

Honeywell

SOFTWARE RELEASE BULLETIN

COMMUNICATIONS
SNA6
SYSTEMS NETWORK
ARCHITECTURE

GZ68-02

SOFTWARE

**COMMUNICATIONS
SNA6
SYSTEMS NETWORK
ARCHITECTURE**

SUBJECT

Release 4.0 of the Systems Network Architecture (SNA6) Program Products

SOFTWARE SUPPORTED

This document supports Release 4.0 of the SNA6 Product Set operating under Release 4.0 of the MOD 400 operating system or Version 1.0 of the HVS 6 PLUS operating system.

ORDER NUMBER

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PREFACE

This Software Release Bulletin (SRB) provides release-specific information needed by data processing managers, system administrators, system personnel, and programmers. It supplements the release-independent reference material documented in product manuals. An associate manual, the Customer Support Handbook (Order No. GT10), covers general information on ordering manuals, reporting problems, and requesting Honeywell assistance.

In this SRB, the terms "SNA6 system" and "SNA6 node" refer to a DPS 6 or DPS 6 PLUS minicomputer executing Honeywell SNA6 software and operating as a node in an SNA network. Honeywell SNA6 systems are referred to as SNA6 nodes to distinguish them from IBM SNA nodes.

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TABLE OF CONTENTS

	Page
PRODUCT DESCRIPTION.....	1
Marketing Identifiers.....	1
SNA6 Transport Facility (SNA6-TF).....	2
SNA6 Remote Job Entry Facility (SNA6-RJE).....	3
SNA6 Interactive Terminal Facility (SNA6-ITF).....	3
SNA6 File Transfer Facility (SNA6-FTF).....	4
SNA6-FTF-6.....	4
SNA6-FTF-H.....	4
SNA6 Application Interface Facility (SNA6-AIF).....	5
SNA6 Remote Operator Facility (SNA6-ROF).....	6
PRODUCT ENHANCEMENTS.....	7
SNA6 Transport Facility (SNA6-TF).....	7
SNA6 Remote Job Entry Facility (SNA6-RJE).....	7
SNA6 Interactive Terminal Facility (SNA6-ITF).....	7
SNA6 File Transfer Facility-6 (SNA6-FTF-6).....	7
SNA6 File Transfer Facility-Host (SNA6-FTF-H).....	7
SNA6 Application Interface Facility (SNA6-AIF).....	8
SNA6 Remote Operator Facility-Host (SNA6-ROF-H).....	8
MINIMUM REQUIREMENTS/DEPENDENCIES.....	9
Hardware Requirements (DPS 6 or DPS 6 PLUS).....	9
Minimum Equipment Requirements (Host).....	9
Software Requirements.....	10
SNA6 Transport Facility (SNA6-TF).....	10
SNA6 Remote Job Entry Facility (SNA6-RJE).....	10
SNA6 Interactive Terminal Facility (SNA6-ITF).....	11
SNA6 File Transfer Facility-6 (SNA6-FTF-6).....	11
SNA6 File Transfer Facility-Host (SNA6-FTF-H).....	13
SNA6 Application Interface Facility (SNA6-AIF).....	14
SNA6 Remote Operator Facility-6 (SNA6-ROF-6).....	15
SNA6 Remote Operator Facility-Host (SNA6-ROF-H).....	16
Memory and Disk Requirements.....	16
SNA6 Transport Facility (SNA6-TF).....	16
SNA6 Remote Job Entry Facility (SNA6-RJE).....	17
SNA6 Interactive Terminal Facility (SNA6-ITF).....	17
SNA6 File Transfer Facility-6 (SNA6-FTF-6).....	17
SNA6 File Transfer Facility-Host (SNA6-FTF-H).....	19
SNA6 Application Interface Facility (SNA6-AIF).....	19
SNA6 Remote Operator Facility-6 (SNA6-ROF-6).....	20
SNA6 Remote Operator Facility-Host (SNA6-ROF-H).....	20

	Page
DOCUMENTATION.....	21
SNA6 Transport Facility (SNA6-TF) - SHC192.....	21
SNA6 Interactive Terminal Facility (SNA6-ITF) - SHC194..	21
SNA6 Remote Job Entry Facility (SNA6-RJE) - SHC196.....	21
SNA6 File Transfer Facility-6 (SNA6-FTF-6) - SHC226.....	21
SNA6 Application Interface Facility (SNA6-AIF) - SHC282..	21
SNA6 Remote Operator Facility-6 (SNA6-ROF-6) - SHC294...	21
IBM Manuals.....	22
PRODUCT EXCEPTIONS AND ITEMS FOR EMPHASIS.....	23
Current Exceptions.....	23
Items for Emphasis.....	23
SNA6 Transport Facility (SNA6-TF).....	23
SNA6 Remote Job Entry Facility (SNA6-RJE).....	24
SNA6 Interactive Terminal Facility (SNA6-ITF).....	24
SNA6 File Transfer Facility-6 (SNA6-FTF-6).....	25
SNA6 File Transfer Facility-Host (SNA6-FTF-H).....	26
SNA6 Application Interface Facility (SNA6-AIF).....	26
SNA6 Remote Operator Facility-6 (SNA6-ROF-6).....	27
SNA6 Remote Operator Facility-Host (SNA6-ROF-H).....	27
APPENDIX A ERRATA.....	A-1
SNA6 Host System Programmer's Guide (GB88).....	A-1
SNA6 Interactive Terminal Facility User's Guide (CR58)..	A-3

PRODUCT DESCRIPTION

This section provides a brief description of each of the SNA6 program products. These products are:

- o SNA6 Transport Facility (SNA6-TF)
- o SNA6 Remote Job Entry Facility (SNA6-RJE)
- o SNA6 Interactive Terminal Facility (SNA6-ITF)
- o SNA6 File Transfer Facility (SNA6-FTF*)
- o SNA6 Application Interface Facility (SNA6-AIF)
- o SNA6 Remote Operator Facility (SNA6-ROF)

The SNA6 program products also include the DSA/SNA Gateway Interface Facility (GWIF) providing internetworking capabilities between SNA and DSA networks. (DSA is Honeywell's Distributed Systems Architecture network system.) GWIF software is described in a separate Software Release Bulletin (DX99).

On DPS 6 and DPS 6 PLUS systems, SNA6 program products can operate concurrently with non-SNA6 software, including BSC, DSA6, PVE, and RNP products.

