

# **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)



# Contents

<b>Abstract</b> . . . . .	iii
<b>Special Notices</b> . . . . .	xix
<b>Preface</b> . . . . .	xxi
<b>Acknowledgments</b> . . . . .	xxiv
<hr/>	
<b>Part 1. Overview</b> . . . . .	1
<b>Chapter 1. IBM Technical Support (TS) Network</b> . . . . .	3
1.1 Hardware and Software . . . . .	4
1.2 Communication Line Assignment . . . . .	6
1.3 Modems in the Network . . . . .	8
1.4 SNA/SDLC Network . . . . .	8
1.5 TRLAN Network . . . . .	9
1.6 X.25 Network . . . . .	10
1.7 ISDN Network . . . . .	11
1.8 Documented Connections for SNA . . . . .	12
1.9 Communications with Peer Systems . . . . .	13
1.10 Communications with System/390 . . . . .	14
<hr/>	
<b>Part 2. Communications with System/390</b> . . . . .	17
<b>Chapter 2. SNA/LEN with AS/400, Different NetID</b> . . . . .	19
2.1 Definitions on OS/2 . . . . .	19
2.1.1 SNA T2.1 in NDF File . . . . .	19
2.1.2 5250 Session Assignment . . . . .	21
2.2 On AS/400 . . . . .	21
2.2.1 Network Attributes . . . . .	21
2.2.2 Line, Controller Description . . . . .	22
2.2.3 Remote APPN Configuration List . . . . .	22
2.2.4 Auto-Created APPC Device Description . . . . .	22
2.2.5 Mode Description MODLU62 . . . . .	23
2.3 On IBMFLC04 . . . . .	23
2.3.1 Network Attributes . . . . .	23
2.3.2 Line, Controller Description . . . . .	24
2.3.3 Remote APPN Configuration List . . . . .	24
2.3.4 Auto-Created APPC Device Description for AS400BU3 . . . . .	25
2.3.5 Auto-Created APPC Device Description for PCASIN1 . . . . .	25
2.3.6 Mode Description MODLU62 . . . . .	26
2.3.7 Mode Description QPCSUPP . . . . .	26
2.4 VTAM/NCP . . . . .	26
2.4.1 For OS/2 . . . . .	27
2.4.2 Line, PU, LUs for FSC AS/400, AS400BU3 . . . . .	28
2.4.3 PU, LUs for IBMFLC04 . . . . .	30
2.5 Usage . . . . .	30
2.6 NetView/370 Session List . . . . .	31
<b>Chapter 3. AS/400 SNPT: OS/2 and AS/400 via AS/400 to MVS</b> . . . . .	33
3.1 Software Used . . . . .	33

3.2 OS/2 CM Definitions	34
3.2.1 SNA Feature Profiles	34
3.2.2 LAN Feature Profiles	36
3.2.3 5250 WSF Profiles	37
3.2.4 3270 Feature Profiles	38
3.3 Definitions on AS/400 CHIBMAS3	38
3.3.1 Token-Ring Line Description	39
3.3.2 APPC Controller and Device Descriptions	39
3.4 Definitions on AS/400 AS400BU3	39
3.4.1 For OS/2 and CHIBMAS3: Token-Ring Line Description	39
3.4.2 For OS/2: APPC Controller and Device Descriptions	39
3.4.3 For CHIBMAS3: APPC Controller and Device Descriptions	40
3.4.4 For MVS: X.25 Line Description	40
3.4.5 For MVS: Host Controller and Device Descriptions	40
3.5 Definition on MVS ZCHMVS6	41
3.5.1 VTAM Start Parameter List	41
3.5.2 for AS400BU3	42
3.6 Matching Parameters	43
 <b>Chapter 4. AS/400 SNA Primary LU Support (SPLS)</b>	 45
4.1 Software Used	45
4.2 VTAM/NCP Definitions	46
4.2.1 IBM 3174 Switched Major Node	46
4.2.2 AS/400 Switched Major Node	46
4.2.3 VTAM Logon Mode Table	47
4.3 AS/400 Definitions	49
4.4 Parameter Overview and Relation	50
4.5 Operation and Status Display	51
4.5.1 Status after Activation	51
4.6 Usage	52
4.7 Session Termination with AS/400	53
 <b>Chapter 5. AS/400 Network Routing Facility (NRF) Support</b>	 55
5.1 Software Used	55
5.2 Definitions	56
5.2.1 VTAM/NCP	56
5.2.2 AS/400 Definitions	62
5.3 Parameter Overview and Relation	63
5.4 Status	64
5.4.1 After Activation	64
5.5 AS/400 NRF Device Release Program	68
 <b>Chapter 6. NetView File Transfer Program for OS/400</b>	 71
6.1 Software Used	72
6.2 Network Definitions	72
6.2.1 VTAM/NCP, Link to AS/400	72
6.2.2 VTAM Logmode Table Entry FTPBIND	73
6.2.3 VTAM APPL for MVS NetView FTP	74
6.2.4 AS/400 Network Attributes	74
6.2.5 AS/400 APPN Remote Location List	74
6.2.6 AS/400 Mode Description FTPBIND	75
6.2.7 AS/400 Configuration Objects as Linked to TS 4381	75
6.2.8 AS/400 ILU/APPC Device Descriptions	76
6.2.9 AS/400 Subsystem Communications Entry	76
6.3 NetView FTP Definitions	76

6.3.1 MVS NetView FTP, Server Table . . . . .	76
6.3.2 AS/400 NetView FTP LU Directory Entry . . . . .	77
6.4 NetView FTP Access Security . . . . .	77
6.5 Matching Parameters . . . . .	77
6.6 Operation Status . . . . .	78
6.6.1 Status Checking . . . . .	79
6.7 FTP Requests - Interactive . . . . .	79
6.7.1 To Send Files From AS/400 to MVS . . . . .	79
6.7.2 Retrieve Files from MVS to AS/400 . . . . .	81
6.7.3 To Send Files from MVS to AS/400 . . . . .	83
6.7.4 To Retrieve Files from AS/400 to MVS . . . . .	85
 <b>Chapter 7. AS/400 SNA/APPN SOC via SNA/Subarea Network . . . . .</b>	 87
7.1 Network . . . . .	87
7.2 Configurations . . . . .	88
7.2.1 AS400BU4 (Focal Point) . . . . .	88
7.2.2 AS400BU3 . . . . .	90
 <b>Chapter 8. AS/400 MVS Bridge (NJE), Job and Spool File . . . . .</b>	 93
8.1 Submit a Job from AS/400 to MVS . . . . .	93
8.2 Submit Job from MVS to AS/400 . . . . .	96
8.2.1 AS/400 Definitions . . . . .	96
8.2.2 Job Submission on MVS . . . . .	97
8.2.3 Job Execution on AS/400 . . . . .	99
8.3 Send Print Spoolfile from AS/400 to MVS . . . . .	100
8.4 Send Print Spool File from MVS to AS/400 . . . . .	101
 <b>Chapter 9. OfficeVision/VM Bridge . . . . .</b>	 103
9.1 Definitions . . . . .	104
9.1.1 RSCS . . . . .	104
9.1.2 RSCS Remloc File . . . . .	106
9.1.3 VTAM/NCP on IBM 4381 . . . . .	106
9.1.4 AS/400 . . . . .	107
9.2 Operation . . . . .	110
9.2.1 Starting the VM Bridge . . . . .	110
9.3 Usage . . . . .	111
9.3.1 Sending Note from OV/400 to OV/VM . . . . .	111
9.3.2 Sending Note from OV/VM to OV/400 . . . . .	113
9.4 Matching Parameters . . . . .	115
 <b>Chapter 10. VM/MVS Bridge Monitor Program . . . . .</b>	 117
10.1 Situation . . . . .	117
10.2 Approaches to Solve . . . . .	117
10.3 VM/MVS Bridge Monitor Program . . . . .	118
10.3.1 CL Program WUPRPDS . . . . .	118
10.3.2 Autostart Job Entry . . . . .	119
10.3.3 Routing Entry . . . . .	119
10.3.4 Job Description . . . . .	119
10.3.5 Configuration of Distribution Queue . . . . .	119

---

<b>Part 3. AS/400 Peer Communications . . . . .</b>	<b>121</b>
---	------------

 <b>Chapter 11. Submit Network Job via SNADS . . . . .</b>	 123
11.1 AS/400 Definitions . . . . .	123

11.2 Batch Job . . . . .	124
11.3 Operations . . . . .	124
11.4 Job Control . . . . .	125
11.5 Matching Parameters . . . . .	126
11.6 Completion Message . . . . .	127

---

<b>Part 4. Remote Workstation Controller . . . . .</b>	<b>129</b>
--	------------

<b>Chapter 12. IBM 5394 via SNA/X.25 SVC, Called by AS/400 . . . . .</b>	<b>131</b>
12.1 IBM 5394 Setup . . . . .	131
12.2 AS/400 Definitions . . . . .	132
12.2.1 TELEPAC Link . . . . .	132
12.2.2 IBM 5394 Controller . . . . .	132
12.2.3 Mechanism to Activate . . . . .	132
12.3 Operation . . . . .	134
12.3.1 On the IBM 5394 . . . . .	134
12.3.2 On the AS/400 . . . . .	134
12.3.3 Connection Establishment . . . . .	134
12.4 Matching Parameters . . . . .	134
 <b>Chapter 13. IBM 5394 via SNA/X.25 SVC, AS/400 with Double X.25 Access . . . . .</b>	 <b>137</b>
13.1 IBM 5394 Setup . . . . .	137
13.2 AS/400 Definitions . . . . .	138
13.2.1 TELEPAC Link 1 . . . . .	138
13.2.2 TELEPAC Link 2 . . . . .	138
13.2.3 IBM 5394 Controller . . . . .	138
13.3 Operation . . . . .	139
13.4 Matching Parameters . . . . .	140
 <b>Chapter 14. IBM 5394 Configuration Quick-Reference . . . . .</b>	 <b>141</b>
 <b>Chapter 15. IBM 5394 as Node T2.1 via SNA Subarea Network . . . . .</b>	 <b>143</b>
15.1 Software required . . . . .	144
15.2 IBM 5394 Set Up . . . . .	144
15.3 AS/400 Definitions . . . . .	144
15.3.1 Network Attributes . . . . .	145
15.3.2 Link with VTAM/NCP . . . . .	145
15.3.3 IBM 5394 Controller, Device . . . . .	146
15.3.4 Mode MODLU62 . . . . .	146
15.3.5 Remote APPN Configuration List . . . . .	147
15.4 VTAM/NCP Definitions . . . . .	147
15.4.1 Link with AS/400 . . . . .	147
15.4.2 Link with IBM 5394 . . . . .	148
15.4.3 VTAM Logmode Table Entry MODLU62 . . . . .	149
15.4.4 VTAM COS Table . . . . .	149
15.5 Operation and Status . . . . .	151
15.5.1 AS/400 Configuration Objects . . . . .	151
15.5.2 NetView/370 . . . . .	152
15.6 Matching Parameters . . . . .	154
 <b>Chapter 16. IBM 5494 V.24 via SNA/SDLC Leased to AS/400 . . . . .</b>	 <b>155</b>
16.1 IBM 5494 Setup . . . . .	155
16.2 AS/400 Definitions . . . . .	156
16.2.1 Network Attributes . . . . .	156



16.2.2	SDLC Line and APPC Controller Description	157
16.2.3	IBM 5494 Controller and Device Description	157
16.2.4	Mode MOD5494	158
16.3	Operation and Status	158
16.4	Matching Parameters	159
<b>Chapter 17.</b>	<b>IBM 5494 V.35 via SNA/SDLC Leased to AS/400</b>	<b>161</b>
17.1	IBM 5494 Setup	161
17.2	AS/400 Definitions	162
17.2.1	Network Attributes	162
17.2.2	SDLC Line and APPC Controller Description	163
17.2.3	IBM 5494 Controller and Device Description	163
17.2.4	Mode MOD5494	164
17.3	Operation and Status	164
17.3.1	AS/400 Configuration Objects	164
17.4	Matching Parameters	165
<b>Chapter 18.</b>	<b>IBM 5494 via SNA/TRLAN to AS/400</b>	<b>167</b>
18.1	IBM 5494 Setup	167
18.2	AS/400 Definitions	168
18.2.1	Network Attributes	168
18.2.2	TRLAN Line Description	169
18.2.3	Auto-Created APPC Controller Description	169
18.2.4	Auto-Created APPC Device Description	170
18.2.5	IBM 5494 Controller and Device Description	170
18.2.6	Mode MOD5494	170
18.3	Operation and Status	171
18.3.1	AS/400 Configuration Objects	171
18.4	Matching Parameters	172
<b>Chapter 19.</b>	<b>IBM 5494 via SNA/X.25 SVC to AS/400</b>	<b>173</b>
19.1	Hardware and Software Used	173
19.2	IBM 5494 Setup	173
19.3	AS/400 Definitions	174
19.3.1	Network Attributes	174
19.3.2	X.25 Line and APPC Controller Description	175
19.3.3	IBM 5494 Controller and Device Description	176
19.3.4	Mode MOD5494	176
19.4	Operation and Status	176
19.4.1	AS/400 Configuration Objects	177
19.5	Matching Parameters	177
<b>Chapter 20.</b>	<b>IBM 5494 via SNA/X.25 PVC to AS/400</b>	<b>179</b>
20.1	IBM 5494 Setup	179
20.2	AS/400 Definitions	180
20.2.1	Network Attributes	180
20.2.2	X.25 Line and APPC Controller Description	181
20.2.3	IBM 5494 Controller and Device Description	182
20.2.4	Mode MOD5494	182
20.3	Operation and Status	182
20.3.1	AS/400 Configuration Objects	182
20.4	Matching Parameters	183
<b>Chapter 21.</b>	<b>IBM 5494 via SNA/X.25 SVC, Called by AS/400</b>	<b>185</b>
21.1	IBM 5494 Setup	185

21.2 AS/400 Definition Changes . . . . .	185
21.3 Operation . . . . .	186
21.3.1 At the IBM 5494 Site . . . . .	186
21.3.2 On the AS/400 . . . . .	186
21.3.3 Connection Establishment . . . . .	186
<b>Chapter 22. IBM 5494 as Node T2.1 via SNA Subarea Network . . . . .</b>	<b>187</b>
22.1 Software Used . . . . .	187
22.2 IBM 5494 Setup . . . . .	188
22.3 AS/400 Definitions . . . . .	188
22.3.1 Network Attributes . . . . .	189
22.3.2 Link with VTAM/NCP . . . . .	189
22.3.3 IBM 5494 Controller, Device . . . . .	190
22.3.4 Mode MODLU62 . . . . .	190
22.3.5 Remote APPN Configuration List . . . . .	191
22.4 VTAM/NCP Definitions . . . . .	191
22.4.1 Link with AS/400 . . . . .	191
22.4.2 Link with IBM 5494 . . . . .	192
22.4.3 VTAM Logmode Table Entry MODLU62 . . . . .	193
22.5 Operation and Status . . . . .	193
22.5.1 AS/400 Configuration Objects . . . . .	193
22.5.2 NetView/370 . . . . .	195
22.6 Matching Parameters . . . . .	195
<b>Chapter 23. IBM 5494 as Node T2.1 via TRLAN to SNA Subarea Network . . . . .</b>	<b>197</b>
23.1 IBM 5494 Setup . . . . .	197
23.2 AS/400 Definitions . . . . .	198
23.2.1 Network Attributes . . . . .	198
23.2.2 Link with VTAM/NCP . . . . .	199
23.2.3 Remote APPN Configuration List . . . . .	199
23.2.4 IBM 5494 Controller, Device . . . . .	200
23.2.5 Mode MODLU62 . . . . .	201
23.3 VTAM/NCP Definitions . . . . .	201
23.3.1 Link with AS/400 . . . . .	201
23.3.2 Link with IBM 5494 . . . . .	202
23.3.3 VTAM Logmode Table Entry MODLU62 . . . . .	203
23.4 Operation and Status . . . . .	203
23.4.1 AS/400 Configuration Objects . . . . .	203
23.5 Matching Parameters . . . . .	205
<b>Chapter 24. IBM 3174 via IBM 7820 and Swissnet to AS/400 . . . . .</b>	<b>207</b>
24.1 Using the AS/400 X.21 Interface . . . . .	207
24.1.1 IBM 7820 attached to AS/400, Setup . . . . .	207
24.1.2 IBM 7820 attached to IBM 3174, Setup . . . . .	208
24.1.3 AS/400 Definitions . . . . .	208
24.1.4 IBM 3174 Definitions . . . . .	209

---

<b>Part 5. AS/400 TCP/IP . . . . .</b>	<b>211</b>
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<b>Chapter 25. TCP/IP . . . . .</b>	<b>213</b>
25.1 TCP/IP Network . . . . .	213
25.1.2 Domain, Host Names and Name Servers . . . . .	213
25.1.3 TCP/IP Network Topology . . . . .	213
25.2 AS/400 Definitions . . . . .	215

25.2.1 Line, Controller and Device Descriptions	215
25.3 FTP	220
25.3.1 FTP with RS/6000	220
25.3.2 FTP with OS/2	221
25.3.3 FTP with HP	222
25.3.4 FTP from mVax to AS/400	223
25.4 AS/400 TCP/IP: SMTP	224
25.4.1 AS/400 System Definitions	224
25.4.2 TCP/IP SMTP Operation	226
25.4.3 SMTP Environment and User Enrollment	227
25.4.4 Send Note from AS/400 to AS/400	228
25.4.5 Send Note from AS/400 to DEC mVAX	230
25.4.6 Send Note from DEC mVAX to AS/400	232
25.4.7 Send Note from AS/400 to RS/6000	233
25.4.8 Send Note from RS/6000 to AS/400	235
25.4.9 Send Note from AS/400 to HP	236
25.4.10 Send Note from HP to AS/400	238
25.4.11 Send Note from VM to AS/400	239
25.4.12 Send Note from AS/400 to VM	240
25.5 RS/6000 as NFS Client of AS/400 AS400BU3	242

---

## Part 6. Communications API's . . . . . 247

<b>Chapter 26. AS/400 User-Defined Communications (UDC) on X.25</b>	249
26.1 AS/400 Definitions	249
26.2 Programming Example	250
26.2.1 Display File UDCDSPF	250
26.2.2 UDC X.25 Parameter Data Structures	251
26.2.3 UDC X.25 RPG Program	256
26.3 Operation	266
<b>Chapter 27. CPI-C</b>	269
27.1 Overview	269
27.2 AS/400 Definitions	269
27.2.1 Communications Side Information (CSI) LOCALBU3	270
27.2.2 Local APPC Controller and Devices	270
27.3 User Programs	271
27.3.1 Send File, RPG/400 CPI-C Program	271
27.3.2 Receive File, RPG/400 CPI-C Program	273
27.3.3 Receive File, Target CL Program RCVCPICL	277
27.4 System-Supplied CPI-C Pseudonyms	277
27.5 CPI-C Call Parameter	280

---

## Part 7. Appendix . . . . . 283

<b>Appendix A. AS/400 Communications Bibliography</b>	285
A.1 General Aspects and Architectures	285
A.1.1 Cables, Modems and ISDN Terminal Adapter	285
A.1.2 General, Self-Study	285
A.1.3 TRLAN/Ethernet	285
A.1.4 DIA/DCA, IIA	286
A.1.5 BSC, SDLC, SNA, X.25	286
A.1.6 SNADS	287

