS
I/COPY QRPQ/QIRGINC,CMRPG
*
*   CPIC CALL PARAMETER DEFINITIONS
I/COPY CMNLIB/QRPGSRC,COMPARM
*
I                                               B 186 1890PRERCV
*
*   PROGRAM INFORMATION DATA STRUCTURE
IPGMDS   SDS
I                                               *PROGRAM PGMNAM
I                                               244 253 JOBNAM
I                                               254 263 USERID
I                                               264 269 JOBNUM
I                                               276 2810JOB DTE
I                                               282 2870JOB TME
*
*****
*
*   START OF PROGRAM
*
*   START OF CONVERSATION
C           EXSR STRCNV
C           RTNCDE  CABNECMOK      ERROR
*
*   GET DATA
C           READ    TAG
C           EXSR GETDTA
C           STSRCV  CABEQSNDREC    END
C           RTNCDE  CABEQDENORM    END
C           RTNCDE  CABNECMOK      ERROR
*
*   WRITE DATA
C           EXSR WRTDTA
C           GOTO READ
*
*   END OF CONVERSATION AND END OF PROGRAM
C           END    TAG
C           EXSR WRTDTA
C           EXSR ENDPGM
C           SETON                                     LR
C           RETRN
*
*
*   ERROR ROUTINE
C           ERROR  TAG
C           EXCPTMMERR
C           SETON                                     LR

```

```

C                                RETRN
*
*****
*
* START OF CONVERSATION
*
CSR          STRCNV    BEGSR
CSR          CALL 'CMACCP'
CSR          PARM          CNVID
CSR          PARM          RTNCDE
CSR          MOVE 'CMACCP' CPICFT 6
CSR          RTNCDE    CABNECMOK    ERRSTR
*
* PREPARE-TO RECEIVE
*
CSR          Z-ADDPTRFLS  PRERCV
CSR          CALL 'CMSPTR'
CSR          PARM          CNVID
CSR          PARM          PRERCV
CSR          PARM          RTNCDE
CSR          MOVE 'CMSPTR' CPICFT
CSR          RTNCDE    CABNECMOK    ERRSTR
*
* SEND-TYPE SET TO RECEIVE
*
CSR          Z-ADDSNDPTR  SNDTYP
CSR          CALL 'CMSST'
CSR          PARM          CNVID
CSR          PARM          SNDTYP
CSR          PARM          RTNCDE
CSR          MOVE 'CMSST ' CPICFT
CSR          RTNCDE    CABNECMOK    ERRSTR
*
*
CSR          ERRSTR    TAG
*
*
CSR          ENDSR
*
*****
*
* GET DATA
*
CSR          GETDTA    BEGSR
CSR          Z-ADD128    REQLEN
CSR          CALL 'CMRCV'
CSR          PARM          CNVID
CSR          PARM          DATA
CSR          PARM          REQLEN
CSR          PARM          DATRCV
CSR          PARM          RCVLEN
CSR          PARM          STSRCV
CSR          PARM          REQTSR
CSR          PARM          RTNCDE
CSR          MOVE 'CMRCV ' CPICFT
*
*
CSR          ENDSR
*

```

```

*****
*
* WRITE DATA TO DB-FILE
*
*
CSR      WRTDTA    BEGSR
CSR      WRITERCVF
*
*
CSR      ENDSR
*
*****
*
* END OF CONVERSATION AND END OF PROGRAM
*
CSR      ENDPGM    BEGSR
CSR      CALL 'CMDEAL'
CSR      PARM      CNVID
CSR      PARM      RTNCDE
CSR      MOVE 'CMDEAL' CPICFT
*
CSR      ENDSR
*
QQPRINT E 03      MMERR
0
0                JOBNAM  5 'JOB: '
0                15
0                16 '.'
0                USERID  26
0                27 '.'
0                JOBNUM  37
0                50 'PROGRAM: '
0                61
*
QQPRINT E 1      MMERR
0                10 'DATE: '
0                JOBDEY  19
0                27 'TIME: '
0                36 ' : : '
0                58 'LAST CPI-C FUNCTION:'
0                65
*
QQPRINT E 1      MMERR
0                26 'CONVERSATION-ID '
0                CNVID   40
QQPRINT E 1      MMERR
0                26 'RETURN-CODE '
0                RTNCDE1 40
QQPRINT E 1      MMERR
0                26 'TP-NAME '
0                TPN     92
QQPRINT E 1      MMERR
0                26 'SYM-DEST-NAME '
0                SYMDST  40

```

27.3.3 Receive File, Target CL Program RCVCPICL

