



**Advanced  
Communications  
Function for VTAM  
Reference Summary**

**Program Product**

Release 3

Program Numbers: 5746-RC3 (VSE)  
5735-RC2 (OS/VS)

SX27-0008-1  
File No. S370/4300-30



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## **Second Edition (December 1980)**

This edition applies to the Advanced Communications Function for VTAM (ACF/VTAM) Release 3 for VSE (Program Number 5746-RC3) and OS/VS1 and OS/VS2 (MVS) (Program Number 5735-RC2). Information about the optional Encrypt/Decrypt Feature, available for OS/VS1 and OS/VS2 (MVS) only, and the optional Multisystem Networking Facility of ACF/VTAM is also included.

Reference summaries for ACF/VTAM Release 2 are still available and can be ordered using form numbers ST00-0655 (OS/VS) and ST00-0640 (VSE).

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## Preface

This publication contains a summary of ACF/VTAM Release 3 reference information which is presented under four major headings:

- Part 1. Operation
- Part 2. Installation
- Part 3. Programming
- Part 4. SNA Reference Data

Refer to the Contents for a list of the specific topics included in each part of the manual.

Supplemental publications include but are not limited to:

- General Information:
  - ACF/VTAM General Information: Introduction*, GC27-0462
  - ACF/VTAM General Information: Concepts*, GC27-0463
- Planning and Installing ACF/VTAM:
  - ACF/VTAM Planning and Installation Reference*, SC27-0584
- Writing Application Programs:
  - ACF/VTAM Programming*, SC27-0449
- Operating ACF/VTAM:
  - ACF/VTAM Operation*, SC27-0446
- Messages:
  - ACF/VTAM Messages and Codes*, SC27-0470
- Diagnosis:
  - ACF/VTAM Diagnosis Guide*, SY38-3020 (VSE), SY38-3029 (OS/VS)
  - ACF/VTAM Diagnosis Reference*, LY38-3022 (VSE), LY38-3027 (OS/VS)
  - ACF/VTAM Data Areas*, LY38-3026 (VSE), LY38-3030 (OS/VS)
  - ACF/VTAM Logic: Multisystem Networking Facility*, LY38-3023
  - ACF/VTAM Logic: Encrypt/Decrypt Feature*, LY38-3025



# Contents

## Part 1. Operation 1

ACF/VTAM Operator Commands	1
DISPLAY Commands	1
EXEC Command (VSE Only)	2
HALT Commands	3
MODIFY Commands	4
START Command (OS/VS Only)	8
VARY Commands	10
Resource Status Codes	14
System Completion Codes (OS/VS)	47
Cancel and Function Codes (VSE)	55
Cancel Codes	55
Function Codes	56

## Part 2. Installation 57

Coding Conventions	57
Restrictions on Use of Assembler Features	58
Macro Instructions and Definition Statements	59
Defining the Network	61
Application Program Major Nodes	61
Local Non-SNA Major Nodes	61
Local SNA Major Nodes	62
Switched Major Nodes	63
Network Control Program Major Nodes	66
Cross-Domain Resource Manager (CDRM) Major Nodes	70
Cross-Domain Resource (CDRSC) Major Nodes	70
Cross-Domain Path Tables	71
TSO/VTAM Requirements (OS/VS2)	72
Multiple-Domain Network	72
Specifying 3270 Characteristics	75
Defining Procedures to Establish Sessions	78
Class of Service (COS) Tables	78
Interpret Tables	78
Logon Mode Tables	78
USS Definition Tables	79
Character-Coded Requests and USS Definition Tables	80

## Part 3. Programming 83

ACF/VTAM Macro Instructions	83
ACB—Create an Access Method Control Block	83
CHECK—Check Request Status	83

## Contents

- CLOSE—Close One or More ACBs 83
- CLSDST—Terminate Sessions in Which the Application Program Is Acting as the Primary Logical Unit 83
- EXECRPL—Execute a Request 84
- EXLST—Create an Exit List 84
- GENCB—Generate a Control Block 84
- INQUIRE—Obtain Logical Unit Information or Application Program Status 85
- INTRPRET—Interpret an Input Sequence 85
- MODCB—Modify the Contents of Control Block Fields 86
- NIB—Create a Node Initialization Block 86
- OPEN—Open One or More ACBs 86
- OPNDST—Establish Sessions in Which the Application Program Will Act as the Primary Logical Unit 87
- OPNSEC—Establish a Session in Which the Application Program Acts as the Secondary Logical Unit 87
- RCVCMD—Receive a Message from ACF/VTAM 87
- RECEIVE—Receive Input on a Session 88
- REQSESS—Initiate a Session in Which the Application Program Will Act as the Secondary Logical Unit 88
- RESETSR—Cancel RECEIVE Operations and Switch a Session's CS-CA Mode 88
- RPL—Create a Request Parameter List 89
- SEND—Send Output on a Session 91
- SENDCMD—Send an ACF/VTAM Operator Command to ACF/VTAM 91
- SESSIONC—Send a Session-Control Request or Response 92
- SETLOGON—Modify an Application Program's Capability to Establish Sessions 92
- SHOWCB—Extract the Contents of Control Block Fields 93
- SIMLOGON—Initiate a Session in Which the Application Program Will Act as the Primary Logical Unit 93
- TERMSESS—Request Termination of a Session in Which the Application Program Acts as the Secondary Logical Unit 94
- TESTCB—Test the Contents of a Control Block Field 94

## Contents

ACB ERROR Field Values	95
Manipulative Macro Instruction Return Codes	98
RPL-Based Macro Instruction Return Codes	99
How RPL-Based Macro Instruction Error and Special Condition Information Is Organized	102
Recovery-Action Return Codes and Their General Meanings	105
LOSTERM Exit Routine Reason Codes	106
Session Outage Notification Summary	109
RPL REQ Field Values	111
Parameter Lists for the EXLST Exit Routines	112
Macro Instructions That Create DSECTS	116
<b>Part 4. SNA Reference Data</b>	<b>117</b>
Format of BNDAREA (ISTDBIND)	117
Index of RUs by NS Headers and Request Codes	118
Logical Unit Presentation Services Profiles and Protocols	125
Transmission Services Profiles	126
Transmission Services Usage Field Request Unit Size	127
Maximum Size of Request Unit (in Decimal)	128
Sense Codes	129
Request Reject (Category Code Hex 08)	131
Request Error (Category Code Hex 10)	154
State Error (Category Code Hex 20)	156
RH Usage Error (Category Code Hex 40)	158
Path Error (Category Code Hex 80)	161



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## PART 1. OPERATION

### ACF/VTAM Operator Commands

#### DISPLAY Commands<sup>1</sup>

DISPLAY NET,APPLS[,ACT|EVERY|INACT]

DISPLAY NET,BFRUSE

DISPLAY NET,CDRMS<sup>2</sup> [,ACT|EVERY|INACT]

DISPLAY NET,CDRSCS<sup>2</sup> [,ACT|EVERY|INACT]

DISPLAY NET,CLSTRS[,ACT|EVERY|INACT]

DISPLAY NET,ID=name<sup>3</sup> [,ACT|EVERY|INACT|NONE]

DISPLAY NET,LINES[,ACT|EVERY|INACT|NONE]

DISPLAY NET,MAJNODES

DISPLAY NET,NCPSTOR,ID=ncpname,ADDR=address  
[LENGTH=n|32]

DISPLAY NET,PATHTAB[,ADJSUB=subarea|DESTSUB=  
subarea]

DISPLAY NET,PATHS,ID=switched physical unit name

DISPLAY NET,PENDING

DISPLAY NET,ROUTE,DESTSUB=subarea  
[,COSNAME=name|ER=n|ER=ALL|VR=n]  
[TEST=YES|NO]

DISPLAY NET,STATIONS[,ID=major node name]  
[,ACT|EVERY|INACT]

DISPLAY NET,TERMS[,ACT|EVERY|INACT]

DISPLAY NET,U,<sup>4</sup>ID=tso user-id

<sup>1</sup> The following abbreviations may be used:

ACT = A	INACT = I
DISPLAY = D	NONE = N
EVERY = E	PATHS = P

<sup>2</sup> Applies only to multiple-domain networks.

<sup>3</sup> Does not apply to application program major nodes.

<sup>4</sup> Applies only to MVS with TSO/VTAM.

## EXEC Command<sup>1</sup>

Enter EXEC PROC=procname

and, if prompted, one or more of these start options:

CDRSCTI=n|480

COLD|WARM

CONFIG=xx|00|name

HOSTSA=n|1

IOINT=n|180

ITLIM=n|0

LIST=xx|00

MAXAPPL=n|10

MAXSUBA=n|15

MSGMOD=YES|NO

NODELST=name

SONLIM=( [m|60] [,n|30] )

SSCPID=n

SUPP=[NOSUP|INFO|WARN|NORM|SER]

{ TNSTAT[ ,CNSL|NOCNSL[ ,TIME=n|60] }  
{ NOTSTAT

TRACE|NOTTRACE,TYPE=BUF,ID=nodename[,EVERY|E]

TRACE|NOTTRACE,TYPE=IO,ID=nodename[,EVERY|E]

TRACE|NOTTRACE,TYPE=LINE,ID=linename

TRACE|NOTTRACE,TYPE=SMS,ID=VTAMBUF

TRACE|NOTTRACE,TYPE=TG,ID=linename

{ TRACE,TYPE=VTAM[,MODE=INT|EXT]

[,OPTIONS=(options)<sup>2</sup> |

(API,MSG,PIU)|ALL]

[,SIZE=nnn|2]

{ NOTTRACE,TYPE=VTAM

USSTAB=name|ISTINCNO

VFBUF=vbsz

VPBUF=vbsz

VTAMEAS=n|404

poolname=(baseno,bufsize,slowpt,xpanno,xpanpt)

<sup>1</sup> Applies to VSE only.

OS/VSE users should use the START command.

<sup>2</sup> Options may be one of the following:

API, CIO, LOCK, MSG, PIU, PSS, SMS, SSCP.

## HALT Commands<sup>1</sup>

HALT NET[,CDLINK<sup>2</sup>=ACT|INACT]

HALT NET,QUICK[,CDLINK<sup>2</sup>=ACT|INACT]

HALT NET,CANCEL<sup>3</sup>

---

<sup>1</sup> HALT or Z may be used.

<sup>2</sup> Applies only to multiple-domain networks.

<sup>3</sup> Applies to OS/VS only.

## MODIFY Commands<sup>1</sup>

- MODIFY procname,<sup>2</sup> ATTACH<sup>3</sup>,ID=name
- MODIFY procname,<sup>2</sup> CDRM<sup>4</sup>=(new cdrm[,old cdrm])  
[,ID=cdrsc major node name|cdrsc  
minor node name]
- MODIFY procname,<sup>2</sup> CSALIMIT<sup>5</sup>=(n|0[,F])
- MODIFY procname,<sup>2</sup> DETACH<sup>3</sup>,ID=name
- MODIFY procname,<sup>2</sup> DUMP,ID=ncp major node name  
[,DUMPSTA=name] [,DYNA|RMPO]
- MODIFY procname,<sup>2</sup> ENCR<sup>6</sup>= {OPT|REQD},ID=logical  
unit name
- MODIFY procname,<sup>2</sup> IMR,ID=link station or physical  
unit name  
[,OPT=ACT|INACT]  
[,RECLIM=n|10]
- MODIFY procname,<sup>2</sup> IOPD[,IOINT=n]
- MODIFY procname,<sup>2</sup> LL2,ID=name<sup>7</sup> [,CANCEL|CONT]  
NTRANS=10|m]  
[,DATA=data] [,NFRAMES=n|1]
- MODIFY procname,<sup>2</sup> MSG<sup>3</sup>,ID=subtask name
- MODIFY procname,<sup>2</sup> MSGMOD= {YES|NO}
- MODIFY procname,<sup>2</sup> NEG POLL=number of responses,ID=  
line name
- MODIFY procname,<sup>2</sup> NOTNSTAT

<sup>1</sup> MODIFY or F may be used.

<sup>2</sup> In VSE, use NET.

In OS/VS1, use procname.Pnn.

In MVS, use procname.

The procname operand is the name of the cataloged procedure by which ACF/VTAM was started.

<sup>3</sup> Applies to VSE only.

<sup>4</sup> Applies only to multiple-domain networks.

<sup>5</sup> Applies to MVS only.

<sup>6</sup> Applies to Encrypt/Decrypt Feature only.

<sup>7</sup> ID=name may be the PU name, or the link station name for the NCP.

## MODIFY Commands<sup>1</sup> (Continued)

MODIFY procname,<sup>2</sup> NOTRACE,TYPE={BUF|IO},ID=node name[,EVERY<sup>3</sup>]

MODIFY procname,<sup>2</sup> NOTRACE,TYPE={LINE|SMS|TG|TSO<sup>4</sup>},ID=node name

MODIFY procname,<sup>2</sup> NOTRACE,TYPE=VTAM  
[,OPTION=ALL|option|  
(option, . . . ,option<sup>5</sup>)|END]

MODIFY procname,<sup>2</sup> POLL=number of seconds,  
ID=line name

MODIFY procname,<sup>2</sup> SESSION=n,ID=line name

MODIFY procname,<sup>2</sup> SUPP={NOSUP|INFO|WARN|NORM|SER}

MODIFY procname,<sup>2</sup> TEST

MODIFY procname,<sup>2</sup> TNSTAT[,CNLSL|NOCNLSL]  
[,TIME=n]

MODIFY procname,<sup>2</sup> TPRINT<sup>6</sup>

and if prompted, one or more of these trace print options:

CANCEL

PRINT

BUF=ALL

BUF=name[, . . . ,name]

CLEAR=YES|NO

INTERVAL=beginning time<sup>7</sup>|{(end time)|beginning time,  
end time)

IO=ALL

---

<sup>1</sup> Modify or F may be used.

<sup>2</sup> In VSE, use NET.

In OS/VS1, use procname.Pnn.

In MVS, use procname.

<sup>3</sup> EVERY or E may be used.

<sup>4</sup> Applies to MVS only.

<sup>5</sup> Options may be one or more of the following:

API, CIO, LOCK, MSG, PIU, PSS, SMS, SSCP.

<sup>6</sup> Applies to VSE only.

<sup>7</sup> Specify the time as yy.ddd/hh:mm:ss, yy.ddd, or  
hh:mm:ss.

## Modify Commands<sup>1</sup> (Continued)

IO=name[, . . . ,name]

LINE=ALL

LINE=name

TNST=ALL

TNST=name[, . . . ,name]

MODIFY procname,<sup>2</sup> TRACE,TYPE= {BUF|IO} ID=name<sup>3</sup>  
[EVERY]<sup>4</sup>

MODIFY procname,<sup>2</sup> TRACE,TYPE=  
{LINE|SMS|TG|TSO<sup>5</sup>},ID=name<sup>3</sup>

MODIFY procname,<sup>2</sup> TRACE,TYPE=VTAM  
[,MODE=INT|EXT]  
[,OPTION=option|  
(option, . . . ,option<sup>6</sup>)|ALL]  
[,SIZE=nnn]

---

<sup>1</sup> MODIFY or F may be used.

<sup>2</sup> In VSE, use NET.

In OS/VS1, use procname.Pnn.

In MVS, use procname.

<sup>3</sup> ID=name specifies the name of the resource for which tracing is to be done. This operand does not apply for TYPE=VTAM.

Names of various types of resources can be specified, depending on the value of the TYPE operand.

For TYPE=BUF or TYPE=IO

Any of the following names can be specified with the EVERY option to trace message activity with the named resource, if applicable, and all of the resource's subordinate nodes:

- The name of a major node
- The name of a line group
- The name of a line
- The name of a physical unit (including switched and channel-attached SNA physical units)

Any of the following names can be specified to trace message activity with the named resource:

- VTAM (for a trace of all SSCP-FMCB sessions)
- The name of an NCP

- 
- The name of a physical unit (including switched and channel-attached SNA physical units)
  - The name of a logical unit (including application programs)
  - The name of a channel-attached non-SNA terminal
  - The name of a CDRM (only in a multiple-domain network)
  - The name of a CDRSC (only in a multiple-domain network)

For TYPE=LINE

The ID operand specifies the name of the line for which tracing is to be done.

For TYPE=SMS

ID=VTAMBUF must be specified for an SMS trace.

For TYPE=TG

The ID operand specifies the name of a line currently within the transmission group to be traced. All the lines in the transmission group are traced as if they were a single logical line.

For TYPE=TSO

The ID operand specifies the TSO user ID for which tracing is to be done.

<sup>4</sup> EVERY or E may be used.

<sup>5</sup> Applies to MVS only.

<sup>6</sup> Options may be one or more of the following: API, CIO, LOCK, MSG, PIU, PSS, SMS, SSCP.



## START Command<sup>1</sup>

Enter START<sup>2</sup> { procname } [ , , , (options, . . . ) ]  
                  { procname.Pnn<sup>3</sup> }

where the start options may be one or more of the following:

CDRSCTI=n|480

COLD|WARM

CONFIG=xx|00|name

CSALIMIT=n|0<sup>4</sup>

DLRTCB=n|8<sup>3</sup>

DLRTCB=n|32<sup>4</sup>

HOSTSA=n|1

IOINT=n|180

ITLIM=n|0

LIST=xx|00

MAXAPPL=n|10

MAXSUBA=n|15

MSGMOD=YES|NO

NODELST=name

SONLIM=( [m|60] [,n|30] )

SSCPID=n

SUPP=[NOSUP|INFO|WARN|NORM|SER]

{ TNSTAT [, CNSL|NOCNSL] [, TIME=n|60] }  
  NOTNSTAT

TRACE|NOTRACE, TYPE=BUF, ID=nodename [, EVERY<sup>5</sup>]

TRACE|NOTRACE, TYPE=IO, ID=nodename [EVERY<sup>5</sup>]

TRACE|NOTRACE, TYPE=LINE, ID=linename

TRACE|NOTRACE, TYPE=SMS, ID=VTAMBUF

TRACE|NOTRACE, TYPE=TG, ID=linename

TRACE|NOTRACE, TYPE=TSO, ID=tso-userid

{ TRACE, TYPE=VTAM [, MODE=INT|EXT]  
                                  [, OPTIONS=(options)|  
                                  (API, MSG, PIU<sup>6</sup>)|ALL]  
                                  [, SIZE=nnn|2] }  
NOTRACE, TYPE=VTAM

<sup>1</sup> Applies to OS/VS only.

VSE users should use the EXEC command.

<sup>2</sup> START or S.

<sup>3</sup> Applies to OS/VS1 only.

<sup>4</sup> Applies to OS/VS2 (MVS) only.

<sup>5</sup> EVERY or E.

<sup>6</sup> Options may be one or more of the following:

API, CIO, LOCK, MSG, PIU, PSS, SMS, SSCP.

## START Command<sup>1</sup> (Continued)

USSTAB=name|ISTINCNO

VTAMEAS=n|404

poolname=(baseno,bufsize,slowpt,F,xpanno,xpanpt)

---

<sup>1</sup> Applies to OS/VS only.

VSE users should use the EXEC command.

## VARY Commands<sup>1</sup>

VARY NET,ACQ,ID=name  
[ACT[,LOGMODE=logon mode name]  
[,LOGON=application program name or  
cdrsc name  
[,SCOPE=ALL|COMP|ONLY|U]

VARY NET,ACT,ID=name  
[,ANS<sup>2</sup>=ON|OFF]  
[,DUMPSTA=name]  
[,LOAD=YES|NO|U]  
[,LOADSTA=name]  
[,LOGMODE=logon mode name]  
[,LOGON=application program name or  
cdrsc name<sup>3</sup>]  
[,RNAME=name1(name1,..,name13)]  
[,SCOPE<sup>4</sup>=ALL|COMP|ONLY|U]  
[,U=channel device name]  
[,WARM<sup>4</sup>]

<sup>1</sup> VARY or V.

<sup>2</sup> Applicable when using SDLC only.

<sup>3</sup> Applies only to multiple-domain networks; a CDRSC name must be an application program in another domain.

<sup>4</sup> Note that WARM and SCOPE cannot be specified on the same command. If both are specified, the command fails.

## VARY Commands<sup>1</sup> (Continued)

The following table indicates each resource type for which the command is valid and which operands can be used on the command. A bullet (●) indicates that the operand applies to that resource and an S indicates that the operand can be specified for sifting to subordinate resources. An M indicates that the operand applies to that resource only in certain migration cases.

V NET,ACT,	Application Program Minor Node	Application Program Major Node	Local SNA Major Node	Local SNA Physical Unit	Local SNA Logical Unit	Local Non-SNA Major Node	Local Non-SNA Minor Node	NCP	Nonswitched Line	Switched Line	Link Station	Physical Unit	Logical Unit	Switched Major Node	Switched Physical Unit	Switched Logical Unit	Path Definition Set	CDRM Major Node <sup>2</sup>	CDRM Minor Node <sup>2</sup>	CDRSC Major Node <sup>2</sup>	CDRSC Minor Node <sup>2</sup>
ID=	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
ANS=										●											
DUMPSTA=								●													
LOAD=								●													
LOADSTA=								●													
LOGMODE=			S	S	●	S	●	S	S	S	S	S	S	●	S	S	●				
LOGON=			S	S	●	S	●	S	S	S	S	S	S	●	S	S	●				
RNAME=								●			M										
SCOPE=	●		●	●	●	●	●	●	●	●		●	●	●	●			●		●	
U=				●				●													
WARM			●			●	●	●						●				●		●	

<sup>1</sup> VARY or V.

<sup>2</sup> Applies only to multiple-domain networks; a CDRSC name must be an application program in another domain.

## VARY Commands<sup>1</sup> (Continued)

VARY NET,ANS<sup>2</sup> = {ON|OFF},ID=line name  
[,ACT]

VARY NET,DRDS,ID=drname

VARY NET,INACT<sup>3</sup>,ID=name  
[,CDLINK=ACT|INACT<sup>4</sup>]  
[,FINAL]  
[,I|F|R]  
[,RMPO]

The following table indicates each resource type for which the command is valid and which operands can be used on the command. A bullet (●) indicates that the operand applies to that resource. An I, F, or R in the table indicates what value is substituted if an F or R operand is specified for a resource to which it does not apply.

V NET, INACT,	Application Program Minor Node	Application Program Major Node	Local SNA Major Node	Local SNA Physical Unit	Local SNA Logical Unit	Local Non-SNA Major Node	Local Non-SNA Minor Node	NCP	Nonswitched Line	Switched Line	Link Station	Physical Unit	Logical Unit	Switched Major Node	Switched Physical Unit	Switched Logical Unit	Path Definition Set	CDRM Major Node <sup>4</sup>	CDRM Minor Node <sup>4</sup>	CDRSC Major Node <sup>4</sup>	CDRSC Minor Node <sup>4</sup>
ID=	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
CDLINK=								●													
FINAL				●								●			●						
I	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		●	●	●	●
F	●	●	I	●	●	I	●	●	●	●	●	●	●	I	R	●		●	●	●	●
R	F	F	I	●	F	I	F	●	F	F	●	●	F	I	●	F		F	F	F	F
RMPO								●													

<sup>1</sup> VARY or V may be used.

<sup>2</sup> Applicable when using SDLC dial only.

<sup>3</sup> **Caution: TSO/VTAM users should never use this command to deactivate a TSO user memory while TSO/VTAM is operating.**

<sup>4</sup> Applies only to multiple-domain network.

