

UNISYS

**OS/3
SYSTEM RELEASE
DESCRIPTION
(SRD)**

RELEASE 12.0

System OS/3
Product Level 12.0
Software Category 1

Distribution
Lists

MB00
MB01
MBW
SAB
SAE

UP-14213.2

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USER COMMENTS FORM



1. Release Information

1.1. RELEASE DESCRIPTION

Operating System/3 (OS/3) Release 12.0 includes functional enhancements for all System 80 models.

Release-related 12.0 documents have been assigned the base number UP-14213. Each release-related document has a UP number incorporating this base number, for example:

- System Release Announcement (SRA) UP-14213.1
- System Release Description (SRD) UP-14213.2

The SRA contains the following information:

- Summary of Release 12.0 enhancements
- Software category changes and support discontinuances
- Ordering procedures (including request forms)

The SRD is provided with each software order. Additional copies (along with other release-related documents) can be ordered through your Unisys representative. The SRD contains:

- A description of each enhancement
- Guidelines and restrictions on the use of this release
- Supported hardware and software
- System installation considerations

Additional release-related documents will be assigned UP numbers in sequence.

This release is identified as follows:

Library System: Unisys Operating System/3 (OS/3)

Release Number: 12.0

SUR Release Level: 1200

This release may be ordered for delivery on OS/3 tapes, disks, or diskettes. See the SRA for details on the various formats that are provided.

The minimum main storage requirement for Release 12.0 is 524K bytes.

1.2. RELEASE-TO-RELEASE COMPATIBILITY

The following statements about compatibility between major releases apply unless superseded by specific restrictions documented in this SRD:

- Upward compatibility is supported between consecutive major releases (for example, 11.0 with 12.0). This support extends to data files, library files, job control streams, and programs compiled on the earlier release. Product releases that occur between major releases will have upward compatibility with the next major release.
- IMS and TIP/30 must be reconfigured for Release 12.0.
- 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 the same functions are provided on both releases. See **4.5, Special Dump Restore Backward Compatibility Guidelines**, for information regarding special backward compatibility considerations for Release 12.0 dump restore tapes, diskettes, and disk volumes.
- The current release supports interfaces of programs from previous releases of the system, but the previous release does not necessarily support interfaces of programs from a more current release of OS/3. Programs compiled on the current release may not be executable on a earlier release.

1.3. LIMITED CONDITIONS OF ASSEMBLER USE

For separately priced contracts, this condition applies to the 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 the system control software (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 (type number 6233-00) at the prevailing market price.

1.4. ERROR REPORTING PROCEDURE

Users who find errors or deficiencies in software must contact the Unisys Customer Support Center to get a system user report (SUR) authorization number. A Unisys Customer Support Center analyst will submit a SUR on behalf of the user. Mail appropriate documentation, such as main storage printouts, system console printouts, and an SMC listing to the address listed below. For language processors, a copy of the source program and data on diskette or tape, and complete JCL should be submitted. Provide the release number along with any additional information that might aid in error analysis.

All associated documentation should be sent to:

Unisys Corporation
Development Support
P.O. Box 500
Blue Bell, PA USA 19424-0013
Attn: SUR Coordinator, E7-118B

Users who discover any new techniques or considerations when using system software are encouraged to forward this information directly to Unisys at this address. The information will then be sent to all users in a system flash.

1.5. USER DOCUMENTATION

The following Unisys publications are new or have been updated for this release. (See the *Library Overview*, UP-8986, for a list of the other current publications.) Either the update package alone, or the complete manual with the update package, may be ordered through your local Unisys representative.

For example, to receive the update package alone, order UP-8748 R1-C; to receive the complete manual, order UP-8748 R1.

1.5.1. Software User Manuals

<u>Publication Number</u>	<u>Description/Type of Manual</u>
UP-8022 R6	<i>Data Base Management System (DMS) Data Description Language Programming Reference Manual</i>
UP-8044 R3-F	<i>Report Program Generator II (RPG II) Programming Reference Manual</i>
UP-8067 R7	<i>Report Program Generator II (RPG II) Programming Guide</i>
UP-8076 R12	<i>System Messages Reference Manual</i>
UP-8613 R2-F	<i>COBOL, 1974 American National Standard Programming Reference Manual</i>
UP-8748 R1-C	<i>Information Management System (IMS) to DMS Interface User Guide</i>
UP-8834 R3	<i>Data Utilities Operating Guide</i>
UP-8839 R7	<i>Installation Guide</i>
UP-8841 R4	<i>System Service Programs (SSP) Operating Guide</i>
UP-8842 R3-C	<i>System Service Programs (SSP) Programming Reference Manual</i>
UP-8858 R2	<i>Dialog Processor User Guide / Programmer Reference</i>
UP-8859 R5	<i>Operations Guide</i>
UP-8868 R3	<i>Hardware and Software Programming Quick-Reference Guide</i>
UP-8870 R1-B	<i>System 80 Technical Overview</i>
UP-8874 R2	<i>System Index and Publication Guide</i>

<u>Publication Number</u>	<u>Description/Type of Manual</u>
UP-8913-F	<i>Assembler Programming Guide</i>
UP-8914 R1	<i>Assembler Programming Reference Manual</i>
UP-8986 R2	<i>Library Overview</i>
UP-9009 R5	<i>Data Management System (DMS) Quick-Reference Guide</i>
UP-9205 R1	<i>Information Management System (IMS) Technical Overview</i>
UP-9207 R1-A	<i>Information Management System (IMS) COBOL / Assembler Action Programs Programming Guide</i>
UP-9502 R2	<i>NTR Utility Programming Guide</i>
UP-9734 R1-A	<i>MAPPER[®] 80 Run Functions Programming Guide</i>
UP-9735 R1-A	<i>MAPPER 80 Manual Functions Programming Guide</i>
UP-9736 R1-A	<i>MAPPER 80 Forms Generation and Utilities Programming Guide</i>
UP-9737 R2-A	<i>MAPPER 80 System Administration and Operations Guide</i>
UP-9744 R1	<i>Integrated Communications Access Method (ICAM) Technical Overview</i>
UP-9745 R2	<i>Integrated Communications Access Method (ICAM) Operations Guide</i>
UP-9748 R1	<i>Integrated Communications Access Method (ICAM) Utilities Programming Guide</i>
UP-9749 R1-B	<i>Integrated Communications Access Method (ICAM) Programming Reference Manual</i>
UP-9972 R1	<i>Interactive Services Operating Guide</i>
UP-9973 R1	<i>Interactive Services Commands and Facilities Programming and Operations Quick-Reference Guide</i>
UP-9975 R1	<i>Spooling and Job Accounting Operating Guide</i>

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<u>Publication Number</u>	<u>Description/Type of Manual</u>
UP-9976-C	<i>General Editor (EDT) Operating Guide</i>
UP-9977 R1	<i>Screen Format Services Technical Overview</i>
UP-9978 R1	<i>Consolidated Data Management Programming Guide</i>
UP-9979-C	<i>Consolidated Data Management Macroinstructions Programming Guide</i>
UP-9980 R1	<i>Dump Analysis Programming Guide</i>
UP-9983 R1	<i>System Activity Monitor Programming Guide</i>
UP-9984 R1	<i>Job Control Programming Reference Manual</i>
UP-9985 R1	<i>System Operations Quick-Reference Guide</i>
UP-9986 R1	<i>Job Control Language Programming Guide</i>
UP-10003 R1	<i>Installation Verification Procedures (IVP) Operating Guide</i>
UP-10870 R2	<i>Data Base Management System (DMS) System Support Functions Programming Guide</i>
UP-11907-B	<i>Information Management System (IMS) System Support Functions Programming Guide</i>
UP-12013-C	<i>Data Base Management System (DMS) Data Manipulation Language Programming Guide</i>
UP-12027-B	<i>Information Management System (IMS) Operations Guide</i>
UP-12028-R1	<i>Security Maintenance Utility User Guide</i>
UP-12407-A	<i>OS/3-MAPPER 5 System Connectivity Operating Guide</i>
UP-12443 R2	<i>System 80 Models 8/10/15/20 Capabilities Overview</i>
UP-14178	<i>Pascal Programming Reference</i>
UP-14179	<i>FORTTRAN 77 Programming Guide</i>
UP-14207	<i>OS/3 to UNIX[®] Connectivity Operating Guide</i>
UP-14208	<i>OS/3 to UNIX File Transfer Operating Guide</i>

1.5.2. Central Hardware User Manuals

<u>Publication Number</u>	<u>Description/Type of Manual</u>
UP-9607 R2	<i>System 80 Models 8/10/15/20 Processor Complex Controllers, Volume 1: Controllers of the Selector Channel and Byte Multiplexer Programming Reference Manual</i>
UP-9608 R2	<i>System 80 Models 8/10/15/20 Processor and Central Peripherals Operating Guide</i>
UP-9692 R2	<i>System 80 Models 8/10/15/20 Processor Programming Reference Manual</i>
UP-9732 R2	<i>System 80 Models 8/10/15/20 Processor Complex Controllers, Volume 2: Controllers and Communications Channels of the I/O Processor Programming Reference Manual</i>

1.5.3. Peripheral Hardware User Manuals

Typically, the current user documentation for peripheral hardware devices is delivered with the equipment. Since the documentation for these devices is specific to the device and not related to the system or the system's release level, it would be impossible to prepare a list of updated peripheral documents for this SRD. However, the *Library Overview*, UP-8986 R2, does list the documentation available with each device. You should use that document as a reference to ensure that you received the proper documentation or that the documentation you already have is current.



2. Release Overview, Restrictions, and Guidelines

This section briefly describes the enhancements contained in Release 12.0. Each description contains the following:

- The UP numbers of the user manuals where the enhancement is documented. Manual titles are given in **1.5. USER DOCUMENTATION**.
- A listing of any user requests that are related to the enhancement.
 - Request For Change (RFC) identifiers are four-digit numbers.
 - User association (AUUA and SUAE) identifiers are in the form xyynnn, where x is S (for Spring) or F (for Fall), yy is the last two digits of the calendar year in which the request was made, and nnn is a three-digit number.

***Note:** The AUUA and SUAE user association identifiers are being retained in this SRD (and possibly in future SRDs) as they represent the current method of tracking a particular user request. Future requests made through the CUBE organization will carry the appropriate CUBE identifier.*

- A functional description of the enhancement.
- Any guidelines relative to the use of the enhancement 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.
- Any restrictions (temporary limitations) on the use of the enhancement. Restrictions are lifted as soon as possible and are documented only in the SRD.

The minimum plateau level requirements for Release 12.0 are:

- Plateau 5.00 for model 8
- Plateau 2.00 for models 10/20
- Plateau 3.00 for model 15.

2.1. HARDWARE

2.1.1. System 80 Model 15

Manuals: UP-8839, UP-8859, UP-12443

User Request: None

OS/3 is enhanced to support System 80 model 15 hardware. This system offers the latest in processor technology and significant increases in performance, capacity, and system throughput potential. The model 15 supports a minimum of 4 megabytes of main storage and is expandable in 4-megabyte increments to 12 megabytes. The model 15 offers a performance capability that is midway between the performance of a model 10 and that of a model 20. In addition, the model 15 supports up to six selector channels.

The model 15 is field-upgradeable from the model 10. Since it is completely compatible with the model 10, no software modifications to existing applications are required, nor are there any considerations for migrating from your present model 10 to the model 15.

If upgrading from another model, the migration considerations are the same as those for upgrading to a model 10 or 20. These considerations are presented in the *System 80 Models 10/20 Migration Guide*, UP-12649.

2.1.2. BT3200 Tapes

Manuals: UP-8839, UP-8868, UP-9984, UP-9986

User Request: None

The versatile BT3200 family of tapes offers a wide range of tape drive configurations and capabilities. The BT3200 tape subsystems are connected to your System 80 via a selector channel and provide transfer rates of from 100 to 1250K bytes per second. The subsystem configuration ranges from a minimum of 1 controller and 1 drive to a maximum of 2 controllers and 16 drives.

Drive speeds available are 75, 125, or 200 inches per second with recording densities of 1,600 bpi (phase encoded) or 6,250 bpi (group coded recording).

2.1.3. DCP Connectivity

Manuals: UP-8839, UP-9744, UP-9745, UP-9748

User Request: None

- **DCP/30 support**
The DCP/30 can be connected via a UDLC communications line. The maximum line speed is 56K bytes per second. (This is the same connection previously used for the DCP/15/20/40.)
- **Selector channel support**
A DCP/15/30/40 can be connected via a selector channel (on the models 8 thru 20) operating at a maximum of 2 megabytes per second. This offers a high-speed alternative to the UDLC communication line.

The selector channel is dedicated; therefore, no other devices can be connected to this channel. A SUPGEN parameter is available to specify the channel number to which the DCP is connected. ICAM generation parameters are available to define the physical connection.

Release 7R2A of Telcon is required for the DCP channel connection.

Guidelines:

- The ICAM terminal support package (6231-xx) and the DCA termination system (6255-xx) are also required.
- The network administrator terminal must be the DCP console or a terminal connected to the DCP. It cannot be a terminal directly connected to System 80.

Restrictions:

- MAPPER 5 system cannot be configured to a DCP.
- These protocols are not supported between the System 80 and the DCP:
 - BSC protocol (includes RBP)
 - Asynchronous protocol
 - Terminals which have been configured as remote workstations
 - MAPPER 5
 - An SVT 1121 and an SVT 1126 connected to a DCP are supported only if an OS 1100 host system has downline loaded the microcode.

- DCP resiliency support is not available.
- No support is provided for receiving a Telcon dump from the DCP. See Appendix E of this document for information on performing and handling a DCP dump.

2.1.4. 9246-14B Printer

Manuals: UP-8839, UP-8868

User Request: None

The 9246-14B high-performance line printer is a freestanding impact printer capable of speeds up to 1500 lpm, depending on the print band selected. The 9246-14B is compatible with the 0776 printer and attaches to your System 80 through a selector channel.

Print density is 10 columns per inch with a print line width of 80, 132, or 136 columns. Line spacing is program selectable at 6 or 8 lines per inch. The 9246-14B can print one original and five copies.

Table 1-1 identifies the bands that are supported by the 9246-14B and the characteristics of each.

The module column identifies the load code buffer module name associated with each band. During system generation, specify this name when executing the SG\$PRB job stream, for example:

```
RV SG$PRB, ,MOD=lcb,DVC=did,PRINT=N
```

where:

lcb

Is the name of the load code buffer in \$Y\$SRC (for example, F5235-24).

did

Is the printer address (for example, 3F0).

PRINT=N

Inhibits printer output.

Table 1-1. Print Bands for the 9246-14B and 9246-25B Printers

Print Band Description	9246-14B Module	9246-25B Module	Print Band ID	Language Version	Character Set Size	Character Font
Business, Standard	F5236-00	F4836-00	18	V50	48	CF1-77L
Business, Standard, OCR-A	F5236-10	F4836-06	48	V50	48	OC1-77A
Scientific Standard	F5236-01	F4836-01	02	V51	48	CF1-77L
Modified ASCII	F5236-09	F4837-15	14	V52	64	CF1-77L
Modified ASCII, EPA	F5236-11	F4837-22	3F	V58	64	CF1-77L
ASCII, ECMA-II	F5235-20	F4837-23	78	V1	192	CF1-EC2
ASCII, ECMA-II	F5235-00	F4837-00	05	V1	96	CF1-EC2
OCR-B, ASCII	F5235-28	F4837-28	55	V1	96	OC1-OAB
A, LIBRA, ASCII	F5236-12	N/A	3E	V1	64	CF1-77L
United Kingdom, ECMA-II	F5236-02	F4836-03	09	V2	48	CF1-EC2
Sweden/Finland, ECMA-II	F5236-06	F4837-02	0E	V18	64	CF1-EC2
Sweden/Finland, ECMA-II	F5235-07	F4837-07	10	V18	96	CF1-EC2
Denmark/Norway, ECMA-II	F5236-05	F4837-01	0D	V8	64	CF1-EC2
Universal	F5235-13	F4837-13	1D	V54	128	CF1-77L
Universal OCR-B ISO	N/A	F4837-03	17	V54	128	OC1-B
Universal OCR-B, ECMA-II, ISO	F5235-21	F4837-24	4C	V45	128	OC1-OE1
Universal OCR-A	F5235-11	F4837-11	0F	V54	128	OC1-77A
Universal OCR-B, ECMA-II	F5235-12	F4837-12	04	V54	128	OC1-OEB
Universal H-14	F5235-04	F4837-04	1C	V54	128	CF1-H14
Universal Extended	F5235-23	F4837-21	47	V61	128	OC1-77A
COBOL - FORTRAN Business	F5235-05	F4837-05	11	V55	192	CF1-77L
Modified FORTRAN	F5236-08	F4837-14	06	V53	64	CF1-77L
International 177, ECMA-II	F5235-06	F4837-06	08	V56	384	CF1-EC2
American Library Assoc.	F5235-24	F4837-19	71	V57	384	CF1-BKM

2.1.5. 9246-25B Printer

Manuals: UP-8839, UP-8868

User Request: None

The 9246-25B printer is a high-performance line printer that is capable of printing at 2000 lines per minute depending upon the print band selected. The 9246-25B is compatible with the 0770 printer and is attached to your System 80 through a selector channel.

Print density is 136 characters per line at 10 characters per inch. The 9246-25B can print an original and up to five copies. It is designed for easy operator use and has extensive built-in microprocessor-controlled diagnostics and displays to show printer status.

Table 1-1 identifies the bands that are supported by the 9246-25B and the characteristics of each.

2.1.6. B2x Terminal Support

Manuals: None

User Request: None

Support of the B2x terminals is provided via the UNISCOPE[®] emulator.

Guideline:

- To facilitate remote printing using the BTOS UTE, it is recommended that the BTOS spooling facility be configured and installed. With BTOS spooling installed, all printing is queued until the user exits from emulation. If the user opts for direct printing, keyboard input is not echoed until printing is completed for each screen's transmission.

Restriction:

- A B2x device must be configured as a terminal and not as a remote workstation.

2.1.7. Remote Console Support

Manual: UP-8859

User Request: S85035, F87016

Enables a personal computer to be used as a remote console on a System 80 (models 8 thru 20). The functions that can be performed via the remote console include system IPL, loading microcode, accessing the service frames, and normal operator console functions.

2.2. CONTROL SYSTEM AND SUPPORT PROGRAMS

2.2.1. Models 8 thru 20 Memory Refresh

Manuals: UP-8076, UP-8859

User Request: None

A memory refresh routine will be executed automatically every day at midnight. This routine accesses 4 megabytes of main storage each time it is initiated, causing the hardware correction mechanism to correct any detected single-bit errors. This reduces the possibility of single-bit errors becoming uncorrectable multibit errors, which can cause system errors or halts. This also improves performance by reducing the number of single-bit error corrections during normal operation.