```
PGM
OVRDBF FILE(RCVPF) TOFILE(CMNLIB/RCVPF)
CLRPFM FILE(CMNLIB/RCVPF)
CALL PGM(CMNLIB/RCVFCPIC)
ENDPGM
PGM
```

27.4 System-Supplied CPI-C Pseudonyms

```
I*
I* RPG INCLUDE FOR SAA COMMUNICATIONS SUPPORT
I*
ICMCONS DS
I*****
I* conversation_type values:
I*
I* CM_BASIC_CONVERSATION -- VALUE 0 (BASIC)
I* CM_MAPPED_CONVERSATION -- VALUE 1 (MAPPED)
I*
I 0 C BASIC
I 1 C MAPPED
I*****
I* data_received values:
I*
I* CM_NO_DATA_RECEIVED -- VALUE 0 (NODATA)
I* CM_DATA_RECEIVED -- VALUE 1 (DATREC)
I* CM_COMPLETE_DATA_RECEIVED -- VALUE 2 (COMDAT)
I* CM_INCOMPLETE_DATA_RECEIVED -- VALUE 3 (INCDAT)
I*
I 0 C NODATA
I 1 C DATREC
I 2 C COMDAT
I 3 C INCDAT
I*****
I* deallocate_type values:
I*
I* CM_DEALLOCATE_SYNC_LEVEL -- VALUE 0 (DESYNC)
I* CM_DEALLOCATE_FLUSH -- VALUE 1 (DEFLUS)
I* CM_DEALLOCATE_CONFIRM -- VALUE 2 (DECONF)
I* CM_DEALLOCATE_ABEND -- VALUE 3 (DEABTY)
I*
I 0 C DESYNC
I 1 C DEFLUS
I 2 C DECONF
I 3 C DEABTY
I*****
I* error_direction values:
I*
I* CM_RECEIVE_ERROR -- VALUE 0 (RCVERR)
I* CM_SEND_ERROR -- VALUE 1 (SNDERR)
I*
I 0 C RCVERR
I 1 C SNDERR
I*****
I* fill values:
I*
I* CM_FILL_LL -- VALUE 0 (FILLL)
```

