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DEFINITY®
Manager IV
Installation, Initialization
and Maintenance Manual

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1. ABOUT THIS MANUAL

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1. ABOUT THIS MANUAL

This manual is broken down into two main sections or books. The first section (Installation and Initialization) contain the detailed procedures needed to install DEFINITY[®] Manager IV software, initialize the DEFINITY Manager IV database, and perform acceptance testing.

The second section (beginning with Section 10 "Manager IV Service Procedures" and also including *DEFINITY System Administration*) provides information for on-going troubleshooting and error correction. The Manager IV application software is designed for the UNIX[®] operating system and is supported by either the 3B2-600 or 6386 host processor.

INTENDED USERS

This manual is intended for use by the NCSC field installation technician assigned to support the installation and initialization of the Manager IV application. These technicians will also perform maintenance and trouble diagnostics of the system once it is operating. It is assumed that the installer has completed the prerequisite training courses to administer Manager IV and the UNIX operating system. See Appendix C, "Manager IV Installation Training."

Use this manual when all the materials needed for the Manager IV installation have arrived on-site and the host processor has been installed and tested by the field installation personnel. See Appendix D "Field Service Installation Tasks" for information on installing and testing the host processor. At this point the technician can begin the Manager IV installation.

DEFINITY Manager IV Planning and Implementation contains a list of pre-installation activities and worksheets which are referenced throughout this document.

For a complete list of Manager IV documents and other AT&T publications that you may want to check during installation, see Appendix A, "Supporting Documentation."

SECTION SUMMARY

Section 1 Understanding Manager IV Installation and Initialization	Presents an overview of the entire Manager IV installation and database initialization process including installation prerequisites, Manager IV file configuration, and sources of help for the installer.
Section 2 The Installation Process [3B2-600]	Introduces the automated installation programs and contains the procedures needed to install the Manager IV software tapes on the 3B2-600 processor.
Section 3 The Installation Process [6386]	Introduces the automated installation programs and contains the procedures needed to install the Manager IV software tapes on the 6386 processor.
Section 4 Testing and Defining Elements of Manager IV Database	Contains acceptance tests which must be performed after the installation process has been completed. These tests ensure that Manager IV system is properly installed.
Section 5 Initializing the Manager	Contains all the information and procedures needed to initialize the Manager IV database with switch data and nonswitch data.
Section 6 Running Acceptance Tests	Provides tests to check the key features of the Manager IV installation and initialization processes. These tests should be performed to ensure that Manager IV is working properly.
Section 7 Error Administration - Database Initialization	Lists solutions of typical problems that may occur during the installation or initialization processes.
Section 8 Manager IV-CDS Synchronization Feature	Provides installation information for CDS.
Section 9 Performing a Manager IV Update	Provides the steps needed to install release updates of Manager IV software.
Section 10 Manager IV Service Procedures	Provides information about operating modes, remote console operation, and responding to alarms.

Section 11 Administration of Customer Directory Service Synchronization	Provides information for the ongoing administration of CDS.
Section 12 Database Administration	Provides information about file compression, database files and installing additional devices.
Section 13 Error Administration: Diagnostics	Provides the diagnostic tables and error correction information.
Section 14 Directory of Tools	Provides the manual page for DBA tools.
Appendices	Contain information about installation tasks and training for the field service technician. They also include supporting documentation and TCM dialtone transactions and reports. Information is also supplied for upgrading a switch on a current Manager IV system.
Index	Provides page references to important procedures, terms, and concepts presented in this manual.

PROCEDURE CONVENTIONS

The installation procedures contained in this manual have the following format:

- **Title:** The title of each procedure appears at the top of the first page of the procedure.
- **Prerequisite:** Any tasks or activities that must be completed before running a procedure are listed under this heading.
- **Purpose:** This heading describes what each procedure will do.
- **Document(s) Used In This Procedure:** This heading shows any manuals that can provide additional information about the procedure.
- **CAUTIONS:** If necessary, cautions are listed in a procedure. Cautions describe potentially hazardous conditions associated with performing the procedure.
- **Note(s):** Outlines additional information that you should be aware of before performing the procedure. Note(s) may also appear within the procedure steps.
- **Procedure Steps:** This includes detailed steps for each procedure.

Entering Commands/Field Information

Enter: precedes commands that you must type.

Bold and *italic* print is used in the following way:

bold The bold print should be entered exactly as it appears.

italic Italics are used to indicate a site or application dependent variable that must be supplied by the person issuing the command. Do not enter the italic as it appears; instead, supply the correct information. Valid entries are listed below each command with an explanation; the entries themselves are in bold.

For example, in the command below, *SITEID* is a place holder for a valid entry, where **cat** and **.disk** must be entered exactly as they appear.

Enter: **cat *SITEID*.disk**

Unless otherwise noted, each line is a complete command. This means that the end of each command line you must press **RETURN** to execute it.

1. UNDERSTANDING MANAGER IV INSTALLATION AND INITIALIZATION

DEFINITY Manager IV installation and initialization depends upon the successful completion of the events, decisions, and data gathering processes outlined in *DEFINITY Manager IV Planning and Implementation*. This section of the manual is intended as a review of those processes as well as a general discussion of the events that occur during Manager IV installation and initialization.

Manager IV *installation* is the process of loading the Manager IV tapes and testing the software. Database *initialization* refers to the process of populating the Manager IV database with customer-specific switch and nonswitch data.

PARTICIPANTS IN INSTALLATION AND INITIALIZATION

Manager IV installation and database initialization involves the combined efforts of the NCSC and field installation personnel, the Implementation Team, and the customer. Each individual or group of individuals has distinct responsibilities as described in the following subsections.

The Installer

The Manager IV field installer has pre-installation responsibilities. The installation of Manager IV requires the combined efforts of the field installer and NCSC personnel. The field installer is responsible for installation of the Manager IV hardware and all peripheral equipment as well as UNIX. Activities specific to the field installer are explained in detail in Appendix D of this manual. NCSC personnel will remotely perform the installation and initialization of the Manager IV software and will direct the field installer to perform various functions locally (mount tapes, type in commands at the local console, change equipment options, observe indicators, etc.) Because the software installation is performed remotely, it is imperative that remote console access be established prior to installing the software. In addition, NCSC remote support must be pre-arranged (scheduled) with the remote support group at least 30 days before the installation start date.

The Manager IV field installer must complete the following installation activities marked with an "f." The NCSC performs the following activities preceded by a "c."

- (f) Verify that the hardware/software environment is ready to accept the Manager IV software. This may include interpreting acceptance tests performed by another vendor, installing the UNIX operating system on a custom system processor, and connecting peripheral hardware to the host processor.
- (f) Obtain specific site installation information by collecting the completed data collection forms from the customer's System Administrator. (Data collection forms are found in *Manager IV Planning and Implementation*.)
- (f) Gather and enter information about spare circuit packs on the administered switch products.
- (f & c) Load the Manager IV software, configure the product access ports available to Manager IV, and run tests after installation at the system console.
- (c) Enter product and corporation data.
- (c) Verify that Manager IV connects with each of the supported products.

- (c) Load the Translation, Recovery, Addition, and Conversion System (TRACS) tape and initialize the database with switch and nonswitch data.
- (c) Add Manager IV database changes made by the AT&T Services Division during switch installation.
- (f & c) Aid the customer in entering trunk, user, and set information.
- (c) Resolve initialization errors.
- (f & c) Run acceptance tests and also test the Manager IV alarm subsystem.
- (f & c) Perform a complete backup of Manager IV.
- (f & c) Turn Manager IV over to the customer.

The Implementation Team

The implementation Team is a group of AT&T and customer representatives who have been assigned to coordinate all Manager IV-related activities from presale to customer turnover and beyond. The Implementation Team is responsible for scheduling the Manager IV software installation and aiding the customer in gathering the data needed to initialize the database. The team is also responsible for making sure the hardware order is placed through the DOSS configurator and for making sure the order arrives at the customer site in time for the scheduled Manager IV installation.

The Implementation Team must also provide the installer with the configuration output, DOSS hardware order, and TRACS data.

See *Manager IV Planning and Implementation* for complete details on the structure and responsibilities of the Implementation team.

The Customer

During the Manager IV implementation stage, the customer, with the aid of the Implementation Team, must collect various types of data to be used to build the Manager IV database. The data is collected on forms provided in *Manager IV Planning and Implementation*. At installation, the customer's System Administrator is responsible for having those completed forms on hand.

After the Manager IV applications have been loaded and the database initialized, the customer must complete the following activities:

- Update the database so that it is synchronized with the product.
- Enter logins for Manager IV users.
- Enter switch and nonswitch data.

Miscellaneous Information and Documentation Checklist

In addition to the items and information already listed, the installer needs the following information and documentation in order to perform Manager IV installation and database initialization.

- Host processor documents.
- Customer System Document (CSD) for the Manager IV-supported switches.
- A list of locations of each switch that Manager IV will administer.
- Tape retrieval forms for new switches as well as those in use.
- Information on spare packs
- TRACS tape (switch translation data) for each System 85, DIMENSION System FP8, and DEFINITY Communication System Generic 2 switch in the network.
- The password for **root**.
- The passwords for smsa, smdba, and smmaint (to be set up by the Manager IV installation procedure.)

THE INSTALLATION AND INITIALIZATION PROCESS: AN OVERVIEW

The process of installing and initializing Manager IV depends on the events, decisions, and data gathering processes that occurred during the implementation phase. For example, the Manager IV software cannot be installed unless the hardware is installed and has passed diagnostic tests and the UNIX operating system is running. See *Manager IV Planning and Implementation* for further details on the implementation process.

Manager IV Pre-Installation

Pre-installation activities are performed by the Implementation Team and the customer and the Field installer. The following list describes some of the activities that each participant must complete before the site is ready to install the Manager IV software. For complete pre-installation activities, see the the Responsibility/Activity List in *Manager IV Planning and Implementation*.

Field Installer

- Verify that the hardware/software environment is ready to accept the Manager IV software. This may include interpreting acceptance tests performed by another vendor, installing the UNIX operating system, and connecting peripheral hardware to the host processor.
- Complete the Manager IV Port Configuration Form# sa2 for all ports.
- Gather information about spare packs on the administered switches.

Implementation Team and the Customer

Obtain specific site installation information by completing the data collection forms found in *Manager IV Planning and Implementation*.

Manager IV Installation

Manager IV installation is performed jointly by AT&T Service Technicians in the field and at the NCSC. The field installer will act at the direction of the NCSC. The customer still participates in some of the installation activities and the Manager IV System Administrator should be present during the entire process.

Manager IV Initialization

After it is verified that the Manager IV software is installed properly, you can begin the database initialization process. The initialization process populates the Manager IV database with switch translation data and and nonswitch data.

Switch translation data applies only to networks that include System 85, DEFINITY Generic 2, and DIMENSION System FP8 switches. Essentially, initializing the Manager IV database with switch data involves loading the TRACS tape(s) prepared by AT&T during the Manager IV implementation stage. For more information on the TRACS process refer to *Manager IV Planning and Implementation*.

Nonswitch data is collected during the implementation stage by the customer on forms provided in *Manager IV Planning and Implementation*. This type of data is stored in the Manager IV database for use

by System Administration and the TCM and FM applications. A sample list of the type of nonswitch data stored in Manager IV database follows.

- User Class/Login IDs
- Port Assignments
- Corporation and product definitions
- Set Attributes (physical attributes of terminals)
- Unassigned communication equipment (for inventory)

Manager IV database initialization consists of a variety of activities. The order in which some of the activities are performed is flexible. Consult with members of your Implementation Team for the scheduling of a particular site's activities.

1. For each System 85, DEFINITY Generic 2, and DIMENSION System FP8, the TRACS file is loaded onto the system, unpacked, split into smaller files (if necessary), and moved to the appropriate directory. [System 85 and DIMENSION only] A hardware table reflecting the status of the circuit packs in the switch is created. This table can be modified to include spare packs and remote modules and groups.
2. For a number portability environment, a network extension field is created.
3. The program to initialize the database is executed. (Processing on the host computer should be kept at a minimum while this program is running.)
4. While the database is being initialized, nonswitch data is entered by the customer into intermediate fields.
5. The network extension file is deleted after all nodes of the network have been initialized.
6. After switch data initialization for all switches is completed and all nonswitch data is entered, the nonswitch data is moved from the intermediate fields to the Manager IV database.
7. A full backup of the database is performed.
8. Initialization errors are resolved.
9. The system is tested and turned over to the customer.
10. The customer enters database changes and additions so that the Manager IV database accurately reflects the switch.

Complete procedures for initializing the Manager IV database with the switch translation data and nonswitch data can be found in Section 5, "Initializing the Manager IV Database."

GETTING HELP

There are other documents, service organizations, and training courses available to aid the AT&T service technician or customer who needs assistance. The AT&T publications available that will be useful during the installation of Manager IV are listed in Appendix A, "Supporting Documentation," along with the complete list of the Manager IV family of documents.

Support Services

A customer who needs assistance calls an 800 service number to report problems to the supporting customer service organization. Customers should be aware of the terms of their contracts and warranties with AT&T. Any questions the customer may have regarding the terms of contracts should be directed to the Account team.

The AT&T Service Organization that provides support for AT&T switch products also provides support for Manager IV. There are three tiers of customer service: field technician (Tier 1), remote support (Tier 2), and regional field technician (Tier 3). Any problems the field technician cannot solve at the customer's site are reported to the remote support technician. Likewise, problems the remote support technician is unable to resolve are forwarded to the next tier of support.

The field technician contacts the customer, visits the customer's premises, and completes installation and maintenance tasks that are appropriately performed at the customer's site, such as loading tapes and connecting equipment.

The remote service technician provides technical advice to the on-site field technician and monitors and coordinates the UNIX and Manager IV installation from a remote system console. The remote service technician does testing and correcting of troubles when necessary. The remote support technician also handles alarms generated automatically from the Manager IV host processor. If a trouble condition cannot be resolved by the remote support technician, the problems is escalated to the next tier.

The third tier of technical support consists of highly trained personnel who handle complex service problems. They are very familiar with the subsystem within the software and generally solve more complicated problems. Sometimes a third tier person is sent out to the site to coordinate with another third tier person at the services location. This tier also acts as the technical liaison between the AT&T Services Division and other field support organizations.

Training Courses

There are a variety of training courses available to the Manager IV customer and the AT&T service technician.

There are customer training courses available that concentrate on System Administration and the user-level aspects of each of the Manager IV applications. The Account Team recommends and schedules Manager IV and other related training courses for customers.

AT&T Services personnel receive training for Manager IV in the following areas: Manager IV installation, maintenance, system administration, and Manager IV application user training. Related training courses cover topics such as host processor administration, UNIX files and commands, UNIX system administration, and shell programming. The necessity for other training will depend on the features and configuration of each Manager IV installation. The Services Training Administrator recommends and schedules Manager IV and other related training courses for AT&T Services personnel. For specific information on available training, see Appendix C "Manager IV Installation Training."