A.1.7 DDM, DRDA . . . . .	287
A.1.8 SAA . . . . .	287
A.1.9 Open System, MVI General . . . . .	287
A.2 IBM 5250 System . . . . .	287
A.3 IBM 8209 . . . . .	288
A.4 IBM 5159 . . . . .	288
A.5 IBM 3270 . . . . .	289
A.6 AS/400 . . . . .	289
A.7 System/36 . . . . .	292
A.8 Additional Hardware and Software . . . . .	293
A.8.1 RS/6000 . . . . .	293
A.8.2 HCF . . . . .	293
A.8.3 VSE/POWER . . . . .	293
A.8.4 JES2 . . . . .	293
A.8.5 RJE Terminals . . . . .	293
A.8.6 DSX . . . . .	293
A.8.7 NRF . . . . .	294
A.8.8 Other Subjects . . . . .	294
<b>Index . . . . .</b>	<b>295</b>

## Figures

1.	Communication Line Assignment	7
2.	SDLC Leased Connections Network	9
3.	TS TRLAN Network, 4 Mbps	10
4.	X.25 (Telepac) Network	11
5.	ISDN Network	12
6.	Documented Connections for SNA	13
7.	Communications with Peer Systems	14
8.	Communications with System/390	15
9.	Overview of SNA/LEN with AS/400, Different NetID	19
10.	5250 Session Assignment	21
11.	SNA/LEN with AS/400, Different NetID, AS/400 Network Attributes	21
12.	SNA/LEN with AS/400, Different NetID, Remote APPN Configuration List	22
13.	SNA/LEN with AS/400, Different NetID, APPC Device Description	23
14.	SNA/LEN with AS/400, Different NetID, Mode Description	23
15.	Network Attributes on IBMFLC04	24
16.	Remote APPN Configuration List	24
17.	Auto-created APPC Device Description for AS/400	25
18.	Auto-created APPC Device Description for AS/400	25
19.	Mode Description MODLU62	26
20.	Mode Description QPCSUPP	26
21.	NetView/370 Session List	31
22.	Overview of AS/400 SNPT: OS/2 and AS/400 via AS/400 to MVS	33
23.	AS/400 SNPT: OS/2 CM Definitions	34
24.	AS/400 SNPT: OS/2 CM Definitions, SNA Feature Profiles, Base Profile	34
25.	AS/400 SNPT: OS/2 CM Definitions, SNA Feature Profiles, DLC	35
26.	AS/400 SNPT: OS/2 CM Definitions, SNA Feature Profiles, Local LU	35
27.	AS/400 SNPT: OS/2 CM Definitions, SNA Feature Profiles, Partner LU	35
28.	AS/400 SNPT: OS/2 CM Definitions, SNA Feature Profiles, Modes	36
29.	AS/400 SNPT: OS/2 CM Definitions, SNA Feature Profiles, Session Limits	36
30.	AS/400 SNPT: OS/2 CM Definitions, LAN Feature Profiles	37
31.	AS/400 SNPT: OS/2 CM Definitions, 5250 WSF Profiles	37
32.	AS/400 SNPT: OS/2 CM Definitions, 3270 Feature Profiles	38
33.	AS/400 SNPT: OS/2 CM Definitions, 3270 Feature Profiles, Destination	38
34.	AS/400 SNPT: OS/2 CM Definitions, 3270 Feature Profiles, Logical Terminal	38
35.	Matching Parameters, SNPT: OS/2 and AS/400	44
36.	Overview: AS/400 SNA Primary LU Support	45
37.	SPLS, IBM 3174 and AS/400 Parameter Overview and Relation	50
38.	Operation and Status Display for the IBM 3174	51
39.	Operation and Status Display for AS/400 SPLS Environment	51
40.	Status on AS/400	52
41.	Changed Status for the IBM 3174	52
42.	Changed Status for AS/400	53
43.	Changed Status on AS/400	53
44.	Passing Through a SNA Subarea Network to an AS/400	55
45.	IBM 3174, NCP/NRF, AS/400 Parameter Overview and Relation	64
46.	NetView/370 Status for IBM 3174	65
47.	NetView/370 Status for the NRF Environment within NCP	65
48.	NetView/370 Status for AS/400 NRF Environment	66
49.	Status on AS/400 using the CL command WRCFGSTS *LIN NRFLINE	66

50.	Changed Status of NRF LUs AS/400 configuration objects	67
51.	Changed Status of NRF LUs AS/400 configuration objects	68
52.	Overview of MVS and OS/400 NetView FTP Environment	71
53.	NetView File Transfer Program, AS/400 Network Attributes	74
54.	NetView File Transfer Program, AS/400 APPN Remote Location List	75
55.	NetView File Transfer Program, AS/400 Mode Description FTPBIND	75
56.	AS/400 NetView FTP LU Directory Entry	77
57.	Matching Parameters	78
58.	Operation Status Checking	79
59.	FTP Interactive Requests to Send Files from AS/400 to MVS	80
60.	FTP Interactive Requests to Retrieve Files from MVS to AS/400	81
61.	Request Log	83
62.	AS400BU4 (Focal Point) Network Attributes	88
63.	AS400BU4 (Focal Point) APPN Local Configuration List	89
64.	AS400BU4 (Focal Point) APPN Remote Configuration List	89
65.	AS400BU4 (Focal Point) Sphere of Control	89
66.	AS400BU3 Network Attributes	90
67.	AS400BU3 APPN Local Configuration List	90
68.	AS400BU3 APPN Local Configuration List	91
69.	AS400BU3 Sphere of Control (WRKSOC)	91
70.	TS Network, MVS Bridge Environment	93
71.	QSYSOPR Message Queue, Job Submitted to MVS	94
72.	MVS Job Log	95
73.	Punched/Received File from MVS	96
74.	Received File, Display PF Member	96
75.	AS/400 Network Attributes, Job Action	97
76.	AS/400 Network Job Entries	97
77.	Job for AS/400, Prepared on MVS	98
78.	Job Submitted to AS/400	98
79.	MVS Job Submission Message	99
80.	Message on AS/400, Showing Job Submission from MVS	99
81.	Display History Log	99
82.	TS Network, MVS Bridge, Spool Files to MVS	100
83.	Message Indicating Successful Transmission of Spool File	101
84.	On the AS/400, DSPUSRPRF (Display User Profile)	101
85.	To Print an MVS Dataset	102
86.	Successful Transmission of Spool File to AS/400	102
87.	Received Spool File from MVS	102
88.	Network, OfficeVision/VM Bridge Environment	103
89.	Network Attributes, AS400BU3	108
90.	Routing Table Entry, ZCHVM5	109
91.	Distribution Queue, ZCHVM5	109
92.	VM Destination Entry	110
93.	Typing Note with OfficeVision/400	112
94.	Receiving Note with OfficeVision/VM	112
95.	Viewing Received Note with OfficeVision/VM	113
96.	Typing Note with OfficeVision/VM	113
97.	Receiving Note with OfficeVision/400	114
98.	Viewing Received Note with OfficeVision/400	114
99.	OfficeVision/VM Bridge, Matching Parameters	115
100.	Autostart Job Entry	119
101.	Routing Entry	119
102.	Job Description	119
103.	SNADS AS/400 Definitions Network Attributes	123
104.	SNADS AS/400 Definitions Network Job Entries	124

105.	SNADS Batch Job	124
106.	SNADS - Send a Job Stream	125
107.	SNADS - Messages to the Submitting User	125
108.	SNADS - Messages on the Target System	126
109.	IBM 5394, using multiple X.25 links to AS/400	131
110.	IBM 5394 Setup Screen for X.25	131
111.	Final Status after Connection Establishment	134
112.	Matching Parameters, AS/400 calling IBM 5394 using X.25/SVC	135
113.	IBM 5394, using multiple X.25 links of AS/400	137
114.	IBM 5394 Setup Screen for X.25	137
115.	Status of Controller XRWS5394	139
116.	Final Status, using the first X.25 Line	139
117.	Matching Parameters, AS/400 and IBM 5394 using X.25/SVC	140
118.	IBM 5394 with T2.1 RPQ via SNA Subarea to AS/400	143
119.	IBM 5394 T2.1 Setup Screen	144
120.	IBM 5394 T2.1 AS/400 Definition, Network Attributes	145
121.	IBM 5394 T2.1 AS/400 Definition, Auto-created Device Description	146
122.	IBM 5394 T2.1 AS/400 Definition, Mode MODLU62	146
123.	IBM 5394 T2.1 AS/400 Definition, Remote APPN Configuration List	147
124.	IBM 5294 T2.1 AS/400 Configuration Objects	151
125.	IBM 5294 T2.1 NetView/370	153
126.	Matching Parameters, VTAM/NCP, AS/400 and 5394 T2.1	154
127.	IBM 5494 via SNA/SDLC Leased	155
128.	IBM 5494 V.24 via SNA/SDLC Leased to AS/400 Setup Screen	155
129.	IBM 5494 via SNA/SDLC Leased, AS/400 Definitions, DSPNETA	156
130.	IBM 5494 via SNA/SDLC Leased, AS/400 definitions, Device Description	157
131.	IBM 5494 via SNA/SDLC Leased, AS/400 Definitions, Mode Description	158
132.	IBM 5494 via SNA/SDLC Leased to AS/400, Configuration Status	158
133.	Matching Parameters, 5494 via SNA/SDLC Leased	160
134.	IBM 5494 V.35 via SNA/SDLC Leased	161
135.	IBM5494 V.35 via SNA/SDLC Leased to AS/400, Setup Screen	161
136.	IBM 5494 V.35 via SNA/SDLC Leased, AS/400 Definitions, Network Attributes	162
137.	IBM 5494 V.35 via SNA/SDLC Leased, AS/400 Definitions, Device Description	163
138.	IBM 5494 V.35 via SNA/SDLC Leased, AS/400 Definitions, Mode Description	164
139.	IBM 5494 V.35 via SNA/SDLC Leased, AS/400 Configuration Objects	164
140.	Matching Parameters, 5494 via SNA/SDLC Leased	166
141.	IBM 5494 via SNA/TRLAN	167
142.	IBM 5494 via SNA/TRLAN to AS/400 Setup Screen	167
143.	IBM 5494 via SNA/TRLAN, AS/400 Definitions, Network Attributes	168
144.	IBM 5494 via SNA/TRLAN, AS/400 Definitions, Controller Description	169
145.	IBM 5494 via SNA/TRLAN, AS/400 Definitions, Device Description	170
146.	IBM 5494 via SNA/TRLAN, AS/400 Definitions, Mode Description	170
147.	IBM 5494 via SNA/TRLAN to AS/400, Configuration Objects	171
148.	Matching Parameters, 5494 via SNA/TRLAN	172
149.	IBM 5494 via SNA/X.25 SVC, 5494 is calling	173
150.	IBM 5494 via SNA/X.25 SVC to AS/400 Setup Screen	173
151.	IBM 5494 via SNA/X.25 SVC, AS/400 Definitions, Network Attributes	174
152.	IBM 5494 via SNA/X.25 SVC, AS/400 Definitions, Auto-created Device Description	175
153.	IBM 5494 via SNA/X.25, AS/400 Definitions, Mode Description	176
154.	IBM 5494 via SNA/X.25, AS/400 Configuration Status	177

155. Matching Parameters, 5494 via SNA/X.25 SVC . . . . .	178
156. IBM 5494 via SNA/X.25 PVC . . . . .	179
157. IBM 5494 via SNA/X.25 PVC Setup Screen . . . . .	179
158. IBM 5494 via SNA/X.25 PVC, AS/400 Definitions, Network Attributes . . . . .	180
159. IBM 5494 via SNA/X.25 PVC, AS/400 Definitions, Auto-created Device Description . . . . .	181
160. IBM 5494 via SNA/X.25 PVC, AS/400 Definitions, Mode Description . . . . .	182
161. IBM 5494 via SNA/X.25 PVC, AS/400 Configuration Objects . . . . .	183
162. Matching Parameters, 5494 via SNA/X.25 PVC . . . . .	184
163. IBM 5494, using SNA/X.25 SVC, called by AS/400 . . . . .	185
164. IBM 5494, with T2.1 RPQ via SNA Subarea to AS/400 . . . . .	187
165. IBM 5494 T2.1 Setup Screen . . . . .	188
166. IBM 5494 as Node T2.1 via SNA Subarea Network, AS/400 Definitions, Network Attributes . . . . .	189
167. IBM 5494 as Node T2.1 via SNA Subarea Network, AS/400 Definitions, Device Description . . . . .	190
168. IBM 5494 as Node T2.1 via SNA Subarea Network, AS/400 Definitions, Mode Description . . . . .	190
169. IBM 5494 as Node T2.1 via SNA Subarea Network, AS/400 Definitions, Remote APPN Configuration List . . . . .	191
170. IBM 5494 as Node T2.1 via SNA Subarea Network, AS/400 Configuration Objects . . . . .	194
171. IBM 5494 as Node T2.1 via SNA Subarea Network, NetView/370 . . . . .	195
172. Matching Parameters, VTAM/NCP, AS/400 and 5494 T2.1 . . . . .	196
173. IBM 5494, with T2.1 RPQ via TRLAN to SNA Subarea and AS/400 . . . . .	197
174. IBM 5494 T2.1 Setup Screen . . . . .	198
175. IBM 5494 as Node T2.1 via TRLAN to SNA Subarea Network, AS/400 Definitions Network Attributes . . . . .	199
176. IBM 5494 as Node T2.1 via TRLAN to SNA Subarea Network, Remote Locations . . . . .	200
177. IBM 5494 as Node T2.1 via TRLAN to SNA Subarea Network, Device Description . . . . .	200
178. IBM 5494 as Node T2.1 via TRLAN to SNA Subarea Network, Mode Description . . . . .	201
179. IBM 5494 as Node T2.1 via TRLAN to SNA Subarea Network, Status . . . . .	204
180. Matching Parameters, VTAM/NCP, AS/400 and 5494 T2.1 . . . . .	205
181. AS/400 SwissNet Scenario with X.21 Interfaces . . . . .	207
182. 3174 Setup Screen . . . . .	209
183. TS TCP/IP Network, Partial View . . . . .	214
184. TCP/IP Host Table . . . . .	216
185. AS/400 TCP/IP Link Definition . . . . .	217
186. TCP/IP Routes . . . . .	217
187. TCP/IP Local Domain Name . . . . .	218
188. TCP/IP Remote System Information . . . . .	219
189. TCP/IP Attributes . . . . .	219
190. AS/400 SNADS Distribution Queue QSMTPQ . . . . .	225
191. AS/400 SNADS Routing Table Entry for TCP/IP SMTP . . . . .	225
192. TCP/IP Jobs in Subsystem QSNADS and QTCP . . . . .	227
193. TS TCP/IP SMTP Environment . . . . .	227
194. System Wide SMTP Nickname File . . . . .	228
195. OfficeVision/400 Note, Editing . . . . .	229
196. OfficeVision/400, Work with Incoming Mail . . . . .	229
197. OfficeVision/400, Received Note . . . . .	230
198. OfficeVision/400 Note, Specify Recipient . . . . .	230
199. OfficeVision/400 Note, Editing . . . . .	231



200.	VMSmail, Note received from AS/400 . . . . .	232
201.	mVax Mail, Enter and Send Note to AS/400 . . . . .	232
202.	mVax Mail, Enter and Send Note to AS/400 . . . . .	233
203.	OfficeVision/400 Note, Specify Recipient . . . . .	233
204.	OfficeVision/400 Note, Editing . . . . .	234
205.	OfficeVision/400 Note, Received on RS/6000 . . . . .	235
206.	RS/6000 Mail, Enter and Send Note to AS/400 . . . . .	235
207.	OfficeVision/400, View Note Received from RS/6000 . . . . .	236
208.	OfficeVision/400 Note, Specify Recipient . . . . .	236
209.	OfficeVision/400 Note, Editing . . . . .	237
210.	OfficeVision/400 Note, Received on HP . . . . .	237
211.	HP, Edit Note . . . . .	238
212.	OfficeVision/400, View Note Received from HP . . . . .	238
213.	Nickname profile on the VM-System . . . . .	239
214.	Sending note to the user guest on the as/400 . . . . .	239
215.	Editing note on the VM-system . . . . .	239
216.	Confirmation for delivery . . . . .	240
217.	Viewing the note on the AS/400 . . . . .	240
218.	Editing note on the AS/400 . . . . .	240
219.	Message on the VM-system . . . . .	241
220.	Note received on the VM-System . . . . .	241
221.	Viewing note on the VM-system . . . . .	242
222.	Authorization List on AS400BU3 . . . . .	245
223.	Export Table on AS400BU3 . . . . .	246
224.	UDC Program via Native X.25 to Mallette . . . . .	249
225.	X.25 Call Request successfully submitted . . . . .	267
226.	Entered user data successfully echoed by MALLETT . . . . .	267
227.	Send/Receive File CPI-C Sample Programs . . . . .	269
228.	CPI-C, AS/400 Definitions, Communications Side Information . . . . .	270



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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



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## Part 1. Overview



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## 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	Productive 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 T2.1	-		V24	Datec	5168	-	5181	Datec	.	ES9K	5X94 v/SNA SA

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.