The operator is notified after the 4 megabytes of memory is accessed and is told the start and end address of the space that was accessed.

2.2.2. Interactive Data Utilities

Manual: UP-8834

User Requests: S87010, S87044

- **MIRAM input file sharing**
The interactive data utilities user can optionally select to share input files with other online activities, such as IMS. This capability is provided through an ACCESS=SRD screen option.
- **Hold printer spool file**
The interactive data utilities user can optionally hold printer spool files for printing at a later time.

2.2.3. Buffer Management

Manuals: UP-8839, UP-8859, UP-9980

User Request: None

- **Display buffer information**
Users can better allocate their buffer resources by first using the DI BI command to obtain information on their current buffer allocation. The information displayed by the DI BI command can help a user reduce memory fragmentation by allowing the user to generate a larger resident control block at SYSGEN time.
- **Buffer analysis routine**
The buffer analysis routine, BUFLIST, is a user program that prints out information on your system's dynamic buffers. It uses the \$Y\$DUMP file as input. Several options are supported. These options are retrieved from the // PARAM statement in the JCL statement.

The long option output for the program includes information about every buffer on the list, and the total bytes used by allocated and free buffers. The lists interrogated are those associated with keys, both allocated and free, and the allocated lists associated with symbionts.

- **Buffer management SYSGEN parameters**
To improve buffer allocation and reduce memory fragmentation, two SUPGEN parameters (RESBFCTSZ and EXPBFCTSZ) have been added.
- **RESBUFSIZE keyword changes**
The minimum value for the RESBUFSIZE SUPGEN keyword parameter has been increased to 500. This memory is necessary to accommodate new features on Release 12.0 that require buffer space during system initialization, when actual nonresident memory is not available for GETBUF requests.

2.2.4. System Installation and Generation

Manual: UP-8839

User Requests: 3401, S87051, F85005, F83051, F85037

- **SYSGEN without printer output**
Users can optionally select to suppress printer output when generating a supervisor or ICAM (PRINT=N for SG\$PARAM, SG\$SUPMK, SG@COPY, and SG\$PRB). This is desirable if booting from a starter supervisor and the printers or spoolers are not yet available.
- **Symbiont execution priorities**
Users can assign a specific priority to individual, selected symbionts via the SYMBIONT SUPGEN parameter.

- Release disk naming change
SG\$PARAM allows a release disk to have a volume name identifier other than RELxxx.
- Users can optionally select an alternate tape drive unit to process the second tape of a multivolume installation tape. With this option selected, users are not required to wait for the first tape to rewind before mounting the second tape.

Restriction:

- The RESHARE parameter in SUPGEN has a limit of 60 shared code module and group names. An INTERNAL TABLE OVERFLOW error message is issued for each entry that exceeds the limit.

2.2.5. WSAT

Manuals: UP-8859, UP-9745, UP-9749, UP-9972

User Requests: S87053, F86039, F86062, S87042

- Console DEFKEY assignment
The console operator can create DEFKEY definitions to replace frequently used or long keys. By pressing the appropriate function key at the console (or alternate), the defined action occurs.
- Destructive space default
The user can define the default value of the destructive space to ICAM that is to be used for terminals/remote workstations. This permits both local and remote devices to have the same capability when workstation management reloads the control page after a user logs off.
- Dual-screen data mode support for SVT 1122 (3612) and UTS 40D
Dual-screen data mode support is available for a user logged on at a SVT 1122 (3612) or UTS 40D. The first screen can be used by either Interactive Services or an ICAM user program (IMS, TIP/30, and so on). The second screen can be used as the bypass screen for auxiliary printing or for data mode by an ICAM user program. Interactive services is not available on the second screen. With this enhancement, the same level of functionality is provided to both the local and remote devices.

Guidelines:

- A user must log on screen 1 before a \$\$\$SON on screen 1 or screen 2 is permitted.
- When entering a \$\$\$SON, a user may only \$\$\$SON in data mode on screen 2 since system mode on screen 2 puts the user in system mode on screen 1. There is no system mode on screen 2.
- A user may use screen 2 for either a global dynamic ICAM session or printing through interactive services. If screen 2 is allocated to an ICAM user program, auxiliary spooling is not available. Conversely, if auxiliary spoolout is being produced on screen 2, the second screen is not available to an ICAM user application.
- Local workstation \$\$\$SON support functions like a remote workstation \$\$\$SON. The remote workstation restriction requiring a \$\$\$SON on screen 1 before screen 2 is also true for a local workstation.

Restriction:

- For dual-screen data mode support, if an incorrect \$\$\$SON is issued on screen 2, the SESSIONS RESOURCES NOT AVAILABLE message appears on screen 1 and will not uniquely identify screen 2.

2.2.6. Spooling

Manuals: UP-9972, UP-9973, UP-9984, UP-9986

User Requests: 2787, 3404, 3434 (part a), 3486, 3551, S87004, S87025, F87056

- **Entering spooling operator commands through a terminal**
To exercise greater control of the spool file contents, a system administrator (or a user with privileges granted through the security maintenance utility (SMU)) can enter selected spool commands from a workstation or terminal and not just from the console.
- **Modify an active output writer**
Users can instruct an active output writer to print a specific file after it completes the current file.
- **User-id as a valid search criteria on selected spool commands**
The console operator or the system administrator (or a user with privileges granted through SMU) can use a user-id as a search criterion on selected spool commands .
- **Routing output to multiple auxiliary printers**
Users can route print output to as many as eight locally attached user-ids via a parameter specification on the // ROUTE JCL statement. One of the user-ids may be designated as the central computer printer.

- **Test pages**
Users can have a test page printed (via the // SPL JCL statement) even if the system is generated to suppress the test page.
- **Suppression of test lines for log file**
No test lines request appears if there is a forms change and the file being printed is a log file.

Guidelines:

- If multiple destinations are specified, all must be attached to the local host.
- DDP or auxiliary printer output (via // ROUTE) and RBP output (via // DST) cannot be mixed for any one job. DDP and local printer destinations cannot be used for the same print file.

2.2.7. Security Maintenance Utility

Manual: UP-12028

User Request: 6050

- **Delegated console privileges**
The administrator can grant to any user additional privileged command and console viewing capabilities. The user can be given command privileges previously allowed only at the system console. The user can be allowed only console status commands, such as MIX, or also system control commands, such as SWITCH and CHANGE. The user may also receive console messages. If all these privileges are given, the user is capable of all the operational capabilities of the system console operator.

These privileges can be granted by category in the user profile (display or control) or by individual commands in the user's command profile.

- **System start-up commands**
The administrator can create an execution profile with the name CONSOLE that contains a set of start-up commands. When the system is IPLed and interactive services is initialized, these commands are executed. Subsequent reloads of interactive services alone will not cause another execution of this profile. This profile saves the operator time when loading the system since this profile can be used to load ICAM, GUST, TIP/30, set up DEFKEYs, and so on.
- **Echo of execution profile commands**
Each command of an execution profile is now echoed as it is executed and the IS90 message is suppressed. In previous releases, only the IS90 COMMAND TERMINATED NORMALLY message appeared for each command and you could not tell which commands had been executed.

- Security file not backward compatible
Although the \$Y\$SEC file can be carried forward from previous releases, it is not backward compatible. Using a Release 12.0 \$Y\$SEC file with an earlier release will cause unpredictable results and potentially serious consequences. A backup copy of your pre-Release 12.0 file should be retained in the event you must run under an earlier release.

2.2.8. Screen Format Services

Manuals: UP-8076, UP-9977

User Requests: 3456, 3489

- Protection can be turned on for the initial display of an input field, then turned off on a subsequent write.
- To avoid operator error, the unused portion of a screen is protected if a portion of the original screen is overwritten by an overlay screen.

Restriction:

- Original screen protection occurs only if an original screen was written prior to an overlay or a series of overlays.

2.2.9. General Editor

Manual: UP-9976

User Requests: F85023, F85038

- Displaying nongraphic data
Optionally, the user can have the editor display nongraphic data (for example, packed decimal characters) as spaces. The user must exercise great care when updating records when this option is in effect since any nongraphic characters in the line being updated will be changed to spaces. This option is invoked through the @SET BLANKS=ON editor command.
- Diagnostic message
A warning diagnostic message appears if a user issues an @DROP and more than one editor workspace is active.

2.2.10. Dump Restore

Manuals: UP-8076, UP-8841, UP-8842

User Request: S84004, S85004, S86001, S86002, S86003, F86014

- **Dump restore global file allocation**
The // PARAM TYPE=FILE,ALL parameter has been modified to allow for the specification of REL, ABS, PRE, or LOG.
- **Improved DMPRST file error messages**
Console and workstation error messages have been improved to identify the file and disk on which the error occurs.
- **Multidisk volume DMPRST**
Users can dump files from multiple volumes to tape and subsequently restore the files to multivolume disks. All the disk volumes must be of the same type and online at execution time.
- **DMPRST tape restart**
Users can restart when dumping to or restoring from a tape. The last tape DMPRST was reading or writing can be mounted for a restart. The DMPRST printed output includes messages to indicate when a tape is being read or written.
- **Print the contents of a sequential file**
Users can print the contents of a sequential or tape file.

Guidelines:

- The DMPRST program has increased in size by 5.2K bytes for Release 12.0.
- See **4.5, Special Dump Restore Backward Compatibility Guidelines**, for information regarding special backward compatibility considerations for Release 12.0 dump restore tapes, diskettes, and disk volumes.

Restriction:

- Multiple disks can be dumped only to tape in file mode. The disks must be of the same type. Files dumped from one disk may not be restored to two disks, nor can files dumped from two different disks be restored to a single disk.

2.2.11. Operator Communications

Manuals: UP-8859, UP-9972, UP-9973, UP-9985

User Requests: 2050, 3164, 3244, 3297, 3414, 3520, 6042, 6050, S83035, F86011, F86022,
F86027, F86038, S87008

- The following enhancements have been made to the RECALL command:
 - The RECALL command to obtain a display of logged messages is permitted from the console. The number of messages displayed depends on the number of available lines on the console at the time the command is entered.
 - The RECALL command can be qualified to display only those messages associated with a specified prefix.
- Delegated console functionality
Interactive users at remote and local workstations or terminals emulating workstations can exercise the following console functions previously only available to the console operator. Users can use these functions only if permitted via their security profiles as defined via SMU:
 - Monitor system status with MIX and DISPLAY
 - Control system activity with commands such as CANCEL, PAUSE, and GO
 - Monitor messages sent to the system console and, optionally, respond to questions
- Jobs with outstanding displayed questions can be moved by memory consolidation.
- Function keys (DEFKEYS) for the console are supported.
- The FLUSH command allows queued terminal/workstation or console messages to be selectively purged.
- SET command enhancements:
 - The console alarm can be enabled and disabled via a new SET command parameter (SET ALARM{,ON/OFF}).
 - The model 8/10/20 console alarm now sounds once every ten seconds if there are unanswered messages. The keyin SET ALARM,ONE can be used to select a single beep mode.
 - The SET command can also be used to change the LOGON bulletin and log defaults, and to override these values.
- A HOLD JBQ command issued from a workstation now holds subsequently submitted RUN jobs in addition to those jobs already on the job queue.

Guideline:

- The RECALL command does not span midnight (change-of-day). The LR04 NO MESSAGES IN THE LOG message appears for a RECALL issued after a day change. RECALL will work again after a break-point of the console log.

Restrictions:

- Users can only issue one RECALL command at a time from a particular device.
- Delegated console users that have been assigned option number 5 (global control) must also have been assigned console viewing privileges, either through option number 1 or 2. If the entry has been omitted, option number 2 will become the default.

2.2.12. SYSDUMP

Manual: UP-9980

User Request: F86032

- SYSDUMP and JOBDUMP print page numbers on dump listings to facilitate the reading of the dump and make it easier to select pages to print on the spooled dumps.
- If the user has selected a symbiont for printing and more than one copy of that symbiont exists, the console displays the number of copies and their addresses. The user can then select the desired copy of the symbiont for printing.
- The following additional parameters for the DISPLAY keyword of SYSDUMP select mode are supported:

CR	Control registers
IO	I/O relocation registers (models 3 thru 6 only)
PR	Problem registers
RR	Relocation registers
SN	Snap registers (not on models 3 thru 6)
SR	Supervisor registers
JOBS	List of all jobs in the system

2.2.13. Library Services

Manuals: UP-8841, UP-8842, UP-9978

User Requests: F85022, F85024

- MLIB allows multiple MIRAM library files to be created on a single tape volume through the parameter TAPEFILES=MULTI.
- MLIB lists the volume and actual file labels on the printed listing for files declared on the FIL statement.

2.2.14. Interactive Services

Manuals: UP-8859, UP-9972, UP-9973

User Requests: F83051, F85037, F85049, F85052, S86026, F86031

- Security LOGON enhancements

An unsuccessful attempt to LOGON causes:

- A message to the administrator's terminal or console displaying the user-id and terminal-id.
- Deactivation of the terminal when the maximum number of invalid LOGON attempts is reached.

The system administrator, the operator, or a user with global control privileges can dynamically reactivate a terminal that has been deactivated by invalid LOGON attempts via the enhanced LIMITS command. This can be done by directly reactivating a downed terminal or by increasing the maximum number of invalid LOGON attempts to a value greater than the current number of attempts.

The STATUS command can be used to obtain a display that shows the terminals that have at least one invalid LOGON attempt. This is available only to the console operator, system administrator, or a user with global status privileges.

- System start-up commands
The user can use SMU to define an execution profile containing a set of system start-up commands that can be executed at the conclusion of IPL.
- Suppressing headers for auxiliary printing at the workstation
Users can now suppress headers when printing on the auxiliary printer at a workstation. After entering a SCREEN WKSTN command, users then issue a SCREEN NOHEADER command. Page separators are then suppressed until a SCREEN HEADER command is issued.

-
- Interactive services bulletin and log default and override options
Users can designate the defaults for the BULLETIN/LOG on the logon screen plus an override capability. The LOGON bulletin and LOG fields can be SYSGEN configured (via ISWKSMBUL and ISWKSLOG) or modified via a SET IS command so that their default values can be specified and cannot be changed by the user.
 - Command enhancements
 - The STATUS command displays the user's terminal name.
 - The display produced by the STATUS T command now shows four groups of terminals and user-ids per display line. This is beneficial for systems that have many users logged on.
 - A STATUS F command issued from the console, by the administrator, or any user with global status privileges, shows all functions active under interactive services. Terminals that are logging on or off are bracketed with asterisks instead of showing a user-id.
 - A user can use either function key 1 or 18 to terminate FSTATUS and VTOC commands that the user entered from the editor by an @SYS command. This can be done if the user does not want to see the entire output of the library file or VTOC listing. Output processing is terminated, and an ED087 message is displayed.
 - Menu action items can specify an ICAM signon (\$\$SON) for remote workstations.
 - Multiple ASK commands are permitted.
 - REMOVE command enhancements
The REMOVE user-id restriction is lifted for:
 - Remote terminals
 - Remote workstations

REMOVE is available so that interactive users can cancel their interactive functions. The 00 IS prefix is no longer required for this command, regardless of whether it was entered from the console or from a workstation.

Restriction:

- The REMOVE user-id is not available for local workstations that are connected to ICAM.

2.2.15. Job Control

Manuals: UP-8076, UP-8839, UP-9984, UP-9986

User Request: F84002, F86007, S87025, S87030

- A system default alternate JCS library can be specified by the SYSGEN parameter ALTJCS.
- A global symbol substitution option (OPTION GSUB) in jobstreams specifies // OPTION SUB processing for the entire job (not just a single job step).
- The JC17 SPOOL IN READER FILE question has responses of I (ignore), R (retry), or C (cancel).
- The Julian date (yyddd) is available to run processor control streams via the INQUIRE SYS parameter JUL.
- The ROUTE statement can handle from one to eight destinations.
- Owner-ids for tape files can be specified by the ID keyword on the LFD statement (// LFD filename,,ID=owner-id).
- A sample test page for spooled output can be printed by using the STL parameter on the // SPL job control statement.
- The user can specify an option (OPTION IMMOVE) that prevents a job from being moved from its initially scheduled location for the duration of the job step. This option takes effect in the job step in which it is specified. No immovable shuffle will be performed on that job, nor will that job be moved during memory consolidation (MEMCON).

This option allows the user to initiate a job that is known to initiate shuffles, but is also of short duration, implying that the shuffle is not in the best interests of the user at this point. Care must be taken by the user in utilizing this option. If the job becomes one of long duration, it does present a roadblock for memory consolidations and thus may cause increased system memory fragmentation.

2.2.16. I/O

Manuals: UP-8076, UP-8839, UP-8859, UP-9985

User Requests: S87038, S87047, F87034

- Disk cache facility (models 8 thru 20 only)
 - Support for a maximum 8-megabyte disk cache buffer. The minimum disk cache buffer size has been increased to 160K bytes.
 - Support for a 24K-byte segment size, which is the track capacity of the 8470, 8480, and 8494 disks.
 - A new cache statistic showing reads over a half-segment is displayed.
 - Numerous internal design modifications have been implemented that should result in improved performance. In addition, increasing the disk cache buffer size will not have an adverse effect on system performance.
- Improved recovery during hardware failures
The I/O wait time that occurs during IPL (I/O) initialization if a hardware problem exists on a local workstation has been reduced.

2.2.17. Data Management

Manuals: UP-8076, UP-8834, UP-9978, UP-9879, UP-9983, UP-9984, UP-9986

User Requests: 3402, 3430, 3517, 3521, 3534, S85006, S85027, F86029, F86031, F86044, S87007, S87010, S87026, S87028, S87030, S87050, F87038, F87019

- The following MILOAD enhancements have been made:
 - Improved duplicate key processing
MILOAD no longer terminates if it detects an illegal duplicate key; it continues to create the output file. However, for each occurrence of an illegal duplicate key, the record number, key value, and key reference number are displayed on the printed listing. This helps the user in determining which records have illegal duplicate key values. The resultant output file is usable; however, it should be rebuilt because it contains records that contain illegal duplicate key values.
 - Read input file by key
MILOAD supports the MKR parameter that provides the user with the ability to build an output file with the records physically ordered by any one of the input file's keys.