OVERVIEW OF MAJOR EVENTS

The following table summarizes the major events that occur from the time the customer buys Manager IV to the time that Manager IV is turned over to the customer.

TABLE 1 Manager IV Overview of Major Events

Before Installation	Installation	Initialization	Turnover to Customer
1. Customer buys Manager IV.	10. [Field] Installer arrives on-site.	18. Installer verifies that all installation activities are complete.	27. Errors that occurred during initialization of switch and nonswitch data are corrected.
2. Implementation team formed and chaired by account team representative.	11. [Field] Installer verifies correct equipment is installed and operational.	19. [Field] Installer loads tape that contains switch translations.	28. [NCSC personnel] Installer updates database with changes that may have occurred during switch installation.
3. System is configured.	12. [Field] UNIX is installed and tested.	20. [NCSC personnel] Installer moves switch files.	29. [NCSC personnel] Installer tests Manager IV operations.
4. Communications system and computer system installed and tested.	13. [NCSC personnel] Manager IV is installed and tested. Installer logs on to Manager IV and does further testing.	21. [NCSC personnel] Installer updates hardware files, enters spare equipment information and remote module/group IDs.	30. [NCSC personnel] Installer performs complete backup of Manager IV system when synchronization of the Manager IV database and switch database is attained.
5. Hardware data gathered. For example, spare ports and packs.	14. [NCSC personnel] Installer completes the corporation add transaction. Installer completes the product add transaction for each of the products supported by Manager IV.	22. [NCSC personnel] For a number portability environment, installer creates network extension file.	31. Manager IV is turned over to the customer.
6. Nonswitch data gathered. For example, color of phone and user organization number.	15. [NCSC personnel] Installer configures, tests, and enables product connection.	23. Initialization of switch data starts.	32. Customer updates Manager IV database with additional database changes.
7. A copy of the switch tape is sent to TRACS.	16. Installer tests alarm subsystem.	24. If needed, initialization is restarted.	
8. Software part of the Manager IV order is built and tested by the National Customer Support Center (NCSC) by a sample run of the smconfig program.	17. [NCSC personnel] Initialization process for switch data is ready to begin.	25. Customer enters nonswitch data including trunk, user, and set data.	
9. Installer is sent to the site.		26. Initialization of nonswitch data started.	

2. THE INSTALLATION PROCESS [3B2-600]

The main purpose of this section is to provide you with the information and procedures for installation of the DEFINITY Manager IV software on the 3B2-600.

The installation of Manager IV is a straightforward process involving the execution of various UNIX commands and Manager IV installation scripts. The installation steps must be performed in the proper sequence and allow little in the way of deviation from customer to customer.

The "software placement" is determined by several factors specific to each system, for example, the number and size of the disks being used. Another factor is whether or not Manager IV is co-resident with other applications such as AT&T Monitor I or AT&T Trouble Tracker. These applications are designed to function independent of one another. Consult your application documentation or contact the National Customer Service Center at 1-800-548-8861 if you have questions about installing co-resident applications.

The following section provides you with requirements and guidelines for the installation of the Manager IV software.

Installation Guidelines

Installation is flexible but there are certain rules that must be followed for Manager IV to become operational.

Usr File System

The standard UNIX installation provides choices for the placement of the **/usr** filesystem. It is recommended that **/usr** be installed on system drive 1 (3B2-600 administration refers to disk numbers starting with 1 and not 0). In general, the **/usr** filesystem and **/root** occupy drive 1 exclusively.

Journal Devices and CORE

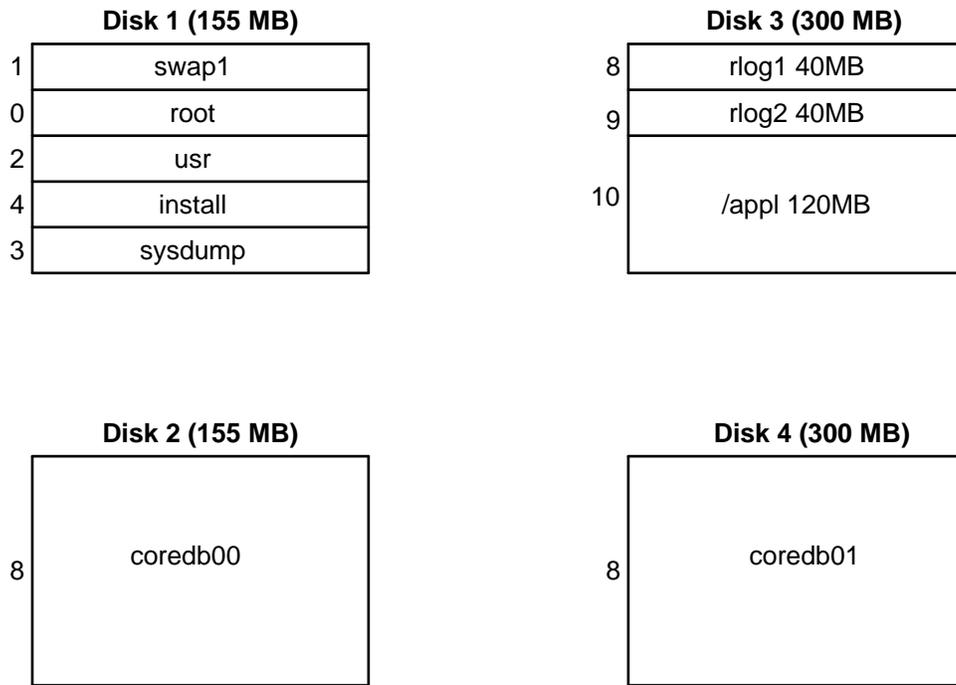
The journal devices **/rlog1** and **/rlog2** must be 40 megabytes (77960 blocks unrounded) each. These areas can be located on any disk that carries adequate space other than drive 1. They can not, however, be located on the same disk as the **CORE** devices. Additionally, if they are to be located on the same disk as the Manager IV software their areas must be partitioned first.

Manager IV Software

The Manager IV software requires 150 megabytes (292350 blocks unrounded) of space. It is recommended that it is placed on any disk other than the disk containing the **/usr** and **/(root)** file system. The Manager IV software can actually reside in the **/usr** filesystem as long as there is sufficient space. A situation of this sort might occur in co-resident configurations where **/usr** has already been installed on a drive other than drive 1.

Manager IV Sample Configuration

The following is a sample of how the above devices could be installed on a system. It consists of a pair of 155 megabyte and 300 megabyte drives with Manager IV as the only application currently installed.



Manager IV Sample Configuration

Installation Steps

Basically there are eight steps to installation.

1. Modify the UNIX tunable parameters.
2. Add the group id and administrative users for Manager IV.
3. Partition the software area for Manager IV and the Journal devices if they are on the same drive.
4. Read in the Manager IV software.
5. Run the Manager IV Configurator **smconfig**.
6. Partition the CORE database and Journal devices (if not already done so).
7. Load the Manager IV system using **sminstall**
8. Execute **startsm** to bring up Manager IV.

Procedure: Modify UNIX Tunable Parameters [3B2-600]

Purpose:

The following procedure provides you with the steps for modifying the UNIX tunable Parameters to allow for Manager IV installation.

Prerequisites:

The UNIX operating system and required utilities have been installed. In addition, the **/usr** file system has been configured.

Note: The Manager IV software has specific memory requirements that differ from the current CSM V4 configuration. These memory requirements necessitate the use of new values (non-default) when performing a full system restore. If these requirements are not fulfilled the installation will **fail**. See Appendix D "Field Service Installation Tasks" for specific information.

Document Used In This Procedure:

- *AT&T 3B2 Computer UNIX System V Release 3 System Administrator's Guide*

Procedure Steps:

1. Login as root and change to the **/etc/master.d** directory.
Enter: **cd /etc/master.d**
2. As a precaution, create a backup directory and copy the current kernel files to this backup directory.

Enter: **mkdir bckdir**

Enter: **cp kernel msg shm sem bckdir**

where *bckdir* = the name of the directory to which the kernel files are to be copied.

NOTE: The above backup directory can be deleted after the kernel parameter modifications have been completed and verified.

3. Using a Unix text editor, update the designated parameters.

NOTE: The tables below provide the file name, default values and those values needed by Manager IV in order to operate.

For more information, please see the "Tunable Parameters" section of the above referenced manual.

These parameter updates apply to Unix release 3.2.1 only.

File name: **kernel**

MANAGER IV KERNEL PARAMETERS		
	DEFAULT	MANAGER IV
MAXUP	30	50

File name: **msg**

MANAGER IV MESSAGE QUEUE PARAMETERS		
	DEFAULT	MANAGER IV
MSGMAP	100	200
MSGMAX	2048	8192
MSGMNB	4096	16384
MSGMNI	50	200
MSGTQL	40	200 (incremental + 160)
MSGSEG	1024	3072

File name: **sem**

MANAGER IV SEMAPHORE PARAMETERS		
	DEFAULT	MANAGER IV
SEMMAP	10	350 (incremental +340)
SEMMNI	10	350 (incremental +340)
SEMMNS	60	650 (minimum)
SEMMNU	30	350 (incremental +320)
SEMMSL	25	64
SEMAEM	16384	32767

File name: **shm**

MANAGER IV SHARED MEMORY PARAMETERS		
	DEFAULT	MANAGER IV
SHMMAX	131072	2097152

NOTE: The term incremental designates the current parameters for Manager IV plus the default.

4. Compile the kernel changes.

Change to the **/boot** directory and execute **mkboot**.

Enter: **cd /boot**

Enter: **mkboot -k KERNEL**

Enter: **mkboot MSG SHM SEM**

5. Activate the kernel changes by shutting down to firmware mode and booting from **/etc/system**.
6. After the system has been rebooted, verify that the kernel changes are present.

Enter: **sysdef**

The output from the above command will provide you with a list of the tunable parameters.

END OF PROCEDURE

Procedure: Add The Group ID And Admin. Users For Manager IV [3B2-600]

Purpose:

The following procedure provides you with the steps for adding a group ID for Manager IV and also administrative users to the newly designated group.

Prerequisites:

UNIX tunable parameters must be modified before performing this procedure. See "Procedure: Perform Modify UNIX Tunable Parameters [3B2-600]" if necessary.

Document Used In This Procedure:

- *AT&T 3B2 Computer UNIX System V Release 3 System Administrator's Guide*

Procedure Steps:

1. Add the group ID.

Enter: **sysadm usermgmt**

Notes: The group ID for Manager IV is **smgr**.

The group ID number is the system default.

The group ID is added using the **addgroup** item of the User Management Menu (**usermgmt**).

See "Procedure 2.1" of section 2 in the *Unix System Administrator's Guide* for specific steps to add the group ID.

WARNING: If Manager IV is co-resident with other system management software, check `/etc/group` before performing the **sysadm addgroup** command to ensure that your group ID has not already been used.

If your ID is already in use and you attempt to install Manager IV with that ID, the installation will not be successful.

2. Add users to the group (**smgr**) that you defined above.

Notes: The users to be added are: **smgr, smsa, smdba, smmaint**.

The user's ID number may be the system default.

The users are added using the **adduser** item of the same menu used to add the group ID.

Make a note of the home directory in which these users were defined. It will be needed further along in the installation. The default is `/usr` but you are free to designate one of your own choosing.

See "Procedure 2.1" of section 2 in the *Unix System Administrator's Guide* for specific steps to add users.

END OF PROCEDURE

Procedure: Partition The Software Area For Manager IV [3B2-600]

Purpose:

The following procedure provides you with information for partitioning the journal devices and application areas for subsequent installation of the Manager IV software.

Prerequisites:

The group ID and administrative users must be defined before performing the following procedure. See "Procedure: Add The Group ID And Admin. Users For Manager IV [3B2-600]" if necessary.

Document Used In This Procedure:

- *AT&T 3B2 Computer UNIX System V Release 3 System Administrator's Guide*

Notes: Partitioning of the software application area is necessary only if there currently is no space available on the drive(s) which meets the software size requirements.

The journal devices and Manager IV can be located on any disk that provides enough space. The journal devices also require that they can not be located on the same disk as the CORE database.

The journal devices (rlogs 1 and 2) require 40 megabytes each (77960 blocks unrounded) and must be identical in size.

Manager IV software requires 150 megabytes (292350 blocks unrounded).

Procedure Steps:

1. Partitioning the journal devices (rlogs 1 and 2).

Enter: **sysadm diskmgmt**

Notes: If the journal devices are to be partitioned on the same disk as the application software, they must be partitioned first.

The partitioning is done using the **partitioning** command of the Hard Disk Management Menu.

When prompted, enter the number of blocks desired (77960) and then the name. In the case of the journal devices, the names are **/rlog1** and **/rlog2**.

See *Unix System Administrator's Guide* for specific steps.

2. Partitioning the application software file system is done in the same manner as the journal devices. You simply substitute the correct number of blocks (233880) and the correct file system name when prompted.

NOTE: Unlike the journal devices the application software name can be any name that you choose. Remember, though, that this name must be recognizable to you and any alternate system-administrator level users.

3. Note that the areas have been partitioned.

Enter: **mount**

System Response [Sample]:

```

/on /dev/dsk/clt1d0s0 read/write on Wed May 10 10:04:56 1989
/usr on /dev/dsk/clt1d0s2 read/write on Wed May 10 10:07:18 1989
/rlog1 on /dev/dsk/clt5d0s8 read/write on Wed May 10 10:17:59 1989
/rlog2 on /dev/dsk/clt5d0s9 read/write on Wed May 10 10:19:09 1989
/appl on /dev/dsk/clt5d0sa read/write on Wed May 10 10:21:12 1989

```

where /appl = the application file system name chosen for Manager IV in the previous step.

Enter: **cat /etc/fstab**

System Response [Sample]:

```

/dev/dsk/clt1d0s2 /usr
/dev/dsk/clt5d0s8 /rlog1
/dev/dsk/clt5d0s9 /rlog2
/dev/dsk/clt5d0sa /appl

```

where /appl = the application file system name chosen for Manager IV in the previous step

END OF PROCEDURE

Procedure: Read in The Manager IV Software [3B2-600]

Purpose:

The following procedure provides you with the steps to read in the Manager IV software.

Prerequisites:

The application software area must be partitioned before performing this procedure. See "Procedure: Partition The Software Area For Manager IV [3B2-600]" if necessary.

Document Used In This Procedure:

- *AT&T 3B2 Computer UNIX System V Release 3 System Administrator's Guide*

Note: Be sure to make a note of labels of all tapes that are received and to load any incremental tapes last.

Procedure Steps:

1. Change to the */appl* directory and create a new directory with the name **smgr**.

Enter: **cd /appl**

mkdir smgr

where: *appl* = the application software file system name designated in the previous procedure.