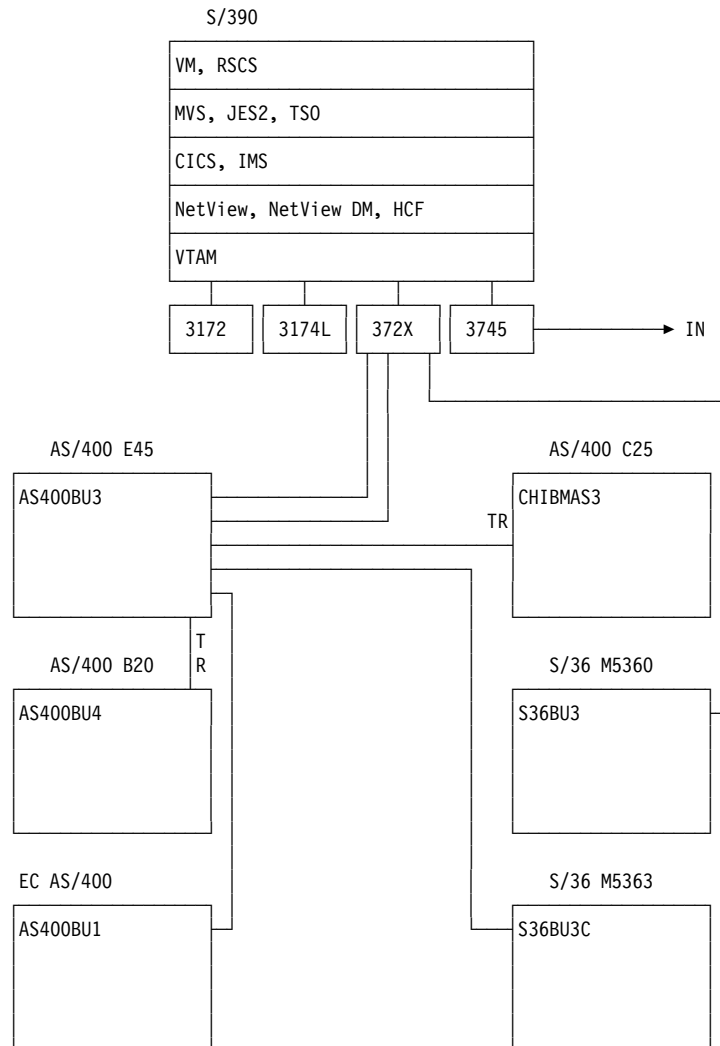


Figure 2. SDLC Leased Connections Network

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

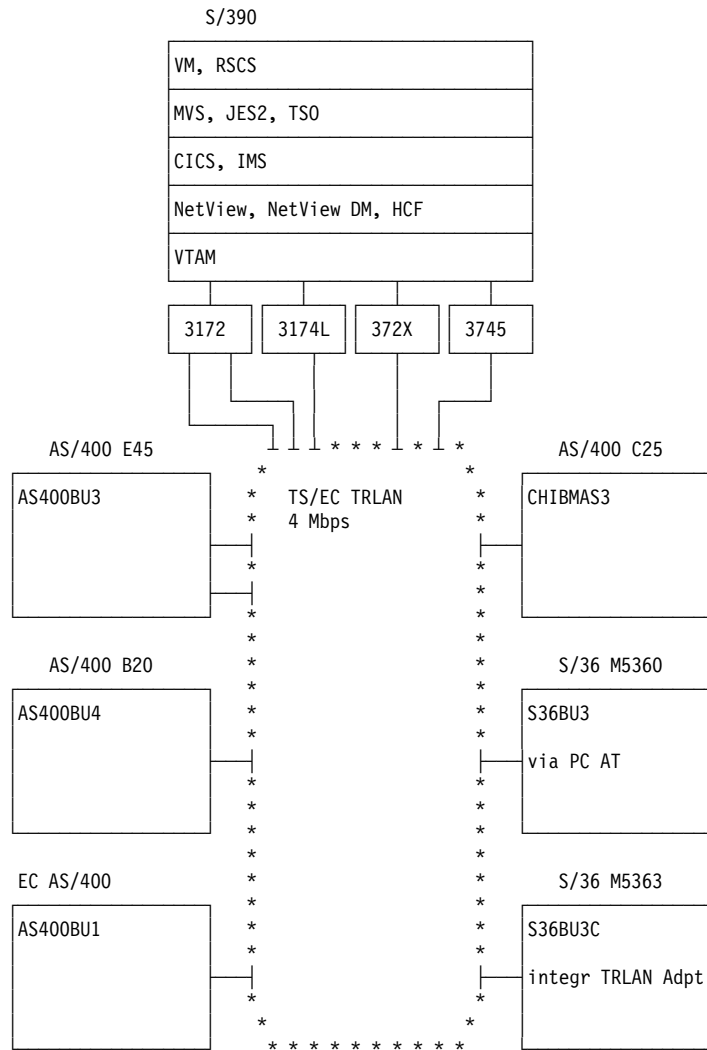


Figure 3. TS TRLAN Network, 4 Mbps

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

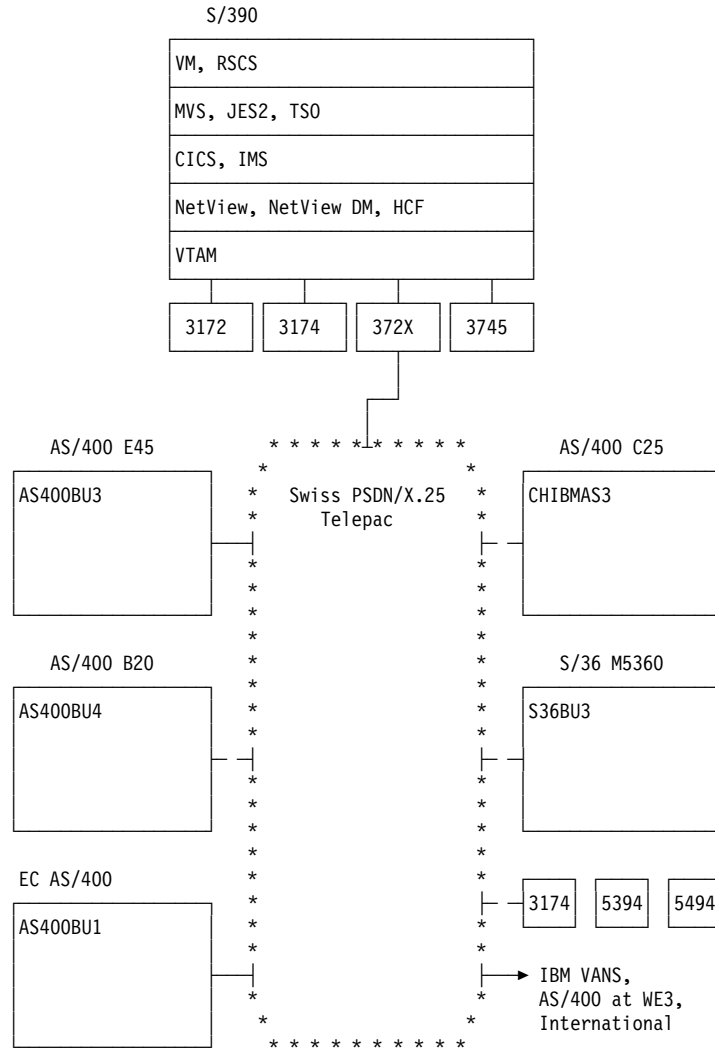


Figure 4. X.25 (Telepac) Network

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

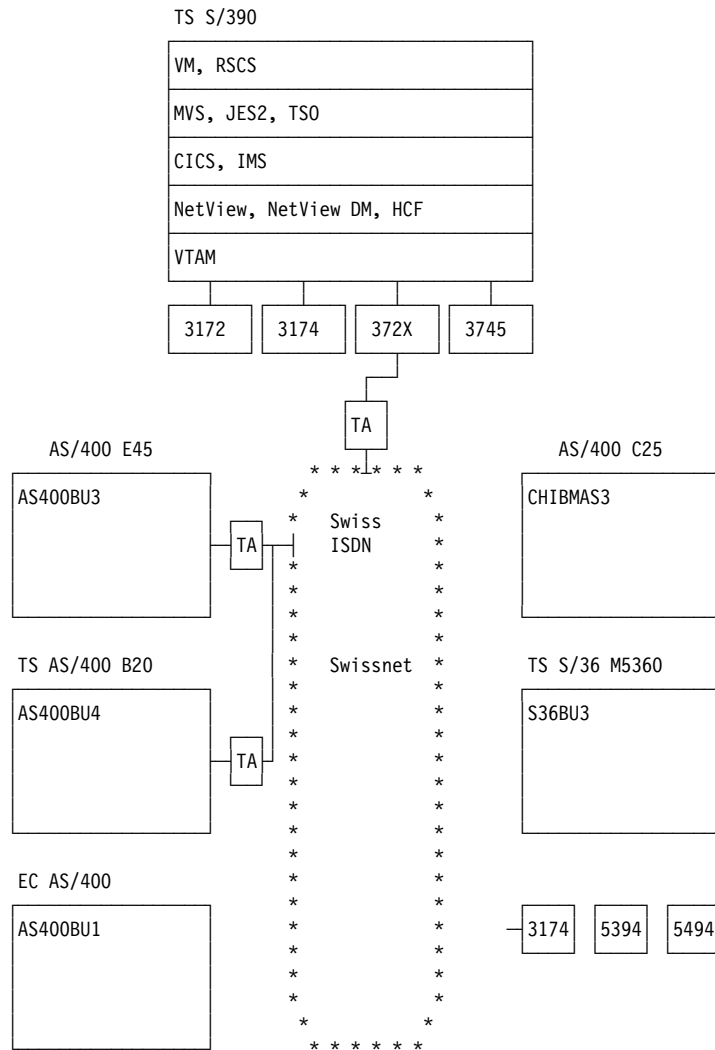


Figure 5. ISDN Network

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 lsd	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*





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## Part 2. Communications with System/390



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

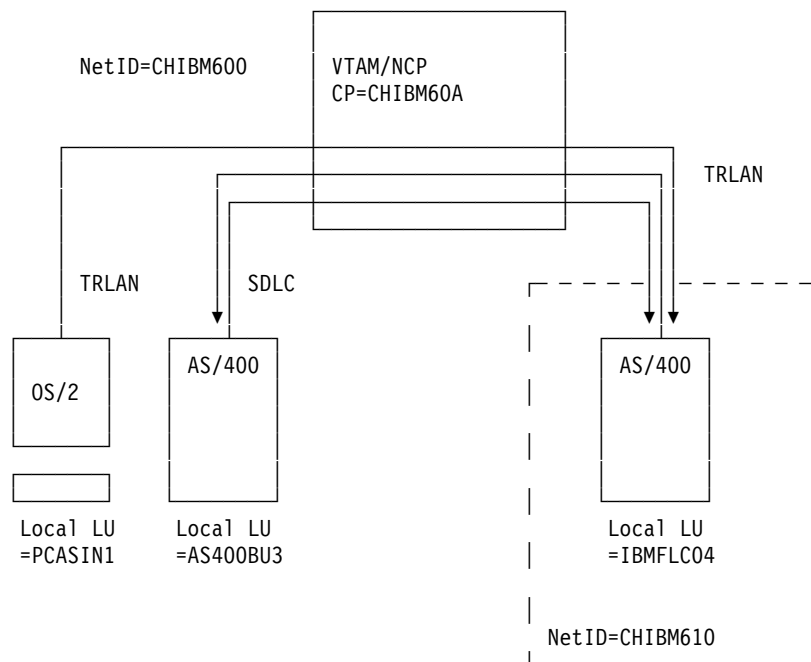


Figure 9. Overview of SNA/LEN with AS/400, Different NetID

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_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(INAUEN )
        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

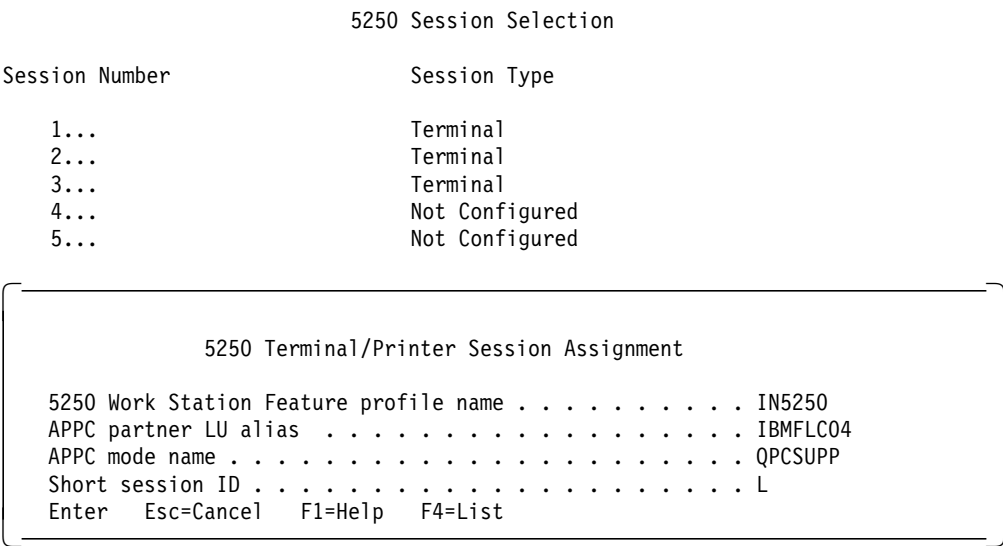


Figure 10. 5250 Session Assignment

2.2 On AS/400

2.2.1 Network Attributes

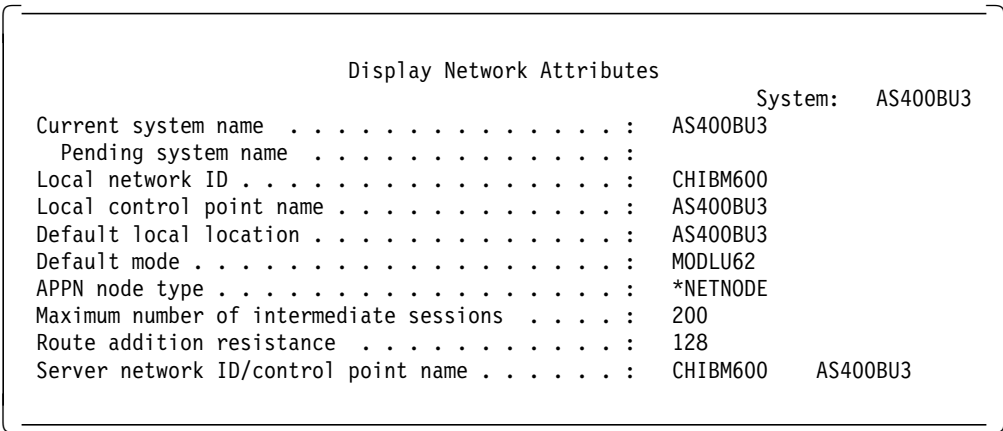


Figure 11. SNA/LEN with AS/400, Different NetID, AS/400 Network Attributes

## 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		Remote	Control		
Location	Network	Local	Control	Point	Secure	
ID		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) RSRNAME(LIN031) +
            MAXFRAME(1994) ADPTADR(400024129900) +
            EXCHID(05600000) TEXT('TRLAN environment')

CRTCTLHOST  CTLD(TPCA KC04) 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(TPCA KC04) +
            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 Cfgl			
-----APPN Remote Locations-----					
Remote	Remote	Remote	Control	Control	Secure
Location	Network	Local	Point	Point	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
                                15.06.93  09:54:04  IBMFLC04
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
5738SS1 V2R2M0 920925                                IBMFLC04 15.06.93 10:11:45
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 REQ
* 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=PCAUSSTB, *
LOGAPPL=PCAZNVAS, ISTATUS=ACTIVE
PCASIN5 LU LOCADDR=05, USSTAB=PCAUSSTB, *
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',COMPROT=X'0000', 3,4,5,6*
          RUSIZES=X'0000',                        9,10  *
          PSNDPAC=X'00',SRCVPAC=X'00',SSNDPAC=X'00', 11,8,7 *

```

```

                                PSERVIC=X'000000000000000000000000'          13-24
*                                01 03 05 07 09 11          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=PCADLMOD,          *                             *
          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  NNNA  06/09 16:46.14 * ACTIVE *
( 2) PCASIN  ILU  PCAZN IBMFLC04 ILU  NNNA  06/09 16:46.14 * ACTIVE *
( 3) IBMFLC04 ILU  NNNA  AS400BU3 ILU  NNNA  06/09 16:46.14 * ACTIVE *
( 4) IBMFLC04 ILU  NNNA  AS400BU3 ILU  NNNA  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

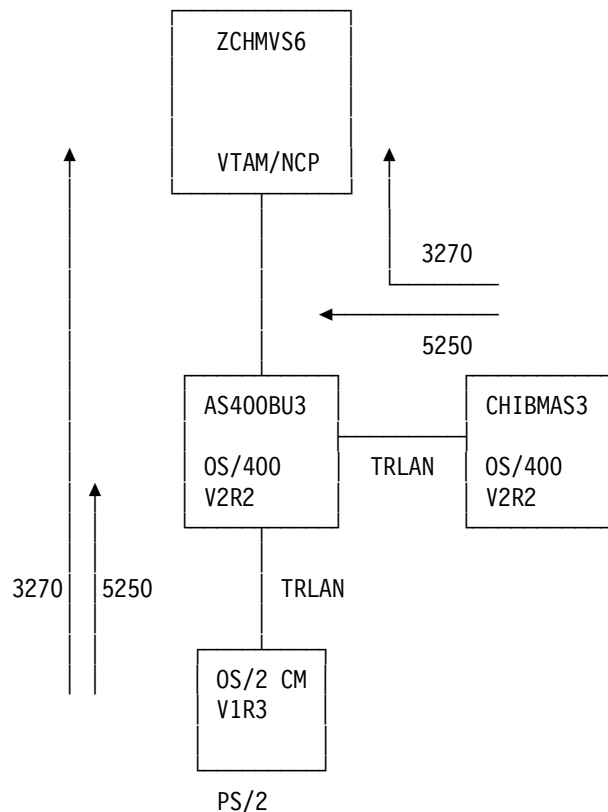


Figure 22. Overview of AS/400 SNPT: OS/2 and AS/400 via AS/400 to MVS

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

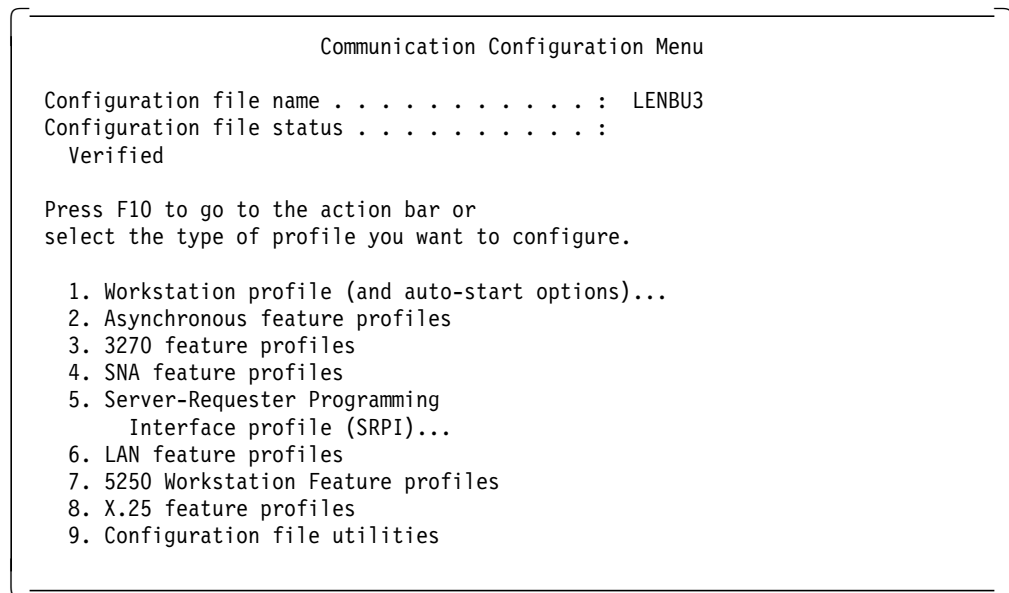


Figure 23. AS/400 SNPT: OS/2 CM Definitions

### 3.2.1 SNA Feature Profiles

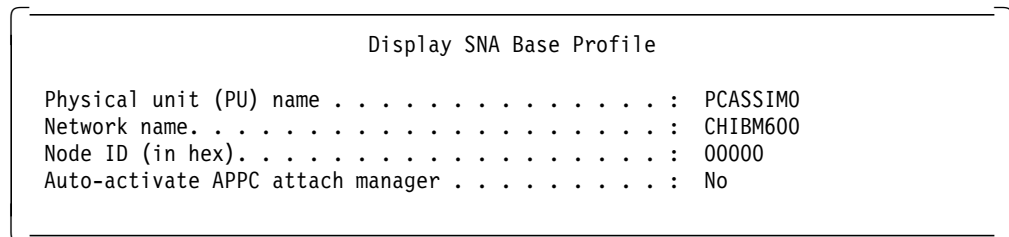


Figure 24. AS/400 SNPT: OS/2 CM Definitions, SNA Feature Profiles, Base Profile

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) <b>1</b>	
33 x 80 (3278/9 mod 3) <b>2</b>	
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(TRNLINE) RSRNAME(LIN021) MAXCTL(64) +
            MAXFRAME(1994) ADPTADR(400000009425) +
            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(TRNLINE) RMTNETID(CHIBM600) +
            RMTCPNAME(AS400BU3) LCLEXCHID(05600C25) +
            ADPTADR(400000009406) 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(TRNLINE) RSRNAME(LIN021) MAXCTL(64) +
            MAXFRAME(1994) ADPTADR(400000009406) +
            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(TRNLINE) RMTNETID(CHIBM600) +
            RMTCPNAME(PCASSIMO) ADPTADR(400000006824) +
            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) +
                                DFTPKTSIZE(128) MAXPKTSIZE(512) +
                                MODULUS(8) DFTWDWSIZE(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) CNNNBR(45911061) +
                                NETLVL(1980) TEXT('PUT2.1 PCAKXAS4 via +
                                X.25 to FSC 4381')

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

```



```

/* 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=FFFFF,     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