Marketing Identifiers

The following Marketing Identifiers (MI) apply:

<u>Program Product</u>	<u>MI</u> s
SNA6 (includes SNA6-TF/ITF/RJE/AIF/ FTF-6/ROF-6)	SHC225
Transport Facility (SNA6-TF)	SHC192
Interactive Terminal Facility (SNA6-ITF)	SHC194
Remote Job Entry Facility (SNA6-RJE)	SHC196
Application Interface Facility (SNA6-AIF)	SHC282
Remote Operator Facility-6 (SNA6-ROF-6)	SHC294
File Transfer Facility-6 (SNA6-FTF-6)	SHC226
SNA-Host (includes SNA6-ROF-H/SNA6-FTF-H)	SHC291
Remote Operator Facility-Host (SNA6-ROF-H)	SHC292
File Transfer Facility-Host (SNA6-FTF-H)	SNC190

- * In some publications SNA6-FTF is referred to as SFT; the components SNA6-FTF-6 and SNA6-FTF-H are referred to as SFT-6 and SFT-H, respectively. SNA6-FTF is also referred to generically as UFT (Unified File Transfer).

PRODUCT DESCRIPTION - Continued

SNA6 Transport Facility (SNA6-TF)

The SNA6 Transport Facility provides the base functionality necessary to support communications between an SNA6 system and an IBM host in a Systems Network Architecture (SNA) network. The SNA6 Transport Facility is prerequisite software for any SNA6 program product.

The SNA6 Transport Facility provides the following functions:

- o A Configurator that creates installation specific configuration tables from SNA host and SNA6 node information provided by the customer.
- o Transmission Services that provide support for:
 - IBM Physical Unit Type 2
 - Data Link Control Layer of SNA
 - Path Control Layer of SNA
 - Transmission Control Layer of SNA
 - SNA Data Flow Control
 - Host generated requests for maintenance statistics
 - Switched and dedicated communications lines
 - Multipoint configurations
 - Multiple Host Connections
 - Multiple SDLC links
 - NRZI support on MLC-16 only
 - Both half-duplex (HDX) and full-duplex (FDX) Transmission Modes
 - Transmission Subsystem (TS) Profiles 3, 4, 5, and 7
 - Function Management (FM) Profiles 0, 3, 4, 5, and 19
- o Administrative Control Services that support operator control (SOPR) of the SNA6 product set. This includes commands to:
 - Provide status of all active lines, nodes and logical units
 - Collect and display both error and traffic statistics
 - Enable/Disable DARTS trace for PU/LU
 - Systematically terminate all active sessions, program products, and the Transport Facility.

In addition, all error and status change messages are journalized in a central sequential log file.

PRODUCT DESCRIPTION - Continued

SNA6 Remote Job Entry Facility (SNA6-RJE)

The SNA6 Remote Job Entry Facility appears to the host as an IBM 3777 Model 3 Remote Job Entry Terminal. In an SNA environment, Remote Job Entry data streams are transmitted from a remote SNA6 system to the host for processing. Printed reports and card output are returned from the host to the SNA6 system.

SNA6-RJE in conjunction with the SNA6 Transport Facility, provides Logical Unit Type 1 communication with multiple hosts, and supports multiple SNA Physical and Logical Units. Each invocation of SNA6-RJE can support up to six concurrent Logical Unit sessions with attached devices. The number of SNA6-RJE logical nodes is limited only by SNA or by resources available on the SNA6 system.

SNA6-RJE emulates a controller of one or more devices and a console. Standard DPS 6 or DPS 6 PLUS devices provide standard 3777 workstation functions.

SNA6-RJE supports the following devices:

- o Card Readers
- o Card Punches (written to disk)
- o Serial or Line Printers
- o Disk Units

SNA6 Interactive Terminal Facility (SNA6-ITF)

The SNA6 Interactive Terminal Facility allows an SNA6 system to appear to the host as an IBM 3274 Control Unit Model 51C with relevant devices attached. Up to 32 devices (displays and/or printers) can be configured per invocation of the Interactive Terminal Facility (ITF). Honeywell WST/VIP asynchronous terminals and workstations with 1920-character displays appear as IBM 3278 Model 2 terminals, and Honeywell dot matrix and line printers appear as IBM 3287 printers to the host system. The number of ITF invocations is limited only by SNA or by resources available on the SNA6 system.

SNA6-ITF, in conjunction with the SNA6 Transport Facility, provides communication with multiple hosts and supports multiple SNA Physical and Logical Units per invocation. In addition to the features inherent in the IBM 3274, SNA6-ITF supports:

- o Multiple hosts
- o Logical Unit Type 1 (SCS printer support)
- o Logical Unit Type 2 (3270 terminal)
- o Logical Unit Type 3 (3270 data stream printer)
- o User Program Exits
- o Multiple keyboard types on VIP terminals

PRODUCT DESCRIPTION - Continued

SNA6 File Transfer Facility (SNA6-FTF)

SFT consists of two components: SNA6-FTF-H that executes on the IBM Host and SNA6-FTF-6 that is an AIF application executing on the SNA6 system. SNA6-FTF-6 requires AIF.

SNA6-FTF-6

SNA6-FTF-6 supports the following functions:

- o Transfer an IBM user file to a new or existing file on the SNA6 system
- o Transfer an SNA6-resident file to an IBM host
- o Rewrite an existing SNA6-resident file
- o Append to an existing SNA6-resident file
- o Delete an SNA6-resident file
- o Rename an SNA6-resident file
- o Execute an EC file on a SNA6 system.

SNA6-FTF-6 provides the functions necessary to support file management features and file transfers to and from an IBM host system.

The supported file structures are UFAS sequential, indexed, relative and non-UFAS fixed relative files (bound units). SNA6-FTF-6 responds to the host resident software (SNA6-FTF-H) which defines all operations to be carried out by the file transfer process.

SNA6-FTF-6 and the DSA6 Unified File Transfer Facility (DSA6-UFT) share several common modules, thus affording some reduction in memory requirements for concurrent operations.

SNA6-FTF-H

SNA6-FTF-H transfers files between a host system and an SNA6 system. In addition to the basic transfer process, this facility provides access to the following file management functions: rename file, delete file, and execute command file.

SNA6-FTF-H software includes the following:

- o A Transmission Control Program (TCP) to monitor and control the file transfer.
- o Support for a 3270 operator interface.