```

I*   CM_FILL_BUFFER                -- VALUE 1   (FILBUF)
I*
I       0                          C          FILLL
I       1                          C          FILBUF
I*****
I* prepare_to_receive_type values:
I*
I*   CM_PREP_TO_RECEIVE_SYNC_LEVEL -- VALUE 0   (PTRSL)
I*   CM_PREP_TO_RECEIVE_FLUSH     -- VALUE 1   (PTRFLS)
I*   CM_PREP_TO_RECEIVE_CONFIRM   -- VALUE 2   (PTRCON)
I*
I       0                          C          PTRSL
I       1                          C          PTRFLS
I       2                          C          PTRCON
I*****
I* receive_type values:
I*
I*   CM_RECEIVE_AND_WAIT           -- VALUE 0   (RCVWAT)
I*   CM_RECEIVE_IMMEDIATE         -- VALUE 1   (RCVIMM)
I*
I       0                          C          RCVWAT
I       1                          C          RCVIMM
I*****
I* request_to_send_received values:
I*
I*   CM_REQ_TO_SEND_NOT_RECEIVED   -- VALUE 0   (RTSNOT)
I*   CM_REQ_TO_SEND_RECEIVED      -- VALUE 1   (RTSREC)
I*
I       0                          C          RTSNOT
I       1                          C          RTSREC
I*****
I* return_code values:
I*
I*   CM_OK                         -- VALUE 0   (CMOK)
I*   CM_ALLOCATE_FAILURE_NO_RETRY  -- VALUE 1   (ALFLNR)
I*   CM_ALLOCATE_FAILURE_RETRY    -- VALUE 2   (ALFLRE)
I*   CM_CONVERSATION_TYPE_MISMATCH -- VALUE 3   (CNVMIS)
I*   CM_PIP_NOT_SPECIFIED_CORRECTLY -- VALUE 5   (PIPNSC)
I*   CM_SECURITY_NOT_VALID        -- VALUE 6   (SECNLV)
I*   CM_SYNC_LVL_NOT_SUPPORTED_LU  -- VALUE 7   (SLNSLU)
I*   CM_SYNC_LVL_NOT_SUPPORTED_PGM -- VALUE 8   (SLNSPU)
I*   CM_TPN_NOT_RECOGNIZED        -- VALUE 9   (TPNAME)
I*   CM_TP_NOT_AVAILABLE_NO_RETRY  -- VALUE 10  (TPNORE)
I*   CM_TP_NOT_AVAILABLE_RETRY    -- VALUE 11  (TPRET)
I*   CM_DEALLOCATED_ABEND         -- VALUE 17  (DEABND)
I*   CM_DEALLOCATED_NORMAL        -- VALUE 18  (DENORM)
I*   CM_PARAMETER_ERROR           -- VALUE 19  (PARERR)
I*   CM_PRODUCT_SPECIFIC_ERROR    -- VALUE 20  (PRODER)
I*   CM_PROGRAM_ERROR_NO_TRUNC    -- VALUE 21  (PENOTR)
I*   CM_PROGRAM_ERROR_PURGING     -- VALUE 22  (PEPURG)
I*   CM_PROGRAM_ERROR_TRUNC       -- VALUE 23  (PETRNC)
I*   CM_PROGRAM_PARAMETER_CHECK    -- VALUE 24  (PEPCHK)
I*   CM_PROGRAM_STATE_CHECK       -- VALUE 25  (STACHK)
I*   CM_RESOURCE_FAILURE_NO_RETRY  -- VALUE 26  (RFNORE)
I*   CM_RESOURCE_FAILURE_RETRY    -- VALUE 27  (RFRET)
I*   CM_UNSUCCESSFUL              -- VALUE 28  (UNSUCC)
I*   CM_DEALLOCATED_ABEND_SVC     -- VALUE 30  (DABSVC)
I*   CM_DEALLOCATED_ABEND_TIMER   -- VALUE 31  (DABTIM)
I*   CM_SVC_ERROR_NO_TRUNC        -- VALUE 32  (SVCENT)

```

```

I* CM_SVC_ERROR_PURGING          -- VALUE 33 (SVCEP)
I* CM_SVC_ERROR_TRUNC           -- VALUE 34 (SVCET)
I*
I          0                     C          CMOK
I          1                     C          ALFLNR
I          2                     C          ALFLRE
I          3                     C          CNVMIS
I          5                     C          PIPNSC
I          6                     C          SECNVL
I          7                     C          SLNSLU
I          8                     C          SLNSP
I          9                     C          TPNAME
I         10                     C          TPNORE
I         11                     C          TPRET
I         17                     C          DEABND
I         18                     C          DENORM
I         19                     C          PARERR
I         20                     C          PRODER
I         21                     C          PENOTR
I         22                     C          PEPURG
I         23                     C          PETRNC
I         24                     C          PEPCHK
I         25                     C          STACHK
I         26                     C          RFNORE
I         27                     C          RFRET
I         28                     C          UNSUCC
I         30                     C          DABSVC
I         31                     C          DABTIM
I         32                     C          SVCENT
I         33                     C          SVCEP
I         34                     C          SVCET
I*****
I* return_control values:
I*
I* CM_WHEN_SESSION_ALLOCATED    -- VALUE 0 (SESALL)
I* CM_IMMEDIATE                 -- VALUE 1 (IMMED)
I*
I          0                     C          SESALL
I          1                     C          IMMED
I*****
I* send_type values:
I*
I* CM_BUFFER_DATA               -- VALUE 0 (BUFDAT)
I* CM_SEND_AND_FLUSH           -- VALUE 1 (SNDFLS)
I* CM_SEND_AND_CONFIRM         -- VALUE 2 (SNDCNF)
I* CM_SEND_AND_PREP_TO_RECEIVE -- VALUE 3 (SNDPTR)
I* CM_SEND_AND_DEALLOCATE      -- VALUE 4 (SNDDEL)
I*
I          0                     C          BUFDAT
I          1                     C          SNDFLS
I          2                     C          SNDCNF
I          3                     C          SNDPTR
I          4                     C          SNDDEL
I*****
I* status_received values:
I*
I* CM_NO_STATUS_RECEIVED        -- VALUE 0 (NOSTAT)
I* CM_SEND_RECEIVED            -- VALUE 1 (SNDREC)
I* CM_CONFIRM_RECEIVED          -- VALUE 2 (CONRCV)

```