- Index rebuild
MILOAD provides the ability (through the REBUILD=YES parameter) to rebuild a file's index without having to make a second copy of the file. The file's data partition remains intact, and the index is rebuilt. This is especially useful if an index becomes compromised.
- Recovery enhancements
 - Temporary work files
Data management does not provide recovery for temporary work files (those whose file names begin with \$SCR and \$JOB) even if SUPGEN DMRECV=YES has been specified.
 - Temporarily suppressing recovery
Users can suppress automatic recovery of a file by using the // DD RECV=OFF specification. Users can create a file with recovery, and then temporarily turn it off when they do not want the overhead of the recovery facility and do not require file recovery if a system stop occurs.
- Improvements to disk OPEN and CLOSE operations
Significant performance improvements of disk OPEN and CLOSE operations have been achieved through improvements in the share file (\$Y\$SHR) search.
- Date/time stamps for last file access and modification
The following additional information is maintained for all disk files on all device types except the 8430 and 8433 disk devices:
 - The date and time of the last access (read or write) to the file. This information is updated on every CLOSE issued against the file.
 - The date, time, jobname, and ACCESS specification of the last two modifications (write only) of the file. This information is updated on the first write operation following each file OPEN.
 - This information can be viewed via the SU VTP command.
- Deleted record count
All MIRAM files created under Release 12.0 have a deleted record count maintained for them. To activate the deleted record count for existing files, users must rebuild the file using a Release 12.0 version of a copy utility, such as MILOAD or DATA. (This enhancement does not apply to files on 8430 and 8433 disk devices.)
- Message suppression
Consolidated Data Management users can optionally suppress all data management messages or either of two select messages (DM36 DUPLICATE RECORD or LB05 MODULE NOT FOUND) via the // DD MSGSUPP JCL specification.
- RESTORE facility enhancement
When a (MIRAM) file is initialized (for example, INIT parameter on the LFD JCL statement), the current record count is saved in the event that the initialization was accidental. If you wish to restore your file back to the record count that existed at the time of the initialization, you can do so via the // DD RESTORE=YES specification without the need to specify the record count. (This enhancement does not apply to files on 8430 and 8433 disk devices.)

- **Improved MIRAM resource control**
Under previous releases, a job could prevent a higher priority job from processing, due to contention over disk (MIRAM) file resources (for example, index, record). This has been addressed under Release 12.0 by enhancing MIRAM processing to raise the priority of the current job (to the highest user priority) when resources are acquired and to lower the priority (to the original priority) when the resources are released. This should result in resources being held for shorter periods and, therefore, in less contention and potentially improved throughput. This priority changing is performed only when there are multiple users of the file and the file is being shared in other than a READ ONLY fashion (that is, not SRDO or SRDF). The job will run at the higher priority only while file management has control; the priority will always be lowered to the original priority before the user program regains control.

Guidelines:

- All disk-related enhancements also apply to format label diskettes.
- If you restore (via DUMP/RESTORE) a version of a file that was created prior to Release 12.0, you will lose the additional information saved for that file under Release 12.0 (deleted record count, date/time stamps, and the saved record count on INIT). This will void the // DD RESTORE=YES capability for that file.

See 4.5, **Special Dump Restore Backward Compatibility Guidelines**, for information regarding special backward compatibility considerations for Release 12.0 dump restore tapes, diskettes, and disk volumes.

- Prior to this release, if a disk or format label diskette file was read only, no format labels were written at file CLOSE. (The format labels contain the file control information.) However, with the advent of date/time stamps, updating the LAST ACCESS date/time stamp requires that the format 2 label be written, even for a file that was only read. If the device is write-protected, the update of the LAST ACCESS date/time stamp is bypassed.

Note: If the write is being performed for any other reason and the device is write-protected, a WRITE PROTECT CHECK (PIOCS) error message is displayed because this is potentially a serious error condition.

2.2.18. VTOC Verify

Manuals: UP-8859, UP-9985

User Requests: None

- **PACK function**
FORMAT-1 labels are currently searched on all ALLOCATE, SCRATCH, EXTEND, OPEN, and CLOSE operations. The PACK facility reorganizes the VTOC by moving all of the FORMAT-1 labels to the front of the VTOC. This results in shortened search times and improved performance for these file management operations.

- **File compromised indication**
The VERIFY function has been enhanced to display an informational message (VV09 EC-45) for each indexed MIRAM file with recovery that is in a compromised state. (An attempt to OPEN such a file would result in a DM66 FILE INACCESSIBLE, TYPE=01 error.) The VERIFY function displays this message only when invoked implicitly by AVR (that is, by a VVAVR=YES SUPGEN specification or a SET VV,ON console command).
- **Label not updated indication**
The VERIFY function has been enhanced to display an informational message (VV09 EC-46) for any file (except MIRAM files with recovery) if the file was modified and the VTOC was not updated. This error is a warning that the LABEL NOT UPDATED flag in the FORMAT-2 label was not updated for some reason and that some of the modifications *may* have been lost.

2.2.19. SMC Process

Manuals: UP-8839, UP-8841, UP-8842

User Requests: 3537, 3539

- **SMC printed output**
SMC now produces a shorter, condensed version of the SMC listing. The full format version of the SMC listing can be printed by specifying FMT=F on the RV command that initiates SMCLIST (for example, RV SMCLIST,,FMT=F). The full listing shows additional information on each SMC, such as whether the SMC is required or optional.
- **Printing of selected SMCs**
Users can select SMCs for printing based on a specified program product type.

Guideline:

- A new keyword (RELINK=Y) is available for use with the SG\$COMMK jobstream for use with the SG\$COMMK jobstream after application of certain SMCs. See the *Installation Guide*, UP-8839, for additional information and instructions.

Users can select SMCs for printing based on a specified program product type.

2.3. DATA BASE AND LANGUAGE PRODUCTS

2.3.1. Information Management System (IMS)

Manuals: UP-8748, UP-9207, UP-11907, UP-12027

User Request: 3547

Note: The single-thread version of IMS is not available on the System 80 models 8/10/15/20.

- **Multiple sequential views**
Allows users to define multiple sequential views of MIRAM files that are often sequentially searched or accessed. IMS internally assigns an available view to a thread initiating a search. A number of sequential operations can take place concurrently, up to the number of views the user has defined. Normal random retrievals and updates can also take place at the same time as the sequential operations. This enhancement relieves the file lock situations that occurred when concurrent action programs sequentially searched a file.
- **IMS timer facility**
Additional features have been added to the timer facility enhancements introduced in Release 11.0. More capability is now offered to dynamically change the specified time-out times by using either new terminal commands or new CHTBL parameters.
- **Flush screen formats**
The master workstation command ZZSCH purges a screen format from IMS memory, thus forcing the screen to be reloaded the next time it is referenced. This allows IMS programmers to change screen formats during an IMS session.
- **ZSTAT printer functions**
The STATFIL print utility, ZC#ZSF, now handles standard printer functions, such as headings, page overflow, and top of form.
- **INTLIST function**
The LIST function in UNIQUE displays partial results to the user based upon the number of accesses done rather than waiting until the screen is full. This prevents out-of-control searches when the search criteria are such that few hits are being made in the file.
- **Configurator agreement with assembler standards**
The *special letters* dollar sign (\$), pound sign (#), at symbol (@), and question mark (?) that are recognized by the OS/3 assembler are now allowed in any column position of any section name parameter. This applies to terminal, transaction, action, program, and language names.
- **Screen format input control**
The new ACTION section keyword SFSINCAP specifies at normal (N) action termination whether screen format services input capabilities are to remain in effect or be turned off.

Guidelines:

- Sequential views may be specified only for CDI-accessed MIRAM files.
- In an IMS configuration, the product of the SFS and RESFMT parameter values must not exceed 255. If the product is greater, an SF02 open error on the IMS screen format file will occur at IMS start-up and Screen Format Services will not be available to this IMS session.
- The following modules are now transmitted with the operating system in library group C\$SYSTEM:

- COBOL COPY modules (\$Y\$SRC)

IMA	Input Message Area
IMA74	Input Message Area, COBOL 74
OMA	Output Message Area
OMA74	Output Message Area, COBOL 74
PIB	Program Information Block
PIB74	Program Information Block, COBOL 74

- Assembler PROCS (\$Y\$MAC)

ZM#DIMH	Input Message Area DSECT
ZM#DOMH	Output Message Area DSECT
ZM#DPIB	Program Information Block DSECT

- Object module (\$Y\$OBJ)

ZF#LINK	Action program interface to IMS
---------	---------------------------------

In previous releases, these modules were transmitted only with the IMS program product in group C\$IMS. No user jobstream or other changes are necessary as a result of this change.

- The instructions for executing the IMS single-thread IVP (IVPIMS) have been removed from the *Installation Verification Procedures (IVP) Operating Guide*, UP-10003, for Release 12.0. To execute this IVP, refer to the Release 11.0 version of that document.
- Patch displacements for changing the default area and record wait times for IMS DML action programs have changed:

	<u>Releases 7.1 thru 10.0</u>	<u>Releases 11.0 and 12.0</u>
Area Wait Time	X '918'	X '60A'
Record Wait Time	X '91A'	X '60C'

The hexadecimal values shown are the displacements within IMS module ZF#IMDM2 of the half-word locations containing the defaults. The values assembled into the module continue to be 0 seconds for area wait time and 10 seconds for record wait time. The default area and record wait times within ZF#IMDM2 may be either temporarily or permanently altered.

To temporarily alter the assembled-in values, use the following alters in your IMS execution jobstream:

```
// ALTER ims-load-module-name,aaaaa,,ORG      ZF#IMDM2
// ALTER ,60A,X'0000'                          default area wait time = 0
// ALTER ,60C,X'000A'                          default record wait time = 10
```

where *aaaaa* is the hexadecimal address of ZF#IMDM2 from the IMS link map.

To permanently change the assembled-in values, use the following librarian jobstream:

```
// JOB DFLTWAIT
// DVC 20 // LFD PRNTR
// EXEC LIBS
/$
  FIL D1=$Y$OBJ
  BOG C$IMSMT,D1
  COR D1,0,ZF#IMDM2,,release-number/1      release-number may be 11 or 12
-60A,01,0000                                default area wait time = 0
-60C,01,000A                                default record wait time = 10
  EOD
  EOG C$IMSMT,D1
/*
/&
// FIN
```

Note: When permanently changing module ZF#IMDM2, IMS must be reconfigured or relinked.

Restrictions:

- ZSTAT must not be initiated from the console or master workstation.
- Multiple ZSTAT transactions that are placing statistics into the STATFIL must not be run concurrently in order to prevent the sequential relationship of the data records from being compromised.
- In the assembly step of IMS configuration, the assembler local dictionary may overflow when there are a large number of files in combination with large SEQVIEWS keyword specifications. If this condition occurs (as indicated by an A054 LOCAL DICTIONARY FULL assembler error message), the number of sequential views must be reduced.

2.3.2. Data Base Management System (DMS)

Manuals: UP-8022, UP-9009, UP-10870, UP-12013

User Requests: 3513, 3515, 3533, 3538, 3540, S86052, S86056, S86067, S87067, S87069, S87070, S87071, S87086

- **Manual insertion index sets**
The set membership characteristics that are available for user-defined sets can now be applied to indexes. This enables index creation (for other than the primary key) to be skipped when the record is first stored, resulting in better loading performance for those records for which one or more of the key values is not known when the record is created or for which the creation of a particular index can be deferred to a later time.
- **Monitor study mode**
The DMS monitor utility, DBMON, now includes the ability to periodically gather run-time information and record it to a MIRAM file. Study mode can be set up to begin at any time during the day and the number of intervals and their lengths can be specified. Also, an additional on-demand report can be requested at any time while study mode is in operation.

The enhanced monitor supports either online or study modes alone or in combination.

To support the monitor's study mode, an additional utility program, DBMPRT, is provided to print the contents of the monitor file. The COBOL source of this utility is supplied to enable the advanced user to adapt the printout program to accomplish any data reduction desired from the captured data.

- **Monitor statistics**
The displaced pages statistic is now implemented. This provides a measurement of thrashing in the data buffer pools so that the number of data buffers can be optimized. Also, various statistics have been corrected and enhanced. For example, the file I/O statistics on screen 7 now include the percentage of reads that were satisfied from system cache. This helps tune the balance between the data buffer pools and the system cache.
- **Improved monitor online operation**
Users are no longer required to select a dynamic screen a second time to avoid the repainting of the fixed portions of the screen.
- **Record pointer retrieval**
The MOVE verb is enhanced to allow user retrieval of owner, next, and prior pointers. This increases compatibility with Cullinet's IDMS.
- **External terminal-id**
The external terminal-id, including TIP/30 terminal-ids, are now shown consistently and correctly in the depart log, the conflict log, and the status command and cancel messages.

- **Batch depart statistics**
The depart statistics for batch run-units are once again returned to the job log of the batch program. The statistics also continue to be optionally logged to the DBMS log. The six statistics returned are the same ones output to the DBMS log. The advantage of this to the batch programmer is that the statistics are now immediately available.

In addition, these same run-unit depart statistics are now correctly displayed by the journal file display utility, JFAUD.
- **LOG function**
The syntax of the unsolicited LOG DEPARTS command has been enhanced to allow any combination of batch or online departs to be logged.

In addition, the unsolicited LOG command may now be specified at start-up. When a LOG function is specified at start-up, an initial status command is automatically generated to alert the operator that logging is active.

When conflict logging is enabled, the status command display now shows the number of conflicts that have occurred since the last status command. This enables the data base administrator to know whether the conflict logging is generating any information at the current threshold time.
- **Inhibit imparts function**
The unsolicited INHIBIT IMPARTS command may now be specified at start-up. This enables the operator to bring up the DBMS in inhibited mode so that run-units cannot begin executing until other system components, such as IMS or TIP/30, are ready. When the DBMS is started up in inhibited mode, an initial status command is automatically generated to alert the operator that processing is inhibited.
- **Resource time-out information**
The additional information logged with a resource time-out (QW18) message is enhanced to show the owner of the resource for the most common resource conflicts. This helps the data base administrator to determine which program is causing resource conflicts among concurrent run-units. Also, the requested wait time and actual wait time are given.
- **Subschema date/time check**
The subschema date/time check may now be suppressed at the DMCL level as well as at the DBMS level.
- **DELPROG utility**
The new DELPROG utility allows the user to delete a program from the subschema cross-reference network in the data dictionary. This list is created when run-units are preprocessed and indicates which run-units invoke a given subschema and, therefore, may have to be recompiled or changed when the invoked subschema is changed. This new utility is useful when a program is discarded.
- **Preprocessing in TIP/30 mode**
The DML preprocessor now recognizes TIP/30 as a unique program type and generates its internal calls differently. This ensures that the correct auxiliary module is linked with the TIP/30 program.

- **Improved subprogram compatibility**
The DMLP preprocessor now generates the DMCA and record areas contiguously in working-storage. This simplifies parameter passing to DML subprograms that use linkage-common.
- **Revised DMS sample program**
The DMS sample program job control has been revised to include more comments that explain what is going on in each step.
- **Revised DMS summary manual**
The *DMS Quick-Reference Guide*, UP-9009, has been revised extensively to cover the many recent DMS enhancements.

Restriction:

- The program type BATCH is not accepted as a valid program type in the PRE-PROCESS DUPL statement for the DML preprocessor. Use the older DML program type for batch DML programs.

Guidelines:

- The control syntax found in the DMCL source, DBMS start-up, and utilities has been converted from IMS terminology to the broader ONLINE terminology. DMS's online interface was developed for IMS but is now used for MAPPER 80 and TIP/30. The new terminology is less confusing to non-IMS users who use this interface. The DMS documentation has been changed to reflect the new terminology. For at least this release, the product will continue to accept the old syntax as well as the new; however, support of the old syntax may be dropped in a future release.
- The subschema compiler does not diagnose a subschema name of seven or eight characters in length. However, the name must be six or fewer characters long in order to be successfully processed by the rest of the DMS system.
- When specifying the location mode in the schema, if you specify an index, the DUPLICATES clause must be coded on a new line.
- If you are moving to Release 12.0 from any release level earlier than Release 11.0, your DMCLs must be recompiled.
- The DBMS will process verbs slightly faster for subschemas that have been compiled at Release 11.0 or above.
- The removal of VALUE clauses from all non-88-level data items that are copied into the LINKAGE SECTION by the DML preprocessor will only work for subschemas that have been compiled at Release 11.0 or above.

2.3.3. MAPPER 80

Manuals: UP-9734, UP-9735, UP-9736, UP-9737

User Requests: None

- **LOCATE manual and run functions**
The LOC manual function produces a result by locating a certain target character string in the report.

The @LOC run function scans a report in the specified column character positions looking for the target string. The @LOC produces a result.

- **Run buffering**
To further improve run performance, the run report buffer is now segmented. Each segment is assigned to a workstation. When a MAPPER 80 run is executed, the segment is initialized and loaded with the latest version of the run. This enhancement eliminates the need for the @INT statement at the beginning of MAPPER 80 runs. The operator CLEAR RUN command can still be used to initialize the run report buffer.

The number of buffer segments is specified on the run buffering parameter card in the MAPPER 80 JCL:

```
RUN REPORT=mmm,[(s)]
```

where:

mmm

Is the run report buffer size.

s

Is the number of buffer segments. If you do not specify a value for s, it defaults to the number of workstations.

Guidelines:

- The formula for sizing the WRK-CNT-AREA area (as described in the *MAPPER 80 Administration and Operations Guide*, UP-9737) is based on reinitializing the area every day. When the area is not initialized as often, it must be larger to handle activity for a longer period of time. An exact activity factor is difficult to integrate into the formula. The current formula specifies 7 data base pages for each workstation configured. Based on the amount of activity in a given MAPPER 80 system and the frequency of area initialization, the formula could be revised to specify as many as 50 pages per workstation.

Resizing the WRK-CNT-AREA area should be considered when RIDs are locked frequently (ERR 92 or ERR 927) or performance appears to be degrading. Once the area is sized to handle the activity, then the frequency of initializing the area should be considered. If they are properly sized, initializing the work areas on a weekly or biweekly basis may be sufficient based on MAPPER 80 activity.

The work areas (WRK-CNT-AREA and WRK-IMG-AREA) should be initialized together using the job streams MAPINIT1 and MAPINT2 (see the *MAPPER 80 Administration and Operations Guide*, UP-9737).

- To be consistent with the other MAPPER 80 operator commands, the CLEAR command now requires a comma, for example:

Prior: UNS MAPPER CLEAR AUX
Current: UNS MAPPER CLEAR,AUX

- DMS depart statistics that are printed by the MAPPER 80 components are meaningless.

