SPERRY UNIVAC

RELEASE DOCUMENTATION

document

System Release Description (SRD)

system OS/3 System 80

product level 9.0

issue number UP-10830.2

software category 1

date March, 1985

Product: SPERRY Operating System/3 (OS/3)

distribution

lists:

This document contains the latest information available at the time of preparation. Therefore, it may contain descriptions of functions not implemented at manual distribution time. To ensure that you have the latest information regarding levels of implementation and functional availability, please consult the appropriate release documentation or contact your local Sperry representative.

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1. General Information

1.1. RELEASE DESCRIPTION

Operating System/3 (OS/3) Release 9.0 provides support for new hardware devices on System 80 model 8 and includes performance and functional enhancements for all System 80 models.

In this SRD, there are guidelines that are still relevant to OS/3 users but do not pertain to Release 9.0. These are carryovers from previous releases and are identified in the left-hand margin as follows:

C Means a carryover from previous releases.

NOTE: System 80 model 8 is under Plateau Control. To install OS/3 release 9.0 on model 8, you must be at plateau level 3 or beyond. System 80 models 3 through 6 are not affected.

1.1.1. Release Identification

Library System:	SPERRY Operating System/3 (OS/3)
Release Number:	9.0
Acronym:	OS/3 9.0
SUR Library No.:	9.0
Release Media:	The release system may be ordered for delivery on OS/3 tapes, disk packs, or diskettes as follows:

- System 80 models 3 through 6

  8420/8422 diskettes, 8419 disk packs, or dump/restore tapes for disk packs

- System 80 model 8

  8420/8422 diskettes; 8418II, 8419, 8430, or 8433 disk packs; or dump/restore tapes for disk packs, except for 8419

1.1.2. Release Content

1.1.2.1. Release 9.0 Enhancements

- All Models

  - File Placement Analyzer

    New commands have been added (PRINT, MAP, and FIX) that allow you to suppress the printing of some observed reports, improve the handling of work/run files, and minimize seek time.

- Resource Management

  This enhancement allows you to balance batch job turnaround time and workstation response time by changing the limits for memory usage and job initiation that were set at SYSGEN.

- DMS Journaling

  The journaling capability has been expanded to allow journaling during concurrent operation of two or more data bases that have different page sizes.

- Mini'qmp Option for System Dump

  This kption provides a printed dump of the memory region that is associated with a specific HPR or system error.

- ICAM Trace Facility

  The following enhancements have been added:

  Trace entries can now be written to disk

  Automatic spooling from disk

  Ability to trace individual lines

  Overwriting the trace area in main storage can be inhibited

  Ability to pause and resume trace

  Snapshot printouts of trace buffers

- Online Diagnostics

  Error Log Edit (ONUERL)

  The ONUERL program has been enhanced as follows:

  Four additional RUN options are provided

  Execution with less operator intervention

  Enhanced disk device error displays that include CYL/HEAD/RCD information

  Enhanced tape device error displays that include expected and received tape block numbers when enabled

  Enhanced VSN error table information for disk and diskette media

  New display for exigent machine check errors (model 8)

  Recovery of altered values when YESUM is reinitialized

  Automatic rerun of program after summary spooling following termination

- Editor

  An enhancement has been added to the editor (EDT) that provides the automatic saving of EDT work space on a permanent (recoverable) file.

- RPG II

  Multikey MIRAM files may be accessed with RPG II action programs using any key.

- Spooling

  The HOLD SPL and DELETE SPL commands have been enhanced to permit 60 characters to be entered. The previous maximum was 28.

- DDP Enter Stream Processing

  This enhancement allows you to continue or cancel the processing of DDP commands in an enter stream.

- File Transfer Utility (PCTRAN)

  The file tranfer utility (PCTRAN) permits transfer of data files, library modules, and source program files between disk or diskette on the SPERRY Personal Computer (PC) and disk, diskette, or tape on the SPERRY System 80.

- RPG II - MIRAM Delete Capability (CDM)

  A record may now be deleted from a MIRAM index sequential file.

o Models 4 and 6 only

- ICAM-Nordic PDN/X.21 support for computer to UTS 20X terminal

  ICAM now supports the Nordic public data network (PDN) computer to UTS 20X terminal service mode.

o Model 8 only

- Online Diagnostics

  T5055 tape drive support (ON5055)

  This new diagnostic program (ON5055) supports the testing of UNISERVO 22, 24, 26, and 28 tape drives that are attached to a T5055 tape control unit on the model 8.

  Integrated Disk Support (ONDCU)

  The ONDCU program now includes test support for 8417 and 8419 disks on the model 8.

Remote Printer Support (ONRPNT)

The ONRPNT program provides support for the testing of 0789 and 0798 remote printer subsystems.

- Hardware Support

  The following additional hardware is supported for the model 8:

  8417/8419 disks (8417 fixed head attachment not supported)
  5055 tape control unit for UNISERVO 22, 24, 26 and 28 tape drives
  0789/0798 remote printer

- System Installation - R (Retry) Parameter for SETREL Run Statement

  A new keyword parameter, R (Retry) is supported for the SETREL Run statement.

1.1.2.2. Software Category Changes

OS/3 is Category I software; products within OS/3 can be Category I, II, or III.

Definitions of the three software support categories are:

o Category I

  Category I software receives the full technical and operational support of the developing organization involved, unless otherwise specified in the product software description. Support includes responses to requests for change (RFC), technical question (TQ) and user group recommendations, corrections to reported problems, and issuance of periodic stability updates. Enhancements that may be made to the software program will be issued as revisions.

o Category II

  Category II software receives limited support by Sperry. Support is limited to providing corrections to reported critical problems. The issuance of periodic stability updates is at the option of the developing organization.

o Category III

  Category III software receives no Sperry support. Programs assigned to this category generally come from three sources:

  1. User-developed software

  2. Software development tools

  3. Destandardized Category I and Category II software

  Such software may be obtained in the general form and degree of completeness, as available. Software in this category is not necessarily properly or completely documented.

1.1.2.2.1. Release 9.0 Category Changes

There are no software category changes in release 9.0.

1.1.2.3. Lifted Restrictions in Release 9.0

The following restrictions (temporary limitations in functions of the software product) are lifted in release 9.0:

- Screen Format Services

  When the screen format services symbiont SL$$VT is waiting for memory, the SE20 message asks whether SL$$VT should continue waiting for memory. You must respond with Y (yes); an N (no) response will cause unpredictable results in all jobs using screen format services.

- SYSGEN - Supervisor, Spooling, and I/O Support

  During IOGEN, the ADDR= parameter for 3561 workstations should only specify the addresses for one controller.

  For example,

  ```
  WORKSTATION  TYPE=3561  ADDR=41-48,51
  ```

  should be:

  ```
  WORKSTATION  TYPE 3561  ADDR=41-48
  WORKSTATION  TYPE 3561  ADDR=51
  ```

- File Placement Analyzer (FIPLAN)

  For observed file access distribution reports, access counts to the resident volume are included for reference only and are excluded from all other reports.

- Editor (EDT)

  When the @FSTAT command is specified with the @SEQ command on the same line, DM14, DM36, or DM65 errors may occur. To avoid the error, specify @FSTAT and @SEQ as separate commands.

- ICAM - UTS Local/Remote Workstation Enhancements

  When you are defining a UTS single station, the ICAM dialog processor may omit a comma between the screen size and the primary feature or, if used, the secondary feature. For example, (U40, 1920, PRIMARY) may be generated instead of (U40, 1920,,PRIMARY). SG$PARAM will flag the parameter and default it to (U40, 1920,,PRIMARY). If a secondary terminal is being defined, the source file created by the dialogs must be updated accordingly.

- Dump/Restore

  The loading of the 8470 IDCU microcode during stand-alone restore is only necessary if it was not already loaded by stand-alone prep. When the microcode must be downline loaded by stand-alone restore, a second manual diskette drive is used for mounting the microcode diskette. To continue processing, specify the device address to the stand-alone restore program and mount the diskette as defined in the System Installation User Guide, UP-8839 (current version).

  When a second diskette drive is not available and the microcode must be loaded, take the IPL diskette out of the drive and mount the 8470 IDCU microcode diskette. Answer the downline load microcode request with a Y and then supply the device address. The microcode is loaded and this recoverable message is displayed:

  IPL14 DEVICE=_____ STATUS=_____ SENSE_____ RUxx

  Remount the IPL diskette and answer the error with an R. Normal processing is now continued.

- System Activity Monitor

  Cochanneling statistics by channel or device are not supported. All accesses to a device are reported by the primary device-id or by the primary channel.

- Assembler

  The use of the negative duplication factor in a define constant (DC) causes the assembler to incorrectly generate a very large number of constants. The assembler may appear to be in an infinite loop.

- Workstation Manager

  The operator will not have to manually change the control page for the transmit and transfer fields prior to signing on to interactive services.

1.2. RELEASE-TO-RELEASE COMPATIBILITY

The following is a general statement regarding compatibility between major releases. It applies unless superseded by specific restrictions documented in the SRD.

Upward compatibility is supported between consecutive major releases (e.g., 8.0 with 9.0). This support extends to data files, library files, job control streams, and programs compiled on the earlier release. For System 80 model 8, object code compatibility between release 6.1.2 and release 9.0 is supported for Series 90 migration to the model 8. Product releases that occur between major releases will be upward compatible with the next major release.

Backward compatibility is restricted to those functions supported on both releases.

Backward compatibility between consecutive releases is generally provided for data files and library files where functions being used are provided on both releases.

The most current release supports interfaces of programs from the previous system, but the previous system does not necessarily support interfaces of programs from a more current OS/3 Operating System. Programs compiled on the most current release of the operating system may not be executable on a previous release.

1.3. ASSEMBLER LIMITED CONDITIONS OF USE

For separately priced contracts, this condition applies regarding use of the assembler:

The assembler is required for system software generation. For this restricted use, the assembler is provided at no charge as part of SCS. Should the customer require use of the assembler for a purpose beyond this restriction, he is obligated to execute an agreement for the program product assembler (TN 6233-00) at the prevailing price.

1.4. REQUEST PROCEDURE

The entire release, including source code, source information, and object code, is SPERRY proprietary software. The proprietary agreement must be signed before object media are sent to the requesting site.

Separately priced products are proprietary program products of the information systems entity of Sperry Corporation. Program products are licensed to you for a separate charge, including both applications and systems support software.

1.5. ORDERING PROCEDURE

Software described in release documents can be obtained by completing and forwarding the request form that accompanies each system release announcement. Mail requests to either the local Sperry branch office or directly to Software Order Services:

Sperry Corporation
Software Order Services
Township Line & Union Meeting Roads
P.O. Box 500
Blue Bell, PA 19424-0013

Note that the request form requires users to send the proper media (disks, diskettes, or magnetic tape) along with the order form. If desired, users may elect to receive the release on diskettes or magnetic tape provided by Sperry; in this case, a standard fee will be charged for the media.

If the request is made directly to Software Order Services, forward a copy of the request form to the local Sperry branch office.

Orders for separately priced products are made via special order with proper approval. When ordering these products, make certain requests contain the appropriate type number for the items. Direct questions about ordering these products to the local branch office.

NOTE: This ordering procedure applies only to U.S. customers. Users outside the United States should check with their local Sperry subsidiary office for distribution procedures.

1.6. ERROR REPORTING PROCEDURE

Users discovering any errors or deficiencies in the software being released are requested to communicate this information to the local Sperry branch office, using a Software User Report (SUR), Form UD1-745, to describe the problem encountered. SURs must be accompanied by appropriate documentation, such as main storage printouts, system console printouts, program listings, and an SMC listing. For language processors, a copy of the source program and data must be supplied on cards or tape together with complete JCL. SURs should also include the release number, along with any additional information that might aid error analysis. The local Sperry personnel, when they have ascertained that the errors in question are adequately documented, should forward these SURs to:

Sperry Corporation
Development Support
Township Line & Union Meeting Roads
P.O. Box 500
Blue Bell, Pa. USA 19424-0013
Attn: SUR Coordinator, C1-SE20

Users discovering any new techniques or considerations in using system software are encouraged to forward this information directly to Sperry at the above address. The information will then be sent to all users via a technical bulletin.

1.7. RELEASE DOCUMENTATION

1.7.1. System Release Description

A copy of this 9.0 SRD (UP-10830.2) is provided with each software order. Order additional copies through your Sperry representative.

1.7.2. Additional Release-Related Documentation

Certain release-related documents (SRDs, SRAs, etc) have become stock items and can be ordered through your Sperry representative.

Documents for release 9 have been assigned the base number UP-10830. Each OS/3 release-related document for release 9 has a UP number incorporating this base number. For example:

Release 9.0 SRA UP-10830.1
Release 9.0 SRD UP-10830.2

Additional release-related documents will be assigned UP numbers, in sequence, according to the date they are issued.

1.8. RELATED PUBLICATIONS

The following Sperry publications are new or current for this release. Either the updating package alone, or the complete manual with the updating package, may be requisitioned by your local Sperry representative.

For example: To receive the updating package alone, order UP-8022 R4-B. To receive the complete manual, order UP-8022 R4.

1.8.1. Software User Manuals

System/Publication	Description/Type of Manual
UP-7503 R1	Fundamentals of COBOL Series Programmer Reference (contents section)
UP-7503.1 R1	Fundamentals of COBOL - Language Programmer Reference
UP-7503.2 R1-A	Fundamentals of COBOL - Table Handling Programmer Reference
UP-7503.3 R1-A	Fundamentals of COBOL - Sorting Programmer Reference
UP-7503.4	Fundamentals of COBOL - Mass Storage Programmer Reference
UP-7503.6	Fundamentals of COBOL - Glossary Programmer Reference
UP-7536 R1-E	Fundamentals of FORTRAN Programmer Reference
UP-8022 R5	Data Base Management System (DMS) Data Description Language User Guide/Programmer Reference
UP-8030 R2	Introduction to the Assembler
UP-8036 R5-A	Data Base Management System (DMS) Data Manipulation Language User Guide/Programmer Reference
UP-8044 R3-C	Report Program Generator II (RPG II) Programmer Reference
UP-8055 R6	Extended COBOL Summary
UP-8056 R7	Basic COBOL Summary
UP-8057 R2-D	Basic COBOL Programmer Reference
UP-8059 R3-B	Extended COBOL Programmer Reference
UP-8067 R6-D	Report Program Generator II (RPG II) User Guide
UP-8068 R4-D	Data Management User Guide

System/Publication	Description/Type of Manual
UP-8069 R9-B	Data Utilities User Guide/Programmer Reference
UP-8073 R2	Introduction to Sort/Merge
UP-8076 R11-A	System Messages Programmer/Operator Reference
UP-8227 R1-F	Assembler Programmer Reference
UP-8253 R4	Report Program Generator II (RPG II) Reference Card
UP-8262 R1-C	Extended FORTRAN Programmer Reference
UP-8272 R4-A	Data Base Management System (DMS) System Support Functions User Guide/Programmer Reference
UP-8364 R7-C	Information Management System (IMS) System Support Functions User Guide/Programmer Reference
UP-8379 R4-A	System/3 to OS/3 Transition User Guide/Programmer Reference
UP-8413	Universal Terminal System 400 Text Editor Programmer Reference
UP-8424	Interfacing a Remote Device Handler Programmer Reference
UP-8481 R1	Universal Terminal System 400 COBOL Programmer Reference
UP-8515 R1	OS/4 to OS/3 Communications Conversion Guide User Guide/ Programmer Reference
UP-8516 R1	OS/4 to OS/3 Assembly Program Translator
UP-8549 R4-A	Integrated Communications Access Method (ICAM) Direct Data Interface (DDI) User Guide
UP-8550 R5-B	Integrated Communications Access Method (ICAM) Standard MCP Interface (STDMCP) User Guide
UP-8553 R1	OS/4 to OS/3 Conversion Guide
UP-8589 R1	OS/4 to OS/3 Job Control Conversion Utility
UP-8596 R1	Introduction to OS/4 to OS/3 Conversion
UP-8611-C	UTS 400/UTS 4000-OS/3 Interface User Guide/Programmer Reference
UP-8612 R3-A	1974 American National Standard COBOL Summary
UP-8613 R2-C	1974 American National Standard COBOL Programmer Reference

System/Publication	Description/Type of Manual
UP-8748 R1-B	IMS/DMS Interface User Guide/Programmer Reference
UP-8800 R2	System 80 System Description
UP-8801	Introduction to BASIC
UP-8804	Introduction to 1974 American National Standard COBOL
UP-8805-B	Fundamentals of 1974 American National Standard COBOL
UP-8806-B	Dialog Specification Language User Guide/Programmer Reference
UP-8808	Introduction to the Data Base Management System (DMS)
UP-8811 R2	Distributed Data Processing Concepts and Facilities
UP-8813	Introduction to FORTRAN IV
UP-8814-D	FORTRAN IV Programmer Reference
UP-8815-A	FORTRAN IV Summary
UP-8816	Introduction to the Information Management System (IMS)
UP-8818	Introduction to Report Program Generator II (RPG II)
UP-8819 R2-A	Independent Sort/Merge User Guide/Programmer Reference
UP-8821	Introduction to Job Control
UP-8824	Introduction to Consolidated Data Management
UP-8827	Introduction to the General File Editor
UP-8830	Introduction to the Supervisor
UP-8831 R1-A	Supervisor Concepts and Facilities
UP-8832-B	Supervisor Macroinstructions User Guide/Programmer Reference
UP-8833-A	Introduction to Data Utilities
UP-8834 R2	Data Utilities User Guide/Programmer Reference
UP-8836 R2-A	SORT3 User Guide/Programmer Reference

System/Publication	Description/Type of Manual
UP-8838	Introduction to System Installation
UP-8839 R4-A	System Installation User Guide/Programmer Reference
UP-8840	Introduction to the System Service Programs
UP-8841 R3-A	System Service Programs User Guide
UP-8842 R3-A	System Service Programs Programmer Reference
UP-8843	Introduction to Distributed Data Processing
UP-8844 R1	Introduction to Interactive Processing
UP-8846 R1	Introduction to the Integrated Communications Access Method (ICAM)
UP-8854 R3	Introduction to ESCORT
UP-8855 R3-A	ESCORT User Guide/Programmer Reference
UP-8856 R4	ESCORT Summary
UP-8857	Introduction to the Dialog Processor
UP-8858	Dialog Processor User Guide/Programmer Reference
UP-8859 R3-A	Operations Handbook
UP-8868 R2	Hardware/Software Summary
UP-8870 R1	System Concepts and Facilities
UP-8872	Introduction to System Maintenance Facilities
UP-8873	Introduction to Screen Format Services
UP-8874 R2	System Index and Publications Guide
UP-8913-B	Assembler User Guide
UP-8914-D	Assembler Programmer Reference
UP-8915	Operator Maintenance Guide, System 80 Models 3 through 6
UP-8946-A	Integrated Communications Access Method (ICAM) Message Processor Procedure Specification (MPPS) User Guide
UP-8987	IBM System/32 to System 80 Transition Introduction

System/Publication	Description/Type of Manual
UP-9009 R4	Data Base Management System (DMS) Summary
UP-9072 R1-A	SORT/MERGE Macroinstructions User Guide/Programmer Reference
UP-9076	UTS 400 Edit Processor Programmer Reference
UP-9106	COBOL Editor User Guide/Programmer Reference
UP-9168 R2-B	BASIC Programmer Reference
UP-9169 R3	BASIC Summary
UP-9205-D	Information Management System (IMS) Concepts and Facilities
UP-9206-C	Information Management System (IMS) Action Programming in Report Program Generator II (RPG II) User Guide
UP-9207-D	Information Management System (IMS) Action Programming in COBOL and Basic Assembly Language (BAL) User Guide
UP-9208-C	Information Management System (IMS) Terminal Users Guide
UP-9209-B	Information Management System (IMS) Data Definition and UNIQUE User Guide
UP-9280.1	Operating System/3 (OS/3) Release 8.0 System Release Announcement
UP-9280.2	Operating System/3 (OS/3) Release 8.0 System Release Description (SRD)
UP-9280.50	Operating System/3 (OS/3) Release 8.1 System Release Announcement (SRA)
UP-9280.51	Operating System/3 (OS/3) Release 8.1 System Release Description (SRD)
UP-9316-A	Introduction to Menu Services
UP-9317	Menu Services Concepts and Facilities
UP-9318	S/80 System/32, 34 to OS/3 Conversion User Guide
UP-9502-A	NTR Utility User Guide
UP-9710	Operator Maintenance Guide, System 80 Model 8

System/Publication	Description/Type of Manual
UP-9731 R1	File Placement Analyzer User Guide/Programmer Reference
UP-9734-A	MAPPER 80 Run Functions User Guide
UP-9735-A	MAPPER 80 Manual Functions User Guide
UP-9736-A	MAPPER 80 Forms Generation and Utilities User Guide
UP-9737 R1	MAPPER 80 Operator and Coordinator User Guide
UP-9743	Series 90 to System 80 Model 8 Migration Guide
UP-9744	Integrated Communications Access Method (ICAM) Concepts and Facilities
UP-9745-A	Integrated Communications Access Method (ICAM) Network Definition and Operations User Guide
UP-9746	Integrated Communications Access Method (ICAM) Communications Physical Interface (CPI) User Guide
UP-9748-A	Integrated Communications Access Method (ICAM) Utilities User Guide
UP-9749-A	Integrated Communications Access Method (ICAM) Programmer Reference
UP-9972	Interactive Services Command and Facilities User Guide/ Programmer Reference
UP-9973	Interactive Services Commands and Facilities Summary
UP-9974	COBOL Editor User Guide/Programmer Reference
UP-9975	Spooling and Job Accounting Concepts and Facilities
UP-9976-A	General Editor (EDT) User Guide/Programmer Reference
UP-9977-A	Screen Format Services Concepts and Facilities
UP-9978	Consolidated Data Management Concepts and Facilities
UP-9979	Consolidated Data Management Macroinstructions User Guide/Programmer Reference
UP-9980	Dump Analysis User Guide/Programmer Reference
UP-9981	RPG II Editor User Guide/Programmer Reference
UP-9982	File Cataloging Concepts and Facilities

System/Publication	Description/Type of Manual
UP-9983	System Activity Monitor User Guide/Programmer Reference
UP-9984-A	Job Control Programmer Reference
UP-9985	System Operations Summary
UP-9986-A	Job Control User Guide
UP-9994	Profile Management User Guide/Programmer Reference
UP-10003	Installation Verification Procedures User Guide/ Programmer Reference
UP-10047	Remote Terminal Processor (RTP) User Guide
UP-10870	DMS System Support Functions

1.8.2. Hardware References

The following manuals are applicable to this release:

Document	Description/Type of Manual
UP-7661	UNISERVO 12/16 Magnetic Tape Subsystem Programmer/Operator Reference
UP-7788 R2-A	UNISCOPE Display Terminal Operator Reference
UP-7807 R2	UNISCOPE Display Terminal Programmer Reference
UP-7882	UNISERVO 12/16 Magnetic Tape Subsystems Operator Reference
UP-7921-B	0716 Card Reader Subsystem Operator Reference
UP-7938 R2-A	0770 Printer Subsystem Operator Reference
UP-7956 R1	UNISERVO 20 Magnetic Tape Subsystem Operator Reference
UP-8016 R1-A	0770 Printer Subsystem Reference
UP-8205	UNISERVO 10 and 14 Magnetic Tape Subsystems Subsystem Reference
UP-8206	UNISERVO 10 and 14 Magnetic Tape Subsystems General Description
UP-8207	UNISERVO 10 and 14 Magnetic Tape Subsystems Operator Reference
UP-8208 R1	UNISERVO Magnetic Tape Subsystems Media and Expendable Supplies

Document	Description/Type of Manual
UP-8247 R1-A	Communications Adapter Subsystem Reference (Preliminary)
UP-8250 R3	0776 Printer Subsystem Operator Reference (Model 8 Type 0776-00, 02, 04 Printers)
UP-8273	Communications Adapter General Description (Preliminary)
UP-8325 R1	8430/8433 Disk Drives General Description
UP-8343 R1	8405/8430/8433 Disk Subsystem Operator Reference
UP-8344-C	8405/8430/8433 Disk Subsystem Subsystem Reference
UP-8354 R3	0776 Printer Subsystem General Description
UP-8357 R1	Universal Terminal System 400 System Description
UP-8358-B	Universal Terminal System 400 Operator's Guide
UP-8359	Universal Terminal System 400 Programmer Reference
UP-8362	8416/8418 Disk Subsystem Operator Reference
UP-8388	0608 Card Punch Subsystem Media
UP-8411 R1	Universal Terminal System 400 Text Editor System Description
UP-8441 R3	0776 Printer Subsystem Reference (Model 8 Type 0776-00, 02, 04 Printers)
UP-8445-A	0776 Printer Subsystem Media and Expendable Supplies
UP-8475	8406 Diskette Subsystem General Description (for UTS 400/DCP)
UP-8476	8406 Diskette Subsystem Operator's Guide (for UTS 400/DCP)
UP-8491	0719 Card Reader Subsystem Operator Reference
UP-8493	0719 Card Reader Subsystem General Description
UP-8609	UNISERVO 10 Type 0871 Magnetic Tape Subsystem Operator Reference
UP-8617-A	0719 Card Reader Subsystem Operator Reference
UP-8619	0719 Card Reader Subsystem General Description
UP-8699 R2	8420/8422 Diskette Subsystem General Description

Document	Description/Type of Manual
UP-8871	0798 Printer General Description
UP-8880 R1-A	System 80 Models 3 through 6 Processor Operator Reference
UP-8881 R1-A	System 80 Models 3 and 6 Processor Reference
UP-8882	0798 Printer Operator Reference
UP-8890 R1	UNISERVO 10 Type 0781 Magnetic Tape Subsystem Reference
UP-8891 R1	UNISERVO 10 Type 0781 Magnetic Tape Subsystem General Description
UP-8894	0608 Card Punch Subsystem General Description
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UP-8917 R1-A	8417 Disk Subsystem Operator Reference
UP-8918 R1	8419 Disk Subsystem General Description
UP-8919 R1-A	8419 Disk Subsystem Operator Reference
UP-8920	0798 Printer Media and Expendable Supplies
UP-9159	0797 Printer General Description
UP-9160	0797 Printer Operator Reference
UP-9162	0797 Printer Media and Expendable Supplies
UP-9166	Flexible Double-Sided Diskette Subsystem Media
UP-9167	0789 Printer Subsystem Reference

Document	Description/Type of Manual
UP-9381	3782 Streaming Magnetic Tape Operator Reference
UP-9382	3782 Streaming Magnetic Tape General Description
UP-9607	System 80 Model 8 I/O Controllers and Multiplexer of IOP
UP-9608	System 80 Model 8 Processor Operator Reference
UP-9692	System 80 Model 8 Processor Hardware Programmer Reference
UP-9693	System 80 Models 4 and 6 I/O Controllers Reference (includes Type 0776-99 Printers)
UP-9732	System 80 Model 8 Controllers and Communications Channel of IOMP Hardware Programmer Reference (includes Type 0776-99 Printers)
UP-10002	8470 Disk Drive General Description
UP-10004	8470 Disk Drive Operator Reference
UP-10005	8416/8418 Disk Drives General Description

1.8.3. Online Diagnostic References

The following Diagnostic References are applicable to this release:

Document	Description/Type of Manual
UP-8915	System 80 Models 3-6 Operator Maintenance Guide
UP-9710	System 80 Model 8 Operator Maintenance Guide

1.8.4. Technical Bulletins

The following Technical Bulletins are applicable to this release:

Document	Description/Type of Manual
UP-8605.6-R1	IMS Multithread Concept Guide
UP-8605.7	IRAM User Consideration
UP-8605.10	OS/3 File Cataloging
UP-8605.11	System 80 Diskette Usage
UP-8605.12	ANSI'74 COBOL Communications

2. Product Overview, Restrictions, and Guidelines

This section briefly describes each feature or enhancement contained in release 9.0. The descriptions and the related restrictions and guidelines are grouped by product according to the System 80 models they apply to:

- o All System 80 models (2.1)
- o System 80 model 8 only (2.2)

For breakdown of the enhancements by release level, see 1.1.2. The System Release Announcement, UP-10830.1, also describes release 9.0 enhancements and features.