2. Change the owner and group of **smgr** to **smgr**.

Enter: **chown smgr smgr**

chgrp smgr smgr

3. Change the mode of this directory to 775.

Enter: **chmod 775 smgr**

4. Change into this new directory.

Enter: **cd smgr**

5. Increase the process limit.

Enter: **ulimit 8192**

6. Mount the Manager IV software Tape(s) on the tape drive and read in its contents.

Enter: **su smgr -c "cpio -iBcumdv </dev/rSA/qtape1 >>tape.out 2>&1 & "**

Notes: The above command will enable you to do the following:

- Execute the command in the background in order not to tie up your terminal.
- Direct the standard output and any possible errors to the file **tape.out**. This allows you to monitor the progress of the tape if you wish. It also provides you with a list of the contents of what is contained on the tape.

When reading in multiple tapes, release tapes must be read first followed by any incremental update tapes. Multiple tapes require executing this step for each new tape.

To monitor tape progress:

Enter: **tail -f tape.out**

or

Enter: **cat tape.out**

At this point, after the tape has been read, you are now ready to run the Manager IV Configurator.
See the following procedure.

END OF PROCEDURE

Procedure: Run The Manager IV Configurator (smconfig) [3B2-600]

Purpose:

This procedure includes instructions for starting and restarting the automatic configuration program, **smconfig**. Input into **smconfig** is taken from the configuration forms filled out during the planning stage by the Implementation Team. To run **smconfig** you need the most current copies of:

- Input Parameter Worksheet
- Hardware Summary Report
- DOSS printout of the application and hardware configuration
- Automatic Alarm Reporting information.

Prerequisites:

- The Manager IV software must be present. See "Procedure: Read In The Manager IV Software [3B2-600]" if necessary.
- You should be logged on as root.
- All hardware must be installed.

Note: To restart **smconfig** specify: **sh smconfig SITEID -r**.

Procedure Steps:

1. Change to the */appl/smgr/INSTALL* directory.

Enter: **cd /appl/smgr/INSTALL**

where: *appl* = the application software file system name previously designated for Manager IV.

2. Start smconfig.

Enter: **sh smconfig SITEID**

where *SITEID* = a string of up to seven characters assigned by the installer to identify the site.

System Response:

The system will respond with the title of the procedure (see "Sample Run of smconfig" following this procedure) and then prompt for comments.

3. Enter an informative comment about this run; for example "First run of smconfig."
4. From this point, smconfig continues to prompt you for input. Compare the information in the parentheses with the information included on the data sheets (see Purpose).

Enter:

- The information in parentheses is default data in either a fixed numerical/string value, for example, No. of TCM stations (**1000**), or an algorithm/formula, for example, No. of 12 button stations (**TCM stations/5**). If the information in parentheses agrees with the data sheets, press **RETURN**.
- If the information does not agree, enter the data from the sheets.

Note: Be sure to record the number of blocks required by the CORE database. It will be needed in the next procedure.

5. Move configuration files to standard names and directories.

Note: The last step performed by the configurator is to transfer the configuration files from their present names to standard Manager IV names. Enter a **y** in response to the following question.

```
*** Commencing Manager IV Configurator Step 4 ***

Do you want site configuration files moved to standard names (y/n)?
```

Enter:**y**

The above input will move the following files to standard names and directories.

MANAGER IV Site Configuration Files		
site dependent file name	standard file name	new directory
siteid.def	def	\$SYSROOT/work/tables
siteid.log	mk_log	\$SYSROOT/etc
siteid.env	envsite	/etc
siteid.smalm	smalmenv	\$SYSROOT/etc

Sample Run of smconfig:

```

                Definity Manager IV Configuration Procedure
                =====
Site Identifier: ATT
DEFINITY Manager IV Customer Configurator      Wed May 10 11:04:51 1989

Customer Name ([  ]) > AT&T
comments ([  ]) > FIRST RUN Manager IV CONFIG

Enter configuration options:
Simultaneous busy-hour users? ( 2) >

Enter DEFINITY Manager IV configuration parameters:
SWITCHES & ADJUNCTS:
Total No. of System 85s and Generic 2s ( 1) >
No. of Generic 2.1s ( 0) > 1
No. of Generic 2.2s ( 0) > 1
No. of Dimension FP8s ( 0) >
No. of System 75s and Generic 1s ( 0) >
STATIONS:
No. of TCM Stations (10000) >
No. of 12-button Stations (No. of TCM Stations/5) >
No. of 36 button Stations (No. of TCM Stations/50) >
TRUNKS:
No. of FM Trunks (no. of TCM Stations/7) >
No. of Translated Authorization Codes (No. of TCM Stations/5) >
No. of System 85s and Generic 2s with Tenant Services Activated ( 0) >
Further input details? (n) >

DEFINITY Manager IV Filesystem and Raw Device sizes:

        appl      area requires      292350 blocks
        rlog1     area requires      77960 blocks
        rlog2     area requires      77960 blocks
        CORE      area requires      864490 blocks

Manager IV configuration completed.  See file 'ATT.m' for results.
Another configuration? (n) >

```

```
*** Manager IV Configurator Step 1 completed successfully ***
*** Commencing Manager IV Configurator Step 2 ***
Created controller's definition file
*** Manager IV Configurator Step 2 completed successfully ***
*** Commencing Manager IV Configurator Step 3 ***
Creating site dependent environment list ...

If Manager IV uses bulk Customer Directory Updates via 9-track tape,
please enter the full path name for the tape device or hit return if NA.
Tape devices in /dev/rmt are:

c0s0    c0s0n    c0s0nr   c0s0r

Enter full path for TAPE device or <CR> if not used:

Will the customer have automatic alarm reporting capability (y/n)? n

The DEFINITY Manager IV root directory is set to /appl/smgr.
Is this correct? (y/n) y

Site dependent environment lists created successfully

*** Manager IV Configurator Step 3 completed successfully ***
*** Commencing Manager IV Configurator Step 4 ***

Do you want site configuration files moved to standard names (y/n)? y

*** Manager IV Configurator Step 4 completed successfully ***
```

END OF PROCEDURE

Procedure: Partition The CORE Database [3B2-600]

Purpose:

The following procedure provides you with the information for partitioning the CORE database.

Prerequisites:

The Manager IV configurator (smconfig) must be completed before executing the following procedure. See "Procedure: Run The Manager IV Configurator (smconfig) [3B2-600]" if necessary.

Document Used In This Procedure:

- *AT&T 3B2 Computer UNIX System V Release 3 Administrator's Guide*

Procedure Steps:

1. Partitioning the CORE database.

Enter: **sysadm diskmgmt**

Notes: The CORE database can not be partitioned on the same disk as the journal devices.

If there is insufficient space on a single disk the CORE database can be spread across several disks as long as you adhere to the above requirement.

The partitioning is done using the **partitioning** command of the Hard Disk Management Menu.

When prompted, enter the number of blocks needed (obtained by using **smconfig** in the previous procedure) and then the name, i.e. **/coredb00**. The CORE database name ends with two digits the leading digit is always 0 the trailing digit can be from 0 to 7 inclusive.

See *UNIX System Administrator's Guide* for specific steps.

2. Note that the CORE area(s) have been partitioned.

Enter: **mount**

System Response [Sample]:

```
/on /dev/dsk/clt1d0s0 read/write on Wed May 10 10:04:56 1989
/usr on /dev/dsk/clt1d0s2 read/write on Wed May 10 10:07:18 1989
/rlog1 on /dev/dsk/clt5d0s8 read/write on Wed May 10 10:17:59 1989
/rlog2 on /dev/dsk/clt5d0s9 read/write on Wed May 10 10:19:09 1989
/appl on /dev/dsk/clt5d0sa read/write on Wed May 10 10:21:12 1989
/coredb00 on /dev/dsk/clt5d1s8 read/write on Wed May 10 11:12:26 1989
/coredb01 on /dev/dsk/clt5d1s9 read/write on Wed May 10 11:14:27 1989
```

Enter: **cat /etc/fstab**

System Response [Sample]:

```
/dev/dsk/clt1d0s2 /usr
/dev/dsk/clt5d0s8 /rlog1
/dev/dsk/clt5d0s9 /rlog2
/dev/dsk/clt5d0sa /appl
/dev/dsk/clt5d1s8 /coredb00
/dev/dsk/clt5d1s9 /coredb01
```

3. At this point you should save the disk partitioning parameters for recovery purposes.

Enter: **cd /etc/vtoc**

prvtoc /dev/rSA/disk number > file name

Notes: This command should be executed for each disk that has been partitioned.

The resulting files should be saved on tape using standard UNIX commands.

END OF PROCEDURE

Procedure: Execute The Installation Script (sminstall) [3B2-600]

Purpose:

The following procedure provides you with instruction for executing the installation script (**sminstall**) for Manager IV.

Prerequisites

The partitioning of disk areas, if necessary, must be completed before installing the Manager IV software. See "Procedure: Partition The Software Area For Manager IV [3B2-600]" and "Procedure: Partition The CORE Database [3B2-600]," if this has not been done.

In addition, the **smconfig** script must be run before executing this procedure. See "Procedure: Run The Manager IV Configurator (smconfig) [3B2-600]" if necessary.

Notes: **BREAK** will interrupt the **sminstall** script at the current command. The system will respond with: "Do you want to exit (y/n)?". Answer **y** to exit at that point; answer **n** to resume.

To restart **sminstall**, enter: **sh sminstall**

To specify a particular phase to execute designate the **-p** option. To continue from this chosen phase onward, add the **-c** option to the command line. To ask for help, input the **-h** option on the command line.

This procedure should be executed in multiuser mode.

Procedure Steps:

1. Make sure that you are in the */appl/smgr/INSTALL* directory.

Enter: **cd /appl/smgr/INSTALL**

where *appl* = the application software file system name previously designated for Manager IV.

2. Execute the installation script.

Enter: **sh sminstall**

After generating the procedure title and installation release version the system provides the local date and time and prompts for confirmation.

System Response:

```
DEFINITY Manager IV Installation Procedure
=====
Installation Release: <release name>   Version: <version number>

Checking for presence of Mgr IV parameter files.

Local date and time : <ddd mmm date hh:mm:ss <timezone year>
Is the date and time, including timezone EDT , correct? (y/n)
```

3. Verify the date, time, and time zone information.
 - If incorrect, then set the proper time and restart **sminstall**.
 - If correct, enter: **y**.

At this point the system begins executing the following installation phases:

- Phase 1 *Check for primary Manager IV login in the system password file*
 - Phase 2 *Add Manager IV Administrative logins to userlist*
 - Phase 3 *Convert CORE and RLOGS to raw devices and allocate CORE database sizings in fsfile*
 - Phase 4 *Create the Manager IV and CORE databases*
 - Phase 5 *Label CORE database devices*
 - Phase 6 *CORE database and log areas sized and labeled.*
4. Upon successfully completing all phases of **sminstall**, bring up the Manager IV application.

Note: At this point you no longer need to provide the path /appl/smgr to reach the Manager IV root directory. The string **\$\$SYSROOT** now translates to the Manager IV root directory.

Enter: **. etc/envlist**

Enter: **\$\$SYSROOT/etc/startsm**

System Response [Sample]:

```

                Now doing cleanup of ipc items.
Semaphore semid 702 successfully initialized
Semaphore semid 703 successfully initialized
Semaphore semid 704 successfully initialized
Manager IV Semaphores initialized
Manager IV booting to normal mode ...
```

Note: If you need more information regarding the **startsm** (and also the **stopsm**) command, see the *DEFINITY Manager IV System Administration*.

If this customer has purchased the optional Switch Support Base (SSB) software for maintenance and admin procs for the Generic 2 switches, see the following section.

If this customer has not purchased SSB, then you can begin defining and testing elements of Manager IV. See section 4, "Defining And Testing Elements Of Manager IV."

END OF PROCEDURE

SWITCH SUPPORT BASE SOFTWARE

This section provides you with the necessary steps to install and configure the optional Switch Support Base (SSB) for Manager IV. Briefly, Switch Support Base software enables the customer to operate an enhanced version of the Proc Mode application. The SSB software provides you with a fully prompted user interface to the Generic 2 switch. For information regarding the operation of this Enhanced Mode see *Manager IV System Administration*.

Procedure: Load the Switch Support Base Software [3B2-600]

Purpose:

This procedure provides you with the necessary steps to install and configure the Switch Support Base (SSB) software for Manager IV.

Procedure Steps:

1. Log in as root (*/*).
2. Execute the environment list.

Enter: `./etc/envlist`

3. Create a target base directory where the SSB files are to be loaded.

NOTE: The recommended target base directory for the SSB files is `$SYSROOT/proc/SSB`.

4. Using the UNIX sysadm transaction, select the **installpkg** option and follow the instructions.
5. Using a UNIX editor add the following information to the `/etc/envlist` and the `$SYSROOT/etc/envlist` files.

Enter: `SSB = fjn`
`export SSB`

where *fjn* = the full path name of the target base directory designated in step 3 of this procedure.

NOTE: If the environment variable is not set, the Manager IV software will default to Basic Mode.

6. Execute the envlist to activate the changes.

Enter: `./etc/envlist`

At this point you can begin defining and testing elements of Manager IV. See section 4, "Defining And Testing Elements Of Manager IV."

END OF PROCEDURE

ENVIRONMENT VARIABLES

After executing the installation script (sminstall) the environment variables are available to the system. Employing these variable names allows you to access needed files without using the fullpath name. This is especially useful since every system could potentially house files in different areas. The following list defines the environment variables used throughout this manual.

LOG the area where all logs are kept
PROG user executable programs
SYSGEN the directory for system utilities
SYSROOT defines the /(root) directory for the Manager IV software
WORK work directory

3. THE INSTALLATION PROCESS [6386]

The purpose of this section is to provide you with the information and procedures for installation of the DEFINITY Manager IV software on the 6386 processor.

The installation of Manager IV is a straightforward process involving the execution of various UNIX commands and Manager IV installation scripts. The installation steps must be performed in the proper sequence and allow little in the way of deviation from customer to customer.

The "software placement" is determined by several factors specific to each system, for example, the number and size of the disks being used. Another factor is whether or not Manager IV is co-resident with other applications such as AT&T Monitor I or AT&T Trouble Tracker. These applications are designed to function independent of one another. Consult your application documentation or contact the TSC at 1 800 548-8861 if you have questions about installing co-resident applications.

The following section provides you with requirements and guidelines for the installation of the Manager IV software.

Installation Guidelines

Installation is flexible but there are certain rules that must be followed for Manager IV to become operational.

Usr File System

The standard UNIX installation provides choices for the placement of the **/usr** filesystem. It is recommended that **/usr** be installed on system drive 0. In general, the **/usr** filesystem and **/root** occupy drive 0 exclusively.