2.3.4. COBOL 74

Manuals: UP-8076, UP-8613

User Requests: F85018, F85035, S86020, F86030

- **MIRAM primary key start location enhancement**
The COBOL 74 compiler allows two MIRAM keys to have the same leftmost starting location within a record. Previously, this condition resulted in a compile-time diagnostic. An informational diagnostic is still issued; but the code is generated.
- **Improved diagnostic message on missing period**
When the last statement in a paragraph is not terminated by a period, the compiler issues one of two messages: a severity code of 0 for a period missing from the end of an imperative statement or series of imperative statements, or a severity code of 1 for a period missing from the end of a conditional statement. These messages are more specific and, therefore, more useful than the single severity code 2 message that was previously issued.
- **Improved LSTREF option alignment**
To improve the readability of source listings and reduce the number of blank lines added to a listing, the definition line numbers for data names and procedure names (the line numbers on the right margin) now appear on the same line as the data name or procedure name instead of on the same line as the statement verb.
- **Produce a run-time error if array limit exceeded**
Users can use a compile-time parameter (SUBCK=YES) to have the compiler verify that the values of subscripts and indexes are within the range specified by the OCCURS clause. If the subscript or index is equal to zero or greater than the size of the array, a run-time message is issued and the program terminates abnormally. The text of the message is: CE58 SUBSCRIPT OR INDEX VALUE OF *number* IS OUT OF RANGE OF MAXIMUM OCCURS VALUE OF *number* AT LOCATION *location* LINE *line*. If the parameter is not specified, the array is not validated and the results of a subscript range violation are unpredictable.

- **Warning diagnostic on alphanumeric compares with embedded sign operands**
A warning message is issued on relational comparisons involving nonnumeric literals and numeric operands with embedded (overpunch) signs. The diagnostic warns; that although the compare is legal, it probably will not do what the programmer expects because of the manipulation of the embedded sign positions in the numeric operands.

2.3.5. RPG II

Manuals: UP-8044, UP-8067, UP-9206

User Request: F86033

- **COPY statement**
The RPG II compiler supports a COPY statement that allows the inclusion of portions of the source program from a COPY library. The format of the COPY statement is:

```
/COPY lfd-name,module-name
```

The / character must be in column 7.

- **Unpacked numeric fields in data structures**
RPG II supports unpacked numeric fields in data structures. Previously, numeric data was represented in packed format. This feature would be helpful in S/36 conversions and is also a useful option for the native OS/3 user if displayable character representation of numeric data is required. This feature is invoked via the // PARAM UNPKDS=YES JCL specification.
- **SORTA operation**
The SORTA operation conducts an internal sort of arrays during the program calculation process. The SORTA operation is typically used in conjunction with a LOKUP operation to search an ordered array.
- **Eight-character filenames**
Eight-character filenames are supported via the // PARAM FNAME8=YES JCL specification. The previous maximum for OS/3 native mode was seven characters.

2.3.6. Pascal

Manual: UP-14178

User Request: None

The OS/3 Pascal compiler is an implementation of the Pascal language that conforms to the *American National Standard IEEE Standard Pascal, ANSI/IEEE X3.97-1983*. Pascal is designed as a language with a small number of fundamental programming concepts suitable for teaching programming in a logical and systematic discipline, while providing a practical language for writing systems and application programs.

Pascal facilitates the application of structured programming techniques to general programming problems. Unisys OS/3 Pascal also adds several extensions to standard Pascal including:

- Relative input and output
- Initial values for variables
- Sharing of variables among separately compiled programs
- Static storage
- Use of separately compiled functions and procedures
- Support of file handling for SAT library modules
- Substring notation for STRING type
- Conditional compilations
- Availability of cross-reference and object listings
- Multiple exit statements (EXIT, NEXT, RETURN)
- Alphanumeric statement labels
- Hexadecimal constants in declarations or expressions

Guidelines:

- Each WRITELN to a workstation screen causes a start-of-entry (SOE) character to appear in column 1 of the following line. A series of WRITELN statements results in the first line displaying only the program data and the second through last lines displaying an SOE character followed by program data.
- The maximum length of any line in a Text File is 132 characters.

Restrictions:

- I/O errors, such as RECORD NOT FOUND, do not properly set the IOSTATUS1 and IOSTATUS2 fields. Instead, the program terminates with the correct DM31 error message.
- The ROUND functions may return incorrect results if the argument is a negative number.
- At run time, Pascal fails to issue an error message when a REAL variable is written to a Text File with a FracDigits specification that is a variable and that has a value of zero.
- A Pascal object program may terminate abnormally with a data exception condition if a REAL variable is written to a Text File and the FracDigits specification is greater than 24.

2.3.7. FORTRAN 77

Manual: UP-14179

User Request: None

FORTRAN 77 is a programming language designed to perform the mathematical computations required to solve engineering and scientific problems. FORTRAN is also useful for many other data processing applications.

FORTRAN expresses an algorithm in a natural way. The user does not need to be very concerned with the particular system characteristics. FORTRAN can reference procedures written in another language by name and make them an implicit part of the program.

FORTRAN 77 conforms to the *American National Standard FORTRAN X3.9-1978* and the military standard, MIL-STD-1753.

Features in FORTRAN 77 that were not available in previous FORTRAN compilers include:

- DO WHILE and END DO statements
- INCLUDE statement (COPY feature)
- Bit field manipulation
- IMPLICIT NONE statement
- OPEN, CLOSE, and INQUIRE statements
- Internal files
- Block IF, ELSE IF, ELSE, and ENDIF statements
- CHARACTER data type statement

The compiler requires approximately 500K bytes of storage to run; it runs at approximately 700 lines of code per CPU minute.

Guidelines:

- These capabilities, available in FORTRAN IV™, are not currently available in FORTRAN 77:
 - INTEGER, REAL, COMPLEX, and LOGICAL data types with explicit length specifications (that is, no INTEGER*2, REAL*8, COMPLEX*16, or LOGICAL*1)
 - Hollerith constants on CALL and DATA statements
 - Call-by-name feature of the SUBROUTINE statement
 - Use of a D character in exponent notation for double-precision numbers. FORTRAN 77 uses the E character for both single- and double-precision.
- FORTRAN 77 runtime messages have this format:

F77 FATAL ERROR
message-text

The text of the messages is as shown in Section 6 of this document; however, the prefix for each message as shown in Section 6 does not appear.

Restrictions:

- At runtime, FORTRAN 77 issues an incorrect diagnostic message after a DM18 RECORD SIZE INVALID data management message. FORTRAN 77 incorrectly issues a F7016 - FORMAT DESCRIPTOR NOT VALID FOR FLOATING PT IO message.
- If using a BACKSPACE following a WRITE statement for tape files, you must CLOSE the file where the tape should be placed before attempting a BACKSPACE and READ operation.
- Failure to specify a number immediately preceding an X nonrepeatable edit descriptor in a FORMAT statement causes the compiler to terminate abnormally with a PASCAL ERROR #01 CASE SELECTOR ERROR message.

2.4. COMMUNICATIONS AND CONNECTIVITY

2.4.1. ICAM

Manuals: UP-8076, UP-8859, UP-9744, UP-9745, UP-9749, UP-9972

User Requests: 3288, 3380, 3473, 3494, 3495, 3496, 3510, F85043, S85049, F85051, S86004, S86015, F86017, F86040, S87013

- **Deferred disk queuing**
Through specification of an ICAM network generation parameter, deferred disk queuing permits messages to be queued in main storage (CORE queues) while resources are available. Switching to the disk queue occurs when a user-specified threshold has been reached.
- **DEFKEY for SIGNON**
Provides the user with the ability to define a \$\$SON sequence for remote workstations via an execution profile or DEFKEY. This enhancement provides the same functionality that is offered to local workstation users.
- **Suppression of time fills for remote workstations and UNISCOPE terminals**
An ICAM network generation parameter on the TERM statement can be used to indicate that time fills should not be embedded in an output message for remote workstations and UNISCOPE terminals that are not connected to the DCP.
- **Multiple terminal definitions for a single PC**
Release 2 of STEP for the PC permits eight logical terminals to be generated for a single physical PC. For certain types of communications errors encountered, all logical devices represented by the PC will be marked down and ICAM will cease polling the complete box. ICAM generation parameters to the TERM statement are provided to permit a user to define to ICAM the logical terminals defined for a PC.
- **Specific device type specification for UTS 20/40**
The user is permitted to define (via a parameter on the ICAM generation TERM statement) the actual type of device associated with the generic UTS 20 and UTS 40 terminal/remote workstation specification. This information can be utilized by TIP/30 under certain circumstances so that it can act in a device-dependent manner.
- **Destructive space default**
The user can define to ICAM the default value of the destructive space to be used for terminals/remote workstations. This permits both local and remote devices to have the same capability when workstation management reloads the control page after a user logs off.
- **UNIX connectivity**
ICAM supports a connection to UNIX systems via UDLC protocol. This permits ICAM to interact with IS/5000 in either interactive or file transfer mode. Users are not required to maintain both a UNISCOPE and UDLC line to be connected to the UNIX system if both interactive mode and file transfer are required. This reduces the number of lines required to connect between the System 80 and the UNIX system if the user wishes to run UNISCOPE emulation and file transfer.

- **BSC handler support**
ICAM provides category 1 support for the interactive BSC handler available for IMS and TIP/30.
- **Character detect table for asynchronous devices**
The user is permitted to define a character detect table for asynchronous devices (previously, only TTY and Baudot were supported) that ICAM will use for a specific line. This enhancement can be used for the redefinition of the port control word, character interpret table, and character detect table.
- **Device trace symbiont**
The device trace symbiont is a diagnostic tool for monitoring communications and workstation activity. It permits the monitoring of input and output messages and can be used in conjunction with the ITF facility. The symbiont logs all or selected interrupts received from a channel or a port in a file (named SYSTRC) for later analysis.

The symbiont is activated by the DT command that can be entered at the console, a workstation, or a terminal. It responds to a set of commands that can be entered with the initialization command or as a set of unsolicited messages.

- **Terminal, line, and LOCAP status commands**
Three unsolicited commands are provided that display the current status of a line, terminal, or LOCAP.
- **Dual-screen data mode support for SVT 1122 (3612) and UTS 40D**
Dual-screen data mode support is available for a user logged on an SVT 1122 (3612) or a UTS 40D. The first screen can be used by an ICAM user program (IMS, TIP/30, and so on.) The second screen can be used as the bypass screen for auxiliary printing or for data mode by an ICAM user program. With this enhancement, the same level of functionality is provided to both the local and remote devices.

Allowing a \$\$SON on screen 2 of a local workstation will give the ICAM user the capability of utilizing both screens of the dual-screen local workstation. The user will need to define both screens in the ICAMGEN to utilize this enhancement.

- **Support of eight-character terminal names in Telcon**
Users utilizing a DCP can use a new keyword parameter on the ICAM remote TERM statement to match terminal names that are from five to eight characters long. ICAM TERM names remain four characters long.
- **User-configurable OPCOM buffer pool for unsolicited keyin messages**
An ICAM generation parameter is provided that permits the OPCOM buffer pool to be configurable (currently three buffers are generated).
- **Improved X.21 SLCA selection algorithm**
To reduce the possibility of call collision when group addressing is used, the X.21 SLCA output selection algorithm now uses a technique compatible with that used by the network. To take maximum advantage of this feature, the X.21 SLCA CACH macroinstructions must be defined in the reverse order from which the associated DCEs are defined in the group by the network.

- Dynamic modification of the CPSTB via unsolicited command entry
An ICAM unsolicited command for the X.21 environment is provided to alter the call progress signal table (CPSTB). This removes the requirement to regenerate ICAM because a single time-out or retry value has changed.

Restrictions:

- IS/5000 interactive mode cannot be used when the end user is a STDMCP or TCI LOCAP. Do not attempt to use IS/5000 interactive mode to converse with a STDMCP, CUP, IMS, or TIP.

2.4.2. Telcon Downline or Cross-Channel Load

Manuals: UP-9748

User Requests: None

Telcon software can be downline or cross-channel loaded into the DCP via ICAM without a direct communications connection to an OS 1100 system. A Telcon generation must still be performed on an OS 1100 system; but the output is written to tape. The contents of the tape are transcribed to an OS/3 file from which it can be loaded directly into the DCP. A job stream is provided to permit the tape-to-disk transformation.

Guidelines:

- ICAM does not support the downline load of the DCP through a dial-up line.
- The downline or cross-channel load of a remote concentrator is not supported. This can be done by an OS 1100 system connected to a System 80.
- Telcon 7R1 does not support the cross-channel load of a DCP. Customers desiring cross-channel load capability must upgrade to Telcon 7R2A.
- ICAM can only load a DCP connected to the System 80. Any DCPs serving as a nodal processor or remote concentrator will not be loaded by ICAM.

2.4.3. PCTRAN Support

Manuals: UP-8841, UP-8842, UP-9972

User Requests: 3470

- PCTRAN shared code module
PCTRAN is now a shared code module initiated via an interactive services command. The PCTRAN job stream has been eliminated.
- STEP screen selection
User can select which screen is to be used for file transfer.
- PCTRAN command file support
Users can call upon default values that may be a list of files to be downloaded or uploaded.

Guidelines:

- STEP command files used for batch processing must be modified. For details, see the discussion under PCTRAN Commands in the *System Service Programs Programming Reference Manual*, UP-8842.
- CMDFILE capabilities are only supported on STEP 2.0 and above.
- When utilizing the WINDOWING feature for STEP 2.0 and above, only one screen at a time may be transferring data actively.
- If initiating PCTRAN without the IND=n specification, STEP uses the screen number currently displayed on the TERMINAL INDEX field of the control page.
- If an error occurs when using PCTRAN in batch mode (via CMDFILE initiation), you must recover by manually terminating the CMDFILE in the control page. To terminate the CMDFILE activity, manually clear the Y to a space in the active column of CMDFILE. PCTRAN does not terminate the active CMDFILE to allow *full batch mode* capabilities.
- A command file utilized prior to Release 12.0 must be modified for use under Release 12.0. See the *System Service Programs Programming Reference Manual*, UP-8842, for details.

2.4.4. UNXSAM Support

Manual: UP-9978

User Request: None

- UNXSAM offers a facility that permits the user to utilize function keys that are capable of performing asynchronous terminal operations, such as cursor movement operations.

Function keys 6 through 20 are predefined as cursor positioning key substitutions. When UNXSAM is loaded, the default function key definitions are used unless the user has redefined the function keys and saved the definitions.

- A facility is provided to permit any user to redefine these function keys for other purposes, including the ability to have a function key equate to a string of characters. The redefined function key definitions may then be saved in an OS/3 system file that is accessible by user-id. This definition will be used each time UNXSAM is loaded for that user.
- This facility greatly enhances the ability of an OS/3 user to utilize UNIX application programs from a local workstation, remote workstation, or terminal.
- An additional function is provided that permits the user to specify a network password when UNXSAM is initiated.



3. Supported Software

3.1. SYSTEM CONTROL SOFTWARE

Unisys 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 in which Unisys provides technical assistance with SCS software at an additional charge.

For new hardware (processor) installations, Unisys will install the SCS for the user and make sure the system is ready for use. New releases of the SCS are provided without additional charge, but must be installed by each user.

Unisys provides a software correction service for the SCS, without additional charge, that resolves problems brought to our attention. For the service to be effective, the user must fully define the problem. To report a problem, contact the Customer Support Center by dialing 1-800-328-0440.

The following list indicates software supported for System 80 models 3 thru 6 and models 8 thru 20:

Software	Models 3-6 Type Number	Model 8 Type Number	Model 10 Type Number	Model 15 Type Number	Model 20 Type Number
System Control Software (SCS)	6210-00	6210-00	6210-00	6210-00	6210-00
Assembler (ASM) (see Note 1)					
Catalog Manipulation Utility (JC\$CAT)					
Centralized File Management (CDM MIRAM)					
Command Language					
Dialog Processor					
Disk Cache					
Disk/Diskette Prep (DSKPRP)					
Diskette Utility					
Dump/Restore (DMPRST)					
Error Logging					
Integrated Communications Access Method (ICAM)					
Interactive CMD I/Fs and Dialogs					
Interactive JCL Prep					
Interactive System Generation (SYSGEN)					
Installation Verification Procedures (IVP)					
Job Control					
Job Scheduler					
Job Step Dump (JOB_DUMP)					
Linkage Editor (LNKEDT)					
OLM Diagnostics (see Note 2)					
Print Collection List Table (SMPLMU)					
Run Processor					
SMC/SMP					
Screen Format Coordinator					
Selector Copy					
Supervisor					
System Access Methods					
System Activity Monitor					
System Dump (SYSDUMP)					
System Generation					
System Librarian (LIBS)					
System Utility					
Tape Prep (TPREP)					
VTOC Verification Routine					
Workstation Manager					

Notes:

1. Usage is limited to system generation (see 1.3).
2. OLM diagnostics are provided with the optional maintenance contract.

3.2. PROGRAM PRODUCTS

Program products (by type number) are Unisys proprietary programs that are licensed to the customer for an additional charge.

Software	Models 3-6 Type Number	Model 8 Type Number	Models 10/15/20 Type Number
Assembler (ASM)	6233-00	6233-99	6233-98
BASIC	6224-00	6224-99	6224-98
COBOL-74	6222-00	6222-99	6222-96
COBOL 68-74 Transition	N/A	6222-97	6222-94
COBOL 68 Extended DTF			
COBOL 74			
COBTRN303 (see note)			
COBOL EDITOR	6222-01	6222-98	6222-95
Data Management System (DMS)	6218-00	6218-99	6218-98
DATAPAC PDN	6248-03	6248-96	6248-89
DATEX-L PDN	6248-00	6248-99	6248-92
DATEX-P PDN	6248-01	6248-98	6248-91
DCA Termination	6255-00	6255-99	6255-98
DDP File Access	6229-02	6229-98	6229-95
DDP IMS Transaction Processor	6229-03	6229-97	6229-94
DDP Transfer	6229-01	6229-98	6229-96
DDX-P PDN	6248-05	6248-05	6248-05
General Editor (EDT)	6226-00	6226-99	6226-98
ESCORT Programming Language	6225-00	6225-99	6225-98
Extended System Software (ESS)	6211-99	6211-97	6211-94
Data Utility			
Dialog Spec Language (DSLTL)			
Screen Format Generator (SFG)			
SORT/MERGE			
SORT3			
Spooling System			
File Placement Analyzer	6759-00	6759-99	6759-98
File Transfer Utility (PCTTRAN)	7685-00	7685-99	7685-98
FORTRAN IV	6223-00	6223-99	6223-98
FORTRAN 77	9767-00	9767-00	9767-00
IBERPAC PDN	6248-10	6248-10	6248-10
IBM 3270 Emulator	6247-01	6247-98	6247-95
ICAM-Terminal Support	6231-00	6231-99	6231-98
IMS-M/T	6232-00	6232-99	6232-98
IMS-S/T	6217-00	N/A	N/A
MAPPER 80	6752-00	6752-99	6752-98
Menu Generator	6254-00	6254-99	6254-98
Nine Thousand Remote (NTR)	6230-00	6230-99	6230-98
NORDIC PDN	6248-06	6248-95	6248-88

Software	Models 3-6	Model 8	Models 10/15/20
	Type Number	Type Number	Type Number
OS/3 - MAPPER 5 Handler	8786-00	8786-99	8786-98
OS/3 MAPPER 5 File Transfer	8785-00	8785-99	8785-98
OS/3 PC Online Disk	8788-00	8788-99	8788-98
OS/3 PC Online Transfer (OLTRAN)	8787-00	8787-99	8787-98
OS/3 Resource Management	6933-00	6933-99	6933-98
OS/3 to UNIX Connectivity	8784-00	8784-99	8784-98
OS/3 to UNIX File Transfer	8789-00	8789-99	8789-98
Pascal	9768-00	9768-00	9768-00
PCTRAN	7685-00	7685-99	7685-98
Remote Terminal Handler	6247-00	6247-99	6247-96
RPG Group	6219-99	6219-98	6219-97
RPG II			
RPG Edit			
RPG Auto Report			
RTP (HASP)	6247-02	6247-97	6247-94
SORT/MERGE	6212-00	6212-99	6212-98
SORT3	6213-00	6213-99	6213-98
TRANSPAC PDM	6248-02	6248-97	6248-90
U.K. PSS PDM	6248-07	6248-94	6248-87
UTS COBOL	6130-08	6130-98	6130-92
UTS 400 EDIT Processor	6201-03	6201-03	6201-03
UTS 400 Load/Dump	6228-00	6228-99	6228-98
Diskette Utility	N/A	6181-99	6181-98
Text Processing Utility	N/A	6185-99	6185-98
Mod 8 Conversion	N/A	N/A	3135-97
Mod 20	N/A	N/A	3135-98
Mod 10	N/A	N/A	3135-99
Mod 15	N/A	N/A	3135-96
Mod 10 to Mod 15 Upgrade	N/A	N/A	3135-00
Mod 15 to Mod 20 Upgrade	N/A	N/A	3135-00

Note: The COBTRN303 diskette is included with the COBOL 68-74 transition group (type number 6222-97 for model 8; 6222-94 for models 10/15/20). Please refer to the Series 90 to Model 8 Migration User Guide, UP-9743, or the System 80 Models 10/20 Migration Guide, UP-12649, for more information.