A cross-reference indicating where the feature or enhancement is documented follows beneath the heading for each item or product. This corresponds to the lists of manuals in 1.8, RELATED PUBLICATIONS.

Where applicable, features are identified with a request for change (RFC) and user association (A/UUA/E) number also.

A restriction is defined as a temporary limitation in the functions of the software product. Restrictions are lifted as soon as possible and are documented only in the SRD.

A guideline is special information related to the use of a product. We offer guidelines to call your attention to aspects of a product that may not be readily apparent from the current user manuals. Guidelines are permanently applicable and will be included in subsequent revisions to the user manuals.

2.1. ENHANCEMENTS COMMON TO ALL SYSTEM 80 MODELS

2.1.1. Control System

2.1.1.1. Interactive Services

Manual: UP-9972

RFC: 2125, 2178, 2253

A/UUA/E: None

Guidelines:

- o If an IS REMOVE userid/ALL is attempted against a workstation with an active ICAM session, the results will be unpredictable and may cause ICAM to terminate abnormally.

- The SCREEN command is not effective for U400 terminals.
- Attempts to read from the card reader directly (with the DEV=RDR parameter) may result in a variety of errors, particularly DM44 LINE TRUNCATED.
- When performing an SMU LIST function (FSTATUS), SMU may terminate after completing the LIST function with an IS29 SYSTEM ERROR 000 message. This occurs only after the user presses function key 19 (continue) in the middle of the SMU home screen (where SMU asks the type of operation). At this point, SMU is terminated. If the user desires to continue using SMU, the SMU command must be reentered.
- The CONNECT and FREE commands cannot be issued from a menu action table.
- Interactive services may not be cancelled (via CA IS,S or CA RC$$IS). If a CANCEL command is issued against IS, the system responds with an invalid job name error message. To shut down IS, use the IS SHUTDOWN command.

C 2.1.1.2. Interactive Downline Loading to Terminals

C Manual: UP-8611, UP-9972

C RFC: None

C A/UUA/E: None

C Guidelines:

The interactive DLOAD command does not support loading to diskette from the host for this release. Therefore, segmented COBOL programs cannot be loaded to the diskette with the DLOAD function.

This process may be done as in previous releases, using a communications user program. (Refer to the UTS 400-OS/3 Interface User Guide/ Programmer Reference, UP-8611 (current version).)

C 2.1.1.3. Accounting for Interactive Users

C Manual: UP-9972

C RFC: None

C A/UUA/E: None

C Guidelines:

The account-number specification is limited to 4-byte entries to conform to the system LOGON support of four bytes.

2.1.1.4. Spooling

Manual: UP-8839, UP-9975

RFC: 1667, 1710, 1984, 2079, 2100

A/UUA/E: RPQ W-3152

Guidelines:

A release pack contains a spool file with 50 cylinders allocated to it. If the user desires a larger spool file, a new spool file must be allocated. Spool file allocation is done only by spool initialization when no spool file exists or when multivolume spool volumes are out of sequence. The customer must scratch the existing spool file and then perform a re-IPL with a supervisor generated to reflect a larger spool file size.

2.1.1.5. Spooling - Spool Debug Command

Manual: UP-9975, UP-9985

RFC: None

A/UUA/E: None

Guidelines:

An output writer function code that is not documented, SD (Spool Debug), is provided for debugging purposes only. If SD is specified, the message ENTER SPOOL DEBUG COMMAND is displayed. This message requires a reply of LOG, PRINT, RDR, or ALL to print the directories of the various queues of the spool file. When printing is completed, the message ENTER SPOOL DEBUG COMMAND is displayed. Enter HALT to terminate spool debug or enter another debug command.

2.1.1.6. Spooling - HOLD and DELETE Commands

Manual: UP-8376, UP-8869

RFC: None

A/UAA/E: None

The HOLD SPL and DELETE SPL commands have been enhanced to permit 60 characters to be entered. The previous maximum was 28.

2.1.1.7. Spooling - COPY Output Writer Function Code

Manual: UP-8376, UP-8869

RFC: None

A/UAA/E: None

Guidelines:

The COPY output writer function code is not available for files being processed from a redirected disk, diskette, or tape.

2.1.1.8. Job Control - HOLD Console Command

Manual: UP-8859

RFC: None

A/UAA/E: None

Guidelines:

The HOLD console command issued from a workstation will hold all OLD jobs on the job queue that were initiated by that workstation. It will not hold NEW jobs that are entering the job queue. There is no way to hold NEW jobs from a workstation.

2.1.1.8A. Job Control - Job Number Wraparound

Manual: UP-8076

RFC: None

A/UAA/E: None

Guidelines:

- A job number is assigned to every active job/symbiont for identification purposes. When the job number reaches the maximum, 9999, it is reset to 20. Old job logs and old inactive jobs on at wraparound time queue can result in bad information in job logs and incorrect device allocation.
- The job log problem has been corrected by CORs C822183 and C090368.
- Incorrect device allocation occurs when the job number of job on queue matches that of an active job/symbiont. The job on queue will not be scheduled until the active job terminates. A new system message is provided to alert you to this problem:

  JS105 JOBNAME NOT SCHEDULED, JOB # NOT AVAILABLE

- When the problem occurs, this message appears in response to the display job status command - DI JS,jobname.
- The job on queue can be deleted with the DELETE command and then rerun to get a new job number.

2.1.1.9. DDP - File and Job Transfer Facility

Manual: UP-8811

RFC: None

A/UUA/E: None

Guidelines:

- When the SUBMIT FILE command is used to transfer job streams from one host to another host, the transfer is limited to a maximum of 10 job streams in the element file.
- When the POSITION=SOF keyword is used on the DDP COPY command, file initialization does not occur if the destination file is a MIRAM or SAT library file. However, file initialization does occur if the destination file is a MIRAM data file.
- Automatic Recovery from Failure - The console operator has the option to select automatic recovery during system initialization. If selected, DDP automatically recovers all work orders in progress at the time of a system crash or communications line failure. Following either failure, the work orders are held until the destination host is available. When it is available, the recovered work orders are automatically reinitiated.

- CREATE Command - The following keyword parameters are not used in an OS/3 environment to create files:

  DENSITY
  PARITY
  INCREMENT_SIZE
  KEY_N
  RECORD_FORM
  RECORD_SIZE

- STATUS Command - Use of this command for the COMMAND= keyword parameter within an ENTER stream is not logical because work order numbers are not predictable.

- When DDP is used in a multihost environment where the hosts are using different major software releases (i.e., 7.0/8.0/8.2), a saved job stream (YSAVE) cannot be sent (DDP SUBMIT FILE command) from a system operating at one release level to a system operating at a different release level. Job control errors will occur on the system that attempts to schedule the job. However, it is possible to save (via SAVE) the job on the system where the job is to be run and use the DDP SUBMIT FILE command to start the job.

- Each DDP user is allocated a buffer that contains a log of current activity. It can hold information for no more than 15 DDP commands; therefore, the DDP STATUS USER=user-id command displays the last 15 commands entered by the user.

2.1.1.10. DDP File Access Facility - Remote File Processing

Manual: UP-8811

RFC: None

A/UAA/E: None

Guidelines:

Remote file processing is restricted to MIRAM disk data files. The results are unpredictable if remote file processing is attempted by a user-written program or system-supplied software on non-MIRAM disk data files.

2.1.1.11. DDP COPY/PURGE Operations

Manual: UP-8811

RFC: None

A/UUA/E: None

The DDP COPY and PURGE commands now allow you to gang copy and gang purge SAT/MIRAM library modules.

Guidelines:

- The gang operation employs the use of a period in the module name field. If the period is followed by a space character, the gang operation is performed.

  For example, assume that there are several modules in a file that contain ABCD in the first four positions of the module name. If you specify ABCD, followed by a space character, all modules that contain ABCD in the first four positions of the module name will be copied or purged. If you specify ABCD followed by a nonspace character, only the first module will be copied or purged.

- If the period is placed in the eighth (last) position of the module name field, DDP cannot determine if a gang operation is wanted. In this case, only one module will be copied or purged; that is, the first module whose module name matches the name specified.

- If your SAT/MIRAM library file contains modules whose names contain periods, do not attempt to purge any of those modules until you apply the appropriate correction, which is available through your local Sperry branch office. If the correction is not applied, you may cause the purging of modules that you do not want purged.

2.1.1.12. DDP - Enter Stream Processing

Manual: UP-8811

RFC: None

A/UAA/E: None

This enhancement allows you to continue or cancel the processing of DDP commands in an enter stream. You do this by including a new DDP command in the enter stream.

The format of this command is:

```
DDP ENTER ERROR={CONTINUE}
                {CANCEL  }
```

where:

CONTINUE
: Means continue processing the enter stream if any DDP command terminates in error.

CANCEL
: Means cancel processing of the enter stream if any DDP command terminates in error. If an error occurs when this is specified, the remaining unprocessed commands in the enter stream are read and displayed on the enter stream log.

This command can only be used in an enter stream. It will be rejected if it is entered from the console, a workstation, or a terminal, and the following messages will be displayed:

DDP002 CA1 002 ENTER COMMAND ACCEPTED hh:mm:ss

DDP103 INT 103 ENTER COMMAND REJECTED hh:mm:ss

When this command is encountered in an enter stream, the following messages appear in the enter stream log:

DDP002 CA1 002 ENTER COMMAND ACCEPTED hh:mm:ss

DDP022 INT 022 ENTER COMMAND COMPLETED hh:mm:ss

If there are syntax errors in the command, the following will appear on the console, workstation, or enter stream log:

messages indicating the syntax error that was detected

COMMAND REJECTED BECAUSE OF ERROR(S) LISTED ABOVE

The DDP ENTER command can be used as often as necessary in the enter stream to control the processing.

All commands are processed under the user-id specified in the LOGON command in an enter stream and DDP bases the cancellation or continuation on the user-id. Consequently, multiple enter streams that use the same user-id and contain DDP ENTER commands should not be run at the same time because this may result in an enter stream being cancelled at the wrong time.

DDP is not aware of when enter stream processing starts or terminates. As a result, the CONTINUE or CANCEL indication can remain in force when enter stream processing is completed. To avoid problems with enter streams that use the same user-id and contain DDP enter commands, each stream should begin with DDP ENTER command to set the desired condition.

2.1.1.13. System Use of Function Keys

Manual: UP-9972

RFC: None

A/UUA/E: None

Guidelines:

Function keys defined for system use are not available for data mode programs. If a user defines a key required for a program, he will not be able to get that key to his program without removing the system definition for that key.

C 2.1.1.14. CDM Data Management Buffers

C Manual: UP-9979

C RFC: None

C A/UUA/E: None

C Guidelines:

If the symbolic address of a data management buffer (IOA1, KARG, and so on) in a RIB macroinstruction is defined as relative 0 in your program, subsequent RIB processing (OPEN) will assume that no address was specified.

C 2.1.1.15. Menu Generator

C Manual: UP-9317

C RFC: None

C A/UUA/E: None

C Guidelines:

Within a user program, menus and screens may not be used together unless the screens are processed directly by the Menu Processor, that is, via the SCREEN and DISPLAY menu function commands.

2.1.1.16. Supervisor Fast Load Capability

Manual: None

RFC: None

A/UAA/E: None

The fast load capability has been added to the supervisor. It builds a table in main storage and YFDY to facilitate a dictionary type search of YLOD. To use this capability, YFDY must be placed next to YLOD on the release disk.

2.1.1.17. Supervisor Debug Options in an IMS Environment

Manual: None

RFC: None

A/UAA/E: None

Guidelines:

The spooling interface must be utilized whenever supervisor debug options are used with SNAPS/DUMPS in an IMS environment to provide documentation for problems. If the printer is hard assigned, invalid I14 errors can occur.

2.1.1.18. Supervisor/PIOCS Assembly

Manual: None

RFC: None

A/UAA/E: None

Guidelines:

The job stream, SG$SUPMK, has divided the supervisor/PIOCS assembly into two separate assemblies. This eliminates a previous problem with ESD TABLE OVERFLOW ERRORS that occurred when a single assembly was executed. There is a minimal increase in total assembly time - 10 .

2.1.2. Support Programs

2.1.2.1. Minidump Option for System Dump

Manual: UP-9980

RFC: None

A/UAA/E: None

The SYSDUMP0 option, MINI, provides a printed dump of a limited number of memory regions, thus reducing the amount of time and paper necessary to print the dump. The actual regions vary depending on the specific HPR or system error that caused the dump.

This is the recommended option to use when sending a dump to Sperry for analysis.

The following procedure shows how to use this option (operator keyins are underlined):

```
RV SYDUMP0
----------

JOB SYSDUMP0 EXECUTING JOBSTEP SYSDUMP00
xx DUMP OPTION (ALL, NONE, DUMP, JOBS, EDIT, MINI, SAVE, RESTORE)
xx MINI
   ----
```

where:

xx
Is the number associated with responses entered via the console.

NOTE: TRANSLATE has been replaced by EDIT. Both TRANSLATE and EDIT are supported and are functionally equivalent.

2.1.2.2. System/34 Screen and Data Converter

Manual: UP-8987

RFC: None

A/UUA/E: None

Guidelines:

Translation can be accomplished only so far as OS/3 supports the same facilities as the System/34.

2.1.2.3. System Installation - Resource Management

Manual: UP-8839, UP-8859

RFC: None

A/UAA/E: None

This enhancement allows you to balance job turnaround time and workstation response time by setting the limits for memory usage and job initiation when you SYSGEN. You do this by using a new command, LIMITS. Resource management allows you to:

- Control the percentage of main memory for symbionts, interactive jobs, and batch jobs.
- Control the maximum number of total jobs, jobs initiated from workstations, jobs initiated from any single workstation, logged-on interactive users, currently executing batch tasks initiated by the ENTER command, and the maximum number of currently executing run symbionts.

The LIMITS command can be issued at any time during the session.

The STATUS command has also been enhanced by the LIMITS parameter, which allows you to display the resource management values and their current status.

Guidelines:

- Resource Management (Type number 6933-00) is marketed as a separately priced program product. If you did not purchase Resource Management and you try to generate this capability at system generation, a link error (module not found) will result.

  If you issue a STATUS LIMITS command and your system does not have Resource Management capability, an error code 51 will result.

  If you issue a LIMITS command and your system does not have Resource Management capability, the command will be accepted but no action will result.

- Care must be taken when you use the LIMITS command to reduce the percentage of memory available for batch jobs. If the percentage of memory is reduced with the LIMITS JOBMEM command to a level below what is already being used in a running system, errors such as DMOA TYPE=21 may result when the system attempts to get additional memory on behalf of a job. The job will terminate abnormally if this error occurs.

  In order to avoid this error, the system operator can wait until some jobs normally terminate and the percentage of memory in use naturally falls below the new lower level before setting the new level. To insure that no new jobs are initiated, the MAXJOBS limit can be lowered with the LIMITS command until the new JOBMEM limit can be safely set. Then, the MAXJOBS limit can be reset to its normal level.

2.1.2.4. System Installation - System Librarian Realignment Option

Manual: UP-8839

RFC None

A/UAA/E: None

Restrictions:

Option 6 on the SMC/SMP screen 1 (System Librarian Realignment option) is permanently restricted and will be removed from the screen in Release 9.0.

2.1.2.5. Installation Verification Procedure

Manual: UP-8820

RFC: None

A/UUA/E: None

Guidelines:

If you use a 48-character business print band to print the IVP, the colons (:) in the RV statements are not printed.

2.1.2.6. File Placement Analyzer (FIPLAN)

Manual: UP-9731

RFC: None

U/UAA/E: None

The following new commands have been added to FIPLAN: PRINT, MAP, and FIX. These commands allow you to suppress the printing of some observed files, improve the handling of work/run files, and minimize seek time.

2.1.2.7. File Placement Analyzer (FIPLAN) - File Processing Limit

Manual: UP-8076, UP-9731

RFC: None

A/UAA/E: None

Guidelines:

The File Placement Analyzer (FIPLAN) can process up to 500 files for analyses and projections. The System Activity Monitor (SAM) is capable of collecting data for up to 48 volumes. If SAM is used to capture data for FIPLAN, it is possible to exceed FIPLAN's 500-file capacity. To avoid this problem, the FIPLAN user should use the FIPLAN IGNORE-VSN command to eliminate the volumes of least interest so the number of files will be within the 500-file limit.

If the 500-file limit is exceeded, FIPLAN will terminate abnormally and the following message will appear:

```
FPA20 MAXIMUM NUMBER OF FILES EXCEEDED, MAXFILES=500
```

2.1.3. Languages

2.1.3.1. Dialog Specification Language Translator (DSLT)

Manual: UP-8806

RFC: None

A/UUA/E: None

Guidelines:

The CDI Data Management OPEN command uses the file name (LFD) in the CDIB. To access more than one module in the same file (which would require another OPEN to be issued to an opened file), the user must generate another device assignment set (DVC through LFD sequence) with a unique LFD in his control stream.

If the user is processing a module from one copy library (COP in the example), the nested copy module must come from the other copy library (SOURCE). For example:

```
// JOB DSLTST,,12000,,,,,J219
// DVC 20  // LFD PRNTR
// DVC 50  // VOL D01906  // LBL DPSRC  // LFD SOURCE
// DVC 50  // VOL D01906  // LBL PMTRANS  // LFD DSLTOUT
// DVC 50  // VOL D01906  // LBL DPSRC  // LFD SRC
// DVC 50  // VOL D01906  // LBL DPSRC  // LFD COP
// WORK1
// EXEC DSLT
// PARAM IN=CFILE1/SRC
// PARAM OUT=DSLTOUT
// PARAM COPY=COP/SOURCE
/&
```

2.1.3.2. RPG II

Manual: UP-8044, UP-8067, UP-8253

RFC: None

A/UUA/E: None

Multikey MIRAM files may be accessed with RPG II action programs using any key. The key structure must be described on the file continuation card. One of the keys must be defined as the primary key by specifying P in column 69. The key identified as the primary key must be the same as the one defined by the PKEY specification in the IMS configuration. If the key of reference for sequentially processed files is different from the primary key, an R must be specified in column 69. Alternate keys may be changed during an update operation when column 69 contains a C and the key specification in the IMS configuration contains CHG. Duplicate keys may also be processed by specifying D in column 68 and DUP in the key specification in the IMS configuration. Duplication and changing are not allowed for the primary key.

The verbs for multikey operations are SETK and REFER. SETK is allowed only for random access files or demand files.

The REFER verb is new for IMS action programs. It makes a record available by using the last key of reference. The desired key is specified in factor 1 and the result field. The duplication count is used to specify which record, with duplicate keys, is desired. A record read by the REFER verb cannot be updated. If a record is to be updated, a read should be done on the primary key using the CHAIN verb.

Guidelines:

When data structures are used, if an internal area is defined more than once and both the alphanumeric and numeric data formats are present, care must be used in controlling the format of the data and the operations performed because both formats cannot coexist. The format is either alphanumeric (unpacked) or numeric (packed), but not both.

NOTE: This is an incompatibility with the IBM System/34.

2.1.3.3. RPG II Editor

Manual: UP-9981

RFC: None

A/UUA/E: None

Guidelines:

To enter the copy modifier option &, you must use EDT. No validation will be done because the statement is created/updated through EDT and not RPGEDT.

2.1.1.3A. RPG II - MIRAM Delete Capability (CDM)

Manual: UP-8067

RFC: None

A/UAA/E: None

A record may now be deleted from a MIRAM index sequential file. In order to delete a record, the file must be defined as an update file with RCB. The output specifications must contain DEL in columns 14 through 16. The record to be deleted must be read prior to deletion.

2.1.3.4. BASIC

Manual: UP-9109, UP-9168, UP-9169

RFC: None

A/UUA/E: None

Guidelines:

No array should be generated that contains more than 8126 items, including the zero order items. Generation of larger arrays causes BASIC to loop when trying to load a program.

2.1.3.5. Editor (EDT) - Automatic Saving of Work Space

Manual: UP-9976

RFC: None

A/UAA/E: None

This enhancement provides the automatic saving of EDT's work space on a permanent (recoverable) file. This helps to prevent the loss of edited files due to system crashes and so on, without operator intervention.

You control automatic saving by specifying two new parameters in the @SET command as follows:

```
@SET{SAVEFILE=string[,AUTO=n]}
    {AUTO={n  }                }
          {OFF}
```

where n is an integer between 1 and 100 that indicates the number of input lines (EDT commands and data) between automatic saves; string is the file parameter string that names the save file. @SET AUTO=OFF disables the automatic saving process.

The automatic saving process is, in effect, a transparent @WRITE command without overwrite queries being issued.

2.1.3.6. ANSI'74 COBOL

Manual: UP-8613

RFC: None

A/UAA/E: None

Guidelines:

Object modules created by Release 9.0 COBL74 compiler cannot be linked with Release 8.1 or earlier run-time routines (YOBJ library). However, object modules created by an earlier release of the COBL74 compiler can be linked with the Release 9.0 YOBJ library.

2.1.3.7. ESCORT Programming Language

Manual: UP-8855

RFC: None

A/UUA/E: None

Guidelines:

- When the ESCORT library file ESC$ESCORT.LIBRARY.FILES is being cataloged, there must be no other ESCORT users on the system at that time. If a catalog attempt is made when any ESCORT user is on the system and another user attempts to enter ESCORT, a system error 2E1 occurs.

- When a UTS 200 terminal is used, the terminal must have the protect feature. If a UTS 400 terminal is used, the PROTECT-FCC toggle switch must be set to FCC, and the control values for XFER and XMIT must be changed from ALL to VAR. Control values can be changed as follows:

  1. Press the CONTROL PAGE key.

  2. Tab to the word ALL, in parentheses, after XFER, and type in VAR in place of ALL.

  3. Tab to the word ALL, in parentheses, after XMIT, and type in VAR in place of ALL.

  4. Press the CONTROL PAGE key to restore the screen.

  Without this support on these devices, ESCORT software will not be functional.

- Screen Format Services many not be used within an ESCORT program when the ESCORT program as invoked via Menu Services.

- It is the user's responsibility to ensure that a form created with Screen Format Services matches the associated ESCORT structure on a field-to-field basis with regard to field type and field size.

- Passwords can be specified for data files only. ESCORT does not allow you to specify passwords for library files or session files.

2.1.4. Applications Support

2.1.4.1. Information Management System (IMS) - Both Single-Thread (ST - Models 3 through 6) and Multithread (MT)

2.1.4.1.1. Miscellaneous Enhancements

Manual: UP-8364, UP-9208

RFC: 1137, 2093, 2095, 1983, 824, M103, 835, 924, 1068, 1109, 1517, 1717, 1735

A/UUA/E: S80019, F79021, S78034, S78049, S78074, F78002, S79034

Guidelines:

- IMS supports the LOCK KEYBOARD choice of the screen disposition only after READ specification; i.e., screens will not be erased, and subsequent input will be disregarded until output is sent to the terminal (screen replenish is supported by the new CALL REBUILD request).

- Function keys F15 and F16 are not supported as ''end of input data'' and ''input data cannot be entered properly'' as stated in the SFC documentation. Instead, they will be passed to the action program.

- You should avoid using the SET DATE console command to set the system IPL date backwards during an IMS run for the following reasons:

  - OFFLINE recovery assumes that the TRACE-DATE-TIME in the TRACE file is always in ascending sequence. The TRCFILE=CLOSE option of the ZC#TRC routine closes the file by recording the EOD pointer as soon as it detects the DATE-TIME of the current trace record lower than that of the preceding record.

  - If the TRCFILE=CLOSE option is not used, the existence of records in the TRACE file that are not in ascending sequence may have adverse effects on normal operation of OFFLINE recovery.

- The UNLOCK function cannot be used with a file that is in undedicated sequential mode. This includes any ISAM, IRAM, or MIRAM file that was placed in sequential mode following a SETL or SETK function. Any attempt to issue the UNLOCK function while a file is in undedicated mode causes an INVALID FUNCTION error (0307) to be posted in the PIB status bytes.