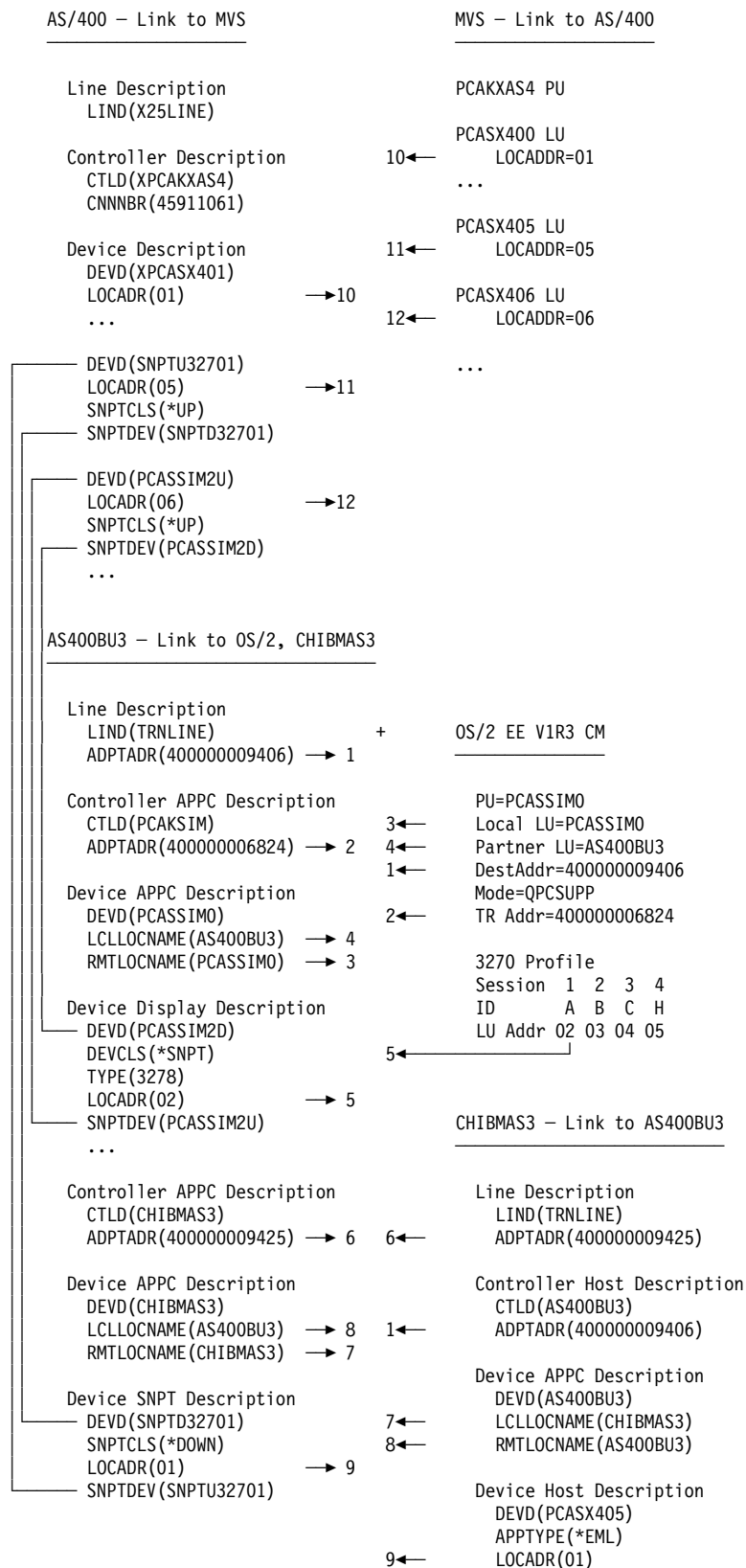


Figure 35. Matching Parameters, SNPT: OS/2 and AS/400

---

## 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.

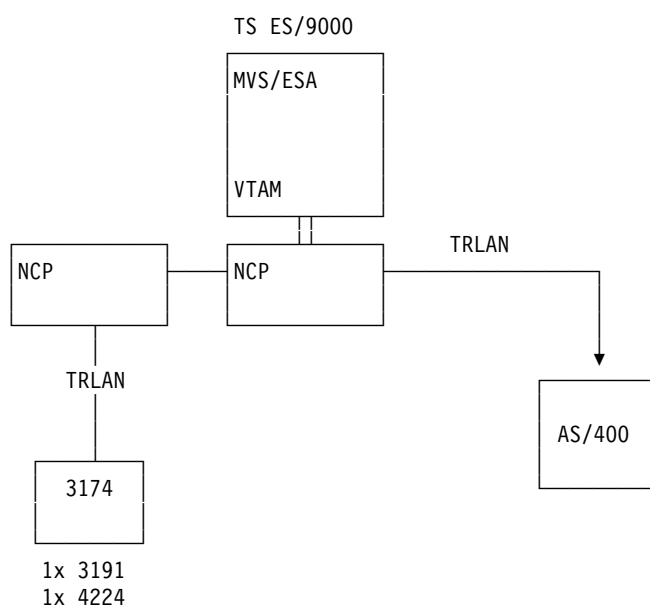


Figure 36. Overview: AS/400 SNA Primary LU Support

---

### 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', SECROT=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', SECROT=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', SECROT=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', SECROT=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', SECROT=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'028000000000000000000200'          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', SECROT=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', SECROT=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
*          00330000
*****
* 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)

```

```

CRTCTLHOST 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 */
      CRTDEVDP  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 */
      CRTDEVDP  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

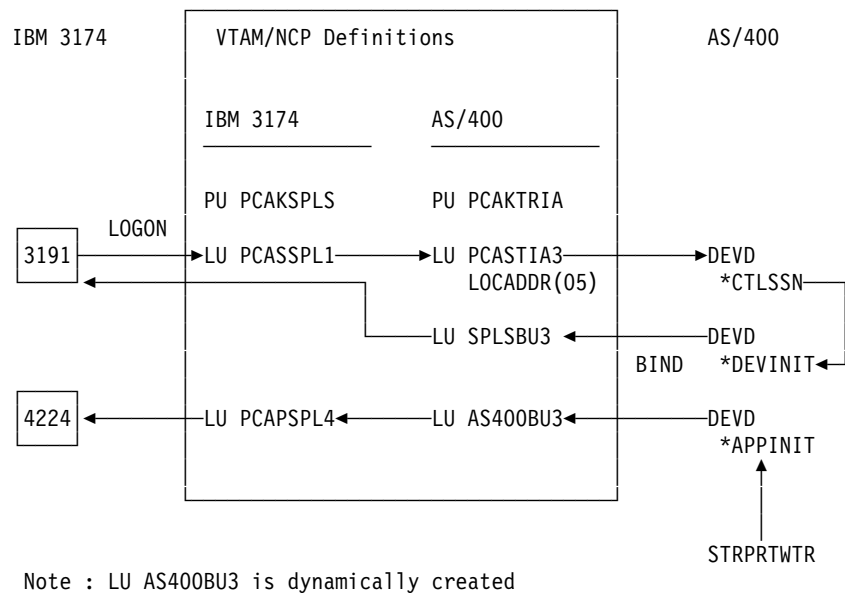


Figure 37. SPLS, IBM 3174 and AS/400 Parameter Overview and Relation

## 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

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

```

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.

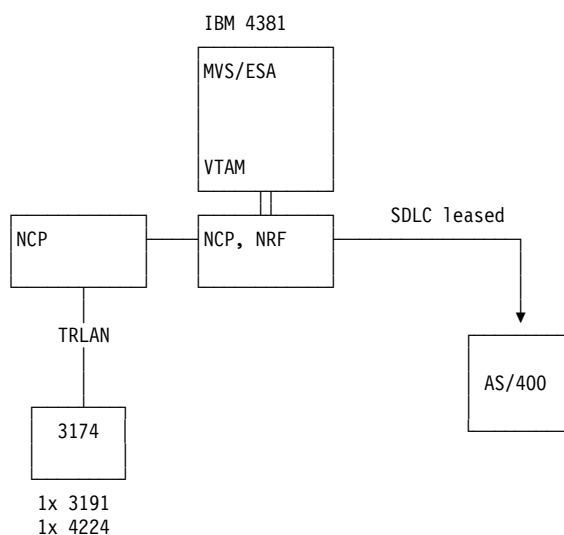


Figure 44. Passing Through a SNA Subarea Network to an AS/400

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 | 4...10 +-----+
*      |     | +-----+028-----+ PC9V54  | TR-GATEWAY | FSC-RING|
*      | ZCHMVS6 | |         | +-----+ PC9-SA09 | +-----+
*      |     | +-----+ +-----+
*      +-----+ |         | | L6 | +-----+
*      | VM/XA | +-----+ +-----+
*      | PCE-SA10 | +-----+048-----+ 3720 2M | +-----+
*      |     | +-----+ +-----+ PC7V54  | +-----+
*      | ZCHVM6 | +-----+049-----+ TEST-NCP | 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 ADDSESS=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,          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 *
SLODOWN=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*
          RNRLIMIT=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,                                           *
                LNCTL=SDLC,          LINE CONTROL TYPE IN THIS GRP  *
                ISTATUS=ACTIVE,      *
                OWNER=CHIBM60A,      VTAM CONTROLLING RESOURCE      *
                PACING=O,            NO PACING ON REX STAGE          *
                VIROWNER=CXRNRNF,    *
                VIRTUAL=YES,         *
                VPACING=O            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)
DLTDEV      DEVD(NRFDEV0*)
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

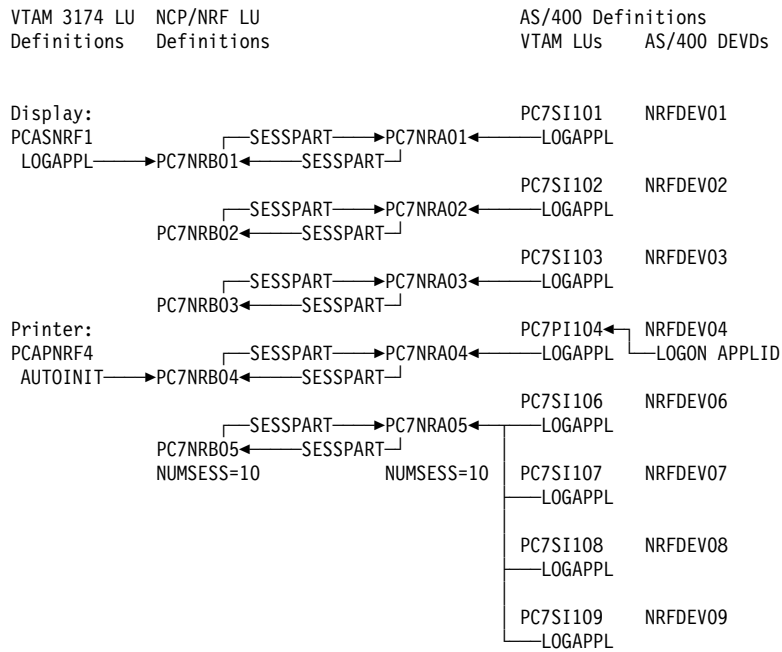


Figure 45. IBM 3174, NCP/NRF, AS/400 Parameter Overview and Relation

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

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/QBATCH) +
                           JOBQ(*LIBL/QBATCH) 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

```

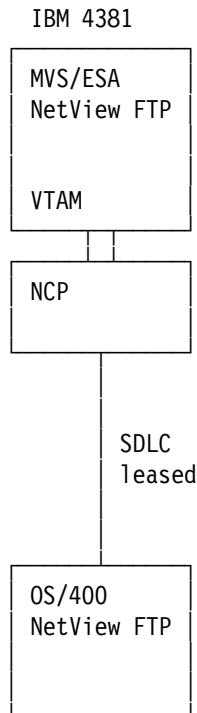
---

## 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 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=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'			
*				
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'			*
*				
	...			
*				
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'			*
	...			

### 6.2.2 VTAM Logmode Table Entry FTPBIND

[illegible]

```

..
..

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 . . . . .

Pending system name . . . . .

Local network ID . . . . .

Local control point name . . . . .

Default local location . . . . .

Default mode . . . . .

Maximum number of conversations for a remote location . . . . .

APPN node type . . . . .

Maximum number of intermediate sessions . . . . .

Route addition resistance . . . . .

AS400BU3

:

:

CHIBM600

AS400BU3

AS400BU3

MODLU62

64

\*NETNODE

200

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 Location Name	Remote Network ID	Local Location Name	Control Point Name	Control Point Net ID	Location Password	Secure Loc
PCAZFTP*	CHIBM600	AS400BU3	CHIBM60A	CHIBM600		*NO
	*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.

```
CRTLINS DLC 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
*VSENO D 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		VTAM Start Parameter
CPNAME(AS400BU3)		1← NETID=CHIBM600
NETID(CHIBM600)	→1	8← SCCPNAME=CHIBM60A
LCLLOCNAME(AS400BU3)	→10	
Controller Description		
CTLD(PC8CM1)		
RMTNETID(CHIBM600)	→1	VTAM/NCP for MVS NFTP
RMTCPNAME(CHIBM60A)	→8	
ILU/APPC Device Description (auto configuration)		VTAM Applications
DEVD(PCAZFTP1)		3← PCAZFTP1 APPL
RMTLOCNAME(PCAZFTP1)	→3	PCAZFTP2 APPL
CTL(PC8CM1)		
LCLLOCNAME(AS400BU3)	→10	
Mode Description		VTAM/NCP for AS/400
FTPBIND	→12	
APPN RMTLOCLIST		VTAM/NCP
RMTLOCNAME(PCAZFTP1)	→3	PC8L12 LINE
RMTNETID(CHIBM600)	→1	
LCLLOCNAME(AS400BU3)	→10	PC8CM1 PU ADDR=C1
RMTCPNAME(CHIBM60A)	→8	10← AS400BU3 LU LOCADDR=0
NFTP LU Directory		
RMTLOCNAME(PCAZFTP1)	→3	VTAM Logon Mode Table
NICKNAME(MVSFTP)	→11	
NFTP Request		12← FTPBIND Mode Entry
....		
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
      DVGSRV01     WAITING
      DVGSRV02     WAITING
                                OFF
                                OFF
                                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
      9  FROMMVS01  SIMH          MVSNFTP         NVFTP.USER.TESTDATA  Status
      9  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.

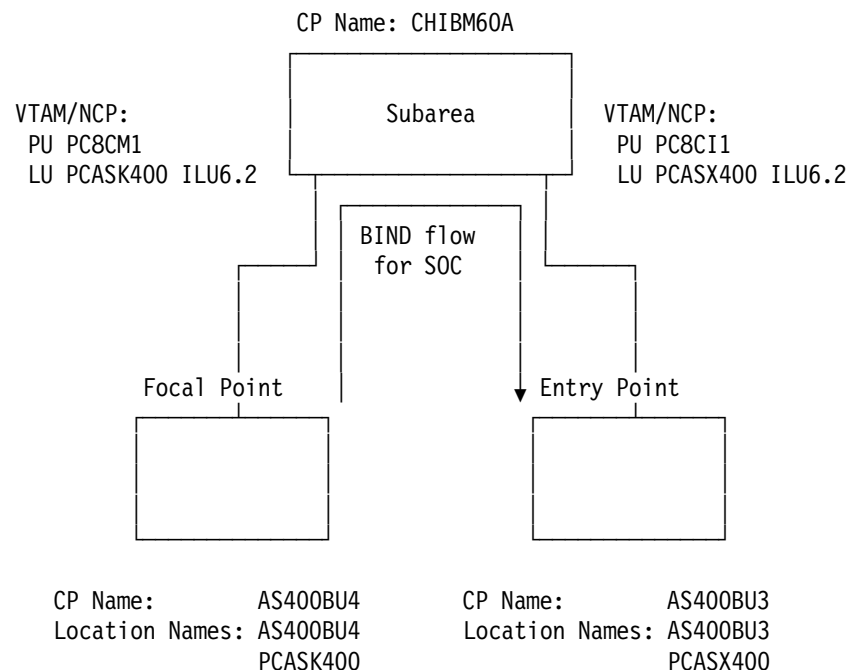
The focal point defines SNA/APPN network nodes (NN) belonging to its SOC. SNA/APPN end nodes (EN) forward alerts to the NN where they have a CP-CP session. ENs are not subject to the SOC.

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

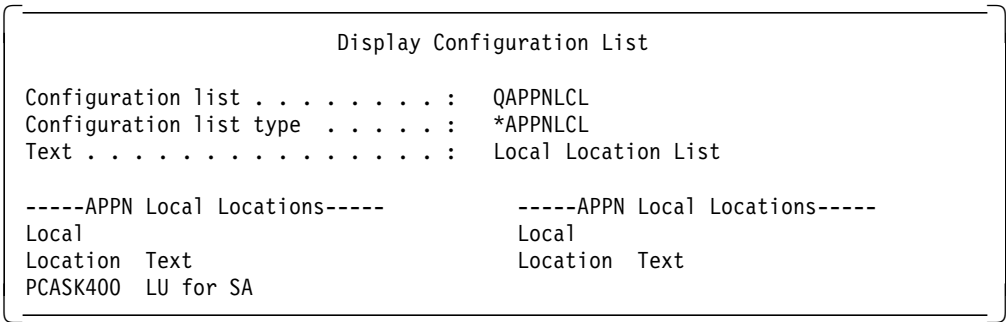


Figure 63. AS400BU4 (Focal Point) APPN Local Configuration List

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

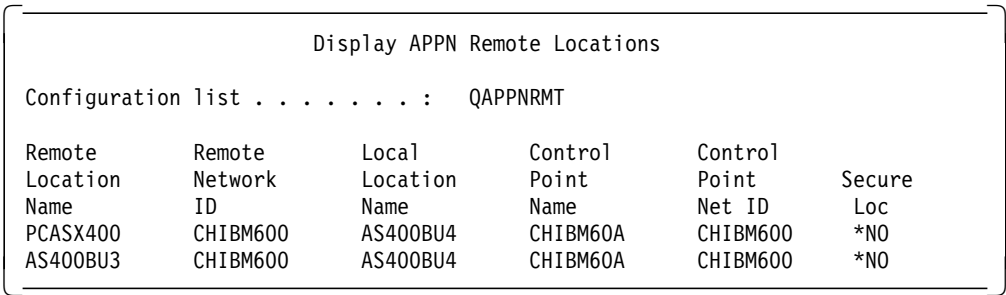


Figure 64. AS400BU4 (Focal Point) APPN Remote Configuration List

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.

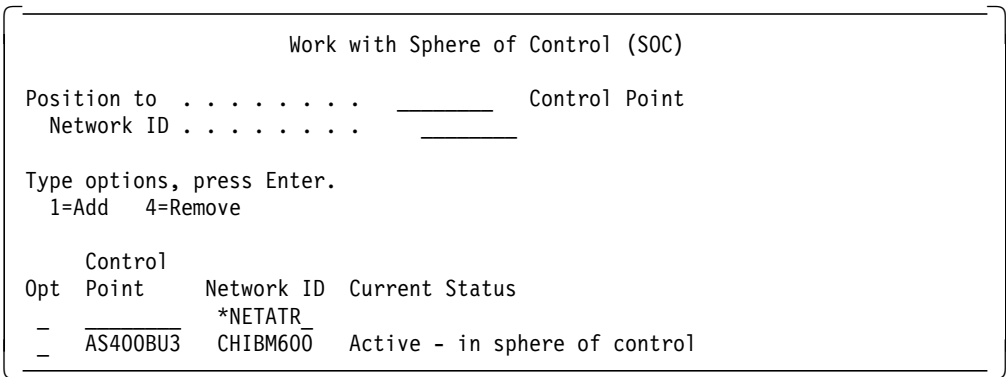


Figure 65. AS400BU4 (Focal Point) Sphere of Control

## 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      Remote      Control
Location    Network    Local      Point      Location    Secure
Location 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 to 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.