4. System Installation Considerations

This section contains information relating to the hardware (microcode) support that is provided by this release, as well as installation and generation considerations. The *Installation Guide*, UP-8839, and the *Operations Guide*, UP-8859, provide detailed information on the subjects discussed in this section.

4.1. BUILDING YOUR RELEASE 12.0 SYSRES DISK

A SYSRES disk must contain both the standard release software and the current versions of the IMPL and IPL routines. If you are building your Release 12.0 SYSRES disk from tape (in non-stand-alone mode), you *must* do the following:

1. Transfer the software to your Release 12.0 SYSRES disk (via SG\$DMPTD or your own file mode DMPRST job stream).
2. Run the PRPMIC program to copy the IMPL and IPL routines to your Release 12.0 SYSRES disk. You must use the Release 12.0 version of PRPMIC so that the Release 12.0 versions of these routines are copied.

Enter the following to execute the Release 12.0 version of PRPMIC:

```
RV PRPMIC:($Y$JCS,vsn),,V=vsn
```

where:

vsn

Is the volume serial number of the Release 12.0 disk.

4.2. STARTER SUPERVISORS

Starter supervisors that are designed to meet the needs of most users are provided for each system. The System 80 model numbers and the corresponding starter supervisor names are as follows:

Models 3 thru 6	SY@BAS
Model 8	SY#BAS
Models 10 thru 20	SY\$BAS

The *Installation Guide*, UP-8839, provides detailed information on the specific features and capabilities of each of these supervisors. If your needs differ, you should generate a new starter supervisor that is tailored to your needs.

4.3. SYSTEM MICROCODE

The system microcode file (\$Y\$MIC) contains the microcode for this release. You can list the current contents of \$Y\$MIC by using the following command:

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

The system definition file (\$Y\$SDF) contains a directory of all of the microcode names (levels) and the associated device addresses. You can list the current contents of \$Y\$SDF by running the job stream SDF\$DSP.

System 80 models 10 thru 20 are under plateau control; the final plateau for model 8 is plateau 6.00. To install Release 12.0, you must be at plateau level 5.00 or 6.00 for model 8, plateau 2.00/2.02 or 3.00 for models 10 and 20, and plateau 3.00 for model 15. The \$Y\$SDF file for Release 12.0 is built with microcode reflecting a model 8 plateau level 6.00 and a model 10 thru 20 plateau level of 2.00/3.00.

Use the following procedure to determine the plateau of your system:

1. Display the configuration frame on the console by pressing ESC and then C.
2. The system IMPL microcode diskette identifier is displayed in the lower-right corner of the configuration frame. The various identifiers and their associated plateau levels are:

FDD0=949,OP5	Model 8	Plateau level 5.00
FDD0=94A,OP5	Model 8	Plateau level 6.00
FDD0=0000OP1	Models 10/20	Plateau level 1.00
FDD0=1110OP2	Models 10/20	Plateau level 2.00
FDD0=2220OP2	Models 10/20	Plateau level 2.02
FDD0=2220OP3	Models 10/15/20	Plateau level 3.00

New model 10 thru 20 systems will include the appropriate plateau level system microcode diskette with each Release 12.0 order. No system diskette is included with Release 12.0 shipments to existing OS/3 users (all models). These users must continue to use their current system microcode diskette, if supported. If the system is not at the minimum supported level, contact your Unisys customer service engineer for an upgrade. New model 10 thru 20 users should create a backup copy of the system microcode using the FDDCOPY utility. For instructions on the use of this utility, please see the *Installation Guide*, UP-8839.

Note: After installing a new system microcode diskette in the FDD drive, if AUTOIPL is to be invoked, the IPL device address should be entered using the configuration frame. Then an IMPL should be initiated to load the new system microcode.

The following chart identifies the microcode levels that are associated with the different models and plateaus. For all models (3 thru 20), you *must* update \$Y\$SDF to reflect the appropriate microcode levels.

MICROCODE DESCRIPTION	DEVICE ADDRESS	DEVICE TYPE	MICROCODE NAMES [2]		
			MODELS 3-6 [3]	MODEL 8 PLATEAU 6 [4]	MODELS 10/15/20 PLATEAU 2/3
CENTRAL PROCESSING UNIT	IMPL	CPU	S2BT0000 (3/4 W/O IOMP) S2CL0000 (5/6 W/O IOMP) S2BT0000 (3/4 ECF) S2CL0000 (5/6 ECF) S2BIH000 (3/4 W/IOMP) S2CIH000 (5/6 W/IOMP)	N/A	N/A
DATA BUS	IMPL	DBUS	DBUSXH00 (3/4 ECF) DBUSH000 (ALL OTHERS)	N/A	N/A
I/O MICROPROCESSOR	IMPL	IOMP	S2IOH000 (W/IOMP)	N/A	N/A
INTEGR DISK CHANNEL (8470)	IMPL	IDC	IDCLE000 (W/O IOMP)	N/A	N/A
INTEGR DISK C.U. (8470)	IMPL	IDCU	ID70F000 (4/6 W/O IOMP)	N/A	N/A
INTEGR DISK C.U. (8470)	cdd [1]	IDCU	N/A	ID70F000	ID70F000
INTEGR DISK C.U. (8416/18)	cdd	IDCU	N/A	ID16M000 [4]	ID16M000
INTEGR DISK C.U. (8417/19)	cdd	IDCU	N/A	ID17B000	ID17B000
DISK CACHE	IMPL	CACH	CA770000	N/A	N/A
		CAC8	N/A	CA120000	CA120000
SERVICE PROCESSOR	001	SVP	N/A	SV94AA00 [4]	N/A
BASIC PROCESSING UNIT	001	BPU	N/A	BP949400	N/A
I/O MICROPROCESSOR	001	IOMP	N/A	LMA58900	N/A
REMOTE PRINTER	cdd	798/789	RPI0J000	RPI0J000	RPI0J000
SLCA-1 SYNC	cdd	2788-02	CMM1L000	CMM1L000	CMM1L000
SLCA-1 9.6 KB NTR	cdd	2788-04	NTR1C000	NTR1C000	NTR1C000
SLCA-2 ASYNC	cdd	2799	CMM2L000	CMM2L000	CMM2L000
SLCA-3 UDLC	cdd	2798-00	UDLCC000	UDLCC000	UDLCC000
SLCA-3 X.21 BIT MODE	cdd	2798-02	BITXE000	BITXE000	BITXE000
SLCA-3 X.21 FUNCTION	cdd	2798-03	BYTXC000	BYTXC000	BYTXC000
SLCA-3 RS-449	cdd	2798-05	BIT3-000	BIT3-000	BIT3-000
SLCA-3 19.2 KB	cdd	2798-06	UNI3A100	UNI3A100	UNI3A100
SLCA-5 56 KB UDLC	cdd	2986-01	BIT5-000	BIT5-000	BIT5-000
SLCA-5 56 KB NTR	cdd	2986-04/05	NTR5F000	NTR5F000	NTR5F000
WORKSTATION PAINT TIME	cdd	3560	WS1DJ000	WS1DJ000	WS1DJ000
NO PAINT TIME	cdd	3560	WS1DG000	N/A	N/A
KATAKANA WORKSTATION	cdd	3560	WSIKJ000	WSIKJ000	WSIKJ000
WORKSTATION MODEL 2	cdd	3561	WS2D-500	WS2D-500	WS2D-500
WORKSTATION CONTROLLER	cdd	WSC	WSC2-400	WSC2-400	WSC2-400
WORKSTATION SVT-1122	cdd	3612	WS3DA000	WS3DA000	WS3DA000
ITCU U11/U22	cdd	STCU	ITCUF000	ITCUF000	ITCUF000 [5]

Notes: [1] cdd represents the DEVICE ADDRESS, where c is the channel number and dd is the control unit and device address.

[2] The shaded microcode names are the ones that are reflected in \$\$\$SDF.

[3] For models 3-6, the names apply to all models, except where noted.

[4] Model 8 plateau levels 5.00 and 6.00 have two differences:

- 8416/18 IDCU microcode name is ID16L000 in plateau 5.00.
- SVP microcode name is SV949900 in plateau 5.00.

[5] For models 10/15/20, ITCUG000 is the only difference for plateau 3.00

4.4. ADDITIONAL INSTALLATION/GENERATION GUIDELINES

- When you restore 8417 or 8470 stand-alone tapes, using the SG\$DMPTD routine while running under Release 8.2 or 9.0, the following message is displayed on the system console:

```
IS OUTPUT DEVICE A FIXED HEAD DEVICE (N,Y)
```

You must answer Y to this message.

- Do not press XMIT during the DBUS test portion of the IMPL sequence. If you do, it will cause a check stop on models 3 thru 6.
- To avoid confusion when allocating disks, it is suggested that all fixed media disks be online prior to IPL. At IPL time, all local devices should be online and ready.
- The first time that an IPL is attempted from a new SYSRES pack, it must be done without job queue recovery (JOBQUEREC=NO system generation parameter must be specified) so that the job queues will be initialized. Job queue recovery must not be attempted on the first IPL because there is inconsistent or invalid data in the job queue area on disk.
- If you have added modules to system files (for example, \$Y\$CAT, \$Y\$SEC, \$Y\$FMT, \$Y\$JCS) while using a previous release, you must take the necessary steps to update the Release 12.0 versions of these files with your previous release updates. You must copy the updated modules to a separate medium. Then, after installing Release 12.0, copy these modules back to the appropriate files. Note that the saved run library file (\$Y\$SAVE) cannot be carried forward from one release to another. Jobs must be resaved.

4.5. SPECIAL DUMP RESTORE BACKWARD COMPATIBILITY GUIDELINES

Release 12.0 dump restore has increased the amount of VTOC label information that is saved to tape or diskette during a file mode dump operation. This has been done to accommodate the additional information (date/time stamps, deleted record count, and saved record count) that data management is now saving in the VTOC (see 2.2.17 for additional information on these enhancements). Release 12.0 dump restore can process tapes and diskettes created by earlier releases that do not carry this extended VTOC information; however, earlier releases cannot process the extended VTOC labels on Release 12.0 file mode dump restore tapes or diskettes. Volume mode (as opposed to file mode) dump restore tapes and diskettes are compatible across all releases. In addition, earlier versions of dump restore cannot properly process disk files that have been created under Release 12.0 and have the extended VTOC labels.

To address backward compatibility problems that might result from the Release 12.0 extended VTOC labels on disk volumes or on file mode dump restore tapes and diskettes, the following, separate solutions are provided:

- SMCs C101646 and C111463 allow Release 10.0 and Release 11.0, respectively, to process Release 12.0 disk volumes and file mode dump restore tapes and diskettes containing the extended VTOC information. These SMCs are provided on a separate diskette along with the Release 12.0 SCS media; they eliminate any backward compatibility issues. These SMCs are required if disk files or dump restore media are created under Release 12.0 and are to be processed using a previous release of dump restore. Users of releases prior to Release 10.0 who wish an equivalent SMC should contact their customer support center.
- Release 12.0 dump restore provides a new option that causes file mode tapes and diskettes to be generated with the shorter Release 11.0 compatible VTOC label information. This new option is being used by OS/3 distribution in Blue Bell and is intended for use by any distribution organizations that create tapes to be restored by other OS/3 systems where the release level is not known. Unisys recommends against the use of this option when using dump restore for backup purposes because restoring from such a tape will cause the loss of the new extended VTOC information and undo the benefits of the data management enhancements. The new option to the DMPRST product is // PARAM TRUNCATE. Additionally, the jobstream SG\$DMPDT supports a new keyword option, T=Y (indicating TRUNCATE=YES) that activates the dump restore truncate option. The format for using this option is:

```
RV SG$DMPDT, ,T=Y
```



5. Carryover Restrictions and Guidelines

This section contains restrictions and guidelines that have been carried over from releases prior to Release 12.0. A listing of the manuals affected is included.

5.1. CONTROL SYSTEM AND SUPPORT PROGRAMS

5.1.1. Security Maintenance Utility

Manual: UP-12028

Guidelines:

- **Protecting the security file**
The security file is normally placed on the SYSRES during the initial run of the security maintenance utility (SMU). This file should be protected from unauthorized use by a user executing utilities other than SMU to manipulate the file.

To prevent unauthorized use, it is recommended that you allocate the security file as \$Y\$SEC and catalog it with a write password on another volume. For example, the following job stream will catalog the security file with a write password and place it on the disk volume DISK1:

```
// JOB CATSEC
// DVC 50 // VOL DISK1 // LBL $Y$SEC(WRITPASS)
// EXT MI,C,,CYL,5 // LFD SEC
// CAT SEC
/&
```

- **Using the security file**
Once the security file is built, only SMU should be used to add, delete, or modify profiles.

5.2. DATA BASE AND LANGUAGE PRODUCTS

5.2.1. Data Base Management System (DMS)

Manual: UP-8022, UP-10870, UP-12013

Restrictions:

- The specification of 0 (zero) updating run-units is not implemented for the MAXIMUM UPDATING RUN-UNITS statement in the DBMS start-up.
- If an I/O error occurs during DMS warm start recovery, the system stops due to a halt and proceed (HPR) request.
- The unsolicited DBMS CLOSE command closes only the data base files themselves, not the QBL and journal files. Therefore, the utilities that can be run while the data base is closed are those that do not access the QBL and journal files, primarily DBDUM and DBPAG.
- The CDML utility does not support the conditional or exclusive forms of the FIND/FETCH DML statement.
- The CDML utility does not support the optional record name form of the format 1 FIND/FETCH DML statement.
- 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.
- When the data base is empty, do not use the DBDUM PRINT STATS command to print only statistics.
- JFFIX does not work when executed against an empty journal file.

5.3. COMMUNICATIONS AND CONNECTIVITY

5.3.1. OS/3 to UNIX OS Connectivity

Manual: UP-9745, UP-9749

Guidelines:

- The products that support this enhancement on the Unisys 5000 family systems operate only with the Series 5000 UNIX System V Release 2.0 operating system.
- This enhancement is restricted on Unisys 7000 family systems.

5.3.2. UNIX OS RBP Support

Manual: UP-9745, UP-9748, UP-9749

Guidelines:

- The products that support this enhancement on the Unisys 5000 models 20, 40, and 50 family systems operate only with the Series 5000 UNIX System V Release 2.0 operating system.
- This enhancement is restricted on Unisys 7000 family systems.

5.3.3. OS/3 to MAPPER 5 System Connectivity

Manual: UP-9744, UP-9745, UP-12407

Restrictions:

- The MAPPER 5 system cannot be configured to a DCP.
- Terminals defined as remote workstations (DEVICE=(RWS) on the LINE macroinstruction), are restricted from sessioning on to (\$\$SON) terminals on a MAP5RDH line.

Guidelines:

- A cable (F8347-00/03) is necessary to allow the MAPPER 5 system to be attached to a modem/DCM. This modem/DCM is the means of connection to System 80.

For further information, see the *MAPPER 5 System Installation Guide*, UP-10505.

- If you use STEP to configure a PC as an OS/3 terminal, you can also use PC Online Extract to transfer data between the PC and the MAPPER 5 system.
- MAPPER 5 Level 1R3 is required.



6. Publication Updates

This section contains documentation update information that became available after the publication cutoff date or for documents that are not being updated for this release. The affected documents are listed in UP number order. The page and subsection where the change is to be made are listed along with the updated information.

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

- *System Messages Reference Manual*, UP-8076

Section 2.

On page 2-695, the explanation for message **SMPU37** incorrectly directs the reader to Appendix J. The description should refer to Appendix I.

Add these alphabetically prefixed messages:

DT01 ENTER DEVICE ADDRESS (HEXA). TYPE IN CCUD

A request has been made by the device trace symbiont for the operator to enter the device address (designated by CCUD) which is to be traced.

DT02 DEVICE TRACE SYMBIONT READY

The device trace symbiont is capable of accepting commands.

DT03 TO START RECORDING ISSUE: 00 DT RECORD

The device trace is not capable of accepting an unsolicited command that will begin recording trace information.

DT04 END OF DEVICE TRACE SYMBIONT

The Device Trace symbiont has terminated.

DT07 xxxxxxxx COMMAND TERMINATED NORMALLY

The device trace command designated by xxxxxxxx has completed.

DT08 xxxxxxxx COMMAND EXECUTION STARTED

The device trace command designated by xxxxxxxx has been initiated.

DT09 RECORDING STOPPED ccud, mmmmmmm RECORDS nnnnnnn PAGES

Recording of the device designated by ccud has been stopped. The number of records (designated by mmmmmmm) and number of pages (designated by nnnnnnn) have been recorded.

DT10 TRACE FILE WRAP AROUND OCCURRED

Recording of data has caused a wrap of the trace file. The oldest records have been overlaid.

DT11 TRACE FILE FULL. RECORDING STOPPED

The trace file has been completely filled. Recording has stopped.

DT12 I/O SUMMARY: - TOTAL OF I/O LOGGED nnnnnnnn

The total number of I/O operations (indicated by nnnnnnnn) has been logged.