Journal Devices and CORE

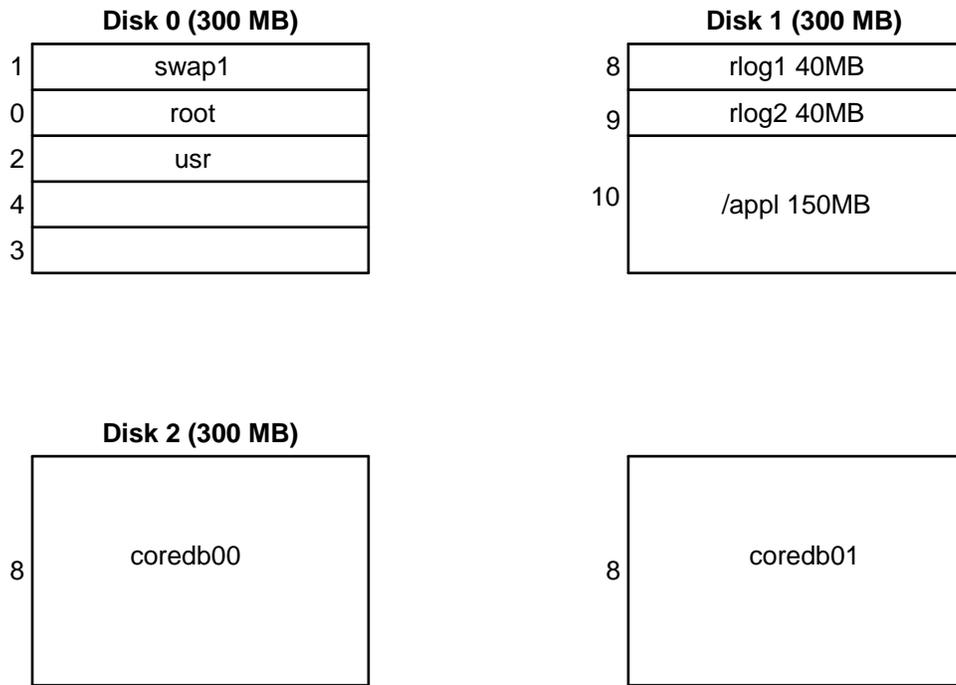
The journal devices **rlog1** and **rlog2** must be 40 megabytes (approximately 56 cylinders) each. These areas can be located on any disk that carries adequate space other than drive 0. They cannot, however, be located on the same disk as the **CORE** devices. Additionally, if they are to be located on the same disk as the Manager IV software their areas must be partitioned first.

Manager IV Software

The Manager IV software requires 150 megabytes (approximately 225 cylinders) of space. It is recommended that it is placed on any disk other than the disk containing the **/usr** and **/(root)** file system. The Manager IV software can actually reside in the **/usr** filesystem as long as there is sufficient space. A situation of this sort might occur in co-resident configurations where **/usr** has already been installed on a drive other than drive 0.

Manager IV Sample Configuration

The following is a sample of how the above devices could be installed on a system. It consists of a single internal 300 megabyte and two 300 megabyte drives with Manager IV as the only application currently installed.



Manager IV Sample Configuration

Installation Steps

Basically there are eight steps to installation.

1. Perform UNIX tunable parameter modifications
2. Add the group id and administrative users for Manager IV.
3. Partition the software area for Manager IV and the Journal devices if they are on the same drive.
4. Read in the Manager IV software.
5. Run the Manager IV Configurator **smconfig**.
6. Partition the CORE database and Journal devices (if not already done so).
7. Load the Manager IV system using **sminstall**
8. Execute **startsm** to bring up Manager IV.

Procedure: Perform UNIX Tunable Parameter Modifications [6386]

Purpose:

The following procedure provides you with the steps for modifying the UNIX tunable parameters to allow for Manager IV installation.

Prerequisites:

The UNIX operating system, required utilities and the `/usr` file system must be present before you can execute this procedure. See Appendix D "Field Service Installation Tasks" if any prerequisites have not been completed.

Documents Used In This Procedure:

- *UNIX System V/386 Release 3.2.2 Operations/System Administration Guide*
- *UNIX System V/386 Release 3.2.2 User's/System Administrator's Reference Manual*

Notes: The tables below provide the default values and the values needed by Manager IV in order to operate.

These parameter values apply to UNIX Release 3.2.2 only.

Procedure Steps:

1. Log in as root and using a UNIX text editor, update the `/etc/conf/ct.d/mtune` file with the following parameter values.

Notes: The fields of the parameters that are to be updated are located in the last column on the right of your screen.

These values are the *minimum* required by Manager IV.

Below, the term *incremental* designates the current value plus the value needed by Manager IV.

If the current value is greater than required by Manager IV, the field need not be updated.

MANAGER IV KERNEL PARAMETERS		
	DEFAULT	MANAGER IV
MAXUP	30	50

MANAGER IV MESSAGE QUEUE PARAMETERS		
	DEFAULT	MANAGER IV
MSGMAP	100	200
MSGMAX	2048	8192
MSGMNB	4096	16384
MSGMNI	50	200
MSGTQL	40	200 (incremental + 160)
MSGSEG	1024	3072

MANAGER IV SEMAPHORE PARAMETERS		
	DEFAULT	MANAGER IV
SEMMAP	10	350 (incremental +340)
SEMMNI	10	350 (incremental +340)
SEMMNS	60	650 (minimum)
SEMMNU	30	350 (incremental +320)
SEMMSL	25	64
SEMAEM	16384	32767

MANAGER IV SHARED MEMORY PARAMETERS		
	DEFAULT	MANAGER IV
SHMMAX	131072	2097152

The additional parameters that need to be updated can be found in the 386 manuals referenced at the beginning of this procedure.

2. Add the parameters and their values, from the previous tables to the `/etc/conf/cf.d/stune` file.

In this file, you must also update the **MAXUP** parameter which is already present.

Notes: The fields of the parameters that are to be updated are located in the last column on the right of your screen.

Match the values that you designated in the mtune file even if it means that some values need not be updated.

3. Rebuild the kernel.

Enter: **cd /**

Enter: **/etc/conf/bin/idbuild**

4. Activate the changes by shutting down and rebooting the system.

END OF PROCEDURE

Procedure: Add The Group ID And Admin. Users For Manager IV [6386]

Purpose:

The following procedure provides you with the steps for adding a group ID for Manager IV and also users to this newly designated group.

Prerequisites:

UNIX tunable parameter modifications must be completed before performing this procedure. See "Procedure: Perform UNIX Tunable Parameter Modifications [6386]" if necessary.

Document Used In This Procedure:

- *UNIX System V/386 Release 3.2.2 Operations/System Administration Guide*

Procedure Steps:

1. Add the group ID.

Log in as **root**.

Using a UNIX text editor, update the **/etc/group** - (System Group) file. Add the following string to the end of the file.

Enter: **smgr::nnnn:**

where *nnnn* = the group id that is any number not currently in use.

2. Obtain the list of current user ids.

Enter: **cat /etc/passwd**

Make a note of the user ids.

3. Add the users to the group (**smgr**) that you defined above.

Notes: The users to be added are: **smgr, smsa, smdba, smmaint**.

Users are added via the **adduser** command.

Enter: **adduser login ID User-Name User-ID Home-Directory**

where

login ID = smgr, smsa, smdba, or smmaint.

User-

Name = Is the name or title that you want to assign to the login id. For example, the **smgr** login id might be named **Mgr.IV Admin**. If a title contains embedded spaces it must be enclosed in double quotes (").

User-ID = Is the numerical id that will be associated with the login-ID. It can be from 100 to 5000 inclusive and must be unique for each user. Use the list from the previous step to ensure that you do not duplicate any of the user ids.

Home-Directory = This is the home directory where the user resides. Generally, these users will be placed in the **/usr** directory but you are free to designate one (a home directory) of your own choosing based on your particular configuration. If the home directory is other than **/usr**, be sure to make a note of it since it will be needed further along in this installation.

Designate a password for each added login.

After entering the login information, the system will prompt you for a password for the particular user.

Note: Passwords can be up to 8 characters in length with at least two alphabetic characters and at least one numeric or special character.

Edit the smgr group ID in the password file.

Using a text editor, update the **/etc/passwd** file. For each of the users that have been added, change the fourth field on each entry to the group id number that was specified in Step 1.

5. For each added user, change the group to the home directory path that you designated in the previous step.

Enter: **chgrp smgr hdp**

where hdp =the home directory path from the previous step, i.e. **/usr/smgr**.

END OF PROCEDURE

Procedure: Partition The Software Area For Manager IV [6386]

Purpose:

The following procedure provides you with information for partitioning the journal devices and application area for subsequent installation of the Manager IV software.

Prerequisites:

UNIX Tunable parameter modifications must be completed before performing this procedure. See "Procedure: Perform UNIX Tunable Parameter Modifications [6386]" if necessary.

You must be logged on as / (root) to perform this procedure.

Document Used In This Procedure:

- *AT&T UNIX System V/386 Release 3.2.2 Operations/System Administrator's Guide*
- *AT&T UNIX System V/386 Release 3.2.2 User's/System Administrator's Reference Manual*

Notes: Partitioning of these application areas is necessary only if there currently is no space available on the drive(s) which meets the software size requirements.

The journal devices can be located on any disk that provides enough space. The journal devices also require that they cannot be located on the same disk as the CORE database.

As a supplement to the procedure steps you can find specific screen output and prompts in the *386 Operations/System Administrator's Guide*.

Procedure Steps:

1. Partition the selected disk.

Enter: `/etc/diskadd c0t x dn`

where x = The target controller number.

where n = The disk number on the target controller.

The system will ask you if you want to partition the disk at 90% UNIX and 10% MS-DOS. You want the entire disk partitioned for UNIX.

Enter: **n**

2. Select the first menu item (Create a partition) on the screen.

Enter: **1**

3. Designate the type of partition that you want to create.

Enter: **1** (UNIX system)

4. Select the percent of the disk that is to be used for UNIX.

Enter: **100**

5. Activate the partition.

Enter: **y**

The system will respond with data regarding the partition, such as status and type.

6. Update the disk configuration and exit the partition screen.

Enter: **4**

7. Perform a surface analysis of the disk.

Enter: **y**

Note: When the surface analysis has completed, you can begin the process of creating the file systems.

8. Indicate that the current allocation is unacceptable.

Enter: **n**

9. Indicate that you do not want additional swap space on this disk.

Enter: **n**

10. Designate the number of file systems that you want on the disk and a name for each.

Notes: If the journal devices are to be located on this disk (along with the application) they must be partitioned first. The names for the journal devices are **rlog1** and **rlog2**.

The application software name can be any name that you choose i.e., *appl*. Remember, though, that this name must be recognizable to you and any alternate system administrator level users.

The journal devices (rlogs 1 and 2) require 40 megabytes each (approximately 56 cylinders) and must be identical in size.

Manager IV software requires 150 megabytes (approximately 225 cylinders).

11. Define the size, in cylinders, that you want allocated for each partition. See the "Notes" at the beginning of this procedure for size values.

At this point the system will generate specific information regarding the partition(s) such as, number, name, and size (in cylinders and bytes).

12. Indicate that the current allocation is acceptable when prompted.

Enter: **y**

13. Indicate that you want the new filesystems mounted automatically.

Enter: **y**

The system will return a message that the filesystems are being created and then generate the diskadd completion message.

At this point you will be returned to the system prompt.

Use the following table to determine where to proceed from this point.

If	Then
You do not have other file systems (other than CORE) to add on separate disks.	Continue to the next step.
You have other file systems (other than CORE) to add on separate disks.	Repeat steps 1 to 13 for each disk.

14. Obtain the file system names.

Enter: **mount**

Make a note of the file system names.

15. Unmount the file systems that you created on the drive.

Enter: **umount** *fsn*

where *fsn* = The full path file system name obtained from the previous step.

Note: The file system name contains the drive number. For example, rlog1 would be called rlog1002.

16. Edit the **/etc/fstab** (filesystem) file.

Remove the raw device names, that is (rlog1 and rlog2).

Change the real file system names to the name that you want.

The system adds the disk number to the filesystem name when it is created. For example, appl on drive 1 would be named *appl002*. You must remove the *002* from this name.

17. Edit the **/etc/partitions** file.

Remove the disk number from the device names.

Add the following information to the raw, that is (rlog1 and rlog2) device filesystem name that you created in the previous steps.

Enter: , **perm = NOMOUNT**

18. Change the mount points for the Manager IV application software area.

Change to the **/(root)** directory.

Enter: **cd /**

Move the directories to new names that do not contain the drive number.

Enter: **mvdir** *oldfsn newfsn*

where *fsn* = the directory name with the drive number.

newfsn = the new directory name without the drive number, i.e. *appl002* to *appl*.

19. Remove any raw directory names, such as rlog1 and rlog2 that were created.

Enter: **rm -r** *raw directory names*

20. Label the file systems. See the 6386 reference manual for syntax.

21. Mount the Manager IV filesystem.

Enter: **mountall**

At this point you can read in the Manager IV software.

END OF PROCEDURE

Procedure: Read in The Manager IV Software [6386]

Purpose:

The following procedure provides you with the steps to read in the Manager IV software.

Prerequisites:

The application software area must be partitioned before performing this procedure. See "Procedure: Partition The Software Area For Manager IV [6386]" if necessary.

Documents Used In This Procedure:

- *AT&T UNIX System V/386 Release 3.2.2 Operations/System Administration Guide*
- *AT&T System V/386 Release 3.2.2 User's/System Administrator's Reference Manual*

Note: Be sure to make a note of labels of all tapes that are received and to load any incremental tapes last.

1. **Change to the *appl* directory and create a new directory with the name **smgr**.**

Enter: **cd *appl***

Enter: **mkdir smgr**

where: *appl* = the application software file system name designated in the previous procedure.

2. Change the owner and group of **smgr** to **smgr**.

Enter: **chown smgr smgr**

Enter: **chgrp smgr smgr**

3. Change the mode of this directory to 775.

Enter: **chmod 775 smgr**

4. Change into this new directory.

Enter: **cd smgr**

5. Increase the process limit.

Enter: **ulimit 8192**

6. Insert the Manager IV software cartridge(s) in the tape drive and read in the contents.

Obtain the *tape* drive name by entering **ls -l /dev/rmt**.

Enter: **su smgr -c "cpio -iBcumdv </dev/rmt/*tape* >> tape.out 2>&1 &"**

where *tape* = The tape drive name obtained from the above listing.

Notes: The above command will enable you to do the following:

- Execute the command in the background in order not to tie up your terminal.
- Direct the standard output and any possible errors to the file **tape.out**. This allows you to monitor the progress of the tape if you wish. It also provides you with a list of the contents of data contained on the tape.

When reading in multiple tapes, release tapes must be read first followed by any incremental update tapes. Multiple tapes require executing this step for each new tape.

To monitor tape progress:

Enter: **tail -f tape.out**

or

Enter: **cat tape.out**

At this point, after the tape has been read, you are now ready to run the Manager IV Configurator.
See the following procedure.