- Whenever the IMS master terminal command CHTBL is used in a multithread environment to change the SHSZ field of the ACT, an extra 340 bytes are added to allow room for the shared code parameter list area and the DMCA if DMS is used with IMS. The effect becomes obvious when the DITBL command is used to display the value of the SHSZ field.

- o ACCESS=SADD or ACCESS=UCP is not supported. The use of either will yield unpredictable results. IMS will not be responsible for the integrity, recovery of any files, or any data management errors resulting from the use of ACCESS=SADD or ACCESS=UCP.

- o Whenever FILETYPE=ISAM, always specify IOROUT=ADDTR. Do not specify IOROUT=RETRVE. If this rule is not followed, IMS control tables immediately following the ISAM DTF table will be destroyed and IMS will abort.

C 2.1.4.1.2. IMS - Katakana Support/UNIQUE Lexicon Support

C Manual: UP-8364

C RFC: 2173

C A/UUA/E: F78065

C Guidelines:

The configurator parameters applicable to this enhancement do not apply to messages generated by IMS-supplied action programs (UNIQUE, ZSTAT, DLOAD, DLMSG).

C 2.1.4.1.3. IMS - System Console/Master Terminal Support

C Manual: UP-8364, UP-9208

C RFC: 1259, 1270, 1556, 1656, 1839, 1843, 1973

C A/UUA/E: S79034, S79032, S80020, F79009

C Guidelines:

C o The master terminal commands ZZUP, ZZDWN, and ZZTST are not allowed to be issued by the console when the console is the output device. The standard terminal commands ZZHLD, ZZRDY, and ZZRSD are also not available from the console.

C o Output messages to the console require some special considerations due to OS/3 control system limitations. Lowercase characters and unprintable characters (including DICE and FCCs) appear as blanks on the system console. IMS performs lowercase-to-uppercase translation for all output messages to the console but performs no other translation or text editing.

C o Messages greater than 120 characters (2 console lines) will be truncated at 120 characters. Also, console output messages must not have a dollar sign (X'5B') as the first character in the text. This is due to OS/3 interpretation of a '$' in the first byte as a stored message indicator.

2.1.4.1.4. IMS - Statistical Reporting Phase II

Manual: UP-8364, UP-9208

RFC: 877, 989, 1518, 1873

A/UUA/E: S78020E, S78001, S80004E

Guidelines:

Due to the size limitation of the count fields, ZSTAT should be used for short IMS sessions only.

C 2.1.4.1.5. IMS - CDM/MIRAM Support of Common Storage Area

C Manual: UP-8364

C RFC: None

C A/UUA/E: F80016

C Guidelines:

The use of common storage area files with defined record management is not supported.

2.1.4.2. Multithread (MT) Only

2.1.4.2.1. IMS-DDP Transaction Processing

Manual: UP-8364, UP-9205, UP-9206, UP-9207

RFC: None

A/UUA/E: None

Guidelines:

- o A user action program may not place an 0 in the lock-rollback-indicator in the program information block (PIB) when issuing a CALL ACTIVATE. If this occurs, the transaction will be cancelled with an output message error (status code = 6, detailed status code = 4).
- o An urgent character is not processed when it is in a routed transaction message. It is passed to the remote system as part of the transaction code.
- o Coordinated data base and data file recovery is not supported in a transaction program routing environment where updates are being performed by the paired hosts.
- o When an output message error shows the status code = 6 and the detailed status code = 9, an action scheduled for program routing has terminated with E succession at the secondary node.

C 2.1.4.2.2. IMS Access to DMS in CDM Mode

C Manual: UP-8364, UP-8748

C RFC: None

C A/UUA/E: S79080

C Guidelines:

UNIQUE/DRM cannot access DMS index location mode records.

2.1.4.3. Data Base Management System (DMS)

Manual: UP-8036, UP-8272, UP-8748, UP-9009

RFC: None

A/UUA/E: S84034, S84039

- o A unique journal file may now be specified for each data base. This allows concurrent operation of multiple data bases that have different page sizes, while still allowing journaling. The DBMS start-up syntax for the new journaling facility is a superset of the previous syntax, so your existing DBMS job streams need not be changed unless you want to the new feature.
- o Disk journal files may now be extended over more than one DBMS session. This capability was previously available only for tape journal files.
- o A DMS data dictionary may now contain more than one schema and its related network.
- o The placement of a via location mode record is enhanced in the case that the member record resides in a different data base area from its owner. The target page is calculated to be the same proportional distance into the member's area as the owner record is into the owner's area. When the member record is in the same area as its owner, the target page continues to be the page containing the current record of the set, as before.
- o The action taken when two threads enter a deadlock situation has been enhanced. Instead of simply rolling back both threads as was done previously, the thread that has executed the lesser number of verbs is selected for rollback. The second thread (or threads) is held longer than its specified wait time in anticipation of it being able to continue normally after the first thread is rolled back.
- o The DBMS's timer interval is now dynamic and varies according to the wait times specified in the DMCAs of the active threads. This allows more accurate time-out control for record and page conflicts.
- o The restriction that the DBMS must run at a higher switching priority than any of its callers has been lifted, pending further investigation of the DBMS DB3 critical code problem.

- When the DBMS has no more work to do, it now preferentially issues an I/O wait on a thread whose I/O has completed, rather than on just any I/O waited thread. This improves performance in a multithread DMS environment.

- The DMSPROC now blocks subschema load modules for faster loading.

Restrictions:

- When the DBMS option to allow IMS access has not been specified and the IMS access is attempted, the request is rejected by the DBMS. However, the IMS access is registered to the DBMS, and a subsequent attempt to shut down the DBMS is not honored until the IMS job is no longer resident in the system.

- JFFIX does not work when executed against an empty journal file.

- An unrecoverable error may occur on the DBMS start-up following an overflow of the IMS QBL file. Size the IMS QBL file so you're sure it won't overflow.

- If an I/O error occurs during DMS warm start recovery, the system HPRs.

- CDML may program check if the memory allocated to the job is insufficient. This problem may occur during execution of the IMPART verb, especially if the edited data display option is selected.

- The schema definition of a record must contain at least one field.

- If the length of a data base record, including its pointers, is too large for the declared page size, DMCLP indicates the error, but may associate it with the wrong data base area.

Guidelines:

- The DBMS shut down command has been shortened. The new syntax is:

  ```
  UNS job-name SHUTDOWN
  ```

  The old, longer command (SHUTDOWN DBMS) is also still accepted.

- A data base must always be processed with the DMCL of the same name that initialized it. Violation of this guidelines causes the DMS recovery system to fail.

C 2.1.4.4. DMS Conversational Data Base Manipulation Language (CDML)

C Manual: UP-8272, UP-9009

C RFC: None

C A/UUA/E: None

C Guidelines:

A CDML program check may occur if the memory allocated for the job is insufficient. This problem may happen during execution of the IMPART verb, especially if the edited data display option is selected.

2.1.4.5. DMS Journaling

Manual: UP-8036, UP-8272, UP-8748, UP-9009

RFC: None

A/UAA/E: None

The DMS journaling capability has been expanded to allow journaling during concurrent operation of two or more data bases with different page sizes. Each data base may have its own journal file, or common journal files can be specified for those data bases with common page sizes. Disk files can be extended over two or more DMS sessions.

2.1.5. Communications

2.1.5.1. ICAM - Packet Switching Network Interface

Manual: UP-8811

RFC: None

A/UUA/E: None

Guidelines:

- Sessions between a local and a remote terminal and sessions to remote process files are not supported.
- Local terminals cannot establish sessions to a remote Interactive Services LOCAP.
- When a virtual circuit is terminated, sessions assigned to that circuit terminate abnormally.

2.1.5.2. ICAM - Trace Facility

Manual: UP-9748

RFC: None

A/UUA/E: None

The following enhancements have been added to the ICAM trace facility:

- Trace entries can now be written to disk.
- Automatic spooling from disk
- Ability to trace individual lines
- The overwriting of the trace area in main storage can be inhibited.
- Pausing and resuming trace
- Snapshot printouts of trace buffers

C 2.1.5.3. ICAM - Remote Terminal Processor

C Manual: UP-10047

C RFC: None

C A/UUA/E: None

C Guidelines:

C o The RETAIN feature of RT$SPL is not available.

C o Unlabeled tape and 7-track tape are not supported.

2.1.5.4. ICAM - Nordic PDN/X.21 Support for Computer to UTS 20X Terminal (Models 4 and 6 only)

Manual: UP-8945

RFC: None

A/UAA/E: None

ICAM now supports the Nordic Public Data Network (PDN) computer to UTS 20X terminal service mode.

2.1.6. Utility

2.1.6.1. File Transfer Utility (PCTRAN)

Manual: UP-8076, UP-8841, UP-8842

RFC: None

A/UUA/E: None

The file transfer utility (PCTRAN) permits transfer of data files, library modules, and source program files between disk or diskette on the SPERRY Personal Computer (PC) and disk, diskette, or tape on the SPERRY System 80. Three user-friendly input screens are used to specify the desired file transfer activity as well as the file names and media location to be used by both the host computer and the PC.

Refer to Appendix H for installation, setup, and operating instructions, and for a description of hardware and software requirements.

Guidelines:

- The file transfer utility (PCTRAN) supports character and PC hexify mode data transmission; these modes are selected by the user. When using character mode, packed decimal fields and binary control characters within the data cannot be transferred and are converted to spaces. The EBCDIC characters which represent these control characters are the following:

00 through 07	2D through 2F
09 through 1A	32
1C through 22	34 through 37
24 through 27	3C through 3D
2A	3F

- When using hexify mode, the data is translated by the PC terminal emulation software and by PCTRAN during the file transfer. This option allows PC object code and binary data to be transferred to and from the OS/3 host system.

- If transferring OS/3 object or load modules to the PC, the data is translated by PCTRAN and is maintained on the PC as character data. When the module is transmitted back to the host system it is translated to OS/3 object code format. This facility is activated whenever the host type parameter specifies ''O'' or ''L''.

- Data base files may require formatting to sequential format prior to using PCTRAN.

- The maximum record size that can be transferred is 7680 characters.

- The minimum OS/3 memory required is 16K bytes.

2.1.7. Hardware Diagnostics

2.1.7.1. Online Diagnostics - Error Log Edit (ONUERL)

Manual: UP-8915, UP-9710

RFC: None

A/UAA/E: None

The ONUERL program has been enhanced as follows:

- Four additional RUN options are provided.

- Execution with less operator intervention

- Enhanced disk device error displays that include CYL/HEAD/RCD information

- Enhanced tape device error displays that include expected tape block numbers when enabled

- New display for exigent machine check errors

- Recovery of altered values when YESUM is reinitialized
- Automatic rerun of program after summary spooling following termination

2.2. ENHANCEMENTS APPLICABLE TO SYSTEM 80 MODEL 8 ONLY

2.2.1. Control System

2.2.1.1. PIOCS - Dual Channel Cochanneling

Manual: None

RFC: None

A/UAA/E: None

Guidelines:

Dual cochanneling provides nonsimultaneous access to control units from either of two selector channels. The devices are connected to two control units that are connected to both selector channels. When one channel is busy, the second channel is used to access the other devices thereby avoiding a wait for the busy channel. Depending on the control units used, dual channel cochanneling is applicable to 8430, 8433, and 8470 disk subsystems, and UNISERVO 10, 12, 14, 16, 22, 24, 26, and 28 magnetic tape subsystems on selector channels.

2.2.1.2. PIOCS - Additional Hardware Support

Manual: None

RFC: None

A/UAA/E: None

The following additional hardware is supported for the Model 8:

- 8417/8419 disks (8417 fixed head attachment not supported)
- T5055 tape control unit for UNISERVO 22, 24, 26, and 28 tape drives
- 0789/0798 remote printer

2.2.2. Support Programs

2.2.2.1. Copy Utilities

Manual: UP-8841, UP-8842

RFC: None

A/UUA/E: None

The disk copy utility SU$C19 supports 8419 disks on the Model 8.

2.2.2.2. Disk Prep

Manual: UP-8841, UP-8842

RFC: None

A/UAA/E: None

- The stand-alond disk prep program (SU@PRP) supports 8470/8417 disks on the Model 8. SU@PRP is used during system installation for disk formatting with defect skipping and surface analysis. SU@PRP creates a volume label for the prepped disk.

- The disk prep program (DSKPRP) supports the 8417/8419 disks on the Model 8. This support includes disk formatting, surface analysis, assign alternate track (AAT) functions, and IMP/IPL processing.

2.2.2.3. Dump/Restore

Manual: UP-8841, UP-8842

RFC: None

A/UAA/E: None

- The stand-alond Dump/Restore program (SU@RST) supports 8470/8417 disks on the Model 8. SU@RST is used during system installation to read diskettes created in file mode by the standard Dump/Restore program and write tracks of data to 8470/8417 disks. The program also copies the VTOC when requested by the user.

- The Dump/Restore program (DMPRST) supports 8417/8419 disks and UNISERVO 26 and 28 tape drives on the Model 8.

2.2.2.4. System Installation - R (Retry) Parameter for SETREL Run Statement

Manual: UP-8839

RFC: None

A/UAA/E: None

A new keyword parameter, R (retry) is supported for the SETREL run statement. If a track is found defective during DSKPRP, this parameter allows you to specify the number of times the track is to be retested before it is declared bad and an alternate track is substituted for it. The value of R is a hexadecimal number from 00 to FF. The default is 0A.

2.2.2.5. System Installation - XSDU (Console Version of SDU)

Manual: UP-8839

RFC: None

A/UUA/E: None

Guidelines:

- SDU is initiated from a workstation of a terminal and provides full functionality when you use it to update YSDF.
- XSDU is the console version of SDU. This version should be used only when your system does not have a workstation or printer because its functionality is limited.
- Do not use XSDU if your system is configured with a workstation or a terminal and you have used SDU to update YSDF. If you use XSDU after SDU has established keys for search fields, XSDU may not be able to satisfy the search request for these entries.

C 2.2.3. Information Management System (IMS)

C Manual: UP-8364

C RFC: None

C A/UUA/E: None

C Guidelines:

For Model 8, IMS multithread can be configured to support CDM or DTF. The default for the CDM generation statement is YES.

C 2.2.4. Applications Support - Data Management System (DMS)

C Manual: UP-8272, UP-9009

C RFC: None

C A/UUA/E: None

C Guidelines:

To shut down DBMS, the user must enter the DBMS job name instead of the job number.

2.2.5. Hardware Diagnostics

2.2.5.1. Online Diagnostics - T5055 Tape Drive Support (ON5055)

Manual: UP-9710

RFC: None

A/UAA/E: None

This new diagnostic program (ON5055) supports the testing of UNISERVO 22, 24, 26, and 28 tape subsystems that are attached to a T5055 tape control unit on the Model 8.

2.2.5.2. Online Diagnostics - Integrated Disk Support (ONDCU)

Manual: UP-9710

RFC: None

A/UAA/E: None

The ONDCU program now includes test support for 8417 and 8419 disks on the Model 8.

2.2.5.3. Online Diagnostics - Remote Printer Support (ONRPNT)

Manual: UP-9710

RFC: None

A/UAA/E: None

The ONRPNT program provides support for testing the 0789 and 0798 remote printer subsystems.

3.1. SYSTEM CONTROL SOFTWARE (SCS)

Sperry provides the user with system control software (SCS), the system programs that make operation of the hardware possible. These programs are also necessary for system installation, generation, and software maintenance.

The user may select an optional SCS support services agreement to have Sperry provide technical assistance with SCS software at an additional charge.

Sperry initially installs the SCS for the user and makes sure that the system is ready for use. New releases of the SCS are provided without additional charge, but must be installed by each user.

Sperry provides a software correction service for the SCS without additional charge. Under this service, we will resolve problems the user brings to our attention. For the service to be effective, the user must fully define the problem and prepare a SUR if necessary.

The following list indicates software that is supported for the System 80 models 3 through 6 and model 8.

Software	Models 3 - 6 Type Number	Model 8 Type Number
System Control S/W (SCS)	6210-01	6210-99
Supervisor	X	X
Job Control	X	X
System Access Methods	X	X
Interactive CMD I/Fs and Dialogs	X	X
Interactive SYSGEN Prep	X	X
Interactive JCL Prep	X	X
Command Language	X	X
Dialog Processor	X	X
Workstation Mgr	X	X
Screen Format Coordinator	X	X
System Librarian (LIBS)	X	X
Linkage Editor (LNKEDT)	X	X
Error Logging	X	X
System Generation (SG)	X	X
Dump/Restore (DMPRST)	X	X
System Dump (SYSDUMP)	X	X

Software	Models 3 - 6 Type Number	Model 8 Type Number
Job Step Dump (JOBDUMP)	X	X
Tape Prep (TPREP)	X	X
Disk/Diskette Prep (DSKPRP)	X	X
Catalog Manipulation Utility (JC$CAT)	X	X
IDA Copy (SU$CIG)	X	X
System Utility	X	X
Job Scheduler	X	X
Print Correction List Table (SMPLMU)	X	X
Assembler (ASM) Usage is limited to system generation.	X (See 1.3.)	X
Integrated Communications Access Method (ICAM)	X	X
Installation Verification Procedures (IVP)	X	X
Run Processor	X	X
Centralized File Management (CDM MIRAM)	X	X
SMP/SMC	X	X
Diskette Utility	X	X
Selector Copy (SU$JCL)	X	X
Disk Cache	N/A	X

3.2. PROGRAM PRODUCTS

Program products (by type number) are SPERRY proprietary programs that are licensed to the customer for a separate charge.

Software	Models 3 - 6 Type Number	Model 8 Type Number
Extended System Software (ESS)	6211-99	6211-97
Data Utility	6211-00	6211-00
SORT	6212-00	6212-00
SORT3	6213-00	6213-00
Spool/JA/SYSLOG/JOBLOG	6216-00	6216-00
Screen Format Generator (SFG)	6214-00	6214-00
Dialog Spec Language (DSLT)	6215-00	6215-00
Screen Format Generator (SFG) (CDI)	6214-00	6214-00
Dialog Spec Language (DSLT) (CDI)	6215-00	6215-00
IMS-ST	6217-00	N/A
IMS-MT	6232-00	6232-00
DMS	6218-00	6218-00
RPG Group	6219-99	6219-98
RPG II	6219-00	6219-00
RPG EDIT (CDI)	6220-00	6220-00
RPG Auto Report (CDI)	6221-00	6221-00

Software	Models 3 - 6 Type Number	Model 8 Type Number
COBOL-74	6222-00	6222-00
COBOL 68-74 Transition	N/A	6222-97
COBOL 68 Extended (DTF)	N/A	6236-00
COBOL 74	N/A	6222-00
COBOL EDITOR	6222-01	6222-01
FORTRAN IV	6223-00	6223-00
BASIC (CDI)	6224-00	6224-00
ESCORT Programming Language (CDI)	6225-00	6225-00
EDITOR (EDT) (CDI)	6226-00	6226-00
ASSEMBLER (ASM)	6233-00	6233-00
SORT	6212-00	6212-00
SORT3	6213-00	6213-00
ICAM-TSF	6231-00	6231-00
ICAM IBM 3270 RTH	6247-00	6247-00
DATEX-L PDN Support	6248-00	6248-00
DATAPAC PDN	6248-03	6248-03
DDX-P PDN	6248-05	6248-05
Menu Generator	6254-00	6254-00
NTR	6230-00	6230-00
DDP Transfer Facility	6229-01	6229-01
DDP File ACCESS	6229-02	6229-02
IMS-DDP Transaction Processing	6229-03	6229-03
IBM 3270 Emulator	6247-01	6247-01
NORDIC PDN	6248-06	6248-06
DATEX-P PDN (UTS 4040)	6248-01	6248-01
PSS PDN (UTS 4040)	6248-07	6248-07
TRANSPAC PDN (UTS 4040)	6248-02	6248-02
Remote Terminal Processor (HASP)	6247-02	6247-02
UTS 400 Load/Dump Terminal Package	6228-00	6228-00
UTS COBOL	6130-05	6130-05
UTS 400 EDIT Processor	6201-03	6201-03
DCA Termination Systems	6255-00	6255-00
MAPPER 80 Software	6752-00	6752-00
File Placement Analyzer	6759-00	6759-00
Resource Management	6933-00	6933-00
File Transfer Utility (PCTRAN)	7685-00	7685-00

3.3. PROGRAMMING AIDS

Programming aids (PA) help the user debug the system for system errors, monitor the activity of the system, verify that all software is functional, and convert from one operating system to another.

These items are provided at no additional charge over equipment price.

Programming Aids	Models 3-6 Type Number	Model 8 Type Number
UTS 400 Software PL/M SMS 400 MAC 80 Utilities	N/A	X600-03
92/9300 Conversion Aids Unload Data Transcriber	N/A	X600-70
OS/4 Conversion Aids DCON 4 Disk Data Converter ASMTRN Assembly Transcriber JCON1 JCL Converter Copy 94 Librarian File Converter	X600-80	X600-80
360/20 Conversion Aids Unload Data Transcriber	N/A	X600-90
IBM System 3/32/34 Conversion Aids Copy S3 Source and PROC Transcriber	X600-60	X600-60
Disk CACHE	X460-00	(Included with SCS)
OLM Diagnostics	X600-10	X600-10
System Activity Monitor (SAM) (Note 1)	X600-20	X600-20
COBTRN303 (Note 2)	N/A	PA512-08

NOTES:
1. SAM is automatically sent (without a specific order request) whenever SCS is distributed.
2. The COBTRN 303 diskette is included with the COBOL 68-74 transition group (type number 6222-97). Please refer to the current versions of the Program Product Specification (PPS) (UP-9265.49) and the Series 90 to Model 8 Migration Guide (UP-9743) for futher information.

This section contains information relating to hardware support provided with this release, including:

System definition file
System microcode file
PRPMIC program
Additional System 80 hardware support

4.1. YSDF SYSTEM DEFINITION FILE

The system definition file YSDF contains the microcode names (levels) associated with device addresses. When a system is delivered, the YSDF file contains the default microcode names associated with the noted device addresses.

4.2. YMIC SYSTEM MICROCODE FILE

The microcode file YMIC contains a list of all the microcode names available with the release. You can list the current contents of YMIC by running the canned job stream SDF$DSP.

The **YMIC** file for Release 9.0 contains the following primary microcode levels:

		Microcode Name						
Device Address	Device Type	Mod 3/4 W/O IOMP	Mod 5/6 W/O IOMP	Mod 3/4 ECF	Mod 5/6 ECF	Mod 3/4 W/IOMP	Mod 5/6 W/IOMP	Mod 8
IMPL	CPU	S2B50000	S2CK0000	S2BXS000	S2CK0000	S2BIH000	S2CIH000	N/A
IMPL	DBUS	DBUSH000	DBUSH000	DBUSXH00	DBUSH000	DBUSH000	DBUSH000	N/A
IMPL	IOMP	N/A	N/A	N/A	N/A	S2IOF000	S2IOF000	N/A
IMPL	IDC (8470)	IDCLC000 (Mod 4 only)	IDCLC000 (Mod 6 only)	N/A	N/A	N/A	N/A	N/A
IMPL	IDCU (8470)	ID70F000 (Mod 4 only)	ID70F000 (Mod 6 only)	N/A	N/A	N/A	N/A	N/A
cdd	IDCU (8470)	N/A	N/A	N/A	N/A	N/A	N/A	ID70F000
cdd	IDCU (8416/ 8418)	N/A	N/A	N/A	N/A	N/A	N/A	ID16K000
cdd	IDCU (8417/ 8419)	N/A	N/A	N/A	N/A	N/A	N/A	ID17A000
IMPL	CACH	CA760000 (See 4.3.4.)	CA760000	CA760000	CA760000	CA760000	CA760000	N/A
IMPL	CAC8	N/A	N/A	N/A	N/A	N/A	N/A	CA910000
001	SVP	N/A	N/A	N/A	N/A	N/A	N/A	SV838800
001	BPU	N/A	N/A	N/A	N/A	N/A	N/A	BP836300
001	IOMP	N/A	N/A	N/A	N/A	N/A	N/A	LMA27800
REMOTE PRINTER								
cdd	0798	RPIOJ000	RPIOJ000	RPIOJ000	RPIOJ000	RPIOJ000	RPIOJ000	RPIOJ000
cdd	0789	RPIOJ000	RPIOJ000	RPIOJ000	RPIOJ000	RPIOJ000	RPIOJ000	RPIOJ000
***SLCA-1 SYNC ***								
cdd	2788	CMMIL000	CMMIL000	CMMIL000	CMMIL000	CMMIL000	CMMIL000	CMMIL000
SLCA-1 9.6 KLB NTR								
cdd	2788	NTR1C000	NTR1C000	NTR1C000	NTR1C000	NTR1C000	NTR1C000	NTR1C000
SLCA-2 ASYNC								
cdd	2799	CMM2L000	CMM2L000	CMM2L000	CMM2L000	CMM2L000	CMM2L000	CMM2L000
SLCA-3 UDLC								
cdd	2798	UDLCC000	UDLCC000	UDLCC000	UDLCC000	UDLCC000	UDLCC000	UDLCC000
SLCA-3 RS-440								
cdd	2798-05	BIT3-000	BIT3-000	BIT3-000	BIT3-000	BIT3-000	BIT3-000	BIT3-000
SLCA-5 56 KB NTR								
cdd	2986	NTR5F000	NTR5F000	NTR5F000	NTR5F000	NTR5F000	NTR5F000	NTR5F000
WORKSTATION-PAINT TIME								
cdd	3560	WS1DJ000	WS1DJ000	WS1DJ000	WS1DJ000	WS1DJ000	WS1DJ000	WS1DJ000
-NO PAINT TIME***								
cdd	3560	WS1DG000	WS1DG000	WS1DG000	WS1DG000	WS1DG000	WS1DG000	N/A
KATAKANA WORKSTATION								
cdd	3560	WS1KJ000	WS1KJ000	WS1KJ000	WS1KJ000	WS1KJ000	WS1KJ000	WS1KJ000
WORKSTATION MODEL 2								
cdd	3560	WS2D-400	WS2D-400	WS2D-400	WS2D-400	WS2D-400	WS2D-400	WS2D-400
WORKSTATION CONTROLLER								
cdd	3561	WSC2-400	WSC2-400	WSC2-400	WSC2-400	WSC2-400	WSC2-400	WSC2-400
X.21 BIT MODE								
cdd	2798	BITXD000	BITXD000	BITXD000	BITXD000	BITXD000	BITXD000	BITXD000
STREAMING TAPE Models 4, 6, and 8 only								
cdd	STCU	ITCUE000 (Mod 4)	ITCUE000 (Mod 6)	ITCUE000 (Mod 4)	ITCUE000 (Mod 6)	ITCUE000 (Mod 4)	ITCUE000 (Mod 6)	ITCUE000
SLCA-3X.21 FUNCTION Models 4, 6								
cdd	2798	BYTXB000	BYTXB000	BYTXB000	BYTXB000	BYTXB000	BYTXB000	BYTXB000

NOTES: 1. No microcode is required for the SLCA autodialer.