DT13 NORMAL mmmmmmmm - ATT. nnnnnnnn - ERROR = xxxxxxxx

Device Trace display of the number of normal and attention interrupts and errors which have occurred.

DT14 CURRENT DEVICE TRACE SYMBIONT STATUS:

COMMAND IN EXECUTION: * cccccccc *

TYPE OF INFO TO BE LOGGED: iiiiiii

AMOUNT OF DATA BUFFER TO BE LOGGED: nn FIRST BYTES

DEVICE TRACED: ccud ACTION ON END FILE: aaaaaaaa

CYLINDERS LOGGED: nnnn:nnnn. hard. COMMAND LOGGED:

TRANSLATION TABLE USED FOR OUTPUT FILE: ttttt

TYPES OF INTERRUPTS TO BE LOGGED: III

SKIP FACTOR: ss TIME INTERVAL: tl DISPLAY SHIFT: ss

CURRENT FILE BLOCK NUM.: bbbbbb BLOCKS LEFT: ll

I/O SUMMARY: - TOTAL OF I/O LOGGED = lllllll

NORMAL = nnnnnnnn - ATT. = aaaaaaaa - ERROR = eeeee

CURRENT OUTPUT FILE PARAMETERS:

JOB=DE\$TROO,FILE=DTLIST,QUEUE=PRINT,H=N,BFSZ=8192

The above mentioned display is in response to a 00 DT STATUS command being entered. Status related to various parameters and counts are displayed.

DT17 CONTINUE DISPLAYING Y/N?

As a result of the number of lines which have been outputted, the operator is questioned whether to continue, or to terminate the display.

DT20 ANOTHER DT SYMBIONT IS ALREADY IN MEMORY

A device trace symbiont is already in memory. This DT command has been ignored.

DT22 ILLEGAL COMMAND. ENTER: 00 DT HELP

A command which was not recognized by device trace was entered. The command has been ignored.

DT23 NOT ALLOWED IN RECORDING, REPLY, DISPLAY MODE

The DT command which was entered has been ignored. A 00 DT STOP command must be entered to cease recording before the requested command can be honored.

DT26 THIS CHANNEL IS NOT CONFIGURED. TRY AGAIN

A device address was entered and a matching channel address was not configured.

DT30 DEVICE TRACE PROGRAM EXCEPTION. SEE DUMP

A program check has occurred while the device trace symbiont was active.

DT31 DEVICE TRACE ABNORMAL TERMINATION. SEE DUMP

The device trace symbiont has terminated abnormally.

DT33 INTERNAL LOGICAL ERROR. DEVICE TRACE ABORTED

An internal logic problem exists within the device trace symbiont. The trace has been aborted.

DT34 NO COMMAND TO CONTINUE

A CONTINUE command was entered and the previous DT command had not been halted.

DT36 NO COMMAND TO HALT

A HALT command was entered while no DT command was active.

FT015 INVALID TERMINAL INDEX VALUE

An incorrect value has been specified for the PCTRAN IND=n parameter. Set the control page by manually changing the TERMINAL INDEX field to the desired screen number or terminate PCTRAN and re-enter the parameter with the correct screen number.

FT016 INVALID MODIFIER

An incorrect PCTRAN parameter has been entered or the CMDFILE parameter has been specified in an incorrect format. Terminate PCTRAN and re-enter the parameters or manually set the CMDFILE field of the control page.

F150 TOO MANY DUMMY ARGUMENTS

The user has exceeded the limit of dummy arguments for a subprogram that the compiler can handle. The compilation is terminated.

Use a common data area for some of the parameters rather than passing them on the CALL or function reference.

F268 ASSEMBLER INTERNAL ERROR; REFERENCE TO BASE REGISTER WHICH IS NOT IN USE

An internal compiler error occurred during the Assembler phase of the compiler. The job step is terminated.

Contact your Unisys customer service representative.

F270 DATA STATEMENT INTERNAL ERROR; EVALUATED SUBSCRIPT EXPRESSION IS NOT CONSTANT

An internal compiler error occurred during evaluation of a subscript expression for a DATA statement. The job step is terminated.

Contact your Unisys customer service representative.

F272 DATA STATEMENT INTERNAL ERROR; EVALUATED INITIAL EXPRESSION IS NOT CONSTANT

An internal compiler error occurred during evaluation of an initial expression for a DATA statement. The job step is terminated.

Contact your Unisys customer service representative.

F274 DATA STATEMENT INTERNAL ERROR; EVALUATED TERMINAL EXPRESSION IS NOT CONSTANT

An internal compiler error occurred during the evaluation of a terminal expression for a DATA statement. The job step is terminated.

Contact your Unisys customer service representative.

F276 DATA STATEMENT INTERNAL ERROR; EVALUATED INCREMENT EXPRESSION IS NOT CONSTANT

An internal compiler error occurred during the evaluation of an increment expression for a DATA statement. The job step is terminated.

Contact your Unisys customer service representative.

F278 INTERNAL ERROR - RUNTIME ROUTINE NAME/TYPE CONFLICT

An internal compiler error occurred. The run-time routine name that the compiler found in the symbol dictionary is not defined by the compiler as a routine. The job step is terminated.

Contact your Unisys customer service representative.

F290 BLOCK OPTIMIZATION INTERNAL ERROR

An internal compiler error occurred during the optimization phase of the compiler. The job step is terminated.

Contact your Unisys customer service representative.

F291 CODE GENERATION INTERNAL ERROR

An internal compiler error occurred during the code generation phase of the compiler. The job step is terminated.

Contact your Unisys customer service representative.

F292 CODE FIXUP INTERNAL ERROR

An internal compiler error occurred during the code fixup phase of the compiler. The job step is terminated. Contact your Unisys customer service representative.

F293 ASSEMBLER INTERNAL ERROR

An internal compiler error occurred during the Assembler phase of the compiler. The job step is terminated.

Contact your Unisys customer service representative.

F297 PROGRAM TOO LARGE TO BE COMPILED

The source program is too large to be compiled. The compilation is terminated.

Reorganize the program into two or more parts using subroutines.

F326 I/O ERROR IN READ FROM SYSTEM FILE

An I/O error was encountered while trying to read from the system input GETCS file. This error occurred while trying to process //PARAM statements.

The compilation is terminated.

F327 NO SOURCE PROGRAM

An error occurred when the end-of-file was read prior to the first source card in the control stream. The job step is terminated.

Correct the control stream and rerun the job.

F330 INPUT FILE COULD NOT BE OPENED

The compiler cannot access the library file designated as containing the FOR77 source program. The job step is terminated.

Correct volume mounting or control stream error and rerun the job.

F999 number ERRORS DETECTED IN THE COMPILATION OF program-name

The compilation has been completed with the number of errors indicated.

No response is required.

F7001 ARCSINE OR ARCCOSINE ARGUMENT OUT OF RANGE (-1 TO 1).

The argument for the intrinsic function ASIN or ACOS is less than -1 or greater than +1. The program is terminated.

Correct the error and resubmit the job.

F7002 LABEL SPECIFIED IS NOT IN THE ASSIGNED GOTO LIST.

The label specified in the integer variable of an assigned GO TO does not match any of the labels specified in the list. The program is terminated.

Correct the error and resubmit the job.

F7003 ARCTANGENT ARGUMENT MUST NOT BE ZERO.

The argument for the intrinsic function ATAN is equal to 0. The program is terminated.

Correct the error and resubmit the job.

F7004 LOWER ARRAY BOUND IS HIGHER THAN THE UPPER BOUND.

The lower limit of a dimension declarator for an array is greater than the specified upper limit. The program is terminated.

Correct the error and resubmit the job.

F7005 END OF FILE.

An end-of-file condition was detected while reading an external input file. The program is terminated.

Correct the program to include an END parameter on the READ statement.

F7006 INVALID BLANK SPECIFIER IN FORMAT STRING.

A B edit descriptor was found but was not immediately followed by an N or Z. Valid blank edit descriptors are BN or BZ. The program is terminated.

Correct the format and rerun the job.

F7007 INVALID FORMAT DESCRIPTOR.

An invalid format descriptor was detected in the FORMAT statement. The valid format descriptors begin with a digit, the letters I, F, E, D, G, L, A, H, T, S, B, or the special characters () / : -. The program is terminated.

Correct the program and resubmit the job.

F7008 REPEATABLE FORMAT DESCRIPTOR (IFEDGLAPHX(') EXPECTED.

An integer was encountered in the format string, but no valid edit descriptors followed it. The only valid edit descriptors are repeatable edit descriptors (I, F, E, D, G, L, or A) or nonrepeatable descriptors (x, h, p, or a right parenthesis). The program is terminated.

Correct the format string and rerun the job.

F7009 INVALID FORMAT DESCRIPTOR - DIGIT EXPECTED.

A digit was expected following the specified edit descriptor. The program is terminated.

Correct the edit descriptor and resubmit the job.

F7010 SPECIFIER EXPECTED BUT END OF FORMAT FOUND.

A specifier was expected in the format but the end of the format was found. The program is terminated.

Check the format for unbalanced parentheses and rerun the job.

F7011 FILE BEING ACCESSED IS ALREADY OPEN ON ANOTHER UNIT.

An attempt was made to open a file already opened on another unit. The program is terminated.

Correct the unit number on the I/O statement in question or close the file and reopen it on the correct unit.

F7012 MISSING STARTING LEFT PARENTHESIS.

The starting left parenthesis for the format is missing. The program is terminated.

Correct the format so it begins with the required left parenthesis and rerun the job.

F7013 FORMAT DESCRIPTOR NOT VALID FOR CHARACTER I/O.

An attempt was made to read or write character data using an edit descriptor other than A. The program is terminated.

Correct the format to match the input or output and rerun the job.

F7014 FORMAT DESCRIPTOR NOT VALID FOR INTEGER I/O.

An attempt was made to read or write integer data using an edit descriptor other than I. The program is terminated.

Correct the format to match the input or output and rerun the job.

F7015 FORMAT DESCRIPTOR NOT VALID FOR LOGICAL I/O.

An attempt was made to read or write logical data using an edit descriptor other than L. The program is terminated.

Correct the format to match the input or output and rerun the job.

F7016 FORMAT DESCRIPTOR NOT VALID FOR FLOATING POINT I/O.

An attempt was made to read or write real, double-precision, or complex data using an edit descriptor other than F, E, D, or G. The program is terminated.

Correct the format to match the input or output and rerun the job.

F7017 FORMAT - NESTING OF PARENTHESIS IS TOO DEEP.

Parenthesis may only be nested to 20 levels deep. The program is terminated.

Correct the program and resubmit the job.

F7018 FILE POSITIONING MAY ONLY BE USED WITH SEQUENTIAL FILES.

A file positioning statement (BACKSPACE, ENDFILE, or REWIND) was specified for a direct access file. The program is terminated.

Correct the program logic and rerun the job.

F7019 PERIOD EXPECTED IN FORMAT STRING.

A period was missing for an F, E, D, or G edit descriptor. The period is required. The program is terminated.

Correct the format descriptor and rerun the job.

F7020 TRYING TO SCALE AN UNSCALABLE SPECIFIER IN FORMAT.

A scale specifier was specified for an edit descriptor other than F, E, D, or G. The program is terminated.

Correct the format and rerun the job.

F7021 EXPECTING ',:/' BUT OTHER FORMAT SPECIFIER FOUND.

A comma, colon, slash, or right parenthesis was missing at the end of an edit descriptor. The program is terminated.

Correct the format and rerun the job.

F7022 INVALID STRING IN FORMAT.

A string longer than 256 characters was specified, or the string is missing the ending apostrophe. The program is terminated.

Correct the string and resubmit the job.

F7023 INVALID TAB SPECIFIER IN FORMAT STRING.

A T, TL, or TR tab specifier appeared in the format statement but was not followed by an integer. The program is terminated.

Correct the tab specifier and rerun the job.

F7024 UNBALANCED PARENTHESIS IN FORMAT STRING.

A left parenthesis without a corresponding right parenthesis (or vice versa) was encountered in the format string. The program is terminated.

Correct the format and rerun the job.

F7025 INVALID INTEGER VALUE IN INPUT STRING.

An invalid integer was detected in the input string. One of these conditions exist: A plus or minus sign was not immediately followed by a digit, the digit read was not one of 0 through 9, or the number was too large. The program is terminated.

Correct the input stream and resubmit the job.

F7026 NUMBER OF RECORDS EXCEEDS INTERNAL UNIT SIZE.

An end-of-file condition was detected for an internal file. The program is terminated.

Correct the problem and resubmit the job.

F7027 LIST DIRECTED INPUT - INVALID CHARACTER VALUE.

The item read from the input record for a list-directed read was not a valid character value. The program is terminated.

Correct the input list to match the input record and rerun the job.

F7028 LIST DIRECTED INPUT - INVALID INTEGER VALUE.

The item read from the input record for a list-directed read was not a valid integer value. The program is terminated.

Correct the input list to match the input record and rerun the job.

F7029 LIST DIRECTED INPUT - INVALID LOGICAL VALUE.

The item read from the input record for a list-directed read was not a valid logical value. The program is terminated.

Correct the input list to match the input record and rerun the job.

F7030 LIST DIRECTED INPUT - INVALID REAL VALUE.

The item read from the input record for a list-directed read was not a valid real value. The program is terminated.

Correct the input list to match the input record and rerun the job.

F7031 LIST DIRECTED INPUT - INVALID COMPLEX VALUE.

The item read from the input record for a list-directed read was not a valid complex value. The program is terminated.

Correct the input list to match the input record and rerun the job.

F7032 INVALID LOGICAL VALUE IN INPUT STRING.

A value of other than .TRUE. or .FALSE. was read from the input string for a logical variable. The program is terminated.

Correct the READ statement to match the input string.

F7033 LOG ARGUMENT IS ZERO OR NEGATIVE.

The argument specified for the intrinsic function LOG was not a positive real, double-precision, or complex number. The program is terminated.

Correct the program and rerun the job.

F7034 SECOND ARGUMENT OF MOD FUNCTION IS ZERO.

The second argument of the intrinsic function MOD is zero. This would result in a divide by zero, which is illegal. The program is terminated.

Correct the program and rerun the job.

F7035 SQUARE ROOT ARGUMENT IS NEGATIVE.

The argument for the SQRT intrinsic function is negative. The program is terminated.

Correct the program and rerun the job.

F7036 ACCESS MODE CAN NOT BE CHANGED FOR AN ACTIVE UNIT.

The ACCESS mode parameter of an OPEN statement for a file that is already opened on the specified unit must contain the same value as was used when the file was originally opened. The program is terminated.

Correct the program and rerun the job.

F7037 DEVICE TYPE CAN NOT BE CHANGED FOR AN ACTIVE UNIT.

An attempt was made to use a device that is different from the one used when the file was originally opened. The program is terminated.

Correct the program and rerun the job.

F7038 FORM PARAMETER CAN NOT BE CHANGED FOR AN ACTIVE UNIT.

The FORM parameter of an OPEN statement for a file that is already opened on the specified unit must contain the same value as was used when the file was originally opened. The program is terminated.

Correct the program and rerun the job.

F7039 STATUS SPECIFIED AS NEW BUT FILE EXISTS.

The STATUS parameter on the OPEN statement is NEW, but the file already exists. The program is terminated.

Correct the STATUS parameter and rerun the job.

F7040 STATUS SPECIFIED AS OLD BUT FILE DOES NOT EXIST.

The STATUS parameter on the OPEN statement is OLD; but the file does not exist. The program is terminated.

Correct the STATUS parameter and rerun the job.

F7041 A FILE NAME MUST BE PROVIDED IF STATUS IS OLD OR NEW.

A FILE parameter is required on the OPEN statement when STATUS is specified as OLD or NEW. The program is terminated.

Correct the OPEN statement and rerun the job.

F7042 RECL PARAMETER CAN NOT BE CHANGED FOR AN ACTIVE UNIT.

The RECL parameter of an OPEN statement for a file that is already opened on the specified unit must contain the same value as was used when the file was originally opened. The program is terminated.

Correct the program and rerun the job.

F7043 STATUS PARAMETER CAN NOT BE CHANGED FOR AN ACTIVE UNIT.

The STATUS parameter of an OPEN statement for a file that is already opened on the specified unit must contain the same value as was used when the file was originally opened. The program is terminated.

Correct the program and rerun the job.

F7044 INVALID ACCESS PARAMETER IN OPEN STATEMENT.

The value of the ACCESS parameter must be either SEQUENTIAL or DIRECT. The program is terminated.

Correct the ACCESS parameter and resubmit the job.

F7045 INVALID FORM PARAMETER IN OPEN STATEMENT.

The value of the FORM parameter must be either FORMATTED or UNFORMATTED. The program is terminated.

Correct the FORM parameter and resubmit the job.

F7046 INVALID BLANK PARAMETER IN OPEN STATEMENT.

The value of the BLANK parameter must be either NULL or ZERO. The program is terminated.

Correct the BLANK parameter and resubmit the job.

F7047 INVALID RECL PARAMETER IN OPEN STATEMENT.

The value of the RECL parameter must be a positive integer. The program is terminated.

Correct the RECL parameter and resubmit the job.

F7048 INVALID STATUS PARAMETER IN OPEN STATEMENT.

The value of the STATUS parameter must be OLD, NEW, SCRATCH, or UNKNOWN. The program is terminated.

Correct the STATUS parameter and resubmit the job.

F7049 INVALID UNIT NUMBER.

The value of the UNIT parameter must be a nonnegative integer. The program is terminated.

Correct the UNIT parameter and rerun the job.

F7050 INVALID FLOATING POINT VALUE IN INPUT STRING.

An invalid floating-point number appeared in the input stream. The problem is one of the following: A plus or minus was not followed by a digit, a digit was not one of 0 through 9, or the number was too large. The program is terminated.

Correct the error and rerun the job.

F7051 FORMATTED READ/WRITE ON UNFORMATTED UNIT OR VISA VERSA.

A READ or WRITE statement with a FORMAT specifier was executed for a file opened as UNFORMATTED, or a READ or WRITE statement without a FORMAT specifier was executed for a file opened as FORMATTED. The program is terminated.

Correct the READ or WRITE statement and rerun the job.

F7052 SEQUENTIAL READ/WRITE ON DIRECT UNIT OR VISA VERSA.

A READ or WRITE statement with a REC specifier was executed for a sequential file, or a READ or WRITE statement without a REC specifier was executed for a direct file. The program is terminated.

Correct the READ or WRITE statement and rerun the job.

F7053 SUBSCRIPT OUT OF BOUNDS.

An array subscript is not within the upper and lower limits set when the array was defined. The program is terminated.

Correct the subscript and rerun the job.

F7054 SYSTEM I/O ERROR - ERROR-CODE.

An unrecoverable I/O error has occurred. The program terminates if no ERR parameter was specified.