PRODUCT DESCRIPTION - Continued

- o A File Maintenance Utility (FMU) to perform the following auxiliary functions:
 - Define the SNA6 system resources that can use the file transfer function
 - Define the work to be done within each file transfer session and the date/time that each session should occur
 - Prepare data for transmission including data compression and/or translation between EBCDIC and ASCII
 - Generate reports of the results of transmission, as well as statistical information
 - Process data received from the SNA6 node into user specified files including data decompression and/or translation between ASCII and EBCDIC.

SNA6 Application Interface Facility (SNA6-AIF)

SNA6 Application Interface Facility (SNA6-AIF) allows COBOL or Assembly language programs, executing on the SNA6 system, to communicate with CICS or IMS (LU Type 0 only) transaction programs at the IBM host.

SNA6-AIF supports an application-to-application interface for LU Type 0 users. The session can use any feature of SNA that is defined by:

- o Session type zero Function Management (FM) profile 4 and Transmission Services (TS) profile 4
- o How CICS treats a full function logical unit
- o How IMS treats a secondary logical unit programmable.

SNA6-AIF also supports advanced program-to-program communications for LU Type 6.2 basic conversations with host transaction programs. SNA6-AIF supports a full set of the LU type 6.2 basic conversation verbs (and most of the option verbs) that support a hierarchical connection.

PRODUCT DESCRIPTION - Continued

SNA6 Remote Operator Facility (SNA6-ROF)

The SNA6 Remote Operator Facility (SNA6-ROF) allows a network operator, who is locally or remotely connected to an IBM host, to have a conversation with SNA6 nodes. The ROF consists of two components: SNA6-ROF-H, residing on the IBM host, and SNA6-ROF-6, residing on the SNA6 node. SNA6-ROF-6 is an AIF application.

SNA6-ROF supports two types of users: a remote user and a remote operator. The remote user has access to the following:

- o ECL commands
- o Line Editor
- o Patch utility
- o DARTS.

In addition, the remote operator can do the following:

- o Execute OCL commands
- o Monitor console activity at the SNA6 system
- o Perform SOPR commands
- o Configure SNA6 nodes remotely (batch configurator)
- o Execute CSCAN.

SNA6-ROF-H supports an IBM administrator who is responsible for starting and stopping LUs on SNA6-ROF-6 nodes and for monitoring and controlling activity on those nodes.

SNA6-ROF-H includes support of IBM printers.

This release of the Systems Network Architecture (SNA6) program products contains all maintenance fixes applicable to Release 1.2 through Update 05.

PRODUCT ENHANCEMENTS

This release provides the following enhancements over Release 1.2.

SNA6 Transport Facility (SNA6-TF)

- o Supports the HVS 6 PLUS Version 1.0 operating system.
- o The SOPR "STATUS" command has been enhanced to display LU Type 6.2 information.
- o The SNA6 Configurator has been enhanced to support the LU Type 6.2.

SNA6 Remote Job Entry Facility (SNA6-RJE)

- o Release 4.0 has been updated for maintenance purposes only and contains no functional enhancements over Release 1.2.

SNA6 Interactive Terminal Facility (SNA6-ITF)

- o The user can change LU classes at the time of login.
- o The Interactive Terminal Facility now allows the user to dynamically spawn a Class 2 application through an EC or application program.

SNA6 File Transfer Facility-6 (SNA6-FTF-6)

- o The SNA6 File Transfer Facility-6 has been revised to allow for execution in swappools, time-sliced, and multiprocessing environments. In addition, SNA6-FTF-6 now makes use of AIF LU Type 0 functionality. As a result, SNA6-FTF-6 can reside on the same physical unit as other AIF applications.

SNA6 File Transfer Facility-Host (SNA6-FTF-H)

- o Release 4.0 allows communications with both SNA6-FTF-6 Release 4.0 and SNA6-FTF-6 Release 1.2.

PRODUCT ENHANCEMENTS - Continued

SNA6 Application Interface Facility (SNA6-AIF)

- o The Application Interface Facility has been enhanced to support LU Type 6.2 basic conversation verbs in COBOL and Assembly language interfaces to host transaction programs.
- o The following LU Type 0 session calls have been added.

<u>Assembly Language</u>	<u>COBOL</u>
\$\$SACPT	CSACPT
\$\$SGTAT	CSGTAT
\$\$SPOLL	CSPOLL

SNA6 Remote Operator Facility-Host (SNA6-ROF-H)

The group logical unit (GLU) configuration file has been changed to a VSAM ESDS file from a sequential file. This eliminates the use of DCT (transient data queues). The installation instructions reflect this change.

MINIMUM REQUIREMENTS/DEPENDENCIES

Hardware Requirements (DPS 6 or DPS 6 PLUS)

The SNA6 Program Product Set Release 4.0 requires the following minimum equipment:

- o Minimum equipment necessary to support the MOD 400 Release 4.0 operating system or the HVS 6 PLUS Version 1.0 operating system. Refer to the GCOS 6 MOD 400 Executive Release 4.0 Software Release Bulletin (GJ01-01) or the HVS 6 PLUS Version 1.0 Software Release Bulletin (US51-00).
- o VIP73XX, VIP78XX, VIP720X, or HDS-2 asynchronous terminals
- o Multiline Communication Processor (MLCP), or the MLC-16 Communications Controller, or a network controller (DPS 6/22)
- o Asynchronous communications line adapter (for terminal connection)
- o HDLC line adapter (For SDLC connection)
- o CIP or CIPSIM for AIF COBOL programs, SNA Configurator, and SNA EDIT utility
- o Modem or direct connect cable
- o Increased system and user memory pool space (see "Memory Requirements")

Minimum Equipment Requirements (Host)

- o Minimum equipment necessary to support the following IBM operating systems or software environments:
 - MVS/SP Version 1 Release 3.8
 - SMP/4
 - AMS/VSAM Release 3.8
 - ACF/VTAM Version 1 Release 3.0
 - ACF/NCP/VS Release 2.1 and 3.0
 - NCCF 1.2/NPDA Release 2.1
 - CICS/OS/VS Version 1.6.1
 - IMS

MINIMUM REQUIREMENTS/DEPENDENCIES - Continued

Software Requirements

SNA6 TRANSPORT FACILITY (SNA6-TF)

The SNA6 Transport Facility Release 4.0 requires GCOS 6 MOD 400 Release 4.0 or HVS 6 PLUS Version 1.0 as an operating system base. The SNA6 Transport Facility is requisite software for any of the other SNA6 program products.