```

I* CM_CONFIRM_SEND_RECEIVED      -- VALUE 3  (CONSND)
I* CM_CONFIRM_DEALLOC_RECEIVED  -- VALUE 4  (CONDEL)
I*
I          0                    C          NOSTAT
I          1                    C          SNDREC
I          2                    C          CONRCV
I          3                    C          CONSND
I          4                    C          CONDEL
I*****
I* sync_level values:
I*
I* CM_NONE                      -- VALUE 0  (NONE)
I* CM_CONFIRM                   -- VALUE 1  (CONFRM)
I*
I          0                    C          NONE
I          1                    C          CONFRM

```

27.5 CPI-C Call Parameter

```

ICMPARM      DS
*
* conversation_id
I              1  8 CNVID
* conversation_state
I              B  9 120CNVSTE
* conversation_type
I              B 13 160CNVTYP
* data_received
I              B 17 200DATRCV
* deallocate_type
I              B 21 240DLCTYP
* error_direction
I              B 25 280ERRDIR
* fill (basic conversation)
I              B 29 320FILL
* mode_name
I              33 40 MODNM
* mode_name_length
I              B 41 440MODNML
* partner_LU_name
I              45 61 PLUNM
* partner_LU_name_length
I              B 62 650PLUNML
* prepare_to_receive_type
I              B 66 690PRPTRT
* received_length
I              B 70 730RCVLEN
* receive_type
I              B 74 770RCVTYP
* requested_length (max to receive)
I              B 78 810REQLEN
* request_to_send_received
I              B 82 850REQTSR
* return_code
I              B 86 890RTNCDE
* return_control
I              B 90 930RTNCTL
* send_length

```


I		B 94 970SNDLEN
	* send_type	
I		B 98 1010SNDTYP
	* status_received	
I		B 102 1050STSRCV
	* sym_dest_name	
I		106 113 SYMDST
	* sync_level	
I		B 114 1170SYNLVL
	* TP name	
I		118 181 TPN
	* TP name length	
I		B 182 1850TPNLEN

Appendix A. AS/400 Communications Bibliography

This appendix provides a bibliography of IBM publications related to the AS/400 in the area of communications.

A.1 General Aspects and Architectures

A.1.1 Cables, Modems and ISDN Terminal Adapter

- GA33-0054 Power and Modem Cables
- GA33-0082 5811/12 Setup, Problem
- GA33-0081 5811/12 Description

- GA33-0130 7820 ISDN TA, Description and Planning
- SY33-2065 7820 ISDN TA, Maintenance Info and Parts Catalog
- SH33-7011 7820 ISDN TA, Service Program Guide
- SA33-0131 7820 ISDN TA, Setup, User's Guide & Problem Analysis

- GA33-0122 7861 Modem, Description and Planning
- SA33-0123 7861 Modem, Setup, User's Guide & Problem Analysis
- SY33-2062 7861 Modem, Maintenance Info and Parts Catalog

- GH11-3027 5858 Guide to Operation
- SY12-8246 5858 Parts and Maintenance

- SY33-2064 LPDA

A.1.2 General, Self-Study

- GC21-5169 General Data Communications Concepts
- SY31-0634 Study Introduction to Data Communications
- GR20-4640 Intro to Crypto
- Z229-4540 General TP Service Information Manual
- ZZ19-8308 Midrange System Connectivity
- SC30-3276 Interchange Architecture Reference

A.1.3 TRLAN/Ethernet

- GA27-3732 IBM TRN LAN Technology
- SC30-3374 TRN Architecture Reference
- GG22-9422 802.3 Considerations
- GG24-3178 LAN Concepts and Products
- GG24-3291 IBM TRLAN Products, Installation Guidelines

- GG24-3398 Multi-segment LAN Design Guidelines
- ZZ81-0234 LAN SNA Gateways, Design and Performance
- ZZ78-0355 IBM TRLAN Gateways and Bridges

A.1.4 DIA/DCA, IIA

- GC23-0758 DCA RFT Reference
- GC23-0757 DCA FFT Reference

- GG24-3503 Information Interchange Architecture (IIA)
- SC31-6803 DS&OA: Presentation Text OCA
- SC31-6804 DS&OA: Graphics OCA
- SC31-6802 DS&OA: Mixed Object DCA
- SC31-6805 DS&OA: Image OCA
- SC31-6806 DS&OA: Formatted Data OCA
- S544-3417 DS&OA: IPDS

A.1.5 BSC, SDLC, SNA, X.25

- GA27-3004 BSC General Information
- GA27-3093 SDLC Concept
- GA27-3136 SNA Reference Summary
- GA27-3761 SNA and X.25 1984, GI
- GC20-1868 SNA Sessions between Logical Units