2. To display the content of the YMIC file, enter the following statement:

```
FSTAT ,$Y$MIC,RES
```

3. For device address cdd:

c
Is the channel number.

dd
Is the control unit and device address.

4.3. UPDATING YSDF USING SDU

When new microcode for a device is installed and/or a device is updated and new microcode is required, the system definition utility (SDU) must be run to change the SDF file to reflect the new loadable microcode level required. The model 8 user who does not have a workstation configured is required to run the utility XSDU, which operates through console statements. For example, when a system is first delivered, there is no entry for microcode for Katakana workstations. The user with such a device should use SDU to add the workstation device address and microcode name 'WS1KG000' to the YSDF file.

Details for installing new microcode are provided in the System Installation User Guide/Programmer Reference, UP-8839 (current version).

4.3.1. Updating the IMPL Area of SYSRES for Models 3 through 6

The PRPMIC canned job stream is automatically scheduled by SDU whenever any initial microcode program load (IMPL) microcode changes are made. PRPMIC moves the IMPL microcode levels reflected in the YSDF file from the YMIC file to the IMPL area on the disk.

4.3.2. Creating the Model 8 Processor Microcode Diskette

In addition to updating YSDF, model 8 users must run the FDDODSKT canned job stream whenever any processor microcode changes are made. FDDODSKT moves the processor microcode reflected in YSDF from the YMIC file to a diskette you have mounted for this purpose. Once FDDODSKT creates this new processor microcode diskette, replace the old processor microcode diskette with it.

4.3.3. Paint Time Enhancement Installation

If the paint time enhancement hardware is to be installed, follow these guidelines:

1. Update the SDF file with the workstation paint time microcode.

2. Install the hardware.

3. IPL the system.

4.3.4. Updating the YSDF File for the Disk CACHE Portion of Model Upgrades (Models 4 and 6)

Users must update the YSDF file after installing CACHE program product (X460-00). The procedure is as follows:

1. Call the system definition utility by entering SDU on the console and then pressing the XMIT key.

2. Complete the message prompting sequence using the cache microcode name that applies to your system. (See 4.2.)

4.4. DUMPING YSDF TO DISK, DISKETTE, OR TAPE

NOTE: Because Release 9.0 contains new microcode, SDU must be executed to update the YSDF file. (See 4.3.)

A job stream (SDFSAVE) is available to dump the YSDF from a RES pack onto a disk, diskette, or tape. The job preps the medium (diskette or tape) and allocates the necessary file. Later, the same job restores the YSDF file onto RES. Any disk or tape and any single-sided, single-density diskette may be used. The format of the statement to execute SDFSAVE is:

```
RU SDFSAVE,,FUNCTION={DUMP   },TYPE={DISK     }
                     {RESTORE}      {DISKETTE}
                                    {TAPE     }

  ,VOLUME={RES       }
          {vol-ser-no}
```

4.5. ADDITIONAL SYSTEM 80 HARDWARE SUPPORT

4.5.1. Release 9.0 Hardware

The following additional hardware is supported for the model 8:

- 8417/8419 disks (8417 fixed head attachment not supported)
- T5055 tape control unit for UNISERVO 22, 24, 26, and 28 tape drives
- 0789/0798 remote printer

5.1. GENERAL INFORMATION

A facility is provided for the delivery and installation of Software Maintenance Packages (SMPs) that contain changes to the OS/3 software.

It is recommended that the user system files be backed up by using the copy routines prior to applying an SMP. (Refer to the current version of the System Installation User Guide/Programmer Reference UP-8839.)

An SMP installation job control stream is provided that:

- installs all applicable corrections in the SMP;
- regenerates the user system if the SMP affects it in such a way that it must be regenerated to be operable; and
- prints an audit report on the status of each correction contained in the SMP.

If, at any time, a user requires a single software maintenance correction (SMC), it will be supplied as soon as possible without waiting for the next SMP delivery. In these special cases, the SMC must be installed using the SMC process.

- The first time that an IPL is attempted from a new SYSRES pack, it must be done without job queue recovery (JOBQUEREC=N specified); this initializes the job queues. Job queue recovery cannot be attempted at this first-time IPL since there is inconsistent/invalid data in the job queue area on disk.

  Failure to specify JOBQUEUE=N at the first-time IPL will cause the system to HPR, thereby making that IPL attempt impossible.

- To avoid confusion when allocating disks, it is suggested that all fixed media disks be turned online prior to boot. At IPL time, all local devices should be online and ready.

- Do not press the TRANSMIT key during the DBUS test portion of the IMPL sequence; a check stop occurs if this is done.

5.2. INTERACTIVE SUPERVISOR MODIFICATION AT IPL

A new feature has been added to the system to allow for a resident shared code directory index. This index allows for faster loading of shared code and faster entry to shared code.

If the message MODIFY SUPERVISOR on the DATE/TIME screen is answered with a Y, the operator is asked if a shared code directory index is to be built. A response of Y builds the index.

The index can also be configured at SYSGEN time via the SCDINDEX parameter. The operator can reject the index by responding with N when asked, during system initialization, if the index is not to be built.

5.3. BASIC SUPERVISOR (SY@BAS) - MODELS 3 THROUGH 6

One supervisor, SY@BAS, is supplied with System 80 models 3 through 6; this basic supervisor is designed to meet the needs of a majority of users. If SY@BAS includes all user requirements, tailoring a supervisor is not necessary. If user requirements differ from the features of SY@BAS, refer to the System 80 installation user guide/programmer reference, UP-8839 (current version) for generating a supervisor tailored to your needs.

SY@BAS features are:

1. Configuration of physical IOCS

   - 0789 printer
   - 0776 printer
   - 0719 reader
   - 0608 punch
   - 8417 disk (4)
   - 8417 disk, fixed head (2)
   - 8419 disk (2)
   - 8420 diskette (4)
   - 3560 workstation (32)
   - UNISERVO 10 tape (2)

2. Supervisor features

   - Fourteen job slots
   - Five switching priorities
   - ICAM support of local workstations
   - Job accounting
   - Spooling
   - System activity monitor
   - Console log

3. Specific capabilities

o Transient areas	5
o Error logging buffers	5
o Max time (device type)	Wall clock
o Max time	60 minutes
o Resident modules	SM$LOCK, SM$LOD, SM$STXIT, SM$TASK, SM$ASCKE, SM$ATCH
o Dynamically allocated load buffers	7 blocks
o Dynamically allocated load table entries	7 per job
o Spool file size	100 cylinders
o Spool file bit map	128 words
o Spool buffer	8 blocks
o Spool output writer buffer	8 blocks
o Shared load modules	DM$CFM, D3$M111, DM$W111, PR$IOE
o Shared data management modules	80 24-byte slots
o Expansion region size	4096 bytes
o System security administrator name	SYSADM
o Job queue recovery	Yes

In the SY@BAS supervisor, devices 100 through 105 are configured for 8417 disks and devices 106 and 107 are configured for 8419 disks. These devices cannot be used for the alternate run or spool devices if the hardware does not match the SY@BAS configuration.

NOTES: 1. Refer to the System Installation User Guide/Programmer Reference, UP-8839 (current version) for instructions on installing the software.

Spooling and job accounting will be disabled at IPL time if the program product spooling is not installed.

2. Transient work area support (TRNWKAREA=YES) has been added to the starter supervisor SY@BAS as a performance enhancement for the SMP process.

5.4. BASIC SUPERVISOR (SY#BAS) - MODEL 8

One supervisor, SY#BAS, is supplied with the System 80 Model 8. If user requirements differ from the features or I/O devices of SY#BAS, refer to the System 80 installation user guide/programmer reference, UP-8839 (current version) for generating a supervisor tailored to your needs.

SY#BAS features are:

1. Configuration of physical IOCS

   - o 0770 printer
   - o SDMA (0776/0789/0798) printer
   - o 0716 reader
   - o 0719 reader
   - o 8418 disk (3)
   - o 8433 disk (2)
   - o 8470 disk (2)
   - o 8420 or 8422 diskette (4)
   - o 3560 and 3561 workstation (2)
   - o 8417 disk (2)
   - o 8419 disk (2)

2. Supervisor features

   - o Twenty-four job slots
   - o Five switching priorities
   - o ICAM support of local workstations
   - o Job accounting
   - o Spooling
   - o System activity monitor
   - o Console log

3. Specific capabilities

o Transient areas	5
o Error logging buffers	6
o Resident modules	SM$LOCK, SM$LOD, SM$STXIT, SM$TASK, SM$ASCKE, SM$ATCH
o Dynamically allocated load buffers	7 blocks
o Dynamically allocated load table entries	7 per job
o Spool file size	50 cylinders
o Spool file bit map	64 words
o Spool buffer	8 blocks
o Spool output writer buffer	8 blocks
o Shared load modules	DM$CFM, D3$M111, DM$W111, PR$IOE
o Shared data management modules	80 24-byte slots
o Expansion region size	4096 bytes
o Job queue recovery	Yes

In the SY#BAS supervisor, the following device configurations apply:

1. Devices 3A0 through 3A2 are configured for 8416/8418 disks.

2. Devices 380 through 381 are configured for 8430/8433 disks.

3. Devices 390 through 391 are configured for 8470 disks.

4. Devices 3B0 through 3B1 are configured for 8417 disks.

5. Devices 3B6 through 3B7 are configured for 8419 disks.

These devices cannot be used if the hardware does not match the SY#BAS configuration.

NOTES: 1. Refer to the System Installation User Guide/Programmer Reference, UP-8839 (current version) for instructions on installing the software.

Spooling and job accounting will be disabled at IPL time if the program product spooling is not installed.

2. Transient work area support (TRNWKAREA=YES) has been added to the starter supervisor SY#BAS as a performance enhancement for the SMP processor.

8417 - 3B0 →

8418 - 2A0 →

5.5. SYSTEM GENERATION GUIDELINES

- When the MIXED and CDM modes are used, there is a related CPU overhead. This overhead may be noticeable when the CPU timing information available from job accounting is used. Most of the overhead is associated with data management and as such gets charged to user jobs. Consideration of this fact may have to be given for any billing or charges based on job accounting information.

- To improve the performance of DDP (and also to help reduce main storage fragmentation), a capability is provided that allows the user to have the DDP modules resident that are common to all DDP functions and that are in the normal processing path.

  The user may, at supervisor generation time, specify

  RESHARE=DDPL
  : All DDP modules required for local processing are made resident (approximately 37,000 bytes).

  or

  RESHARE=DDPR
  : All DDP modules required for remote processing are made resident (approximately 82,000 bytes). This includes the group DDPL.

  The user may also modify the supervisor at system initialization time by specifying a Y to the question at the bottom of the screen regarding supervisor modification. Either group DDPL or DDPR may be added at initialization time. The same modules and sizes apply whether DDP is made resident at supervisor generation time or system initialization time.

- The minimum main storage requirement for Release 9.0 is 524K bytes.

- The maximum number of transient areas that can be created by using the TRANS keyword parameter is 15.

- There are two IMS configuration parameters that cause screen format services (SFS) to allocate additional dynamic memory:

  RESFMT=n
  : where n is the number of resident formats. The default is 1 resident format per terminal for single thread and 3 resident formats for multithread.

  SFS=n
  : where n is the number of concurrent SFS users.

The system allocates dynamic buffers according to the formula:

no.-of-terminals x no.-of-resident-formats x format-size = allocated main storage

Using this formula, the following example illustrates the IMS/SFS dynamic buffer allocation for a typical user:

10 terminals x 3 x 4K = 120K

5.6. IMPL/IPL GUIDELINES

- You may use an 8470 disk as your SYSRES on the System 80 model 4 and model 6. However, due to a software restriction you cannot IMPL or IPL from that drive. Instead, you must IMPL and IPL from an 8417 or 8419. You may, however, load your supervisor from the 8470.

  Follow these steps to use an 8470 as SYSRES:

  1. To IMPL, answer the IMPEQUALCDD? message by keying in the device-id of the 8417 or 8419 you want to IMPL from.

  2. To IPL, answer the IPLEQUALCDD? message by keying in the device-id of the 8417 or 8419 you want to IPL from.

  3. After the IPL load device is selected and the IPL01 message is displayed requesting the supervisor you want to load, key in the supervisor name, S, device-id of the 8470 where your supervisor resides.

5.7. RESTORING FILES FROM PREVIOUS RELEASES TO RELEASE 9.0

The following files may include modules and records created by the user while using a previous release:

```
$Y$CAT
$Y$SEC
$Y$SAVE
$Y$FMT
ESC$ESCORT.LIBRARY.FILES
```

These user-generated modules and records can be transferred to your Release 9.0 SYSRES volume by using the following procedure:

1. Select the media on which you wish to save the file.

2. Use the JC$CAT utility for YCAT; use MLIB for the remainder of the files.

3. Save the files from your previous release to the selected save media.

4. Install Release 9.0 using the restore utility.

5. Restore the files to your Release 9.0 SYSRES volume.

6. System Publication Updates

This section contains system publication update information for Release 9.0 UP- documentation that became available after the publication cutoff date. The affected UP- documents are listed in the order of their UP- numbers. The page, subsection, etc. where the change is to be made is listed along with the updated information.

The information in this section will be included in the next scheduled update of the UP- manuals.

- o UP-8022 Data Base Management System (DMS) Data Description Language User Guide/Programmer Reference

  - Subsection 5.4.3.2.4.

    Change the rule to read as follows:

    > If the optional clause is not present, the LOOKS clause defaults to the AREA LOCKS sentence, if specified. Otherwise, NO LOOKS.

- o UP-8036 Data Base Management System (DMS) Data Manipulation Language User Guide/Programmer Reference

  - Subsection 3.5.3

    Change rule 3 to read as follows:

    > The area from which the record is deleted, as well as any areas that may potentially be updated by the deletion (based on schema path), must be open for an update usage mode before the DELETE statement can be executed.

  - Subsection 3.5.9

    Change the second bulleted item to read as follows:

    > Loads the requested subschema load module (if not not already loaded).

- o UP-8054 Rev. 4 Sort/Merge Programmer Reference

  - Table E-2

    Add the following data transfer rate information for UNISERVO 26 and UNISERVO 28 as shown:

UNISERVO 26	UNISERVO 28
120,000 bps	200,000 bps
60,000 bps	100,000 bps
-	-
-	-
-	-

- UP-8067 Report Generator II (RPGII) User Guide

  Subsection 8.2.5

  Delete the second paragraph.

  Add the folowing sentence to the end of the third paragraph:

  A record must be read prior to deletion.

  Subsection 13.12.1

  Change the third paragraph to read as follows:

  If the table is to apply to one or all files in your program, the format of the translation table record is:

  Add the following to the entry for Position 1-8:

  Enter the file name if the translation table applies to one file in your program.

- UP-8342 Sort/Merge User Guide

  Subsection 1.7.2

  Table 1-3

  Add the following data transfer rate information for UNISERVO 26 and UNISERVO 28 as shown:

UNISERVO 26	UNISERVO 28
120,000 bps	200,000 bps
60,000 bps	100,000 bps
-	-
-	-
-	-

- UP-8364 Information Management System (IMS) System Support Functions User Guide

  Subsection 4.2

  Add the following new keyword paramter to the IMSCONF jproc format:

  [,SWPRI=1-60]

  Add the following new subsection:

  4.2.15. Assigning a Task Switching Priority

  The SWPRI keyword parameter allows you to assign a task switching priority to the IMS configuration job steps. The priorities range from 1 to 60. 1 is the highest priority and 60 is the lowest.

  If this parameter is omitted, the system priority applies.

  For additional information on task switching priority, refer to the Job Control User Guide, UP-9986 (current version).

Subsection 4.3.3.6

Add the following after the third paragraph:

When the INTLIST access number is reached and another action is waiting to access the same defined file, LIST processing is interrupted and the accumulated results are output to the terminal. The terminal operator can cancel the current transaction or enter some other command. To continue LIST generation, the terminal operator transmits the MORE LIST command. The terminal operator can repeat this process until conditional LIST requirements are satisfied or until a new transaction is entered.

If no other ACTION is attempting to the same defined field when the INTLIST access number is reached, the LIST continues to process without any outward indication that the internal check is occurring. The number of accesses is checked repeatedly for the length of the file.

Table F-2. Configurator Errors and Their Interpretation

Delete *** ERROR 07 09 .

o UP-8550 Integrated Communications Access Method (ICAM) Standard MCP Interface (STDMCP) User Guide

Table 2-1. Output Delivery Notice Status Codes

Add note 1 to device status 2, note 2 to device status 3, and note 3 to device status 4:

NOTE 1:

An out-of-paper condition on an Aux device will be reported as a status 3 on a UTS 20 or UTS 40.

NOTE 2:

Status 3 will also be reported for Aux devices on a UTS 20 or UTS 40 if the lid of a printer is raised or a printer is powered off during a print operation.

NOTE 3:

Status 4 is also reported for Aux devices on a UTS 20 or UTS 40 when a printer is offline or end of tape occurs on a TCS.

o UP-8811 Distributed Data Processing Concepts and Facilities

Subsection 7.3.2

Change the first sentence of the Location description of the KEY parameter to read as follows:

Is the number of bytes in the record that precede the key.

Change the first line of the example as follows:

```
KEY 1 =(8,50,CHANGE)
          ↑
          └The location is 50 because that is the number of bytes
            in the record that precede the employee number field.
```

Change the second line of the example as follows:

```
KEY 2 =(2,67,DUPLICATES,CHANGE)
          ↑
          └The location is 67 because that is the number of bytes
            in the record that precede the pay-class field.
```

Subsection 8.5.1.1. DDP STATUS Command Information Summary

Add the following:

The DDP STATUS HOST=hhhh command displays the following information:

1. SYS-SIZE = _____ FREE-MEM= _____ LARGEST= _____

   displays the current size of installed memory, the amount of free memory, and the size of the largest free region.

2. INTERACTIVE= ____ ENTER= ____ BACKGROUND= ____ BATCH-JOBS= ____

   displays the number of current interactive tasks, enter tasks, background tasks, and the number of active batch jobs.

3. CURRENT INTERACTIVE USERS:

4. dddd-uuuuuu.dddd-uuuuuu dddd-uuuuuu

   displays the device-id and user-id for every interactive user currently logged onto the system.

5. CURRENT ACTIVE BATCH JOBS:

6. jjjjjjjj jjjjjjjj jjjjjjjj

   displays the names of all currently active batch jobs.

7. REMOTE DDP SESSION ACTIVITY:

8. REMOTE HOST= ___ INPUT SESSIONS = ___ OUTPUT SESSIONS= ___

displays the name of each remote host connected to the host for which status is being returned, as well as the number of input sessions to that host and the number of ouput sessions from that host.

In addition, if no interactive users are logged on, messages 3 and 4 are replaced by the following message:

NO INTERACTIVE USERS CURRENTLY LOGGED-ON

If there are no batch jobs currently active, message 5 and 6 are replaced by the following message:

NO BATCH JOBS CURRENTLY ACTIVE

If there is no DDP session activity, message 8 is replaced by:

NO DDP SESSIONS ACTIVE AT THIS TIME

- UP-8823 Security Maintenance Utility User Guide/Programmer Reference

Subsection 1.2.1.

Change the Password description to read as follows:

A 1- to 8-alphanumeric string that, with the user-id, controls the user's access to the system.

Subsection 2.2.7.

Add the following sentences to the third paragraph:

The $$SCN and $$SOFF commands must not be used in execution profiles. The use of these commands will cause unpredictable results in ICAM.

- UP-8831 Supervisor Concepts and Facilities

Subsection 4.2.6. Job Management Parameters

Add the keyword parameter:

JOBACCTREQ Keyword Parameter:

JOBACCTREQ=:NO :
:YES:

Specifies whether a user must have an account number to log onto the system. If you specify YES, all users must enter an account number when they log on. To use this feature, you must also configure logon security by specifying ISLOGONSC = YES. However, you can configure logon security without specifying the JOBACCTREQ feature.

- UP-8834 Data Utilities User Guide

  Add the following note to steps 12 and 13 on page 3-8:

  NOTE:

  The default values for this parameter are not the same as for the DATA routine in batch mode. In batch mode, this parameter defaults to the values of the input file; in interactive mode, the default values are as shown.

- UP-9209 IMS Data Definition and UNIQUE User Guide

  Subsection 3.21

  Change the first bulleted item in the data-name-1 description to read as follows:

  - A record described with the FROM or FROM CONTROL BREAK format of the FROM clause, data-name-1 must be part of that record's primary key only.

  Add the following note to subsection 7.8 after the Embedded NEXT command subject:

  NOTE:

  Do not attempt to update a common storage area file via UNIQUE. UNIQUE can access a common storage area file through defined record management, but only through a supplement definition. You must not specify ASSUMES CONTROLLED ROLE IN UPDATE in the supplement definition.

- UP-9317 Menu Services Concepts and Facilities

  Subsection 2.4

  Change the DISPLAY menu function command description to:

  This command displays the screen format, specified by format-name, purely for informational purposes. This screen may or may not have input fields. Screens that contain output or bidirectional fields cause an error and are not displayed.

- UP-9975 Spooling and Job Accounting Concepts and Facilities

  Add the Output Writer enhancement and related operator command:

  By using a new Output Writer command, the operator can skip forward or back up a specified number of lines of a log file that is being printed.

- UP-9976 General Editor User Guide/Programmer Reference

  Subsection 1.2.1

  Change the first sentence to read as follows:

  > The OS/3 editor contains a user-controllable data entry saving feature called AUTOSAVE, which can periodically copy your data entries to a user-specified save file.

  Subsection 7.9

  In the description of the AUTO parameter, change the first sentence to read as follows:

  > Activates AUTOSAVE, which automatically saves data entries by copying a user's proc (main proc) work space to the file specified in SAVEFILE. at a frequency rate designated by the user.

  In the description of the AUTO parameter, change the last sentence in Note 2 to read as follows:

  > The user must identify and correct the error, then reinitialize AUTOSAVE with another @SET/@AUTO sequence.

  In the typical examples of using the aSET directive, change the description of the last example to read as follows:

  > Sets EDT to save the user's proc 0 (main proc) every 10 input lines to the module EDTSAVE on the file YSRC on the RES pack.

The format of this command is:

$$\begin{Bmatrix} SK \\ RE \end{Bmatrix} \begin{Bmatrix} ,nnn \\ ,LI,nnn \end{Bmatrix}$$

where:

,nnn
Specifies that the Output Writer should skip or restart nnn lines from the current position.

,LI,nnn
Specifies the Output Writer should skip to or restart at the line number indicated by nnn.

o UP-9978 Consolidated Data Management Concepts and Facilities

Replace the 8470 disk subsystem characteristics in Table A-4 with the following:

Characteristics	8470 Disk Subsystem
Data capacity (8-bit bytes)	491 million
Number of disk units	1 to 8
Disk/diskette speed (rpm)	3600
Rotation period (ms/rotation)	16.7
Data bit rate (MHz)	16.8 x 106
Bit density (ppi)	11,134
Track density (tracks/inch)	630
Track capacity (bytes/track)	24,576
Number of tracks	1250 + 10 spares
Number of surfaces per disk unit	16
Positioning time (seek time)	
Minimum (ms)	4
Average (ms)	23
Maximum (ms)	46
Transfer rate (kilobytes/second)	2097

- UP-9979 Consolidated Data Management Macroinstructions User Guide/ Programmer Reference

  Paragraph 2.3.1.

  Delete the following under the description of the keyword parameter WORK:

  The work area and the I/O area can be the same buffer if all of the following conditions are met:

  - you are performing unkeyed operations only;
  - RCB=NO; and
  - the record size = the buffer size.

A canned job stream, MODLST, is available on the release disk to provide the OS/3 macro/module listing. This job stream provides an alphanumerically ordered listing of the contents of each of the 11 system libraries, including the description and size of each module. The job may be executed by entering the following system command:

```
RU MODLST[,,VSN=xxxxxx]
```

where:

xxxxxx
Is the VSN of an optional work disk. If this parameter is omitted, the work space for the job is allocated on the disk containing the RUN library. Disk work-space requirements for MODLST are as follows:

8416/8418 (Model 8)	30 cylinders
8430 (Model 8)	10 cylinders
8433 (Model 8)	10 cylinders
8417 (Models 4 and 6)	15 cylinders
8419 (Models 4 and 6)	30 cylinders
8470 (Models 4, 6, and 8)	4 cylinders

The job stream executes in three steps:

1. Program DMENVR is used to determine if CDI data management is available and sets on UPSI bit accordingly. Otherwise, DTF data management versions are used.

2. Either MODXTR (DTF mode) or CMDSTR (CDI mode) is used to extract data from each module in the system libraries to an output file for step 3.

3. The output file from step 2 is submitted as input to the MODLST (DTF mode) or CMDLST (CDI mode) program, which sorts the input and then produces the macro/module listing.

B.1. DESCRIPTION AND USE

The Screen Format Conversion Utility (SFCNVR) is a batch-oriented program that converts all Release 7 Formats (type F records) in a library to a form required by the Release 8 Screen Format Coordinator. Screen Format Generator clump records (type FC records) do not require conversion and are automatically excluded from the conversion process. (FC default).