- o The Transport Facility Release 4.0 Software consists of the following bound units:
 - >>SYSLIB2>SNA
 - >>SYSLIB2>SNAMAP
 - >>SYSLIB2>SNEDIT
 - >>SID>ZNBINT
 - >>SID>ZQLSCI
 - >>SID>ZNLSHC
 - >>SID>ZNLSNC
 - >>SID>ZNLSMC
 - >>ZSNA>ZNBSLN
 - >>ZSNA>ZNSOPR
 - >>ZSNA>ZNCONF

The following files are used with the User Productivity Facility (UPF) and the SNA configurator directory:

- >>CCD>SOPR DTA
- >>CCD>CNF>START UP.EC (used by UPF only)

The SNA6 Transport Facility Release 4.0 provides the following DARTS files:

- >>SID>DARTS DBF
- >>SID>B L.TICS
- >>SID>LC.TICS
- >>SID>DFC.TICS

SNA6 REMOTE JOB ENTRY FACILITY (SNA6-RJE)

The SNA6 Remote Job Entry Facility Release 4.0 requires GCOS 6 MOD 400 Release 4.0 or HVS 6 PLUS Version 1.0 as an operating system base.

- o The SNA6 Transport Facility Release 4.0 is requisite software for the Remote Job Entry Facility Release 4.0.
- o SNA6-RJE consists of the following bound unit:
 - >>ZSNA>ZNRJE

MINIMUM REQUIREMENTS/DEPENDENCIES - Continued

In addition, the following DARTS file is included:

- >>SID>RJE.TICS

The following file is used with UPF and the SNA configurator directory:

- >>CCD>RJE>START UP.EC

- o Sample RJE configuration files are provided.

SNA6 INTERACTIVE TERMINAL FACILITY (SNA6-ITF)

The SNA6 Interactive Terminal Facility Release 4.0 requires GCOS 6 MOD 400 Release 4.0 or HVS 6 PLUS Version 1.0 as an operating system base.

- o The SNA6 Transport Facility Release 4.0 is requisite software for the Interactive Terminal Facility Release 4.0.
- o The Interactive Terminal Facility consists of the following bound units:
 - >>ZSNA>ZNITF
 - >>ZSNA>ZNICOM

In addition, the SNA6 Interactive Terminal Facility Release 4.0 provides the following DARTS file:

- >>SID>ITF.TICS

The following file is used with UPF and the SNA configurator directory:

- >>CCD>ITF>START UP.EC

- o A sample ITF configuration file is provided.

SNA6 FILE TRANSFER FACILITY-6 (SNA6-FTF-6)

The SNA6 File Transfer Facility-6 Release 4.0 requires GCOS 6 MOD 400 Release 4.0 or HVS 6 PLUS Version 1.0 as an operating system base.

- o The SNA6 Transport Facility Release 4.0 and the SNA6 Application Interface Facility Release 4.0 are requisite software for SNA6-FTF-6 Release 4.0.
- o SNA6-FTF-H Release 4.0 is requisite software for SNA6-FTF-6 Release 4.0.

MINIMUM REQUIREMENTS/DEPENDENCIES - Continued

- o The SNA6-FTF-6 Release 4.0 consists of the following bound units:

- >>NFT>QMGR>ICHGUFT
- >>NFT>QMGR>FTPR
- >>NFT>QMGR>FTPS
- >>NFT>QMGR>FTPSS
- >>NFT>QMGR>SU SNA
- >>NFT>QMGR>ZNFP
- >>NFT>QMGR>ZNFTA
- >>NFT>QMGR>ZNFTB
- >>NFT>QMGR>ZNFTSS
- >>SYSLIB2>SGMBX

In addition, the following DARTS files are included:

- >>NFT>DART>S AIF
- >>NFT>DART>SET UP.EC
- >>NFT>DART>TICS ALL
- >>NFT>DART>TICS DYL
- >>NFT>DART>TICS NFT
- >>NFT>DART>TICS QM
- >>NFT>DART>TICS COMM
- >>NFT>DART>TICS FP
- >>NFT>DART>TICS MB
- >>NFT>DART>TICS KW
- >>NFT>DART>BULLSEYE
- >>NFT>DART>DART INFO

The following files for various tools and utilities are also included:

- >>ML>UFT.EN
- >>NFT>CHANGEUFT.EC
- >>NFT>NULL.EC
- >>NFT>START NET.EC
- >>NFT>START UFT.EC
- >>NFT>START UP.EC
- >>NFT>STARTNET.EC
- >>NFT>STARTNETD.EC
- >>NFT>TOOLS>ABSAO.EC
- >>NFT>TOOLS>ABSAO.EC
- >>NFT>TOOLS>DUMPMEM.EC
- >>NFT>TOOLS>HELP-DSA
- >>NFT>TOOLS>HELP-SNA
- >>NFT>TOOLS>NPXD.EC
- >>NFT>TOOLS>START UP.EC
- >>NFT>TOOLS>USUR REG.EC
- >>NFT>TOOLS>DPEX.EC
- >>NFT>TOOLS>QM F.EC

MINIMUM REQUIREMENTS/DEPENDENCIES - Continued

- >>NFT>AO>ABSAO.EC
- >>NFT>QMGR>START
- >>NFT>QMGR>START UP.EC
- >>NFT>QMGR>STATE
- >>WDD>FILETRAN.EC

The following files are sample configuration files for SNA6-FTF-6:

- >>CCD>AIF>SFTNODE.S
- >>CCD>AIF>SFTNODE DTA
- >>CCD>AIF>SFTNODE

SNA6 FILE TRANSFER FACILITY-HOST (SNA6-FTF-H)

- o The SNA6-FTF-H software is provided by Honeywell on magnetic tape in a format suitable for installations using IBM's System Modification Program (SMP/4). The tape contains eight files:

FILE 1 - SMP System Modification Control Statements

FILE 2 - SFT Modules

FILE 3 - Source of Customization Tables

FILE 4 - Macros for Customization Tables

FILE 5 - SFT Messages

FILE 6 - Initialization File for VSAM clusters

FILE 7 - Partitioned Data Set (PDS) which contains instructions and JCL members needed to install the program product.

FILE 8 - PDS containing sample IDCAMS control statements for allocating VSAM files.

Use the JCL that is described in the SNA6 Host System Programmer's Guide (GB88) to dump file 7 of the tape to a PDS that is referenced throughout the install process and print down the instruction document. (Due to changes in the JCL, use manual GB88-03 or later.)