## VARY Commands<sup>1</sup> (Continued)

VARY NET,INOP { ,ID=line name[,END] }  
                  { ,ID=physical unit name }

VARY NET,LOGON=application program name or  
          cdrsc name<sup>2</sup>,ID=name  
          [,LOGMODE=logon mode name]

VARY NET,PATH=USE|NOUSE  
          { ,PID=n,ID=physical unit name }  
          { ,GID=n,ID=switched major node name }

VARY NET,REL,ID=name  
          [,CDLINK=ACT|INACT<sup>3</sup>]  
          [,I]

VARY NET,TERM,  
          { ,LU1=LU name[,LU2=LU name] }  
          { ,PLU=primary LU name[,SLU=secondary }  
          LU name }  
          { ,SID=session identifier }  
          { ,SLU=secondary LU name[,PLU=primary }  
          LU name }  
          [,NOTIFY=YES|NO]  
          [,SCOPE=ACT|ALL|Q]  
          [,TYPE=COND|UNCOND|FORCE]

---

<sup>1</sup> VARY or V may be used.

<sup>2</sup> Applies only to multiple-domain networks; a CDRSC name must be an application program in another domain.

<sup>3</sup> Applies only to multiple-domain networks.

## Resource Status Codes

The status of an ACF/VTAM network resource is contained in the RDT prefix (RPRE) for each resource. The resource's status is broken down into its current state and the desired state. These two values are contained at displacements hex 38 (RPRCURST — current state) and hex 3A (RPRDESST — desired state) in the RPRE. The hexadecimal values in these two fields correspond to the status of the resource, as shown in the following table. The 5-character state acronym also appears in some ACF/VTAM messages in response to an operator DISPLAY NET, ID=resource name command. See *ACF/VTAM Operation* and *ACF/VTAM Messages and Codes* for more information about the DISPLAY command and the messages that respond to it.

The classification of states into the following major categories may aid in deciding if a problem exists.

<i>Category</i>	<i>Meaning</i>
Final	ACF/VTAM has no further processing to do for the node.
Short Transient	The node is awaiting completion of an operation (such as I/O) that will take a relatively short time to complete. If the node remains in this state for a long time, there is probably a hardware or software error.
Long Transient	The node is awaiting completion of an operation that will take a relatively long time to complete. If the node remains in this state for an unreasonable length of time, there is probably a hardware or software error.

<i>Category</i>	<i>Meaning</i>
Suspended	This node is awaiting processing of another node. When the awaited processing has completed, the status of this node should change. If the awaited processing completes and this node remains in this state, then there is probably a software problem.
Internal	This state is used within ACF/VTAM to direct processing. It should never be displayed. If it is, then there is probably a software problem.

The first byte of RPRCURST and RPRDESST represents the resource status categories:

<b>Value (Hex)</b>	<b>Current State Category</b>	<b>Desired State Category</b>
00	Inactive	Inactive
01	Pending inactive	Not used
02	Connectable	Connectable
03	Reactivate	Reactivate
04	Pending active	Not used
05	Active	Active
06	Routable	Routable

The second byte of RPRCURST and RPRDESST gives the specific resource status. The following table shows the two bytes in combination (for example, value hex 0001 indicates a category of 00 and a specific code of 01).



## Resource Status Codes

<i>Abbreviation (Hex Value)</i>	<i>Category</i>	<i>Resource Status</i>
ACTIV (0505)	Final	Active: The resource is in the active state.
APEER (0501)	Final	Backup Link Station Active: The resource is an active backup link station to which a subarea node is attached.
CONCT (0200)	Final	Connectable: A VARY NET,ACT command has completed for a switched or local physical or logical unit, or for an application program. A dial-in or dial-out request will be honored, but the resource is not active at this time. For application programs, an OPEN has not yet been issued. For a channel-attached resource, the device has not been powered on.
CTD(1) (043D)	Suspended	Contacted (1): A link station was being activated and a Contacted request has been received. Because the NCP contacted is also being activated, the activation of the link station is suspended while the NCP activation proceeds. Activation processing for the link station will resume before activation of the NCP completes.

*Abbreviation  
(Hex  
Value)*

*Category*

*Resource Status*

CTDER  
(041D)

Suspended

Contacted Error: A node, either a link station or a peripheral physical unit was being activated and a Contacted request was received indicating the Contact operation failed. For a peripheral PU, a request to deactivate the resource has been scheduled. For a link station, if the NCP it is trying to contact is also being activated, the link station activation will be suspended while the NCP activation proceeds. Activation processing for the link station will resume before activation of the NCP completes. A second contact failure will cause deactivation of the link station.

CTRQI  
(043A)

Suspended

Contacted (2) Request IPL: A node, either a link station or a peripheral PU, is being activated and the Contacted request indicates that reload is required. For a peripheral PU, a request to deactivate the resource has been scheduled. For a link station, if the NCP it is trying to contact is also being activated, the link station activation will be suspended while the 3705 activation proceeds. Activation processing for the link station will resume before activation of the NCP completes. A second Contacted request indicating that reload is required will cause deactivation of the link station.

## Resource Status Codes

*Abbreviation  
(Hex  
Value)*

*Category*

*Resource Status*

CT1NS  
(040F)

Suspended

Contact (1) Not Sent: A link station reached the point in its activation where a Contact request should be sent, but the NCP to be contacted was not in a suitable state. The link station's activation will be suspended while the NCP's activation proceeds. Activation processing for the link station will resume before activation of the NCP completes.

DALUC  
(011E)

Suspended

DACTLU Complete: A DACTLU has been sent and the response received, but some higher-level node recovery processing has started. This node will remain in this state until the higher-level process redrives it.

DAPUC  
(011F)

Internal

DACTPU Complete: A DACTPU has been sent as the result of a force deactivate or force reactivate command, and either the response was received or in the case of a 3705, a route failed and a DACTPU request was received.

DEFND  
(0001)

Short  
Transient

Defined: A VARY NET, ACT command is being processed for a major node and the RDT segment has just been built. The major node and its subnodes are known to ACF/VTAM. The activation has been suspended while the processing of the command moves from one internal ACF/VTAM dispatching point to another.

*Abbreviation  
(Hex Value)*

*Category*

*Resource Status*

DUMPC  
(011B)

Suspended

Dump Complete: A link station was used to dump an NCP and the dump is complete, but the recovery or deactivation of the NCP has not reached the point where link stations adjacent to that NCP are processed. For a recovery, that point is when the NCP's load/dump procedure status is RESET. For a deactivation, that point is when the NCP's status is PRSET.

FDSCC  
(0445)

Internal

Force Discontact Complete: A DISCONTACT has been sent as a result of a force deactivate or force reactivate command and the response to the DISCONTACT has been received.

HLACC  
(042D)

Internal

Higher-Level Activate Complete: The resource is being activated and its higher-level node has completed activation. For example, a local PU or LU is being activated, and the activation of the associated channel (such as PUB or UCB allocation) has completed. The activation of the resource is about to begin.

HLACF  
(0409)

Internal

Higher-Level Activate Failed: The resource was being activated, and activation of its higher-level node failed. For example, a local PU or LU was being activated, and PUB or UCB allocation has failed for its associated channel. A deactivate request was scheduled for the local PU or LU.

## Resource Status Codes

*Abbreviation  
(Hex  
Value)*

*Category*

*Resource Status*

IINOP  
(0005)

Final

Inactive (Inoperative): The resource has been deactivated by an INOP request or a forced deactivation.

INACS  
(0006)

Final

Inactive with Sessions. If the resource is an LU, the node is in the inactive state, but may have active sessions. There is no LU-SSCP session, but the LU may have active LU-LU sessions. This state can occur when a cross-domain resource is made a same-domain resource as part of the takeover of the resources of an SSCP that failed.

If the resource is a CDRM, the node is in an inactive state, but it supports active cross-domain LU-LU sessions. In this state, there is no SSCP-SSCP session, but the CDRM may be supporting active cross-domain LU-LU sessions. This state can occur when:

1. The virtual route used by the SSCP-SSCP session is inoperative or has been deactivated by a DACTVR (FORCE)
2. Activate CDRM contention has occurred
3. An unrecoverable error has been detected for the SSCP-SSCP session. The cross-domain active session, which used the SSCP-SSCP session to setup, will remain intact.

## Resource Status Codes

*Abbreviation  
(Hex  
Value)*

*Category*

*Resource Status*

INACT  
(0003)

Final

Inactive: The resource is inactive.

INOP  
(0441)

Suspended

Inoperative: An INOP request, route failure, or force reactivate command is being processed. Active user sessions have been terminated, and the resource is about to be reactivated, but must wait for a higher level node.

INVAP  
(0417)

Internal

Invalid ACTPU Response: A node, such as a communication controller or PU, is being activated, and the ACTPU request has been sent, but the associated response is invalid. Examples of invalid responses are: when the response unit has invalid format or indicates the PU is not in COLD or ERP state, or the resource has been loaded, and the contents ID is not the expected value. A request to deactivate the resource was scheduled.

LLQED  
(043B)

Suspended

Lower Level Queued: A VARY NET, ACT command is being processed for a communication controller and the RDT segment has just been built. The network names of the major node and its subnodes are known to ACF/VTAM. At least one of the subnode link stations has been queued on another link station queue, because it is an operand of the RNAME= keyword on the second communication

## Resource Status Codes

*Abbreviation  
(Hex  
Value)*

*Category*

*Resource Status*

controller's VARY NET, ACT command. The activation of the communication controller has been suspended while the processing of the command moves from one internal ACF/VTAM dispatching point to another.

NACDR  
(042F)

Internal

Negative Activate CDRM Response: A CDRM is being activated and the Activate CDRM request was sent, but the associated response was negative (the request failed). A request to deactivate the CDRM has been scheduled.

NACTL  
(0410)

Internal

Negative Activate LU Response: A node, such as an application program or other LU was being activated, and the Activate LU request was sent, but the associated response was negative (the request failed). A request to deactivate the resource was scheduled.

NACTP  
(0412)

Internal

Negative Activate PU Response: A node, such as a communication controller or PU, was being activated and the Activate PU was sent, but the associated response was negative, and the request failed. A request to deactivate the resource was scheduled.

## Resource Status Codes

*Abbreviation  
(Hex  
Value)*

*Category*

*Resource Status*

NADLK  
(0423)

Internal

Negative Add Link Response: A channel link was being activated and an Add Link request was sent to the appropriate PU services. However, the associated response was negative and the request failed. A request to deactivate the resource was scheduled.

NADST  
(0420)

Internal

Negative Add Link Station Response: A channel link station was being activated and an Add Link Station request was sent to the host PU. However, the associated response was negative and the request failed. A request to deactivate the resource was scheduled.

NALNK  
(0415)

Internal

Negative Activate Link Response: A line was being activated, and the Activate Link request was sent, but the associated response was negative (the request failed). A request to deactivate the line has been scheduled.

NANNA  
(0431)

Internal

Negative Allocate Node Network Address: A node, such as a DR-added PU or LU, was being activated, and the Request Network Address Assignment request was sent to the appropriate PU services, but the associated response was negative, and the request failed. A request to deactivate the resource was scheduled.



## Resource Status Codes

<i>Abbreviation (Hex Value)</i>	<i>Category</i>	<i>Resource Status</i>
NASNA (0426)	Internal	Negative Allocate Subnode Network Addresses: A node, such as a local or switched physical unit, is being connected and the Request Network Address Assignment request has been sent to the appropriate PU services. However, the associated response was negative and the request failed. A request to disconnect the resource was scheduled.
NCONO (0400)	Internal	Negative Connect Out Response: A node, such as a local or switched physical unit, was being connected and the Connect Out request was sent to the appropriate PU services, but the associated response was negative and the request failed. A request to disconnect the resource was scheduled.
NCONT (041C)	Internal	Negative Contact Response: A node, such as a link station or PU, was being activated and the Contact request was sent, but the associated response was negative (the request failed). A request to deactivate the resource has been scheduled.
NEVAC (0004)	Final	Never Activated: The resource has never been activated.

*Abbreviation  
(Hex  
Value)*

*Category*

*Resource Status*

NLOAD  
(043C)

Internal

Negative Load Response: An NCP was being activated and a Load Request was sent to the appropriate PU services, but the associated response was negative and the request failed. A request to deactivate the NCP was scheduled.

NNAUV  
(0403)

Internal

Negative Set LU Control Vector Response: A node, such as a switched or dynamically added logical unit, was being connected and the Set Control Vector request with the LU Control Vector was sent, but the associated response was negative and the request failed. A request to disconnect the resource was scheduled.

NSARV  
(041A)

Internal

Negative Set Subarea Routing Control Vector: A node, such as a link station, was being activated and the Set Control Vector request with the Subarea Routing Control Vector was sent, but the associated response was negative and the request failed. A request to deactivate the resource was scheduled.

NSDT  
(0428)

Internal

Negative Start Data Traffic Response: A communication controller was being activated and the Start Data Traffic request was sent, but the associated response was negative, and the request failed. A request to deactivate the communication controller was scheduled.

## Resource Status Codes

*Abbreviation  
(Hex  
Value)*

*Category*

*Resource Status*

NSNCP  
(042E)

Internal

Negative Switch to NCP Response: A PEP link was being activated, and the SW to NCP request was sent, but the associated response was negative, and the request failed. A request to deactivate the PEP link was scheduled.

NSSSV  
(0405)

Internal

Negative Set SDLC Secondary Station (SSS) Control Vector: A node, such as a DR-added PU, or a switched PU, was being connected, and the Set Control Vector Request with the SSS control vector was sent, but the associated response was negative and the request failed. A request to disconnect the node was scheduled.

NSTD  
(042A)

Internal

Negative Set Time and Date Response: A node, such as a communication controller, was being activated, and the Set Time and Data request was sent, but the associated response was negative, and the request failed. A request to deactivate the node was scheduled.

NVYLM  
(0436)

Internal

Negative Operator Query (VFLYM) Response: The resource was being activated and the response to the ACF/VTAM message IST361I or 5D61A was to terminate the NCP's activation. A request to deactivate the resource has been scheduled.

*Abbreviation  
(Hex Value)*

*Category*

*Resource Status*

PABCN  
(010B)

Short  
Transient

Pending Abandon Connection Response: A node, such as a local or switched PU, is about to become disconnected. The Abandon Connection request has been sent to the appropriate PU services, but the associated response has not been received.

PABCO  
(0116)

Short  
Transient

Pending Abandon Connect Out Response: A node, such as a local or switched PU, is being disconnected and the Abandon Connect Out request has been sent to the appropriate PU services, but the associated response has not been received.

PACDR  
(0430)

Long  
Transient

Pending Activate CDRM Response: A CDRM is being activated and the Activate CDRM request has been sent, but the associated response has not been received. The sending of this request may have to wait for the availability of a virtual route. If one or more explicit routes are operative, this should be a short transient state while route activation proceeds. If no routes are operative, this may be a long transient state while ACF/VTAM waits for connectivity to be established along the route.

## Resource Status Codes

*Abbreviation  
(Hex  
Value)*

*Category*

*Resource Status*

PACTL (0411)	Short Transient	Pending Activate LU Response: A node, such as an application program or other logical unit, is being activated and the Activate LU request has been sent, but the associated response was not received.
PADLK (0421)	Short Transient	Pending Add Link Response: A channel link is being activated and an Add Link request was sent to the appropriate PU services, but the associated response has not been received.
PADST (0419)	Short Transient	Pending Add Link Station Response: A channel link station is being activated and an Add Link Station request was sent to the appropriate PU services, but the response has not been received.
PALNK (0416)	Short Transient	Pending Activate Link Response: A line is being activated, and the Activate Link request has been sent, but the associated response was not received.
PALUC (0434)	Short Transient	Pending Activate LU Cleanup Response: An active LU is undergoing recovery processing. An ACTLU request has been sent, but the associated response has not been received.

*Abbreviation  
(Hex  
Value)*

*Category*

*Resource Status*

PANNA  
(0432)

Short  
Transient

Pending Allocate Node Network Address: A node, such as a dynamically added physical unit or logical unit, is being activated and the Request Network Address Assignment request has been sent to the appropriate PU services, but the associated response was not received.

PAPU1  
(0413)

Long  
Transient

Pending Activate PU (1) Response: An NCP is being activated, and may need to be loaded, ACTPU was sent, but the associated response has not yet been received. The sending of this request may have to wait for the availability of a virtual route. If one or more explicit routes are operative, this should be a short transient state while route activation proceeds. If no routes are operative, this may be a long transient state while ACF/VTAM waits for connectivity to be established along the route.

PAPU2  
(0425)

Long  
Transient

Pending Activate PU (2) Response: A physical unit is being activated. ACTPU has been sent, but the associated response has not yet been received. For a subarea PU, the sending of this request may have to wait for the availability of a virtual route. If one or more explicit routes are operative, this should effectively be a short transient state

## Resource Status Codes

*Abbreviation  
(Hex  
Value)*

*Category*

*Resource Status*

while route activation proceeds. If no routes are operative, this may be a long transient state while ACF/VTAM waits for connectivity to be established along the route.

PASNA  
(0427)

Short  
Transient

Pending Allocate Subnode Network Addresses: A node, such as a local or switched physical unit, is being connected and the Request Network Address Assignment request has been sent to the appropriate PU services. However, the associated response was not received.

PCONO  
(0401)

Short  
Transient

Pending Connect Out Response: A node, such as a local or switched physical unit, is being connected and the Connect Out request has been sent to the appropriate PU services, but the associated response was not received.

PCON1  
(041E)

Short  
Transient

Pending Contact (1) Response: A node, such as a link station is being activated, and the first Contact request was sent to the appropriate PU services, but the associated response was not received.

PCON2  
(0422)

Short  
Transient

Pending Contact (2) Response: A node, such as a PU or link station, is being activated, and the Contact request (second attempt for link station) has been sent to the appropriate PU services, but the associated response has not been received.

*Abbreviation  
(Hex  
Value)*

*Category*

*Resource Status*

PCTD1  
(041F)

Long  
Transient/  
Suspended

Pending Contacted (1) Request: If the resource is a link station it is being activated, and a positive Contact response was received but the associated Contacted request was not received. An NCP will also be found in this state (in this case a suspended state) during activation while waiting for an adjacent link station to be activated.

PCTD2  
(0424)

Long  
Transient/  
Suspended

Pending Contacted (2) Request: If the node is a link station or peripheral PU, it is being activated and a Contact request was sent and the response received, but the associated Contacted request has not been received. An NCP will also be found in this state (it is a suspended state in this case) during activation while waiting for an adjacent link station connected to it to be activated. The difference between PCTD2 and PCTD1 is that an NCP in the PCTD1 state may be loaded if a Contacted request is received for an adjacent link station indicating that the communication controller needs to be loaded, whereas in the PCTD2 state, both the adjacent link station and the NCP would be deactivated.



## Resource Status Codes

*Abbreviation  
(Hex  
Value)*

*Category*

*Resource Status*

PDACL (010F)	Short Transient	Pending DACTLU Response: A node, such as an application program or a logical unit, is being disconnected or deactivated. The DACTLU request has been sent, but the associated response has not been received.
PDACP (0110)	Short Transient	Pending DACTPU Response: A node, such as a communication controller or physical unit, is being disconnected or deactivated. The DACTPU request has been sent, but the associated response has not been received.
PDANC (0442)	Short Transient	Pending DACTPU ANSC: A DACTPU has been sent to the resource but the associated response has not been received. The resource was being activated when an Auto Network Shutdown Complete (ANSC) RU was received. This request causes the SSCP to reset the SSCP-PU session and then resume the activation procedure.
PDANS (0104)	Short Transient	Pending Inactivate ANS Processing: The Abandon Connect In request unit has been sent for a node such as a switched link.
PDELRL (010E)	Short Transient	Pending Delete Network Resource Response: A node, such as an application program, is being disconnected. The Delete Network Resource request has been sent to the appropriate PU services, but the associated response has not been received.

*Abbreviation  
(Hex Value)*

*Category*

*Resource Status*

PDISC  
(010D)

Short  
Transient

Pending Discontact Response: A node, such as a link station or physical unit, is being deactivated or disconnected. The Discontact request has been sent to the appropriate PU services, but the associated response has not been received.

PDLNK  
(0112)

Short  
Transient

Pending DACTLINK Response: A line or local device is being deactivated, and the DACTLINK request has been sent to the appropriate PU services, but the associated response has not been received.

PDLUC  
(011D)

Short  
Transient

Pending Deactivate LU Cleanup: An active LU is undergoing error recovery processing and a DACTLU request has been sent, but the associated response has not been received.

PDPA1  
(0443)

Short  
Transient

Pending DACTPU (ACT1): A DACTPU has been sent to the resource but the associated response has not been received.

The NCP was being activated and was found already loaded. This state is exited when the DACTPU response is received and processing will continue from the beginning. Another attempt to load will be allowed.

## Resource Status Codes

*Abbreviation  
(Hex  
Value)*

*Category*

*Resource Status*

PDPA2  
(0440)

Short  
Transient

Pending DACTPU (ACT2): A DACTPU has been sent to the resource but the associated response has not been received.

If the resource is an NCP, it was being activated and a load was performed. Once the DACTPU response is received, the activation of the NCP will proceed. If the resource is a BSC 3270 PU, a General Poll Failure occurred and the DACTPU was sent to clean up internal control blocks. When the response is received, an ACTPU will be sent.

PFDCP  
(0440)

Short  
Transient

Pending Force DACTPU Response: A DACTPU has been sent as a result of a force reactivate or force deactivate command against a node, such as a communication controller. The response has not been received.

PFDLU  
(0120)

Short  
Transient

Pending Force DACTLU Response: A DACTLU has sent as a result of a force deactivate command for the LU, but the response has not yet been received.

PFDMP  
(0119)

Long  
Transient

Pending Dump Response: DUMP is being performed of an NCP over a link station and has not yet completed processing.

*Abbreviation  
(Hex Value)*

*Category*

*Resource Status*

**PF DSC  
(042C)**

**Short  
Transient**

**Pending Force Discontact Response:** A PU is being force deactivated or force reactivated and the Discontact request has been sent to the appropriate PU services, but the associated response has not been received.

**PF NNA  
(011C)**

**Short  
Transient**

**Pending Free Node Network Address:** A node, such as a dynamically added PU or LU is being deactivated. The Free Network Address request has been sent to the appropriate PU services, but the associated response has not been received.

**PFSNA  
(010C)**

**Short  
Transient**

**Pending Free Subnode Network Addresses:** A node, such as a local or switched PU, is being disconnected. The Free Network Address request has been sent to the appropriate PU services, but the associated response has not been received.

**PHLAC  
(040A)**

**Suspended**

**Pending Higher-Level Activation:** A node is awaiting activation of its higher-level node. For example, a local PU or LU is being activated, and the request to activate the associated channel, (that is, the associated PUB or UCB) has not completed.

## Resource Status Codes

*Abbreviation  
(Hex  
Value)*

*Category*

*Resource Status*

PHLIN  
(0102)      Suspended      Pending Higher-Level Deactivation:  
A node is inactive and its higher-  
level node is being deactivated. For  
example, a local PU is inactive and  
the associated channel PUB or UCB  
is being deallocated.

PINAC  
(0100)      Long  
Transient      Pending Inactive: CDRM is being  
deactivated. This is a long transient  
state because all cross-domain ses-  
sions involving the CDRM must be  
terminated before the CDRM is  
deactivated.

PLOAD  
(040E)      Long  
Transient      Pending Load: An NCP is being  
activated and a loading operation  
has begun, or a peripheral PU,  
such as an 8775, being activated has  
requested a load and the SSCP sent  
the load request to an application  
program defined in the CNM  
routing tables. A response to the  
load request has not been received.

PLSTC  
(043F)      Suspended      Pending Load Station Conditional:  
Activation processing for an NCP is  
waiting for the link station over  
which the NCP will be loaded to  
become available. When the link  
station is available, ACF/VTAM  
will perform a conditional load if  
the link station is channel-attached,  
or otherwise an unconditional load.