END OF PROCEDURE

Procedure: Run The Manager IV Configurator (smconfig) [6386]

Purpose:

This procedure includes instructions for starting and restarting the automatic configuration program, **smconfig**. Input into **smconfig** is taken from the configuration forms filled out during the planning stage by the Implementation Team. To run **smconfig** you need the most current copies of:

- Input Parameter Worksheet
- Hardware Summary Report
- DOSS printout of the application and hardware configuration
- Automatic Alarm Reporting information.

Prerequisites:

- The Manager IV software must be present in order to execute this procedure. See "Procedure: Read In The Manager IV Software [6386]" if necessary.
- You should be logged on as root.
- All hardware must be installed.

Note: To restart **smconfig** specify: **sh smconfig SITEID -r**.

Procedure Steps:

1. Change to the */appl/smgr/INSTALL* directory.

Enter: **cd /appl/smgr/INSTALL**

where: *appl* = the application software file system name previously designated for Manager IV.

2. Start **smconfig**.

Enter: **sh smconfig SITEID**

where *SITEID* = a string of up to seven characters assigned by the installer to identify the site.

System Response:

The system will respond with the title of the procedure (see "Sample Run of smconfig" following this procedure) and then prompt for comments.

3. Enter an informative comment about this run; for example "First run of smconfig."
4. From this point, **smconfig** continues to prompt you for input. Compare the information in the parentheses with the information included on the data sheets (see Purpose).

Enter:

- The information in parentheses is default data in either a fixed numerical/string value, for example, No. of TCM stations (**1000**), or an algorithm/formula, for example, No. of 12 button stations (**TCM stations/5**). If the information in parentheses agrees with the data sheets, press **RETURN**.
- If the information does not agree, enter the data from the sheets.

Note: Be sure to record the size required by the CORE database. It will be needed in the next procedure.

5. Move configuration files to standard names and directories.

Note: The last step performed by the configurator is to transfer the configuration files from their present names to standard Manager IV names. Enter a **y** in response to the following question.

```
*** Commencing Manager IV Configurator Step 4 ***
Do you want site configuration files moved to standard names (y/n)?
```

Enter:**y**

The above input will move the following files to standard names and directories.

MANAGER IV Site Configuration Files		
site dependent file name	standard file name	new directory
siteid.def	def	\$SYSROOT/work/tables
siteid.log	mk_log	\$SYSROOT/etc
siteid.env	envsite	/etc
siteid.smalm	smalmenv	\$SYSROOT/etc

Sample Run of smconfig:

```

                Definity Manager IV Configuration Procedure
                =====
Site Identifier: ATT
DEFINITY Manager IV Customer Configurator      Wed May 10 11:04:51 1989
Customer Name ([  ]) > AT&T
comments ([  ]) > FIRST RUN Manager IV CONFIG
Enter configuration options:
Simultaneous busy-hour users? ( 2) >
Enter DEFINITY Manager IV configuration parameters:
SWITCHES & ADJUNCTS:
Total No. of System 85s and Generic 2s ( 1) >
No. of Generic 2.1s ( 0) > 1
No. of Generic 2.2s ( 0) > 1
No. of Dimension FP8s ( 0) >
No. of System 75s and Generic 1s ( 0) >
STATIONS:
No. of TCM Stations (10000) >
No. of 12-button Stations (No. of TCM Stations/5) >
No. of 36 button Stations (No. of TCM Stations/50) >
TRUNKS:
No. of FM Trunks (no. of TCM Stations/7) >
No. of Translated Authorization Codes (No. of TCM Stations/5) >
No. of System 85s and Generic 2s with Tenant Services Activated ( 0) >
Further input details? (n) >
DEFINITY Manager IV Filesystem and Raw Device sizes:
      appl      area requires      292350 blocks
      rlog1     area requires      77960 blocks
      rlog2     area requires      77960 blocks
      CORE      area requires      864490 blocks
Manager IV configuration completed.  See file 'ATT.m' for results.
Another configuration? (n) >
```

```
*** Manager IV Configurator Step 1 completed successfully ***
*** Commencing Manager IV Configurator Step 2 ***
Created controller's definition file
*** Manager IV Configurator Step 2 completed successfully ***
*** Commencing Manager IV Configurator Step 3 ***
Creating site dependent environment list ...

If Manager IV uses bulk Customer Directory Updates via 9-track tape,
please enter the full path name for the tape device or hit return if NA.
Tape devices in /dev/rmt are:
c0s0    c0s0n    c0s0nr   c0s0r

Enter full path for TAPE device or <CR> if not used:

Will the customer have automatic alarm reporting capability (y/n)? n

The DEFINITY Manager IV root directory is set to /appl/smgr.
Is this correct? (y/n) y

Site dependent environment lists created successfully

*** Manager IV Configurator Step 3 completed successfully ***
*** Commencing Manager IV Configurator Step 4 ***

Do you want site configuration files moved to standard names (y/n)? y

*** Manager IV Configurator Step 4 completed successfully ***
```

END OF PROCEDURE

Procedure: Partition The CORE Database [6386]

Purpose:

The following procedure provides you with the information for partitioning the CORE database.

Prerequisites:

The Manager IV configurator (smconfig) must be completed before executing the following procedure. See "Procedure: Run The Manager IV Configurator (smconfig) [6386]" if necessary.

You must be logged on as / (root) to perform this procedure.

Document Used In This Procedure:

- *AT&T UNIX System V/386 Release 3.2.2 Operations/System Administrator Guide*
- *AT&T UNIX System V/386 Release 3.2.2 User's/ System Administrator's Reference Manual*

Notes: Partitioning of these application areas is necessary only if there currently is no space available on the drive(s) which meets the software size requirements.

CORE cannot be located on the same disk as the journal devices.

If there is insufficient space on a single disk the CORE database can be spread across several disks as long as you adhere to the above requirement.

As a supplement to the procedure steps you can find specific screen output and prompts in the *386 User's/System Administrator's Guide*.

Procedure Steps:

1. Partition the selected disk.

Enter: **/etc/diskadd c0txdn**

where x = The target controller number.

where n = The disk number on the target controller.

The system will ask you if you want to partition the disk at 90% UNIX and 10% MS-DOS. You want the entire disk partitioned for UNIX.

Enter: **n**

2. Select the first menu item (Create a partition) on the screen.

Enter: **1**

3. Designate the type of partition that you want to create.

Enter: **1** (UNIX system)

4. Select the percent of the disk that is to be used for UNIX.

Enter: **100**

5. Activate the partition.

Enter: **y**

The system will respond with data regarding the partition, such as status and type.

6. Update the disk configuration and exit the partition screen.

Enter: **4**

7. Perform a surface analysis of the disk.

Enter: **y**

Note: When the surface analysis has completed, you can begin the process of creating the file systems.

8. Indicate that the current allocation is unacceptable.

Enter: **n**

9. Indicate that you do not want additional swap space on this disk.

Enter: **n**

10. Designate the number of file systems that you want on the disk (**1**) and the name **CORE**.

At this point the system will generate specific information regarding the partition such as, number, name, and size (in cylinders and bytes).

11. Indicate that the current allocation is acceptable when prompted.

Enter: **y**

12. Indicate that you want the new file system mounted automatically.

Enter: **y**

The system will return a message that the file system is being created and then generate the diskadd completion message.

At this point you will be returned to the system prompt.

Use the following table to determine where to proceed from this point.

If	Then
You are relegating CORE to the current disk.	Continue to the next step.
You are spreading CORE over several separate disks.	Repeat steps 1 to 12 for each disk.

13. Obtain the CORE file system name.

Enter: **mount**

Make a note of the CORE name.

14. Unmount the CORE file system that you created on the drive.

Enter: **umount** *cfsn*

where *cfsn* = The full path of the CORE file system name obtained from the previous step.

Note: The file system name contains the drive number. For example, coredb00 would be called coredb002.

15. Edit the **/etc/fstab** (filesystem) file.

Remove the CORE device name entry.

16. Edit the **/etc/partitions** file.

Remove the disk number from the device name.

Add the following information to the CORE, device filesystem name that you created in the previous steps.

Enter: , **perm = NOMOUNT**

17. Remove the CORE directory name was created.

Enter: **cd** /

Enter: **rm -r** *CORE directory name*

18. Label the CORE file system. See the 6386 reference manual for syntax.

19. At this point you should save the disk partitioning parameters by copying the partitions file.

Enter: **cp /etc/partitions /etc/***target filename*

END OF PROCEDURE

Procedure: Execute The Installation Script (sminstall) [6386]

Purpose:

The following procedure provides you with instructions for executing the installation script (**sminstall**) for Manager IV.

Prerequisites

The partitioning of disk areas, if necessary, must be completed before installing the Manager IV software. See "Procedure: Partition The Software Area For Manager IV [6386]" and "Procedure: Partition The CORE Database [6386]," if this has not been done.

In addition, the **smconfig** script must be run before executing this procedure. See "Procedure: Running The Manager IV Configurator (smconfig) [6386]" if necessary.

Notes: **BREAK** will interrupt the **sminstall** script at the current command. The system will respond with: "Do you want to exit (y/n)?". Answer **y** to exit at that point; answer **n** to resume.

To restart **sminstall**, enter: **sh sminstall**

To specify a particular phase to execute designate the **-p** option. To continue from this chosen phase onward, add the **-c** option to the command line. To ask for help, input the **-h** option on the command line.

This procedure should be executed in multiuser mode.

Procedure Steps:

1. Make sure that you are in the */appl/smgr/INSTALL* directory.

Enter: **cd /appl/smgr/INSTALL**

where *appl* = the application software file system name previously designated for Manager IV.

2. Execute the installation script.

Enter: **sh sminstall**

After generating the procedure title and installation release version the system provides the local date and time and prompts for confirmation.

System Response:

```

DEFINITY Manager IV Installation Procedure
=====

Installation Release: <release name>   Version: <version number>

Checking for presence of Mgr IV parameter files.

Local date and time : <ddd mmm date hh:mm:ss <timezone year>
Is the date and time, including timezone EDT , correct? (y/n)

```

3. Verify the date, time, and time zone information.
 - If incorrect, then set the proper time and restart **sminstall**.
 - If correct, enter: **y**.

At this point the system begins executing the following installation phases:

- Phase 1 *Check for primary Manager IV login in the system password file*
- Phase 2 *Add Manager IV Administrative logins to userlist*
- Phase 3 *Convert CORE and RLOGS to raw devices and allocate CORE database sizings in fsfile*
- Phase 4 *Create the Manager IV and CORE databases*
- Phase 5 *Label CORE database devices*
- Phase 6 *CORE database and log areas sized and labeled.*

4. Upon successfully completing all phases of **sminstall**, bring up the Manager IV application.

Note: At this point you no longer need to provide the path /appl/smgr to reach the Manager IV root directory. The string **\$\$SYSROOT** now translates to the Manager IV root directory.

Enter: **./etc/envlist**

Enter: **\$\$SYSROOT/etc/startsm**

System Response [Sample]:

```
Now doing cleanup of ipc items.  
Semaphore semid 702 successfully initialized  
Semaphore semid 703 successfully initialized  
Semaphore semid 704 successfully initialized  
Manager IV Semaphores initialized  
Manager IV booting to normal mode ...
```

Note: If you need more information regarding the **startsm** (and also the **stopsm**) command, see *DEFINITY Manager IV System Administration*.

If this customer has purchased the optional Switch Support Base (SSB) software for maintenance and admin procs for the Generic 2 switches, see the following section.

If this customer has not purchased SSB, then you can begin defining and testing elements of Manager IV. See section 4, "Defining And Testing Elements Of Manager IV."

END OF PROCEDURE

SWITCH SUPPORT BASE SOFTWARE

This section provides you with the necessary steps to install and configure the optional Switch Support Base (SSB) for Manager IV. Briefly, Switch Support Base software enables the customer to operate an enhanced version of the Proc Mode application. The SSB software provides you with a fully prompted user interface to the Generic 2 switch. For information regarding the operation of this Enhanced Mode see *Manager IV System Administration*.

Procedure: Load the Switch Support Base Software [6386]

Purpose:

This procedure provides you with the necessary steps to install and configure the Switch Support Base (SSB) software for Manager IV.

Procedure Steps:

1. Log in as root (*/*).
2. Execute the environment list.

Enter: **./etc/envlist**

3. Create a target base directory where the SSB files are to be loaded.

NOTE: The recommended target base directory for the SSB files is **\$SYSROOT/proc/SSB**.

4. Enter **installpkg** and follow the instructions.
5. Using a UNIX editor, add the following information to the **/etc/envlist** and the **\$SYSROOT/etc/envlist** files.

Enter: **SSB = *fpn***
export SSB

where *fpn* = the full path name of the target base directory designated in Step 3 of this procedure.

NOTE: If the environment variable is not set, the Manager IV software will default to Basic Mode.

6. Execute the envlist to activate the changes.

Enter: **./etc/envlist**

At this point you can begin defining and testing elements of Manager IV. See section 4, "Defining And Testing Elements Of Manager IV."

END OF PROCEDURE

ENVIRONMENT VARIABLES

After executing the installation script (**sminstall**), the environment variables are available to the system. Employing these variable names allows you to access needed files without using the full path name. This is especially useful since every system could potentially house files in different areas. The following list defines the environment variables used throughout this manual.

LOG the area where all logs are kept
PROG user executable programs
SYSGEN the directory for system utilities
SYSROOT defines the /(root) directory for the Manager IV software
WORK work directory

4. THE INSTALLATION PROCESS [NCR 3332]

The purpose of this section is to provide you with the information and procedures for installation of the DEFINITY Manager IV software on the NCR 3332 processor.

The installation of Manager IV is a straightforward process involving the execution of various UNIX commands and Manager IV installation scripts. The installation steps must be performed in the proper sequence and allow little in the way of deviation from customer to customer.

The "software placement" is determined by several factors specific to each system, for example, the number and size of the disks being used. Another factor is whether or not Manager IV is co-resident with other applications such as AT&T Monitor I or AT&T Trouble Tracker. These applications are designed to function independent of one another. Consult your application documentation or contact the TSC at 1 800 548-8861 if you have questions about installing co-resident applications.

The following section provides you with requirements and guidelines for the installation of the Manager IV software.

Installation Guidelines

Installation is flexible but there are certain rules that must be followed for Manager IV to become operational.

Note: If three drives reside on a system, the 6386 installation rules may have been followed. The way to determine which method was used is to note where the logs reside. If they are on drive 0, the 3332 rules were followed; if they are on any other drive, the 6386 rules were followed.

Usr File System

The standard UNIX installation provides choices for the placement of the **/usr** filesystem. It is recommended that **/usr** be installed on system drive 0. In general, the **/usr** filesystem and **/root** occupy drive 0 exclusively.

Journal Devices and CORE

The journal devices **rlog1** and **rlog2** must be 40 megabytes (approximately 56 cylinders) each. These areas can be located on any disk that carries adequate space. They cannot, however, be located on the same disk as the **CORE** devices. Additionally, if they are to be located on the same disk as the Manager IV software, their areas must be partitioned first. However, in most cases, only two internal drives will exist. Therefore, changes have been made to repartition drive 0 in these cases. When this is done, the logs will reside on drive 0.