MINIMUM REQUIREMENTS/DEPENDENCIES - Continued

SNA6 APPLICATION INTERFACE FACILITY (SNA6-AIF)

The SNA6 Application Interface Facility Release 4.0 requires GCOS 6 MOD 400 Release 4.0 or HVS 6 PLUS Version 1.0 as an operating system base.

- o The SNA6 Transport Facility Release 4.0 is requisite software for the Application Interface Facility Release 4.0.
- o SNA6-AIF consists of the following three bound units:
 - >>ZSNA>ZNAIF
 - >>ZSNA>ZNAPC
 - >>ZSNA>ZNATZ

The following COBOL runtime routines are included in the directories >>LDD>ZCART for COBOLA and >>LDD>ZCMRT for COBOLM:

CSACEB.O	CSPONR.O
CSACPT.O	CSPTOR.O
CSALLO.O	CSRAW.O
CSATCH.O	CSRECV.O
CSCASR.O	CSRI.O
CSCNFD.O	CSRTOS.O
CSCONF.O	CSSDAT.O
CSDEAL.O	CSSEND.O
CSEBAC.O	CSSERR.O
CSFLSH.O	CSSI.O
CSGTAT.O	CSSRSP.O
CSINIT.O	CSTERM.O
CSLEAD.O*	CSTEST.O
CSPHRA.O	CSWAIT.O
CSPHRZ.O	CSWANY.O
CSPOLL.O	

*Included in >>LDD>ZCART only

The SNA6-AIF emergency dump file is:

- >>CCD>AIF DUMP

In addition, the following DARTS files are included:

- >>SID>AIF P.TICS (for PU module)
- >>SID>AIF L.TICS (for LU module)
- >>SID>AIF C.TICS (for COBOL module)

MINIMUM REQUIREMENTS/DEPENDENCIES - Continued

The following file is used with UPF and the SNA configurator directory:

- >>CCD>AIF>START UP.EC

The following files are sample configuration files for SNA6-FTF-6:

- >>CCD>AIF>SFTNODE.S
- >>CCD>AIF>SFTNODE DTA
- >>CCD>AIF>SFTNODE

The following directory contains sample Assembly and COBOL application programs for both LU Type 0 and LU Type 6.2:

- >>CCD>AIF>SAMPLE

These samples are used in conjunction with host CICS sample applications that are provided by Honeywell. These samples are packaged with AIF as two files (PDS) on magnetic tape in a format suitable for installations using IBM's IEBCOPY utility. These files are:

FILE 1: HISAIF4.INSTALL - JCL/Instructions
FILE 2: HISAIF4.MODULES - Load Modules

SNA6 REMOTE OPERATOR FACILITY-6 (SNA6-ROF-6)

The SNA6 Remote Operator Facility-6 Release 4.0 requires GCOS 6 MOD 400 Release 4.0 or HVS 6 PLUS Version 1.0 as an operating system base.

- o The SNA6 Transport Facility Release 4.0 and the SNA6 Application Interface Facility Release 4.0 are requisite software for ROF-6 Release 4.0.
- o SNA6-ROF-H Release 4.0 is requisite software for SNA6-ROF-6 Release 4.0.
- o SNA6-ROF-6 Release 4.0 consists of the following bound units:

- >>ZSNA>ZNGSUP
- >>ZSNA>ZNGROF

In addition, the following DARTS files are included:

- >>SID>SUP.TICS
- >>SID>ROF.TICS

MINIMUM REQUIREMENTS/DEPENDENCIES - Continued

SNA6-ROF-6 requires the directory:

- >>CCD>ROF

The following files are dynamically created and deleted by SNA6-ROF-6 (in the >>CCD>ROF directory):

- USER IN.XX
- USER OUT.XX

where XX is the group ID.

The following files are used with the Interactive Configurator for a sample ROF node:

- >>CCD>AIF>SMPLROF
- >>CCD>AIF>SMPLROF DTA

- o For remote system operators, the system files LOGA and LOGB are required.

SNA6 REMOTE OPERATOR FACILITY-HOST (SNA6-ROF-H)

- o SNA6-ROF-H requires the MVS or MVS/XA operating system at the host. For information regarding use with other operating systems, contact your Honeywell representative.
- o The SNA6-ROF-H software is provided by Honeywell on magnetic tape in a format suitable for installations using IBM's IEBCOPY utility. The tape contains three files:

FILE 1 - Installation Instructions
FILE 2 - JCL and Text files
FILE 3 - Load Modules

Use the JCL that is described in the SNA6 Host System Programmer's Guide (GB88-03 or later) to unload this tape and read the text and load modules.

Memory and Disk Requirements

SNA6 TRANSPORT FACILITY (SNA6-TF)

1. A minimum of 72,000 bytes of system memory from the \$\$ pool, plus:
 - o For each of the two frame sizes configured through SOPR, the buffer manager sets up thirty-two buffers (example, a 256-byte link sets up thirty-two 256-byte buffers). The maximum number of host link buffers which are built is sixty-four, i.e. thirty-two for each possible frame size (256 or 512). At least 5% of available system memory is always left.

MINIMUM REQUIREMENTS/DEPENDENCIES - Continued

- o The SDLC Communication Control Program requires 500 bytes of MLCP space, 594 bytes of MLC-16 space, or 620 bytes of network communications controller space.
 - o The SNA configurator requires 60,000 bytes of user memory.
2. Disk space - a minimum of 784 sectors

SNA6 REMOTE JOB ENTRY FACILITY (SNA6-RJE)

1. A minimum of 54,000 bytes of user memory.
2. Buffer Pools require a minimum of 3000 bytes of user memory and:
 - o Each Logical Unit requires 7000 bytes of memory
 - o Each output medium Pool entry requires 600 bytes of memory
 - o Each print medium requires 64 bytes of memory.
3. Disk space - a minimum of 200 sectors

SNA6 INTERACTIVE TERMINAL FACILITY (SNA6-ITF)

1. A minimum of 40,000 bytes of user memory, plus;
 - o Buffer Pools require a minimum of 6600 bytes of memory, and:
 - Each memory resident Screen Image Buffer (SIB) requires 2300 bytes of memory
 - Each Logical Unit (CRT, printer or virtual terminal) requires 4600 bytes of memory
 - Each application program requires 240 bytes of memory in addition to the application program size.
2. Disk space - a minimum of 336 sectors

SNA6 FILE TRANSFER FACILITY-6 (SNA6-FTF-6)

SNA6-FTF-6 is also known as DSA6 Unified File Transfer Facility (DSA6-UFT). DSA6-UFT supports either a DSA or SNA network environment or a combination of both networks. The memory requirements depend on the networks used, the options selected, and the load. The UFT bound unit runs in a user group; the remaining four bound units run in the \$X group. Both groups run in a user memory pool.