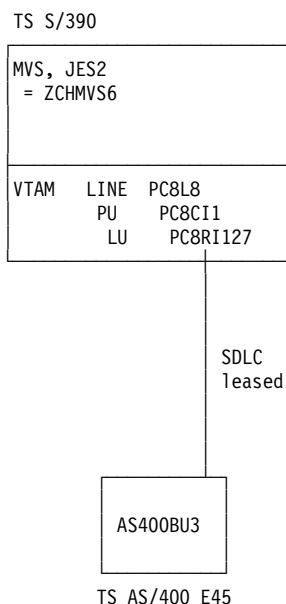


Figure 70. TS Network, MVS Bridge Environment

**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 $HASP122 SIMHNJE (JOB00001 FROM FSC400 ) RECEIVED AT ZCHMVS6
From . . . . : SYSTEM ZCHMVS6        23.03.93  15.51.52
JOB04777 $HASP165 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:

```

JES2 JOB LOG "SYSTEM MVS1" NODE ZCHMVS6

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=IEBGENER
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_____
      INIT      SIMH        Number User ID Address Date      Time
                                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	
<b>Job action . . . . .</b>	:	<b>*SEARCH</b>	

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
                                System:   AS400BU3
Queue . . . . . : QSYSOPR           Program . . . . : *DSPMSG
Library . . . . : QSYS              Library . . . . :
Severity . . . . : 45               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

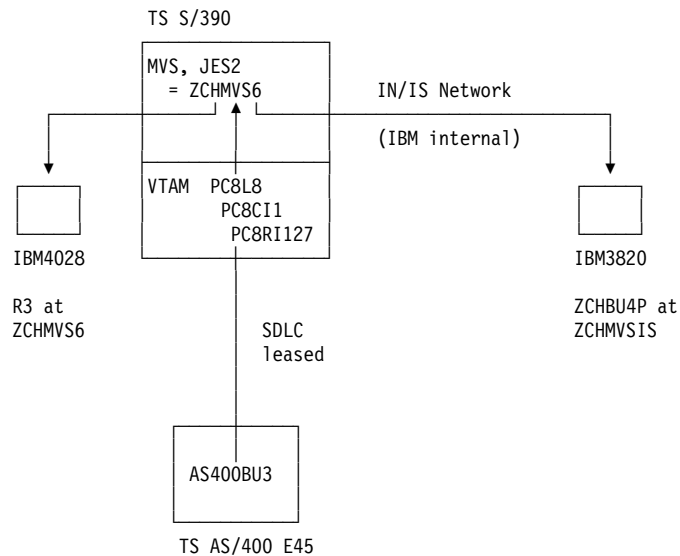


Figure 82. TS Network, MVS Bridge, Spool Files to MVS

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) SP  
LNBR(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/DSP0  
3) 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 TS0ISPF 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   Pages Page Copy
                                   16      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.

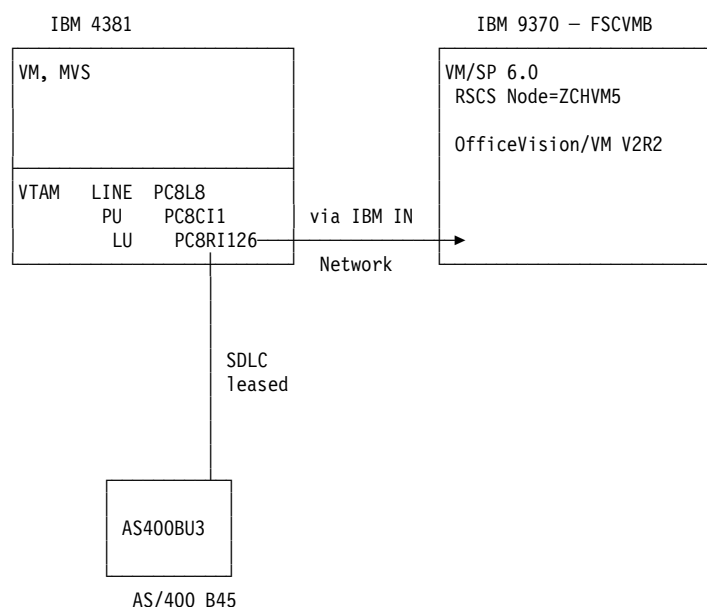


Figure 88. Network, OfficeVision/VM Bridge Environment

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
*
*      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

```

```

DEM09370PROMAIL 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=(PC8CI1)
*
PC8CI1  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,PC8CI1,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

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

CRTCTH0ST 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 Node ID ZCHVM5	OfficeVision/VM YES	OfficeVision/VM Distribution Manager PROMAIL	VM/RSCS Code Page
F3=Exit	F5=Refresh	F6=Add destination	F12=Cancel	F17=Top
				Bottom F18=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:

```
ADDIRE 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)
```

```
ADDIRE 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:

```
MSG 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					
PF9 Help PF10 Next Page PF11 Previous Page				Page	1 of 1
				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 Received
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

```

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

@

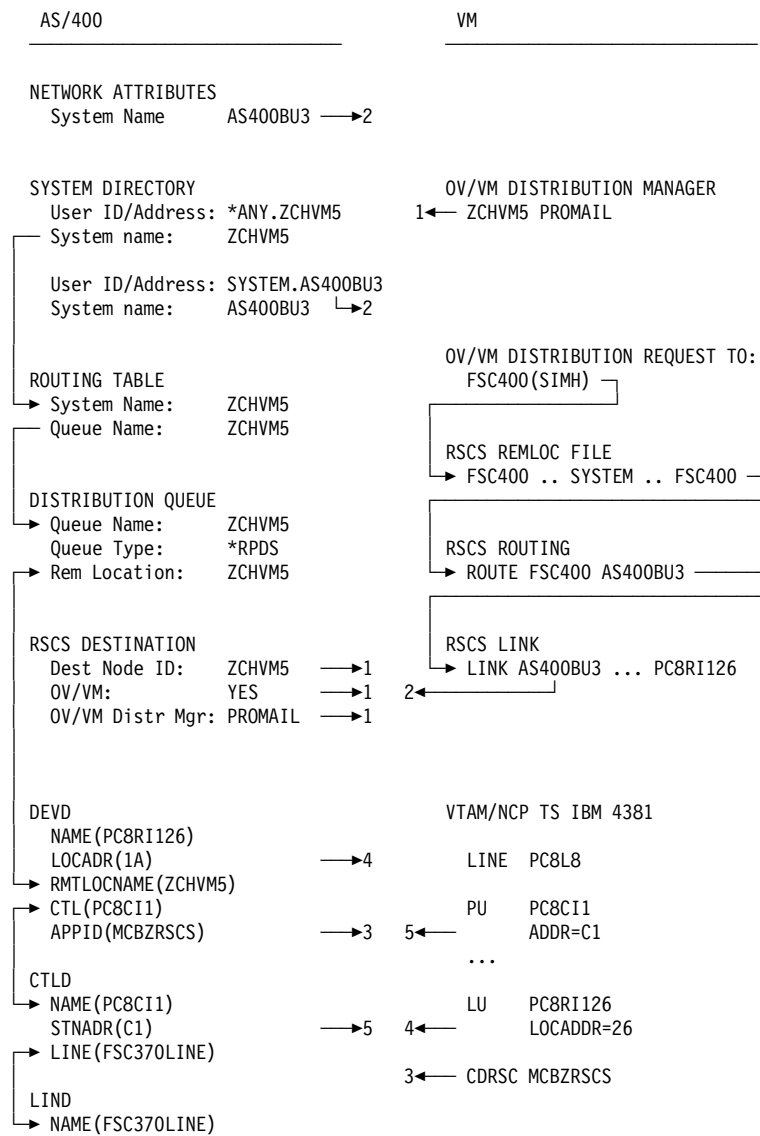


Figure 99. OfficeVision/VM Bridge, Matching Parameters



---

## 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 then 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 CHAIBM00)))
                                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 SBSD(QSNADS) JOB(WUPRPDS) JOBD(QGPL/WUPRPDS)
```

*Figure 100. Autostart Job Entry*

### 10.3.3 Routing Entry

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

*Figure 101. Routing Entry*

### 10.3.4 Job Description

```
CRTJOB (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 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 (ADDNETJOBE) or Change Network Job Entry (CHGNETJOBE) 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
<b>Job action.</b> . . . . .	<b>JOBACN</b>	<b>*SEARCH</b>
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) JOBD(QGPL/CMNJOB) JOBQ(*JOB) OUTQ(*JOB) +
  200          LOG(*JOB *JOB *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

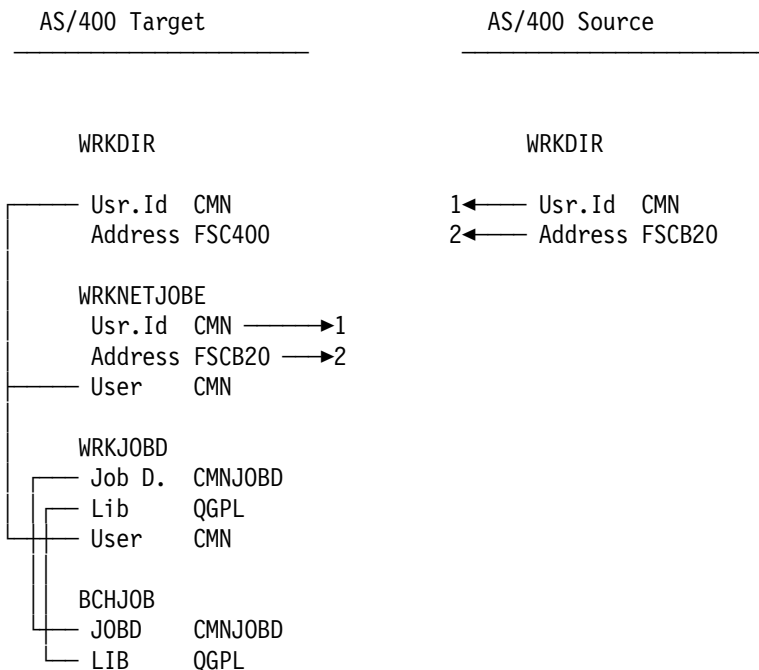
```

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.

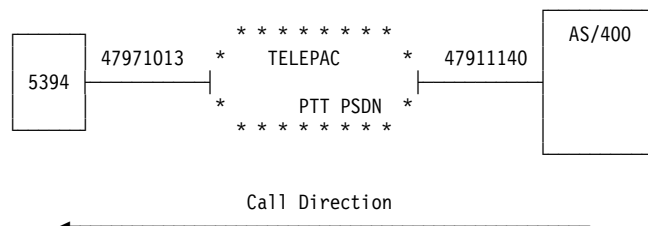


Figure 109. IBM 5394, using multiple X.25 links to AS/400

### 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')  
  
CRTDEVDSP 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

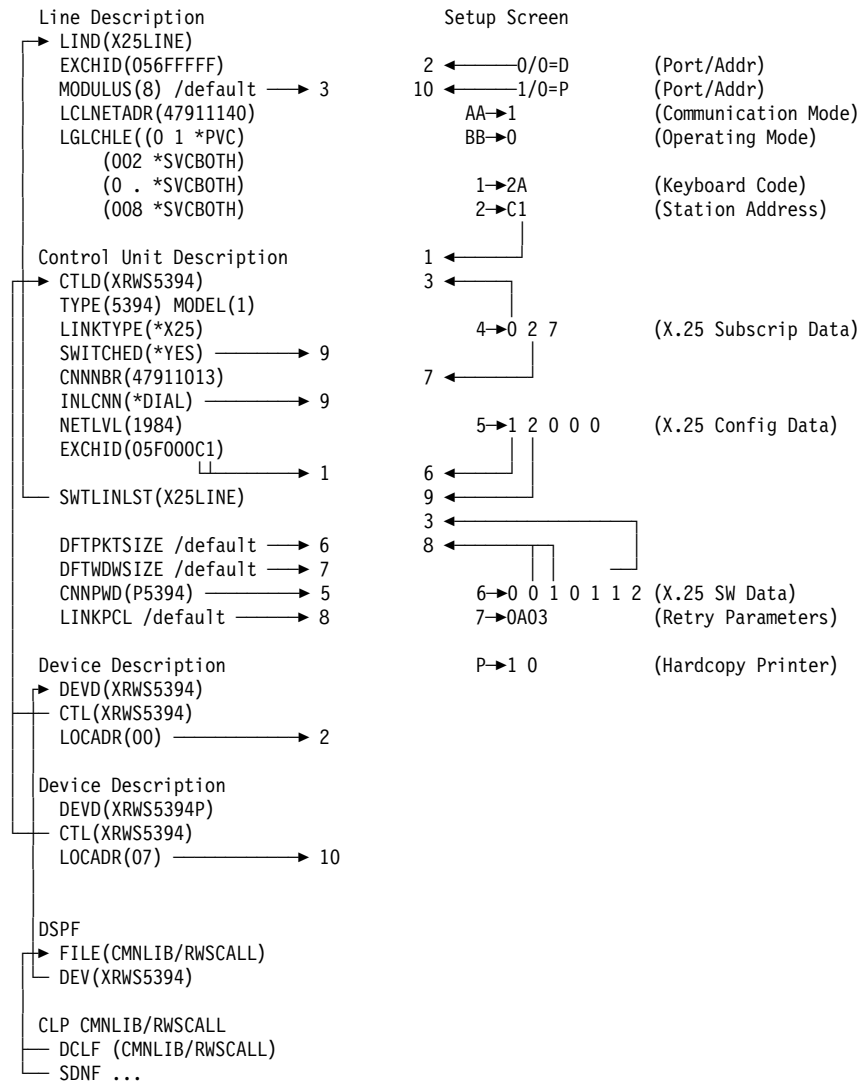


Figure 112. Matching Parameters, AS/400 calling IBM 5394 using X.25/SVC





## 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.

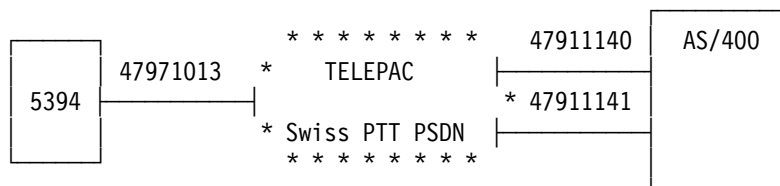


Figure 113. IBM 5394, using multiple X.25 links of AS/400

### 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) +
            DFTPKTSIZE(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(056EEEE) +
            DFTPKTSIZE(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')

CRTDEVDSP  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

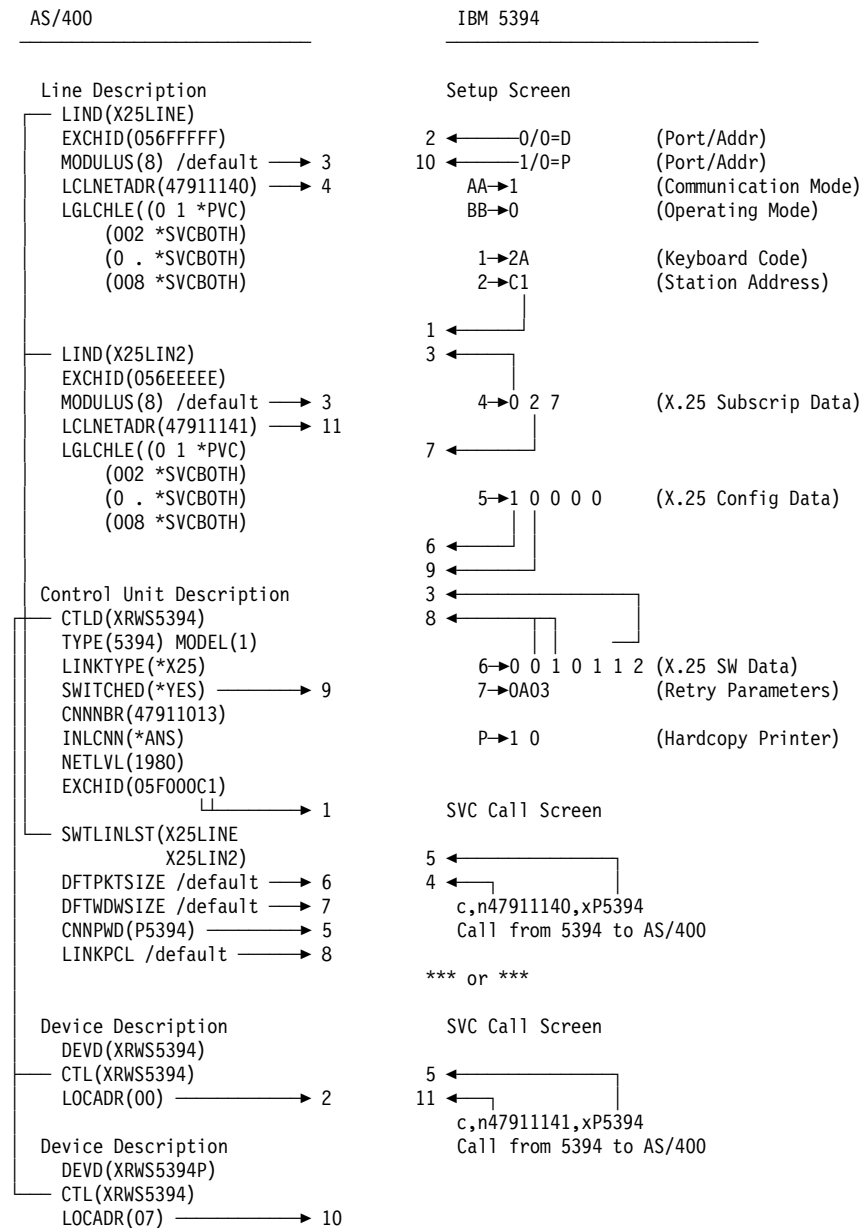


Figure 117. Matching Parameters, AS/400 and IBM 5394 using X.25/SVC

## 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)

			2 D: CIRCUIT TYPE 0= MULTIPLE PVCs, MULTIPLE SVCs, OR SVC CALL 1= SINGLE PVC 2= SINGLE SVC ANSWER ONLY WITH RELEASE 2 3 D: FLOW CONTROL NEGO. ALLOW 0= YES, 1= NO 4 D: ALL MANUAL OPTIONS ALLOWED 0= YES, 1= NO 5 D: LOCAL LOOP BACK SUPPORTED 1= YES, 0= NO
6 (X.25)	7 DIGITS	X.25 SOFTWARE DATA	1 D: REVERSE CHARGING ACCEPTED 1= YES, 0= NO 2&3 D: LOGICAL LINK CONTROL 00= PSH, 01= QLLC, 10= ELLC 4 D: SPECIAL NETWORK ATTACHMENT 0= YES, 1= NO 5 D: LINK INITIALIZATION CONTROL 0= NETWORK OR IBM 5394 1= NETWORK ONLY 6 D: NETWORK SUBSCRIPTION 0= CCITT X.25 1980 1= CCITT X.25 1984 7 D: DIAGNOSTICS CODE 0= SNA 1984 1= ISO 1984 2= SNA 1980
7 (X.25)	4 DIGITS HEXADECI.	RETRY PARAMETERS	1&2 D: NUMBER OF RETRIES HEX. 00 TO FF 3&4 D: SECOND BETWEEN RETRIES HEX. 01 TO 3C
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	1&2 D: NUMBER OF RETRIES HEX. 00 TO FF 3 D: DELAY BETWEEN RETRIES HEX. 1 TO F 4 D: DIRECT CALL SUPPORT IN SHM 1= YES, 0= NO
C (X.21)	2 DIGITS HEXADECI.	OPTIONAL CALL PROG- RESS 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.

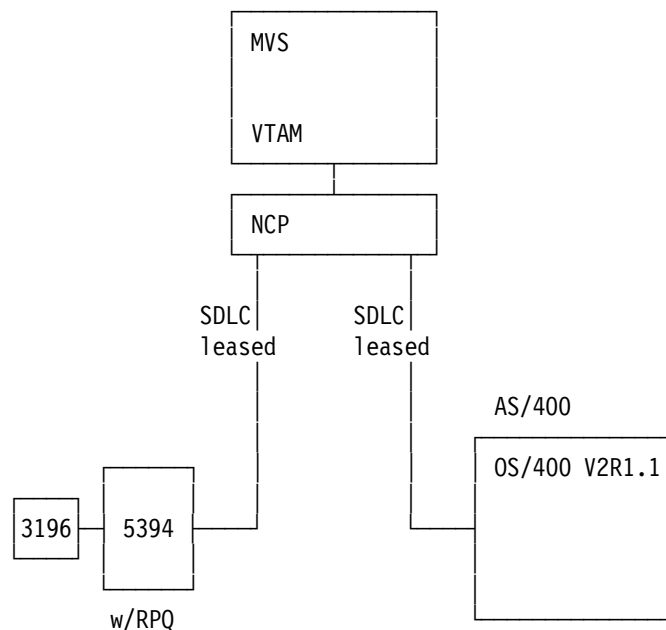


Figure 118. IBM 5394 with T2.1 RPQ via SNA Subarea to AS/400

---

## 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:

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

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

/* EMULATED SCREEN 3278/9-2 */
CRTDEVHST 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 . . . . .	PC8SRWS0	
Option . . . . .	*BASIC	
Category of device . . . . .	*APPC	
Remote location . . . . .	PC8SRWS0	
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 . . . . .	PC8SRWS0	
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