SFCNVR provides a means of modifying a complete format library without any need to know which formats reside in a library. If the user directs the output of the conversion to be rewritten to the input file, a MIRAM Librarian job should be executed to realign the library to reclaim space from deleted records. If the user directs the output of the conversion program to be written to a new file, the FC elements should be copied to this new file (FC=Y).

The conversion program is initiated with parameters entered interactively or through a statement, using keywords to provide the parameters.

After each format is converted, a message is written to the job log indicating the format name, number of sectors that the format previously occupied, and the number of sectors that the converted format occupies. The amount of space required for the converted format is generally smaller than the Release 7 format.

B.2. KEYWORD PARAMETER METHOD

The following command invokes the Screen Format Conversion Utility, accepting defaults for all the parameters:

```
RUN SFCVR
```

The defaults are:

Old formats are located in YFMT.

New formats are located in YFMT.

YFMT is on SYSRES.

The complete syntax for the RUN SFCVR statement is:

```
RUN SFCVR  ⎧⎡,VO=⎧RES        ⎫⎤⎡,VI=⎧RES        ⎫⎤⎫
   or      ⎪⎢    ⎨vol-ser-no ⎬⎥⎢    ⎨vol-ser-no ⎬⎥⎪
RV SFCVR   ⎪⎣    ⎩X          ⎭⎦⎣    ⎩X          ⎭⎦⎪
           ⎨                                      ⎬
           ⎪⎡,V=⎧RES        ⎫⎤                    ⎪
           ⎪⎢   ⎨vol=ser-no ⎬⎥                    ⎪
           ⎩⎣   ⎩X          ⎭⎦                    ⎭

           ⎧[,FO=filename] [,FI=filename] ⎡,A=⎧Y          ⎫⎤⎫ ⎡FC=⎧N⎫⎤
           ⎪                              ⎢   ⎨N          ⎬⎥⎪ ⎣   ⎩Y⎭⎦
           ⎨                              ⎣   ⎩# of cyl   ⎭⎦⎬
           ⎪                                                ⎪
           ⎩[,F=filename]                                   ⎭
```

Parameters that can be supplied are:

filename
: File names for the old and new format names.

VSN
: Volume serial numbers for the old and new file names.

Allocation information (if the output file is new):

V=
: Volume to be used for input and output libraries. V=RES is default unless VO or VI is specified.

VO=
: Volume to be used for output library when not the same as input. V must not be specified. VO=RES is default.

VI=
: Volume to be used for input library when not the same as output. V must not be specified. VI=RES is default.

NOTE: When V is specified, VO and VI are ignored.

If V, VO, or VI is specified as X (e.g., VO=X), the following JCL is generated:

```
// DVC 50  // VOL   X(NOV)
```

This enables specification of one alternate SYSRES volume.

NOTE: Normally, input and output libraries should be the same, unless a user format file is specified. In this case, the user may choose to separate old formats from new by using VO and VI and/or FO and FI.

File specification uses the following keywords:

F=
The file name to be used for both input and output libraries.

FO=
File name used for output library when not the same as the input file. F must not be specified.

FI=
File name used for input library when not the same as the output file. F must not be specified.

For allocation, the following applies:

A=N
This is the default. Do not allocate space for the library. The output library exists.

A=Y
Allocate two cylinders to a new output library. The file is initialized.

A=nn
Allocate the number of cylinders (must be specified as 2).

FC records (clump records)

FC=N
This is the default; FC records are not to be copied.

FC=Y
FC records are to be copied from the input file to the output file if the files are different.

Examples:

```
1.  RUN SFCVR
2.  RV SFCVR,,V=D01234
3.  RV SFCVR,,FO=MYFMT,A=Y
4.  RV SFCVR,,VO=X,FO=MYFMT
5.  RV SFCVR,,V=X,F=MYFMT
```

1. All defaults are taken. The input and output libraries are YFMT on the RES volume. Output library already exists. No debug snaps.

2. The input and output libraries are YFMT on volume D01234.

3. The input library is YFMT on the RES volume, and the output library is a new file MYFMT, also on RES.

4. The input library is YFMT on RES. The output library is an old file MYFMT on another volume that has a duplicate VSN. Operator interaction is necessary to ensure proper allocation.

5. Both input and output libraries are MYFMT (existing) on a volume with a duplicate VSN.

B.3. INTERACTIVE PARAMETER PROMPTING METHOD

Enter the following to initiate the RUN processor in the interactive mode:

```
RUN SFCVR,,I=Y
```

Any of the following parameters may be changed from their default values:

Parameter	Default	Options
Output library file (LBL)	YFMT	YFMT or user file LBL name
Volume serial no. for output library	RES	RES or vsn
Alternate library file (LBL) used for old format input	YFMT	YFMT or user file LBL name
Volume serial no. for alternate library	RES	RES or vsn

In addition, one of the following two questions will be asked:

1. IS OUTPUT FILE NEW? (REPLY Y, N, OR # OF CYL.)

   The default value is no (N). This causes an existing file to be allocated. If yes (Y) is selected, a new file will be allocated with two cylinders of storage. If the number of cylinders is selected, yes is implied and that amount of storage (2 or more) cylinders will be allocated to the file (e.g., 2, 12, Y are acceptable replies).

2. IS AN ALTERNATE FILE TO BE USED FOR INPUT FORMATS? (Y OR N)

   The default value is no (N). Normally the same library file should be used for both old and new format access (both input and output accesses). If this default is selected, the user will be prompted only for the file (LBL) name and volume serial number for one file.

If the user wishes to access new and old formats in separate libraries, he may select yes (Y). If that is the choice, then prompts will take place for both libraries, soliciting file (LBL) names and the corresponding volume serial numbers.

The following example illustrates an interactive session:

```
RV SFCVR,,I=Y
26 RV0011   IS OUTPUT FILE NEW? (REPL): Y, N, OR # OF CYL.)
27RV0011   JOB=SFCVR    SYMBOL=A        VALUE=N            *ENTER VALUE
27 Y
28 RV0011   IS AN ALTERNATE FILE TO BE USED FOR INPUT FORMATS? (Y OR N)
29RV0011   JOB=SFCVR    SYMBOL=ALT      VALUE=N            *ENTER VALUE
29 Y
30 RV0011   PLEASE ENTER FILE LABEL (LBL) FOR INPUT FORMAT LIBRARY
31RV0011   JOB=SFCVR    SYMBOL=FI       VALUE=$Y$FMT       *ENTER VALUE
31 CNFORMAT
32 RV0011   ENTER VOLUME SERIAL # (OR RES) FOR THIS INPUT LIBRARY
33RV0011   JOB=SFCVR    SYMBOL=V]       VALUE=RES          *ENTER VALUE
33
34 RV0011   ENTER FILE LABEL  (LBL) FOR ALL OTHER FUNCTIONS
35RV0011   JOB=SFCVR    SYMBOL=FO       VALUE=$Y$FMT       *ENTER VALUE
35 CHRISFMT
36 RVC011   ENTER VOLUME SERIAL # (CR RES) FOR ALL OTHER FUNCTIONS
37RRV0011  JOB=SFCVR    SYMBOL=VO       VALUE=RES          *ENTER VALUE
37
38 RV0011   SHOULD THE FC ELEMENTS BE COPIED TO THE NEW FILE?(Y OR N)
39RV0011   JOB=SFCVR    SYMBOL=FO       VALUE=N            *ENTER VALUE
39 Y
```

This example shows the following:

1. User overrides the default (N) for the first question (line 27).
2. User types in the same value (N) as default for second question (line 29).
3. User overrides default file LBL of the input by entering CNFORMAT (line 31).
4. User accepts the default value (RES) for volume (line 33).
5. User overrides default file LBL of the output by entering CHRISFMT (line 35).
6. User accepts the default value (RES) for volume (line 37).
7. User overrides default value (N) for FC elements (line 39).

SOFTWARE USER REPORTS (SURs)

Inquiries to SURs corrected by this release of the software should be directed to the local Sperry branch office.

This appendix contains information that can be used to estimate the main storage needs of System 80 for Release 9.0. Included are storage estimates for the various components of the operating system, a chart to aid in calculating the total amount of main storage required, and a list of the main storage capacities available with System 80 systems.

D.1. MAIN STORAGE COMPONENTS

The main storage estimates of the OS/3 Operating System software are listed by the following categories:

- Main storage
- Supervisor size
- Shared data management code
- DTF sizes
- Job prologue
- Space for user programs
- Integrated communications access method (ICAM)
- Information management system (IMS)
- Data base management system (DMS)
- MAPPER 80 software
- Data utilities
- Other system software
- Emulation
- OS/3 disk requirements
- Interactive command processor
- MENU generator
- Screen format services

D.2. CALCULATING MAIN STORAGE REQUIREMENTS

The Main Storage Estimator Chart (Figure D-1) provides a convenient checklist for constructing a software system from the individual software components.

Main storage requirements can be calculated as follows:

1. Determine which software components are to be used.

2. Calculate the amount of main storage required for each component, using the appropriate subsection (D.3 through D.9) in Figure D-1. The value (in bytes) in subsections D.3 through D.9 is indicated in parentheses.

3. List each program to be run and calculate total main storage required (D.10 through D.12).

4. Total all the entries made in Figure D-1 to arrive at the main storage requirements.

   NOTE: The total obtained in step 4 may be reduced by:

   - Reducing the number of programs to be run
   - Modifying the size/type of programs to be run
   - Eliminating certain software components that are not used regularly and not required to be in main storage all the time

5. Select the main storage size (Figure D-1) closest to (but greater than) the total in Figure D-1 to determine the size needed.

SUPERVISOR (D.3) _____
ICAM (D.4) _____
IMS (D.5) _____
DMS (D.6) _____
SYSTEM SOFTWARE (D.7) _____
DATA UTILITIES (D.8) _____
EMULATION (D.9) _____
SUBTOTALS _____

PROGRAM SIZES (D.10)

(Models 3 through 8)		(Model 8 only)		(Model 8 only)	
#1		#15		#32	
#2		#16		#33	
#3		#17		#34	
#4		#18		#35	
#5		#19		#36	
#6		#20		#37	
#7		#21		#38	
#8		#22		#39	
#9		#23		#40	
#10		#24		#41	
#11		#25		#42	
#12		#26		#43	
#13		#27		#44	
#14		#28		#45	
		#29		#46	
		#30		#47	
		#31		#48	

CONCURRENT SYMBIONTS (D.11) _____
SHARED D.M. (D.12) _____

SUBTOTALS _____

Totals - ESTIMATED MAIN STORAGE REQUIREMENTS _____

MAIN STORAGE SIZE RECOMMENDATIONS: Select size closest to (but greater than) your estimated main storage requirements.

524,288
1,572,864*
2,097,152*
2,621,440*
3,145,728*
3,670,016*
4,194,304*

* Systems with Main Storage Expansion

Figure D-1. Main Storage Estimator Chart

D.3. SUPERVISOR SIZE

1. Minimum requirements for a supervisor

   The minimum requirements for a supervisor include:

   a. One job slot
   b. One task switching priority
   c. Multitasking
   d. Interrupt handling
   e. Storage protect
   f. One transient area
   g. Transient loader
   h. Console control facilities
   i. Support for peripherals
      - o Printer
      - o Two disk drives
      - o One diskette drive

   j. ECC (error correction code) for IDA
   k. AVR
   l. System access technique (SAT) required for disk data management and system software
   m. Resident loader

2. Supervisor options (can be added to minimum supervisor):

3. Supervisor functions (available through transients) that can optionally be made resident:

a.	SM$LOCK - Resident system lock feature	(900)	_____
b.	SM$ATCH - Resident multitasking (ATTACH macro)	(1200)	_____
c.	SM$TASK - Resident multitasking (AWAKE, TYIELD, CHAP, WAITM, and POST macros)	(1100)	_____
d.	SM$STXIT - Resident island code control (STXIT and EXIT macros with island code activation)	(1400)	_____
e.	SMG$GTPUT - Resident information passing (GETCOM, PUTCOM, and GETINF macros)	(760)	_____
f.	SM$DBS - Resident DBS	(300)	_____

4. Sum of items 1, 2, and 3 - round to 1024 or multiples of 1024

5. Basic supervisor

o Models 3 through 6	13,735	_____
o Model 8	14,277	_____

This is the starting point for all other features. The basic supervisor includes:

a. One to 14 job slots (Models 3 through 6), one to 24 job slots (Model 8) (Refer to 6a.)
b. Integrated communications access method (ICAM) interface
c. One to 60 task switching priorities (Refer to 6c.)
d. Capability to add selector and multiplexer channel devices
e. Error logging interface
f. Minimum timer services for I/O clock (Refer to 6h.)
g. Items 1c through 1l (minimum supervisor)

6. Additional supervisor options

a. Multijobbing (4 bytes x number of job slots x number of I/O data paths). Note that the 0605 punch with read feature is one data path.		_____
b. Printer/punch/reader/RBP/system log/ spooling (Table D-1)		_____
c. Multipriorities (4 bytes x number of execution priorities)		_____
d. Job accounting	(350)	_____
e. Memory consolidation (dynamic relocation)	(500)	_____
f. SYSDUMP	(1384)	_____
g. Online diagnostics	(1400)	_____
h. Clock support		
GETTIME macro support	(150)	_____
SETTIME macro support	(200)	_____
i. Additional transient areas 1200 bytes each; 15 maximum. One transient area is included in Basic Supervisor.		_____
j. Console logging		
Console log dispatcher	(450)	_____
Console log spool control table	(228)	_____
Console log buffer:		
Minimum	(304)	_____
Normal	(560)	_____
Maximum	(1072)	_____
k. Shared code directory (40 bytes x number of shared code directory slots)		_____
l. Interactive command processing table	(64)	_____
m. System activity monitor (SAM)	(344)	_____
n. Add total of supervisor options in item 3		_____
o. Shared code directory index (16 x number of modules in the Shared code load library)	(5328)	_____

7. Sum of items 5 and 6; round to 1024 or multiples of 1024 _____

D.3.1. PIOCS Sizes

o Models 3 through 6

PIOCS Resident -	12,755
448 x number of DMA disks	(____)
304 x number of diskettes	(____)
636 x number of local workstations	(____)
264 x number of printers	(____)
264 x number of readers and punches	(____)
304 x number of tapes	(____)
If 8470 disks are configured:	
1396 + 448 x number of 8470 disks	(____)
If tape block numbering is configured:	
Add 1640	(____)
Sum of PIOCS sizes	_____

o Model 8

PIOCS Resident -	19,222
(Includes 1 LMUX, 1 USEL, and 1 DMUX channel; plus support for 8418 or 8470 disk at 1374 fixed size)	
256 x number of additional channels	(____)
92 x number of additional USEL channels	(____)
448 x number of disks	(____)
304 x number of diskettes	(____)
636 x number of local workstations	(____)
264 x number of printers, readers, and punches	(____)
304 x number of tapes	(____)
If 8430/8433 disks are configured:	
Add 2028	(____)
If tape block numbering is configured:	
Add 1640	(____)
Sum of PIOCS sizes	_____

D.3.2. Interactive Command Processor Size

The interactive command processor consists of resident code and shared code modules. The resident code remains in main storage as long as one workstation is logged on or commands are being entered from the console. Shared code modules remain in main storage until they are unused and their main storage is needed for some other purpose.

1. Basic interactive services symbiont (including 1024 prologue) (8192) _____

2. DDP support (See note 1.) (8192) _____

3. Remote workstation support (See note 2.) (11264) _____

4. ICAM support (See note 3). (1024) _____

5. Dynamic open file table (26 x number of users configured) _____

6. Workstation control table (56 per logged-on workstation) _____

7. Thread control packet (344 x number of commands running) _____

8. Shared code command modules

a.	COMMAND PROCESSOR	4256	+ (300 x number of users)	_____
b.	COPY, PRINT, PUNCH	1916	+ (316 x number of users)	_____
c.	FSTAT, VTOC	2648	+ (408 x number of users)	_____
d.	COMMENT	648	+ (208 x number of users)	_____
e.	RECOVER	1536	+ (304 x number of users)	_____
f.	ALLOCATE	256	+ (56 x number of users)	_____
g.	ERASE	800	+ (448 x number of users)	_____
h.	ENTER	1024	+ (320 x number of users)	_____
i.	LOGON	4096	+ (800 x number of users)	_____

NOTES:

1. DDP support is included only if the DDP product is separately purchased by the customer, as evidenced by the presence of the load module DD$ICM in YLOD.

2. Remote workstation support is included only if remote workstations are configured in the supervisor and load modules WS$WKS and WS$TRM are present in YLOD.

3. ICAM support is included only if needed, i.e., if DDP or remote workstations are supported.

4. The size of the I/S symbiont is determined dynamically when RC$$IS is initially loaded.

5. On Releases 7.0 and 7.1, the modules required to support remote workstations and ICAM were separately loaded elsewhere in main storage, not bound into the I/S symbiont. The change was made to reduce memory fragmentation.

j.	LOGOFF	(1344)		
k.	SMU	5370	+ (960 x number of users)	
l.	SDU	1900	+ (436 x number of users)	
m.	HELP	432	+ (192 x number of users)	
n.	SCREEN	1408	+ (40 x number of users)	
o.	STATUS	1824	+ (125 x number of users)	

7. Dynamic file management

a.	Dynamic open			
	Root	(264	+ 240 x number of users)	
	Phase I	(3176	+ 184 x number of users)	
	Phase II	(3296	+ 664 x number of users)	
	Phase III	(376	+ 56 x number of users)	
	Minimum open	(3280	+ 906 x number of users)	
b.	Dynamic close	(712	+ 304 x number of users)	
c.	Spool file access			(6880)
d.	VTOC access			(2536)
e.	Workstation system mode access			(1776)

8. Library utilities

Table D-1. Spooling Size Estimates

Component	Options			
	Output Print/Punch	Input Read/ Print Punch	RBP Print/ Punch/Read/ JCS	
Spooler	5900	5900	5900	5900
System Spool Control Tables (Single VOLUME)	728	728	728	728
Directories	72	96	168	

Virtual PUBS:

Reader	Default is 32 x number of job slots or user-specified number x 32.	_____
Printer	Default is 64 x number of job slots or user-specified number x 32.	_____
Punch	Default is 32 x number of job slots or user-specified number x 32.	_____
Bit Map	Default is 256 bytes or user-specified size x 4 bytes.	_____
	TOTAL	_____

D.3.3. MENU Generator

The MENU generator requires the following main storage:

Root and I/O	(6074)
Buffers	(15,328)
CREATE functionality	(41,744)
or	
MODIFY functionality	(45,568)
or	
DISPLAY functionality	(26,224)

NOTE:

Execution also requires the MENU processor, screen format services, and library utilities.

D.3.4. Screen Format Services

Screen format services requires the following main storage:

Screen format generator	(50,000)
Screen format coordinator	(19,000)
Input virtualizer	(6144)
Output virtualizer	(6000)
VT symbiont	(1600)

D.4. INTEGRATED COMMUNICATIONS ACCESS METHOD (ICAM)

There are five different interface levels: CPI, DDI, TCI, RBP, and STDMCP. Storage estimates for an ICAM generation are calculated as follows:

1. Job prologue

Preamble	(304)	_____
TCBs		
a. Primary TCB for all configurations	(320)	_____
b. ICAM overlays (all configurations except CPI)	(320)	_____
c. TCB for each DISCFIL Macro	(320)	_____
d. TCB for each JRNFILE Macro	(320)	_____
e. TCB for RBP interface	(320)	_____
f. TCB for a CCA with TYPE=(GBL)	(320)	_____
g. Open file table 4 + (20 x number of total DISCFIL and JRNFILE macros in all CCAs)		_____
h. Phase load table	(136)	_____
i. TCB for SCLA load (if TSF desired)	(320)	_____
j. TCB for TSF	(320)	_____

2. Code present for all configurations

Timer services	(500)	_____
General information table (Table D-2)		_____
Activity control	(4500)	_____
Software monitor	(600)	_____
Internal stack control	(1000)	_____

3. Terminal support facility (TSF)

Basic	(19,300)	_____
If ICAM configured for CPI users only add:	(1100)	_____

4. Code present for all non-CPI configurations

Common subroutines	(700)	_____
Buffer pool control	(1100)	_____
Message control interface	(1200)	_____
Overlay control and total overlay area size	(3200)	_____
Communications control area (Table D-3)		
Remote device handlers:		
o Common subroutines - 1-time requirement	(1300)	_____
o If any remote batch terminals	(600)	_____
o U100/U200 - interactive mode	(5800)	
o The following elements are optional as add ons to UTS 100/200 interactive mode:		
a. COP and/or 800 terminal printer	(1600)	
b. Tape cassette and/or diskette	(900)	
c. DCT 1000 - interactive mode	(800)	
d. DCT 1000 - batch mode	(1200)	_____

NOTES: 1. If more than one device is desired, choose device with the largest size. This logic will support the other devices.

2. The add-on size for tape cassette and/or diskette support presupposes COP and/or terminal printer support. The add-on size for cassette/diskette without printer support is 2000.

e.	UTS 400 native mode and UTS 4000	(800)
f.	Katakana support on UTS 400 and UTS 4000	(1400)
o	DCT 500 SERIES/TTY (nonaddressed and ASCII mode)	(3100) _____
a.	TTY - baudot mode	(100) _____
b.	Address mode and/or auxiliary device processing	(1800) _____
	NOTE: When both a and b are selected, add an additional 600.	(600) _____
o	BSC - Generalized mode	(3300) _____
a.	2780 Mode	(300) _____
b.	Line buffer toggling	(100) _____
o	DCT 2000 - Standard	(2300) _____
a.	Punch capability	(300) _____
b.	DCT 2000 emulation mode	(200) _____
o	U1004/9200/9300	(2500) _____
o	NTR - full duplex	(2200) _____
o	Local workstation support (does not require TSF)	(6000) _____
o	IBM 3270 real terminal handler	(7300) _____
o	DATEX-L public data network (Germany)	(4200) _____
o	Remote workstation support (common subroutine; not required for this RDH)	(2700) _____
o	IBM 3270 emulator	(19,900) _____

5. Code optional for all configurations

Fast overlay loading	(1100) _____
GAWAKE processing	(1800) _____
Operator communication (required for RBP)	(1400) _____
Trace table	(16,600 max) _____
Buffer pool expansion	(1300) _____

6. Code optional for STDMCP or TCI configurations only

Format edit processing	(1700)	_____
MPPS processing	(5000 max)	_____
History journaling and checkpoint	(3000)	_____
Distribution list (DLIST) processing	(700)	_____

7. User interface code

a. Global network support in ICAM

- Minimum code	(15,100)	_____
- Add if DCA=YES specified on CCA	(23,700)	_____
- Add if PROTYP=INIT-1 on TERM	(4700)	_____
- Add if PROTYP=RB-2 on TERM	(2600)	_____
- Add if DEVICE=(ABM) on VLINE	(2100)	_____
- Add if type=packet for PDN proc	(24,500)	_____
- Add if type=packet and carrier=DATAPAC or TRANSPAC or DATEX or PSS	(14,200)	_____
- Add if type=packet and carrier=DDX	(18,900)	_____
- Add if catp=E out for SUB proc	(24,500)	_____
- Add if catp=11 for SUB proc	(16,400)	_____
- Add if locap type=(STDMCP) in CCA	(0)	_____
- Add if locap type=(DMI) in CCA	(9300)	_____
- Add if locap type=(TCI) in CCA	(1100)	_____
Add to ICAM if JOBINIT: specified on LOCAP macro for COBOL communications user program	(800)	_____

b. Dedicated and/or global CCA support in ICAM

COBOL message control system (CMCS), add to user program	(3200)	_____
CPI	(3100)	_____
STDMCP	(0)	_____
TCI	(5700)	_____
DDI	(1300 max)	_____

RBP Refer to UP-9748 section on minimum RBP sizing (DDI interface is required for RBP).

8. Code required for STDMCP, TCI, or global network configurations

MUST processing	(5500 max) _____
Main storage queueing	(3000 max) _____
or	
Main storage and/or disk queueing	(7400 max) _____
Communication network control (CNC)	(3300 max) _____
Session control subroutine	(3100) _____

9. For total ICAM symbiont size, add all applicable items from items 1 through 8 _____

10. The only interface supported through transient ICAM is TCI, and its total size, including prologue, is (9700) _____

11. Refer to Table D-4 for ICAM utilization of dynamic main storage. _____

12. For the size of ICAM utility programs, refer to the respective UP- manual. These utilities are executed as programs and handle the following functions:

- Journal file data reduction program (JUST)	(UP-9748) _____
- ICAM device emulation system (IDES)	(UP-9748) _____
- Global user service task (GUST)	(UP-9745) _____
- SLCA dump utility (TSF, optional)	(UP-9748) _____
- Remote terminal processor (RTP)	(UP-8841) _____
- Nine thousand remote (NTR)	(UP-9748) _____
- ICAM trace facility (ITF)	(UP-9748) _____
- ICAM EDIT dump (IED)	(UP-9748) _____

Table D-2. General Information Table Size Calculation

SIZE=1500 (if TSF desired) + 3800 + (20 x (total no. of configured CCAs)) + (490 x (total no. of SCLAs))

Table D-3. Communication Control Area Size Calculations

Macro	Decimal Size (Bytes) for Each Occurrence of Macro
CCA* (DEDICATED)	512
CCA (GLOBAL-NONDCA)	724
CCA (GLOBAL-DCA)	2811
BUFFERS (ARP)	140 + 56 x number of ARPS
BUFFERS (NETWORK BUFFERS)	140 + size of buffer x number of buffers
BUFFERS (LNKPAK)	140 + size of buffer x number of buffers
BUFFERS (UDUCT)	140 + 96 x number of UDUCTs
BUFFERS (STATS)	4 x number of ARPS + 4 x number of network buffers + 4 x no. of UDUCTs + 4 x no. of LNKPAKs
LINE (MINIMUM AMT.)	204
LINE (LINE BUFFERS)	Refer to UP-9745 (current version).
PGROUP (Remote W.S. only)	56
TERM	152 + size of each message queue
DLIST	4 + 4 x number of destinations in list
EUP	228
LOCAP	172 + size of each message queue
NODE	116
SESSION (LOCAL)	60
SESSION (REMOTE) NONDCA)	116
SESSION (REMOTE) DCA)	0
PDN	76
TRUNK	66 + (no. of PUCs x 104) + (no. of SVCs x 104)
VLINE	204
SUB	40
VLINE (X25)	204 + size of packet buffer pool + 30
VLINE (ABM)	204
MESSAGE QUEUE	CORE=36 DISK=64
LPORT	88
PRCS	52 + size of each message QUEUE
DISCFILE (TCI)	500
DISCFILE (DISK QUEUED)	700
JRNFILE	450 + number of staging buffers x size of staging buffer
TRANSLATE TABLES	384 x number of device types + total size of all user-supplied translate tables
ENDCCA	36 + 8 x number of end users**
MPPS	Average is 8 per macro + ERRMSG sizes.