MINIMUM REQUIREMENTS/DEPENDENCIES - Continued

<u>Component</u>	<u>BU</u>	<u>Estimate</u>
o Operator interface		
- Basic UFT	SUFT*	13400
Associated workspace per user		3500
- Extended UFT	UFT*	30600
Associated workspace per user		4600
o Request control		
- Basic UFT	ZNFTB*	54400
Associated workspace		12800
plus per active user		2900
plus per active request		
or server		4000
- Extended UFT	ZNFTA*	70700
Associated workspace		12800
plus per active user		3900
plus per active request		
or server		4000
plus SFT node table where		
n = number of nodes		6 x n
- SFT Server only	ZNFTSS	37600
Associated workspace		9500
plus workspace per server request		4000
plus SFT node table where		
n = number of nodes		6 x n
o File System interface	ZNFP	8000
Associated workspace per		900
active file accessed		
plus record size		
o Requester protocol handler	FTPR*	16700
Associated workspace per active request		9400
o Server protocol handler	FTPS*	21200
Associated workspace per active server		5600
o SFT Server Protocol Handler	FTPSS	19800
Associated workspace per active		
server		5600
plus SNA RU. where n = RU size		2 x n
o CKM (requester +/- server)		n
where n = 28 x records/interval +		
14 x intervals/file		
o CHANGEUFT.EC	ICHGUFT	55800

* These bound units are used only in a DSA/SNA concurrent network environment.

MINIMUM REQUIREMENTS/DEPENDENCIES - Continued

FTPSS services SNA6 Release 4.0 requests from an IBM host, and it supports only the SNA6-FTF-6 server. FTPS and FTPR service DSA6 Release 4.0 nodes. ZNFTA supports Extended and Basic UFT. ZNFTB supports only Basic UFT. If you are using ZNFTB, you can use only SUFT. If Basic UFT is used, SNA6-FTF-6 cannot be used.

Of the three bound units, ZNFTSS, ZNFTB, and ZNFTA, only one will be present in memory at any given time. It remains in memory only while SFT-6 has requests for file transfers. When SNA6-FTF-6 has not had any requesters for a period of time, the bound unit that had been in memory goes away and \$X terminates. SNA6-FTF-6 does not use any memory until it is needed again.

The remaining bound units are required only in a DSA/SNA concurrent network environment. The UFT bound unit is sharable and is loaded only once for all users in that memory pool and is present only during the time a user is making requests. There is an associated workspace for each user that is actively making a request.

ZNFP is present only while UFT is accessing the file system on the local node. FTPR is loaded only once for all active requestors (requests originating at the local node). FTPS is loaded only once for all active servers (requests originating from another node). The workspace for both FTPR and FTPS is on a per active request basis.

SNA6-FTF-6 requires a minimum of 2720 sectors of disk space for an SNA-only network environment. An additional 464 sectors of disk space are required for a DSA/SNA concurrent environment.

SNA6 FILE TRANSFER FACILITY-HOST (SNA6-FTF-H)

1. A minimum 768,000 byte region for the File Maintenance Utility.
2. A minimum 768,000 byte region for the Transmission Control Program.
3. Disk space - 8 cylinders of 3380 space

SNA6 APPLICATION INTERFACE FACILITY (SNA6-AIF)

1. A minimum of one of the following:
 - o 32,600 bytes of user memory, which includes one Type 0 LU- plus
 - 1100 bytes of user memory per additional LU

MINIMUM REQUIREMENTS/DEPENDENCIES - Continued

- o 37,600 bytes of user memory, which includes one Type 6.2 LU. plus
 - 1100 bytes plus maximum RU size of user memory per additional LU
- o 43,600 bytes of user memory, which includes one Type 0 LU and one Type 6.2 LU, plus
 - 1100 bytes of user memory per additional Type 0 LU. plus
 - 1100 bytes plus maximum RU size of user memory per additional Type 6.2 LU

2. Disk space - a minimum of 192 sectors

SNA6 REMOTE OPERATOR FACILITY-6 (SNA6-ROF-6)

1. A minimum of 47480 bytes of user memory, plus the following:
 - o 474 bytes for each LU (minimum of 2 LUs)
 - o 56 bytes for each ROF terminal user
 - o 1548 bytes for the correlation table (1 table required for each 256 users)
 - o 568 bytes for the control table
 - o 3576 bytes for the task request block structures
 - o 256 bytes for each transmission buffer (maximum of 10 concurrent)
 - o A unique task group with the EC processor as the lead task.
2. Disk space - a minimum of 288 sectors.

SNA6 REMOTE OPERATOR FACILITY-HOST (SNA6-ROF-H)

1. Memory--A minimum 25-500-byte region
2. Disk space - 3 cylinders of 3380 space

DOCUMENTATION

The software reference manuals listed below document SNA6 Release 4.0 products:

SNA6 Transport Facility (SNA6-TF) - SHC192

CR56-03	IBM DDP Overview
CR57-04	SNA6 Network Configuration
GB88-03	SNA6 Host System Programmer's Guide
GX10-01	SNA6 Operator's Guide

SNA6 Interactive Terminal Facility (SNA6-ITF) - SHC194

CR58-02	SNA6 Interactive Terminal Facility User's Guide
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SNA6 Remote Job Entry Facility (SNA6-RJE) - SHC196

CR59-02	SNA6 Remote Job Entry Facility User's Guide
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SNA6 File Transfer Facility-6 (SNA6-FTF-6) - SHC226

CR60-02	SNA6 File Transfer Facility User's Guide
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SNA6 Application Interface Facility (SNA6-AIF) - SHC282

GR11-02	SNA6 Application Programmer's Guide
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SNA6 Remote Operator Facility-6 (SNA6-ROF-6) - SHC294

GX11-01	SNA6 Host System Operator's Guide
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Note: If you order SNA6 (SHC225) you will receive all of these manuals.