```

CRTCTLRWS  CTLD(T215394RWS) TYPE(5394) MODEL(1) +
            LINKTYPE(*NONE) ONLINE(*NO) +
            RMTLOCNAME(PC8SRWS0) LCLLOCNAME(AS400BU4) +
            RMTNETID(CHIBM600) TEXT('5394 via SNA SA')

CRTDEVDPSP  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
PC8SRWS0	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
Opt  Mode      Status      -----Conversations-----
      SNASVCMG Started        Total Source Target Detached
      MODLU62  Started        0      0      0      0
                        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 0F
( 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 0F
( 7) AS400BU4 ILU  PCAZN PC8SRWSO ILU  PCAZN 05/05 09:11:03 05/05 09:22:30
      REASON CODE 0F SENSE 08010000
( 8) PC8SRWSO ILU  PCAZN AS400BU4 ILU  PCAZN 05/05 09:10:52 05/05 09:16:06
      REASON CODE 0F

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	
0/0 = 0	→10	1←	NetID=CHIBM600
AA = 1		2←	SSCPName=CHIBM60A
BB = 2		VTAM Logon Mode Table	
CC = 77-826BE		3←	Table Entry=MODLU62
1 = 2A		VTAM/NCP for IBM 5394	
2 = C1	→5	4←	PC8L69 LINE DUPLEX=FULL
3 = 011 0000	→4	4←	NRZI=YES
8 = 3C 0		5←	PC8CRWS PU ADDR=C1
10 = 0A 06			PUTYPE=2
11 = CHIBM600	→1		XID=YES
12 = PC8SRWS0	→6	6←	PC8SRWS0 LU LOCADDR=0
13 = PC8CRWS	→5		
14 = MODLU62	→3		
15 = CHIBM600	→1		
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
Remote APN Config List		8←	PUTYPE=2
REMLOCNAME(PC8SRWS0)	→5	8←	XID=YES
REMNETID(CHIBM600)	→1	9←	AS400BU4 LU LOCADDR=0
LCLLOCNAME(AS400BU4)	→9		
REMCPCNAME(CHIBM60A)	→2		
REMNETID(CHIBM600)	→1		
AS/400 for IBM 5394			
CTLRWS CTLD(T215394RWS)			
RMTLOCNAME(PC8SRWS0)	→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		
DEVAPPC REMLOCNAME(PC8SRWS0)	→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

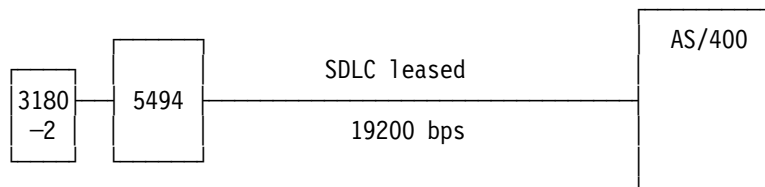


Figure 127. IBM 5494 via SNA/SDLC Leased

### 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						
1→	2A	-	-	2→	C1	3→	0 1 1 0 0 0 0
				DD→	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 QCLUS	
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

```
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')
```

## 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		
CTLD(SRWSCTL)		1 = 2A
STNADR(C1)	→ 7	7 ← 2 = C1
NODETYPE(*LEN)		3 = 0 1 1 0 0 0
ROLE(*SEC)		11 ←
APPN(*YES)		9 ←
RMTCPNAME(RWS5494)	→ 2	11 ←
RMTNETID(*NETATR)	→ 1	12 ←
MAXFRAME(521)		8 = 060
APPC Device Description		
(auto-created)		1 ← 11 = CHIBM600
DEVD(RWS5494)		3 ← 12 = RWS5494
CTL(SRWSCTL)		2 ← 13 = RWS5494
RMTLOCNAME(RWS5494)	→ 3	6 ← 14 = MOD5494
LCLLOCNAME(AS400BU3)	→ 4	15 =
RMTNETID(*NETATR)	→ 1	16 = 010 06
MODE(*NETATR)		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 133. Matching Parameters, 5494 via SNA/SDLC Leased



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

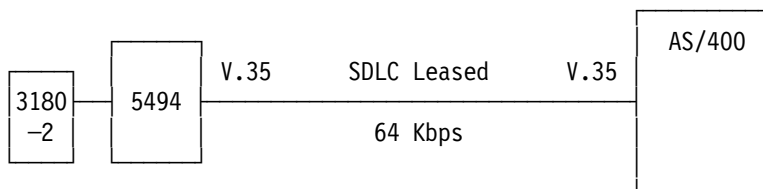


Figure 134. IBM 5494 V.35 via SNA/SDLC Leased

### 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 QCLUS	
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
ROLE(*SEC)		11 ←
APPN(*YES)		9 ←
RMTCPNAME(RWS5494)	→ 2	11 ←
RMTNETID(*NETATR)	→ 1	12 ←
MAXFRAME(521)		8 = 060
APPC Device Description		
(auto-created)		1 ← 11 = CHIBM600
DEVD(RWS5494)		3 ← 12 = RWS5494
CTL(VRWSCTL)		2 ← 13 = RWS5494
RMTLOCNAME(RWS5494)	→ 3	6 ← 14 = MOD5494
LCLLOCNAME(AS400BU3)	→ 4	15 =
RMTNETID(*NETATR)	→ 1	16 = 010 06
MODE(*NETATR)		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

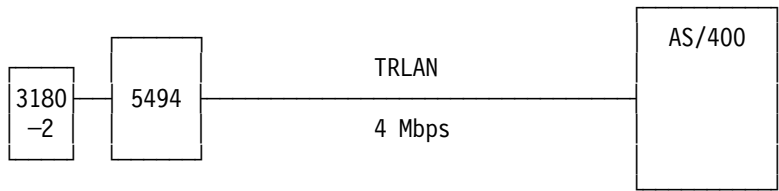


Figure 141. IBM 5494 via SNA/TRLAN

## 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 . . . . .	TMSGPNBR	*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 . . . . .	LANCNRRTY	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 . . . . .	LANACCPTY	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')

CRTDEVDSPL  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-----
      TRNLINE        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 LIND(TRNLINE)	→ 8	Setup Screen
ADPTADR(400000009406)	→ 12	10 ← 0/0 = 3180-2
SSAP(04)	→ 13	8 ← AA = A 1 = 2A
APPC Controller Description (auto-created)		9 ← F = 04 G = 01 H = 30 I = 030 J = 08
CTLD(RWS549400)		
ADPTADR(400000005494)	→ 7	
DSAP(04)	→ 9	
APPN(*YES)		
RMTCPNAME(RWS5494)	→ 2	
RMTNETID(*NETATR)	→ 1	
APPC Device Description (auto-created)		1 ← 11 = CHIBM600 3 ← 12 = RWS5494 2 ← 13 = RWS5494 6 ← 14 = MOD5494 7 ← 15 = 400000005494 16 = 010 06 17 = 77-FB011
DEVD(RWS549402)		
CTL(RWS549400)		
RMTLOCNAME(RWS5494)	→ 3	4 ← H1:1 = AS400BU3 5 ← H1:2 = CHIBM600 1 ← H1:3 = CHIBM600 6 ← H1:4 = MOD5494 12 ← H1:5 = 400000009406 13 ← H1:7 = 04
LCLLOCNAME(AS400BU3)	→ 4	
RMTNETID(*NETATR)	→ 1	
MODE(*NETATR)		
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 148. Matching Parameters, 5494 via SNA/TRLAN

## Chapter 19. IBM 5494 via SNA/X.25 SVC to AS/400

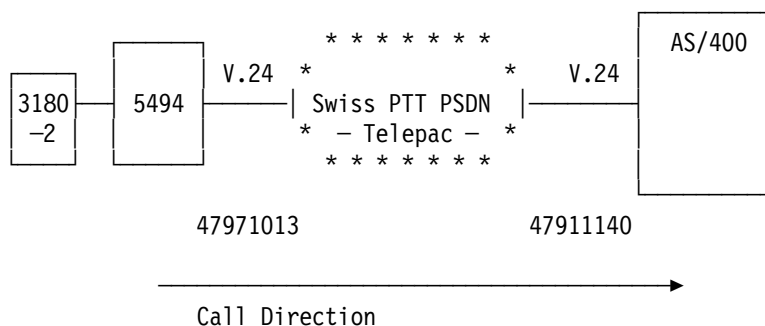


Figure 149. IBM 5494 via SNA/X.25 SVC, 5494 is calling

### 19.1 Hardware and Software Used

- AS/400 E45 with OS/400 V2R1.1
- IBM 5494-2, Microcode R1.0
- Two real PSDN access links were used

### 19.2 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→ 1				DD→ 0			
1→ 2A - -	2→ C1	4→ 0 02 7	5→ 1 0 0 0 0	6→ 0 0 0 0 1 0			
7→ 010 03							
	P→ - -						

Figure 150 (Part 1 of 2). IBM 5494 via SNA/X.25 SVC to AS/400 Setup Screen

```
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(056FFFFF) +
            DFTPFSIZE(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')

CRTDEVDSP  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)
APPC Controller Description		1 = 2A
CTLD(XRWSCTL)		7 ← 2 = C1
CNNBR(47971013)	→ 12	4 = 0 02 7
EXCHID(073000C1)	→ 7	9 ←
SWITCHED(*YES)	→ 11	5 = 1 0 0 0 0
APPN(*YES)		11 ←
RMTCPNAME(RWS5494)	→ 2	6 = 0 0 0 0 1 0
RMTNETID(*NETATR)	→ 1	
DFTWDWSIZE(2 2)	→ 9	
APPC Device Description		1 ← 11 = CHIBM600
(auto-created)		3 ← 12 = RWS5494
DEVD(RWS549401)		2 ← 13 = RWS5494
CTL(XRWSCTL)		6 ← 14 = MOD5494
RMTLOCNAME(RWS5494)	→ 3	12 ← 15 = 47971013
LCLLOCNAME(AS400BU3)	→ 4	16 = 010 06
RMTNETID(*NETATR)	→ 1	17 = 77-FB011
MODE(*NETATR)		4 ← H1:1 = AS400BU3
		5 ← H1:2 = CHIBM600
		1 ← H1:3 = CHIBM600
		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

Chapter 20. IBM 5494 via SNA/X.25 PVC to AS/400

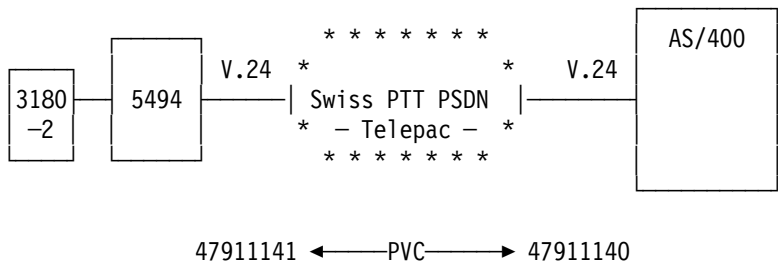


Figure 156. IBM 5494 via SNA/X.25 PVC

20.1 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→ 1 DD→ 0							
1→ 2A - - 2→ C1 4→ 0 02 7 5→ 1 1 0 0 0 6→ 0 0 0 0 1 0							
7→ 010 03 P→ - -							

Figure 157 (Part 1 of 2). IBM 5494 via SNA/X.25 PVC 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->	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(056FFFFF) +
            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 QCLUS	
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

```
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')
```

### 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)
APPC Controller Description		1 = 2A
CTLD(XPRWSCCTL)		7 ← 2 = C1
SWITCHED(*NO)	→12	4 = 0 02 7
LGLCHLID(001)	→13	5 = 1 1 0 0 0
EXCHID(073000C1)	→ 7	12 ←
APPN(*YES)		6 = 0 0 0 0 1 0
RMTCPNAME(RWS5494)	→ 2	
RMTNETID(*NETATR)	→ 1	
		1 ← 11 = CHIBM600
APPC Device Description		3 ← 12 = RWS5494
(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,

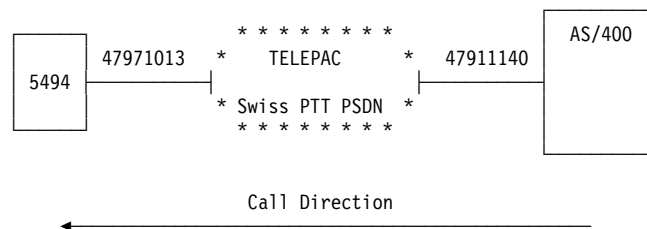


Figure 163. IBM 5494, using SNA/X.25 SVC, called by AS/400

---

### 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.

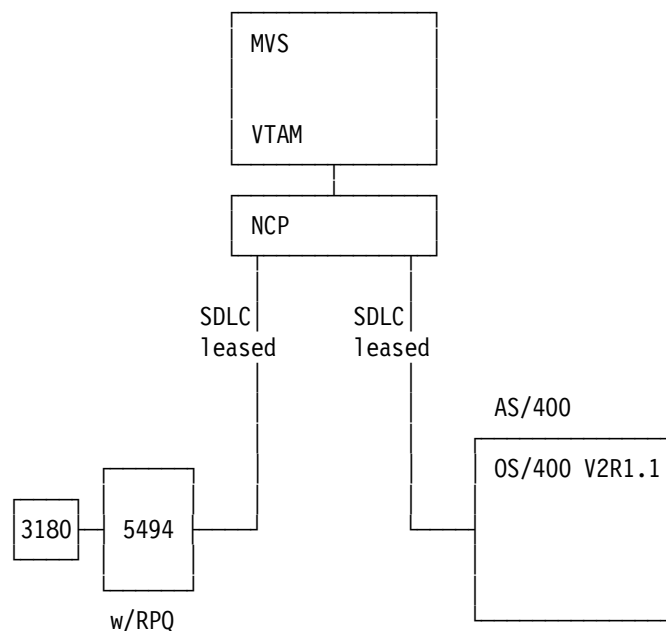


Figure 164. IBM 5494, with T2.1 RPQ via SNA Subarea to AS/400

---

### 22.1 Software Used

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

## 22.2 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→ 1                                  DD→ 0  
1→ 2A - -    2→ C1    3→ 0 1 1 0 0 0 0        8→ 06 0

P→ 2 1

Figure 165 (Part 1 of 2). IBM 5494 T2.1 Setup Screen

11→ CHIBM600 12→ PC8SRWS0 13→ PC8CRWS\_ 14→ MODLU62\_  
15→ \_\_\_\_\_ 16→ 010 06 17→ 77-FB011

H1:1→ AS400BU3 H1:2→ CHIBM600 H1:3→ CHIBM600 H1:4→ MODLU62  
H1:5→ \_\_\_\_\_

H2:1→ \_\_\_\_\_ H2:2→ \_\_\_\_\_ H2:3→ \_\_\_\_\_ H2:4→ \_\_\_\_\_  
H2:5→ \_\_\_\_\_

H3:1→ \_\_\_\_\_ H3:2→ \_\_\_\_\_ H3:3→ \_\_\_\_\_ H3:4→ \_\_\_\_\_  
H3:5→ \_\_\_\_\_

H4:1→ \_\_\_\_\_ H4:2→ \_\_\_\_\_ H4:3→ \_\_\_\_\_ H1:4→ \_\_\_\_\_  
H4:5→ \_\_\_\_\_

Figure 165 (Part 2 of 2). IBM 5494 T2.1 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.

## 22.3 AS/400 Definitions

## 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.

```
CRTLINS DLC LIND(S4381LIN2) RSRNAME(LIN052) ONLINE(*NO) +
    ROLE(*SEC) LINESPEED(19200) +
    MODEM(*IBMLPDA1) DUPLEX(*FULL) +
    TEXT('Leased, PP, to FSC 4381')
CRTCTHST CTLD(PC8CM1) LINKTYPE(*SDLC) ONLINE(*NO) +
    APPN(*YES) LINE(S4381LIN2) +
    RMTNETID(CHIBM600) RMTCPNAME(CHIBM60A) +
    SSCPID(05000000A0BE) STNADR(C1) CPSSN(*NO) +
    NODETYPE(*LENNODE) TEXT('PU(PC8CM1) to +
    FSC4381')
/* EMULATED SCREEN 3278/9-2 */
CRTDEVHST DEV D(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 . . . . .	PC8SRWS0	
Option . . . . .	*BASIC	
Category of device . . . . .	*APPC	
Remote location . . . . .	PC8SRWS0	
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 QLU5	
Device description . . . . .	PC8SRWS0	
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(PC8SRWS0) 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 Location Name	Remote Network ID	Local Location Name	Control Point Name	Control Point Net ID	Location Password	Secure Loc
PC8SRWS0	CHIBM600	AS400BU3	CHIBM60A	CHIBM600		*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-----
      Mode      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 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			
LINS DLC LIND(S4381LIN2)			
CTLHOST CTLD(PC8CM1)			
NODETYPE(*LENNODE)	→8		
RMTNETID(CHIBM600)	→1		
RMTCPNAME(CHIBM60A)	→2		
DEV APPC 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.