*Size of communications control area is 0 for a CPI user.

**In this context, an end user is a terminal, line, LOCAP, PRCS, or MPPS.

Table D-4. Dyna ic Main Storage Utilization by ICAM

Session Control Table Sizes for Dynamic Session*		
Dynamic sessions	Per local session:	120 bytes
	Per remote session:	236 bytes
	plus	120 bytes
	(for each 60 dynamic sessions)	
	plus	128 bytes
	(for each CUP to remote CUP session)	
	plus	104 bytes
	(for each session in PDN network)	
Dynamic buffer pool Expansion	per expansion pool:	144 bytes
	plus expansion factor, as a percentage, x (number of buffers x (size in bytes + 4))	
ILR macro Implementation Language	Per task control block:	400 bytes
ICAM trace facility	per event traced: (as specified in the event keyword, E=)	32 bytes
	plus (header)	50 bytes

*To calculate the total dynamic main storage required by ICAM for dynamic session establishment, multiply the maximum number of current sessions by the sizes of the session control table.

D.5. INFORMATION MANAGEMENT SYSTEM (IMS)

The main storage requirements for both single-thread and multithread IMS can be found in the OS/3 IMS System Support Functions User Guide, UP-8364 (current version).

D.6. DMS MAIN STORAGE REQUIREMENTS

The DMS system consists of a DBMS run-time component, which executes as a privileged job; language processors, which execute from separate jobs but require the DBMS job to be active; and stand-alone utilities, which do not require the DBMS job to be active. Explicit main storage specification on the // JOB statement is required for the DBMS job and to execute DMS utilities.

Main storage space requirements are as follows:

DBMS Job

Load module		67,072 bytes
Each thread-control block:	Batch	492 bytes
	IMS	3,564 bytes
Maximum IMS-terminals (IX84)		_____ bytes
DMCL load module		_____ bytes
File DTFs and tables (K x 160)		_____ bytes
Data buffer control entries (N x 32)		_____ bytes
Data base buffers (N x page size)		_____ bytes
Space buffer control entries (M x 24)		_____ bytes
Space inventory buffers (M x page size)		_____ bytes
Lock space		_____ bytes
CALC routine 2		_____ bytes
Subschema pool 3		_____ bytes
Total		_____ bytes

1. The lock space calculation is based on the KEEP lock requirement. This is the maximum number of record currency locks that may be required for the total schema. For each DMCL, the calculation is:

   24 [U(1+A+3C)+3K]

   where:

   U is the maximum number of run units for the DMCL.
   A is the number of area types in the schema.
   C is the maximum number of currency locks derived from the following rule: If a record type is not a member in any set type (excluding CALC) then it will have one locked occurrence; otherwise, it will have one locked occurrence for each set membership.
   K is the KEEP lock specification from START-UP.

2. CALC00 is 536 bytes.
   CALC01 is 240 bytes.

3. Space remaining from the main storage specification on the // JOB statement is assigned to the subschema pool. This space must be large enough to fit all subschema load modules that will be active concurrently (+28 bytes per subschema +4.)

DMS language processors:

Schema	(SCHMAP)	86,276 bytes
Subschema	(SUBSP)	75,212 bytes
DMCL	(DMCLP)	69,700 bytes
DML	(DMLP)	86,460 bytes
Conversational DML	(CDML)	58,158 bytes

DMS utility load module sizes:

Initialization	(DBINT)	32,640 bytes	(Notes 1,2,3,4)
Page dump and alter	(DBPAG)	54,162 bytes	(Notes 1,2,4,5)
Security dump	(DBDUM)	56,376 bytes	(Notes 1,2,4,6)
Security restore	(DBRES)	43,128 bytes	(Notes 1,2,3,4)
Recovery	(DBREC)	61,008 bytes	(Notes 1,2,3)
Journal audit	(JFAUD)	66,256 bytes	(Notes 1,2,3)
Journal fix	(JFFIX)	19,036 bytes	(Notes 1,2,3)

NOTES:
1. Add DMCL load module size.
2. Add data base buffers.
3. Add space inventory buffers.
4. Add DTF and tables (160 per file).
5. Add CALC routine (if required).
6. Add request/header space (2000 - 4000).

See Data Base Management System (DMS) System Support Functions User Guide/Programmer Reference, UP-8272 (current version), for detailed information.

D.7. MAPPER 80 SOFTWARE MAIN STORAGE REQUIREMENTS

1.	Main MAPPER 80 job	(97,280)	
	Plus (65,536 x number of workstations)	_____	
	Plus (27,648 x number of aux printers)	_____	
			_____
2.	MAPDMY utility	(23,136)	_____
3.	MAPGEN utility	(56,760)	_____
4.	MAPLOD utility (57,720 + optional user own code)		_____
5.	MAPLST utility (54,816 + optional user own code)		_____
6.	MAPDMS utility (48,186 + user code)		_____
7.	MAPRAD utility	(56,984)	_____
8.	MAPDUM utility	(40,176)	_____
9.	MAPRES utility	(41,488)	_____

D.8. SYSTEM SOFTWARE REQUIREMENTS

System software main storage requirements are calculated by using the following values:

1. Language processors:

a.	Assembler	(20,480)* _____
b.	RPG II	(33,044)* _____
c.	COBOL	
	o Extended (ANSI-1968) (Model 8 only)	(45,056)* _____
	o ANSI-1974	(57,344)* _____
d.	FORTRAN	
	o Basic (Model 8 only)	(23,552)* _____
	o FORTRAN IV	Small(67,584)* _____
		Large(102,400)* _____
e.	PL/M	(143,000)* _____
f.	MAC80	(102,400)* _____
g.	BASIC	
	o Sharable load module and control System memory	(46,016)* _____
	o Stack frames, dynamic buffers, etc	(9216 x number of users) _____
	o Source text, tables, interpretive code, etc	(Estimate 1024 for every 5 to 7 lines BASIC source program) _____
h.	EDT	
	o Sharable load module and control system memory	(49,000)* _____
	o Stack frames, dynamic buffers, etc	(7700 x number of users) _____
i.	EFP	
	o Sharable local module (Note EDT is required.)	(3134)* _____
	o Stack frames, dynamic buffers, etc	(5192 x number of users) _____
j.	ESCORT Programming Language (approximate)	
	o Basic first user	(39,000)** _____
	plus	(20,000) for each additional user
	o Structure processor	(21,000) _____
	o Tutorial	(15,000) _____
	plus	(1500) for each additional user
	o Program/job mode	(21,000) _____
	plus	(3000) for each additional user
	o Compiler I	(22,000) _____
	plus	(6000) for each additional user
	o Compiler II	(42,000) _____
	plus	(27,000) for each additional user
	o Run time	(36,000) _____
	o Report system	(51,000) _____
	plus	(8000) for each additional user
	o Report system utility	(16,000) _____

k. RPG II auto report	(51,200)*	_____
l. Dialog specification language translator	(67,000)	_____
m. Dialog processor	(74,000)	_____
o Audit file processing	(25,000)	_____
o Job control dialog processing	(60,000)	_____
o System generation dialog processing	(115,200)	_____
n. RPG II editor ***		
Sharable load module	(16,917)*	_____
Stack frames, buffers, etc (2950 x no. of users)		_____
o. COBOL Editor***		
Sharable load module	(53,500)	_____
Stack frames, buffers, etc (9192 x no. of users)		_____

*Size listed does not include the job prologue size.

**The system provides an additional 80,000 bytes (approx.) for the screen format generator, utilities, etc.

***RPGEDT and COBEDT run with EDT and screen format services; their sizes must also be considered.

2. Linkage editor	(17,516)*	_____
a. The linkage editor requires an additional buffer to develop reference table entries.	(7060)*	_____
Total size	(24,577)*	_____
3. Librarian	(23,316)*	_____

a. Librarian: if you are using the librarian escape (ESC) operation, make the following memory allocations:

o SAM tape	34,048 + BLK SIZE + 4
o SAM diskette	34,048 + BLK SIZE + 4
o SAM disk	34,048 + BLK SIZE + 4
o LIBRARIAN disk	34,048 + BLK SIZE + 4
o MULTI BLK TAPE	34,048 + 2048 + (15,392 x number of tapes)

4. File utility _____
(See specific figures in D.9.)

5. Sort/Merge

a. SORT/MERGE subroutine logical code (12,400) _____
(added to user processor code)

Sort function:

If record size greater than 100, add 5x record size to total.

b. Independent SORT/MERGE (16,784)* _____

Merge function:

For merge function, add 2x block size for each additional file beyond first file.

c. SORT3 (16,384)* _____

6. JOBLOG report program (23,500)* _____

7. System activity monitor report program (SAMRPT) (without prologue) (102,400)* _____

8. Nine thousand remote (NTR)

o The module size of a basic NTR system (which supports the console, one card reader, one card punch, and one printer) is 33,180 bytes. This is composed of the following modules:

Basic NTR modules (includes console)	(23,250)
NTR global tables	(4,300)
Card reader	(750)
Printer	(3,900)
Card punch	(980)
Total basic NTR	(33,180)

In addition, the following information should be considered in determining NTR size:

General ICAM buffer and console support (5 x BLOCKIN size)	(7,300) Note 1
Add for each card punch/printer (2 x BLOCKIN size)	(5,840) Note 2
Add for each card reader (2 x BLOCKOUT size)	(1,024) Note 3
Subtotal additional items	(14,164)
Total basic NTR plus additional items	47,344

NOTES:
1. Based on BLOCKIN size of 1460
2. Based on BLOCKIN size of 1460 (1 card punch/1 printer)
3. Based on BLOCKOUT size of 512 (1 card reader)

o Add for each additional card reader

2 x BLOCKOUT size (512)	(1024)
720 bytes DTF/DCA/image buffers	(720)
	(1744)

_____ _____

o Add for each additional printer/punch

2 x BLOCKOUT size (1460)	(2920)
2560 bytes DTF/DCA/VFB/image buffers	(2560)
	(5480)

NOTE: The // JOB job control card should not specify a MIN/MAX size. The NTR load module will be generated with the proper size.

9. DDP (194,560) _____

10. File placement analyzer (FIPLAN) (203,448) _____

D.9. DATA UTILITIES REQUIREMENTS

Most data utility executions (batch and conversational) will run in 32K bytes of main storage. If a more accurate size is required (larger or smaller), the following formula may be used:

M = maximum of (43500,B)

where:

M
Is the minimum amount of main storage required to run this job.

B
Is the total size of the required functional routines, DTFs, IOCS modules, and data management buffers. B can be determined by using the following formula:

B = (29200 + FT + IOT + C + D + E + F + G + H + I + J)

where:

FT
Is the total size of the functional routines required by this job. The sizes of the functional routines are specified in Table D-5 along with the parameters that specify the function.

IOT
Is the size of all DTFs and I/O routine modules for all files used in this job. The printer DTF and I/O routine module are included in the printer routine (noted in the routine size table, Table D-5); therefore, printer files are not included in this value. Use Table D-6 for running job in a mixed or CDI-only environment.

C
Is the maximum INPUT1 record size for ISAM or NI files as specified in the INPUT1 VTOC entry.

D

Is the INPUT1 block/buffer size as specified in the second entry of the A=( ) parameter. If the INPUT1 file is a disk file (other than IRAM/MIRAM), then the block size is taken from the disk file format labels.

E

Is the maximum record size for the ISAM OUTPUT1 or NI OUTPUT1/INPUT2 file. For NI INPUT2 files, this value is taken from the file format labels.

F

Is the OUTPUT1/INPUT2 block/buffer size as specified in the second entry of the B=( ) parameter. If this is a compare (K2), then the INPUT2 block size is taken from the INPUT2 file format labels for disk files (other then IRAM/MIRAM).

G

This variable is for ISAM INPUT1 files only. It is the disk file key length and is taken from the disk file format labels.

H

This variable is for ISAM OUTPUT1/INPUT2 files only. It is the record key length as specified in the V=() parameter. If this is a compare (K2), then the key length is taken from the disk file format labels.

I

This variable is for IRAM and MIRAM INPUT1 disk files only. It is the index buffer size and is taken from the disk file format labels.

J

This variable is for IRAM and MIRAM OUTPUT1/INPUT2 files only. It represents the disk file index buffer size and it is calculated by multiplying the second entry in the OR=(I,n) or the OM=(I,n) parameter by 256 decimal. If this is a compare (K2) then this value is taken from the disk file format labels.

Table D-5. Functional Routine Sizes

Function	Invoking Parameter	Size (decimal)
Correction	COR statement	5250 (See note 2.)
Select/delete	SEL/DEL statement	1450
Field selection	FS statement Note 1	2650 (See note 3.)
Sequence checking	X=( ) parameter	700
Compare	K2 parameter	4050
Print routine	UCP, UTP, UDP, or DP	3700

NOTES:
1. This routine is also invoked for operations involving variable DAM files and/or variable NI files with keys and whenever the output record length is greater than the input record length.
2. Add the maximum INPUT1 file record size to this figure.
3. Add the maximum OUTPUT1/INPUT2 file record size to this figure.

Table D-6. I/O Routine Sizes for Mixed or CDI only

Type	Input 1	Input 2	Output 1	Output 2
8413/card	475	475	485	565
Tape	1350	1225	1225	
SAM disk	890	780	675	
ISAM disk	1000	840	1025	
DAM disk	800	790	725	
NI disk	1450	1355	1355	
IRAM disk	900	900	1000	
MIRAM disk	1025	785	1225	
DCON4 TP.	775			
Diskette	1025	775	1225	

D.10. PROGRAM SIZES

The program sizes are calculated as follows: up to 14 job slots are supported for Models 3 through 6; up to 47 job slots plus 1 job slot reserved for IS are supported for Model 8.

(Use for batch or real-time programs)

Job number	1	2	3	4	5	6	-14 (Models 3-6) -47 (Model 8)
1. Job prologue (D.10.1)	____	____	____	____	____	____	____
2. DM control structures (D.10.2.)	____	____	____	____	____	____	____
3. I/O buffers	____	____	____	____	____	____	____
4. User-coded logic	____	____	____	____	____	____	____
5. Estimated user program sizes (Round up to a multiple of 1024 bytes - minimum job size is 8192 bytes.)	____ a.	____ b.	____ c.	____ d.	____ e.	____ f.	____ g.

D.10.1. Job Prologue Size

Determine the job prologue size for each job in the system. The prologue size can be estimated as follows:

1. Job preamble (288) _____

2. TCBs (task control blocks)
   One for each task - a minimum of one is required (224 if floating point is configured; otherwise, 192.) _____

3. Job accounting table
   56 + (4 x number of unique devices used by the user job) _____

4. Open file table
   4 + (20 x number of possible active files) _____

5. Extents
   56 + (8 x number of logical extents x number of possible active files) _____

6. Phase load table (136) _____
   Included in jobs with:
   // OPTION JOBDUMP or
   // OPTION ABRDUMP

7. Spool tables (136) _____

8. Spool tables
   o Job log spool control table (228) _____

   o Spool device buffers (1104) _____
   (The size of buffers is preset to 1104 bytes; this value can be modified via SYSGEN or JCL.)

   Spool device buffers=
   16+n[32+m(256)]

   where:

   n=2 if RUN processor detects spooler reader, printer or punch. Otherwise, n=1.
   m is defined at SYSGEN.
   (default=2)

   The user can change n and m by specifying different values in positional parameter 9 of the // JOB card.

   Spool control table= _____
   228 x number of active unit record devices

   Spool control table=
   228 x (number of spooled readers)
   +228 x (number of spooled punches)
   +(2p + 230 for each spooled printer)

   where:

   p=number of skip codes for this printer (from the // SPL or // VFB card. Default=7)

   o Line control table (16) _____
   2 x number of skip codes (default=8 codes); x=number of printer files.
   User may use the // SPL statement to modify the number of skip codes for a print file.

o Optional dedicated buffers _____

Each spool file in a job may request dedicated buffers. This is only advisable for jobs that require a large amount of printed output.

Optional dedicated buffers=
16+n[32+m(256)]

where:

n = the n specified in the // SPL statement.
m = the m specified in the // SPL statement.

9. Data management interface routines (172) _____

D.10.2. Data Management Control Structure Sizes

For each control structure (DTF, CDIB, or RIB) included in the user program, multiply the number of bytes in the table by the number of Control Structures. Enter the results in the appropriate spaces on the user program estimator, D.10, item 3.

Device	DTF element (bytes/file)
1. SAM - low-speed devices:	
a. Card reader	(116) _____
b. Card punch	(120) _____
c. Punch with automatic retry	(812) _____
d. Printer	(92) _____
2. SAM - high-speed devices:	
a. Tape	(242) _____
b. Disk	(242) _____
3. DAM - relative address	(242) _____
4. ISAM	
a. Add/retrieve	(396) _____
b. Retrieve	(372) _____
c. Add	(396) _____
d. Load	(332) _____

Device	DTF element (bytes/file)
5. IRAM	
a. Indexed	(387) _____
b. Nonindexed	(240) _____
6. MIRAM	(388) _____
7. CDIB	(44) _____
8. RIB*	(n) _____
9. Total of items 1 through 6	_____

*The Resource Information Block (RIB) varies in size, depending on the number and type of parameters specified. To approximate the size of the RIB (n), use the expression:

n= 4 + [(3 x number of numeric parameters specified) + (5 x number of symbolic or indirect parameters specified)]

D.11. CONTROL SYSTEM SYMBIONTS

The following control system symbionts are temporarily loaded into main storage on behalf of user jobs. The user should reserve sufficient main storage so that these symbionts may be loaded as required. (These symbionts relinquish their main storage following termination of their function.)

Symbiont	Storage Requirement	
	Hex.	Decimal
Run processor (RU,RV,RB)		
Min	5D00	23808
Max	B700	46848
File processor	2400	9216
Output Writer*		
(printer and punch) 5400 + (SPOOLOWBUFR-2) x 256		
Input reader		4200
System utility		
SU		26000
TU		48000
Output writer (diskette)*		7500
Spool		
Min		20500
System activity monitor (standard size)	4200	
(extended size)	5200	
Save processor	3800	14,338
SC processor (restore)	3000	12,288

*Size does not include prologue (preamble + TCB + 16)

D.12. SHARED DATA MANAGEMENT

All data management is shared - no data management routines are included in user programs.

1. Low-speed devices

a.	Sam (sequential access method) card (reader/punch/combined)	3000
b.	SAM printer	1420
c.	SAM diskette (8413)	4346
d.	WSAM (workstation access method)	9216

2. High-speed devices

a.	SAM tape	3724
b.	SAM/DAM (sequential direct access method) disk	3830
c.	ISAM (index sequential access method) disk	4266
d.	IRAM (indexed random access method) disk	2744
e.	MIRAM (multindexed random access method) disk	10,434