DOCUMENTATION - Continued

IBM Manuals

Refer to these IBM documents for host programming, operating, and configuration information:

<u>Order No.</u>	<u>Manual Title</u>
GA27-3136	SNA Reference Summary
SC23-0046	JES2 Initialization and Tuning
SC27-0164	ACF/VTAM Messages and Codes
SC27-0449	ACF/VTAM Programming
SC27-0611	ACF/VTAM Planning and Installation Reference
SC30-3167	ACF/NCP Installation and Resource Definition
SC30-3168	ACF/NCP System Support Programs: Utilities
SC30-3169	ACF/NCP and Emulation Program: Messages and Codes
SC33-0149	CICS Resource Definition Guide

PRODUCT EXCEPTIONS AND ITEMS FOR EMPHASIS

Exceptions are items of functionality that are not in conformance to the product's definition, but are expected to be corrected. These exceptions are also documented in the product's problem tracking system. Items for emphasis are those key areas where product usage is explained.

Current Exceptions

KPF Number: G06380
Subject Name: SFT
Description: Using the CHECKPOINT option for "sending" files is restricted. However, a patch is available under this KPF# that allows CHECKPOINT to be used for "receiving" files.

KPF Number: G06381
Subject Name: AIF
Description: AIF is restricted to a maximum of 50 LU sessions (total of LU 0 and/or LU 6.2).

KPF Number: G06382
Subject Name: SFT
Description: In low memory situations, misleading or unexpected error messages can occur while SFT-6 is recovering. If low memory conditions occur frequently, reconfigure with additional memory in the AB pool.

Items for Emphasis

SNA6 TRANSPORT FACILITY (SNA6-TF)

1. Within the directory >>CCD, files and/or node names cannot contain the suffix ' UPD', ' UPX', or ' DTA'. The use of these suffixes conflicts with internal SNA6 naming schemes.
2. The user should create groups with the appropriate person.project.mode, as follows:

AIF = SNA.AIF.SNA
ITF = SNA.ITF.SNA
RJE = SNA.RJE.SNA
ROF = SNA.SUP.SNA
SFT = UFT.DAEMON

If you execute from another group, you should set the appropriate ACLs on PRIV GROUP and PRIV2.

PRODUCT EXCEPTIONS AND ITEMS FOR EMPHASIS - Continued

3. Listenur terminal support

The SNA6 System Administrator has the following 3 options for supporting execution of SNA6 program products via Listenur terminals (typically the configurator and RJE):

- o Register each user with the user id of the installed product (e.g., SNA.RJE.SNA). The user LOGIN ID and PASSWORD are not altered.
 - o Set an ACL on each of the system-defined files (PRIV GROUP, PRIV2, and PRIV1) for each user id. This procedure does not require a user to be re-registered.
 - o Login as the SNA6 system administrator and execute the desired SNA6 program product.
4. Product configuration files created for the SNA6 Release 1.2 products must be recreated for use in the Release 4.0 environment.
5. The Transport Facility does not SHUTDOWN until all program products and AIF applications have terminated.

SNA6 REMOTE JOB ENTRY FACILITY (SNA6-RJE)

1. SNA6-RJE requires 4 LRNs and up to 10 LFNs per LU.
2. The following are not supported:
 - o T Type data and exchange data
 - o RSHD command
 - o Magnetic Tape
 - o Preconfigured logon, preconfigured INPT files, and preconfigured medium/subaddress.
 - o The SOPR commands ABORT, STOP, and SHUTDOWN are not honored until the user enters the next RJE command at the RJE workstation terminal.

SNA6 INTERACTIVE TERMINAL FACILITY (SNA6-ITF)

1. Each time the remote printer is being restarted, the ACQUIRE (printer) command must be executed by the host operator.

PRODUCT EXCEPTIONS AND ITEMS FOR EMPHASIS - Continued

2. ITF does not prevent host-initiated unsolicited screen writes.

Depending on the host application, data being entered may on rare occasions be overwritten by the host prior to data entry completion. User action is dependent upon the particular host application being used.

3. ITF requires the configuration of 10 IRBs per LU.
4. If ITF encounters a serious protocol violation and cannot resolve it, the LU session is suspended and the terminal is returned to Listenur. If a user tries to log in to that LU. ITF returns a 5B54 message and rejects the login. However, the terminal user can log in to a different LU. The LU suspension is done for debugging purposes. The user should take a group memory dump. (Submit the dump to your Honeywell representative.) If the user needs to recover the LU, do a \$A abort of the node. If the group that the node ran in does not go back to ready (RDN) state, do a \$S abort of that task group. Then spawn the group and reinvoke the ITF.
5. To fully take advantage of ITF's dynamic LU configuration, a dynamically spawned class 2 virtual application must issue a return code of X'07' to ITF signifying its final return. This instructs ITF to delete the task, restore the LU to its original class, and release the LU for use. This return code should be sent after the application has logged off the host application, terminated the session, and received the unbind.
6. ITF does not support the Response Time Monitor.

SNA6 FILE TRANSFER FACILITY-6 (SNA6-FTF-6)

1. Save file transfers (i.e., files that use control intervals) are not supported.
2. In order to read and write files to disk, you must provide access to the following default person.project on any file that is to be transferred:

UFT.user.*

3. A sample batch AIF configuration file for SFT-6 is provided in >>CCD>AIF>SFTNODE.S. The default start file (>>NFT>QMGR>START) uses this sample configuration for the initial local node name.

PRODUCT EXCEPTIONS AND ITEMS FOR EMPHASIS - Continued

4. If SFT-6 is to EXECUTE an Enter Batch Request command for an EC file, the CLM entry for \$B requires a secondary name. For example, if the original CLM entry is

```
MEMPOOL B,,10000
```

change it to

```
MEMPOOL I,BT,10000  
MEMPOOL B,,BT
```

SNA6 FILE TRANSFER FACILITY-HOST (SNA6-FTF-H)

1. To migrate to SNA6 Release 4.0, first migrate the SNA6-FTF-H package.
2. SMP/E compatibility is not present on the host load tape.
3. SNA6-FTF-H does not support host files with undefined record lengths.
4. When staging or dynamically allocating new files for the SFT-6 system from the host, always define the record length (RECL) parameter in the STAGE or ADDACT statement.
5. When coding the SFTTCP EXEC statement, the PARM parameter should specify blocking for outbound transmissions (BLKOUT=ENABLE). If unblocked mode is desired, especially when transmitting small record sizes, set the pacing for NCP to LU sessions at a low value.

SNA6 APPLICATION INTERFACE FACILITY (SNA6-AIF)

1. AIF user-written applications do not require a privileged group.
2. With LU type 0 assembler applications, programmers have options in managing 'waits' for multiple requests.
 - o If the \$WAITL macro (wait on list) is used, then AIF requests must be subtasked.
 - o If you wish to use the Wait Any function, the application program should use the AIF session call \$\$SWANY and must never execute the \$WAITA macro.