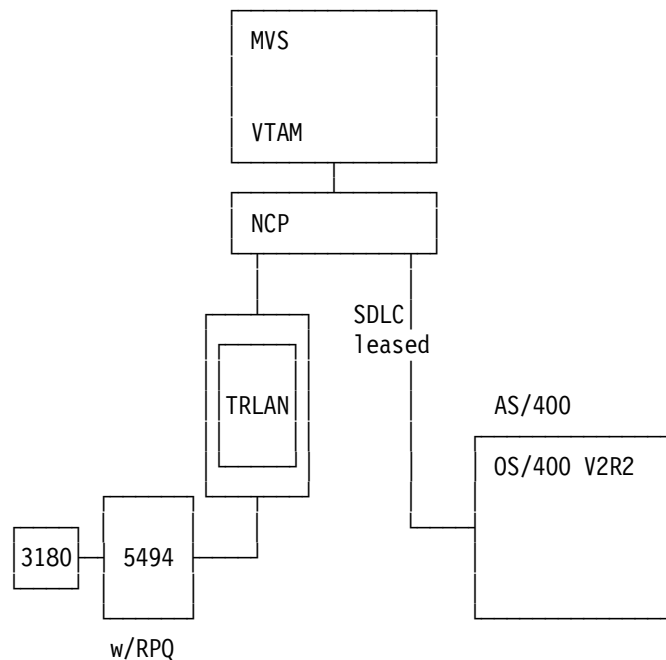


Figure 173. IBM 5494, with T2.1 RPQ via TRLAN to SNA Subarea and AS/400

---

### 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.

```

      CRTLINS DLC LIND(S4381LIN2) RSRNAME(LIN052) ONLINE(*NO) +
          ROLE(*SEC) LINESPEED(19200) +
          MODEM(*IBMLPDA1) DUPLEX(*FULL) +
          TEXT('Leased, PP, to FSC 4381')
      CRTCTHST CTLD(PC8CM1) LINKTYPE(*SDLC) ONLINE(*NO) +
          APPN(*YES) LINE(S4381LIN2) +
          RMTNETID(CHIBM600) RMTCPNAME(CHIBM60A) +
          SSCPID(05000000A0BE) STNADR(C1) CPSSN(*NO) +
          NODETYPE(*LENNODE) TEXT('PU(PC8CM1) to +
          FSC4381')
/* EMULATED SCREEN 3278/9-2 */
      CRTDEVHST DEV(DPC8SM101) 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 Location Name	Remote Network ID	Local Location Name	Control Point Name	Control Point Net ID	Location Password	Secure Loc
PCASTICO	CHIBM600	AS400BU3	CHIBM60A	CHIBM600		*NO
	*NETATR	*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 QLU5	
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')

CRTDEVDSPE DEVD(RWS5494C00) DEVCLS(*RMT) TYPE(3180) +
           MODEL(2) LOCADR(03) ONLINE(*NO) +
           CTL(RWS5494C) TEXT('3180 at 5494 T2.1')

```



## 23.2.5 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 178. IBM 5494 as Node T2.1 via TRLAN to SNA Subarea Network, Mode Description

## 23.3 VTAM/NCP Definitions

### 23.3.1 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*
              RNRLIMT=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          *

```



```

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-----
      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 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

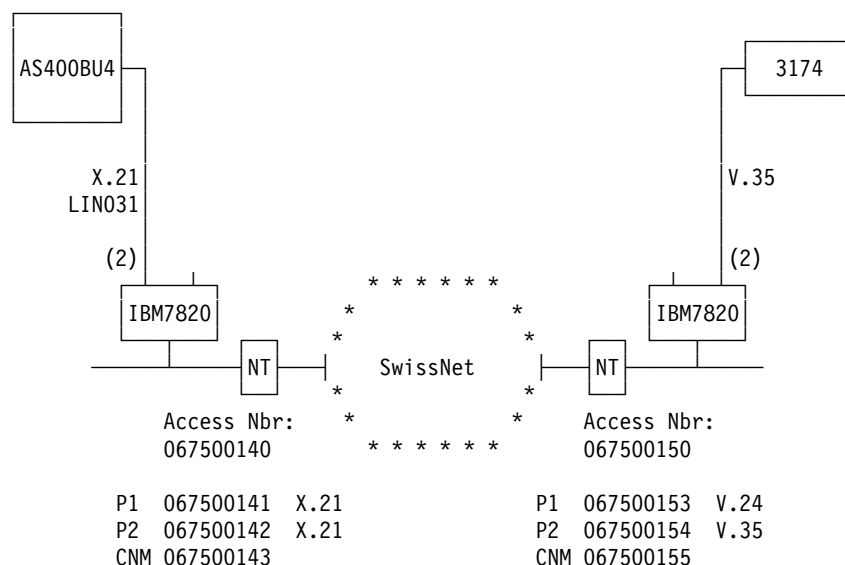
IBM 5494, T2.1		VTAM Startup	
0/3 = 3180-2	→10	1←	NetID=CHIBM600
AA = 4		2←	SSCPName=CHIBM60A
		VTAM Logon Mode Table	
11 = CHIBM600	→1	3←	Table Entry=MODLU62
12 = PCASTICO	→6		
13 = PCAKTRIC	→5		
14 = MODLU62	→3		
15 = 400000005494		VTAM for IBM 5494	
16 = 010 06		5←	PCAKTRIC PU
17 = XI-05494	→11		IDBLK=073
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
H1:5 = 400000000010	→12		LOCADDR=00
		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		
REMNETID(CHIBM600)	→1		
LCLLOCNAME(AS400BU3)	→9		PC8CM1 PU
REMCPCNAME(CHIBM60A)	→2	8←	ADDR=C1
REMNETID(CHIBM600)	→1	8←	PUTYPE=2
			XID=YES
		9←	AS400BU3 LU
			LOCADDR=0
AS/400 for IBM 5494			
CTLRWS CTLD(RWS5494C)			
RMTLOCNAME(PCASTICO)	→6		
LCLLOCNAME(AS400BU3)	→9		
RMTNETID(CHIBM600)	→1		
DEVDSPL 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		
DEVAPPC 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



## Chapter 24. IBM 3174 via IBM 7820 and Swissnet to AS/400

### 24.1 Using the AS/400 X.21 Interface



NT stands for Network Termination

Figure 181. AS/400 SwissNet Scenario with X.21 Interfaces

CNM nbr, for example 067500143, is used to configure the IBM 7820 by a remote NetView/PC attached via a V.24 interface to the IBM 7820.

AS400BU4 uses IBM 7820 interface 2 (P2)

IBM 3174 uses IBM 7820 interface 2 (P2).

IBM 3174 calls AS400BU4 for 3270 Remote Support

#### 24.1.1 IBM 7820 attached to AS/400, Setup

CUSTOMIZE BASE	CUSTOMIZE INTERFACE 1	CUSTOMIZE INTERFACE 2
NETWORK TYPE: 30U		2/SP ATTACHED: NO
CURRENT LOOP DETECTOR: NO		2/TYPE (X.21): X.21
TEI MODE: AUTOMATIC		2/MODE: SWITCHED
TA CALL NBR:0675 00143		2/CALL NBR: 0675 00142

TA PASSWORD:  
/

FACILITIES:  
/

2/SPEED:  
64000

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

```
CRTLNSDLC 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')
```

```
CRTCTLRWS CTLD(I3174) TYPE(3174) MODEL(0) +  
          LINKTYPE(*SDLC) ONLINE(*NO) +  
          SWITCHED(*YES) SWTLINLST(IX21LINE) +  
          EXCHID(017EEEE) INLCNN(*ANS) STNADR(C1)
```

```
CRTDEVDPSP DEVD(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

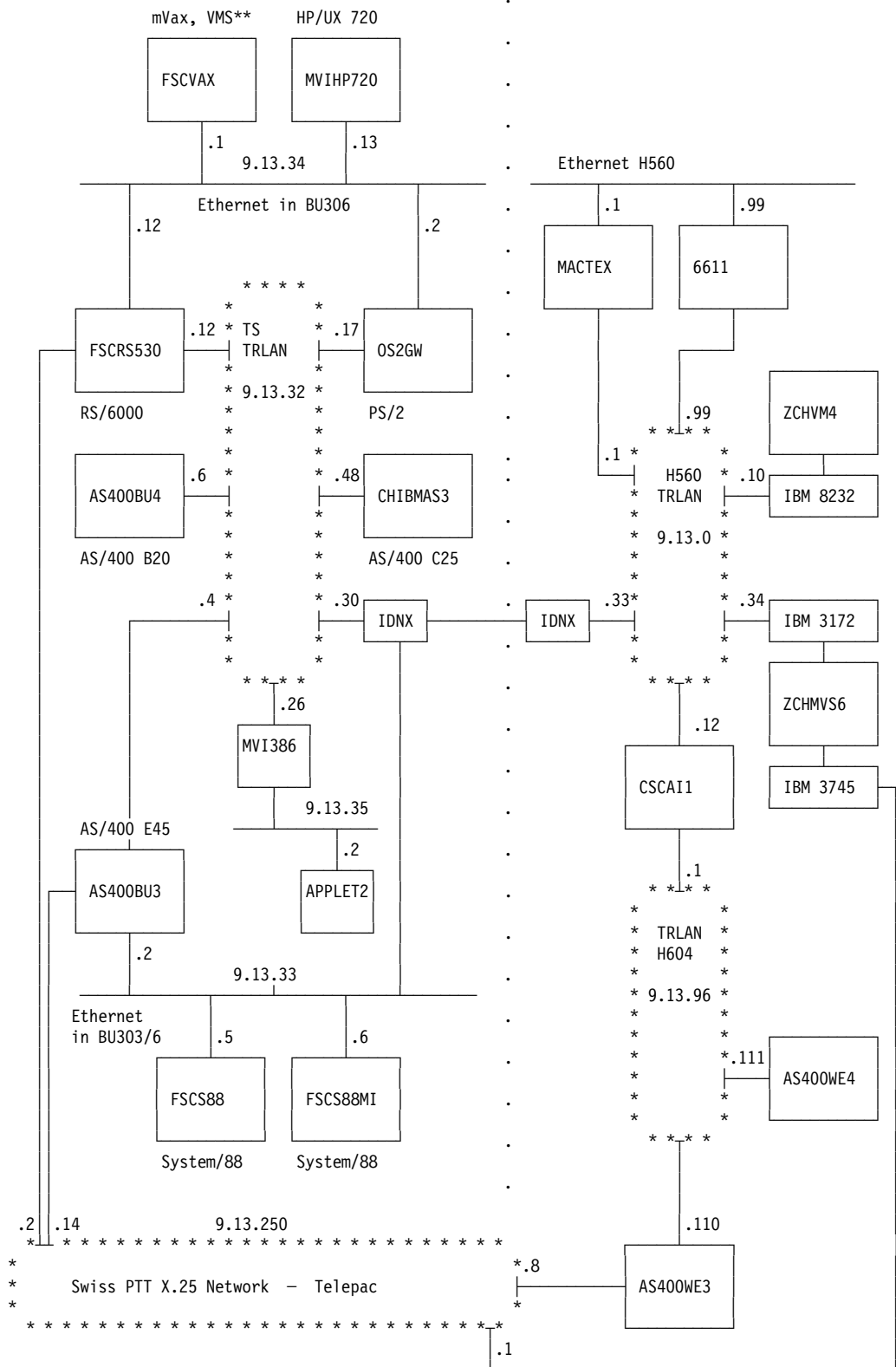


Figure 183. TS TCP/IP Network, Partial View

---

## 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  First 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	NFTPDTA.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	NFTPDTA	*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
FTPSEVER_DTP.LOG;22      FTPSEVER_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 QSMTPDMY 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(QSMTPDMY 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 . . . . . : QSMTPQ
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 QSMTPQ

- A SNADS routing table entry is required to guide any SMTP mailing into the global distribution queue QSMTPQ.

Display Details of Routing Table Entry

```

Destination system
  name/Group . . . . . : TCP/IP
Description . . . . . : TCP/IP SMTP Routing
Service level:
  Fast:
    Queue name . . . . . : QSMTPQ
    Maximum hops . . . . : *DFT
  Status:
    Queue name . . . . . : QSMTPQ
    Maximum hops . . . . : *DFT
  Data high:
    Queue name . . . . . : QSMTPQ
    Maximum hops . . . . : *DFT
  Data low:
    Queue name . . . . . : QSMTPQ
    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:

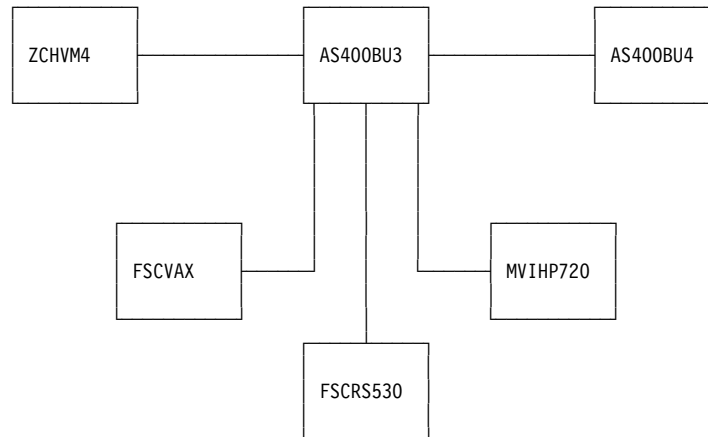


Figure 193. TS TCP/IP SMTP Environment

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
			Bottom
F3=Exit   F5=Refresh   F12=Cancel   F15=Print list   F17=Position to			

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

-----From-----
Opt  Status      User ID  Address  Description      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 9.13.32.41 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. VMSmail, 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

T0: 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

F2=Move

F3=Exit/Save

F6=Find

F10=Send

F12=Cancel

F13=Edit options

F14=Get options

F16=Adjust/Paginate

F17=Functions

F18=Search/Replace

F19=Print/View

F21=Nondisplay keys

F22=Spell functions

F23=Word spell aid

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

T0: 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) Relas
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/J0 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= Rgtleft 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 BSMTP 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 NFT 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:
/qdls/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:/qdls/guest /home/simh/as400bu3/qdls
```

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  1 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  1 12:58 ndm.file
drwxrwxrwx  1 simh      system      4096 Jul  1 12:58 nftp.file
-r-xr-xr-x  1 simh      system      8000 Apr  1 1992  nftpdta.pf
drwxrwxrwx  1 simh      system      4096 Jul  1 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  rtfvfrommvs.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/qdls>cd ..
fscrs530.simh:/home/simh/as400bu3>cd ..
fscrs530.simh:/home/simh>umount /home/simh/as400bu3/qdls
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 ID
	/QDLS/GUEST	*ALL	*YES	*NO	777
	/QSYS.LIB/GUEST.LIB	*ALL	*YES	*NO	777
F3=Exit F5=Refresh F11=Display additional path information					Bottom 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.

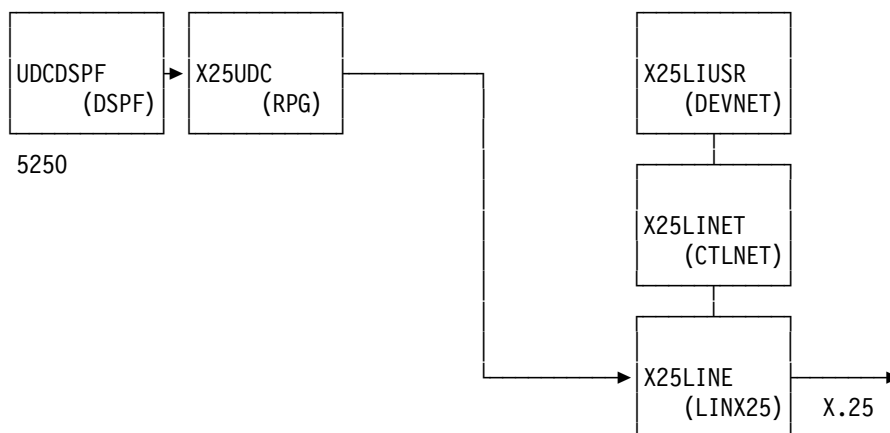


Figure 224. UDC Program via Native X.25 to Mallette

---

### 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              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*			QOLRECV
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*			QOLSETF
I*			QOLSEND
I*			QOLRECV
I*			QOLDLINK
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*			QOLDLINK
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*			QOLRECV
I* NUMDU	Number of data units		QOLSEND
I*			QOLRECV
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*			QOLRECV
I* OPRTN1	Operation (first byte)		QOLSEND
I*			QOLRECV
I* OPRTN2	Operation (second byte)		QOLSEND
I*			QOLRECV
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		All
I* RTNODE	Return Code		All
I* UCEP	Existing user connection end point ID		QOLRECV
I* XUDSZ	X.25 user data size		QOLELINK
*****			
IUDCPRM	IDS		
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 47100PRTNN
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\*\*\*\*\*

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\* FDTL Calling DTE address length

I\* FDTE Calling DTE address

I\* FRDTA Additional routing data

I\*\*\*\*\*

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 FDTL
I         10 21 FDTE
I         22 22 FRDTA

```

I/EJECT

I\*\*\*\*\*

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*
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* CCCUD 128 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* RUDTA 128 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 Stucture
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                                MOVELFF      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          EXFMT PROMPT
C          *INKC      CABEQ'1'      ENDPGM
C
C      *
C      * SEND DATA TO BE ECHOED
C          EXSR SEND
C
C      *
C      * RECEIVE DATA FROM REMOTE DTE
C          EXSR RECV
C          MOVE LUSDTA      FLD004
C          GOTO ECHO
C
C      *
C      * SEND CLEAR REQUEST
C          ENDPGM      TAG
C          EXSR CLEAR
C
C      *
C      * RECEIVE CLEAR CONFIRMATION
C          EXSR CLEARC
C
C      *
C      * DISABLE LINK
C          EXSR DLINK
C          SETON      LR
C/EJECT
C*****
C      * Enable the Link
C*****
C          ELINK      BEGSR
C      * X.25 user data size (512 TO 4096)
C          Z-ADD 512      XUDSZ
C      * Copy 4 userspace names to parameter fields
C          MOVE LCIBUF      IBUF
C          MOVE LCIBUFD      IBUFD
C          MOVE LCOBUF      OBUF
C          MOVE LCOBUFD      OBUFD
C      * Copy data queue name to parameter field
C          MOVE LCDATAQ      DATAQ
C      * DTAQ key length, 0=no key
C          Z-ADD 0      KEYLEN
C      * Line description name = X25LINE
C          MOVE 'X25LINE'      LIND
C      * Handle to be used on future calls = HANDLE
C          MOVE 'HANDLE'      HANDLE
C
C      *
C      * Call Enable Link UDC program
C          CALL 'QOLELINK'
C          PARM      RTNCDE
C          PARM      RSNCDE
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-ADDRTNCDE   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'FDTL
* CALLING DTE ADDRESS
* NEEDS TO BE X'00' WHEN WORKING WITH PID
C          MOVE'HEX00    FDTL
* 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          MOVEA ADTE,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-ADD0          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
C
*
* Copy user's data from USRSPC data unit, no descriptor
C          Z-ADD1      STRPOS
C          Z-ADD512     USDTAL
C
*
C          CALL 'QUSRTVUS'
C          PARM          IBUF
C          PARM          STRPOS
C          PARM          USDTAL
C          PARM          USDTA
C
*
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   FRCCCHG
C
*
C          CALL 'QUSCHGUS'
C          PARM          OBUF
C          PARM          STRPOS
C          PARM          USDTAL
C          PARM          USDTA
C          PARM          FRCCCHG
C
*
* 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   FRCCCHG
C
*
C          CALL 'QUSCHGUS'
C          PARM          OBUFD
C          PARM          STRPOS
C          PARM          USDTAL
C          PARM          DATAL
C          PARM          FRCCCHG
* 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
*
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
*
C          MOVE *BLANK    MSGERR
C          MOVE 'QOLSEND' MSGERR
C          MOVE '0000'    MSGERR
C          Z-ADDRSNCDE    UDCRSN
C          Z-ADDRTNCDE    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          DGNDTA
C          PARM          HANDLE
C
*
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-ADDRTNCDE    UDCRTN
C          EXFMTUDCERR
C*
C          RTNCDE    CABNECZERO    ENDPGM
C
*
* COPY TOTAL DATA LENGTH FROM DESCRIPTOR UNIT IN USER SPACE
C          Z-ADD1    STRPOS
C          Z-ADD2    USDTAL
C          CALL 'QUSRTVUS'
C          PARM          IBUFD
C          PARM          STRPOS
C          PARM          USDTAL
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-ADD0          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          MOVEL' 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          MOVEL' 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
C
C      * Copy user's data from USRSPC data unit, no descriptor
C          Z-ADD1      STRPOS
C          Z-ADD512    USDTAL
C
C      *
C          CALL 'QUSRTVUS'
C          PARM          IBUF
C          PARM          STRPOS
C          PARM          USDTAL
C          PARM          USDTA
C
C      *
C          ENDSR
C/EJECT
C*****
C      * Disable the link
C*****
C          DLINK      BEGSR
C      * Disable type = 00, do not vary off NETWORK DEVD
C          Z-ADD0      OPTN2
C      * Call Disable Link UDC program
C          CALL 'QOLDLINK'
C          PARM          RTNCDE
C          PARM          RSNCDE
C          PARM          HANDLE
C          PARM          OPTN1
C
C      *
C          MOVE *BLANK  MSGERR
C          MOVE 'QOLDLINK' MSGERR
C          Z-ADDRSNCDE  UDCRSN
C          Z-ADDRTNCDE  UDCRTN
C          EXFMTUDCERR
C
C      *
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 MALLETT*