*Abbreviation  
(Hex  
Value)*

*Category*

*Resource Status*

PLSTU  
(040D)

Suspended

Pending Load Station Unconditional: Activation processing for an NCP is waiting for the link station over which the NCP will be loaded to become available. When the link station is capable of being used for loading, a load of the NCP will be done.

PMALD  
(0446)

Long  
Transient

Pending Migration ACTPU Load/Dump Procedure: For an NCP session on a migration route, a session recovery loop has been suspended due to an ongoing load or dump operation.

PMATM  
(0447)

Long  
Transient

Pending Migration ACTPU Timer: An NCP, attempting session recovery on a migration route, is waiting for expiration of a time interval before retrying session activation.

PNAUV  
(0404)

Short  
Transient

Pending Set LU Control Vector Response: A node, such as a switched or dynamically added logical unit, is being connected and the Set Control Vector request with the LU Control Vector has been sent to the appropriate PU services, but the associated response has not been received.

PNFY1  
(0113)

Long  
Transient

Pending Notify(1) Request: A node, such as an LU, is being deactivated or disconnected. The request to terminate user sessions has

## Resource Status Codes

*Abbreviation  
(Hex  
Value)*

*Category*

*Resource Status*

been scheduled, but the Notify request indicating that the user sessions have ended has not yet been received.

PNFY2  
(0108)

Long  
Transient

Pending Notify(2) Request: A node, such as a logical unit, is about to become connectable and the request to terminate any queued user sessions has been scheduled. However, the Notify request indicating that the user sessions have ended has not yet been received.

PNFY3  
(0105)

Long  
Transient

Pending Notify(3) Request: A node is about to become inactive and the request to terminate queued user sessions has been scheduled. However, the Notify request indicating that the user sessions have ended has not yet been received.

POAS1  
(0437)

Long  
Transient

Pending Operator Query (AUTOSYN1) Response: A communication controller is being activated and message IST183A or 5B83A, which asks if the communication controller should be reloaded or resynchronized, has been issued. The message was sent after the communication controller was contacted but before an SSCP-PU session was established. The reply has not been received.

## Resource Status Codes

*Abbreviation  
(Hex  
Value)*

*Category*

*Resource Status*

POAS2  
(0438)

Long  
Transient

Pending Operator Query (AUTOSYN2) Response: A communication controller is being activated and message IST183A or 5B83A, which asks if the communication controller should be reloaded or resynchronized, has been issued. The message was sent after an SSCP-PU session was established with the communication controller. The reply has not been received.

PREQC  
(0402)

Long  
Transient

Pending Request Contact Request: A node, such as a local or switched physical unit, is being connected and the Connect Out response has been received, but the Request Contact request has not been received.

PRMPO  
(0103)

Short  
Transient

Pending RMPO Response: A link station is being deactivated and the NCP attached to it has to be powered off. A Remote Power Off request has been sent and the response has not been received.

PRSET  
(0101)

Short  
Transient

Pending Reset: The resource is inactive, but the network name is still known to ACF/VTAM.

PSARV  
(041B)

Short  
Transient

Pending Set Subarea Routing Control Vector Response: A node, such as a link station, is being activated and the Set Control Vector request containing a Subarea Routing Control Vector has been sent to the appropriate PU services, but the associated response has not been received.



## Resource Status Codes

*Abbreviated  
(Hex  
Value)*

*Category*

*Resource Status*

PSDT  
(0429)

Short  
Transient

Pending Start Data Traffic (SDT) Response: A node, such as a communication controller is being activated, and the Start Data Traffic request was sent, but the associated response was not received.

PSNCP  
(0414)

Short  
Transient

Pending Switch to NCP Response: A PEP link is being activated, and the Switch to NCP request was sent, but the response has not been received.

PSSSV  
(0406)

Short  
Transient

Pending Set SDLC Secondary Station (SSS) Control Vector Response: A switched physical unit is being connected, or a DR added PU is being activated, and the Set Control Vector Request containing an SSS control vector has been sent to the appropriate PU services, but the associated response has not been received.

PSTD  
(042B)

Short  
Transient

Pending Set Time and Date Response: A communication controller is being activated, and the Set Control Vector request containing a Set Time and Date Control Vector was sent, but the associated response was not received.

*Abbreviation  
(Hex Value)*

*Category*

*Resource Status*

PSUBR  
(0504)

Suspended

Pending Subnode Release: An acquired communication controller that was activated before it was acquired is being released; that is, a request to release the subnodes in the acquired portion of the communication controller is in progress.

PSUB1  
(0115)

Suspended

Pending Subnode Deactivate (1): A node supporting subnodes, for example, an application program segment, communication controller, link, or PU is being deactivated or disconnected and is waiting for its subnodes to complete deactivation processing before proceeding with its own deactivation. (The differences between PSUB1, PSUB2, and PSUB3 vary for the node type. The different states are used to determine the next step to be taken in deactivating this node once its subnodes complete processing.)

PSUB2  
(010A)

Suspended

Pending Subnode Deactivate (2): A node supporting subnodes, for example, an application program segment, communication controller, link, or PU is being deactivated or disconnected and is waiting for its subnodes to complete deactivation processing before proceeding with its own deactivation. (The differences between PSUB1, PSUB2, and PSUB3 vary for the node type.

## Resource Status Codes

*Abbreviation  
(Hex Value)*

*Category*

*Resource Status*

The different states are used to determine the next step to be taken in deactivating this node once its subnodes complete processing.)

PSUB3  
(0107)

Suspended

Pending Subnode Deactivate (3): A node supporting subnodes, for example, an application program segment, communication controller, link, or PU is being deactivated or disconnected and is waiting for its subnodes to complete deactivation processing before proceeding with its own deactivation. (The differences between PSUB1, PSUB2, and PSUB3 vary for the node type. The different states are used to determine the next step to be taken in deactivating this node once its subnodes complete processing.)

PSWEP  
(0111)

Short  
Transient

Pending Switch to EP Response: A PEP link has been deactivated. The Switch to EP Mode request has been sent to the appropriate PU services, but the associated response has not been received.

PTRM1  
(0114)

Short  
Transient

Pending Terminate(1) Response: A node, such as an LU, is being deactivated or disconnected. The request to terminate user sessions has been scheduled, but the associated response has not yet been received.

## Resource Status Codes

*Abbre-  
viation  
(Hex  
Value)*

*Category*

*Resource Status*

PTRM2  
(0109)

Short  
Transient

Pending Terminate(2): A node, such as an LU, is about to become connectable and the request to terminate queued user sessions has been scheduled. However the associated response has not yet been received.

PTRM3  
(0106)

Short  
Transient

Pending Terminate(3) Response: An LU is about to become inactive and the request to terminate queued user sessions has been scheduled, but the associated response has not yet been received.

PVYLM  
(0435)

Long  
Transient

Pending Operator Query (VFYLM) Response: The resource is being activated and the ACF/VTAM operator message IST361A or 5D61A has been issued, but the reply has not yet been received. Message IST361A or 5D61A asked the operator if he wanted to load the NCP or terminate the NCP's activation.

P095A  
(0118)

Long  
Transient

Pending Operator Query Response: An error recovery procedure (ERP) issued message IST095A or 5A95A, asking whether an ERP DUMP is desired. The reply has not been received.

P284A  
(0408)

Long  
Transient

Pending Operator Query Response: A communication controller is being recovered and message IST284A or 5C84A, asking whether the communication controller should be

## Resource Status Codes

<i>Abbreviation (Hex Value)</i>	<i>Category</i>	<i>Resource Status</i>
		reloaded, has been issued. The reply has not been received.
RACTH (0301)	(See Note)	Reactivate at Higher Level: The resource is being deactivated and, once inactive, will wait for its reactivation to be driven by a higher-level node. <sup>1</sup>
RACTN (0300)	(See Note)	Reactivate at this Level: The resource is being deactivated and will then be reactivated at this level. <sup>1</sup>
RADDF (0433)	Internal	RDTADD Failed: A node was being activated and the request to add the associated network address to the ACF/VTAM's network address table has failed. A request to deactivate the resource has been scheduled.
RDIAL (0201)	(See Note)	Redial: A switched PU is being disconnected and an attempt to redial the PU will be made once disconnection is complete. <sup>1</sup>
RELSA (0002)	Final	Released: A physical unit has been released or it exists in the unowned portion of an activated-before-acquired 3705 and has not yet been acquired.

---

<sup>1</sup> This is a desired state only.

*Abbr-  
viation  
(Hex  
Value)*

*Category*

*Resource Status*

RESET  
(0000)

Final

Reset: As a current state, this means that the RDT segment has been built but has not been processed by the SSCP. This value for an LU can also mean that a VARY NET,REL command for the associated PU has been completed.

As the NCP's load dump procedure status, this state means that no load or dump procedure is in progress.

RINAC  
(0600)

Long  
Transient

Routable, Inactive: A MODIFY LL2 command is being processed for an inactive DR-added PU. When the LL2 test is terminated the PU will be returned to the inactive state.

RRLSD  
(0601)

Long  
Transient

Routable, Release: A MODIFY LL2 command is being processed for a released DR-added PU. When the LL2 test is terminated, the PU will be returned to the released state.

183AF  
(0418)

Internal

Operator Query (AUTOSYNCH) Failed: A request to issue message IST183A or 5B83A was scheduled, but the message could not be issued. Processing continues as if the reply was negative.

## Resource Status Codes

<i>Abbreviation (Hex Value)</i>	<i>Category</i>	<i>Resource Status</i>
284AF (0407)	Internal	Operator Query Failed: A request to issue message 5C84A has been scheduled, but the message could not be issued. Processing continues as if the reply was negative.
TRACT <sup>1</sup> (03)	Final	Trace Active: The trace indicated is active for this line.
TRPAR <sup>1</sup> (02)	Short Transient	Pending Active Trace Response: The trace is being activated and the ACTTRACE request has been sent but the associated response has not been received.
TRPDR <sup>1</sup> (01)	Short Transient	Pending DACTTRACE: The trace is being deactivated and a DACTTRACE request has been sent, but the associated response has not been received.
TRRES <sup>1</sup> (00)	Final	Trace Reset: The trace indicated is inactive for this line.

---

<sup>1</sup> This value may appear in a 1-byte field containing the line trace status.

## System Completion Codes (OS/VS)

This section contains only the OS/VS system completion codes related to ACF/VTAM. The remainder of the system completion codes are listed in the appropriate *OS/VS Message Library: System Codes*.

System completion codes indicate that the control program has determined that a task cannot continue processing and expect valid results. For example, an error may have occurred during the execution of a user's application program and was detected by ACF/VTAM. In such a case, processing of the task is terminated, and a completion code is supplied which indicates the reason for the termination. When appropriate to the error, the explanation of the completion code suggests a programmer response intended to correct the reason for the abnormal termination. If the error cannot be corrected by correcting program code, the problem determination action should be followed. The problem determination table for the system completion codes is at the end of this section.

0A7

*Explanation:* During ACF/VTAM HALT NET, CANCEL processing, ACF/VTAM found that a TPEND exit routine did not exist or could not be scheduled for each access method control block (ACB) opened by the user's application program.

*System Action:* The user's task is abnormally terminated.

*Programmer Response:* None.



## System Completion Codes

### 0A8

*Explanation:* ACF/VTAM detected an error that occurred during the execution of a user's application program. The contents of the low-order 2 bytes of register 15 indicates the cause of the error:

*Register 15*

*Contents in*

*Hexadecimal: Explanation:*

2101	An ACF/VTAM validity check of the user's request parameter list (RPL) failed because the RPL does not have the same protection key as the application programs's TCB.
7001	The user's request parameter list (RPL) or event control block (ECB) is invalid.

*System Action:* The task abnormally terminates.

*Programmer Response:* Probable user error.

Verify that the RPL and ECB pointers are correct and execute the job step again.

### 0A9

*Explanation:* An error occurred during the execution of an ACF/VTAM module. The contents of the low-order 2 bytes of register 15 indicate the cause of the error.

*Register 15*

*Contents in*

*Hexadecimal: Explanation:*

0000	An ACF/VTAM HALT NET, CANCEL command has been processed successfully.
3141	An ACF/VTAM destination vector table (DVT) entry is invalid for the defined attachment.

*Register 15**Contents in**Hexadecimal: Explanation:*

- |      |   |
|------|---|
| 7001 | An ACF/VTAM application program has specified an invalid RPL or ECB.  |
| 7002 | An ACF/VTAM request for storage failed.   |
| 7003 | An ACF/VTAM request to release storage failed because the storage had already been released.  |
| 7004 | ACF/VTAM could not obtain a local storage lock.   |
| 7005 | ACF/VTAM was unable to restore its registers after a user exit routine returned to ACF/VTAM.  |
| 7071 | A RELSTORE was issued for a previously freed buffer.  |
| 7141 | Control cannot be passed to the proper ACF/VTAM module. Either an ACF/VTAM destination vector table (DVT) entry is invalid for the defined attachment or ACF/VTAM storage has been altered. |
| 10F1 | The ABEND was issued by the ACF/VTAM STAE retry routine so that the user recovery routine (STAE exit routine) could get control.  |

*System Action:* The task that initiated the ACF/VTAM request abnormally terminates.

*Programmer Response:* None.

## System Completion Codes

### 0AA

*Explanation:* An abend condition occurred during execution of ACF/VTAM. ACF/VTAM's functional recovery routines (FRRs) were unable to associate the failure with any particular TCB in the address space.

*System Action:* All the tasks in the address space are abnormally terminated.

*Programmer Response:* None.

### 0AB

*Explanation:* An error occurred while TSO/VTAM was in operation and a VTIOC module was executing an ACF/VTAM macro instruction. The contents of the 2 low-order bytes of register 15 indicate the cause of the error:

#### *Register 15*

#### *Contents in*

#### *Hexadecimal: Explanation:*

0101      The terminal input manager for IBM 3767, IBM 3770, and NTO terminals (IKTIMLU1) encountered an unrecoverable error while executing an ACF/VTAM macro instruction that uses a request parameter list (RPL).

0102      The terminal output manager for IBM 3767, IBM 3770, and NTO terminals (IKTOMLU1) encountered an unrecoverable error while executing an ACF/VTAM macro instruction that uses an RPL.

0103      The terminal input manager for IBM 3270 SNA terminals (IKTIMLU0 or IKTIMLU2) encountered an unrecoverable error while executing an ACF/VTAM macro instruction that uses an RPL.

*Register 15**Contents in**Hexadecimal: Explanation:*

- 0104      The terminal output manager for IBM 3270 SNA terminals (IKTOMLU0 or IKTOMLU2) encountered an unrecoverable error while executing an ACF/VTAM macro instruction that uses an RPL.
- 0105      The VTIOC LOSTERM exit routine encountered an error during execution of a BIND or UNBIND command that used an RPL.
- 0201      The error occurred during initialization of a TSO/VTAM user address space. An application program ID problem was encountered while executing ACF/VTAM OPEN macro instruction.
- 0202      The error occurred during execution of an ACF/VTAM OPEN macro instruction. The ERROR field of the ACB indicates the problem. The values that can be set in the ERROR field are shown in Part 3, "Programming," in the section titled, "ACB ERROR Field Values."
- 0203      The error occurred during execution of an ACF/VTAM CLOSE macro instruction. The code in the ERROR field of the ACB is hex 42, indicating that the ACB has been closed but an ACF/VTAM error has prevented the successful disconnection of one or more TSO terminals.

## System Completion Codes

**System Action:** The terminal session in which the error occurred terminates.

**Programmer Response:** None.

### 0AC

**Explanation:** The terminal control address space (TCAS) was unable to continue its normal processing due to an error. The 2 low-order bytes of register 15 and TCAS work area (TWAR) field TWARSON both contain the reason code that indicates the cause of the error:

**Reason**

**Code in**

**Hexadecimal: Explanation:**

00	STOP command was entered.
04	Invalid START command was issued.
10	The TCAS main task was unable to attach the ACF/VTAM interface subtask.
14	The TCAS main task was unable to attach the user interface subtask.
18	The TCAS main task was unable to attach the console communication subtask.
1C	TCAS was unable to obtain storage for the TCAS table (TCAST) in the common service area (CSA).
20	The TCAS main task abnormally terminated and was unable to recover.

## System Completion Codes

### *Reason*

### *Code in*

*Hexadecimal: Explanation:*

30	The ACF/VTAM interface subtask abnormally terminated and was unable to recover.
34	The user interface subtask abnormally terminated and was unable to recover.
38	The console communication subtask abnormally terminated and was unable to recover.

*System Action:* TCAS abnormally terminates.

*Operator Response:* Reply "DUMP" to TCAS termination message IKT012D to obtain a dump.

0AD

*Explanation:* An error occurred while TSO/VTAM was in operation and VTIOC's queue manager was executing a GETCELL or FREECELL macro instruction. The contents of the 2 low-order bytes of register 15 indicate the cause of the error:

### *Register 15*

### *Contents in*

*Hexadecimal: Explanation:*

0108	The cell address supplied to the FREECELL macro instruction was invalid.
010C	No cell pool existed for the FREECELL request.
0110	An invalid cell pool ID was specified for the FREECELL request.
020C	No cell pool existed for the GETCELL request.

## System Completion Codes

### *Register 15*

#### *Contents in*

*Hexadecimal:      Explanation:*

0210                  An invalid cell pool ID was specified for the GETCELL request.

*System Action:* The queue manager abnormally terminates, and the terminal session in which the error occurred terminates.

*Programmer Response:* None.

## Cancel and Function Codes (VSE)

When an ACF/VTAM routine issues CANCEL, register 15 and the TIBCNCL field in the task information block (TIB) contains codes that aid in determining the reason for the cancellation. A cancel code is set in the TIB and a function code is set in register 15. The cancel code also appears at the end of message 5J97I:

```
5J97I VTAM CANCELLED FOR INVALID  
CONDITION cancel code
```

**Note:** *This message is also issued without a cancel code under some conditions. See ACF/VTAM Messages and Codes for more information.*

### Cancel Codes

Cancel codes are set in the VSE TIB cancel fields (hex 1A). This field is found at displacement hex 01 in the PIB. For information about the relationship between the TIB and ACF/VTAM control blocks, see *ACF/VTAM Diagnosis Reference*. Possible cancel codes are:

Hex 40 The application program task was canceled because ACF/VTAM terminated.

Hex 41 ACF/VTAM terminated in this task with the function code indicated.

If the hex 40 is set, message 5J95I is issued:

```
5J95I taskname CANCELLED DUE TO  
TERMINATION OF VTAM
```

If hex 41 is set, message 5J97I is issued:

```
5J97I VTAM CANCELLED FOR INVALID  
CONDITION function code
```



## Function Codes

The 2 low-order bytes of register 15 are set with flags and a function code. The flags occupy the first 4 bits, and function code occupies the remaining 12 bits. The function codes are listed below:

<i>Function Code (hex)</i>	<i>Issuing Module</i>	<i>Reason</i>
7001	ISTAICPT	The address of an application program's RPL or ECB is invalid.
7002	ISTAICPT	REQSTORE return code is greater than 8. The request is invalid; the user-defined header size exceeds the buffer size, or the number of buffers requested is larger than the specified pool.
7003	ISTAICPT	REQSTORE return code is greater than 8.
7071	ISTORCRT	RELSTORE was issued for an area of storage that was not originally obtained by REQSTORE.

## PART 2. INSTALLATION

### Coding Conventions

Conventions used to explain the syntax of macro instructions and definition statements, and the rules used to code them are summarized here as assembler language rules.

<i>Name</i>	<i>Operation</i>	<i>Operands</i>
Symbolic name	Macro instruction or statement	Required and optional operands

The Name field symbolically identifies the macro instruction, definition statement, or minor node. If a symbolic name is specified in the field, it must contain 1 to 8 characters in the following format:

first character — alphabetic (A-Z) or the national characters @, #, or \$

second through eighth character — alphameric (A-Z or 0-9) or the national characters @, #, or \$

The name must begin in the first position of the macro instruction or statement and must be followed by one or more blanks.

The Operation field identifies the macro instruction or statement. It must be preceded and followed by one or more blanks.

The Operands field contains operands coded in any order and separated by commas. The Operands field ends with one or more blanks placed after the last operand. In most macro instructions or statements, keyword operands are used in the Operands field. Keyword operands are followed by an equal sign (=) and the keyword value. The keyword value can be a single value or a list of values. If it is a list of values, the values must be separated by commas and the list must be enclosed in parentheses.

## Coding Conventions

Comments can be written after the Operands field, but they must be separated from the last operand of the Operands field by one or more blanks. An entire card can be used for a comment by placing an asterisk in the first column of the card. A macro instruction that has no operands cannot have comments on the same card as the operation code.

ACF/VTAM definition statements and NCP generation macro instructions are coded in columns 1 through 71 of a card. A statement or macro instruction that exceeds 71 columns can be continued on one or more additional cards by placing a nonblank character in column 72 to indicate continuation. The operands can be interrupted either at column 71 or after any comma that separates operands. The continued portion must begin in column 16 of the following card. Comments can appear on every card of a continued statement. Columns 73 through 80 can be used to code identification characters, statement sequence characters, or both.

### Restrictions on Use of Assembler Features

The NCP generation macro instructions and the ACF/VTAM definition statements are coded in standard operating system macro instruction format, as described above, with the following restrictions:

- Assembler program control instructions (such as ICTL, ISEQ) cannot be used in major node definition decks.

- Assembler listing control statements (such as PRINT, SPACE, EJECT) can be used in the NCP generation deck but must not be used in definition decks for the other types of major nodes.

Some assembler features must not be used in a major node definition deck:

- User assembler macro instructions that generate NCP macro instructions are not permitted.

- Names generated by global variables (for example, &SYSNDX or &SYSECT) cannot be used.

- Variable substitution at assembly time is not permitted.

References to assembler attributes (length, type, etc.) are not permitted.

Use of literals is not permitted.

Quoted strings cannot be used to make names out of keywords. For example, AUTH="PASS" is treated just like AUTH=PASS.

Comments, statements, or remarks can be used in decks for all types of major nodes.

Errors made in the major node definition decks filed in the ACF/VTAM definition library result in messages to the system operator's console during ACF/VTAM initialization or VARY ACT command processing.

Missing continuation characters can cause the NCP (during NCP generation) to assume values that are not physically correct (for example, half-duplex lines instead of full-duplex lines).

### Macro Instructions and Definition Statements

Conventions used to illustrate the format and coding of macro instructions and definition statements are as follows:

**Capital Letters:** Capital letters represent values that are coded directly, without change. Brackets [ ], "or" bar |, underlines, and superscripts are never coded.

**Lowercase Letters:** Lowercase letters represent operands for which a value or name must be supplied if the operand is coded.

**Brackets [ ]:** Brackets enclose operands or symbols that are either optional or conditional. Conversely, the lack of brackets indicates that an item or group of items must be coded.

An optional operand is one that can be coded or omitted independently of other operands that are coded or omitted. Depending on the operand, omitting it might cause the corresponding feature or function to be omitted or included, or omitting it can cause a specific value (the default value) to

## Coding Conventions

be assigned. When the syntax of a macro instruction or statement is shown in this book, any operands that are always required appear first, followed by the optional or conditional operands in alphabetical order.

**Vertical "or" Bar (|):** A vertical bar between operands indicates that one operand must be coded from among the values separated by the "or" bar.

**Parentheses, Equal Sign, and Commas:** Parentheses, equal signs, and commas are coded as shown.

**Underlined Values:** An underlined value represents the value that ACF/VTAM or the NCP uses if the operand is omitted (the default value).