Manager IV Software

The Manager IV software requires 150 megabytes (approximately 225 cylinders) of space. It is recommended that it is placed on any disk other than the disk containing the **/usr** and **/(root)** filesystem.

Manager IV Sample Configuration

The following is a sample of how the above devices could be installed on a system. It consists of either two internal 535-megabyte drives or one internal 535-megabyte drive and an internal one-gigabyte drive. If a third drive is required, it may also be internal.

DRIVE	NAME	CYL./MB SIZE	USE	BLOCKS
Drive 0 = 535 MB	/	33	root	67584
	swap	64	swap	67584
	/usr	200	/usr User Logins INFORMIX	409600
	/usr2	58	MON1 Application or any application	118784
	dos	10	Peripheral Diagnostics	200448
	dump	64	dump	131072
	rlog1	40	MGRIV Log1	81920
	rlog2	40	MGRIV Log2	81920

DRIVE	NAME	CYL./MB SIZE	USE	BLOCKS
Drive 1 = 535 MB	coredb00	50	MGRIV databases	102400
	/usr3	150	MGRIV Application	307200
	/usr4	150	MON1 databases or any application	307200
	/usr5	159 Remainder	MON1 databases or any application	325632

DRIVE	NAME	CYL./MB SIZE	USE	BLOCKS
Drive 1 = 1 GB	coredb00	50	MGRIV databases	102400
	/usr3	150	MGRIV Application	307200
	/usr4	200	MON1 databases or any application	409600
	/usr5	200	MON1 databases or any application	409600
	/usr6	200	MON1 databases or any application	409600
	/usr7	200 Remainder	MON1 databases or any application	409600

Manager IV Sample Configurations

Installation Steps

Basically there are eight steps to installation.

1. Perform UNIX tunable parameter modifications
2. Add the group id and administrative users for Manager IV.
3. Partition the software area for Manager IV and the Journal devices if they are on the same drive.
4. Read in the Manager IV software.
5. Run the Manager IV Configurator **smconfig**.
6. Partition the CORE database and Journal devices (if not already done so).
7. Load the Manager IV system using **sminstall**
8. Execute **startsm** to bring up Manager IV.

Procedure: Perform UNIX Tunable Parameter Modifications [NCR 3332]

Purpose:

The following procedure provides you with the steps for modifying the UNIX tunable parameters to allow for Manager IV installation.

Prerequisites:

The UNIX operating system, required utilities and the `/usr` filesystem must be present before you can execute this procedure. See Appendix D "Field Service Installation Tasks" if any prerequisites have not been completed.

Documents Used In This Procedure:

- *UNIX System V/386 Release 3.2.2 Operations/System Administration Guide*
- *UNIX System V/386 Release 3.2.2 User's/System Administrator's Reference Manual*

Notes: The tables below provide the default values and the values needed by Manager IV in order to operate.

These parameter values apply to UNIX Release 3.2.2 only.

Procedure Steps:

1. Log in as root and using a UNIX text editor, update the `/etc/conf/cf.d/mtune` file with the following parameter values.

Notes: The fields of the parameters that are to be updated are located in the last column on the right of your screen.

These values are the *minimum* required by Manager IV.

Below, the term *incremental* designates the current value plus the value needed by Manager IV.

If the current value is greater than required by Manager IV, the field need not be updated.

MANAGER IV KERNEL PARAMETERS		
	DEFAULT	MANAGER IV
MAXUP	30	50

MANAGER IV MESSAGE QUEUE PARAMETERS		
	DEFAULT	MANAGER IV
MSGMAP	100	200
MSGMAX	2048	8192
MSGMNB	4096	16384
MSGMNI	50	200
MSGTQL	40	200 (incremental + 160)
MSGSEG	1024	3072

MANAGER IV SEMAPHORE PARAMETERS		
	DEFAULT	MANAGER IV
SEMMAP	10	350 (incremental +340)
SEMMNI	10	350 (incremental +340)
SEMMNS	60	650 (minimum)
SEMMNU	30	350 (incremental +320)
SEMMSL	25	64
SEMAEM	16384	32767

MANAGER IV SHARED MEMORY PARAMETERS		
	DEFAULT	MANAGER IV
SHMMAX	131072	2097152

The additional parameters that need to be updated can be found in the 386 manuals referenced at the beginning of this procedure.

2. Add the parameters and their values, from the previous tables to the **/etc/conf/cf.d/stune** file.

In this file, you must also update the **MAXUP** parameter which is already present.

Notes: The fields of the parameters that are to be updated are located in the last column on the right of your screen.

Match the values that you designated in the mtune file even if it means that some values need not be updated.

3. Rebuild the kernel.

Enter: **cd /**

Enter: **/etc/conf/bin/idbuild**

4. Activate the changes by shutting down and rebooting the system.

END OF PROCEDURE

Procedure: Add The Group ID And Admin. Users For Manager IV [NCR 3332]

Purpose:

The following procedure provides you with the steps for adding a group ID for Manager IV and also users to this newly designated group.

Prerequisites:

UNIX tunable parameter modifications must be completed before performing this procedure. See "Procedure: Perform UNIX Tunable Parameter Modifications [NCR 3332]" if necessary.

Documents Used In This Procedure:

- *UNIX System V/386 Release 3.2.2 Operations/System Administration Guide*

Procedure Steps:

1. Add the group ID.

Log in as **root**.

Using a UNIX text editor, update the **/etc/group** - (System Group) file. Add the following string to the end of the file.

Enter: **smgr::nnnn:**

where *nnnn* = the group id that is any number not currently in use.

2. Obtain the list of current user ids.

Enter: **cat /etc/passwd**

Make a note of the user ids.

3. Add the users to the group (**smgr**) that you defined above.

Notes: The users to be added are: **smgr, smsa, smdba, smmaint**.

Users are added via the **adduser** command.

Enter: **adduser login ID User-Name User-ID Home-Directory**

where

login ID = smgr, smsa, smdba, or smmaint.

User-

Name = Is the name or title that you want to assign to the login id. For example, the **smgr** login id might be named **Mgr.IV Admin**. If a title contains embedded spaces it must be enclosed in double quotes (").

User-ID = Is the numerical id that will be associated with the login-ID. It can be from 100 to 5000 inclusive and must be unique for each user. Use the list from the previous step to ensure that you do not duplicate any of the user ids.

Home-

Directory = This is the home directory where the user resides. Generally, these users will be placed in the **/usr** directory but you are free to designate one (a home directory) of your own choosing based on your particular configuration. If the home directory is other than **/usr**, be sure to make a note of it since it will be needed further along in this installation.

Designate a password for each added login.

After entering the login information, the system will prompt you for a password for the particular user.

Note: Passwords can be up to 8 characters in length with at least two alphabetic characters and at least one numeric or special character.

Edit the smgr group ID in the password file.

Using a text editor, update the **/etc/passwd** file. For each of the users that have been added, change the fourth field on each entry to the group id number that was specified in Step 1.

5. For each added user, change the group to the home directory path that you designated in the previous step.

Enter: **chgrp smgr hdp**

where hdp =the home directory path from the previous step, i.e. **/usr/smgr**.

END OF PROCEDURE

Procedure: Repartition Drive 0 For Manager IV [NCR 3332]

Purpose:

The following procedure provides you with information for repartitioning drive 0 from one additional **/usr[2]** filesystem to multiple filesystems. This procedure involves editing both the partition file and the UNIX **mkpart** command.

By adding additional filesystems onto the first disk, the need for one or more external drives is eliminated.

This procedure also goes through using the **/etc/diskadd** command to partition the second internal 535-megabyte hard disk drive. Although a single 1-gigabyte hard disk drive may be used, this documentation is written as though two 535-megabyte hard drives make up the configuration.

Prerequisites:

UNIX Tunable parameter modifications must be completed before performing this procedure. See "Procedure: Perform UNIX Tunable Parameter Modifications [NCR 3332]" if necessary.

You must be logged on as / (root) to perform this procedure.

Documents Used In This Procedure:

- *AT&T UNIX System V/386 Release 3.2.2 Operations/System Administrator's Guide*
- *AT&T UNIX System V/386 Release 3.2.2 User's/System Administrator's Reference Manual*

Note: The journal devices can be located on any disk that provides enough space. The journal devices also require that they cannot be located on the same disk as the CORE database.

Procedure Steps:

1. Copy the **etc/partitions** file to alter disk00 information.
Enter: **cp /etc/partitions /etc/0partitions**
2. Edit the partitions file for disk0 for a 535-megabyte disk.
Note Use "vi" to edit the **/etc/partitions** file.
Enter: **vi /etc/partitions**
3. Find the **/usr[2]** filesystem on the first disk. It will have to be edited from containing all remaining blocks. It will need to be broken up into three separate filesystems.
4. Add the additional **/usr[2]** filesystem and the two MANAGER IV rlogs to the partition file by altering the block "size" information to show **/usr[2]** block size changing from 282624 blocks (138 cylinders) to 118784 blocks (58 cylinders).

On the NCR3332, the "dump" partition is not added to partition 4 but is added to the end of the disk as partition 6, starting with block 913408 and going to the last block on the disk.

Notes

You will be adding the logs to follow **usr[2]** blockwise, but the next available partitions are 8 and 9. Add the logs to partitions (slices) 8 and 9. Both logs will be 81920 blocks (40 cylinders).

You are only editing the partitions file at this time. The actual information on the disk still reflects your original configuration until you remake the partitions on the disk itself. The **mkpart -P** command accomplishes this task. It will take the changed entries in the

partitions file for the specified disk slices/partitions. Then you can remake the filesystems.

The example below may be followed, if the same configuration is used.

If the disk is 535 megabytes, "cyls (cylinders) is = to 510" (497 cylinders available for partitioning of the disk according to the system). Keep in mind you really used 499 cylinders. If the disk is 1 gigabyte, "cyls (cylinders) is = to 1001".

disk0:

```
heads = 64, cyls = 510, sectors = 32, bpsec = 512,
vtocsec = 29, altsec = 0, boot = "/etc/boot", device = "/dev/rdisk/c0t0d0s0"
```

root:

```
partition = 1, start = 22528, size = 67584,
tag = ROOT, perm = VALID
```

swap:

```
partition = 2, start = 90112, size = 131072,
tag = SWAP, perm = NOMOUNT, perm = VALID
```

usr:

```
partition = 3, start = 221184, size = 409600,
tag = USR, perm = VALID
```

usr2:

```
partition = 4, start = 630784, size = 282624, CHANGE SIZE TO 118784
tag = USR, perm = VALID
```

dos:

```
partition = 5, start = 32, size = 20448,
tag = OTHER, perm = NOMOUNT, perm = VALID
```

reserved:

```
partition = 7, start = 20480, size = 34,
tag = BOOT, perm = NOMOUNT, perm = VALID
```

dump:

```
partition = 6, start = 913408, size = 131072,
tag = SWAP, perm = NOMOUNT, perm = VALID
```

5. Add in partitions 8 and 9, making sure you enter the following information exactly as indicated.

rlog1:

```
partition = 8, start = 749568, size = 81920,
tag = OTHER, perm = NOMOUNT, perm = VALID
```

rlog2:

```
partition = 9, start = 831488, size = 81920,
tag = OTHER, perm = NOMOUNT, perm = VALID
```

Warning! It is critical to leave the existing blank line at the end of the file. Otherwise you will have a MAJOR problem during the sminstall! Also leave a blank line in between the dump, rlog1, and rlog2 sections.

6. Create separate partitions on the disk using the **mkpart** command.
7. Unmount **usr2** filesystem.

Enter: **umountall or umount /usr2**

The **/usr** filesystem will show busy; it can stay mounted. This is due to lpsched and cron running. If these processes are killed, **/usr** will unmount. Example of error: **umount: [/dev/rdisk/c0t0d0s3]**

busy

8. You can use "**mkpart -t disk0**" to view actual partitioning on the disk prior to and/or after creating new partitions.

WARNING The **adddisk** command would wipe out existing partitions. To avoid this, use the UNIX **mkpart -P** command to create the last three partitions on the disk itself.

Enter: **mkpart -P usr2 -P rlog1 -P rlog2 disk0**

Although an error will be received indicating a reboot is needed, simply continue on with the procedure.

9. Make a filesystem for the newly partitioned areas by using the UNIX **mkfs** command to create these new filesystems.
10. Again you must unmount the **/usr2** filesystem so you can recreate the **/usr2** filesystem and create the log areas. The system was rebooted, therefore the filesystem was remounted.

Enter: **umountall or umount /usr2**

Example: **mkfs /dev/rdisk/c?t?d?s? size in blocks gaps cylinders**

Enter: **mkfs /dev/rdisk/c0t0d0s4 118784 12 315**

Enter: **mkfs /dev/rdisk/c0t0d0s8 81920 12 315**

Enter: **mkfs /dev/rdisk/c0t0d0s9 81920 12 315**

11. Use **/etc/labelit** to label the **/usr[2]** filesystem on the disk.

Example: **/etc/labelit /dev/rdisk/c?t?d?s? fsname volname**

Enter: **/etc/labelit /dev/rdisk/c0t0d0s4 usr2 disk00**

The LOG areas will be labeled by the application's **sminstall** script.

Both logs will be recreated and re-labeled during the **sminstall** process.

12. Run a filesystem check on the new filesystems.

Example: **fsck /dev/rdisk/c?t?d?s?**

13. Mount the filesystems.

Enter: **mountall**

Procedure: Partition The Software Area For Manager IV [3332]

To begin the procedure go to "Procedure Steps" section. See the paragraphs immediately following for samples of the **/etc/partitions** file for the second internal drive. These are ONLY possible configuration samples!

In these sample configurations, there are four UNIX filesystems that can be created using the **diskadd** command on a 535-megabyte drive. They also show that you could have three additional filesystems if the disk is one-gigabyte (for a total of seven filesystems). **Remember these are just samples!** The "diskmap" will still dictate the configuration.

Notes: IF a 535-megabyte disk is to be installed, the following sample **/etc/partitions** file also can be used. (Note that 2048 blocks = 1 cylinder.)

A diskmap should be provided that indicates how each disk is to be partitioned! The number of blocks and cylinders is also provided!