---

## 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.

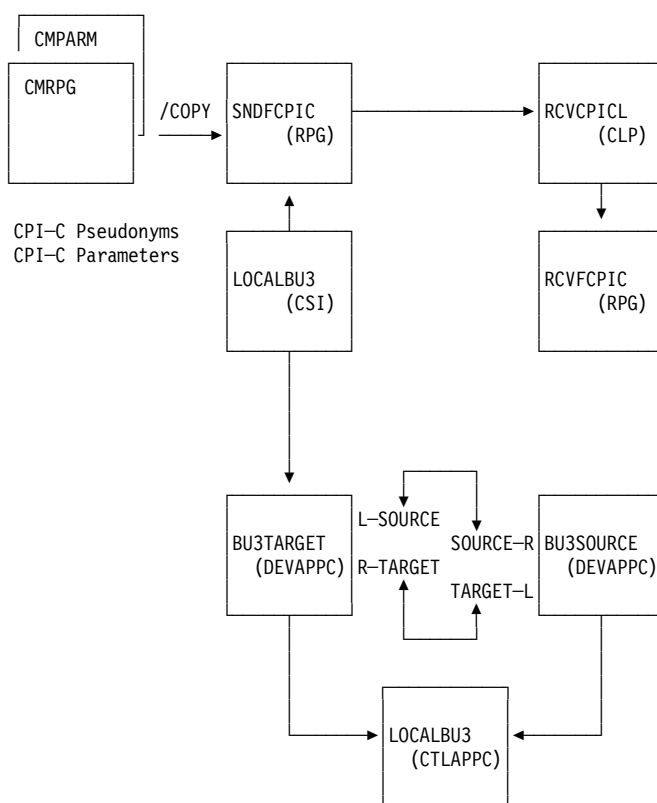


Figure 227. Send/Receive File CPI-C Sample Programs

---

### 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				
Opt	Side Info	Library	Text	
	AS400BU4	CMNLIB	Generic CSI for AS400BU4	
5	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)
```



```

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 REQLLEN
*
C N90          CALL 'CMSEND'
C          PARM          CNVID
C          PARM          DATA
C          PARM          REQLLEN
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          *
C          MOVE 'CMDEAL'  CPICFT
C          *
C          SETON          LR
C          RETRN
C          *
C          * ERROR SUBROUTINE
C          ERROR          TAG
C          EXCPTMMERR
C          SETON          LR
C          RETRN
C          *
OQPRINT  E   03          MMERR
O          5 'JOB: '
O          JOBNAM        15
O          16 '.'
O          USERID        26
O          27 '.'
O          JOBNUM         37
O          50 'PROGRAM: '
O          PGMNAM         61
O          *
OQPRINT  E   1          MMERR
O          10 'DATE: '
O          JOBDTEY        19
O          27 'TIME: '
O          JOBTME         36 ' : : '
O          58 'LAST CPI-C FUNCTION:'
O          CPICFT         65
O          *
OQPRINT  E   1          MMERR
O          26 'CONVERSATION-ID '
O          CNVID          40
OQPRINT  E   1          MMERR
O          26 'RETURN-CODE '
O          RTNCDE1        40
OQPRINT  E   1          MMERR
O          26 'TP-NAME '
O          TPN            92
OQPRINT  E   1          MMERR
O          26 'SYM-DEST-NAME '
O          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,CMPARM
*
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 2810JOBDE
I                                           282 2870JOBTME
*
*****
*
*      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                               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

```

### 27.3.3 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   (SECNVL)
I*   CM_SYNC_LVL_NOT_SUPPORTED_LU   -- VALUE 7   (SLNSLU)
I*   CM_SYNC_LVL_NOT_SUPPORTED_PGM  -- VALUE 8   (SLNSP)
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 SDCNF
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







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## Appendix A. AS/400 Communications Bibliography

This appendix provides a bibliography of IBM publications related to the AS/400 in the area of communications.

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### 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)

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## **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
- GA21-9323 5251-12 Operator's Guide
  
- 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
  
- GA27-3936 5494 Planning
- GA27-3960 5494 User's Guide
- SC30-3533 5494 Functions Reference
- SC30-3566 5494 Att to SNA SA RPQ
- GA27-3909 5494 Problem Determination
- SY27-0327 5494 Maintenance Library
  
- G570-2221 5250 Enhanced Emulation
- G570-2203 5250 Remote Emulation
- G571-0138 5250 Remote Emulation V2
  
- SA21-9869 5209 User's Guide
- SY31-0679 5209 Maintenance
- ZZ20-5867 5209 Newsletter
  
- SA21-9870 5208 User's Guide
- SY31-0678 5208 Maintenance

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### A.3 IBM 8209

- SA21-9994 8209 Customer Information
- SY31-9077 8209 Service Information

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### A.4 IBM 5159

- SA21-9600 5159 User's Guide
- SY31-0708 5159 Maintenance



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## A.5 IBM 3270

- 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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## A.6 AS/400

- GC41-9678 Publication Guide
- 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
- SA41-9957 IBM 9406, Attaching Wrkstn and Comms Cables
- 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
- SC41-0025 DRDA Guide
- SC41-0027 Communications API Guide
- SC41-0053 Central SAT/400 Installation
- SC41-0054 Central SAT/400 User's Guide
- SC41-0055 Distributed SAT/400 Installation and User's Guide
- SC41-8099 Finance Support User's Guide
- SC41-8106 Device Configuration Guide
- SC41-8188 APPN User's Guide
- SC41-8189 APPC Programmer's Guide
- SC41-8223 System Pgm's Interface Reference
- SC21-8257 AS/400 SMT Guide
- SC41-9588 Distribution Services Network Guide
- SC21-8168 S/3X VM Line Driver User's Guide
- SC41-9590 Communications Programmer's Guide
- SC41-9592 ASYNC Communications Programmer's Guide
- SC41-9593 BSC Equivalence Link Programmer's Guide
- SC41-9594 SNA Upline Facility Programmer's Guide
- SC41-9600 Distributed Data Management User's Guide
- SC41-9602 3270 Device Emulation User's Guide
- SC41-9661 Communications and Systems Management User's Guide
- SC41-9858 Retail Programmer's Guide
- GC41-9861 Network Planning Guide
- SC41-9864 ICF Intra Programmer's Guide
- SC41-9868 POS Communications Utility User's Guide
- SC41-9879 OfficeVision/400 Adapted Word Processing
  
- SC41-9875 TCP/IP Guide
  
- SC09-1168 RJE User's Guide
- SC09-1201 RJE Planning Guide
- SC09-1373 RJE Guide
  
- SC41-9758 Office Services Concepts and Programmer's Guide
- SC41-9627 Managing OfficeVision/400
- SX41-9868 OV/400 Common Tasks

- SX41-9069 PCS/400 Common Tasks, DOS
- SX41-0001 PCS/400 Common Tasks, OS/2
- SC41-8091 PCS/400 Technical Reference, DOS and OS/2
- SC41-0006 PCS/400 Installation, DOS
- SC41-0007 PCS/400 Installation, OS/2
- SC41-8199 PCS/400 User's Guide for DOS
- SC41-8200 PCS/400 User's Guide for OS/2
  
- GH12-5480 NetView FTP General Information
  
- SH19-6765 INS Attaching OS/2 Workstations
- GC34-2232 INS Planning Guide
  
- LY44-0597 Diagnostic Aids, Volume 1
- LY44-0598 Diagnostic Aids, Volume 2
- SY44-3911 IBM 9402 Problem Analysis Guide, incl URC
- SY44-3921 IBM 9404 Problem Analysis Guide, incl URC
- SY44-3931 IBM 9406 Problem Analysis Guide, incl URC
- 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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## A.7 System/36

- 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)
- SY31-9018 S/36 Communications Maintenance (large format)
- LY21-0590 S/36 Program Service Information
- SA21-9436 S/36 Functional Reference Manual
- SC21-7909 S/36 MSRJE Guide
- SC21-7944 S/36 MSRJE Messages
- 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
- SC21-9471 S/36 APPN Guide
- SA21-9478 S/36 Planning ROSF (5360)
- SA21-9485 S/36 Planning ROSF (5362)
- SA21-9441 S/36 Planning Data Communications (5360)
- SA21-9482 S/36 Planning Data Communications (5362)
- SA21-9932 S/36 Preparing for Data Communications (5363)
- SC21-9060 S/36 Remote Operation/Support Facility
- SC21-9025 S/36 SMF User's Guide
- SC09-1062 PS/36 Administration
- SC09-1105 PS/36 in a Office Network
- SC21-9481 PS/36 Planning S/36 Office

- S544-3485 PSF/36, User Guide and Reference
- SC21-9800 S/36 ODF PRPQ
- SC21-9097 S/36 PC Support Technical Reference
- SC21-9088 S/36 PC Support User's Guide
- SC21-9564 S/36 PC Support WSF User's Guide
- SC21-9569 S/36 PC Support WSF Technical Reference
- SC21-9709 DSNX/NX User's Guide

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## **A.8 Additional Hardware and Software**

### **A.8.1 RS/6000**

- GC23-2406 RS/6000 SW Overview
- SC32-0012 OSIMF/6000 User & Sys Admin Guide

### **A.8.2 HCF**

- SC27-0455 HCF Guide and Reference

### **A.8.3 VSE/POWER**

- SH12-5328 POWER RJE User's Guide
- SH12-5329 POWER Installation and Operations Guide
- SC33-6140 Power Networking User's Guide

### **A.8.4 JES2**

- SC23-0048 JES2 Commands
- SC23-0070 NJE Formats and Protocols
- GC38-0225 JES2 Remote Terminals

### **A.8.5 RJE Terminals**

- GA27-3005 2780 Component Description
- GA27-3063 3780 Component Information
- SY27-0103 3780 Theory of Operation
- GA27-3144 3770 Introduction

### **A.8.6 DSX**

- GH19-6394 DSX V3 General Information
- SH19-6397 DSX V3 Administration
- SH19-6399 DSX V3 Preparing Plans

### **A.8.7 NRF**

- SC27-0593 NRF Planning
- GC27-0594 NRF General Information
- SC31-6203 Migration Resource Definition

### **A.8.8 Other Subjects**

- 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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# Index

## Numerics

- 3174 remote workstation controller
    - documented scenarios 12
    - network routing facility (NRF) 55
    - SNA primary LU support (SPLS) 45
    - via IBM 7820 and ISDN 207
  - 5294 remote workstation controller
    - documented scenarios 12
  - 5394 remote workstation controller
    - as PUT2.1 via subarea 143
    - documented scenarios 12
    - quick reference configuration chart 141
    - via SNA/X.25 SVC called by AS/400 131
    - via SNA/X.25 SVC with dual links 137
  - 5494 remote workstation controller
    - as PUT2.1 via subarea SDLC 187
    - as PUT2.1 via subarea TRLAN 197
    - documented scenarios 12
    - via SNA/TRLAN 167
    - via SNA/X.25 PVC 179
    - via SNA/X.25 SVC 173
    - via SNA/X.25 SVC called by AS/400 185
    - via V.24 SNA/SDLC leased 155
    - via V.35 SNA/SDLC leased 161
- ## A
- API (application program interface)
    - See application program interface (API)
  - APPC/APPN protocol
    - 5394 as PUT2.1 via subarea 143
    - 5494 as PUT2.1 via subarea SDLC 187
    - 5494 as PUT2.1 via subarea TRLAN 197
    - 5494 via SNA/TRLAN 167
    - 5494 via SNA/X.25 PVC 179
    - 5494 via SNA/X.25 SVC 173
    - 5494 via SNA/X.25 SVC called by AS/400 185
    - 5494 via V.24 SNA/SDLC leased 155
    - 5494 via V.35 SNA/SDLC leased 161
    - NetView file transfer program 71
    - SNA passthrough (SNPT) 33
    - sphere of control (SOC) in subarea 87
    - submit network job (SBMNETJOB) 123
  - application program interface (API) 247
    - common programming interface -
      - communications 269
    - user-defined communication via X.25 249
  - AS/400
    - 3174 via IBM 7820 and ISDN 207
    - 5394 as PUT2.1 via subarea 143
    - 5394 via SNA/X.25 SVC called by AS/400 131
    - 5394 via SNA/X.25 SVC with dual links 137
    - 5494 as PUT2.1 via subarea SDLC 187
    - 5494 as PUT2.1 via subarea TRLAN 197

## AS/400 (continued)

- 5494 via SNA/TRLAN 167
- 5494 via SNA/X.25 PVC 179
- 5494 via SNA/X.25 SVC 173
- 5494 via SNA/X.25 SVC called by AS/400 185
- 5494 via V.24 SNA/SDLC leased 155
- 5494 via V.35 SNA/SDLC leased 161
- file server support/400 242
- FTP with HP 222
- FTP with MicroVax 223
- FTP with OS/2 221
- FTP with RS/6000 220
- MVS Bridge (NJE) 93
- NetView file transfer program 71
- network routing facility (NRF) 55
- OfficeVision/VM Bridge 103
- SMTP note between AS/400s 228
- SMTP note with HP 236, 238
- SMTP note with MicroVAX 230, 232
- SMTP note with RS/6000 233, 235
- SMTP note with VM 239, 240
- SMTP system configuration 224
- SNA passthrough (SNPT) 33
- SNA primary LU support (SPLS) 45
- SNA/LEN with different NetID 19
- sphere of control (SOC) in subarea 87
- submit network job (SBMNETJOB) 123
- VM/MVS bridge monitor program 117

## B

- bridge monitor program for VM/MVS
  - See VM/MVS bridge monitor program
- bridge to MVS for NJE
  - See MVS Bridge (NJE)
- bridge to OfficeVision/VM
  - See OfficeVision/VM Bridge

## C

- common programming interface (CPI-C)
  - See application program interface (API)
- CPI-C (common programming interface)
  - See application program interface (API)

## D

- DEC MicroVAX 3300
  - FTP with AS/400 223
  - SMTP note with AS/400 230, 232
- device release program, NRF 68

## F

file server support/400 242  
file transfer program (NetView FTP)  
    *See* NetView file transfer program  
file transfer protocol of TCP/IP 220  
FSS/400 (file server support/400)  
    *See* file server support/400  
FTP of TCP/IP  
    *See* file transfer protocol of TCP/IP  
FTP, NetView (Netview File Transfer Program)  
    *See* NetView file transfer program

## H

host computer  
    *See* System/390  
HP 9000-720  
    FTP with AS/400 222  
    SMTP note with AS/400 236, 238

## I

ISDN 7820 terminal attachment  
    3174 via ISDN 207  
ISDN protocol  
    3174 via IBM 7820 and ISDN 207  
    network description 11

## L

LAN, token-ring  
    *See* token-ring LAN (TRLAN)  
LU6.2 protocol  
    *See* APPC/APPN protocol

## M

monitor program for VM/MVS bridge  
    *See* VM/MVS bridge monitor program  
MVS Bridge (NJE) 93

## N

NetView file transfer program 71  
network description  
    communication line assignment 6  
    hardware and software 4  
    ISDN 11  
    modems 8  
    multi-vendor 6  
    SNA/SDLC 8  
    TRLAN 9  
    X.25 10  
network file server (NFS)  
    *See* file server support/400  
network routing facility (NRF) 55  
NFS (network file server)  
    *See* file server support/400

NJE bridge to MVS  
    *See* MVS Bridge (NJE)  
NRF (network routing facility)  
    *See* network routing facility (NRF)

## O

OfficeVision/VM Bridge 103

## P

PC  
    *See* Personal System/2  
peer system connections 13  
peer-to-peer protocol  
    *See* APPC/APPN protocol  
Personal Computer  
    *See* Personal System/2  
Personal System/2  
    FTP with AS/400 221  
    SNA passthrough (SNPT) 33  
    SNA/LEN with different NetID 19

## R

RISC System/6000  
    FTP with AS/400 220  
    SMTP note with AS/400 233, 235  
RS/6000  
    *See* RISC System/6000

## S

SBMNETJOB (submit network job)  
    *See* submit network job (SBMNETJOB)  
SDLC protocol  
    5394 as PUT2.1 via subarea 143  
    5494 as PUT2.1 via subarea 187  
    5494 via V.24 SNA/SDLC leased 155  
    5494 via V.35 SNA/SDLC leased 161  
    MVS Bridge (NJE) 93  
    NetView file transfer program 71  
    network description 8  
    network routing facility (NRF) 55  
    OfficeVision/VM Bridge 103  
    SNA/LEN with different NetID 19  
Simple Mail Transfer Protocol (SMTP) 224  
SMTP (Simple Mail Transfer Protocol)  
    *See* Simple Mail Transfer Protocol (SMTP)  
SNA connections 12  
SNA passthrough (SNPT) 33  
SNA primary LU support (SPLS) 45  
SNA protocols  
    *See* SDLC, token ring LAN, ISDN, X.21, X.25  
SNPT (SNA passthrough)  
    *See* SNA passthrough (SNPT)  
SOC (sphere of control)  
    *See* sphere of control (SOC) in subarea



- sphere of control (SOC) in subarea 87
- SPLS (SNA primary LU support)
  - See SNA primary LU support (SPLS)
- submit network job (SBMNETJOB) 123
- System/390
  - 5394 as PUT2.1 via subarea 143
  - 5494 as PUT2.1 via subarea SDLC 187
  - 5494 as PUT2.1 via subarea TRLAN 197
  - documented connections 14
  - MVS Bridge (NJE) 93
  - NetView file transfer program 71
  - network routing facility (NRF) 55
  - OfficeVision/VM Bridge 103
  - SMTP note with AS/400 239, 240
  - SNA passthrough (SNPT) 33
  - SNA primary LU support (SPLS) 45
  - SNA/LEN with different NetID 19
  - sphere of control (SOC) in subarea 87
  - VM/MVS bridge monitor program 117

## T

- TCP/IP protocol
  - AS/400 configuration definitions 215
  - file server support/400 242
  - FTP (file transfer protocol) 220
  - FTP with HP 222
  - FTP with MicroVAX 223
  - FTP with OS/2 221
  - FTP with RS/6000 220
  - network description 213
  - network topology 213
  - SMTP note between AS/400s 228
  - SMTP note with HP 236, 238
  - SMTP note with MicroVAX 230, 232
  - SMTP note with RS/6000 233, 235
  - SMTP note with VM 239, 240
- token-ring LAN (TRLAN)
  - 5494 as PUT2.1 via subarea 197
  - 5494 via SNA/TRLAN 167
  - network description 9
  - network routing facility (NRF) 55
  - SNA passthrough (SNPT) 33
  - SNA primary LU support (SPLS) 45
  - SNA/LEN with different NetID 19
- TRLAN
  - See token-ring LAN (TRLAN)
- TS network
  - See network description

## U

- UDC (user-defined communications)
  - See application program interface (API)
- user-defined communications (UDC)
  - See application program interface (API)

## V

- VM/MVS bridge monitor program 117

## X

- X.21 protocol
  - 3174 via IBM 7820 and ISDN 207
- X.25 protocol
  - 5394 via SNA/X.25 SVC called by AS/400 131
  - 5394 via SNA/X.25 SVC with dual links 137
  - 5494 via SNA/X.25 PVC 179
  - 5494 via SNA/X.25 SVC 173
  - 5494 via SNA/X.25 SVC called by AS/400 185
  - network description 10