D.13. SHARED CODE MODULE NAME CROSS-REFERENCE

The following listing contains cross-references to shared code module names.

```
 LINE   SOURCE STATEMENT                                          OS/3 ASM 83/11/21
A2445+MS$SILNK EQU   44 SAT SUBR. LENGTH                                  P$$C6890
A2446+MS$CLSAD EQU   MS$SCLNK-20 CLOSEALL START ADDR                      P$$C6900
A2447+         SHAREQU                                                    P$$C6920
B2448+*                                                                   P$$00030
B2449+*    EQUATES FOR KEY 0 SHARED CODE ID'S                             P$$00040
B2450+*                                                                   P$$00050
B2451+*                                                                   P$$00060
B2452+*   START OF DTF MODE SHARED CODE ID'S                              P$$00070
B2453+*                                                                   P$$00080
B2454+SC$STDTF EQU   X'10' START OF DTF MODE ID'S                         P$$00090
B2455+SC$MIRAM EQU   X'10' (DI$MI110)     MIRAM DISK DATA MGMT           P$$00100
B2456+SC$TAPE  EQU   X'11' (DD$T1110)     MAG TAPE DATA MGMT             P$$00110
B2457+SC$PRINT EQU   X'12' (PR$IOE00)     PRINTER DATA MGMT              P$$00120
B2458+SC$CARD  EQU   X'13' (CD$IOJ00)     CARD READER/PUNCH DATA MGMT    P$$00130
B2459+SC$NI    EQU   X'14' (DD$NI110)     SAM/DAM/NI DISK DATA MGMT      P$$00140
B2460+SC$ISAM  EQU   X'15' (IS$13130)     ISAM DISK DATA MGMT            P$$00150
B2461+SC$IRAM  EQU   X'16' (DI$I1110)     IRAM DISK DATA MGMT            P$$00160
B2462+SC$SAT   EQU   X'17' (SAT93   )     SAT DISK DATA MANAGEMENT       P$$00170
B2463+SC$STAPE EQU   X'18' (ST$11100)     TAPE/UR SAT MODULE             P$$00180
B2464+SC$CARDD EQU   X'19' (CD$IODJ0)     CARD/DISKETTE MODULE           P$$00190
B2465+SC$OCFM  EQU   X'1A' (LU$OCFMO)     LIBRARY UTILITY OPEN           P$$00200
B2466+SC$DME13 EQU   X'1B' (DM$DME13)     UNOPEN FILE PROCESSING         P$$00210
B2467+*                                                                   P$$00220
B2468+*   END OF DTF MODE SHARED CODE ID'S                                P$$00230
B2469+*                                                                   P$$00240
B2470+SC$EDDTF EQU   X'1E' END OF DTF MODE IDS                            P$$00250
B2471+*                                                                   P$$00260
```

```
82472+*   START OF CDI MODE SHARED CODE ID'S                                  P$S00270
82473+*                                                                        P$S00280
82474+SC$STCDI EQU   X'1E' START OF CDI MODE IDS                              P$S00290
82475+SC$CNVRT EQU   X'1F' (SFSCNVRT)     FORMAT CONVERSION (R7 TO R8)       P$S00300
82476+SC$INT20 EQU   X'20' (SFSINT20)     INT-2 OUTPUT CONVERTER             P$S00310
82477+SC$INT2P EQU   X'21' (SFSINT2P)     INT-2 PRINTER OUTPUT CONVERTER     P$S00320
82478+SC$IPC   EQU   X'22' (IPCSPROC)     CDI INTERPROCESS CONTROL           P$S00330
82479+SC$PRCR  EQU   X'23' (MNSPRCR0)     IS MENU PROCESSOR                  P$S00340
82480+SC$CTLI  EQU   X'24' (SFCSCTLI)     SCREEN FORMAT COORD INIT/TERM      P$S00350
82481+SC$FSP   EQU   X'25' (DMSFSPU0)     D.M. FILE SHARE PROCESSOR          P$S00360
82482+SC$INT2I EQU   X'26' (SFSINT2I)     INT-2 INPUT VIRTUALIZER            P$S00370
82483+SC$OPEN  EQU   X'27' (SCSOPEN0)     OPEN INTERFACE FOR SUBFILES        P$S00380
82484+SC$CLOSE EQU   X'28' (SCSCLOSE)     CLOSE INTERFACE FOR SUBFILES       P$S00390
82485+SC$RCCMD EQU   X'29' (RCSCMDU0)     RC COMMAND PROCESSOR               P$S00400
82486+SC$LKUP  EQU   X'2A' (RCSLKUP0)     RC COMMAND LOOKUP ROUTINE          P$S00410
82487+SC$DNOP3 EQU   X'2B' (RCSDNOP3)     DISTRIB DATA PROC MODULE           P$S00420
82488+SC$RLDIN EQU   X'2C' (RED$INDC)     RPG EDT INPUT CONTROL MODULE       P$S00430
82489+SC$REDOT EQU   X'2D' (RED$OUTC)     RPG EDT OUTPUT CONTROL MODULE      P$S00440
82490+SC$REDVR EQU   X'2E' (RED$VERC)     RPG EDT VERIFY CALL MODULE         P$S00450
82491+SC$CFM   EQU   X'2F' (DMSCFMU0)     CENTRALIZED FILE MANAGER           P$S00460
82492+SC$OTRAN EQU   X'30' (SFSINT10)     OUTPUT INT-1 DCI CONVERTER         P$S00470
82493+SC$CTLR  EQU   X'31' (SFCSCTLR)     SCREEN FORMAT SERVICES CONTROL     P$S00480
82494+SC$DPOPN EQU   X'32' (DPROPNC0)     DIALOG PROC OPEN MODULE            P$S00490
82495+SC$DP9   EQU   X'33' (DP80C0UC)     DIALOG PROCESSOR INTERPRETER       P$S00500
82496+SC$ITRAN EQU   X'34' (SFSINTII)     INPUT INT-1 DCI CONVERTER          P$S00510
82497+SC$WSAM  EQU   X'35' (DMSWI110)     WORK STATION IOCS MODULE           P$S00520
82498+SC$OPRO1 EQU   X'36' (RCSOPR01)     RC CONSOLE ACCESS                  P$S00530
82499+SC$RCAM  EQU   X'37' (RCSRCAM0)     REMOTE CONTROLLER ACCESS METHOD    P$S00540
82500+SC$DNCLS EQU   X'38' (RCSDNCLS)     DYNAMIC CLOSE                      P$S00550
82501+SC$DNOP2 EQU   X'39' (RCSDNOP2)     DYNAMIC OPEN - OVERLAY II          P$S00560
82502+SC$DNOP1 EQU   X'3A' (RCSDNOP1)     DYNAMIC OPEN - OVERLAY I           P$S00570
82503+SC$DNOPN EQU   X'3B' (RCSDNOPN)     DYNAMIC OPEN - OVERLAY I           P$S00580
82504+SC$SPXFR EQU   X'3C' (RCSSPXFR)     SPOOL FILE ACCESS                  P$S00590
82505+SC$MIAQ  EQU   X'3D' (DMSMIAQC)     MIRAM APPLY/QUERY PROCESSOR        P$S00600
82506+SC$DROUT EQU   X'3E' (LUSDROUT)     SAT LIBRARY UTILITIES              P$S00610
82507+SC$MROUT EQU   X'3F' (LUSMROUT)     MIRAM LIBRARY UTILITIES            P$S00620
82508+SC$APQY  EQU   X'40' (WSSAPQYC)     WORKSTATION APPLY/QUERRY           P$S00630
82509+SC$VTOC  EQU   X'41' (RCSVTOC0)     VTOC ACCESS MODULE                 P$S00640
82510+SC$FMAPY EQU   X'42' (SFSFMAPY)     SFS APPLY/QUERY                    P$S00650
82511+SC$DPAQ  EQU   X'43' (DP8C0QC0)     DIALOG PROCESSOR APPLY/QUERY       P$S00660
82512+SC$GTMSG EQU   X'44' (RCSGTMSG)     RC GETMSG ROUTINE FOR CDI          P$S00670
82513+SC$RFP   EQU   X'46' (DMSRFPU0)     D.M. REMOTE FILE PROCESSOR         P$S00680
82514+SC$PDSCL EQU   X'47' (SCSPDSCL)     PADS ACTIVATION MODULE             P$S00690
82515+SC$OVRFY EQU   X'48' (SFSOVRFY)     SFS OUTPUT VERIFICATION            P$S00700
82516+SC$CBESN EQU   X'49' (COBEDTSN)     COBOL EDITOR SCREEN MODULE         P$S00710
82517+SC$CBEAB EQU   X'4A' (COBEDTAB)     COBOL EDITOR ABBREVIATION MOD      P$S00720
82518+SC$CBERT EQU   X'4B' (COBEDTRT)     COBOL EDITOR ROOT MODULE           P$S00730
82519+SC$GETCS EQU   X'4C' (CLGETCS0)     GETCS/SETCS FOR ICS                P$S00740
82520+SC$ADTST EQU   X'4D' (ADSCFMOC)     ACTIVE DICT SERVICES INTERFACE     P$S00750
82521+SC$SERV  EQU   X'4E' (DMSSERVO)     DATA MGNT SERVICE MODULE           P$S00760
82522+*                                                                        P$S00770
82523+*   END OF CDI MODE SHARED CODE ID'S                                     P$S00780
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Appendix E. Disk Space Requirements

This appendix helps determine the disk space requirements for OS/3 software on a user-generated SYSRES volume. A definition of the OS/3 SYSRES files and sizes is provided in addition to SYSGEN information for controlling the presence or absence of the files.

Three of the files may vary considerably for combinations of the components to be deleted. Consequently, detailed definitions for each of these files are provided in a similar fashion.

OS/3 also requires disk space for run libraries for each job and for scratch files for some of its components during execution. The amount of space used for those temporary files is much more difficult to estimate.

E.1. SYSRES FILE DEFINITIONS

The name, together with the use or content of each of the OS/3 SYSRES files, is listed in alphabetic order as follows:

File	Description
IVPLIB	This file is the installation verification program (IVP) library.
SG$JCS	This librarian file contains job control procedures used in the SYSGEN process.
SG$LOD	This librarian file contains load modules used in the SYSGEN process.
SG$MAC	This librarian file contains macros used in the SYSGEN process.
SG$OBJ	This librarian file contains object modules and subroutines used in the SYSGEN process.
SG$XXX	This area is used to store variables when loading unbundled products to the user's disk.
SMCAUDIT	This is an audit trail of the SMC application process.
SMCBSAT	This librarian file is used to store copies of modules that have been changed by SMCs.

File	Description
SMCFILE	This file contains all software maintenance corrections (SMCs) processed for the system.
VTOC	This area of disk contains the volume table of contents (VTOC), which OS/3 uses to allocate and deallocate space on the SYSRES volume.
$IMPL	This file contains the initial microprogram load that is provided for loading of microcode into the CPU control storage.
$IPL	This file contains the initial program load and provides the initiation of processing.
YCAT	This file is used by job control to record the cataloged files made by the customer.
YDIALOG	This MIRAM file contains system dialogs for SYSGEN and JCL.
YDUMP	This is a storage area used by SYSDUMP processing. An image of main storage is written into this file and then read during the dump analysis processing.
YELOG	This is a storage area that the supervisor uses to record the I/O error history.
YESUM	This file contains the error log summary.
YFMT	This file contains the system screen formats and system menus.
YHELP	This MIRAM file contains help screen modules.
YJCS	This librarian file houses stored job control streams and job control procedures.
YLOD	This librarian file holds the load modules for the system.
YOBJ	This librarian file contains the object module subroutines for data management and the run-time library for each compiler. These object modules are included by the linkage editor for subsequent program execution.
YMAC	This librarian file holds the interface procedures and macros for the components that may be referenced from assembled code.
YMIC	This file contains all microcode levels for peripherals and the CPU.

File	Description
YSAVE	This file contains the saved run-library modules.
YSCLOD	This is the shared code load library file.
YSDF	This file contains the directory of microcode levels that will be downline loaded to each peripheral and the CPU from the YMIC file.
YSEC	This file contains user-ids and passwords when LOGON security is configured.
YSHR	This file holds information about files that are currently OPEN in the system and their ability to be shared.
YSJF	This file logs data that is used to determine system stability when log stability data is configured.
YSMCLOG	This file is the software maintenance correction log.
YSRC	This librarian file contains the source and copy modules provided.
YSYSTEM TABLES	This file contains tables for the system.
YTRAN	This file holds the OS/3 transient modules and the canned messages for console and printed display.
YTRANA	This file holds exactly what YTRAN holds. When the Supervisor has an error accessing YTRAN, it recovers by trying to access YTRANA.

E.2. INDIVIDUAL FILE REQUIREMENTS

The disk space requirements for files are shown in type-number sequence in Tables. All cylinder values are shown in decimal.

Cylinder values are based on the following:

Type	Blocks per Cylinder
8430, 8433 (Model 8)	627
8417 (Models 3 through 6)	840
8419 (Models 3 through 6)	350
8416 (Model 8)	280
8418 (Model 8)	280
8470 (Models 4, 6, and 8)	3072

where a block is a 256-byte record or sector.

NOTE: In the tables, the contents of the columns are as follows:

Column 1	Indicates the item or file.
Column 2	Indicates the number of 256-byte blocks of disk space required by the item.
Columns 3-7	Indicate the block size (in cylinders) for each type of SYSRES volume.

The last line of each table indicates the total number of blocks required for that particular product.

6210-00 SYSTEM SOFTWARE

FILE	NUMBER OF BLOCKS	NUMBER OF CYLINDERS 8416 / 8418	8430 / 8433	8470	8417	8419
SYSJCS	2389	8.70	3.88	0.79	2.99	6.96
SYSLOD	13398	48.80	21.79	4.44	16.26	39.04
SYSMAC	13707	49.93	22.29	4.55	16.64	39.94
SYSMIC	4808	17.51	7.82	1.59	5.83	14.01
SYSOBJ	531	1.93	0.86	0.17	0.64	1.54
SYSSCLOD	1582	5.76	2.57	0.52	1.92	4.61
SYSSRC	177	0.64	0.28	0.05	0.21	0.51
IVPLIB	3286	11.97	5.34	1.09	3.99	9.57
SGSJCS	2379	8.66	3.87	0.78	2.88	6.93
SGSLOD	992	3.61	1.61	0.32	1.20	2.89
SGSMAC	9561	34.82	15.55	3.17	11.60	27.96
SGSOBJ	1511	5.50	2.45	0.50	1.83	4.40
6210-00	54321	197.88	88.36	18.03	65.96	158.30

6130-05 UTS4000 COBOL

FILE	NUMBER OF BLOCKS	NUMBER OF CYLINDERS 8416 / 8418	8430 / 8433	8470	8417	8419
SYSLOD	1322	4.81	2.15	0.43	1.60	3.85
SYSSRC	319	1.16	0.51	0.10	0.38	0.92
6130-05	1641	5.97	2.66	0.54	1.99	4.78

6201-03 UTS400 EDIT

FILE	NUMBER OF BLOCKS	NUMBER OF CYLINDERS 8416 / 8418	8430 / 8433	8470	8417	8419
SYSLOD	43	0.15	0.06	0.01	0.05	0.12
6201-03	43	0.15	0.06	0.01	0.05	0.12

6211-00 DATA UTILITIES

FILE	NUMBER OF BLOCKS	NUMBER OF CYLINDERS 8416 / 8418	8430 / 8433	8470	8417	8419
SYSJCS	5	0.01	0.00	0.00	0.00	0.01
SYSLOD	924	3.36	1.50	0.30	1.12	2.69
6211-00	929	3.38	1.51	0.30	1.12	2.70

6212-00 SORT MERGE

FILE	NUMBER OF BLOCKS	NUMBER OF CYLINDERS 8416 / 8418	8430 / 8433	8470	8417	8419
SYSLOD	144	0.52	0.23	0.04	0.17	0.41
6212-00	144	0.52	0.23	0.04	0.17	0.41

6213-00 SORT3

FILE	NUMBER OF BLOCKS	NUMBER OF CYLINDERS				
		8416 / 8418	8430 / 8433	8470	8417	8419
SYSLOD	161	0.58	0.26	0.05	0.19	0.46
6213-00	161	0.58	0.26	0.05	0.19	0.46

6214-00 SCREEN FMT GENERATOR

FILE	NUMBER OF BLOCKS	NUMBER OF CYLINDERS				
		8416 / 8418	8430 / 8433	8470	8417	8419
SYSJCS	40	0.14	0.06	0.01	0.04	0.11
SYSLOD	638	2.32	1.03	0.21	0.77	1.85
6214-00	678	2.46	1.10	0.22	0.82	1.97

6215-00 DIALOG SPEC LANGUAGE

FILE	NUMBER OF BLOCKS	NUMBER OF CYLINDERS				
		8416 / 8418	8430 / 8433	8470	8417	8419
SYSLOD	200	0.72	0.32	0.06	0.24	0.58
6215-00	200	0.72	0.32	0.06	0.24	0.58

6216-00 SPOOLER

FILE	NUMBER OF BLOCKS	NUMBER OF CYLINDERS 8416 / 8418	8430 / 8433	8470	8417	8419
SYSJCS	29	0.10	0.04	0.00	0.03	0.08
SYSLOD	620	2.25	1.00	0.20	0.75	1.80
6216-00	649	2.36	1.05	0.21	0.78	1.89

6217-00 IMS - S/T

FILE	NUMBER OF BLOCKS	NUMBER OF CYLINDERS 8416 / 8418	8430 / 8433	8470	8417	8419
SYSJCS	198	0.72	0.32	0.06	0.24	0.57
SYSMAC	111	0.40	0.19	0.03	0.13	0.32
SYSOBJ	167	0.60	0.27	0.05	0.20	0.48
SYSSRC	24	0.08	0.03	0.00	0.02	0.06
SYSLOD	867	3.15	1.41	0.28	1.05	2.52
SGSMAC	0	0.00	0.00	0.00	0.00	0.00
6217-00	1767	4.97	2.22	0.45	1.65	3.98

6218-00 DMS

FILE	NUMBER OF BLOCKS	NUMBER OF CYLINDERS				
		8416 / 8418	8430 / 8433	8470	8417	8419
YJCS	60	0.21	0.09	0.01	0.07	0.17
YLOD	4055	14.77	6.59	1.34	4.92	11.81
YOBJ	16	0.05	0.02	0.00	0.01	0.04
YSRC	145	0.52	0.23	0.04	0.17	0.42
6218-00	4276	15.57	6.95	1.41	5.19	12.46

6219-00 RPGII

FILE	NUMBER OF BLOCKS	NUMBER OF CYLINDERS				
		8416 / 8418	8430 / 8433	8470	8417	8419
YOBJ	164	0.59	0.26	0.05	0.19	0.47
YLOD	1073	3.90	1.74	0.35	1.30	3.12
6219-00	1237	4.50	2.01	0.41	1.50	3.60

6220-00 RPG EDIT

FILE	NUMBER OF BLOCKS	NUMBER OF CYLINDERS				
		8416 / 8418	8430 / 8433	8470	8417	8419
YSCLOD	239	0.87	0.38	0.07	0.29	0.69
6220-00	239	0.87	0.38	0.07	0.29	0.69

6221-00 RPG AUTO REPORT

FILE	NUMBER OF BLOCKS	NUMBER OF CYLINDERS 8416 / 8418	8430 / 8433	8470	8417	8419
SYSLOD	367	1.33	0.59	0.12	0.44	1.06
6221-00	367	1.33	0.59	0.12	0.44	1.06

6222-00 COBOL 74

FILE	NUMBER OF BLOCKS	NUMBER OF CYLINDERS 8416 / 8418	8430 / 8433	8470	8417	8419
SYSLOD	1675	6.10	2.72	0.55	2.03	4.88
SYSOBJ	209	0.76	0.34	0.06	0.25	0.60
6222-00	1934	6.86	3.06	0.62	2.28	5.49

6222-01 COBOL EDITOR

FILE	NUMBER OF BLOCKS	NUMBER OF CYLINDERS 8416 / 8418	8430 / 8433	8470	8417	8419
SYSSCLOD	345	1.25	0.56	0.11	0.41	1.00
6222-01	345	1.25	0.56	0.11	0.41	1.00

6223-00 FORTRAN IV

FILE	NUMBER OF BLOCKS	NUMBER OF CYLINDERS				
		8416 / 8418	8430 / 8433	8470	8417	8419
SYSLOD	2231	8.12	3.62	0.74	2.70	6.50
SYSMAC	368	1.34	0.59	0.12	0.44	1.07
SYSOBJ	527	1.91	0.85	0.17	0.63	1.53
6223-00	3126	11.38	5.08	1.03	3.79	9.11

6224-00 BASIC

FILE	NUMBER OF BLOCKS	NUMBER OF CYLINDERS				
		8416 / 8418	8430 / 8433	8470	8417	8419
SYSSCLOD	204	0.74	0.33	0.06	0.24	0.59
6224-00	204	0.74	0.33	0.06	0.24	0.59

6225-00 ESCORT

FILE	NUMBER OF BLOCKS	NUMBER OF CYLINDERS				
		8416 / 8418	8430 / 8433	8470	8417	8419
SYSSCLOD	1188	4.32	1.93	0.39	1.44	3.46
6225-00	1188	4.32	1.93	0.39	1.44	3.46

6226-00 EDITOR

FILE	NUMBER OF BLOCKS	NUMBER OF CYLINDERS				
		8416 / 8418	8430 / 8433	8470	8417	8419
YSCLOD	279	1.01	0.45	0.09	0.33	0.81
6226-00	279	1.01	0.45	0.09	0.33	0.81

6228-00 UTS400 LOAD/DUMP

FILE	NUMBER OF BLOCKS	NUMBER OF CYLINDERS				
		8416 / 8418	8430 / 8433	8470	8417	8419
YJCS	32	0.11	0.05	0.01	0.03	0.09
YLOD	0	0.00	0.00	0.00	0.00	0.00
6228-00	32	0.11	0.05	0.01	0.03	0.09

6229-01 DDP TRANFER FACILITY

FILE	NUMBER OF BLOCKS	NUMBER OF CYLINDERS				
		8416 / 8418	8430 / 8433	8470	8417	8419
YSCLOD	931	3.39	1.51	0.30	1.13	2.71
6229-01	931	3.39	1.51	0.30	1.13	2.71

6229-02 DDP FILE ACCESS

FILE	NUMBER OF BLOCKS	NUMBER OF CYLINDERS 8416 / 8418	8430 / 8433	8470	8417	8419
SYSCLOD	879	3.20	1.42	0.29	1.06	2.56
6229-02	879	3.20	1.42	0.29	1.06	2.56

6229-03 DDP IMS TRANS FACIL

FILE	NUMBER OF BLOCKS	NUMBER OF CYLINDERS 8416 / 8418	8430 / 8433	8470	8417	8419
SYSOBJ	195	0.71	0.31	0.06	0.23	0.56
6229-03	195	0.71	0.31	0.06	0.23	0.56

6230-00 NTR

FILE	NUMBER OF BLOCKS	NUMBER OF CYLINDERS 8416 / 8418	8430 / 8433	8470	8417	8419
SYSSRC	17	0.06	0.02	0.00	0.02	0.04
SG$MAC	306	1.11	0.49	0.10	0.37	0.89
SG$OBJ	152	0.55	0.24	0.05	0.18	0.44
6230-00	475	1.73	0.77	0.15	0.57	1.38

6231-00 ICAM - TSF

FILE	NUMBER OF BLOCKS	NUMBER OF CYLINDERS 8416 / 8418	8430 / 8433	8470	8417	8419
SG$OBJ	82	0.29	0.13	0.02	0.09	0.23
6231-00	82	0.29	0.13	0.02	0.09	0.23

6232-00 IMS - M/T

FILE	NUMBER OF BLOCKS	NUMBER OF CYLINDERS 8416 / 8418	8430 / 8433	8470	8417	8419
YJCS	198	0.72	0.32	0.06	0.24	0.57
YLOD	1830	6.66	2.97	0.60	2.22	5.33
YMAC	192	0.69	0.31	0.06	0.23	0.55
YOBJ	802	2.92	1.30	0.26	0.97	2.33
YSRC	28	0.08	0.03	0.00	0.02	0.06
6232-00	3046	11.09	4.95	1.01	3.69	8.87

6233-00 ASSEMBLER

FILE	NUMBER OF BLOCKS	NUMBER OF CYLINDERS 8416 / 8418	8430 / 8433	8470	8417	8419
SYSLOD	550	2.00	0.89	0.18	0.66	1.60
6233-00	550	2.00	0.89	0.18	0.66	1.60

6236-00 COBOL EXTENDED

FILE	NUMBER OF BLOCKS	NUMBER OF CYLINDERS				
		8416 / 8418	8430 / 8433	8470	8417	8419
SYSLOD	1065	3.87	1.73	0.35	1.29	3.10
SYSOBJ	132	0.48	0.21	0.04	0.16	0.38
6236-00	1197	4.36	1.94	0.39	1.45	3.48

6247-00 3270 RTM

FILE	NUMBER OF BLOCKS	NUMBER OF CYLINDERS				
		8416 / 8418	8430 / 8433	8470	8417	8419
SGSOBJ	31	0.11	0.05	0.01	0.03	0.09
6247-00	31	0.11	0.05	0.01	0.03	0.09

6247-01 3270 EMULATOR

FILE	NUMBER OF BLOCKS	NUMBER OF CYLINDERS				
		8416 / 8418	8430 / 8433	8470	8417	8419
SGSOBJ	92	0.33	0.14	0.03	0.11	0.26
6247-01	92	0.33	0.14	0.03	0.11	0.26

6247-02 RTP (HASP)

FILE	NUMBER OF BLOCKS	NUMBER OF CYLINDERS 8416 / 8418	8430 / 8433	8470	8417	8419
SYSJCS	119	0.43	0.19	0.03	0.14	0.34
SGSMAC	1690	6.15	2.74	0.56	2.05	4.92
SGS0BJ	263	1.03	0.46	0.09	0.34	0.82
6247-02	2092	7.62	3.40	0.69	2.54	6.09

6248-00 DATEX-L PDN

FILE	NUMBER OF BLOCKS	NUMBER OF CYLINDERS 8416 / 8418	8430 / 8433	8470	8417	8419
SG$0BJ	21	0.07	0.03	0.00	0.02	0.06
6248-00	21	0.07	0.03	0.00	0.02	0.06

6248-01 DATEX-P PDN

FILE	NUMBER OF BLOCKS	NUMBER OF CYLINDERS 8416 / 8418	8430 / 8433	8470	8417	8419
SG$0BJ	101	0.36	0.16	0.03	0.12	0.29
6248-01	101	0.36	0.16	0.03	0.12	0.29

6248-02 TRANSPAC PDN

FILE	NUMBER OF BLOCKS	NUMBER OF CYLINDERS 8416 / 8418	8430 / 8433	8470	8417	8419
SG$08J	101	0.36	0.16	0.03	0.12	0.29
6248-02	101	0.36	0.16	0.03	0.12	0.29

6248-03 DATAPAC PDN

FILE	NUMBER OF BLOCKS	NUMBER OF CYLINDERS 8416 / 8418	8430 / 8433	8470	8417	8419
SG$08J	101	0.36	0.16	0.03	0.12	0.29
6248-03	101	0.36	0.16	0.03	0.12	0.29

6248-05 DDX-P PDN

FILE	NUMBER OF BLOCKS	NUMBER OF CYLINDERS 8416 / 8418	8430 / 8433	8470	8417	8419
SG$08J	99	0.35	0.15	0.03	0.11	0.28
6248-05	99	0.35	0.15	0.03	0.11	0.28

6248-06 NORDIC PDN

FILE	NUMBER OF BLOCKS	NUMBER OF CYLINDERS 8416 / 8418	8430 / 8433	8470	8417	8419
SG$08J	36	0.13	0.05	0.01	0.04	0.10
6248-06	36	0.13	0.05	0.01	0.04	0.10

6248-07 PSS PUB DATA NETWORK

FILE	NUMBER OF BLOCKS	NUMBER OF CYLINDERS 8416 / 8418	8430 / 8433	8470	8417	8419
SG$03J	101	0.36	0.16	0.03	0.12	0.29
6248-07	101	0.36	0.16	0.03	0.12	0.29

6254-00 MENU SERVICES

FILE	NUMBER OF BLOCKS	NUMBER OF CYLINDERS 8416 / 8418	8430 / 8433	8470	8417	8419
YSCLOD	320	1.16	0.52	0.10	0.38	0.93
6254-00	320	1.16	0.52	0.10	0.38	0.93

6255-00 DCA TERMINATION

FILE	NUMBER OF BLOCKS	NUMBER OF CYLINDERS				
		8416 / 8418	8430 / 8433	8470	8417	8419
SG$OBJ	25	0.09	0.04	0.00	0.03	0.07
6255-00	25	0.09	0.04	0.00	0.03	0.07

6752-00 MAPPER 80

FILE	NUMBER OF BLOCKS	NUMBER OF CYLINDERS				
		8416 / 8418	8430 / 8433	8470	8417	8419
SY$JCS	25	0.09	0.04	0.00	0.03	0.07
SY$LOD	2259	8.72	3.67	0.75	2.74	6.58
SY$OBJ	9	0.03	0.01	0.00	0.01	0.02
SY$SCLOD	185	0.67	0.30	0.06	0.22	0.53
SY$SRC	9	0.03	0.01	0.00	0.01	0.02
6752-00	2489	9.06	4.04	0.82	3.02	7.25

6759-00 FILE PLACEMENT ANALYZER

FILE	NUMBER OF BLOCKS	NUMBER OF CYLINDERS				
		8416 / 8418	8430 / 8433	8470	8417	8419
SY$JCS	2	0.00	0.00	0.00	0.00	0.00
SY$LOD	630	2.29	1.02	0.20	0.76	1.83
6759-00	632	2.30	1.02	0.20	0.76	1.84

6933-00 RESOURCE MANAGEMENT

FILE	NUMBER OF BLOCKS	NUMBER OF CYLINDERS 8416 / 8418	8430 / 8433	8470	8417	8419
SG$08J	12	0.04	0.01	0.00	0.01	0.03
6933-00	12	0.04	0.01	0.00	0.01	0.03

X460-00 DISK CACHE

FILE	NUMBER OF BLOCKS	NUMBER OF CYLINDERS 8416 / 8418	8430 / 8433	8470	8417	8419
YMIC	22	0.08	0.03	0.00	0.02	0.06
X460-00	22	0.08	0.03	0.00	0.02	0.06

X600-10 ON-LINE DIAG (OLM)

FILE	NUMBER OF BLOCKS	NUMBER OF CYLINDERS 8416 / 8418	8430 / 8433	8470	8417	8419
$YSJCS	36	0.13	0.05	0.01	0.04	0.10
$YSLOD	12064	43.94	19.62	4.00	14.64	35.15
X600-10	12100	44.07	19.68	4.01	14.69	35.26

X600-20 SYSTEM ACT. MONITOR

FILE	NUMBER OF BLOCKS	NUMBER OF CYLINDERS				
		9416 / 8418	8430 / 8433	8470	8417	8419
YJCS	4	0.01	0.00	0.00	0.00	0.01
YLOD	466	1.69	0.75	0.15	0.56	1.35
X600-20	470	1.71	0.76	0.15	0.57	1.36

X600-60 SYS 3/32/4 CONV AIDS

FILE	NUMBER OF BLOCKS	NUMBER OF CYLINDERS				
		9416 / 8418	8430 / 8433	8470	8417	8419
YLOD	45	0.16	0.07	0.01	0.05	0.13
X600-60	45	0.16	0.07	0.01	0.05	0.13

X600-70 92/9300

FILE	NUMBER OF BLOCKS	NUMBER OF CYLINDERS				
		9416 / 8418	8430 / 8433	8470	8417	8419
YJCS	0	0.02	0.01	0.00	0.00	0.02
YLOD	0	0.00	0.00	0.00	0.00	0.00
YSRC	965	3.51	1.56	0.32	1.17	2.81
X600-70	973	3.54	1.58	0.32	1.18	2.83

X600-80 OS/4 CONVERSION ATDS

FILE	NUMBER OF BLOCKS	NUMBER OF CYLINDERS				
		8416 / 8418	8430 / 8433	8470	8417	8419
SYSLOD	343	1.24	0.55	0.11	0.41	0.99
X600-80	343	1.24	0.55	0.11	0.41	0.99

X600-90 360/20

FILE	NUMBER OF BLOCKS	NUMBER OF CYLINDERS				
		8416 / 8418	8430 / 8433	8470	8417	8419
SYSJCS	0	0.00	0.00	0.00	0.00	0.00
SYSLOD	0	0.00	0.00	0.00	0.00	0.00
X600-90	0	0.00	0.00	0.00	0.00	0.00

Appendix F. System 80 All Models Data Management Comparison - General Guidelines

Data management operation of System 80 systems may be in these environments:

- Mixed (DTF and CDI) - Model 8 only

  DTF interfaces are provided for all supported file types except WSAM (which is CDI only). Supported file types include SAM, DAM, ISAM, NI, IRAM, and MIRAM disk files.

  In addition CDI interfaces are provided for all file types. Note that MIRAM is the only disk processing method that is accessible through CDI.

- CDI-only - all Models

  All data management interfaces are through CDI except for SAT-Disk and SAT-Tape, which are DTF. MIRAM and SAT are the only disk processing methods. Components that do not support the CDI interface cannot run in this environment.

As users in the mixed mode convert their processing interfaces to CDI and their disk files to MIRAM, they become eligible, on a file at a time basis, for the benefit of media independence, the CDM level of the file sharing, and distributed data processing. They do not have to convert their entire installation to achieve these benefits.

As indicated previously, all software components offered on all models support the CDI interface. CDI interfaces are used for all files except SAT-Disk or SAT-Tape, which retain DTF interfaces. Components that support MIRAM operate with CDI interfaces to allow the user to have the benefits of consolidated data management.

Compilers generate data management interfaces according to the setting of the mode indicator. The mode in which the compiler is running is defined to be the mode in which the object code is to run. Also, the type of data management interface can be selectively controlled by file (see the applicable COBOL, FORTRAN, or RPG II user guide for details.)

Data management will be provided only in a shared form; object and procedure (source) modules will not be provided as they are in Release 6. Specific inclusion of subset modules (either shared or not) in line assembly of data management code will not be supported. Instead, a single shared module that supports all functional capabilities will be supplied for each access method.

IRAM support is replaced by MIRAM in all components. MIRAM supports the existing IRAM file format.

In the mixed mode, disk files provided by the user as input to a software component or expected as output must be able to be specified in their current form (e.g., SAM, ISAM) to allow continued operation in a hybrid environment.

Assuming no changes have been made in their access method specification, programs compiled under Release 9.0 on the Model 8 are to receive the same access methods as under Release 8.2 on a Series 90 System with mixed mode. Specifically the user controls when MIRAM is substituted for the existing disk access methods on an individual file basis to permit the gradual conversion of interlocking applications.

The following chart illustrates the component operation for all models (CDM) and Model 8 only (mixed); numbers in the columns refer to notes following the chart.

Component	All Models CDM	Model 8 only Mixed
Data management		
MIRAM	Yes 2	Yes 1, 2
SAT	Yes 1	Yes 1
Unit record	Yes 2	Yes 1, 2
Tape	Yes 2	Yes 1, 2
SAM/DAM/NI	No	Yes 1
ISAM	No	Yes 1
IRAM 3	No	Yes 1
Screen format generator	Yes	Yes
NTR utility	No	Yes
Interactive services		
EDIT (includes RSP)	Yes	Yes
RPG EDIT	Yes	Yes
BASIC	Yes	Yes

Component	All Models CDM	Model 8 only Mixed
Dialog specification language processor	Yes	Yes
Dialog processor	Yes	Yes
System generation	Yes	Yes
Linker	Yes	Yes
Librarian	Yes	Yes
Library subroutines	Yes	Yes
Disk prep	Yes	Yes
Dump restore	Yes	Yes
Copy utilities	Yes	Yes
SYSDUMP/JOBDUMP	Yes	Yes
Data utility	Yes	Yes
Gang punch	Yes	Yes
Library conversion	Yes	Yes

Component	All Models CDM	Model 8 only Mixed
Program conversion	Yes	Yes
JCON1 (OS/4 conversion)	No	Yes
COPY94 (OS/4 conversion)	No	Yes
Emulation 360/20	No	Yes
Emulation 92/9300	No	Yes
IMS		
Single-thread	Yes	Yes 5
Multithread	Yes	Yes 6
Single-thread DMS 7	Yes	Yes 4, 5
Multithread DMS	No	No
Configurator	Yes	Yes
Data definition PROC	Yes	Yes
Numeric file utility	Yes	Yes
Edit file generator	Yes	Yes
Tape copy utility	Yes	Yes
DMS	Yes	Yes
Assembler	Yes	Yes
ASMTRAN (OS/4 conversion)	No	Yes

Component	All Models CDM	Model 8 only Mixed
SCAN (not ASM level conversion)	No	Yes
RPG II 8	Yes	Yes
Sort/Merge	Yes	Yes
SORT3	Yes	Yes
FORT (basic)	No	Yes
FOR 4 (FORTRAN IV)	Yes	Yes
COBOL '68	No	Yes
COBOL '74	Yes	Yes
U400 PLM	No	Yes
U400 MAC80	No	Yes
ICAM	Yes	Yes

NOTES: 1. DTF interface to access method is supported.

2. CDI interface to access method is supported.

3. The IRAM file format is supported under MIRAM.

4. DTF MIRAM is not supported in any mode of operation.

5. IMS can be configured for either DTF or CDM operation but not both.

6. Notes relate to processing files outside the DMS data base.

7. MIRAM and workstations are not supported on DTF-only systems.

Appendix G. Release 9.0 Documentation Summary

The Release 9.0 Documentation Summary is a history of current published release documentation items.

Item names are abbreviated as follows:

SRA - System Release Announcement. New designation for the software release announcement to facilitate announcement of both software and hardware availability.

SRD - System Release Description. New designation for software release description. Document accompanying newly available software release describing contents, guidelines, and restrictions on use of a new release.

Release-related documents with Release 9 are stock items and are assigned UP numbers for identification and ordering purposes. The base UP number for Release 9 is UP-10830.

The following summarizes the Release 9.0 documentation:

Issue/ UP NO.	Date	Level	Item and Description
UP-10830.1		9.0	SRA (Release ordering information for Release 9.0)
UP-10830.2		9.0	SRD ~~Rev. 1~~ 2 (A base release document giving details on installing and using Release 9.0 along with guidelines and restrictions.)

Appendix H. File Transfer Utility (PCTRAN) Guide

The file transfer utility (PCTRAN) is described in 2.1.6.1 of this document. Following is a description of the hardware and software requirements to support PCTRAN, and instructions for installation and operation.

H.1. HARDWARE REQUIREMENTS

- SPERRY Personal Computer Modesl 10, 20, 30, 40, 50
- UNISCOPE Communications Board (F4213-00)
- 16K bytes of main storage to load PCTRAN

H.2. SOFTWARE REQUIREMENTS

- MS-DOS Operating System, Release 2.1 or higher
- SPERRY Terminal Emulation Program, Release 1.2 or higher (F6834-00)
- OS/3 Communications Software (ICAM)

H.3. SETUP AND OPERATING PROCEDURES

H.3.1. Setup Procedures

The SPERRY Terminal Emulation Program must be loaded into the PC and the proper UNISCOPE (U20) configuration must be generated for the PC. The PC can be configured as a remote terminal emulating a workstation or as a remote workstation. This procedure is described in the SPERRY Personal Computer Guide to SPERRY Terminal Emulator User's Guide, UP-10144, Section 3.

The OS/3 host system must have an ICAM generation with a line and U20 terminal defined with the same RID/SID as was specified in the PC configuraiton. See the Integrated Communications Access Method (ICAM) Programmer's Reference, UP-9749, Section 2, for OS/3 ICAM generation procedures.

Following are some examples of OS/3 ICAM generation:

CCA specifications:

```
REMO    LOCAP TYPE=(DMI),IAS=(YES,OFF),MODE=SYSTEM
```

Line and Terminal Specifications:

Remote Terminal Emulating a Workstation

```
LN10    LINE DEVICE=(UNISCOPE),TYPE=(2400,SWCH,SYNC,UNAT),ID=10,    X
             CHAN=15,INPUT=(YES)
TM11    TERM FEATURES=(U20,1920),ADDR=(21,51),TCTUPD=YES,           X
             LOW=MAIN,MED=MAIN,HIGH=MAIN,AUX1=(COP,73)
TM12    TERM FEATURES=(U20,1920),ADDR=(21,52),TCTUPD=YES,           X
             LOW=MAIN=MED=MAIN,HIGH=MAIN,AUX1=(COP,73)
```

Remote Workstation

```
LN20    LINE DEVICE=(RWS),TYPE<(2400,SWCH,UNAT),ID=7,CHAN=15,       X
             INPUT=(YES)
        PGROUP PGID=23
TM21    TERM FEATURES=(U20,1920,,,PRIMARY),ADDR=(21,51),            X
             LOW=MAIN,MEDIUM=MAIN,HIGH=MAIN,AUX1=(COP,73)
TM22    TERM FEATURES=(U20,1920,,,SECONDARY),ADDR=(21,52),          X
             Low=MAIN,MEDIUM=MAIN,HIGH=MAIN,AUX1=(COP,73)
```

NOTE: The AUX1 device is not necessary for this utility and is used only when you want to use the PC printer as an auxliary printer on a workstation.

H.3.2. Operating Procedures

During the file transfer process (PCTRAN) process, you can press any key to terminate the file transfer and initiate program restart. Also, press the transmit key on any screen when the cursor is at the start-of-entry position to automatically reinitialize PCTRAN.

In the normal operating mode, the transfer will terminate when the input end-of-file has been detected on either the host file or the PC file.

The following steps tell you how to use PCTRAN:

1. Make sure that the OS/3 ICAM is ready, and that the communications line to be used is up and available.

2. Load the PC using the proper PC configuration generated in the setup procedure. For example, if the configuration was defined as RMT, the load entry would be:

   ```
   STEP RMT
   ```

3. A help screen is then displayed on the PC. It explains the various key functions used in the U20 terminal emulation. Press any key to clear the help screen.

4. Dial up the host system. After the PC successfully connects, the word ''Poll'' flashes on the right side of line 25.

   NOTE: Sign-on is not required if the PC was configured as a remote workstation and the line definition in the ICAM generation specified DEVICE=(RWS). If so, go to step 6.

5. Sign on to OS/3 using the **$$SON** command as follows:

   $$SON TM11REMO

   where:

   TM11 is the terminal ID and REMO is the CCA LOCAP name defined in the ICAM generation.

6. At this point the OS/3 logo is displayed and you can log on in the normal manner. After a successful log-on, PCTRAN can be initiated. Note that with Release 1.2 of the PC terminal emulation program, PCTRAN can be run only from the primary or first screen, shown in Figure H-1.

   To enter the system mode, perform step 6a or 6b as appropriate.

   a. If the PC is operating as a remote terminal emulating a workstation, simultaneously press the ALT and 1 keys to put the PC in system mode.

   b. If the PC is operating as a remote workstation, press the ALT and 4 keys simulataneously to put the PC in system mode.

7. Once in system mode, enter the following command to initialize PCTRAN:

   RV PCTRAN

   The file transfer utility loads and the mode screen is displayed as follows (Figure H-1):

```
*SPERRY OS/3 FILE TRANSFER UTILITY *

                Version 1R0

    1 : Receive Character Data File from Host
    2 : Transfer Character Data File to Host
    3 : Receive Hexify Data File from Host
    4 : Transfer Hexify Data File to Host
    5 : Terminate PCTRAN

    Select mode : (1)


NOTE : Depress any function key to terminate transfer and restart.
```

Figure H-1. Mode Screen (Screen 1)

8. Select the desired transfer (or terminate) function, then press the transmit key. Figure H-1 illustrates that the receive character data file from host option was selected.

9. The host screen (Figure H-2) is then displayed as follows:

```
    * S P E R R Y   O S / 3   F I L E   T R A N S F E R   U T I L I T Y *

                        RECEIVE DATA FROM HOST

     Enter OS/3 file specifications in the following format:

                module-name,filename,vsn,SAT=YES
                                OR
                FILE=filename,VSN=vsn,RCFM=VAR

file=test,vsn=res


See general editor description of file specifications.
Sample Keywords: MODULE,FILE,VSN,TYPE,DEVICE,SAT

Note : The OS/3 file default parameter values are as follows:
     DEV=DISK              SAT=NO              RCFM=FIXED
     EXTEND=YES            RCB=NO              RCSZ=256
     INC=1                 INIT=NO             SIZE=2
```

Figure H-2. Host Screen (Screen 2)

Type in the appropriate host file name, volume serial number, and other parameter options as required to define the host file. An example of the specification for a file to be received from the host is shown in the entry in Figure H-2. Note that the minimum requirements for a file definition are the file name and the volume serial number parameters. See General Editor User Guide/Programmer Reference, UP-9976 (3.14 and 3.18) for additional information.

10. If the file has been opened properly, the PC Screen (Figure H-3) is displayed as follows:

```
* S P E R R Y   O S / 3   F I L E   T R A N S F E R   U T I L I T Y *

                    RECEIVE DATA FROM HOST

Enter personal computer file specifications :

  PC drive     : (a)
  PC filename : (testfile.dta)

  NOTE: File is in the form filename.extension.
```

Figure H-3. PC Screen (Screen 3)

Type in the appropriate PC specifications to define the PC file. Figure H-3 shows the PC file (testfile), with the extension (dta), which is located on device (a). When a file is to be received from the host, the PC file is automatically allocated on the PC.

After normal completion of the file transfer, the mode screen is redisplayed (Figure H-4) including a total record count. At this point, you can select another file transfer operation or you can terminate PCTRAN.

```
*SPERRY OS/3 FILE TRANSFER UTILITY*

                Version 1R0

    1 : Receive Character Data File from Host
    2 : Transfer Character Data File to Host
    3 : Receive Hexify Data File from Host
    4 : Transfer Hexify Data File to Host
    5 : Terminate PCTRAN

    Select mode : (2)


NOTE : Depress any function key to terminate transfer and restart.



RECEIVE RECORD COUNT = 000050
```

Figure H-4. Mode Screen Redisplayed at End of Successful File Transfer

Following are additional examples of how PCTRAN can be used.

Figure H-4 illustrates a mode screen redisplayed after a successful file transfer. The total record count is also shown in the mode screen. In this example, the transfer character data file to host option has been selected as the second file transfer operation. When this selection is entered, the host screen is redisplayed as follows (Figure H-5):

```
     * S P E R R Y   O S / 3   F I L E   T R A N S F E R   U T I L I T Y *

                          TRANSFER DATA TO HOST

     Enter OS/3 file specifications in the following format:

               module-name,filename,vsn,SAT=YES
                                OR
               FILE=filename,VSN=vsn,RCFM=VAR

file=testout,vsn=res,rcfm=fix,rcsz=168,rcb=yes,key1=1:7


See general editor description of file specifications.
Sample Keywords: MODULE,FILE,VSN,TYPE,DEVICE,SAT

Note : The OS/3 file default parameter values are as follows:
     DEV=DISK            SAT=NO            RCFM=FIXED
     EXTEND=YES          RCB=NO            RCSZ=256
     INC=1               INIT=NO           SIZE=2
```

Figure H-5. Host Screen Redisplayed

In Figure H-5, the record format parameter (rcfm) defines the file type as fixed, and the record size (rcsz) is defined as 168 characters. The parameter (rcb=yes) specifies that a record control byte is to precede each record. The parameter (key1) specifies characters 1 through 7 of the record as a key field. See the General Editor User Guide/Programmer Reference, UP-9976 (3.14 and 3.18) for additional information.

NOTE: When you transmit a SAT module to a new host file, you must specify the SAT=YES parameter. If SAT=YES is not specified, its default is used and the module will be in a MIRAM file format.

If the file has been opened properly, the PC screen is displayed again as follows (Figure H-6):

```
* S P E R R Y   O S / 3   F I L E   T R A N S F E R   U T I L I T Y *

                    TRANSFER DATA TO HOST

Enter personal computer file specifications :

  PC drive     : (a)
  PC filename  : (testfile.dta)

  NOTE: File is in the form filename.extension.
```

Figure H-6. PC Screen Redisplayed

Figure H-6 shows that the PC data file (testfile.dta) has been specified to be transferred to the host.

Upon completion of this second transfer, the mode screen (Figure H-7) is then displayed again, including a new total record count of the records transferred:

```
*SPERRY OS/3 FILE TRANSFER UTILITY*

                Version 1R0

    1 : Receive Character Data File from Host
    2 : Transfer Character Data File to Host
    3 : Receive Hexify Data File from Host
    4 : Transfer Hexify Data File to Host
    5 : Terminate PCTRAN

    Select mode : (1)


NOTE : Depress any function key to terminate transfer and restart.
```

Figure H-7. Mode Screen Redisplayed at End of Second Successful File Transfer

Once again, you can either terminate PCTRAN or select another file transfer operation. Figure H-7 shows the receive from host option selected. When this selection is entered, the host screen (Figure H-8) is displayed again:

```
*SPERRY OS/3 FILE TRANSFER UTILITY*

                RECEIVE DATA FROM HOST

     Enter OS/3 file specifications in the following format:

               module-name,filename,vsn,SAT=YES
                           OR
               FILE=filename,VSN=vsn,RCFM=VAR

pctran00,$y$lod,res,1


See general editor description of file specifications.
Sample Keywords: MODULE,FILE,VSN,TYPE,DEVICE,SAT

Note : The OS/3 file default parameter values are as follows:
     DEV=DISK              SAT=NO              RCFM=FIXED
     EXTEND=YES            RCB=NO              RCSZ=256
     INC=1                 INIT=NO             SIZE=2
```

Figure H-8. Host Screen Redisplayed

Figure H-8 demonstrates the use of PCTRAN to transfer an OS/3 load module to the PC. The L parameter specifies that pcran00 is a load module.

If the file has been opened properly, the PC screen (Figure H-9) is displayed again:

```
* S P E R R Y   O S / 3   F I L E   T R A N S F E R   U T I L I T Y *

                    RECEIVE DATA FROM HOST

Enter personal computer file specifications :

  PC drive     : (b)
  PC filename  : (pctran.lod__)

  NOTE: File is in the form filename.extension.
```

Figure H-9. PC Screen Redisplayed

In Figure H-9, the OS/3 load module (pctran00) is translated into a PC data file (.lod). The module will be translated back to object code format when it is transmitted back to the host with L specified as the last parameter of the host file specification (see Figure H-8).

NOTE: When a module is received from the host with a module type specified, you must specify the same module type (either L or O) when you transmit the module to the host.

An example of a PC loadable file which is to be transferred to the host is shown in Figure H-10.

```
*SPERRY OS/3 FILE TRANSFER UTILITY *

                Version 1R0

    1 : Receive Character Data File from Host
    2 : Transfer Character Data File to Host
    3 : Receive Hexify Data File from Host
    4 : Transfer Hexify Data File to Host
    5 : Terminate PCTRAN

    Select mode : (4)


NOTE : Depress any function key to terminate transfer and restart.



RECEIVE RECORD COUNT = 000075
```

Figure H-10. Another Mode Screen Selection Sample

To transfer PC loadable data, the transfer hexify data file to host option must be selected as shown in Figure H-10. When this selection is entered, the host screen reappears as shown in Figure H-11.:

```
*SPERRY OS/3 FILE TRANSFER UTILITY*

                TRANSFER DATA TO HOST

     Enter OS/3 file specifications in the following format:

               module-name,filename,vsn,SAT=YES
                              OR
               FILE=filename,VSN=vsn,RCFM=VAR

stepmod,srcfil,res,sat=yes


See general editor description of file specifications.
Sample Keywords: MODULE,FILE,VSN,TYPE,DEVICE,SAT

Note : The OS/3 file default parameter values are as follows:
     DEV=DISK              SAT=NO            RCFM=FIXED
     EXTEND=YES            RCB=NO            RCSZ=256
     INC=1                 INIT=NO           SIZE=2
```

Figure H-11. Host Screen

In this example, this host module (stepmod) is stored in the SAT file (scrfil), which is contained on the RES OS/3 disk pack.

If the module name and SAT parameter are not included in the host file specification, a MIRAM file (srcfil) will be stored on the RES OS/3 disk pack.

NOTE: The rcfm=var (see Figure H-5) parameter should be included to guarantee that trailing blocks are omitted from the last block transferred to the host.

If the file has been opened properly, the PC screen is redisplayed as shown in Figure H-12:

```
*SPERRY  OS/3  FILE  TRANSFER  UTILITY *

                TRANSFER DATA TO HOST

Enter personal computer file specifications :

  PC drive     : (a)
  PC filename  : (step.com____)

  NOTE: File is in the form filename.extension.
```

Figure H-12. PC Screen

In Figure H-12, the file to be transferred is the PC loadable file (step.com). The module stepmod exists as a SAT module on the OS/3 host; it can be received later by another PC by selecting 3 (receive hexify data file from host).

When this transfer is successfully completed, the mode screen (Figure H-13) reappears:

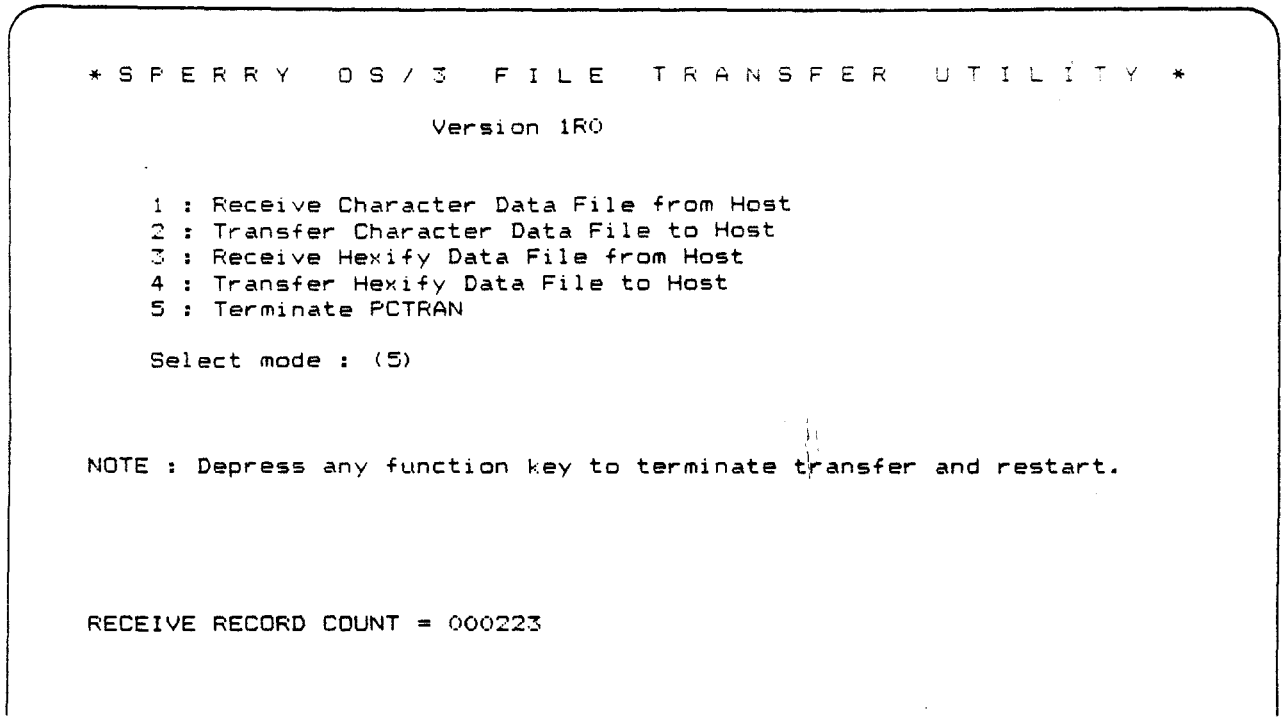

Figure H-13. Mode Screen

Figure H-13 shows the termination of PCTRAN after the several file transfers that were described in the preceding examples. Option 5 is selected to terminate PCTRAN.

H.4. ERROR MESSAGES

If an error condition is detected by OS/3 or by the PCTRAN program, an error message is displayed. The error messages are as shown in Table H-1.

Table H-1. PCTRAN Error Message (Part 1 of 2)

Message Number	Meaning/Action
FT000	INVALID SPECIFICATION FOR FILE A syntax error has been detected in the host or PC specification. Correct the error and reenter specification.
FT001	PC DISK FULL, TRANSFER NOT COMPLETED Another diskette/disk should be used or files should be erased from the diskette/disk for additional file space.
FT002	PC DISK NOT READY Put diskette/disk in ready state.
FT003	PC DISK IS WRITE-PROTECTED Make sure the correct diskette/disk has been specified. If so, write enable the diskette/disk.
FT004	PC I/O ERROR A diskette/disk I/O error has occured. Correct the PC hardware problem.
FT009	PC ERROR-ACK NOT TRANSMITTED TO HOST The PC has not transmitted an acknowledge status to the host while receiving data. The data transfer is questionable.
FT010	PC BLOCK SIZE EXCEEDS MAXIMUM The PC has transmitted a block of data which exceeds the PC control page block size. The data transfer is questionable.
FT011	RECORD SIZE EXCEEDS MAXIMUM The record size specified by the host RCSZ parameter is larger than 7680 characters. Reenter the host specification with valid record size.
FT012	RECORD SIZE EXCEEDS RCSZ, RECORD SPANNED A data record larger than RCSZ has been transmitted to the host. The record has been spanned over multiple records on the host file at a record size equal to RCSZ.

Table H-1. PCTRAN Error Message (Part 2 of 2)

Message Number	Meaning/Action
FT013	PC HEXIFY DATA, MODULE TYPE INVALID Operator has specified a module type of O or L in the host file specification, but has selected HEXIFY DATA mode transfer. OS/3 object O or load L modules must be transferred using CHARACTER DATA mode.
FT014	SYSTEM ERROR MNN An OS/3 system error has occurred. Refer to the OS/3 System Messages Programmer/Operator Reference, UP-8076, Appendix A, for an explanation of this error.