The first sample configuration follows:

```
disk010:
  heads = 64, cyls = 510, sectors = 32, bpsec = 512,
  vtcsec = 29, altsec = 0, boot = "/etc/boot", device = "/dev/rdisk/c0t1d0s0"
coredb00:
  partition = 3, start = 2048, size = 102400, (50 cylinders)
  tag = USR, perm = NOMOUNT, perm = VALID
usr3:
  partition = 4, start = 104448, size = 307200, (150 cylinders)
  tag = USR, perm = VALID
usr4:
  partition = 5, start = 411648, size = 307200, (150 cylinders)
  tag = USR, perm = VALID
usr5:
  partition = 6, start = 718848, size = 325632, (159 cylinders)
  tag = USR, perm = VALID
rsrvd010:
  partition = 7, start = 1, size = 34,
  tag = BOOT, perm = NOMOUNT, perm = VALID
```

If a one-gigabyte disk is to be installed, the following sample of the /etc/partitions file is one that could be used:

Notes: (2048 blocks = 1 cylinder)

Header would be different and would have additional filesystems.

```
disk010:
  heads = 64, cyls = 1001, sectors = 32, bpsec = 512,
  vtcsec = 29, altsec = 0, boot = "/etc/boot", device = "/dev/rdisk/c0t1d0s0"
coredb00:
  partition = 3, start = 2048, size = 102400, (50 cylinders)
  tag = USR, perm = VALID, perm = NOMOUNT
usr3:
  partition = 4, start = 104448, size = 307200, (150 cylinders)
  tag = USR, perm = VALID
usr4:
  partition = 5, start = 411648, size = 409600, (200 cylinders)
  tag = USR, perm = VALID
usr5:
  partition = 6, start = 821248, size = 409600, (200 cylinders)
  tag = USR, perm = VALID
rsrvd010:
  partition = 7, start = 1, size = 34,
  tag = BOOT, perm = NOMOUNT, perm = VALID
usr6:
  partition = 8, start = 1230848 size = 409600, (200 cylinders)
```

tag = USR, perm = NOMOUNT

usr7:

partition = 9, start = 1640448, size = 409600, (200 cylinders)

tag = USR, perm = VALID

Procedure Steps:

1. Partition the selected disk.

Enter: **/etc/diskadd c0t.xd n**

where x = the target controller number

where n = the disk number on the target controller

Example: **/etc/diskadd c0t1d0**

Note: The second internal drive is usually defined as SCSI ID 1 = t1, only disk on id = d0.

2. The system asks you if you want to partition the disk at 90% UNIX and 10% MS-DOS. You want the entire disk partitioned for UNIX.

Enter: **n**

3. Select the first menu item (create a partition) on the screen.

Enter: **1**

4. Designate the type of partition that you want to create.

Enter: **1**(UNIX system)

5. Select the percent of the disk that is to be used for UNIX.

Enter: **100**

6. Activate the partition.

Enter: **y**

The system responds with data regarding the partition, such as status and type.

7. Update the disk configuration and exit the partition screen.

Enter: **4**

8. Perform a surface analysis of the disk.

Enter: **y**

Note: When the surface analysis has completed, you can begin the process of creating the filesystems.

9. Indicate that the current allocation is unacceptable.

Enter: **n**

10. Indicate that you do not want additional swap space on the disk.

Enter: **n**

11. Designate the number of filesystems that you want on the disk and a name for each.

Notes: You can have one through 12 filesystems on the disk.

When naming the coredb00 filesystem, it must be shortened to core0 during the diskadd as only one through six characters are allowed for the filesystem name. This will be corrected in the partitions file later.

If the journal devices are to be located on this disk (along with the application), they must be partitioned first. The names for the journal devices are **rlog1** and **rlog2**. The application software name can be any name that you choose, for example, *appl*. Remember, though that this name must be recognizable to you and any alternate system administrator level users.

The journal devices (rlogs 1 and 2) require 40 megabytes each (approximately 40 cylinders) and must be identical in size.

Manager IV software requires 150 megabytes (approximately 150 cylinders).

12. Define the size, in cylinders, that you want allocated for each partition. See "Notes" at the beginning of this procedure for size values. (1 cylinder = 1 megabyte on a 1-gigabyte drive)

At this point, the system will generate specific information regarding the partition(s), such as number, name, and size (in cylinders and bytes).

13. Indicate that the current allocation is acceptable when prompted.

Enter: **y**

14. Indicate that you want the new filesystems mounted automatically.

Enter: **y**

The system will return a message that the filesystems are being created and then generate the diskadd completion message.

At this point you will be returned to the system prompt.

Use the following table to determine where to proceed from this point.

If	Then
You do not have other file systems (other than CORE) to add on separate disks.	Continue to the next step.
You have other file systems (other than CORE) to add on separate disks.	Repeat steps 1 to 13 for each disk.

15. Obtain the filesystem names.

Enter: **mount**

Make a note of the filesystem names.

16. Unmount the filesystems that you created on the drive.

Enter: **umount** *fsn*

where *fsn* = The full path filesystem name obtained from the previous step.

Note: The filesystem name contains the drive number. For example, rlog1 would be called rlog1002.

17. Edit the **/etc/fstab** (filesystem) file.

Remove the raw device names, that is (rlog1 and rlog2).

Change the real filesystem names to the name that you want.

The system adds the disk number to the filesystem name when it is created. For example, appl on drive 1 would be named *appl002*. You must remove the *002* from this name.

18. Change the mount points for the Manager IV application software area.

Change to the **/(root)** directory.

Enter: **cd /**

Move the directories to new names that do not contain the drive number.

Enter: **mvdir** *oldfsn newfsn*

where *fsn* = the directory name with the drive number.

newfsn = the new directory name without the drive number, i.e. *appl002* to *appl*.

19. Label the filesystems. See the NCR 3332 reference manual for syntax.
20. Mount the Manager IV filesystem.

Enter: **mountall**

At this point you can read in the Manager IV software.

END OF PROCEDURE

Procedure: Read in The Manager IV Software [NCR 3332]

Purpose:

The following procedure provides you with the steps to read in the Manager IV software.

Prerequisites:

The application software area must be partitioned before performing this procedure. See "Procedure: Partition The Software Area For Manager IV [NCR 3332]" if necessary.

Documents Used In This Procedure:

- *AT&T UNIX System V/386 Release 3.2.2 Operations/System Administration Guide*
- *AT&T System V/386 Release 3.2.2 User's/System Administrator's Reference Manual*

Note: Be sure to make a note of labels of all tapes that are received and to load any incremental tapes last.

1. **Change to the *appl* directory and create a new directory with the name **smgr**.**

Enter: **cd *appl***

Enter: **mkdir smgr**

where: *appl* = the application software filesystem name designated in the previous procedure.

2. Change the owner and group of **smgr** to **smgr**.

Enter: **chown smgr smgr**

Enter: **chgrp smgr smgr**

3. Change the mode of this directory to 775.

Enter: **chmod 775 smgr**

4. Change into this new directory.

Enter: **cd smgr**

5. Increase the process limit.

Enter: **ulimit 8192**

6. Insert the Manager IV software cartridge(s) in the tape drive and read in the contents.

Obtain the *tape* drive name by entering **ls -l /dev/rmt**.

Enter: **su smgr -c "cpio -iBcumdv </dev/rmt/*tape* >> tape.out 2>&1 &"**

where *tape* = The tape drive name obtained from the above listing.

Notes: The above command will enable you to do the following:

- Execute the command in the background in order not to tie up your terminal.
- Direct the standard output and any possible errors to the file **tape.out**. This allows you to monitor the progress of the tape if you wish. It also provides you with a list of the contents of data contained on the tape.

When reading in multiple tapes, release tapes must be read first followed by any incremental update tapes. Multiple tapes require executing this step for each new tape.

To monitor tape progress:

Enter: **tail -f tape.out**

or

Enter: **cat tape.out**

At this point, after the tape has been read, you are now ready to run the Manager IV Configurator.
See the following procedure.

END OF PROCEDURE

Procedure: Run The Manager IV Configurator (smconfig) [NCR 3332]

Purpose:

This procedure includes instructions for starting and restarting the automatic configuration program, **smconfig**. Input into **smconfig** is taken from the configuration forms filled out during the planning stage by the Implementation Team. To run **smconfig** you need the most current copies of:

- Input Parameter Worksheet
- Hardware Summary Report
- DOSS printout of the application and hardware configuration
- Automatic Alarm Reporting information.

Prerequisites:

- The Manager IV software must be present in order to execute this procedure. See "Procedure: Read In The Manager IV Software [NCR 3332]" if necessary.
- You should be logged on as root.
- All hardware must be installed.

Note: To restart **smconfig** specify: **sh smconfig SITEID -r**.

Procedure Steps:

1. Change to the */appl/smgr/INSTALL* directory.

Enter: **cd /appl/smgr/INSTALL**

where: *appl* = the application software filesystem name previously designated for Manager IV.

2. Start smconfig.

Enter: **sh smconfig SITEID**

where *SITEID* = a string of up to seven characters assigned by the installer to identify the site.

System Response:

The system will respond with the title of the procedure (see "Sample Run of smconfig" following this procedure) and then prompt for comments.

3. Enter an informative comment about this run; for example "First run of smconfig."
4. From this point, smconfig continues to prompt you for input. Compare the information in the parentheses with the information included on the data sheets (see Purpose).

Enter:

- The information in parentheses is default data in either a fixed numerical/string value, for example, No. of TCM stations (**1000**), or an algorithm/formula, for example, No. of 12 button stations (**TCM stations/5**). If the information in parentheses agrees with the data sheets, press **RETURN**.
- If the information does not agree, enter the data from the sheets.

Note: Be sure to record the size required by the CORE database. It will be needed in the next procedure.

5. Move configuration files to standard names and directories.

Note: The last step performed by the configurator is to transfer the configuration files from their present names to standard Manager IV names. Enter a y in response to the following question.

```
*** Commencing Manager IV Configurator Step 4 ***

Do you want site configuration files moved to standard names (y/n)?
```

Enter:y

The above input will move the following files to standard names and directories.

MANAGER IV Site Configuration Files		
site dependent file name	standard file name	new directory
siteid.def	def	\$SYSROOT/work/tables
siteid.log	mk_log	\$SYSROOT/etc
siteid.env	envsite	/etc
siteid.smalm	smalmenv	\$SYSROOT/etc

Sample Run of smconfig:

```

                Definity Manager IV Configuration Procedure
                =====
Site Identifier: ATT
DEFINITY Manager IV Customer Configurator      Wed May 10 11:04:51 1989

Customer Name ([ ]) > AT&T
comments ([ ]) > FIRST RUN Manager IV CONFIG

Enter configuration options:
Simultaneous busy-hour users? ( 2 ) >

Enter DEFINITY Manager IV configuration parameters:
SWITCHES & ADJUNCTS:
Total No. of System 85s and Generic 2s ( 1 ) >
No. of Generic 2.1s ( 0 ) > 1
No. of Generic 2.2s ( 0 ) > 1
No. of Dimension FP8s ( 0 ) >
No. of System 75s and Generic 1s ( 0 ) >
STATIONS:
No. of TCM Stations (10000) >
No. of 12-button Stations (No. of TCM Stations/5) >
No. of 36 button Stations (No. of TCM Stations/50) >
TRUNKS:
No. of FM Trunks (no. of TCM Stations/7) >
No. of Translated Authorization Codes (No. of TCM Stations/5) >
No. of System 85s and Generic 2s with Tenant Services Activated ( 0 ) >

Further input details? (n) >

DEFINITY Manager IV Filesystem and Raw Device sizes:

      appl      area requires  292350 blocks
      rlog1     area requires  77960 blocks
      rlog2     area requires  77960 blocks
      CORE      area requires  864490 blocks

Manager IV configuration completed.  See file 'ATT.m' for results.

Another configuration? (n) >

```

```
*** Manager IV Configurator Step 1 completed successfully ***
*** Commencing Manager IV Configurator Step 2 ***
Created controller's definition file
*** Manager IV Configurator Step 2 completed successfully ***
*** Commencing Manager IV Configurator Step 3 ***
Creating site dependent environment list ...

If Manager IV uses bulk Customer Directory Updates via 9-track tape,
please enter the full path name for the tape device or hit return if NA.
Tape devices in /dev/rmt are:
c0s0    c0s0n    c0s0nr   c0s0r

Enter full path for TAPE device or <CR> if not used:

Will the customer have automatic alarm reporting capability (y/n)? n

The DEFINITY Manager IV root directory is set to /appl/smgr.
Is this correct? (y/n) y

Site dependent environment lists created successfully

*** Manager IV Configurator Step 3 completed successfully ***
*** Commencing Manager IV Configurator Step 4 ***

Do you want site configuration files moved to standard names (y/n)? y

*** Manager IV Configurator Step 4 completed successfully ***
```

END OF PROCEDURE

Procedure: Execute The Installation Script (sminstall) [NCR 3332]

Purpose:

The following procedure provides you with instructions for executing the installation script (**sminstall**) for Manager IV.

Prerequisites

The partitioning of disk areas, if necessary, must be completed before installing the Manager IV software. See "Procedure: Partition The Software Area For Manager IV [NCR 3332]" and "Procedure: Partition The CORE Database [NCR 3332]," if this has not been done.

In addition, the **smconfig** script must be run before executing this procedure. See "Procedure: Running The Manager IV Configurator (smconfig) [NCR 3332]" if necessary.

Notes: **BREAK** will interrupt the **sminstall** script at the current command. The system will respond with: "Do you want to exit (y/n)?". Answer **y** to exit at that point; answer **n** to resume.

To restart **sminstall**, enter: **sh sminstall**

To specify a particular phase to execute designate the **-p** option. To continue from this chosen phase onward, add the **-c** option to the command line. To ask for help, input the **-h** option on the command line.

This procedure should be executed in multiuser mode.

Procedure Steps:

1. Make sure that you are in the */appl/smgr/INSTALL* directory.

Enter: **cd /appl/smgr/INSTALL**

where *appl* = the application software filesystem name previously designated for Manager IV.

2. Execute the installation script.

Enter: **sh sminstall**

After generating the procedure title and installation release version the system provides the local date and time and prompts for confirmation.

System Response:

```

DEFINITY Manager IV Installation Procedure
=====

Installation Release: <release name>   Version: <version number>

Checking for presence of Mgr IV parameter files.

Local date and time : <ddd mmm date hh:mm:ss <timezone year>
Is the date and time, including timezone EDT , correct? (y/n)

```

3. Verify the date, time, and time zone information.
 - If incorrect, then set the proper time and restart **sminstall**.
 - If correct, you must reset the timezone using FACE and then enter: **y**.

At this point the system begins executing the following installation phases:

- Phase 1 *Check for primary Manager IV login in the system password file*
- Phase 2 *Add Manager IV Administrative logins to userlist*
- Phase 3 *Convert CORE and RLOGS to raw devices and allocate CORE database sizings in fsfile*
- Phase 4 *Create the Manager IV and CORE databases*
- Phase 5 *Label CORE database devices*
- Phase 6 *CORE database and log areas sized and labeled.*

4. Upon successfully completing all phases of **sminstall**, bring up the Manager IV application.

Note: At this point you no longer need to provide the path /appl/smgr to reach the Manager IV root directory. The string **\$\$SYSROOT** now translates to the Manager IV root directory.