**Braces { }:** Braces indicate mutually exclusive operands.

## Defining the Network

### Application Program Major Nodes

For an application program major node, code one VBUILD statement and then one APPL statement for each application program.

```
[name] VBUILD TYPE=APPL
name APPL  [,ACBNAME=acbname]
          [,AUTH=(|ACQ|NOACQ)
          [,CNM|NOCNM]
          [,PASS|NOPASS]
          [,PPO|SPO|NOPO]
          [,TSO|NOTSO]1
          [,VPACE|NVPACE)]
          [,AUTHEXIT=YES|NO]2
          [,DLOGMOD=default logon mode entry
          name]
          [,EAS=n|404]
          [,ENCR=SEL|REQD|OPT|NONE]3
          [,MAXPVT=n|0]4
          [,MODETAB=logon mode table name]
          [,PARSESS=YES|NO]
          [,PRTCT=password]
          [,SONSCIP=YES|NO]
          [,SPAN=name]5
          [,SRBEXIT=YES|NO]1
          [,VPACING=n|0]
          [,VTAMFRR=YES|NO]1
```

### Local Non-SNA Major Nodes

Code one LBUILD statement for each set (major node) of channel-attached non-SNA terminals.

```
[name] LBUILD [,CONFIGDS=ddname]
          [,CONFIGPW=password]
```

<sup>1</sup> Applies to MVS only.

<sup>2</sup> Applies to OS/VS1 only.

<sup>3</sup> Applies to the Encrypt/Decrypt Feature only.

<sup>4</sup> Applies to OS/VS only.

<sup>5</sup> Applies to NCCF only.

## Defining: Local Non-SNA • Local SNA

Code one LOCAL statement for each channel-attached non-SNA terminal (minor node) in the major node.

```
name LOCAL    CUADDR=address
              [,TERM=3277|3284|3286]
              [,DLOGMOD=default logon mode entry
              name]
              [,FEATUR2=([EDATS|NOEDATS]
              [MODEL1|MODEL2])
              [,ISTATUS=ACTIVE|INACTIVE]
              [,LOGAPPL=application program name]
              [,LOGTAB=interpret table name]
              [,MODETAB=logon mode table name]
              [,SPAN=name] 1
              [,USSTAB=USS definition table name]
```

### Local SNA Major Nodes

Code one VBUILD statement for each set of channel-attached SNA devices.

```
[name] VBUILD TYPE=LOCAL
              [,CONFIGDS=ddname]
              [,CONFGPW=password]
```

Code one PU statement for each physical unit in the local SNA major mode.

```
name PU    CUADDR=address
           [,DISCNT=([YES|NO] [,F|NF])
           [,DLOGMOD=default logon mode entry name] 2
           [,ENCR=REQD|SEL|OPT|NONE] 2,3
           [,ISTATUS=ACTIVE|INACTIVE]
           [,LOGAPPL=application program name] 2
           [,LOGTAB=interpret table name] 2
           [,MAXBFRU=number|1]
           [,MODETAB=logon mode table name] 2
           [,PACING=n|0|1] 2
           [,PUTYPE=2]
           [,SPAN=name] 1
           [,SSCPFM=FSS|USSSCS] 2
           [,USSTAB=USS definition table name] 2
           [,VPACING=n|0|1]
```

<sup>1</sup> Applies to NCCF only.

<sup>2</sup> If any of these operands are specified in both the PU and LU statements, the values used are those in the LU statement.

<sup>3</sup> Applies to OS/VS only.

Code one LU statement for each logical unit associated with a physical unit within a local SNA major node.

```

name    LU          LOCADDR=n
          [,DLOGMOD=default logmode entry] 3
          [,ENCR=REQD|SEL|OPT|NONE] 1,3
          [,ISTATUS=ACTIVE|INACTIVE]
          [,LOGAPPL=application program name] 3
          [,LOGTAB=interpret table name] 3
          [,MODETAB=logon mode table name] 3
          [,PACING=n|0|1] 3
          [,SPAN=name] 2,3
          [,SSCPFM=FSS|USSSCS] 3
          [,USSTAB=USS definition table name] 3
          [,VPACING=n|0|1] 3
    
```

### Switched Major Nodes

Code one VBUILD statement for each switched major node.

```

name    VBUILD     TYPE=SWNET
          [,MAXGRP=n]
          [,MAXNO=n]
          [,CONFIGDS=ddname]
          [,CONFGPW=password]
    
```

---

<sup>1</sup> Applies to the Encrypt/Decrypt Feature only.

<sup>2</sup> Applies to NCCF only.

<sup>3</sup> If any of these operands are specified in both the PU and LU statements, the values used are those in the LU statement.



## Defining: Switched

Code one PU statement for each physical unit in the switched major node.

```
name    PU    ADDR=station address
          ,IDBLK=identification block
          ,IDNUM=identification number
          [,BATCH=YES|NO]
          [,DISCNT=(YES|NO) [,FINF]]
          [,DLOGMOD=default logmode entry name]
          [,ENCR=REDQ|SEL|OPT|NONE]3
          [,FEATUR2=(MODEL1|MODEL2,LOWERCSE|
          DUALCSE)]1
          [,IRETRY=YES|NO]
          [,ISTATUS=ACTIVE|INACTIVE]
          [,LOGAPPL=application program name]
          [,LOGTAB=interpret table name]
          [,MAXDATA=SIZE|261|265]4
          [,MAXOUT=n|1]
          [,MAXPATH=n|0]
          [,MODETAB=logon mode table name]1
          [,PACING=n|0|1]1
          [,PASSLIM=n|1]
          [,PUTYPE=n|2]
          [,SPAN=name]2
          [,SSCPFM=FSS|USSSCS|USSNTO]1
          [,TERM=terminal type]1
          [,USSTAB=USS definition table name]1
          [,VPACING=n|0|2]
```

<sup>1</sup> If any of these operands are specified in both the PU and LU statements, the values used are those in the LU statement.

<sup>2</sup> Applies to NCCF only.

<sup>3</sup> Applies to OS/VS only.

<sup>4</sup> Default 261 applies to PU type 1 and default 265 applies to PU type 2.

Code up to 256 PATH statements to define dial-out paths for each physical unit. Each PATH statement must immediately follow the PU statement that defines the associated physical unit.

```
[name]  PATH    DIALNO=telephone number
          GID=n,
          GRPNM=groupname,
          LINEM=linename
          PID=n
          [,REDIAL=n|3]
          [,USE=YES|NO]
```

Code one LU statement for each logical unit associated with a physical unit within a switched major node.

```
name    LU      LOCADDR=n
          [,BATCH=YES|NO] 1
          [,DLOGMOD=default logmode entry] 1
          [,ENCR=REQD|SEL|OPT|NONE] 1,2
          [,FEATUR2=(operand,operand . . .)] 1
          [,ISTATUS=ACTIVE|INACTIVE]
          [,LOGAPPL=application program name] 1
          [,LOGTAB=interpret table name] 1
          [,MODETAB=logon mode table name] 1
          [,PACING=n|0|1] 1
          [,SPAN=name] 3
          [,SSCPFM=FSS|USSSCS|USSNTO] 1
          [,TERM=terminal type] 1
          [,USSTAB=USS definition table name]
          [,VPACING=n|0|1] 1
```

---

<sup>1</sup> If any of these operands are specified in both the PU and LU statements, the values used are those in the LU statement.

<sup>2</sup> Applies to the Encrypt/Decrypt Feature only.

<sup>3</sup> Applies to NCCF only.

## Defining: NCP

### Network Control Program Major Nodes

File one or more PCCU statements in front of the NCP generation deck.

```
[symbol] PCCU ,NCPLUB=lubname1  
[,AUTODMP=YES|NO]  
[,AUTOIPL=YES|NO]  
[,AUTOSYN=YES|NO]  
[,BACKUP=YES|NO]2  
[,CHANCON=COND|UNCOND]  
[,CONFGDS=ddname]  
[,CONFGPW=password]  
[,CUADDR=channel device name]  
[,DUMPDS=dumpname]  
[,DUMPSTA=link station name]  
[,INITEST=YES|NO]  
[,LOADSTA=link station name]  
[,MAXDATA=size]  
[,OWNER=ownername]  
[,RNAME=link station name|(name,  
name, . . . ,name)]  
[,SUBAREA=n]  
[,VFYLM=YES|NO]
```

---

<sup>1</sup> Applies to VSE only.

<sup>2</sup> Applies to the Multisystem Networking Facility only.

NCP generation operands that are used by ACF/VTAM are as follows:

	PU	LU	GROUP	LINE	CLUSTER	TERMINAL
ADDR	*				*	*
ANS	*					
ANSWER			V	V		
ATTN			*	*		
AUTO				*		
AUTODL			R	R		
BATCH	*	*	*	*		
BHSET			R	R	R	R
BNSUP	*		*	*		
CALL			R	R		
CDATA			*	*		
CONV			*	*		*
CUTYPE			*	*		
DEVICE						V
DIAL			*			
DIALNO						
DIRECTN			*	*		*
DISCNT	V		V	V	V	
DLOGMOD	V	V	V	V	V	V
ENCR	V	V	V	V		

V = ACF/VTAM only; for a description, refer to *ACF/VTAM Planning and Installation Reference*.

N = ACF/VTAM only; for a description, refer to *ACF/VTAM Planning and Installation Reference*. The *Network Terminal Option Installation* manual should be consulted for further discussion.

R = ACF/VTAM restriction; for a description, refer to *ACF/VTAM Planning and Installation Reference*. The operand is described in *ACF/NCP-SSP Installation*.

\* = Described in *NCP Generation Manual* (no special ACF/VTAM restrictions).

## Defining: NCP

NCP generation operands used by ACF/VTAM (continued)

	PU	LU	GROUP	LINE	CLUSTER	TERMINAL
ENDTRNS						
EXEC			*	*		
FEATUR2	N	N	V	V	V	V
G POLL					R	
IDSEQ						
IRETRY	*		*	*	*	
ISTATUS	V	V	V	V	V	V
LINEADD			*			
LINEAUT			R			
LNCTL			*			
LOCADDR		*				
LOGAPPL	V	V	V	V	V	V
LOGTAB	V	V	V	V	V	V
MAXDATA	*		*	*	*	
MAXLU	*		*	*		
MAXOUT	*		*	*	*	
MODETAB	V	V	V	V	V	V
OWNER			V	V		
PACING	R	R	R	R		
PASSLIM	*		*	*		
PAUSE			*	*		
POLIMIT			R	R		
POLL						*
POLLED			*	*		

V = ACF/VTAM only; for a description, refer to *ACF/VTAM Planning and Installation Reference*.

N = ACF/VTAM only; for a description, refer to *ACF/VTAM Planning and Installation Reference*. The *Network Terminal Option Installation* manual should be consulted for further discussion.

R = ACF/VTAM restriction; for a description, refer to *ACF/VTAM Planning and Installation Reference*. The operand is described in *ACF/NCP-SSP Installation*.

\* = Described in *NCP Generation Manual* (no special ACF/VTAM restrictions).

## Defining: NCP

NCP generation operands used by ACF/VTAM (continued)

	PU	LU	GROUP	LINE	CLUSTER	TERMINAL
PT3 EXEC			*	*		
PU			V	V		
PUTYPE	*		*	*		
SESSION			R	R		
SSCPFM	V	V	V	V		
SUBAREA (used by PU)	*					
TERM	N	N	R	R	R	R
TGN	*					
TYPE			*	*		
USE			R	R		
USSTAB	V	V	V	V	V	V
VIRTUAL			*			
VPACING	V	V	V	V	V	
X21SW			R			

V = ACF/VTAM only; for a description, refer to *ACF/VTAM Planning and Installation Reference*.

N = ACF/VTAM only; for a description, refer to *ACF/VTAM Planning and Installation Reference*. The *Network Terminal Option Installation* manual should be consulted for further discussion.

R = ACF/VTAM restriction; for a description, refer to *ACF/VTAM Planning and Installation Reference*. The operand is described in *ACF/NCP-SSP Installation*.

\* = Described in *NCP Generation Manual* (no special ACF/VTAM restrictions).

## Defining: CDRM • CDRSC

### Cross-Domain Resource Manager (CDRM) Major Nodes

Code a VBUILD statement for each set of CDRM definition statements.

```
[name]      VBUILD  TYPE=CDRM  
              [,CONFGDS=ddname]  
              [,CONFGPW=password]
```

Code one or more CDRM definition statements to define CDRM minor nodes.

```
cdrmname    CDRM    SUBAREA=n  
              [,CDRDYN=YES|NO]  
              [,CDRSC=OPT|REQ]  
              [,ELEMENT=n|1]  
              [,ISTATUS=ACTIVE|INACTIVE]  
              [,VPACING=n|0|63]
```

### Cross-Domain Resource (CDRSC) Major Nodes

Code a VBUILD statement for each set of CDRSC definition statements.

```
[name]      VBUILD  TYPE=CDRSC  
              [,CONFGDS=ddname]  
              [,CONFGPW=password]
```

Code one or more CDRSC definition statements to define CDRSC minor nodes.

```
cdrsname    CDRSC    CDRM=cdrmname  
              [,ISTATUS=ACTIVE|INACTIVE]
```

**Cross-Domain Path Tables**

Code one or more PATH statements to define a path definition set to represent the routes ACF/VTAM takes to communicate with other subarea nodes.

symbol	PATH	DESTSA=n (n1,n2,n3, . . . )
		[,ER0=(adjsub,[tg#])]
		[,ER1=(adjsub,[tg#])]
		.
		.
		.
		[,ER7=(adjsub,[tg#])]
		[,VR0=er#]
		[,VR1=er#]
		.
		.
		.
		[,VR7=er#]



## TSO/VTAM Requirements

An APPL definition statement defines an application program to ACF/VTAM. Because TCAS and each TSO user are ACF/VTAM application programs, APPL definition statements must be specified for them and put into SYS1.VTAMLST.

Code the following APPL statements for TCAS:

```
TSO      APPL      PRTCT=password1,AUTH=
              (NOACQ,PASS,NVPACE,TSO,
              NOPO),EAS=1
```

Code as many APPL statements, in the following format, as there will be users logged on to TSO/VTAM at one time:

```
TSOnnnn2  APPL      PRTCT=password1,AUTH=
              (NOACQ,PASS,NVPACE,TSO,
              NOPO),EAS=1
```

## Multiple-Domain Network

TCAS and the terminals are defined with special statements.

Code the following CDRM statements in each domain<sup>3</sup>:

```
name1      CDRM      CDRDYN=YES,CDRSC=OPT, . . .
name2      CDRM      CDRDYN=YES,CDRSC=OPT, . . .
```

---

<sup>1</sup> The same *password* must be specified for TCAS and each TSO/VTAM user.

<sup>2</sup> A different application program name, in the form TSO<sup>nnnn</sup>, must be specified for each session. The suffix <sup>nnnn</sup> is a decimal number; the numbering must start with 0001 and must be sequential. Note that NOACQ and NOPO need not be coded; they are default values.

<sup>3</sup> This is to avoid defining both the SLUs that log on to TSO/VTAM as CDRSCs in the TSO/VTAM domain, and the TSO user application programs as CDRSCs in the SLU's domain. This is controlled by the CORDYN and CDRSC operands.

Code the following APPL statement for TCAS in your domain:

```
thistso1      APPL      ACBNAME=TSO,
                    PRTCT=password,
                    AUTH=(NOACQ,PASS,
                    NOVPACE,TSO,NOPO),
                    EAS=1
```

Code as many APPL statements in the following format as the maximum number of sessions that will be established with TSO/VTAM in your domain at one time:

```
thistsonnnn1,2  APPL      ACBNAME=TSOnnnn,
                    PRTCT=password,
                    AUTH=(NOACQ,PASS,
                    NVPACE,TSO,NOPO),
                    EAS=1
```

Code the following statement for each TCAS in another domain with which an LU in your domain will communicate:

```
thatstso3      CDRSC      CDRM=name of ACF/VTAM
                    manager for thatstso
```

---

<sup>1</sup> *thistso* is a unique prefix that must be included on all APPL statements for your domain. The name, *thistso*, must be unique in the network. The same prefix (that is, *thistso*) must be specified when coding APPL statements for each terminal logged on to the TSO/VTAM in this ACF/VTAM host concurrently.

<sup>2</sup> The *nnnn* suffix is a decimal integer that must start with 0001 and be sequential. The remaining operands are described above.

<sup>3</sup> *thatstso* specifies the name of the TCAS APPL definition statement in the domain of the indicated CDRM that this CDRSC represents.

## TSO/VTAM Requirements

If dynamic cross-domain resource definition is not authorized, code the following CDRSC statements in each domain that contains an SLU that can communicate with your domain:

```
thatsonnn1,2 CDRSC CDRM=name of ACF/VTAM  
manager for thatsonnn  
application
```

and code a CDRSC statement in the domain of TSO/VTAM for each cross-domain SLU that can log on to TSO/VTAM.

---

<sup>1</sup> *thatso* specifies the name of the TSO user APPL definition statement in the domain of the indicated CDRM that this CDRSC represents.

<sup>2</sup> The *nnnn* suffix is a decimal integer that must start with 0001 and be sequential. The remaining operands are described above.

### Specifying 3270 Characteristics

Two types of 3270 devices are supported by TSO/VTAM: non-SNA devices attached over a channel or through a bisynchronous line protocol, and SNA devices attached by SDLC links. For non-SNA devices with a screen size larger than 24 X 80, or multiple screen sizes, or special features, and for SNA devices (LU2), you must provide a logmode table entry.

Use the MODETAB and MODEENT macros to define the logmode table and its entry. The PSERVIC parameter of the MODEENT macro carries the screen sizes in row/column form. If no logmode table entry exists for a 3270 device, TSO/VTAM assumes it is non-SNA (LU0), and the buffer size specified by the SCRSIZE parameter of the TSOKEY00 member of PARMLIB (either 480 (12 X 40) or 1920 (24 X 80)).

#### *MODEENT Macro Instruction for Non-SNA 3270 Devices*

```
tabname      MODEENT  FMPROF=X'02',
              TSPROF=X'02',
              PRIPROT=X'71',
              SECPROT=X'40',
              COMPROT=X'2000',
              PSERVIC=X'.....'2
```

For example:

Code the following MODEENT macro instruction for a 3270 terminal having a screen size of 1920 characters:

```
MODEENT1 FMPROF=X'02',TSPROF=X'02',
          PRIPROT=X'71',SECPROT=X'40',
          COMPROT=X'2000',COS=cos name,
          PSERVIC=X'00000000000000000000200'
```

---

<sup>1</sup> The FMPROF, TSPROF, PRIPROT, SECPROT, and COMPROT values are the same as those used in the IBM-supplied logon mode table, ISTINCLM.

<sup>2</sup> See "PSERVIC Operand of the MODEENT Macro Instruction."

## TSO/VTAM Requirements

### *MODEENT Macro Instruction for SNA 3270 Devices*

```
modname    MODEENT  FMPROF=X'03',  
            TSPROF=X'03',  
            PRIPROT=X'B1',  
            SECPROT=X'90',  
            COMPROT=X'3080',  
            RUSIZES=X'8587',  
            COS=cos name,  
            PSERVIC=X'.....1
```

The RUSIZES parameter above indicates a 256-byte maximum secondary logical unit RU send size and a 1024-byte maximum primary logical unit RU send size.

For example:

Code the following MODEENT macro instruction for a 3270 terminal having a primary buffer size of 1920 characters, and an alternate buffer size of 3440 characters:

```
MODEENT  FMPROF=X'03',TSPROF=X'03',  
         PRIPROT=X'B1',SECPROT=X'90',  
         CMPROT=X'3080',RUSIZES=X'8587',  
         COS=cos name,  
         PSERVIC=X'02000000000018502B507F'
```

---

<sup>1</sup> See "PSERVIC Operand of the MODENT Macro Instruction."

*PSERVIC Operand of the MODEENT Macro Instruction*

Code the 12 bytes of device-specific hexadecimal data of the PSERVIC operand as described below:<sup>1,2</sup>

PSERVIC=X'00. . 00000000. . . . . 00'	for non-SNA (LU0)
X'02. . 00000000. . . . . 00'	for SNA (LU2)
X'. . 00. . . . . '	device without extended data stream capability
X'. . 80. . . . . '	device with extended data stream capability
X'. . . . . 0000000001. . '	buffer size 480 only (12X40)
X'. . . . . 0000000002. . '	buffer size 1920 only (24X80)
X'. . . . . 0C280C507F. . '	buffer sizes 480 or 960 (12X40) or 12X80)
X'. . . . . 185020507F. . '	buffer sizes 1920 or 2560 (24X80 or 32X80)
X'. . . . . 18502B507F. . '	for buffer sizes 1920, 3440 (24X80 or 43X80)
X'. . . . . 18501B847F. . '	for buffer sizes 1920, 3564 (24X80 or 27X132)

<sup>1</sup> To prevent switching of screen sizes on a device that has more than one size possible, code the screen size to be used in the primary area of PSERVIC and a X'7E' to indicate no switching. For example:

PSERVIC=X'. . . . . 1B8400007E. . ' for 3564 buffer only

<sup>2</sup> See *ACF/VTAM Programming* for details of the bit settings in the PSERVIC parameter, which represents bytes 13-24 of the session parameters.

## Defining Procedures to Establish Sessions

### Class of Service (COS) Tables

Define a COS table by specifying a COSTAB macro, one or more COS macros, and a COSEND macro.

```
csectnam COSTAB1 where csectnam=ISTSDCOS
[name] COS VR=(vr#,tp#)
              ((vr#,tp#)(vr#,tp#)
              (, ...))
COSEND
```

### Interpret Tables

Define each interpret table by one INTAB macro followed by at least one LOGCHAR macro, followed by one ENDINTAB macro.

```
[name] INTAB
[name] LOGCHAR APPLID=(APPLICID,applName)|
              (ROUTINE,routineName)
              [,SEQNCE='characters']
[name] ENDINTAB
```

### Logon Mode Tables

Define, create, or modify a logon mode table by specifying a MODETAB macro, one or more MODEENT macros, and a MODEEND macro.

```
[name] MODETAB
[name] MODEENT [LOGMODE=name]
              [,TYPE=value]
              [,FMPROF=value]
              [,TSPROF=value]
              [,PRIPROT=value]
              [,SECPROT=value]
```

---

<sup>1</sup> The IBM-supplied default is ISTVTCOS, which is used for example to establish CDRM-to-CDRM sessions.

[,COMPROT=value]  
 [,RUSIZES=value]  
 [,PSERVIC=value]  
 [,PSNDPAC=value]  
 [,SRCVPAC=value]  
 [,SSNDPAC=value]  
 [,ENCR=value]<sup>1</sup>  
 [,COS=name]

[name] MODEEND

### USS Definition Tables

Create or modify USS definition tables with USSTAB, USSCMD, USSPARM, USSMSG, and USSEND macro instructions.

[name]	USSTAB	[TABLE=name]
[name]	USSCMD	CMD=name [,REP=name] [,FORMAT=BAL  <u>PL1</u> ]
[name]	USSPARM	PARM=pn name [,REP=name] [,DEFAULT=value] [,VALUE=value]
[name]	USSMSG	[MSG=n(n1,n2...)] [,TEXT='message text.'] <sup>2</sup> [,BUFFER=bufferaddress] <sup>2</sup>
[name]	USSEND	

<sup>1</sup> Applies to the Encrypt/Decrypt Feature only.

<sup>2</sup> TEXT and BUFFER are mutually exclusive.



### Character-Coded Requests and USS Definition Tables

Using the IBM-supplied USS table, ACF/VTAM can accept a character-coded logon that has the following format:

```
LOGON APPLID(name) LOGMODE(name)  
DATA(user data)
```

In this format:

- LOGON represents the function of logging on and must be specified first.
- The APPLID parameter names the application program with which the LU wants to establish a session.
- The optional LOGMODE parameter indicates the entry in a logon mode table where the session parameters desired for use in the session can be found.
- The optional DATA parameter contains data to be passed to the application program.