The error-code insertion specifies the number of a data management (DM) message that provides additional information. For example, if an error-code of 02 is displayed, look up the DM02 message which says that the output tape is not write-enabled.

F7055 DIRECT ACCESS NOT PERMITTED WITH PRECONNECTED FILES.

A READ or WRITE statement was specified for a direct file that was not opened by an OPEN statement. The program is terminated.

Add an OPEN statement for the direct file and rerun the job.

F7056 INVALID UNIT NUMBER IN READ OR WRITE STATEMENT.

A unit number other than a positive integer was specified in a READ or WRITE statement. The program is terminated.

Correct the unit number and rerun the job.

F7057 FILE DOES NOT EXIST.

The file to be opened does not exist. The program is terminated.

Correct the problem and rerun the job.

F7058 UNDEFINED ERROR CODE - ERROR-CODE.

Error in generated object code or run-time subroutine. The program is terminated.

F7101 CAN NOT CLOSE SCRATCH FILES WITH A STATUS OF KEEP.

An attempt was made to close a temporary file with a status of KEEP. The program is terminated.

Correct the STATUS parameter of the CLOSE statement and rerun the job.

F7102 INVALID STATUS PARAMETER IN CLOSE STATEMENT.

The STATUS specifier for the CLOSE statement must have a value of KEEP or DELETE. The program is terminated.

Correct the STATUS specifier and rerun the job.

IS140 IS/ICAM INTERFACE {INITIALIZATION/TERMINATION} {START/END}

Informational message. It provides an additional trace of events to help determine under what circumstances termination procedures are not performed properly.

If an IS/ICAM INTERFACE INITIALIZATION START message and an IS/ICAM INTERFACE TERMINATION END message do not appear on the console when it is known that ICAM/GUST or Interactive Services is shutting down, then an error has occurred. Contact your Unisys customer support center and send a copy of the console log along with a selective dump (DU(SEL)) of the JOB=RC\$\$IS00 to the Unisys SUR coordinator.

JC38 cc COMMAND REJECTED:

The cc command in the job stream for this job has been rejected for the reason noted.

MC#20 cca-name cc/uuu line CHANNEL DOWN ERROR ee

If the channel connection between the System 80 and the DCP goes down, this message is displayed, where:

cca-name

Is the label on the CCA macroinstruction.

cc/uuu

Is the channel/control unit address of the affected channel.

line

Is the label on the DCPCHNL macroinstruction.

ee

Is the 2-byte decimal error code (see table).

Channel down error codes for unrecoverable errors occurring during and after successful link start-up:

Code Explanation

- 01 Loss of heartbeat
- 02 Unit exception - DCP non-operational
- 03 Command reject
- 04 Intervention required
- 05 Lost data
- 06 Invalid SAI header
- 07 Unexpected SUP received
- 08 Output timeout

Channel down error codes for recoverable errors where maximum retries have been exhausted occurring during and after successful link start-up:

Code Explanation

- 09 Parity Error
- 10 Bad block checksum or invalied control field parity
- 11 Invalid Control Field
- 12 Invalid message length
- 13 Out of resources (link buffers)
- 14 Block sent not equal to block expected

MC#25 cca-name cc/uuu line CHANNEL INITIALIZED

When GUST initialization of a global network is complete, ICAM attempts to establish a channel connection with the DCP. This message indicates successful completion, where:

cca-name

Is the label on the CCA macroinstruction.

cc/uuu

Is the channel/control unit address of the affected channel.

line

Is label on the DCPCHNL macroinstruction.

This is a informational message. See MC#20 if the channel fails to initialize.

**MC#30 cca-name cc/ss line DOWN LINE LOAD {IN PROGRESS/RESTARTED/
COMPLETED/ABORTED/ABANDONED}**

This is an informational message indicating the progress of a DCP down line load sequence, where:

cca-name

Is the label on the CCA macroinstruction

cc/ss

Is the channel/device address of the affected SLCA.

line

Is the label on the VLINE macroinstruction.

IN PROGRESS

Indicates that down line loading has started.

COMPLETED

Indicates that down line loading has completed.

ABORTED

Indicates that down line loading has been aborted by the DCP. Intervention may be required at the DCP to restart the down line load procedure.

RESTARTED

Indicates that down line loading has been restarted by the DCP.

ABANDONED

Indicates that unrecoverable protocol errors have caused the down line load to be abandoned.

Restart the down line load.

**MC#31 cca-name cc/uu line cross-channel LOAD {IN PROGRESS/RESTARTED/
COMPLETED/ABORTED/ABANDONED}**

This is an informational message indicating the progress of a DCP cross-channel load sequence, where:

cca-name

Is the label on the CCA macroinstruction.

cc/uu

Is the channel/control unit address of the affected channel.

line

Is the label on the DCPCHNL macroinstruction.

IN PROGRESS

Indicates that cross-channel loading has started.

COMPLETED

Indicates that cross-channel loading has completed.

ABORTED

Indicates that cross-channel loading has been abort by the DCP. Intervention may be required at the DCP to restart the cross-channel load procedure.

RESTARTED

Indicates that cross-channel loading has been restarted by the DCP.

ABANDONED

Indicates that unrecoverable protocol errors have caused the cross-channel load to be abandoned.

Restart the cross-channel load

MC#32 DCP LOAD FILE DCP.LOAD.{ccss/ccuu} {OPEN/CLOSE/READ} ERROR

This is an informational message indicating that an error has occurred in attempting to OPEN, CLOSE or READ the specified DCP load file, where:

ccss

Is the channel/device of the affected SLCA.

ccuu

Is the channel/control unit address of the affected channel.

MC#33 cca-name cc/ss line LINE REQUEST PENDING DOWN LINE LOAD

This is an informational message displayed in response to an UP command entered at the system console. It indicates that down line load is either in progress or pending for the the specified line, where:

cca-name

Is the label on the CCA macroinstruction.

cc/ss

Is the channel/device of the affected SLCA.

line

Is the label on the VLINE macroinstruction.

MC#34 cca-name cc/uu line LINE REQUEST PENDING cross-channel LOAD

This is an informational message displayed in response to an 'UP' command entered at the system console. It indicates that cross-channel load is either in progress or pending for the specified line, where:

cca-name

Is the label on the CCA macroinstruction.

cc/uu

Is the channel/control unit address of the affected channel.

line

Is the label on the DCPCHNL macroinstruction.

MC#172 LINK INITIALIZED cca-name cc/ppp llll

When GUST initialization of a global network is complete ICAM attempts to establish a UDLC/NRM link. This message indicates successful completion, where:

cca-name

Is the 4-byte alphanumeric label of the cca macroinstruction for the global network.

cc

Is the 2-byte decimal number of the logical controller number specified in the VLINE macroinstruction.

ppp

Is the 3-byte decimal number related to the ID parameter specified in the VLINE macroinstruction.

llll

Is the 4-byte alphanumeric label on the VLINE macroinstruction.

MC#173 STATION CONNECT cca-name cc/ppp llll ssss

The specified STATION is connected, where:

cca-name

Is the 4-byte alphanumeric label of the cca macroinstruction for the global network.

cc

Is the 2-byte decimal number of the logical controller number specified in the VLINE macroinstruction.

ppp

Is the 3-byte decimal number related to the ID parameter specified in the VLINE macroinstruction.

llll

Is the 4-byte alphanumeric label on the VLINE macroinstruction.

ssss

Is the 4-byte alphanumeric label on the STATION macroinstruction.

MC#174 STATION DISCONT cca-name cc/ppp llll ssss

The specified STATION has been logically disconnected, where:

cca-name

Is the 4-byte alphanumeric label of the cca macroinstruction for the global network.

cc

Is the 2-byte decimal number of the logical controller number specified in the VLINE macroinstruction.

ppp

Is the 3-byte decimal number related to the ID parameter specified in the VLINE macroinstruction.

llll

Is the 4-byte alphanumeric label on the VLINE macroinstruction.

ssss

Is the 4-byte alphanumeric label on the STATION macroinstruction.

PAR000 I/O ERROR;FILE:xxxxxxx FILE SYSTEM DETECTED I/O ERROR: X'ccss

Data Management has detected an I/O error on file xxxxxxx, where:

cc

Is the Data Management error number, e.g. DMcc

ss

Is the Data Management subcode number-- See appendix E of this manual.

PAR001 CASE SELECTOR ERROR

The case selector does not match any of the case constants in the case statement.

Correct the program. This error is not detected if the CHECK option is off.

PAR002 VARIANT ERROR

The value of the tag field of a variant record is invalid at the point of reference.

Correct the program. This error is not detected if the CHECK option is off.

PAR003 POINTER ERROR -- NIL OR UNDEFINED

Value of pointer variable is invalid.

Correct the program. This error is not detected if the CHECK option is off.

PAR004 INDEXING ERROR -- VALUE OUT OF RANGE

The value of a non-constant index expression is out of range.

Correct the program. This error is not detected if the CHECK option is off.

PAR005 ARITHMETIC ERROR

Invalid argument value for sqrt, trunc, or round functions, or the value of j is zero in a term of the form $i \bmod j$ or $i \operatorname{div} j$.

Correct the program. This error is not detected if the CHECK option is off.

PAR006 PARAMETER ERROR

An actual value parameter which is not constant is not assignment compatible with the formal parameter.

Correct the program. This error is not detected if the CHECK option is off.

PAR007 VARIABLE ERROR -- ASSIGNMENT VALUE OUT OF RANGE

For an assignment statement, the value of the expression is out of range for the variable or function identifier.

Correct the program. This error is not detected if the CHECK option is off.

PAR008 DISPOSE ERROR -- PTR IS NIL OR UNDEFINED

The pointer-type of a dispose has a nil value.

Correct the program.

PAR009 INVALID VALUE FOR SUBSTRING EXPRESSION

For a substring denoted by "string_variable[first_char,length]", both of the following must hold

$1 \leq \text{first_char} \leq \text{length of string_variable}$

$1 \leq (\text{first_char} + \text{length} - 1) \leq \text{length of string_variable}$

Correct the program.

PAR010 USER-INVOKED ABORT

This is usually the result of a cancel command from the operator's console or from the workstation.

PAR011 RELEASE ERROR -- PTR IS NIL OR UNDEFINED

The value of the actual parameter to the release procedure is incorrect.

The actual parameter must have been correctly set by the mark procedure before release is invoked.

PAR012 RELEASE AFTER DISPOSE

The release procedure has been invoked subsequent to invoking the dispose procedure.

Correct the program.

PAR013 SQRT OF A NEGATIVE NUMBER

Invalid argument value for sqr function.

Correct the program. This error is not detected if the CHECK option is off.

PAR014 LN OF ZERO OR NEGATIVE

Invalid argument value for ln function.

Correct the program. This error is not detected if the CHECK option is off.

PAR015 SET ERROR -- OUT OF RANGE VALUE

For an assignment statement, the value of the expression is out of range for the variable or function identifier.

Correct the program. This error is not detected if the CHECK option is off.

PAR016 ERROR DETECTED VIA TRAP HANDLER:psw= xxxxxxxx xxxxxxxx exception

This error is usually the result of running a program which does not comply with the Pascal standard with the CHECK option off.

If the cause of the problem is not apparent, reduce the program to the smallest and most simple form which will reproduce the condition and then contact your UNISYS representative for help.

PAR017 OVERLAY ERROR -- UNABLE TO LOAD

This error should not be produced.

Contact your UNISYS representative for help.

PAR018 NEW ERROR -- UNABLE TO SATISFY STORAGE REQUEST

Insufficient memory has been allocated for the job.

See the *Pascal Programming Reference Manual*, UP-14178.

PAR019 STACK ERROR -- UNABLE TO ALLOCATE STORAGE

Insufficient memory has been allocated for the job.

See the *Pascal Programming Reference Manual*, UP-14178.

PAR020 NO MEMORY AVAILABLE FOR MODULE/PROGRAM VARIABLES

Insufficient memory has been allocated for the job.

See the *Pascal Programming Reference Manual*, UP-14178.

PAR021 NOT ENOUGH MEMORY TO INITIALIZE STACK/HEAP

Insufficient memory has been allocated for the job.

See the *Pascal Programming Reference Manual*, UP-14178.

PAR022 RETURN FROM FUNCTION WITHOUT ASSIGNING VALUE

The result of an activation of a function is undefined upon completion of the algorithm of the activation.

Correct the program.

PAR023 ABEND -- SEE THE SYSTEM'S MESSAGE

This error is usually the result of running a program which does not comply with the Pascal standard with the CHECK option off.

If the cause of the problem is not apparent, reduce the program to the smallest and most simple form which will reproduce the condition and then contact your UNISYS representative for help.

SAM08 ST={INACTIVE/hh:mm:ss,IT={mmm/Sxx}}[,xxx][,C][,T][,did,n,filename]}

where:

ST=INACTIVE

Indicates that monitor is currently inactive (stopped).

ST=hh:mm:ss

Indicates the clock time in hours, minutes, and seconds (HH:MM:SS) at which point the monitor was started by using the GO function.

IT={mmm/Sxx}

Indicates the monitoring time interval in minutes (mmm) or seconds (Sxx) that the monitored output data is being recorded or displayed. This field is applicable only if the monitor is operating in class mode (C parameter specified).

xxx

Indicates the number of intervals (occurrences of the specified time interval) to be recorded to the current output subfile. In fact, this field represents the number of data buffers written to the output file and is displayed for either class or trace mode. When the monitor is in class mode (C parameter specified), it also corresponds to the number of interval expirations, which is its primary use.

C

Indicates that the monitor is operating in class mode (classes being monitored). This field is displayed only when the monitor is operating in class mode (C parameter specified).

T

Indicates that the monitor is operating in trace mode (events being traced). This field is displayed only if the monitor is operating in trace mode (T parameter specified).

did,n,filename

Indicates the device address (did), the last opened subfile (n), and the name of the file being used to record monitored data. This field is displayed only when monitored data is being recorded to disk (O parameter specified).

SD01 DUMP OPTION (ALL, NONE, DUMP, JOBS, EDIT, MINI, RESTORE, SAVE)

SYSDUMP has been started, and an option is required. The RESTORE and SAVE options will only be displayed or accepted under Consolidated Data Management.

Key in one of the following (suboptions are enclosed in parentheses):

ALL (NOSHARE) - Full SYSDUMP

NONE - No dump necessary

DUMP (NOSHARE/SELECT) - Hexadecimal/character display of main storage

JOBS (NOSHARE/SELECT) - All jobs related to dump portions

EDIT - Provides an English language description of the state of system.

MINI - Provides a hexadecimal dump, including a table of contents, of specific main storage regions dependent upon the HPR or system error code.

RESTORE - Restore SYSDUMP

SAVE - Save SYSDUMP

Section 5.

Add these unprefixed messages:

INVALID FUNCTION KEY DEPRESSED ON SCREEN 2

An invalid function key was pressed while on screen 2. Press the transmit key to acknowledge this message on screen 1. Then press one of the valid function keys on screen 2.

PREVIOUS SYSTEM FUNCTION KEY NOT PROCESSED

A function key was pressed when the previous system function key was not processed. Acknowledge message and press another function key.

PREVIOUS USER FUNCTION KEY NOT PROCESSED

A function key was pressed when the previous user function key was not processed. Acknowledge message and press another function key.

PREVIOUS USER FUNCTION KEY NOT PROCESSED ON SCREEN 2

A function key was pressed while on screen 2 when the previous screen 2 function key was not processed. Message displayed on screen 1.

- *Installation Guide*, UP-8839

Page 4-10

Add the following to the description of the SYMBIONT parameter:

The following symbiont names can be specified:

Name	Symbiont
BEG	Begin
BRK	Break point
CHA	Change job queue
CS	Create symbiont
DEL	Delete
DIS	Display
DT	Device trace
FIL	File
HOL	Hold
IED	ICAM trace display
IN	Input
IO	I/O trace
MM	Mini monitor
MON	Monitor
PD	Output writer (data set label diskette)
PR	Output writer (printer)
PU	Output writer (punch)
PT	Patch transient
RP	Output writer (aux printer)
RUN	Run processor
RV	Run processor (without card reader)
SCH	Schedule (with card reader)
SFM	Screen format manager
SI	Schedule (without card reader)
SAM	System activity monitor
SAX	System activity monitor (larger)
SPM	System performance monitor
SU	System utility
TU	System utility (also)
VV	VTOC verify

If you specify a symbiont name more than once, the first occurrence is accepted. All subsequent specifications are ignored, and an error message is issued.

Page 4-11

Change the description of the ALTJCS parameter to read:

Identifies the file that is to be the system default for the alternate \$Y\$JCS library. The file is identified via a filename (lblname) and a disk identifier (RUN, RES, or vsn). The disk identifier is not required if the file is cataloged.

Page 4-19

The SUPGEN keyword parameter TRNWKAREA now has a maximum value of 250. Specifying YES initializes the transient work area to 250 at initial program load (IPL).

- *System Service Programs Programming Reference Manual, UP-8842*

Page F-3

Delete the following line from the second screen shown on the page:

TRANSLATE TAB CHARACTER TO SPACE: (Y)

- *Data Base Management System Quick-Reference Guide, UP-9009*

Section 1

Change the document number at the bottom of pages 1-1 thru 1-20 from UP-13086 to UP-9009.

- *MAPPER 80 Administration and Operations Guide, UP-9737*

Section 4.

The MAPDBINT job shown on page 4-5 should be as follows in order to work properly with the Release 11.0 and 12.0 versions of the DMS DBINT utility.

```
// JOB MAPDBINT,,10000
// DVC 20 // LFD PRNTR
// DVC 50 // VOL MAPPER // LBL MAPPER$DB$FILE // LFD DBLINK
// DVC 50 // VOL MAPPER // LBL MAPPER$DB$BQBL // LFD DBBQBL
// DVC 50 // VOL MAPPER // LBL MAPPER$DB$CQBL // LFD DBCQBL
// EXEC DBINT
/$
DMCL IS MPDB.
ACTIVATE DMCL.
INITIALIZE ALL AREAS.
END.
/*
/ &
```

The MAPDBINT job is released with the MAPPER 80 program product. As well as noting the above change in your manual, you should update your MAPDBINT job in \$Y\$JCS.

Section 5.

The MAPINT1 job shown on page 5-10 should be:

```
// JOB MAPINT1,,10000
// DVC 20 // LFD PRNTR
// DVC 50 // VOL MAPPER // LBL MAPPER$DB$FILE // LFD DBLINK
// DVC 50 // VOL MAPPER // LBL MAPPER$DB$BQBL // LFD DBBQBL
// DVC 50 // VOL MAPPER // LBL MAPPER$DB$CQBL // LFD DBCQBL
// EXEC DBINT
/$
DMCL IS MPDB.
QUICK-BEFORE-LOOKS FILE IS DBBQBL KEEP.
IMS QUICK-BEFORE-LOOKS FILE IS DBCQBL KEEP.
ACTIVATE DMCL.
INITIALIZE AREA WRK-CNT-AREA, WRK-IMG-AREA
  ON ERROR STOP.
END.
/*
/&
```

- *Security Maintenance Utility Operations Guide, UP-12028*

Section 1.