- GG22-9105 APPC, SNADS, DIA, DCA
- GG22-9137 LEN and APPN
- GC30-3073 SNA Technical Overview
- GC30-3084 LU 6.2 Programmer's Reference
- SC30-3269 SNA Format & Protocol Reference
- SC30-3346 SNA Management Service Reference
- SC30-3409 SNA and X.25 1984, Architecture
- SC30-3422 PU T2.1 Architecture
- GG24-3669 SNA/APPN Architecture and Implementation (Tutorial)
- ZZ27-7425 SNA NetID Registration, incl APPN
- LY43-0081 SNA Network Product Formats
- GC31-6809 SNA/MS, Alert Implementation Guide

A.1.6 SNADS

- SC30-3098 SNADS Format and Protocol

A.1.7 DDM, DRDA

- GC21-9527 DDM General Information
- SC21-9529 DDM Implementation Programmer's Guide
- SC21-9526 DDM Reference

- SC21-9643 DDM/PC User's Guide
- SC21-9644 DDM/PC Technical Reference
- SC33-0695 CICS/DDM R1 User's Guide

- SC26-4651 DRDA Reference
- SC26-4417 Concepts of Distributed Data

A.1.8 SAA

- SC09-1308 CPI-C Reference L2
- SC09-1390 CDRA L1 Reference
- SC09-1391 CDRA L1 Registry
- GC09-1392 CDRA Executive Overview
- GC23-0576 SAA Intro to SystemView
- SC26-4399 CPI Communication Reference
- GC26-4341 SAA, An Overview
- GC26-4531 AD/Cycle Concepts
- SC33-6472 SystemView End-Use Dimension, Consistency Guide/Concepts
- ZZ05-0472 SE's Guide to SAA Information

A.1.9 Open System, MVI General

- GG22-9142 OSI and IBM Program Products
- GG24-3376 TCP/IP Tutorial and Technical Overview
- G325-4130 AS/400 - Consultant Report on Open System
- G325-4131 AS/400 - Consultant Report on Client/Server
- ZZ81-0243 OSI/CS Implementation of Mgmt & X.500 (1989)

A.2 IBM 5250 System

- GA21-9246 5250 Introduction
- GA21-9337 5250 Planning
- SA21-9247 5250 Functional Reference
- GA21-9289 5251-12 Display Station Setup
- GA09-1652 5251-12 X.25 Attachment, Operator's Guide

- GA09-1653 5251-12 X.25 Attachment
- GA09-1654 5251-12 X.25 Planning

- GA21-9369 5294 Setup
- GA21-9370 5294 Operator's Guide
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- GA27-3852 5394 User's Guide
- SC30-3488 5394 Functions Reference
- SC30-3531 5394 T2.1 Support RPQ
- SK2T-0316 5394 Introduction and Planning
- SY27-0322 5394 Maintenance Library

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- SA21-9600 5159 User's Guide
- SY31-0708 5159 Maintenance

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- GA23-0218 3174 Functions Description
- GA27-3850 3174 Introduction
- GX20-1878 3270 Reference Summary
- GG24-3702 3174 APPN Implementation Guide (1991)

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- GA19-5486 AS/400 System Handbook
- G320-9866 AS/400 Connectivity, Presentation Guide
- GA21-9607 SAA SystemView and AS/400
- SC41-9993 Central Site Distribution Guide
- ZC21-8166 AS/400 Performance Capabilities Reference
- ZZ25-8859 Personalized Learning Series, AS/400 Networking
- SC09-1349 RPG/400 Reference
- SC09-1340 RPG/400 User's Guide
- SC09-1347 C/400 User's Guide
- SC41-0030 CL Reference
- SC41-8077 CL Programmer's Guide
- SC41-8078 Work Management Guide
- SC41-8080 Cryptographic Support User's Guide
- SC41-8084 Performance Tools Guide
- SC41-8201 SystemView System Mgmt Guide
- SC41-9620 DDS Specifications Reference
- SA41-9922 IBM 9404 ASCII Workstation Guide
- SA41-9944 Twinax Controller Prt Tester User's Guide
- SA41-0005 IBM 9402, Attaching Wrkstn and Comms Cables
- SA41-0004 IBM 9404, Attaching Wrkstn and Comms Cables
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- SA21-9987 AS/400 3270 DE and RJE to /370
- SA21-9582 Using DSPT and ODF with APPN
- SC41-0001 Communications Configuration Reference
- SC41-0002 Remote Workstation Guide

- SC41-0003 ISDN Guide
- SC41-0004 LAN Guide
- SC41-0005 X.25 Network Guide
- SC41-0024 Management Guide
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- SC41-0027 Communications API Guide
- SC41-0053 Central SAT/400 Installation
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- SC41-8099 Finance Support User's Guide