ACF/VTAM expects to receive information in a character-coded logoff that has the following format:

```
LOGOFF APPLID(name) TYPE(value) HOLD(value)
```

In this format:

- LOGOFF represents the function for logging off.
- The APPLID parameter names the application program with which the LU is in session.
- The TYPE parameter indicates whether or not the session is to be terminated at the discretion of the application program.
- The HOLD parameter indicates the disposition of the SSCP-to-PU session after the LU is no longer in session with the application program.

If you want logons and logoffs entered at LUs in some other form, you have the following choices:

- If the syntax of the logon and logoff commands is such that they can be translated to the character-coded logon

format in the IBM-supplied USS table (these tables use PL/I syntax), you can:

- Change the IBM-supplied default USS table. The default table must contain the desired translation of the logon and logoff command into the required IBM format. This table will be used for an LU that has not been associated with a specific USS table.
- Write supplementary USS tables and associate them with specific LUs. These tables must contain the desired translation of the logon and logoff commands into the required IBM format.

For example, suppose that you wanted to use a logon format from a previous system:

```
L ACCOUNTS
```

A replacement USS definition table could convert this to the standard USS format:

```
LOGON APPLID(ACCOUNTS) LOGMODE(QUERY)
```

- If the logons you want to use are such that a USS definition table cannot be used to translate them into a formatted command (for example they are not PL/I syntax), you can use an interpret table).

The contents of the IBM-supplied USS table are shown in *ACF/VTAM Planning and Installation Reference*. In changing the IBM-supplied table or creating replacement or supplementary tables, you use USSTAB, USSCMD, USSPARM, USSMSG, and USSEND macro instructions.

The USSTAB macro instruction indicates the beginning of a USS definition table. It can optionally specify the table to be used for character translation.

The USSCMD macro instruction identifies a set of definition statements to be used to convert a user-defined command received from an LU.

## Character Requests – USS Definition

The USSPARM macro instruction identifies a user-defined keyword or positional parameter that can be coded in the user-defined command identified by the previous USSCMD definition.

The USSMSG macro instruction allows you to tailor messages corresponding to different situations. The IBM-supplied table already contains messages for these situations, appropriate to most installations, but you may want to change the language.

The USSEND macro instruction indicates the end of a USS definition table.

To tell ACF/VTAM that a device supports character-coded messages and to indicate any input media control required by the device, specify the SSCPFM operand in the statement defining the device. To tell ACF/VTAM which USS table it should use in translating the character-coded commands from a particular LU, name the table in the USSTAB operand on the LU statement.

## PART 3. PROGRAMMING

## ACF/VTAM Macro Instructions

## ACB—Create an Access Method Control Block

[symbol]      ACB            AM=VTAM  
                                   [,APPLID=address of application  
                                   program's symbolic name]  
                                   [,EXLST=exit list address]  
                                   [,MACRF=LOGON|NLOGON]  
                                   [,PARMS=(NIB=nib address)]  
                                   [,PASSWD=password address]

## CHECK—Check Request Status

[symbol]      CHECK          RPL=rpl address

## CLOSE—Close One or More ACBs

OS/VS only:

[symbol]      CLOSE            (acb address[,acb address] . . .)

VSE only:

[symbol]      CLOSE            acb address[,acb address] . . .

## CLSDST—Terminate Sessions in Which the Application Program Is Acting as the Primary Logical Unit

[symbol]      CLSDST          RPL=rpl address  
                                   [,rpl field name=new value] . . .

RPL fields that apply to CLSDST are:

AAREA=address of target PLU's symbolic name	NIB=nib address
ACB=acb address	OPTCD=RELEASE PASS
AREA=address of user data for Initiate	OPTCD=SYN ASY
ARG=(register)	PARMS=(THRDPTY= NOTIFY  <u>NONOTIFY</u> )
BRANCH=YES <sup>1</sup>  NO	RECLN=length of user data
{ ECB=ecb address INTERNAL }	
{ EXIT=rpl exit routine address }	

<sup>1</sup> Applies to MVS only.

## EXECRPL • EXLST • GENCB

### EXECRPL—Execute a Request

```
[symbol] EXECRPL RPL=rpl address  
                [,rpl field name=new value] ...
```

All RPL fields apply to EXECRPL.

### EXLST—Create an Exit List

```
[symbol] EXLST AM=VTAM  
                [,DFASY=  
                [,LERAD=  
                [,LOGON=  
                [,LOSTERM=  
                [,NSEXIT=  
                [,RELREQ=  
                [,RESP=  
                [,SCIP=  
                [,SYNAD=  
                [,TPEND= } exit routine address]
```

### GENCB—Generate a Control Block

```
[symbol] GENCB BLK= { ACB|EXLST|RPL|NIB }  
                ,AM=VTAM  
                [,keyword=value] ...  
                [,COPIES=quantity]  
                [,WAREA=work area address,  
                LENGTH=work area length]  
                [,MF=list, generate, or execute form  
                parameters]
```

Keyword is any GENCB-supported keyword that can be used in the macro instruction corresponding to the BLK operand.

**INQUIRE—Obtain Logical Unit Information or Application Program Status**

[symbol] INQUIRE RPL=rpl address  
 [,rpl field name=new value] ...

The setting of the specified RPL's option code determines the type of INQUIRE to be performed. The option code can be: LOGONMSG, DEVCHAR, COUNTS, TERMS, APPSTAT, CIDXLATE, TOPLOGON, SESSPARM or SESSKEY.

RPL fields that apply to INQUIRE are:

ACB=acb address	OPTCD=LOGONMSG
AREA=address of data area	DEVCHAR COUNTS
AREALEN=length of data area	TERMS APPSTAT
ARG=(register)	CIDXLATE
BRANCH=YES <sup>1</sup>  NO	TOPLOGON SESSPARM
{ECB=ecb address INTERNAL}	SESSKEY <sup>2</sup>
{EXIT=rpl exit routine address}	OPTCD=SYN ASY
NIB=nib address	

**INTRPRET—Interpret an Input Sequence**

[symbol] INTRPRET RPL=rpl address  
 [,rpl field name=new value] ...

RPL fields that apply to INTRPRET are:

AAREA=interpreted data area address	ARG=(register)
AAREALN=interpreted data area length	BRANCH=YES <sup>1</sup>  NO
ACB=acb address	{ECB=ecb address INTERNAL}
AREA=input data address	{EXIT=rpl exit routine address}
	NIB=nib address
	OPTCD=SYN ASY
	RECLEN=input data length

<sup>1</sup> Applies to MVS only.

<sup>2</sup> Applies to the Encrypt/Decrypt Feature only.

## MODCB • NIB • OPEN

### MODCB—Modify the Contents of Control Block Fields

[symbol] MODCB AM=VTAM  
( ,ACB=acb address  
,EXLST=exit list address  
,NIB=nib address  
,RPL=rpl address )  
,field name=new value . . .  
[,MF=list, generate, or execute  
form parameters]

### NIB—Create a Node Initialization Block

[symbol] NIB [BNDAREA=0|bind area address]  
[,ENCR=REQD|SEL|NONE]<sup>1</sup>  
[,EXLST=exit list address]  
[,LISTEND=YES|NO]  
[,LOGMODE=0|C' '|logon mode name]  
[,MODE=RECORD]  
[,NAME=name in configuration  
tables]  
[,RESPLIM=1|response limit]  
[,SDT=APPL|SYSTEM]  
[,USERFLD=user data]  
PROC= ([CA|CS|RPLC]  
[,KEEP|TRUNC]  
[,NCONFTXT|CONFTXT]  
[,NDFASYX|DFASYX]  
[,NEGBIND|NNEGBIND]  
[,NRESPX|RESPX]  
[,ORDRESP|NORDRESP]  
[,SYSRESP|APPLRESP])

### OPEN—Open One or More ACBs

OS/VS only:

[symbol] OPEN (acb address [, ,acb address] . . . )

VSE only:

[symbol] OPEN acb address [, ,acb address] . . .

<sup>1</sup> Applies to the Encrypt/Decrypt Feature only.

**OPNDST—Establish Sessions in Which the Application Program Will Act as the Primary Logical Unit**

[symbol] OPNDST RPL=rpl address  
[,rpl field name=new value] . . .

RPL fields that apply to OPNDST are:

AAREA=input area address for negotiable bind response	OPTCD=ACQUIRE ACCEPT
AAREALN=length of input area	OPTCD=CONANY CONALL
ACB=acb address	OPTCD=CS CA
BRANCH=YES <sup>1</sup>  NO	OPTCD=Q NQ
{ECB=ecb address INTERNAL}	OPTCD=SPEC ANY
{EXIT=rpl exit routine address}	OPTCD=SYN ASY
NIB=nib address	

**OPNSEC—Establish a Session in Which the Application Program Acts as the Secondary Logical Unit**

[symbol] OPNSEC RPL=rpl address  
[,rpl field name=new value] . . .

RPL fields that apply to OPNSEC are:

ACB=acb address	NIB=nib address
BRANCH=YES <sup>1</sup>  NO	OPTCD=CS CA
{ECB=ecb address INTERNAL}	OPTCD=SYN ASY
{EXIT=exit routine address}	

**RCVCMD—Receive a Message from ACF/VTAM**

[symbol] RCVCMD RPL=rpl address  
[,rpl field name=new value] . . .

RPL fields that apply to RCVCMD are:

ACB=acb address	{ECB=ecb address INTERNAL}
AREA=input message address	{EXIT=rpl exit routine address}
AREALEN=length of message area	OPTCD=Q NQ
BRANCH=YES NO	OPTCD=SYN ASY
	OPTCD=TRUNC

<sup>1</sup> Applies to MVS only.



## RECEIVE • REQSESS • RESETSR

### RECEIVE—Receive Input on a Session

[symbol] RECEIVE RPL=rpl address  
[,rpl field name=new value] ...

RPL fields that apply to RECEIVE are:

ACB=acb address	OPTCD=Q NQ
AREA=input data area address	OPTCD=SPEC ANY
AREALEN=length of input data area	OPTCD=SYN ASY
ARG=(register)	OPTCD=TRUCN KEEP  NIBTK
BRANCH=YES <sup>1</sup>  NO	RTYPE=(DFSYN  NDFSYN,DFASY  NDFASY,RESP  NRESP)
{ECB=ecb address INTERNAL}	
{EXIT=rpl exit routine address}	
OPTCD=CA CS	

### REQSESS—Initiate a Session in Which the Application Program Will Act as the Secondary Logical Unit

[symbol] REQSESS RPL=rpl address  
[,rpl field name=new value] ...

RPL fields that apply to REQSESS are:

AAREA=0	NIB=nib address
ACB=acb address	OPTCD=NQ
AREA=address of user data for Initiate	OPTCD=SYN ASY
BRANCH=YES <sup>1</sup>  NO	RECLen=user data length
{ECB=ecb address INTERNAL}	
{EXIT=rpl exit routine address}	

### RESETSR—Cancel RECEIVE Operations and Switch a Session's CS-CA Mode

[symbol] RESETSR RPL=rpl address  
[,rpl field name=new value] ...

---

<sup>1</sup> Applies to MVS only.

RPL fields that apply to RESETSR are:

ACB=acb address	OPTCD=CA CS
ARG=(register)	OPTCD=SYN ASY
BRANCH=YES <sup>1</sup>  NO	RTYPE=(DFSYN NDFSYN,
{ ECB=acb address INTERNAL }	DFASY NDFASY,
{ EXIT=rpl exit routine address }	RESP NRESP)

**RPL—Create a Request Parameter List**

```
[symbol] RPL AM=VTAM
           [,AAREA=alternate data area address]
           [,AAREALN=alternate data area length]
           [,ACB=acb address]
           [,AREA=data area address]
           [,AREALEN=data area length]
           [,BRACKET=(BB|NBB,EB|NEB)]
           [,BRANCH=YES1|NO]
           [,CHAIN=FIRST|MIDDLE|LAST|
           ONLY]
           [,CHNGDIR=(CMD|NCMD,
           REQ|NREQ)]
           [,CODESEL=STANDARD|ALT]
           [,CONTROL=(DATA|BID|BIS|CANCEL|
           CHASE|LUS|QC|RTR|QEC|RELO|
           RSHUTD|SBI|SHUTC|SHUTD|
           SIGNAL|BIND|CLEAR|RQR|SDT|
           STSN|UNBIND)]
           [,CRYPT=YES|NO]2
           [ { ,ECB=acb address
           ,ECB=INTERNAL
           ,EXIT=exit routine address } ]
           [,IBSQAC=SET|TESTSET|INVALID|
           IGNORE|TESTPOS|TESTNEG|
           RESET]
           [,IBSQVAL=inbound sequence number]
           [,NIB=nib address]
           [,OBSQAC=SET|TESTSET|INVALID|
           IGNORE|TESTPOS|TESTNEG|
           RESET]
```

<sup>1</sup> Applies to MVS only.

<sup>2</sup> Applies to the Encrypt/Decrypt Feature only.

## RPL—Create a Request Parameter List (continued)

```

[,OBSQVAL=outbound sequence
  number]
[,PARMS=(THRDPTY=NOTIFY|
  NONOTIFY)]
[,POST=SCHED|RESP]
[,RECLEN=data length]
[,RESPOND=EX|NEX|FME|NFME,
  RRN|RRRN|QRESP|NORESP)]
[,RTYPE=(DFSYN|NDFSYN,
  DFASY|NDFASY|RESP|NRESP)]
[,SEQNO=sequence number]
[,SIGDATA=signal data]
[,SSENSEO=0|CPM|STATE|FI|RR]
[,SSENSMO=system sense modifier
  value]
[,STYPE=REQ|RESP]
[,USENSEO=user sense value]
[,OPTCD = ([,ACCEPT ACQUIRE]
  [,CA|CS]
  [,CONALL|CONANY]
  [,COND|UNCOND]
  [,LOGONMSG|DEVCHAR|
  COUNTS|TERMS|APPSTAT|
  CIDXLATE|TOPLOGON|
  SESSPARM|SESSKEY1]
  [,NFMHDR|FMHDR]
  ([,NIBTK|TRUNC|KEEP]
  [,Q|NQ]
  [,QUIESCE|STOP|START]
  [,RELEASE|PASS]
  [,RELREQ|NRELREQ]
  [,SPEC|ANY]
  [,SYN|ASSY])]

```

<sup>1</sup> Applies to the Encrypt/Decrypt feature only.

**SEND—Send Output on a Session**

[symbol] SEND RPL=rpl address  
[,rpl field name=new value] . . .

RPL fields that apply to SEND are:

ACB=acb address	OPTCD=SYN ASY
AREA=output data address	POST=SCHED RESP
ARG=(register)	RECLEN=output data length
BRACKET=(BB NBB,EB NEB)	RESPOND=(EX NEX,FME NFME,RRN NRRN,NQRESP QRESP)
BRANCH=YES <sup>2</sup>  NO	RTYPE=(DESYN NDFSYN,DFASY NDFASY,RESP NRESP)
CHAIN=FIRST MIDDLE LAST ONLY	SEQNO=sequence number
CHNGDIR=(CMD NCMD,REQ NREQ)	SIGDATA=signal data
CONTROL=DATA BID BIS CANCEL CHASE LUS QC RTR QEC RELO RSHUTD SBI SHUTC SHUTD SIGNAL	SSENSEO=CPM STATE FI RR O
CODESEL=STANDARD ALT	SSENSMO=system sense modifier value
CRYPT=YES NO <sup>1</sup>	STYPE=REQ RESP
{ ECB=acb address INTERNAL }	USENSEO=user sense value
{ EXIT=rpl exit routine address }	
OPTCD=CA CS	
OPTCD=FMHDR NFMHDR	

**SENDCMD—Send an ACF/VTAM Operator Command to ACF/VTAM**

[symbol] SENDCMD RPL=rpl address  
[,rpl field name=new value] . . .

RPL fields that apply to SENDCMD are:

ACB=acb address	OPTCD=SYN ASY
AREA=command address	RECLEN=command length
BRANCH=YES <sup>2</sup>  NO	
{ ECB=acb address INTERNAL }	
{ EXIT=rpl exit routine address }	

<sup>1</sup> Applies to the Encrypt/Decrypt Feature only.

<sup>2</sup> Applies to MVS only.

## SESSIONC • SETLOGON

### SESSIONC—Send a Session-Control Request or Response

[symbol] SESSIONC RPL=rpl address  
[,rpl field name=new value] . . .

RPL fields that apply to SESSIONC are:

ACB=acb address	OBSQAC=SET TESTSET
ARG=(register)	INVALID IGNORE
BRANCH=YES <sup>1</sup>  NO	RESET TESTPOS
CONTROL=SDT CLEAR	TESTNEG
STSN RQR BIND	OBSQVAL=outbound
{ ECB=acb address INTERNAL }	sequence number
	EXIT=rpl exit routine
address	RESPOND=(EX NEX)
IBSQAC=SET TESTSET	SEQNO=sequence number
INVALID IGNORE	SSENSEO=system sense
RESET TESTPOS	value
TESTNEG	SSENSMO=system
IBSQVAL=inbound	sense modifier value
sequence	STYPE=REQ RESP
number	USENSEO=user sense
NIB=nib address	value

### SETLOGON—Modify an Application Program's Capability to Establish Sessions

[symbol] SETLOGON RPL=rpl address  
[,rpl field name=new value] . . .

RPL fields that apply to SETLOGON are:

ACB=acb address	OPTCD=QUIESCE
BRANCH=YES <sup>1</sup>  NO	START STOP
{ ECB=acb address INTERNAL }	OPTCD=SYN ASY
	EXIT=rpl exit routine address

<sup>1</sup> Applies to MVS only.

**SHOWCB—Extract the Contents of Control Block Fields**

```
[symbol]   SHOWCB   AM=VTAM
              {
                ,ACB=acb address
                ,EXLST=exit list address
                ,NIB=nib address
                ,RPL=rpl address
              }
              ,AREA=data area address
              ,FIELDS=field name|(field
                name, . . . )
              ,LENGTH=data area length
              [,MF=list, generate, or execute
                form parameters]
```

**SIMLOGON—Initiate a Session in Which the Application Program Will Act as the Primary Logical Unit**

```
[symbol]   SIMLOGON   RPL=rpl address
                      [,rpl field name=new value] . . .
```

RPL fields that apply to SIMLOGON are:

ACB=acb address	OPTCD=CONANY CONALL
AREA=address of user data for Initiate	OPTCD=Q NQ
BRANCH=YES <sup>1</sup>  NO	OPTCD=REL RQ  NRELRQ
{ ECB=ecb address INTERNAL EXIT=rpl exit routine address }	OPTCD=SYN ASY
NIB=nib address	RECLEN=length of user data

---

<sup>1</sup> Applies to MVS only.

## TERMSESS • TESTCB

### TERMSESS—Request Termination of a Session in Which the Application Program Acts as the Secondary Logical Unit

[symbol] TERMSESS RPL=rpl address  
[,rpl field name=new value] . . .

RPL fields that apply to TERMSESS are:

ACB=acb address	NIB=nib address
ARG=(register)	OPTCD=COND
BRANCH=YES <sup>1</sup>  NO	UNCOND
{ECB=ecb address INTERNAL }	OPTCD=SYN ASY
{EXIT=rpl exit routine address }	

### TESTCB—Test the Contents of a Control Block Field

[symbol] TESTCB AM=VTAM  
[ { ,ACB=acb address  
,EXLST=exit list address  
,NIB=nib address  
,RPL=rpl address } ]  
[,ERET=error exit routine  
address]  
,field name=test value  
[,MF=list, generate, or execute  
form parameters]

---

<sup>1</sup> Applies to MVS only.

## ACB ERROR Field Values

<i>ERROR Field Value (Hex)</i>	<i>Applicable Macros</i>		<i>Explanation</i>
	<i>OPEN</i>	<i>CLOSE</i>	
0	●	●	OPEN or CLOSE successful
4		●	CLOSE already issued or ACB never opened
14	●		Open cannot be processed because of a temporary shortage of storage
24	●		The ACB's password does not match the APPL entry's password
40		●	Outstanding OPNDST (ACQUIREs) not released
42		●	System error prevented termination of one or more of the application program's sessions
46	●	●	OPEN or CLOSE not issued in mainline program
48		●	CLOSE was not issued in a job step task, or in a subtask within the ACF VTAM partition. <sup>1</sup>
4C		●	CLOSE was issued for a pro- gram operator application but there are messages queued for it, or ACF VTAM is waiting for a reply, or both
50	●	●	ACF VTAM is not part of the operating system
52	●		HALT was issued by the operator
54	●		Invalid APPLID
56	●		APPLID is not an APPL entry
58	●		ACB's symbolic name is the same as another ACB that is already open

<sup>1</sup> Applies to OS/VS1 only.



## ACB ERROR Field Values (continued)

<i>ERROR Field Value (Hex)</i>	<i>Applicable Macros</i>		<i>Explanation</i>
	<i>OPEN</i>	<i>CLOSE</i>	
5A	●		APPLID does not match any names in the ACF/VTAM network configuration tables
5C	●		ACF/VTAM is inactive
5E	●		Address in APPLID field is beyond the program's addressable range
60	●	●	System error
62	●		Incorrect APPLID length byte
64	●		Address in PASSWD field is beyond the program's addressable range
66	●		Incorrect PASSWD length byte
68	●		OPEN was issued for a primary program operator, when another primary program operator is already active
70		●	OPEN or CLOSE was issued unnecessarily while the program was terminating abnormally <sup>1</sup>
88	●		OPEN cannot be processed due to a temporary storage shortage. <sup>2</sup>
BC		●	ACB is being opened, or being closed by another CLOSE macro instruction
F4	●		The application program is not authorized for SRBEXIT=YES. <sup>3</sup>

<sup>1</sup> Applies to OS/VS only.

<sup>2</sup> Applies to VSE only.

<sup>3</sup> Applies to MVS only.

## ACB ERROR Field Values (continued)

<i>ERROR Field Value (Hex)</i>	<i>Applicable Macros</i>		<i>Explanation</i>
	<i>OPEN</i>	<i>CLOSE</i>	
F6	●		A communication network management (CNM) application program failed to supply a NIB pointer in the NIB field of the ACB, or the NIB address specified lies beyond the addressable range of the application program
FA	●		An application program without CNM authorization supplied a NIB pointer in its ACB, or if CNM authorized, the application program failed to supply valid NIB options on the NIB macro
FE	●		The CNM routing table indicated that this application program was to receive the same unsolicited formatted requests that were already being routed to another active CNM authorized application program

## Manipulative Macro Instruction Return Codes

### Register 15 Explanation

00	Successful completion
04	Error—Register 0 set
08	Error—Execute form of macro used to enter new item in parameter list—Register 0 not set
0C	System Control Error—Register 0 set <sup>1</sup>

Return Code (Register 0)	GENCB	MODCB	SHOWCB	TESTCB	Explanation
-----------------------------	-------	-------	--------	--------	-------------

### For 04 in Register 15

01	•	•	•	•	Invalid request type
02	•	•	•	•	Invalid block type
03	•	•	•	•	Invalid keyword
04		•	•	•	Invalid block
05			•	•	Reserved (VSAM only)
06			•	•	Reserved (VSAM only)
07		•	•		Field nonexistent
08	•				Insufficient main storage
09	•		•		Insufficient program storage
0A	•	•			No address supplied
0B		•			RPL active
0C		•			ACB open
0D		•			Reserved (VSAM only)
0E	•	•		•	Invalid parameter list
0F	•		•		Invalid alignment
10	•	•	•	•	Invalid control block (access method invalid)
11				•	No internal ECB

### For 0C in Register 15<sup>1</sup>

04	•	•	•	•	SIZE operand missing from program EXEC statement
08	•	•	•	•	Attempt made to run in real mode
0C	•	•	•	•	SIZE operand does not allow enough space for ACF/VTAM modules

<sup>1</sup> Applies to VSE only.