Add this note to the end of the discussion on Command Restriction Specification that appears on page 1-3:

Note: *Users are always allowed to control their own jobs with commands such as HO, CA, GO, PA, DI, JS, and so on, regardless of their command restriction specification.*



Appendix A. Macro/Module Description Listing

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 each of the system libraries, including the description and size of each module. The job is executed by entering the following system command:

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

where:

xxxxxx

Is the VSN of the optional work disk. If this parameter is omitted, the work space for the job is allocated on the disk containing the run library modules. Disk work space requirements for MODLST are:

8416/8418	30 cylinders
8417	15 cylinders
8419	30 cylinders
8430/8433	10 cylinders
8470	4 cylinders
8494	7 cylinders



Appendix B. SYSRES File Definitions

The following list provides the name and use or content of each of the OS/3 SYSRES files:

<u>File</u>	<u>Description</u>
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.
SMCBMIR SMCBSAT SMCBTRAN	These librarian files are used to store copies of modules that have been changed by software maintenance corrections (SMCs).
SMCFILE	This file contains all software maintenance corrections (SMCs) processed for the system.
\$VTOC	This file contains the volume table of contents (VTOC).
\$IMPL	This file contains the initial microprogram load that is provided for the loading of microcode into CPU control storage.
\$IPL	This file contains the initial program load and provides the initiation of processing.
\$Y\$CAT	This file is used by job control to record the cataloged files made by the user.
\$Y\$DIALOG	This MIRAM file contains system dialogs for SYSGEN and JCL.
\$Y\$DUMP	This is a main storage area used by SYSDUMP processing. An image of main storage is written into this file and then read during the dump analysis processing.
\$Y\$ELOG	This is a storage area that the supervisor uses to record the I/O error history.

<u>File</u>	<u>Description</u>
\$Y\$ESUM	This file contains the error log summary.
\$Y\$FMT	This file contains the system screen formats and system menus.
\$Y\$HELP	This MIRAM file contains help screen modules.
\$Y\$JCS	This librarian file contains stored job control streams and job control procedures.
\$Y\$LOD	This librarian file holds the load modules for the system.
\$Y\$OBJ	This librarian file contains the run-time library for each compiler. These object modules are included by the linkage editor for subsequent program execution.
\$Y\$MAC	This librarian file holds the interface procedures and macros for the components that may be referenced from assembled code.
\$Y\$MIC	This file contains all microcode levels for peripherals and the CPU.
\$Y\$SAVE	This file contains the saved run library modules.
\$Y\$SCLOD	This file is the shared code load library file.
\$Y\$SDF	This file contains the directory of microcode levels that will be downline loaded to each peripheral and the CPU from the \$Y\$MIC file.
\$Y\$SEC	This file contains user-ids and passwords when LOGON security is configured.
\$Y\$SHR	This file holds information about files that are currently open in the system and their ability to be shared.
\$Y\$SJF	This file logs data that is used to determine system stability when log stability data is configured.
\$Y\$SMCLOG	This file is the software maintenance correction (SMC) log.
\$Y\$SRC	This librarian file contains the source and copy modules that are provided with OS/3.
\$Y\$SYSTEMTABLES	This file contains tables for the system.
\$Y\$TRAN	This file holds the OS/3 transient modules and the canned messages for the console and printed display.
\$Y\$TRANA	This file is a duplicate of \$Y\$TRAN. When the supervisor has an error accessing \$Y\$TRAN, it recovers by trying to access \$Y\$TRANA.

Appendix C. MAPPER 80 Version 3.0 Installation Instructions

The MAPPER 80 Version 3.0 media consists of the following diskettes. These diskettes contain the program product and associated files.

<u>Media</u>	<u>VSN</u>	<u>Contents</u>
One 8420 diskette	MAPR01	Program product diskette containing MAPPER 80 Version 3.0 software, program product 6752-00.
Two 8420 diskettes	MAPF01 MAPF02	Diskettes containing the MAPPER\$FMTE file screen formats
One 8420 diskette	MAPT01	Diskette containing the MAPPER\$TRAINING\$FILE file
One 8420 diskette	MAPD01	Diskette containing the MAPPER\$DD\$FILE file (data dictionary)
One 8420 diskette	MAPI01	Diskette containing the MAPPER\$FIRST\$INSTALL file (MAPPER 80 JCL, DMCL source/load for training data base)

C.1. GUIDELINES

To ensure that all modules are present in your system:

- You must do an IPL from a release pack.
- SG\$ files must be present.
- If you use more than one software system, each must have MAPPER 80 software installed.
- If you want to retain backup systems stored on various media types, you must restore them, install the MAPPER 80 software, and then back them up again.
- The MAPPER 80 installation process is designed using certain assumptions about file placement. If files installed during a previous installation have been moved or installed differently from the recommended method, it may be necessary to modify the MAPPER 80 job streams used in the installation process.

C.2. PROCEDURES

Installation of MAPPER 80 software takes about 30 minutes. Proceed as follows:

1. Be certain that your system is backed up.
2. Do not multiprogram.
3. Do an IPL of the system so that you are running with the starter supervisor even though you may already be running under that supervisor.
4. Mount MAPR01 and then load the MAPPER 80 program product by entering:

```
RV SG@CPYPD
```

Respond to the mount request by entering:

```
GO SG@CPYPD
```

Note: *The job control streams supplied with the MAPPER 80 program product require the format file, the training file, and the data dictionary to be loaded onto the RES pack. Therefore, respond Y (yes) in steps 6, 7, 8, and 9 to the question:*

```
IS MAPPER DATA FILE GOING TO IPL DISK (N,Y)
```

If you answer N to this question, the MAPPER 80 data files will go to a volume with a VSN of MAPPER. If you select this option, the MAPPER 80 job streams must be changed to reference the MAPPER volume for these data files. (Due to space limitations on your SYSRES, you may want to answer N.)

5. Read the following before performing this step:
 - If you are installing the MAPPER 80 product for the first time, skip this step and proceed to step 6.
 - If the MAPPER 80 product was previously installed on your system, you must perform this step to erase the old MAPPER 80 screen format file (MAPPER\$FMTE), training file (MAPPER\$TRAINING\$FILE), and data dictionary file (MAPPER\$DD\$FILE).
 - Because MAPPER 80 allows user screen formats to be contained in the MAPPER 80 screen format file (MAPPER\$FMTE), be sure to save any user screen formats in a backup file by using the MIRAM librarian (MLIB) before performing this step. (See the *System Service Programs (SSP) Operating Guide*, UP-8841.)

Erase the old MAPPER 80 screen format file (MAPPER\$FMTE), training file (MAPPER\$TRAINING\$FILE), and data dictionary file (MAPPER\$DD\$FILE) by entering:

```
RV CLEANMAP
```

Note: *If these files are not on the RES pack, this run stream must be modified.*

6. Mount MAPF01 and load the screen format file by entering:

RV SG@CPYPD

Respond to the mount request by entering:

GO SG@CPYPD

When the message IS MAPPER DATA FILE GOING TO IPL DISK (N,Y) appears, respond Y (yes).

When the message MOUNT DEV=nn VSN=MAPF02 appears, mount MAPF02 and respond R (retry).

7. Mount MAPT01 and load the training file by entering:

RV SG@CPYPD

Respond to the mount request by entering:

GO SG@CPYPD

When the message IS MAPPER DATA FILE GOING TO IPL DISK (N,Y) appears, respond Y (yes).

8. Mount MAPD01 and load the data dictionary by entering:

RV SG@CPYPD,,F=F

Respond to the mount request by entering:

GO SG@CPYPD

When the message IS MAPPER DATA FILE GOING TO IPL DISK (N,Y) appears, respond with Y (yes).

9. Mount MAPI01 and load the first-install file by entering:

RV SG@SPYPD

Respond to the mount request by entering:

GO SG@SPYPD

When the message IS MAPPER DATA FILE GOING TO IPL DISK (N,Y) appears, respond Y (yes).

10. Read the following before performing this step:

- If the MAPPER 80 product was previously installed on your system, skip this step because it will overwrite the current MPDB load module. Perform this step only if you are installing the MAPPER 80 product for the first time.

- New users must perform this step to put module MPDB in \$Y\$LOD and module MPDBREL in \$Y\$SRC. These modules are needed to use the training data base described in the *MAPPER 80 System Administration and Operations Guide*, UP-9737.
- Previous steps of this installation procedure created a file called MAPPER\$FIRST\$INSTALL on the RES pack. Training data base DMCL source module S-MPDBREL and load module L-MPDB were placed in this file. This was done so that an existing MAPPER 80 user does not lose any customized DMCL source and load modules.

Continue the installation process by entering:

```
RV COPYMPDB
```

11. Read the following before performing this step:

If you are installing the MAPPER 80 product for the first time, you must perform this step to complete the installation process. This step copies the released job control streams from the MAPPER\$FIRST\$INSTALL file to \$Y\$JCS, which, in turn, permits access to the MAPPER 80 software.

Place the new MAPPER 80 job control streams in \$Y\$JCS by entering:

```
RV COPMAPJC
```

12. Software installation is complete.
13. Run the IVP procedure described in the *Installation Verification Procedures (IVP) Operating Guide*, UP-10003.
14. Refer to Section 4 of the *MAPPER 80 System Administration and Operations Guide*, UP-9737, for additional information on the installation and modification of MAPPER 80 software.

Appendix D. IMS Special Installation Guidelines

The IMS single-thread (S/T) and multithread (M/T) program products cannot coexist on the same SYSRES. Users requiring the ability to execute IMS S/T and IMS M/T from the same SYSRES must follow the procedures covered in these guidelines. If you do not use both IMS S/T and IMS M/T on the same SYSRES, you can ignore the information in this appendix.

D.1. DEFINITION OF TERMS

- **IMS program product**
This refers to the set of modules (IMS S/T or IMS M/T) that is delivered to a customer.
- **IMS executable online module**
This module is produced as a result of a successful IMS configuration. The user can create as many of these modules as necessary for his applications. IMS S/T and IMS M/T executable modules can coexist on the same SYSRES as in the past.

D.2. OVERVIEW

An IMS program product must be applied to the system by using the standard program product system installation procedure, SG@CPYPD. Refer to the *Installation Guide*, UP-8839.

If it is necessary to switch from IMS S/T to IMS M/T or vice versa, a new delete utility (SG\$PDDEL) must be initiated. SG\$PDDEL is a console utility that allows selective deletion of program products from a SYSRES disk. SG\$PDDEL performs the following functions:

- Deletes program products (by program product number) through console queries
- Deletes all modules associated with the selected program product
- Deletes all SMC log entries related to that program product

D.3. RUNNING THE SG\$PDDEL UTILITY

To initiate the utility, enter:

```
RV SG$PDDEL
```

Respond to queries that are prompted by the SG\$PDDEL utility.

D.4. EXAMPLE OF THE PROCEDURE TO DELETE A PROGRAM PRODUCT

1. Run the SG\$PDDEL utility as follows:

```

RV SG$PDDEL
1P JC06 USING DEV=104 VSN=OS3DTA
09 ARE THE SELECTED PRODUCTS FOR S90 OR S80
0A?JOB=SG$PDDEL SYMBOL=SYSTEM VALUE=S90 *ENTER VALUE
 0A S80 (Note 1)
0B ENTER PRODUCT NUMBERS OF PRODUCTS TO BE DELETED
0C ENTER END WHEN LIST IS COMPLETE
0D?JOB=SG$PDDEL SYMBOL=P1 *VALUE IS NULL* *ENTER VALUE
 0D (Note 2)
0E?JOB=SG$PDDEL SYMBOL=P2 *VALUE IS NULL* *ENTER VALUE
 0E END
2F JC01 JOB SG$PDDEL EXECUTING JOB STEP SMPLMU00 #001
2G SMPM04 000009 RECORDS WERE PROCESSED.
2H JC01 JOB SG$PDDEL EXECUTING JOB STEP LIBS0000 #002
2J JC02 JOB SG$PDDEL TERMINATED NORMALLY

```

Notes: 1. On line 0A, S80 is a required entry for the System 80.

2. On line 0D, enter the program product type number of the IMS product to be deleted:

- For IMS S/T, enter 6217-00
- For IMS M/T, enter 6232-00

SG\$PDDEL deletes all SMC numbers from the SMCLOG file that have been applied to the program product. Any SMCs applied to the program product (via the SMCFILE) will still remain in the SMCFILE and will not be reapplied unless the program product is reapplied to the system.

Note: Subsequent SMC application runs will produce errors for each of these SMCs, but should be ignored.

2. Apply the IMS product (S/T or M/T as required) via the SG@CPYPD job by entering:

```
RV SG@CPYPD
```

3. Reapply any SMCs to this product that are currently resident in the SMCFILE by entering:

```
RV SMC
```

See the *Installation Guide*, UP-8839, for more information.

Note: Any SMCs requiring input media will not reapply if this media is not available. Users should retain this media for future use in the event that a switch of IMS products is necessary.

E. Telcon Guidelines

This appendix contains information for DCP Telcon users. If you have an OS 1100 system, there will be few changes to your current procedures. If the System 80 is a stand-alone system, there are special DCP dump considerations and procedures that must be followed.

E.1. MICROCODE

E.1.1. Microcode Levels

The Customer should set up a system to match the DCP/OS microcode level with the Telcon tape. While most microcode levels and Telcon tapes of the same release are compatible, there are instances in which program change registrations (PCR) for Telcon go in that require that the levels match. If you encounter problems with the DCP load, check the DCP/OS and Telcon levels.

E.1.2. Microcode for Selector Channels

To load the correct microcode, Telcon uses the hardware-id of the line module. For Telcon 7R2A, the hardware-id should be set to 14 (block mux). This is not the address strapping defined in ICAM. Line module switches must be set for *block mux* operation.

E.2. DCP DUMPS

If you have an OS 1100 system connected to the same DCP as the System 80, you will be able to use the upline dump routine to process DCP dumps. If your System 80 is a stand-alone system, you will have to use the @SPLIT utility that came with your Telcon software. Instructions for running the @SPLIT utility are included in **E.2.2. Running @SPLIT** in this SRD.

E.2.1. Prepping Diskettes for @SPLIT

To run the @SPLIT utility, diskettes must be prepped and the @SPLIT files must be cataloged. DCP/20/40 users with only an integrated flexible diskette controller (IFDC) diskette drive must use a prep routine called DCPPREP. Diskettes must be single-sided and must be prepped as single-density.

Note: DCP/20/40 users must also use this routine for diskettes prepped using CPM. The CPM prep does not put a volume name on the diskette. Using option 9 (Purge) will prompt you for a volume name. Purge can also be used to erase files on a previously prepped diskette.

DCP/15 users can use the IF0 drive to prep diskettes. Diskettes must be 5 1/4 inch, double-sided, double-density, and 48 TPI.

If you have no prep capability, contact your Unisys customer service representative.

1. Start a run. Enter:

```
@RUN run-ID,,[qualifier]
```

2. The device must be down for the prep routine to run. Enter:

```
@@CONS DN IF0
```

3. Run the prep utility. Enter:

```
@DISK
```

4. The @DISK menu appears. Select the option you need. Enter:

```
1  
  To prep a DCP/15/30 diskette; or
```

```
9  
  To purge a DCP/20/40 diskette
```

5. Enter the device name to be used for the prep. Enter:

```
IF0
```

Note: If you have not downed the device, you get an error message. You do not have to abort the prep routine to down the device. Down the device (@@CONS DN IF0), then enter Y for retry.

6. A warning message appears asking if you want to destroy the information on this device. Ensure that the device-id is correct and that the proper diskette is in that device. Enter:

```
Y
```

The prep takes from 3 to 5 minutes.

7. Enter the volume name. Enter:

SPLIT0

Note: *The volume name should be the same for all diskettes. If the volume name is the same, you need only catalog the first split file (SPLIT0). The rest of the files will be cataloged by the @SPLIT utility. However, when running the @SPLIT utility, the volume name is displayed when the diskette drive is downed and then upped. If you want to keep track of your diskettes, you can name them SPLIT0 through SPLIT9. If you use different names for each diskette, you will have to catalog each file on each of those diskettes.*

8. The volume name is displayed and you are prompted to press XMIT.

Note: *The above procedure should be executed for each diskette required for the dump file. To calculate the number of diskettes enter @PRT,F qualifier*SYSDUMP. This will display information about the file including the block size. Calculate the number of diskettes from the block size (2800 for DCP/15/30 and 960 for DCP/20/40). For a 2-megabyte system, 3 DCP/15/30 diskettes or 9 DCP/20/40 diskettes are required.*

9. The @DISK menu appears. Select option 12 to exit. Enter:

12

10. Up the diskette drive. Enter:

@@CONS UP IF0

11. Catalog a split file. The first SPLIT0 is the file name; the second SPLIT0 is the volume name from the prep.

If you are a DCP/15/30 user, enter:

@CAT SPLIT0.,/2800,SPLITD OR SPLIT0

If you are a DCP/20/40 user, enter:

@CAT SPLIT0.,/960,SPLITD OR SPLIT0

Note: *2800 and 960 are the block sizes for each type of diskette.*

12. Down the diskette drive. Enter:

@@CONS DN IF0

If you need different names for each diskette, you will need to catalog each file on each of those diskettes. Repeat steps 1 thru 12 for each diskette.

E.2.2. Running @SPLIT

The @SPLIT utility is used to create diskettes from the DCP dump file (qualifier*SYSDUMP). These diskettes can then be sent to Network Engineering for processing. To force a dump of DCP/OS, the operator must set the top cap switches to hex 02 and press the Program Load switch. To force a dump of Telcon, the operator must E off the Telcon run through the OS workstation by entering E TELCON. (Refer to the *Telcon Operations Reference Manual*, UP-9256, and the *DCP/OS Operations Reference Manual*, UP-11541, for additional information.)

1. If you have not done so, start a run. Enter:

```
@RUN run-id,,[qualifier]
```

2. Down the diskette drive and remove the current diskette. Enter:

```
@@CONS DN IF0
```

3. Put the first diskette with SPLIT0 in the diskette drive. Enter:

```
@SPLIT,NOVP qualifier*SYSDUMP.,SPLIT0.
```

4. Switching to file: SPLITn:

- a. Put in the next diskette

- b. Enter @@CONS DN IF0

- c. Enter @@CONS UP IF0

- d. Press XMIT

Note: Repeat step 4 until program has terminated.

4. Down the device and remove the diskette. Enter:

```
@@CONS DN IF0
```

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