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- SC41-9868 POS Communications Utility User's Guide
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- SC09-1168 RJEF User's Guide
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- SC41-9758 Office Services Concepts and Programmer's Guide
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- SC41-0006 PCS/400 Installation, DOS
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- SC41-8199 PCS/400 User's Guide for DOS
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- SH19-6765 INS Attaching OS/2 Workstations
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- LY44-0597 Diagnostic Aids, Volume 1
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- SY44-3902 Service Function User's Guide

- SL23-0187 OSICS/400 Configuration and Administration
- SL23-0189 OSICS/400 Operation
- SH19-6703 OSIFS/400 User's Guide
- SH19-6704 OSIFS/400 Programmer's Guide
- SC41-0026 OSIMS/400 User's Guide

- SL23-0192 OSI CS Abstract Syntax Checker Reference
- SL23-0202 OSI CS C Language Examples
- SL23-0201 OSI CS COBOL Language Examples
- SL23-0191 OSI CS Programming Concepts and Guide
- SL23-0190 OSI CS Programming Reference
- SL23-0193 OSI CS Programming with Starter Set
- SL23-0207 OSI Trace Analyzer

- GA21-9601 CallPath/400 Overview and Planning Guide
- GC21-9867 CallPath/400 Programmer's, User's and Installation Guide

- SC41-8245 Facsimile Support/400 User's Guide and Reference

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- SC21-8221 S/36 SSP R6 Enhancements
- SC21-9020 S/36 SSP Reference
- SC21-9082 S/36 Using Communications
- SC21-7938 S/36 System Messages
- SY31-9007 S/36 Communications Maintenance (large format)
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- LY21-0590 S/36 Program Service Information
- SA21-9436 S/36 Functional Reference Manual

- SC21-7909 S/36 MSRJE Guide
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- SC21-7912 S/36 3270 Device Emulation Guide
- SC21-7945 S/36 3270 Device Emulation Messages
- SC09-1086 S/36 3278 Emulation via IBM PC Guide

- SC21-7910 S/36 ICF Reference
- SC21-7911 S/36 ICF Guide and Examples
- SC21-9530 S/36 ICF Base Subsystems Reference
- SC21-9532 S/36 ICF Upline Subsystems Reference
- SC21-9533 S/36 ICF Programming and Intra Reference

- SC21-8010 S/36 C&SM Guide (HCF, DSX, Alerts)
- SC21-8011 S/36 DDM Guide
- SC21-9143 S/36 Using Asynchronous Comms Support
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- SA21-9478 S/36 Planning ROSF (5360)
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- SC09-1062 PS/36 Administration
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- GC23-2406 RS/6000 SW Overview
- SC32-0012 OSIMF/6000 User & Sys Admin Guide

A.8.2 HCF

- SC27-0455 HCF Guide and Reference

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- SH12-5328 POWER RJE User's Guide
- SH12-5329 POWER Installation and Operations Guide
- SC33-6140 Power Networking User's Guide

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- SC23-0048 JES2 Commands
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- GC38-0225 JES2 Remote Terminals

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- GA27-3005 2780 Component Description
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- SY27-0103 3780 Theory of Operation
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- GH19-6394 DSX V3 General Information
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A.8.7 NRF

- SC27-0593 NRF Planning
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- SC31-6203 Migration Resource Definition

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- GG24-1635 An Office System Primer
- GG66-0299 LEN VTAM 3.2 and S/36 as T2.1
- G320-0556 RFT RFT-DCA Interchange Compatibility
- GG24-3458 X.25 Guide

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