## RPL-Based Macro Instruction Return Codes

<i>RTNCD</i>	<i>FDBK2</i>	<i>Problem Definition</i>
<i>Feedback</i>	<i>Reason</i>	
00	00	Normal completion or request accepted
00	05	Input area too small
00	06	No input available
00	07	INQUIRE information not available
00	08	OPNDST OPTCD=ACQUIRE, SIMLOGON, or CLSDST OPTCD=PASS failed
00	09	OPNDST OPTCD=ACCEPT denied; no queued CINITs
04	03	Exception request received
04	04	Negative response received
08	00	Temporary storage shortage
0C	0A	Request canceled by RESETSR
0C	0B	Request canceled because the session has been terminated
0C	0C	Request canceled by Clear request
0C	0D	Prior exception in chain detected
10	00	Logical unit, application program status, or queued BIND not available
10	01	OPNDST failed
10	02	Logical unit inhibited for sessions
10	03	HALT issued
10	07	Request canceled by VARY command
10	09	Unconditional Terminate or character-coded logoff received
10	0A	ACF/VTAM error
10	0D	ACF/VTAM inactive for your ACB
10	0E	Request aborted
10	0F	Buffers filled
10	11	SDT failure on OPNDST
10	12	Macro instruction failure, sense included
14	00	VSAM request
14	02	Zero EXIT field
14	03	Zero ECB field
14	04	Inactive RPL checked
14	10	Control block invalid
14	11	No RTYPE specified

## RPL-Based Macro Instruction Return Codes (continued)

<i>RTNCD</i>	<i>FDBK2</i>	<i>Problem Definition</i>
<i>Feedback</i>	<i>Reason</i>	
14	12	CLSDST in progress
14	13	CID invalid
14	1E	Invalid data or length
14	23	Request type invalid
14	24	Request invalid for address space <sup>1</sup>
14	3B	NFME-NRRN response
14	3C	Previous macro instruction outstanding
14	40	CONTROL invalid
14	41	Data traffic not allowed
14	42	Invalid STYPE for SESSIONC
14	44	RESPLIM exceeded
14	47	3270 SEND option invalid
14	48	Session control protocol violation
14	49	Invalid STSN action/result code
14	4A	Application program name not available
14	4B	INTRPRET sequence or LOGMODE invalid or cryptographic incompatibility
14	4C	Invalid search argument for INQUIRE or INTRPRET
14	4D	No interpret table
14	4E	Invalid use of NIB list
14	4F	ACQUIRE-ACCEPT option code invalid
14	50	RPL field Invalid
14	51	OPNDST OPTCD=ACCEPT and SIMLOGON not allowed
14	52	NIB invalid
14	53	Logical unit not found
14	55	Application program not authorized, application program name not available, or task association not specified

---

<sup>1</sup> Applies to MVS only.

## RPL-Based Macro Instruction Return Codes (continued)

<i>RTNCD</i>	<i>FDBK2</i>	<i>Problem Definition</i>
<i>Feedback</i>	<i>Reason</i>	
14	57	Invalid MODE field
14	5E	CLSDST OPTCD=PASS not authorized
14	60	Invalid LU name for CLSDST or SESSIONC
14	61	Invalid SETLOGON
14	6C	Exceeded limit on outstanding RVCMD requests
14	6D	Application program not authorized
14	6E	Syntax error in reply to ACF/VTAM operator message
14	6F	SEND CMD/RVCMD processor inactive
14	70	Program operator closing ACB with requests outstanding
14	71	Operator command not valid
14	73	SEND parameter invalid for CNM
14	74	Negotiable response to non-negotiable BIND
14	75	Invalid negotiable BIND response parameters
14	76	Invalid negotiable BIND response size

## How RPL-Based Macro Instruction Error and Special-Condition Information Is Organized

### *For RPL-Based Requests*

After a SEND, RECEIVE, CHECK, or other RPL-based macro instruction, the next sequential instruction finds in Register 15

Zero
-----
Some other value

The request was successful; or, for a synchronous request (including CHECK), the operation was successful.

The request or the operation was not successful.

Depending on the request and whether or not it was successful, it may be necessary to test Register 0

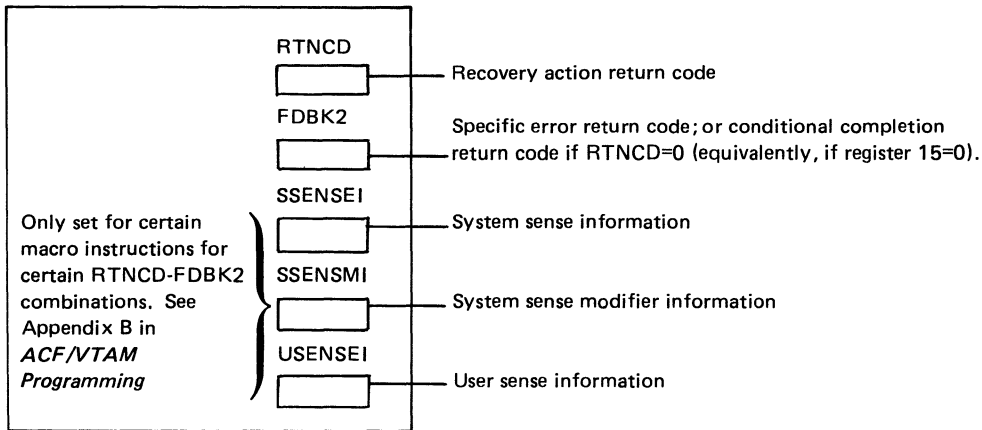
Completion code
-----
Return code
-----
Recovery code

If register 15 is zero, register 0 indicates (with a conditional completion return code) for certain macro instructions whether success was conditional. If register 15 is not zero, register 0 can contain a return code from a LERAD or SYNAD exit routine or, if there is no LERAD/SYNAD exit routine, register 0 can contain a recovery action return code (generally the code from the TRNCD field of the RPL).

If a request or operation was unsuccessful or conditionally successful, the following RPL fields can be examined (in either the issuing routine or in a LERAD or SYNAD exit routine) to determine the cause of the exception.



## RPL



In addition, other RPL fields that contain feedback information (such as SEQNO, CHAIN, and CHNGDIR) normally used following completion of a requested operation may be used in determining how to handle an error or special condition.



RPL fields are described under the RPL and other macro instruction descriptions in this manual, in the section titled, "ACF/VTAM Macro Instructions" and are summarized in Appendix A of *ACF/VTAM Programming*.

Possible RPL RTNCD,FDBK2, sense information settings and their meanings are described in this manual, in the section titled "ACB ERROR Field Values", and more fully in Appendix B of *ACF/VTAM Programming*.

#### *For Arrival of a Logical Unit Status Request*

After receiving input with a RECEIVE specifying RTYPE=(DFSYN,NRESP) and CONTROL=LUS, the RPL inbound sense fields (SSENSEI,SSENSMI, and USENSEI) will contain error or special condition information from the logical unit.

Register 0 is of interest in these circumstances

- For certain macro instructions with certain options set (see Appendix B of *ACF/VTAM Programming*), if register 15 contains zero, success may be conditional. Register 0 should be examined to see if there is a condition (and what it is).
- If an error occurred for an RPL-based request and no LERAD or SYNAD exit routine is available, register 15 contains hex 04, and register 0 contains a recovery action return code.
- If a LERAD or SYNAD exit routine is available, it can set register 15 to zero to indicate "Error corrected – request or operation successful." If the error is not corrected, register 15 should be nonzero and a return code can be passed from LERAD or SYNAD in register 0.
- If the ACB was not opened, register 0 contains the RPL request code.

## Recovery-Action Return Codes and Their General Meanings

Recovery Active Return Code (In RPL RTNCD Field (Hex))	LERAD or SYNAD Exit Scheduled	Type of Completion	Programmer Action
00	No exit scheduled	Normal or conditional	Continue normal or conditional processing.
04	SYNAD	Exception condition	Analyze RPL to choose logic path.
08	SYNAD	Retriable completion	User EXECRPL macro to retry if desired.
0C	SYNAD	Data integrity damage	Execute user program error recovery coding.
10	SYNAD	Environment error	Call for external intervention.
14	LERAD	Logic error	Dump program status and continue or abend.
18 (in register 0 but not in RTNCD field)	LERAD	Logic error; RPL invalid	Dump program status and continue or abend. Do not reuse this RPL.
Others	LERAD or SYNAD	RPL overwritten	Dump program status and continue or abend. Do not reuse this RPL.

## LOSTERM Exit Routine Reason Codes

### Reason Code

Dec	Hex	Meaning
0		Reserved
4		Reserved
8		Reserved
12	0C	<p>The session has been terminated. Immediate recovery is unlikely. The application program <i>must</i> issue CLSDST if it has not already done so. The cause of the session termination may preclude the session from being reestablished immediately.</p> <p>This reason code is only reported to a PLU application program. Some of the types of session outages that cause it are reported instead through a SCIP exit routine (if SONSCIP=YES on the APPL definition statement) or otherwise through an NSEXIT routine (if one exists).</p>
16	10	<p>The session has been terminated. This reason code is reported immediately after reason code 24 (hex 18) (unless CLSDST has been issued) and is only reported after reason code 24. The application program may now try to reinitiate the session, for example, by issuing SIMLOGON or OPNDST OPTCD=ACQUIRE; however, the application program <i>must</i> first issue CLSDST if it has not already done so.</p> <p><b>Note:</b> <i>Once the CLSDST macro instruction has been issued, session initiation is subject to the normal rules. Therefore, if another logical unit has a queued session with the logical unit, the new session requested by the application program whose LOSTERM exit routine was invoked may not be immediately established.</i></p>

## LOSTERM Exit Routine Reason Codes (continued)

### Reason Code

Dec Hex

Meaning

16 10  
(continued)

This reason code is only reported to a PLU application program. Many of the types of session outages that cause it are reported instead through a SCIP exit routine (if SONSCIP=YES on the APPL definition statement) or otherwise through an NSEXIT exit routine (if one exists).

20 14

A CTERM Forced request has been received. Perhaps the logical unit issued a Terminate Forced request, using TERMSESS OPTCD=UNCOND, for example. The application program *must* issue a CLSDST. When this completes, the application program may attempt to re-initiate the session. This reason code is only reported to PLU application programs.

24 18

The session has been terminated. The LOSTERM exit routine will be immediately rescheduled with reason code 16 (hex 10) for this session. (See the reason code 16 description above.) The application program may issue CLSDST at this time, which in turn may cancel the execution of the LOSTERM exit routine with reason code 16.

This reason code is only reported to a PLU application program. The session outage can instead be reported through a SCIP or NSEXIT exit routine as is described under reason code 16.

28 1C

Reserved

## LOSTERM Exit Routine Reason Codes (continued)

### *Reason Code*

<i>Dec</i>	<i>Hex</i>	<i>Meaning</i>
32	20	A CTERM Conditional request has been received. Perhaps the logical unit issued a Terminate Orderly request, using TERMSESS OPTCD=COND, for example. The application program can choose to issue CLSDST now or at some time in the future. The interpretation of the receipt of CTERM Conditional is not defined by SNA or ACF/VTAM. This reason code is only reported to a PLU application program.
36	24	Received request or response units for this session have been discarded because of a lack of buffer space. The session has not been terminated, but session data recovery procedures are required. This reason code may be reported to either a PLU or SLU application program. For further details, see the description of (RTNCD, FDBK2)=(16,15) in Appendix B of <i>ACF/VTAM Programming</i> .

**Note:** *For any of the LOSTERM reason codes that require or recommend a CLSDST macro instruction, do not issue a second CLSDST if one has already been issued for the same session, but possibly for a different reason.*

## Session Outage Notification Summary

Application Program Is:	Receives:	Exit Routine Scheduled: (See Note 1)		
Secondary Logical Unit	CLEANUP		CLEANUP	No Exit Routine Scheduled
	UNBIND	UNBIND	An application program acting as a secondary logical unit must have an SCIP exit routine.	
	Notify or NSPE		Notify or NSPE	No Exit Routine Scheduled

1. Read each row from left to right. The first nonblank column for which the exit routine is available represents the exit routine that will be scheduled and shows some of the key input to that exit routine.
2. The SCIP exit routine (if available) is scheduled for a PLU (for UNBIND) only if SONSCIP=YES is coded on the APPL definition statement. For SONSCIP=NO, UNBIND is handled as if no SCIP exit routine were available.
3. If no LOSTERM exit routine is available, no exit routine is scheduled.



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.



## RPL REQ Field Values

<i>Value</i>		<i>Macro Instruction</i>
<i>(Dec)</i>	<i>Hex</i>	
(21)	15	SETLOGON
(22)	16	SIMLOGON
(23)	17	OPNDST
(26)	1A	INQUIRE
(27)	1B	INTRPRET
(31)	1F	CLSDST
(34)	22	SEND
(35)	23	RECEIVE
(36)	24	RESETSR
(37)	25	SESSIONC
(39)	27	SENDCMD
(40)	28	RCVCMD
(41)	29	REQSESS
(42)	2A	OPNSEC
(44)	2C	TERMSESS



## Parameter Lists for the EXLST Exit Routines

Exit Routine	Register 1 Parameter List		
	1st Word	2nd Word	3rd Word
DFASY	ACB address	CID	USERFLD data <sup>4</sup>
LERAD	None (Register 1 contains the RPL address for the request that failed)		
LOGON	ACB address	Address of the secondary logical unit's symbolic name	USERFLD data or zeros <sup>2</sup>
LOSTERM	ACB address	CID	USERFLD data <sup>4</sup>
NSEXIT (for CLEANUP RU)	ACB address	CID	USERFLD data <sup>4</sup>
NSEXIT (for Notify RU)	ACB address	Reserved	USERFLD data <sup>3</sup>
NSEXIT (for NSPE RU)	ACB address	Reserved	Reserved

<sup>1</sup> If the BIND request is a result of a REQSESS macro instruction, word 3 contains the USERFLD data from the NIB used with REQSESS; otherwise, word 3 contains zeros.

<sup>2</sup> If the LOGON exit routine is entered as a result of a SIMLOGON macro instruction, word 3 contains USERFLD data from the NIB used with SIMLOGON; otherwise, word 3 contains zeros.

### Parameter Lists for the EXLST Exit Routine (continued)

Exit Routine	Register 1 Parameter List		
	4th Word	5th Word	6th Word
DFASY	Reserved	Address of ready-only RPL	Reserved
LERAD	None (Register 1 contains the RPL address for the request that failed)		
LOGON	Length of logon message	Address of read-only RPL (RPL contains the address of the CINIT RU.)	CID
LOSTERM	Reason code	Reserved	Reserved
NSEXIT (Cleanup)	Reserved	Address of read-only RPL (RPL contains address of CLEANUP RU.)	Reserved
NSEXIT (Notify)	Reserved	Address of read-only RPL (RPL contains address of Notify RU.)	Reserved
NSEXIT (NSPE)	Reserved	Address of read-only RPL (RPL contains address of NSPE RU.)	Reserved

<sup>3</sup> Word 3 contains data from the NIB used with REQSESS, SIMLOGON, or CLSDST OPTCD=PASS.

<sup>4</sup> Word 3 contains data from the NIB used with OPNDST or OPNSEC.

### Parameter Lists for the EXLST Exit Routines (continued)

Exit Routine	Register 1 Parameter List		
	1st Word	2nd Word	3rd Word
RELREQ	ACB address	Address of the secondary logical unit's symbolic name	Reserved
RESP	ACB address	CID	USERFLD data <sup>2</sup>
SCIP (for BIND RU)	ACB address	CID	USERFLD data or zeros <sup>1</sup>
SCIP (for other than BIND RU)	ACB address	CID	USERFLD <sup>2</sup>
SYNAD	None (Register 1 contains the RPL address for the request that failed)		
TPEND	ACB address	Reason-code	Reserved

<sup>1</sup> If the BIND request is a result of a REQSESS macro instruction, word 3 contains the USERFLD data from the NIB used with REQSESS; otherwise, word 3 contains zeros.

<sup>2</sup> Word 3 contains data from the NIB used with OPNDST or OPNSEC.

### Parameter Lists for the EXLST Exit Routines (continued)

Exit Routine	Register 1 Parameter List		
	4th Word	5th Word	6th Word
RELREQ	Reserved	Reserved	Reserved
RESP	Reserved	Address of read-only RPL	Reserved
SCIP (Bind)	Address of the session parameters	Address of read-only RPL (RPL contains the address of the BIND RU.)	Reserved
SCIP (for other than BIND RU)	Reserved	Address of read-only RPL (For UNBIND, the RPL contains the address of the UNBIND RU.)	Reserved
SYNAD	None (Register 1 contains the RPL address for the request failed)		
TPEND	Reserved	Reserved	Reserved

## Macro Instructions That Create DSECTS

<i>Control Block</i>	<i>DSECT Name and Operands</i>	
ACB	IFGACB	AM=VTAM [,DSECT= <u>YES</u>  NO]
EXLST	IFGEXLST	AM=VTAM [,DSECT= <u>YES</u>  NO]
RPL	IFGRPL	AM=VTAM [,DSECT= <u>YES</u>  NO]
Device character- istics field in NIB	ISTDVCHR	[,DSECT= <u>YES</u>  NO]
Processing options field in NIB	ISTDPROC	[,DSECT= <u>YES</u>  NO]
RTNCD-FDBK2- FDBK fields in RPL	ISTUSFBC	
NIB	ISTDNIB	
Session parameters	ISTDBIND	
Program operator message and command header	ISTDPOHD	

In coding these macro instructions, do not use elsewhere in the program any label beginning with:

ACB	IFG	PRO
BIN	IST	RPL
DEV	NIB	RSV
EXL	POH	USF

## PART 4. SNA REFERENCE DATA

### Format of BNDAREA (ISTDBIND)

Displacement

Dec Hex

0 0

4 4

8 8

12 C

16 10

20 14

24 18

28 1C

32 20

36 24

BIND Format (BINFMT)	BIND Type [TYPE] (BINTYPE)	FM Profile [FMPROF] (BINFM)	TS Profile [TSPROF] (BINTS)	Primary LU Protocols [PRIPROT] (BINPRIP)
Secondary LU Protocols [SECPROT] (BINSECP)		Common LU Protocols [COMPROT] (BINCMNP)   (BINCMNP2)		Secondary Send Pacing [SSNDPAC] (BINAPACE)
Secondary Receive Pacing Count [SRCVPAC] (BINRPACE)		Maximum Request Unit Send Sizes (RUSIZES) Secondary LU (BINSRUSZ)   Primary LU (BINPRUSZ)		Primary Send Pacing Count [PSNDPAC] (BINSPACE)
Primary Receive Pacing Count (BINBPACE)		Presentation Services Profile [PSERVIC] (BINLUP)		
Logical Unit Presentation Services Usage Field [PSERVIC] (BINPSCHR)				
		Cryptographic control (BINCRCTL)	Length of Primary LU name (BINPRIML)	
Name of Primary Logical Unit (BINPRIMN)				User Data Length (BINUSEL)
User Data (BINUSE)				

The heavily outlined section is the fixed-length portion of BIND. The names in brackets are the operands of the MODEENT macro used to build the corresponding fields in a logon mode table entry. For further information refer to the *ACF/VTAM Planning and Installation Reference* manual. The names in parentheses are the ISTDBIND DSECT labels for the field.

## Index of RUs by NS Headers and Request Codes

<i>Hex Value</i>	<i>RU Name</i>	<i>RU Category</i>	<i>ACF/ VTAM Control Block</i>
010002	Change Negative Response Poll Limit	FMD	—
010003	Change Session Limit	FMD	—
010004	Chg Service Seeking Pause	FMD	—
010201	Contact	FMD	CTCRU
010202	Discontact	FMD	DCTRU
010203	IPL Initial	FMD	—
010204	IPL Text	FMD	—
010205	IPL Final	FMD	—
010206	Dump Initial	FMD	—
010207	Dump Text	FMD	—
010208	Dump Final	FMD	—
010209	Remote Power Off	FMD	—
01020A	Activate Link	FMD	ALKRU
01020B	Deactivate Link	FMD	DLKRU
01020E	Connect Out	FMD	CNTRU
01020F	Abandon Connection	FMD	ABCRU
010211	Set Control Vector (Configuration Services)	FMD	SCVRU
010214	Entering Slowdown	FMD	NSRU
010215	Exiting Slowdown	FMD	NSRU
010216	Activate Connect In	FMD	AINRU
010217	Deactivate Connect In	FMD	DINRU
010218	Abandon Connect Out	FMD	ACNRU
010219	Assign Network Address	FMD	ANARU
01021A	Free Network Address	FMD	FADRU
01021B	Request Discontact	FMD	—
010222	Set Control Vector (Configuration Services)	FMD	MSVRU
010280	Contacted	FMD	KTDRU
010281	Inoperative	FMD	INPRU

## Index of RUs

<i>Hex Value</i>	<i>RU Name</i>	<i>RU Category</i>	<i>ACF/ VTAM Control Block</i>
010284	Request Contact	FMD	RQCRU
010285	NS Lost Subarea	FMD	LSARU
0102FFA0	Allocate Resource	FMD	ALRRU
0102FFA1	Free Resource	FMD	FRERU
0102FFA2	Set Routable State	FMD	RTARU
0102FFA3	Reset Routable State	FMD	RTIRU
010301	Execute Test	FMD	—
010302	Activate Trace	FMD	—
010303	Deactivate Trace	FMD	—
010311	Set Control Vector (Maintenance Services)	FMD	MSVRU
010331	Display Storage	FMD	DSTRU
010334	Record Storage	FMD	RSTRU
010380	Request Test	FMD	—
010381	Record Maintenance Stats	FMD	NSRU
010382	Record Test Data	FMD	—
010383	Record Trace Data	FMD	NSRU
010604	Net Services Proc Error	FMD	NSPE
010681	Initiate Self Format-0	FMD	ISHDR
010683	Terminate Self Format-0	FMD	TMRU
02	NC IPL Final	NC	—
03	NC IPL Initial	NC	—
04	NC IPL Text	NC	—
04	Logical Unit Status	DFC	LUSRU
05	Ready to Receive	DFC	—
05	Lost Subarea	NC	LSARU
06	Explicit Route Inoperative	NC	ERIRU
07	ANS Complete	NC	ANCRU
08	Lost Path	NC	—
09	Explicit Route Test	NC	ETSRU
0A	Explicit Route Test Reply	NC	ETRRU



## Index of RUs

<i>Hex Value</i>	<i>RU Name</i>	<i>RU Category</i>	<i>ACF/ VTAM Control Block</i>
0B	Explicit Route Activate	NC	ERARU
0C	Explicit Route Activate Reply	NC	EARRU
0D	Activate Logical Unit	SC	ALURU
0D	Activate Virtual Route	NC	VRARU
0E	Deactivate Logical Unit	SC	—
0E	Deactivate Virtual Route	NC	VRDRU
0E	Explicit Route Operative	NC	ERORU
10	Explicit Route Activated	NS	—
11	Activate Physical Unit	SC	APURU
12	Deactivate Physical Unit	SC	DPURU
14	Activate CDRM	SC	ACTCD
14	Activate CDRM Response	SC	APRRU
15	Deactivate CDRM	SC	DACTC
31	Bind Session	SC	BIND
32	Unbind Session	SC	UNBRU
410210	Request Net Addr Assign	FMD	RADRU
41021C	Delete Network Resource	FMD	—
41021D	Explicit Route Inoperative	FMD	—
41021E	Add Link	FMD	—
410221	Add Link Station	FMD	—
410223	Virtual Route Inoperative	FMD	—
410235	Initiate Procedure	FMD	—
410236	Procedure Status	FMD	—
410237	Load Required	FMD	—