In the latter case, the P-bit in non-AIF request blocks must be set by the caller before executing a \$\$SWANY. If a task has more than one active AIF session, that task must never execute a \$WAITA call.

PRODUCT EXCEPTIONS AND ITEMS FOR EMPHASIS - Continued

3. The following sequence occurs in the event that AIF detects an unrecoverable user program error:
 - a. The application program is informed that the session has been aborted (RCPGER or VRPGER).
 - b. An emergency dump (DPEDIT of the AIF node's task group) is put into the file >>CCD>AIF DUMP and a system operator message is displayed and journaled.
 - c. The host is directed to terminate the session. The affected LU becomes available for assignment to other users.

AIF DUMP was created by the install EC with a maximum size of 4500 CIs. The number of DPEDITs that fit into this file is determined by the SNA6 configuration being dumped (AIF limits itself to ten (10) dumps); that is, the more LUs being configured, the larger the dump.

The install EC command used to create the file is:

```
CR >>CCD>AIF DUMP -GRSZ 1000 -MXSZ 4500
```

You may wish to alter the maximum size of your file to accommodate your installation's file space needs. The MODIFY FILE command can be used to change the maximum file size. This file should be printed and forwarded to your local Honeywell representative for analysis, then deleted in order to conserve file space. If you delete the file and do not recreate it, AIF automatically creates the file if it is needed for an emergency dump, but the new file is created without a maximum size.

The START UP.EC should include directives to test for the existence of >>CCD>AIF DUMP and print and delete its contents.

4. For LU Type 6.2 to accept an unsolicited BIND, this LU must be configured as RESERVED.

SNA6 REMOTE OPERATOR FACILITY-6 (SNA6-ROF-6)

1. If the system files LOGA and LOGB are not open when a system operator is invoked, ROF assumes that the files have been created in the directory >>SID and attempts to open them.
2. All users must be registered on the DPS 6 or DPS 6 PLUS system.

SNA6 REMOTE OPERATOR FACILITY-HOST (SNA6-ROF-H)

1. SMP-E compatibility is not present on the host load tape.

APPENDIX A ERRATA

SNA6 Host System Programmer's Guide (GB88)

1. Page 6-3.
Change BLKOUT=NO to BLKOUT=DISABLE in Figure 6-1.
2. Page 6-6.
Change BLKOUT=(YES,NO) to BLKOUT=(ENABLE,DISABLE).
The default is DISABLE.
3. Page B-3 and Page B-4.
Replace the subsection entitled "Files Common to
GWIF-HOST and ROF-H" with the following:

FILES COMMON TO GWIF-HOST AND ROF-H

Both GWIF-HOST and ROF-H require the IBM host system administrator to create a user validation (ID/password) file and a routing information (configuration) file. The user validation file is a collection of records that provide the first level of security for the DSA network or SNA6 node in the SNA network. The routing information file is a collection of records that define communication paths from the host to the target system and application.

File Characteristics - User Validation File

User validation files are VSAM KSDS (key sequence data set) files and have the following characteristics:

- o Records are in a fixed position and fixed field format.
- o All fields must be filled from the first character position. Unused character positions must be blank-filled.
- o The first field of each record is used as the key to that record. Records must be entered in EBCDIC collating sequence by this (first field) key.

File Characteristics - Routing Information File

Routing information files are VSAM ESDS (entry sequence data set) files and have the following characteristics:

- o Each record statement must begin with an object identifier CO, CG, CR, RC, CLU, or GLU in column one of the statement. (Record objects are described later in this section.)
- o Each keyword must begin with a hyphen (-).
- o In each record, the object identifier, object name, keywords, and keyvalues must be separated by one or more blanks. (In GLU records, if multiple LU names are used to define keyword -INLU or keyword -OUTLU, the LU names must be separated by a comma.)
- o The maximum logical record size is 80 characters. However, statements can be continued, by placing an X (or any non-blank character) in column 72 and continuing the statement in column 16 of the next line. Records can be continued between keywords only.
- o An asterisk (*) in column one of a record denotes a comment line.

4. Page C-1.

Delete Destination Control Table (DCT) from the list of CICS tables requiring entries.

5. Page C-1 and Page C-2.

Delete the subsection entitled "Destination Control Table Entries."

6. Page C-2.

Delete Figure C-1.

7. Page C-2.

Replace the subsection entitled "File Control Table Entries" with the following:

FILE CONTROL TABLE ENTRIES

GWIF and ROF share two VSAM KSDS files and one VSAM ESDS file. The KSDS files are: a message file and a user validation (ID/password) file. The ESDS file is a routing information (configuration) file. The message file is supplied with the installation material. The user validation file and the routing information file must be defined by the host system administrator. (Refer to Appendix B.) Sample validation and configuration files are supplied with the installation material.

A separate FCT entry is required for each of these files. Figure C-2 shows sample DFHFCT macros used to generate the entries.

8. Page C-3.
Add the following macro to Figure C-2, "Sample FCT Definition".

```

*
*
*   DEFINITION MACRO FOR ROUTING CONFIG. FILE
*
HISCONFG DFHFCT TYPE=DATASET,           ENTRY DESCRIBES A FILE           X
      DATASET=HISCONFG,                 SYMBOLIC, ACB, DD NAME           X
      ACCMETH=(VSAM,ESDS),              VSAM ENTRY SEQUENCE FILE       X
      SERVREQ=(BROWSE),                 BROWSE ONLY                     X
      FILSTAT=(ENABLED,OPENED),        ENABLE AND OPEN AT CICS START  X
      RECFORM=VARIABLE,                VARIABLE LENGTH RECORDS        X
      RSL=PUBLIC,                      NO SECURITY CHECK ON RESOURCE  X
      BUFNI=2,                          # BUFFERS FOR THIS FILE       X
      STRNO=1                           # STRINGS(CONCURRENT REQUESTS)

```

SNA6 Interactive Terminal Facility User's Guide (CR58)

1. Page 3-14.
Delete the subsection entitled "Using the Last Transaction Time Indicator."
2. Page 3-39.
Delete the LTTI function from Table 3-3.
3. Page 3-40.
Delete the LTTI function from Table 3-4.
4. Page 3-41.
Delete the LTTI function from Table 3-5.
5. Page 3-43.
Delete the LTTI function from Table 3-6.