Index of RUs

<i>Hex Value</i>	<i>RU Name</i>	<i>RU Category</i>	<i>ACF/ VTAM Control Block</i>
410240	Request Activate Logical Unit	FMD	—
410240	Add Network Resource	FMD	ANRRU
410243	NS IPL Initiate	FMD	—
410244	NS IPL Text	FMD	—
410245	NS IPL Final	FMD	—
410246	NS IPL Abort	FMD	—
410285	Lost Subarea	FMD	LSARU
410286	Req Delete Net Resource	FMD	RDRRU
410286	Request Free Network Address	FMD	—
410287	Network Services Lost Control Point	FMD	LCPRU
4102FF10	Request Network Address Assignment	FMD	RNARU
4102FFBD	Add Link	FMD	PLKRU
4102FFBE	Add Link Station	FMD	PSTRU
4102FFBF	Delete Network Resource	FMD	DNRRU
4102FFCD	Request Dump	FMD	RDPRU
4102FFCE	Request Conditional Load	FMD	RLDRU
4102FFCF	Request Unconditional Load	FMD	RLDRU
410304	Request Maintenance Statistics	FMD	—
410305	Enter Test Mode	FMD	ETMRU
410306	Request Route Test	FMD	TRTRU
410384	Record Formatted MS	FMD	—
410385	Record Test Results	FMD	RCTRU
410386	Explicit Route Tested	FMD	ETRRU
4106FF01	OPEN ACB	FMD	OCRU
4106FF02	CLOSE ACB	FMD	OCRU
50	NCP Init Complete	NC	—

## Index of RUs

<i>Hex Value</i>	<i>RU Name</i>	<i>RU Category</i>	<i>ACF/VTAM Control Block</i>
51	Switch line EP to NCP mode	NC	—
52	Switch line NCP to EP mode	NC	—
63	Service Manager Parameter List	FMD	SMP
70	Bracket Init Stopped	DFC	—
71	Stop Bracket Initiation	DFC	—
80	Quiesce At End Of Chain	DFC	—
81	Quiesce Complete	DFC	—
810320	Notify	FMD	—
810386	Explicit Route Tested	FMD	—
810387	Request Echo Check	FMD	RQERU
810389	Echo Test	FMD	ECTRUC
810601	Control Initiate	FMD	CTLIN
810602	Control Terminate	FMD	CTERM
810620	Notify	FMD	NOTRUC
810629	Cleanup Session	FMD	CLNUP
810680	Initiate Other	FMD	INITO
810681	Initiate Self Format-1	FMD	ISHDR
810682	Terminate Other	FMD	TMRUC
810683	Terminate Self Format-1	FMD	TMRUC
810685	Bind Failure	FMD	BFA
810686	Session Started	FMD	SSSRUC
810687	Unbind Failure	FMD	UBFRUC
810688	Session Ended	SSE	—
8106FF80	Reallocate	FMD	RELOC
810810	Forward	FMD	FWDRUC
810812	Deliver	FMD	DLVRUC
8108FF01	Notify	FMD	NAMRUC
818620	Cross-Domain Notify	FMD	NOTRUC
818627	Direct Search List	FMD	DSL
818640	Cross-Domain Init Other	FMD	CRDIO

Index of RUs

<i>Hex Value</i>	<i>RU Name</i>	<i>RU Category</i>	<i>ACF/ VTAM Control Block</i>
818641	Cross-Domain Initiate	FMD	CDIN
818642	Cross-Domain Term Other	FMD	—
818643	Cross-Domain Terminate	FMD	CDTRM
818645	CD Session Setup Failure	FMD	CDSF
818646	CD Session Started	FMD	CSESS
818647	CD Session Takedown Failure	FMD	—
818648	CD Session Ended	FMD	CRSE
818649	Cross-Domain Takedown	FMD	DTAKD
81864A	CD Takedown Complete	FMD	DTAKC
81864B	CD Control Initiate	FMD	CDCIN
82	Release Quiesce	DFC	—
83	Cancel	DFC	—
84	Chase	DFC	—
A0	Start Data Traffic	SC	—
A1	Clear	SC	—
A2	Set and Test Sequence Nos	SC	—
A3	Request Recovery	SC	—
C0	Cryptography Verify	SC	—
C0	Shutdown	DFC	—
C1	Shutdown Complete	DFC	—
C2	Request Shutdown	DFC	—
C8	Bid	DFC	—
C9	Signal	DFC	—
FF01	Virtual Route Inoperative	FMD	AMRU
FF01	Purge Chain Element	AMR	—
FF01	Notify (drive LOSTERM)	FMD	AMRU
FF02	Set Session Address	FMD	AMRU

## Index of RUs

<i>Hex Value</i>	<i>RU Name</i>	<i>RU Category</i>	<i>ACF/ VTAM Control Block</i>
FF03	Set Session Address with Disconnect	FMD	AMRU
FF04	Override Session Address	FMD	AMRU
FF05	Purge Wait Queue	FMD	AMRU
FF06	Flush Virtual Route Sessions	FMD	AMRU
FF0B	Request Explicit Route Activate	FMD	RAERU
FF0E	Request Virtual Route Deactivate	FMD	RDVRU
FF31	Generic Bind	FMD	GBIND
FF32	Generic Unbind	FMD	GUNB
FFFF	Virtual Route Status	FMD	VRSRU

## Logical Unit Presentation Services Profiles and Protocols<sup>1</sup>

### LU Type 0

Use of a set of protocols and data streams agreed upon by the logical units involved; SNA does not define them

### LU Type 1

Use of an SNA character string (SCS) and a defined set of SNA protocols for a keyboard/printer device

Use of predefined function management headers to identify a variety of data set types and controls that can be sent and received

### LU Type 2

Use of a 3270 data stream and a defined set of SNA protocols for a keyboard/display device

### LU Type 3

Use of a 3270 data stream and a defined set of SNA protocols for a printer

### LU Type 4

Use of an SNA character string (SCS) and a defined set of SNA protocols for a batch input/output LU having associated with it a printer and a magnetic stripe reader/recorder

### LU Type 6

Use of SNA character string (SCS) and structured field data streams between application programs in a distributed processing environment

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<sup>1</sup> Refer to *Systems Network Architecture: Sessions between Logical Units*, GC20-1868, and *Systems Network Architecture: Concepts and Products*, GC30-3072, for additional information.

## Transmission Services Profiles<sup>1</sup>

### Session Control Requests for Each Transmission Services Profile

Session Control Request	Transmission Services Profile			
	2	3	4	7
CLEAR	Opt	Opt	Opt	NA
RQR	NA	NA	Opt	NA
SDT	NA	Req	Req	NA
STSN	NA	NA	Opt	NA

**Key:** Req — This request must be used. The required requests may be issued by ACF/VTAM on behalf of the application program.

Opt — This request may be used.

NA — Not applicable.

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<sup>1</sup> Refer to the *Systems Network Architecture Reference Summary*, GA27-3136, for additional information.

## Transmission Services Usage Field Request Unit Size<sup>1</sup>

The session parameters specify the maximum length of request units that can be sent by the logical units. This information is divided into two parts: the secondary logical unit send request unit size (byte 9) and the primary logical unit send request unit size (byte 10). Both bytes have the same format; however, they may be set to different values depending upon the requirements of the logical units. The bits that can be set are listed below.

**Caution:** The displacements indicated below apply to the **ISTDBIND DSECT**. These displacements are one greater in the actual **BIND RU**, since the **BIND RU** contains a request code that is not contained in the **ISTDBIND DSECT**.

### *Bit Setting*

*(Bytes 9 and 10)*

0	1	2	3	4	5	6	7	Meaning
0	.	.	.	.	.	.	.	(byte 9) 6K bytes is the default size of the request unit that can be sent.
0	.	.	.	.	.	.	.	(byte 10) There is no limit specified for the size of the request unit that can be sent.
1	0	0	0	.	.	.	.	This is the mantissa (m) of the formula $m(2^n)$ used to determine the length of request units that can be sent by the primary or secondary logical unit.
through								
1	1	1	1	.	.	.	.	This is the exponent (n) of the formula $m(2^n)$ used to determine the maximum length of request units that can be sent by the primary or secondary logical unit.
through								
.	.	.	.	0	0	0	0	
through								
.	.	.	.	1	1	1	1	

---

<sup>1</sup> Refer to the *Systems Network Architecture Reference Summary*, GA27-3136, for additional information.



### Maximum Size of Request Unit (in decimal)

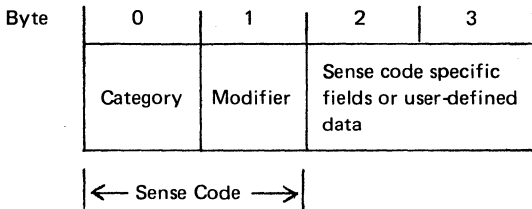
RU Size Byte	Bits 0-3(m)			
	8	9	A (10)	B (11)
0	8	9	10	11
1	16	18	20	22
2	32	36	40	44
3	64	72	80	88
4	128	144	160	176
5	256	288	320	352
6	512	576	640	704
7	1024	1152	1280	1408
8	2048	2304	2560	2816
9	4096	4608	5120	5632
A(10)	8192	9216	10240	11264
B(11)	16384	18432	20480	22528
C(12)	32768	36864	40960	45056
D(13)	65536	73728	81920	90112
E(14)	131072	147456	163840	180224
F(15)	262144	294912	327680	360448

RU Size Byte	Bits 0-3(m)			
	C (12)	D (13)	E (14)	F (15)
0	12	13	14	15
1	24	26	28	30
2	48	52	56	60
3	96	104	112	120
4	192	208	224	240
5	384	416	448	480
6	768	832	896	960
7	1536	1664	1792	1920
8	3072	3328	3584	3840
9	6144	6656	7168	7680
A(10)	12288	13312	14336	15360
B(11)	24576	26624	28672	30720
C(12)	49152	53248	57344	61440
D(13)	98304	106496	114688	122880
E(14)	196608	212992	229376	245760
F(15)	393216	425984	458752	491520

## Sense Codes

The information in this section is adapted from information presented in the *SNA Format and Protocol Reference Manual: Architectural Logic*, SC30-3112, and is provided here for the convenience of the reader. Although the information was accurate at the time it was published, it is subject to change. The manual cited above should be regarded as the official source of this information.

The sense data included with an exception request (EXR), a negative response, or a send check is a 4-byte field (see below) that generally includes a 1-byte category value, a 1-byte modifier value, and 2 bytes of implementation- or end-user-defined data (hereafter referred to as user-defined data). For certain sense codes, user-defined data cannot be included in the sense data (it is never carried in send-check sense data); in its place is sense code specific information, whose format is defined along with the sense code definition, below.



Together, the category and modifier bytes hold the sense code (SNC) defined for the exception condition that has occurred.

## Sense Codes

The following categories are defined; all others are reserved:

<i>Hex Value</i>	<i>Category</i>
00	User Sense Data Only
08	Request Reject
10	Request Error
20	State Error
40	Request Header (RH) Usage Error
80	Path Error

The category "user sense data only" (hex 00) allows the end users to exchange sense data in bytes 2-3 for conditions not defined by SNA within the other categories (and perhaps unique to the end users involved). The modifier value is also hex 00.

The sense codes for the other categories are discussed below. For these categories, a modifier value of hex 00 can be used (as an implementation option) when no definition of the exception condition beyond the major category is to be identified.

**Request Reject (Category Code Hex 08)**

This category indicates that the request was delivered to the intended half-session component and was understood and supported, but not executed.

*Sense Code  
(Hex)*

*Meaning*

0801	Resource Not Available: The LU, PU, or link specified in an RU is not available.
0802	Intervention Required: Forms or cards are required at an output device, or a device is temporarily in local mode, or other conditions require intervention.
0803	Missing Password: The required password was not supplied.
0804	Invalid Password: The password was not valid.
0805	Session Limit Exceeded: The requested session cannot be activated, as one of the NAUs is at its session limit. Applies to ACTCDRM, INIT, BIND, and CINIT requests.
0806	Resource Unknown: The request contained a name or address not identifying a PU, LU, link, or link station known to the receiver.
0807	Resource Not Available—LUSTAT Forthcoming: A subsidiary device will be unavailable for an indeterminate period of time. LUSTAT will be sent when the device becomes available.
0808	Invalid Contents ID: The contents ID contained on the ACTCDRM request was found to be invalid.

## Sense Codes

*Sense Code  
(Hex)*

*Meaning*

- |      |   |
|------|---|
| 0809 | Mode Inconsistency: The requested function cannot be performed in the present state of the receiver.  |
| 080A | Permission Rejected: The receiver has denied an implicit or explicit request of the sender; when sent in response to BIND, it implies either that the secondary LU will not notify the SSCP when a BIND can be accepted, or that the SSCP does not recognize the NOTIFY vector key hex 0C. (See the hex 0845 sense code for a contrasting response.)  |
| 080B | Bracket Race Error: Loss of contention within the bracket protocol. Arises when bracket initiation/termination by both NAUs is allowed.   |
| 080C | Procedure Not Supported: A procedure (Test, Trace, IPL, REQMS type) specified in an RU is not supported by the receiver.  |
| 080D | NAU Contention: A request to activate a session was received while the receiving half-session was awaiting a response to a previously sent activation request for the same session; for example, the SSCP receives an ACTCDRM from the other SSCP before it receives the response for an ACTCDRM that it sent to the other SSCP and the SSCP ID in the received ACTCDRM was less than or equal to the SSCP ID in the ACTCDRM previously sent. |
| 080E | NAU Not Authorized: The requesting NAU does not have access to the requested resource.  |

*Sense Code  
(Hex)**Meaning*

080F

End User Not Authorized: The requesting end user does not have access to the requested resource.

0810

Missing Requester ID: The required requester ID was missing.

0811

Break: Asks the receiver of this sense code to terminate the present chain with CANCEL or with an FMD request carrying EC. The half-session sending the Break sense code enters chain-purge state when Break is sent.

0812

Insufficient Resource: The receiver cannot act on the request because of a temporary lack of resources.

0813

Bracket Bid Reject—No RTR Forthcoming: BID (or BB) was received while the first speaker was in the in-bracket state, or while the first speaker was in the between-brackets state and the first speaker denied permission. RTR will not be sent.

0814

Bracket Bid Reject—RTR Forthcoming: BID (or BB) was received while the first speaker was in the in-bracket state, or while the first speaker was in the between-brackets state and the first speaker denied permission. RTR will be sent.

0815

Function Active: A request to activate a network element or procedure was received, but the element or procedure was already active.

0816

Function Inactive: A request to deactivate a network element or procedure was received, but the element or procedure was not active.

## Sense Codes

*Sense Code  
(Hex)*

*Meaning*

- 0817      Link Inactive: A request requires the use of a link, but the link is not active.
- 0818      Link Procedure in Process: CONTACT, DISCONTACT, IPL, or other link procedure was in progress when a conflicting request was received.
- 0819      RTR Not Required: Receiver of Ready to Receive has nothing to send.
- 081A      Request Sequence Error: Invalid sequence of requests.
- 081B      Receiver in Transmit Mode: A race condition: normal-flow request received while the half-duplex contention state was not-receive, (\*S, R), or while resources (such as buffers) necessary for handling normal-flow data was unavailable. (Contrast this sense code with hex 2004, which signals a protocol violation.)
- 081C      Request Not Executable: The requested function cannot be executed, because of a permanent error condition in the receiver.
- The following list shows ACF/VTAM-unique codes that are set as part of sense code 081C.

*OS/VS User Sense Codes for Request Load  
(Conditional) and Request Load  
(Unconditional) Request Units*

*Sense Data*

*Meaning*

- 081C0008      ACF/VTAM is unable to successfully open the data set containing the NCP load module.

## Sense Codes

<i>Sense Data</i>	<i>Meaning</i>
081C0014	The loaded NCP has encountered an error preventing successful initialization.
081C0018	Load not performed — HALT is in progress.
081C001C	The 3705 dump/load/restart router (module ISTINCDP) has received an input work element which contains an unrecognized command code. The NCP load module is not present in the load module data set (BLDL failure).
081C0020	A permanent I/O error has occurred on the 3705.
081C0024	ACF/VTAM is unable to successfully open the data set containing the diagnostics programs (ddname "INITTEST").
081C002C	The diagnostic program has detected a probable 3705 hardware error.
081C0030	The NCP or diagnostics program load module has a block size greater than 1024 bytes (the "DC" option was not specified when the link-edit was performed).



## Sense Codes

<i>Sense Data</i>	<i>Meaning</i>	
081C003C	The 3705 unit control block does not contain a valid value for the channel adapter type field.	C
081C0040	The NCP or diagnostics program load module is improperly constructed.	C
081C0044	The IFLOADRN 3705 load utility program is unable to allocate sufficient storage.	C
081C004C	The NCP load module size exceeds the storage capacity of the 3705.	
081C0050	A permanent I/O error has occurred on the NCP load module library.	*
081C0054	A permanent I/O error has occurred on the diagnostics program load module library (ddname "INITTEST").	*
081C0058	A diagnostics program cannot be located in the diagnostics program load module library (ddname "INITTEST") - BLDL' failure.	C
081C005C	Request Load (Conditional) is attempted while another host is already loading the 3705 (unit exception on SENSE channel program).	C

<i>Sense Data</i>	<i>Meaning</i>
081C0060	Request Load (Conditional) is attempted while another host is already loading the 3705 (Start I/O condition code = 3 on SENSE channel program).
081C0064	A Load I/O operation (to a link-attached 3705) has been purged (by Vary Deactivate or error recovery of the 3705 or of another node in the path to the 3705).
081C0068	A Load I/O operation (to a link-attached 3705) has failed (a negative response has been generated by the adjacent 3705).
081C008C	The NCP load module has an entry point address of zero.
081C00AB	Load not performed — the load subtask has abended.

*User Sense Codes for Request Dump  
Request Units*

<i>Sense Data</i>	<i>Meaning</i>
081C0004	A requested 3705 dump has been terminated because of a permanent I/O error on the dump file — the dump is partially complete and can be formatted and printed.

## Sense Codes

<i>Sense Data</i>	<i>Meaning</i>
081C0008	A requested 3705 dump has been terminated because of a permanent 3705 I/O error — the dump is partially complete and can be formatted and printed.
081C000C	A requested 3705 dump has been terminated because of a permanent I/O error on the dump file — the dump data set cannot be formatted and printed.
081C0010	A requested 3705 dump has been terminated because of a permanent 3705 I/O error — the dump data set cannot be formatted and printed.
081C0014	Unable to successfully open the dump data set.
081C0018	Dump not performed — HALT is in progress.
081C001C	The dump data set resides on a device that is not supported by the dump utility program. Or, the 3705 dump/load/restart router (module ISTINCDP) has received an input work element that contains an unrecognized command code.

<i>Sense Data</i>	<i>Meaning</i>
081C0020	Unable to successfully load a necessary dump utility module.
081C00AB	Dump not performed — the dump subtask has abended.

*User Sense Codes for Activate Link and Deactivate Link Request Units*

<i>Sense Data</i>	<i>Meaning</i>
081C0004	Invalid Device Address — not three valid hexadecimal digits.
081C0008	Invalid Device Address — specified device does not exist (i.e. has not been defined in the operating system SYSGEN).
081C000C	Invalid Device Type — specified device is not of the correct type.
081C0010	Device is already allocated to another JOB.
081C0028	Unable to deallocate device.
081C0030	No paths are available to the device (MVS only).
081C0034	Invalid resource type in ACF/VTAM resource definition table entry (RDTE) corresponding to device to be allocated.

## Sense Codes

<i>Sense Data</i>	<i>Meaning</i>
081C0038	Cannot locate ACF/VTAM resource definition table entry (RDTE) corresponding to device to be allocated.
081C003C	Device not Usable — VARY ONLINE OS/VS command has not been issued.

### *Sense Code (Hex)*

### *Meaning*

081D	Invalid Station/SSCP ID: The station ID or SSCP ID in the request was found to be invalid.
081E	Session Reference Error: The request contained reference to a half-session that was neither active nor in the process of being activated (generally applies to network services requests).
081F	Reserved.
0820	Control Vector Error: Invalid data for the control vector specified by the target network address and key.
0821	Invalid Session Parameters: Session parameters were not valid or not supported by the half-session whose activation was requested.
0822	Link Procedure Failure: A link-level procedure has failed due to link equipment failure, loss of contact with a link station, or an invalid response to a link request. (This is not a path error, since the request being rejected was delivered to its destination.)

*Sense Code  
(Hex)**Meaning*

- 0823      **Unknown Control Vector:** The control vector specified by a network address and key is not known to the receiver.
- 0824      **Unit of Work Aborted:** The current unit of work has been aborted; when synchronization point protocols are in use, both synchronization point managers are to revert to the previously committed synchronization point.
- 0825      **Component Not Available:** The LU component (a device indicated by an FM header) is not available.
- 0826      **FM Function Not Supported:** A function requested in an FMD RU is not supported by the receiver.
- 0827      **Intermittent Error—Retry Requested:** An error at the receiver caused an RU to be lost. The error is not permanent, and retry of the RU (or chain) is requested.
- 0828      **Reply Not Allowed:** A request requires a normal-flow reply, but the outbound data flow for this half-session is quiesced or shut down, and there is no delayed reply capability.
- 0829      **Change Direction Required:** A request requires a normal-flow reply, but the half-duplex flip-flop state is not-send, (S, \*R), CD was not set on the request, and there is no delayed reply capability.

## Sense Codes

<i>Sense Code (Hex)</i>	<i>Meaning</i>
082A	Presentation Space Alteration: Presentation space altered by the end user while the half-duplex state was not-send, (S, *R); request executed.
082B	Prsentation Space Integrity Lost: Presentation space integrity lost (e.g., cleared or changed) because of a transient condition—for example, because of a transient hardware error or an end user action such as allowing presentation services to be used by the SSCP. (Note: The end-user action described under sense codes hex 082A and 084A is excluded here.)
082C	Resource-Sharing Limit Reached: The request received from an SSCP was to activate a half-session, a link, or a procedure, when that resource was at its share limit.
082D	LU Busy: The LU resources needed to process the request are being used; for example, the LU resources needed to process the request received from the SSCP are being used for the LU-LU session.
082E	Intervention Required at LU Subsidiary Device: A condition requiring intervention, such as out of paper, or power-off, or cover interlock open, exists at a subsidiary device.
082F	Request Not Executable because of LU Subsidiary Device: The requested function cannot be executed, due to a permanent error condition in one or more of the receiver's subsidiary devices.
0830	Reserved.

<i>Sense Code (Hex)</i>	<i>Meaning</i>
0831	LU Component Disconnected: An LU component is not available because of power off or some other disconnecting condition.
0832	Invalid Count Field: A count field contained in the request indicates a value too long or too short to be interpreted by the receiver, or the count field is inconsistent with the length of the remaining fields. Bytes 2 and 3 following the sense code are not used for user-defined data; they contain a binary count that indexes (zero-origin) the first byte of the invalid count field.
0833	Invalid Parameter (with Pointer and Complemented Byte): One or more parameters contained in fixed- or variable-length fields of the request are invalid or not supported by the NAU that received the request. Bytes 2 and 3 following the sense code are not used for user-defined data. Byte 2 contains a binary value that indexes (zero-origin) the first byte that contained an invalid parameter. Byte 3 contains a transform of the first byte that contained an invalid parameter: the bits that constitute the one or more invalid parameters are complemented, and all other bits are copied.
0834	RPO Not Initiated: A power-off procedure for the specified node was not initiated because one or more other SSCPs have contacted the node, or because a CONTACT, DUMP, IPL, or DISCONTACT procedure is in progress for that node.



## Sense Codes

*Sense Code  
(Hex)*

*Meaning*

- 0835 Invalid Parameter (with Pointer Only): The request contained a fixed- or variable-length field whose contents are invalid or not supported by the NAU that received the request. Bytes 2 and 3 following the sense code are not used for user-defined data; they contain a 2-byte binary count that indexes (zero-origin) the first byte of the fixed- or variable-length field having invalid contents.
- 0836 PLU/SLU Specification Mismatch: For a specified LU-LU session, both the origin LU (OLU) and the destination LU (DLU) have only the primary capability or have only the secondary capability.
- 0837 Queuing Limit Exceeded: For an LU-LU session-initiation request (INIT, CDINIT, or INIT-OTHER-CD) specifying (1) Initiate or Queue (if Initiate not possible) or (2) Queue Only, the queuing limit of either the OLU or the DLU, or both, was exceeded.
- 0838 Reserved.
- 0839 LU-LU or SSCP-LU Session Being Taken Down: At the time an LU-LU session-initiation or termination request is received, the SSCP of at least one of the LUs is either processing a CDTAKED request or is in the process of deactivating the associated SSCP-LU session.
- 083A LU Not Enabled: At the time an LU-LU session-initiation request is received at the SSCP, at least one of the two LUs, although having an active session with its SSCP, is not ready to accept CINIT or BIND requests.

*Sense Code  
(Hex)*

*Meaning*

083B

Invalid PCID: An invalid PCID was received, e.g., one containing an invalid network address of the SSCP of the initiating LU (ILU) or terminating LU (TLU), has been received in CDINIT, INIT-OTHER-CD, CDTERM, or TERM-OTHER-CD; or a PCID that does not identify a previously queued request has been received in CDINIT (Dequeue) or INIT-OTHER-CD (Dequeue); or, a PCID that cannot be associated with the PCID of any previously processed CDINIT has been received on CDCINIT.

083C

Domain Takedown Contention: While waiting for a response to a CDTAKED, a CDTAKED request is received by the SSCP containing the SSCP-SSCP primary half-session. Contention is resolved by giving preference to the CDTAKED sent by the primary half-session.

083D

Dequeue Retry Unsuccessful—Removed from Queue: The SSCP cannot successfully honor a CDINIT (Dequeue) request (which specifies "leave on queue if dequeue-retry is unsuccessful") to dequeue and process a previously queued CDINIT request (e.g., because the LU in its domain is still not available for the specified session), and removes the queued CDINIT request from its queue.

083E

Reserved.

083F

Terminate Contention: While waiting for a response to a CDTERM, a CDTERM is received by the SSCP of the SLU. Contention is resolved by giving preference to the CDTERM sent by the SSCP of the SLU.

## Sense Codes

*Sense Code  
(Hex)*

*Meaning*

- 0840 Procedure Invalid for Resource: The named procedure is not supported in the receiver for this type of resource (e.g., (1) SETCV specifies boundary function support for a type 1 node but the capability is not supported by the receiving node, or (2) the PU receiving an EXECTEST or TESTMODE is not the primary PU for the target link).
- 0841 Duplicate Network Address: In a cross-domain LU-LU session initiation request, the SSCP of the DLU determines that the OLU network address specified in the CDINIT request is a duplicate of an LU network address assigned to a different LU name.
- 0842 SSCP-SSCP Session Not Active: The SSCP-SSCP session, which is required for the processing of a network services request, is not active; e.g., at the time an LU-LU session-initiation or termination request is received, at least one of the following conditions exists:
- The SSCP of the ILU and the SSCP of the OLU do not have an active session with each other, and therefore INIT-OTHER-CD cannot flow.
  - The SSCP of the TLU and the SSCP of the OLU do not have an active session with each other, and therefore TERM-OTHER-CD cannot flow.
  - The SSCP of the OLU and the SSCP of the DLU do not have an active session with each other, and therefore CDINIT or CDTERM cannot flow.

<i>Sense Code (Hex)</i>	<i>Meaning</i>
0843	Required FMDS Synchronization Not Supplied: For example, a secondary LU (LU-LU session type 2 or 3) received a request with Write Control Code = Start Print, along with RQE and CD.
0844	Initiation Dequeue Contention: While waiting for a response to a CDINIT (Dequeue), a CDINIT (Dequeue) is received by the SSCP of the SLU. Contention is resolved by giving preference to the CDINIT (Dequeue) sent by the SSCP of the SLU.
0845	Permission Rejected—SSCP Will Be Notified: The receiver has denied an implicit or explicit request of the sender; when sent in response to BIND, it implies that the secondary LU will notify the SSCP (via NOTIFY vector key hex 0C) when a BIND can be accepted, and the SSCP of the SLU supports the notification. (See the hex 080A sense code for a contrasting response.)
0846	ERP Request Forthcoming: The received request was rejected for a reason to be specified in a forthcoming request.
0847	Restart Mismatch: Sent in response to STSN or SDT or BIND to indicate that the secondary half-session is trying to execute a resynchronizing restart but has received insufficient or incorrect information.
0848	Cryptography Function Inoperative: The receiver of a request was not able to decipher the request because of a malfunction in its cryptography facility.

## Sense Codes

*Sense Code  
(Hex)*

*Meaning*

0849	Reserved.
084A	Presentation Space Alteration: The presentation space was altered by the end user while the half-duplex state was not-send, (S, *R); request not executed.
084B	<p>Requested Resources Not Available: Resources named in the request, and required to honor it, are not currently available. It is not known when the resources will be made available.</p> <p>Bytes 2 and 3 following the sense code are not used for user-defined data; they contain sense-code-specific information. Settings allowed are:</p> <p>0000 Requested resources are not available.</p> <p>6022 The resource identified by the destination program name (DPN) is not supported.</p> <p>6003 The resource identified by the primary resource name (PRN) is not supported.</p>
084C	Permanent Insufficient Resource: Receiver cannot act on the request because resources required to honor the request are permanently unavailable.
084D	Invalid Session Parameters—BF: Session parameters were not valid or were unacceptable by the boundary function. Bytes 2 and 3 following the sense code contain a binary count that indexes (zero-origin) the first byte of the fixed- or variable-length field having invalid contents.

*Sense Code  
(Hex)*

*Meaning*

- 084E Invalid Session Parameters: A positive response to an activation request (e.g., BIND) was received and was changed to a negative response due to invalid session parameters carried in the response. The services manager receiving the response will send a deactivation request for the corresponding session.
- 084F Reserved.
- 0850 Link not capable of IPL: An IPL, dump, or Remote Power Off (RPO) cannot be performed through the addressed link station because of the current definition of the hardware configuration of its associated link.
- 0851 Session Busy: Another session that is needed to complete the function being requested on this session (e.g., to forward an NS RU embedded in a FORWARD request) is temporarily unavailable.
- 0852 Session with Larger Activation Request Sequence Identifier Already Active: A session has already been activated for the subject destination-origin pair by a session-activation request that carried a larger activation request identifier than the current request; the current request (ACTPU or ACTCDRM) is refused.
- 0853 Terminate (Cleanup) Required: The SSCP cannot process the termination request, as it requires cross-domain SSCP-SSCP services that are not available. (The corresponding SSCP-SSCP session is not active.) Terminate (Cleanup) is required.

## Sense Codes

<i>Sense Code (Hex)</i>	<i>Meaning</i>
0854–0855	Reserved.
0856	SSCP-SSCP Session Lost: Carried in the sense data field in a NOTIFY or NSPE sent to an ILU or SSCP (ILU) to indicate that the activation of the LU-LU session either cannot be completed or is uncertain because the SSCP-SSCP session between the two domains has been lost. (This sense code appears only in NOTIFY or NSPE, not in a negative response. Another sense code, hex 0842, is used on a negative response to signal the condition when the condition is known at the time the response, e.g., to INIT, is prepared.)
0857	SSCP-LU Session Not Active: The SSCP-LU session, required for the processing of a request, is not active; e.g., in processing REQECHO, the SSCP did not have an active session with the target LU named in the REQECHO RU.
0858	Reserved.
0859	REQECHO Data Length Error: The specified length of data to be echoed (in REQECHO) violates the maximum RU size limit for the target LU.
085A–085F	Reserved.

*Sense Code  
(Hex)**Meaning*

- 0860**      **Function Not Supported—Continue Session:** The function requested is not supported; the function may have been specified by a request code or some other field, control character, or graphic character in an RU. Bytes 2-3 following the sense code are not used for user-defined data; they contain a 2-byte binary count that indexes (zero-origin) the first byte in which an error was detected. This sense code is used to request that the session continue, thereby ignoring the error.
- 0861**      **Invalid COS Name:** The class of service (COS) name, either specified by the ILU or generated by the SSCP of the SLU from the mode table is not in the "COS name to VR identifier" table used by the SSCP of the PLU. Bytes 2 and 3 following the sense code contain hex 0000 if the COS name was generated by the SSCP or hex 0001 if specified by the ILU.
- 0862**      **Medium Presentation Space Recovery:** An error has occurred on the current presentation space. Recovery consists of restarting at the top of the current presentation space. The sequence number returned is of the RU in effect at the top of the current presentation space. Bytes 2 and 3 following the sense code contain the byte offset from the beginning of the RU to the first byte of the RU that is displayed at the top of the current presentation space.
- 0863**      **Referenced Local Character Set Identifier (LCID) Not Found:** A referenced character set does not exist.



## Sense Codes

<i>Sense Code (Hex)</i>	<i>Meaning</i>
0864	Function Abort: A loop will occur upon reexecution; the request sender should not send the same data.
0865	Function Abort: Sender is responsible to detect the loop.
0866	Function Abort: Receiver is responsible to detect the loop.
0867	Sync Event Response: Indicates a negative response to a synchronization event.
0868	No Panels Loaded: Referenced format not found because no panels are loaded for the display.
0869	Panel Not Loaded: The referenced panel is not loaded for the display.
0870	Reserved.
0871	Read Partition State Error: A Read Partition structured field was received while the display was in the retry state.
0872	Orderly Deactivation Refused: An NC_DACTVR (Orderly) request has been received, but sessions are assigned to the VR and it will not be deactivated.
0873	Virtual Route Not Defined: There is no explicit route number (ERN) designated to support this virtual route number (VRN).
0874	ER Not in a Valid State: The ER supporting the requested VR is not in a state allowing VR activation.

*Sense Code  
(Hex)*

*Meaning*

- 0875      Incorrect or Undefined Explicit Route Requested: The reverse ERNs specified in the NC\_ACTVR do not contain the ERN defined to be used for the VR requested, or the ERN designated to be used for the VR is not defined.
- 0876      Nonreversible Explicit Route Requested: The ERN used by the NC\_ACTVR does not use the same sequence of transmission groups (in reverse order) as the ERN that should be used for the RSP (NC\_ACTVR).
- 0877      Reserved.
- 0878      Insufficient Storage: The storage required for a data format is not available.
- 0879      Storage Medium Error: A permanent error has occurred involving a storage medium.
- 087A      Format Processing Error: A processing error occurred during data formatting.

## Sense Codes

### Request Error (Category Code Hex 10)

This category indicates that the RU was delivered to the intended half-session component, but could not be interpreted or processed. This condition represents a mismatch of half-session capabilities.

*Sense Code  
(Hex)*

*Meaning*

**1001**      **RU Data Error:** Data in the request RU is not acceptable to the receiving FMDS component; for example, a character code is not in the set supported, a formatted data field is not acceptable to presentation services, or a required name in the request has been omitted.

**1002**      **RU Length Error:** The request RU was too long or too short.

**1003**      **Function Not Supported:** The function requested is not supported. The function may have been specified by a formatted request code, a field in an RU, or a control character.

Bytes 2 and 3 following the sense code are not used for user-defined data; they contain sense-code-specific information.

Settings allowed are:

**0000**      Function requested is not supported.

**6022**      The resource identified by the destination program name (DPN) is not supported.

**6003**      The resource identified by the primary resource name (PRN) is not supported.

(Note: This code can also be used instead of sense code hex 0826.)

**Sense Code  
(Hex)****Meaning**

1004	Reserved.
1005	Parameter Error: A parameter modifying a control function is invalid, or outside the range allowed by the receiver.
1006	Reserved.
1007	Category Not Supported: DFC, SC, NC, or FMD request was received by a half-session not supporting any requests in that category; or an NS request with byte 0 was not set to a defined value, or byte 1 was not set to an NS category supported by the receiver.
1008	Invalid FM Header: The FM header was not understood or translatable by the receiver, or an FM header was expected but not present.  Bytes 2 and 3 following the sense code are not used for user-defined data; they contain sense-code-specific information as defined in <i>Systems Network Architecture Sessions between Logical Units</i> .
1009	Format Group Not Selected: No format group was selected before issuing a Present Absolute or Present Relative Format structured field to a display.

## Sense Codes

### State Error (Category Code Hex 20)

This category indicates a sequence number error, or an RH or RU that is now allowed for the receiver's current session control or data flow control state. These errors prevent delivery of the request to the intended half-session component.

*Modifier  
(Hex)*

*Meaning*

2001	Invalid Sequence Number: Sequence number received on normal-flow request was not 1 greater than the last.
2002	Chaining Error: Error in the sequence of the chain indicator settings (BCI, ECI), such as first, middle, first.
2003	Bracket Error: Error resulting from failure of sender to enforce bracket rules for session. (This error does not apply to contention or race conditions.)
2004	Direction Error: Error resulting from a normal-flow request received while the half-duplex flip-flop state was not-receive, (*S, R). (Contrast this sense code with hex 081B, which signals a race condition.)
2005	Data Traffic Reset: An FMD or normal-flow DFC request received by a half-session whose session-activation state was active, but whose data-traffic state was not active.
2006	Data Traffic Quiesced: An FMD or DFC request received from a half-session that has sent Quiesce Complete or Shutdown Complete and has not responded to Release Quiesce.

*Modifier  
(Hex)*

*Meaning*

- 2007 Data Traffic Not Reset: A session control request (e.g., STSN), allowed only while the data traffic state is reset, was received while the data-traffic state was not reset.
- 2008 No Begin Bracket: A BID or an FMD request specifying BBI=BB was received after the receiver had previously sent a positive response to Bracket Initiation Stopped.
- 2009 Session Control Protocol Violation: An SC protocol has been violated; a request, allowed only after a successful exchange of an SC request and its associated positive response, has been received before such successful exchange has occurred (e.g., an FMD request has preceded a required Cryptography Verification request). The request code of the particular SC request or response required, or hex 00 if undetermined, appears in the fourth byte of the sense data. There is no user data associated with this sense code.
- 200A Immediate Request Mode Error: The immediate request mode protocol has been violated by the request.
- 200B Queued Response Error: The queued response protocol has been violated by a request, i.e., QRI=QR when an outstanding request had QRI=QR.
- 200C ERP Sync Event Error: The ERP synchronization event protocol has been violated.
- 200D Response Owed before Sending Request: An attempt has been made in half-duplex (flip-flop or contention) send/receive mode to send a normal-flow request when a response to a previously received request has not yet been sent.

## Sense Codes

### RH Usage Error (Category Code Hex 40)

This category indicates that the value of a field or combination of fields in the RH violates architectural rules or previously selected BIND options. These errors prevent delivery of the request to the intended half-session component and are independent of the current states of the session. They may result from the failure of the sender to enforce session rules. Detection by the receiver of each of these errors is optional.

#### *Sense Code (Hex)*

#### *Meaning*

- |      |   |
|------|---|
| 4001 | Invalid SC or NC RH: The RH of a session control (SC) or network control (NC) request was invalid. For example, an SC RH with pacing request indicator set to 1 is invalid.   |
| 4002 | Reserved.   |
| 4003 | BB Not Allowed: The begin bracket indicator (BBI) was specified incorrectly, e.g., BBI=BB with BCI=BC.  |
| 4004 | EB Not Allowed: The end bracket indicator (EBI) was specified incorrectly, e.g., EBI=EB with BCI=BC, or by the primary half-session when only the secondary may send EB, or by the secondary when only the primary may send EB. |
| 4005 | Incomplete RH: Transmission shorter than full TH-RH.  |
| 4006 | Exception Response Not Allowed: Exception response was requested when not permitted.  |
| 4007 | Definite Response Not Allowed: Definite response was requested when not permitted.  |

<i>Sense Code (Hex)</i>	<i>Meaning</i>
4008	Pacing Not Supported: The pacing indicator was set on a request, but the receiving half-session or boundary function half-session does not support pacing for this session.
4009	CD Not Allowed: The change direction indicator (CDI) was specified incorrectly, e.g., CDI=CD with ECI=EC, or CDI=CD with EBI=EB.
400A	No-Response Not Allowed: No-response was specified on a request when not permitted. (Use only on EXR.)
400B	Chaining Not Supported: The chaining indicators (BCI and ECI) were specified incorrectly, e.g., chaining bits indicated other than (BC, EC), but multiple-request chains are not supported for the session or for the category specified in the request header.
400C	Brackets Not Supported: The bracket indicators (BBI and EBI) were specified incorrectly, e.g., a bracket indicator was set (BBI=BB or EBI=EB), but brackets are not used for the session.
400D	CD Not Supported: The change-direction indicator was set, but is not supported.
400E	Reserved.
400F	Incorrect Use of Format Indicator: The format indicator (FI) was specified incorrectly, e.g., FI was set with BCI=BC, or FI was not set on a DFC request.



## Sense Codes

*Sense Code  
(Hex)*

*Meaning*

- 4010      Alternate Code Not Supported: The code selection indicator (CSI) was set when not supported for the session.
- 4011      Incorrect Specification of RU Category: The RU category indicator was specified incorrectly, e.g., an expedited-flow request or response was specified with RU category indicator = FMD.
- 4012      Incorrect Specification of Request Code: The request code on a response does not match the request code on its corresponding request.
- 4013      Incorrect Specification of (SDI, RTI): The sense data included indicator (SDI) and the response type indicator (RTI) were not specified properly on a response. The proper value pairs are (SDI=SD, RTI=negative) and (SDI=SD, RTI=positive).
- 4014      Incorrect Use of (DR1I, DR2I, ERI): The definite response 1 indicator (DR1I), definite response 2 indicator (DR2I), and exception response indicator (ERI) were specified incorrectly, e.g., a CANCEL request was not specified with DR1I=DR1, DR2I=DR2, and ERI=ER.
- 4015      Incorrect Use of QRI: The queued response indicator (QRI) was specified incorrectly, e.g., QRI=QR on an expedited-flow request.
- 4016      Incorrect Use of EDI: The enciphered data indicator (EDI) was specified incorrectly, e.g., EDI=ED on a DFC request.
- 4017      Incorrect Use of PDI: The padded data indicator (PDI) was specified incorrectly, e.g., PDI=PD on a DFC request.

**Path Error (Category Code Hex 80)**

This category indicates that the request could not be delivered to the intended receiver because of a path outage, an invalid sequence of activation requests, or one of the listed path information unit (PIU) errors. (Some PIU errors fall into other categories, e.g., sequence number errors are category hex 20.) A path error received while the session is active generally indicates that the path to the session partner has been lost. In this case, the NAU services manager receiving the -RSP (Path Error) may deactivate the affected half-session.

*Sense Code  
(Hex)*

*Meaning*

8001	Intermediate Node Failure: Machine or program check in a node providing intermediate function. A response may not be possible.
8002	Link Failure: Data link failure.
8003	NAU Inoperative: The NAU is unable to process requests or responses, e.g., the NAU has been disrupted by an abnormal termination.
8004	Unrecognized Destination Address: A node in the path has no routing information for the destination specified by the TH.
8005	No Session: No half-session is active in the receiving end node for the indicated origination-destination pair, or no boundary function half-session component is active for the origin-destination pair in a node providing the boundary function. A session-activation request is needed.

## Sense Codes

*Sense Code  
(Hex)*

*Meaning*

- 8006 Invalid FID: Invalid FID for the receiving node. It is generally not possible to send a response for this exception condition, since information (FID, addresses) required to generate a response is not available. It is logged as an error if this capability exists in the receiver.
- 8007 Segmenting Error: First BIU segment had less than 10 bytes; or mapping field sequencing error, such as first, last, middle; or segmenting not supported and MPF not set to 11. If segmenting is not supported, a negative response is returned for the first segment only, since this contains the RH. Subsequent segments are discarded.
- 8008 PU Not Active: The SSCP-PU secondary half-session in the receiving node has not been activated and the request was not ACTPU for this half-session; for example, the request was ACTLU from an SSCP that does not have an active SSCP-PU session with the PU associated with the addressed LU.
- 8009 LU Not Active: The destination address specifies an LU for which the SSCP-LU secondary half-session has not been activated and the request was not ACTLU.
- 800A Too-Long PIU: Transmission was truncated by a receiving node because the PIU exceeded a maximum length or sufficient buffering was not available.

*Sense Code  
(Hex)**Meaning*

800B	Incomplete TH: Transmission received was shorter than a TH. It is generally not possible to send a response for this exception condition, since information (FID, addresses) required to generate a response is not available. It is logged as an error if this capability exists in the receiver.
800C	DCF Error: The data count field (DFC) is inconsistent with the transmission length.
800D	Lost Contact: Contact with the link station for which the transmission was intended has been lost, but the link has not failed. If the difference between link failure and loss of contact is not detectable, link failure (hex 8002) is sent.
800E	Unrecognized Origin: The origin address specified in the TH was not recognized.
800F	Invalid Address Combination: The (DAF', OAF') (FID2) combination or the LSID (FID3) specified an invalid type of session, e.g., a PU-LU combination.
8010	Segmented RU Length Error: An RU was found to exceed a maximum length, or required buffer allocation that might cause future buffer depletion.
8011	ER Inoperative or Undefined: A PIU was received from a subarea node that does not support ER and VR protocols, and the explicit route to the destination is inoperative or undefined.

## Sense Codes

*Sense Code  
(Hex)*

*Meaning*

8012

Subarea PU Not Active or Invalid Virtual Route: A session-activation request for a peripheral PU or LU cannot be satisfied because there is no active SSCP-PU session for the subarea node providing boundary function support, or the virtual route for the specified SSCP-PU\_T1|2 or SSCP-LU session is not the same as that used for the SSCP-PU session of the PU\_T1|2's or LU's subarea PU.

8013

COS Not Available: A session-activation request cannot be satisfied because none of the virtual routes requested for the session is available. This condition may arise because each of the specified virtual routes cannot be activated for one of the following reasons:

- The specified virtual route cannot be mapped to an explicit route to the destination subarea, or the explicit route it is mapped to is not defined.
- The underlying explicit route is not operative.
- The underlying explicit route is operative but cannot be activated.
- The underlying explicit route is active but the virtual route cannot be activated.
- The session must be assigned to a virtual route with an underlying reverse explicit route number of 0, but the virtual route does not meet this criterion.

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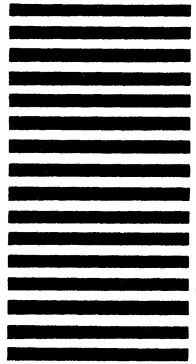


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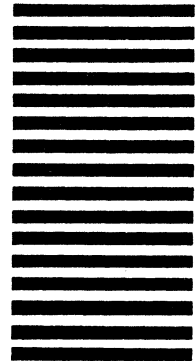


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