Enter: **./etc/envlist**

Enter: **\$\$SYSROOT/etc/startsm**

System Response [Sample]:

```
                Now doing cleanup of ipc items.
Semaphore semid 702 successfully initialized
Semaphore semid 703 successfully initialized
Semaphore semid 704 successfully initialized
Manager IV Semaphores initialized
Manager IV booting to normal mode ...
```

Note: If you need more information regarding the **startsm** (and also the **stopsm**) command, see *DEFINITY Manager IV System Administration*.

If this customer has purchased the optional Switch Support Base (SSB) software for maintenance and admin procs for the Generic 2 switches, see the following section.

If this customer has not purchased SSB, then you can begin defining and testing elements of Manager IV. See section 4, "Defining And Testing Elements Of Manager IV."

END OF PROCEDURE

SWITCH SUPPORT BASE SOFTWARE

This section provides you with the necessary steps to install and configure the optional Switch Support Base (SSB) for Manager IV. Briefly, Switch Support Base software enables the customer to operate an enhanced version of the Proc Mode application. The SSB software provides you with a fully prompted user interface to the Generic 2 switch. For information regarding the operation of this Enhanced Mode see *Manager IV System Administration*.

Procedure: Load the Switch Support Base Software [NCR 3332]

Purpose:

This procedure provides you with the necessary steps to install and configure the Switch Support Base (SSB) software for Manager IV.

Procedure Steps:

1. Log in as root (*/*).
2. Execute the environment list.

Enter: **./etc/envlist**

3. Create a target base directory where the SSB files are to be loaded.

NOTE: The recommended target base directory for the SSB files is **\$SYSROOT/proc/SSB**.

4. Enter **installpkg** and follow the instructions.
5. Using a UNIX editor, add the following information to the **/etc/envlist** and the **\$SYSROOT/etc/envlist** files.

Enter: **SSB = *fpn***
export SSB

where *fpn* = the full path name of the target base directory designated in Step 3 of this procedure.

NOTE: If the environment variable is not set, the Manager IV software will default to Basic Mode.

6. Execute the envlist to activate the changes.

Enter: **./etc/envlist**

At this point you can begin defining and testing elements of Manager IV. See section 4, "Defining And Testing Elements Of Manager IV."

END OF PROCEDURE

ENVIRONMENT VARIABLES

After executing the installation script (**sminstall**), the environment variables are available to the system. Employing these variable names allows you to access needed files without using the full path name. This is especially useful since every system could potentially house files in different areas. The following list defines the environment variables used throughout this manual.

LOG the area where all logs are kept
PROG user executable programs
SYSGEN the directory for system utilities
SYSROOT defines the /(root) directory for the Manager IV software
WORK work directory

5. DEFINING AND TESTING ELEMENTS OF MANAGER IV

After the Manager IV tapes are installed, a series of tests must be performed to ensure that the system is properly installed.

- Checks are performed at the remote system console and a complete backup is taken. See the end of this section and *DEFINITY Manager IV System Administration* for more information regarding system backup.
- The corporation and products to be supported by Manager IV are defined.
- All product access ports are configured, enabled, and tested.

The procedures which enable you to perform these tasks are listed below. To complete the activities in this section, use the **root** and **smsa** logins.

- Performing Post Installation Sanity Checks
- Adding a Corporation
- Adding a Product
- Adding a Port
- Enabling and Testing Ports

Procedure: Performing Post Installation Checks

Purpose:

Use these UNIX commands at the system console to verify that the Manager IV software is properly installed.

Procedure Steps:

1. Log in at the system console as **root**.
2. Establish the Manager IV environment.

Enter: **. /etc/envlist**

3. Verify that the background processes are running by checking the output.

Enter: **ps -ef | grep -v getty**

Sample Output:

UID	PID	PPID	C	STIME	TTY	TIME	COMMAND
root	0	0	41	11:11:23	?	13:39	sched
root	1	0	0	11:11:23	?	0:04	/etc/init
root	0	0	0	11:11:23	?	0:00	vhand
root	3	0	1	11:11:22	?	3:59	bdflush
root	247	1	1	11:22:05	tty3-05	0:04	/etc/hdlogger
root	186	1	0	11:15:22	?	0:01	/etc/cron
smgr	183	1	0	11:15:21	?	0:00	generic
smgr	195	1	0	11:15:35	?	0:00	controller*
smgr	298	195	0	11:28:06	?	0:01	ueutil *
smgr	302	1	0	11:28:39	?	0:00	/appl/smgr/usr/prog/linmgr 600 1800
smgr	303	1	0	11:28:39	?	0:03	/appl/smgr/usr/prog/sched

* These are Manager IV processes.

4. Verify that the controller "def" table can be accessed.

A. Enter: **upctl**

System Response:

```
Transaction >
```

B. Enter: **map**

Sample Output:

```

# upctl
Transaction > map
NAME           KEY           QBYTES      LWNUM        HWNUM        NUM        IDLECNT
generic        90001         8192         3            4            3          3
fmtrk5         120001        8192         1            10           1          1
mnfe           150001        8192         0            10           0          0
blkld          180001        8192         0            10           0          0
canclsr        210001        8192         0            10           0          0
customer       240001        8192         0            10           0          0
dbio           270001        8192         0            10           0          0
disrpt         300001        8192         0            10           0          0
equiptab       330001        8192         0            10           0          0
extract        360001        8192         1            31           1          1
nswdta         390001        8192         0            10           0          0
product        420001        8192         0            10           0          0
resdisp        450001        8192         1            10           1          1
rschsr         480001        8192         1            10           1          1
scm            510001        8192         1            30           1          1
srstat         540001        8192         0            10           0          0
ueutil         570001        8192         2            10           2          2
DUMP SUCCESSFUL

Transaction >

```

5. Exit upctl.

Enter: **!**

6. Verify that the database can be opened and closed.

A. Enter: **updb**

System Response:

```

# updb
Transaction >

```

B. Enter: **o cust n**

System Response:

```

FILE SUCCESSFULLY OPENED  FLID = 0
NUMBER OF RECORDS IN FILE = 0
NUMBER OF BYTES IN FILE = 0

Transaction >

```

C. Enter: **c 0**

System Response:

```
DB SUCCESSFULLY CLOSED
```

```
Transaction >
```

7. Exit updb.

Enter: **!**

Successful completion of these steps ensures a properly installed system.

END OF PROCEDURE

Procedure: Adding a Corporation

Purpose:

Use this procedure to define the corporation associated with your switch(es).

Notes:

- Corporations must be defined before products can be defined.
- Corporation information is available on the filled-out copies of the Corporation Information data collection form found in *Manager IV Planning and Implementation*.

Procedure Steps:

1. Login as **smsa** .
2. Execute the smue to enter the Manager IV application.
Enter: **smue**
3. Access the **corporation add** screen from the Manager IV user interface.

Enter application: **system-administration corporation add**

System Response:

AT&T Mgr IV 2.2	DEFINITY G2.2	<target>
system-administration corporation add		Page 1 of 2
Corporation Record		
Corp. Name: _____	Corp. I.D.: _____	
No. of DCS Networks: _	DCS Subnetwork I.D.'s	
_____	_____	
Number of Electronic Tandem Networks (ETN's): _	ETN I.D.: _____	No. of Portability Networks: _
_____	_____	Number Portability Subnetwork I.D.'s
_____	_____	
ETN I.D.: _____	No. of Portability Networks: _	Number Portability Subnetwork I.D.'s
_____	_____	_____

Define a corporation name and ID in the Manager IV database and identify any associated Electronic Tandem Networks (ETNs), Distributed Communication System (DCS) subnetworks, and Number Portability subnetworks.

The corporation data should be available on the Corporation Information data collection form that was completed by the customer prior to installation. (The form is found in *DEFINITY Manager IV Planning and Implementation*.)

The System prompts for the following fields.

Corp. Name	Enter the full name of the corporation. Maximum length is 30 characters.
Corp. I.D.	This ID is a shortened key that is valid for identifying the corporation at the target level. The ID cannot contain blank spaces and may be a maximum length of 13 characters.
No. of DCS Networks	Enter number of DCS networks to be managed through Manager IV. Valid entries are 0-9 .
DCS Subnetwork I.D.'s	This ID is a unique identifier for the DCS Network. The ID may be a maximum length of 8 characters.
Number of Electronic Tandem Networks (ETN's)	Enter the number of ETN networks present for this corporation. Valid entries are 0-5 .
ETN I.D.	This ID is a unique identifier for the ETN Network. The ID may be a maximum length of 8 characters.
No. of Portability Networks	Enter number of NP networks for this corporation. Valid entries are 0-9 .
Number Portability Subnetwork I.D.'s	This ID is a unique identifier for the NP networks. The ID may be a maximum length of 8 characters.

4. Execute the corporation add transaction. Press **ESC** or **EXECUTE**.

END OF PROCEDURE

Procedure: Adding a Manager IV Supported Product

Use this procedure to identify each supported product in a customer's system and enter this information into the Manager IV CORE database.

Prerequisite:

Corporate information must be defined first. Use the **system-administration corporation add** command to define corporate information.

Notes:

Product data should be available on the Product Definition Data Collection form completed by the customer prior to installation. (The form is found in *Manager IV Planning and Implementation*.)

For information regarding the addition of cut-through accessed products see "Procedure: Adding Cut-through Access to a Product" in this section.

Procedure Steps:

1. Login as **smsa**.
2. Execute the smue to enter the Manager IV.

Enter: **smue**

3. Access the product add screen.

Enter: **system-administration product add**

System Response:

```

AT&T Mgr IV 2.2          DEFINITY G2.2          <target>
system-administration product add          Page 1 of 3

Product ID: _____          Corporation ID: _____

          Product Location: _____
                              _____

          Product Type: DEFINITY G2
          Release: 2
          Issue: 1.0

Equipment Serial Number: _____
          DOSS Order Number: _____
          Port Phone Number 1: _____          Port Type 1:
          Port Phone Number 2: _____          Port Type 2:
          Security Code: _____

SWITCH FEATURES

          Call Vectoring?_ Tenant Services?_ Expert Agent?_ Call Work Codes?_
Trad. Modules: _____
Univ. Modules: _____
          XE Modules: _____

```

4. Enter the product information from the Product Definition data collection form(s). The type of product being defined determines the required fields and valid entries. The charts below list the required fields and valid entries by product. Use the charts as a guide when entering the information.

Product ID:

The Product ID is a unique identifier for the managed product. Each Product ID cannot contain blank spaces and has a maximum length of 13 characters.

Corporation ID:

The corporation ID is assigned through the **corporation add** transaction. Maximum length is 13 characters.

Product Location:

The Product Location is the address of the product. Maximum length is two lines of up to 60 characters.

Product Type:

This is the code that identifies the type of product being added.

CODE	PRODUCT
ADJUNCT	All products for which Manager IV provides cut-through access
SYS85	System 85 products
D2000	DIMENSION products
DEFINITY G2	DEFINITY Generic 2 products

- **System 85:**

Release: [System generated] A single digit: **(2)**.

Version: A single digit: **(2,3, or 4)**.

Issue: Issue number: *default* **(1.0)**

- **DIMENSION 2000:**

Bus Type: Enter **1** for single bus; **2** for dual bus

Feature Package: [System generated] A single digit: **(8)**

Issue: Issue number: **1.16** or **3.8**

Hardware Configuration: Switch memory size. Maximum length is 2 characters. The first letter represents memory size and a trailing D represents a dual processor. Sample entries are: **B** or **CD**.

Valid entries are:

- **B**
- **C** (not valid for FP8 Issue 3.8)
- **D** (not valid for FP8 Issue 1.16)
- **F**
- **D** (dual processor).

• **DEFINITY Generic 2:**

Release: A single digit: (**1** for G2.1; **2** for G2.2).

Issue: Issue number: *default* (**1.0**)

Provide identification for the product, the network, the present applications, and the administrators' logins. This information should be on the Product Definition Data Collection Form. Use the field descriptions below as a guide when entering information.

Equipment Serial Number: Enter the serial number in the form:

<NNNN-YY-XXXXXXXXXX-Z>

where: NNNN = Product Code - 4 digits identifying the product type

YY = Manufacturer's Code - 2 digits identifying the manufacturer

XXXXXXXXXX = Serial Number - 9 characters unique to the product

Z = Check digit - 1 character (numeric or dash [-])

DOSS Order Number: Enter the DOSS Order number in the following format:

<XXXXXXXXXXNN>

where: XXXXXXXXXXXX = DOSS Sales Order Number

NN = DOSS Segment Number

Port Phone Number 1: Enter the product port number as dialed from the product access port or "dedicated". This field is required.

The number may contain any combination of digits, dash (—), equal (=), asterisk (*), or pound sign (#).

— pause

= wait for secondary dial tone

* touch tone asterisk

touch tone pound sign

0-9 dialed digit

Port Type 1: [DEFINITY Generic 2] This field appears only in Generic 2. Enter **r** for RMATS, **p** for PPG or **n** for none.

Port Phone Number 2: [System 85 and DEFINITY Generic 2] This field is optional and cannot be designated as *dedicated*. This field has the same format as the "Port Phone Number 1" and is used to specify the second dial-up port.

Port Type 2: [DEFINITY Generic 2] This field appears only in Generic 2. Enter **r** for RMATS, **p** for PPG or **n** for none.

Security Code: Security codes are stored in the switch.
[DIMENSION 2000] Enter the four-digit security code.
[System 85 and DEFINITY Generic 2] Enter the six-digit security code.

NOTE: If unrestricted switch alarm dial-out is required on System 85, only "Port Phone No. 1" should be specified. The number used should be the switch port without the dial-out capability. This ensures that the dial-out port is never busy for servicing Manager IV when a switch alarm occurs.

Switch Features

[D2000 and SYS85 only] Asgnd Modules:

Enter the assigned module numbers. Valid entries are a single digit separated by commas (,) or a range of numbers separated by dashes (—), i. e. 2, 3, 4-7.

[System 85R2V4 or DEFINITY G2] Call Vectoring

A system generated field informing you whether Call Vectoring is present.

[System 85 R2V4 or DEFINITY G2] Tenant Services

A system generated field informing you whether Tenant Services is present.

[System 85 R2V4 or DEFINITY G2] Trad. Univ., or XE Modules:

System generated fields providing specific information on the type of modules present.

[DEFINITY G2.2] Expert Agent?

A system generated field informing you whether Expert Agent Selection is present.

[DEFINITY G2.2] Call Work Codes?

A system generated field informing you whether Call Work Codes is present.

Page 2 of the **product add** screen is as follows:

AT&T Mgr IV 2.2	DEFINITY G2.2	<target>
system-administration product add		Page 2 of 3
Product Record		
Product ID: _____	Corporation ID: _____	
Distributed Communications System (DCS) ID: _____		
Electronic Tandem Network (ETN) ID: _____		
Product Time Zone: EST		
Daylight Savings Time During Summer? y		
Non-Blocking Indicator:n		
TCM Administrator's Login:		
FM Administrator's Login:		
Directory Update for this product?		
NOTES: _____		
End of Page 2		

DCS ID: Enter the valid ID associated with the switch. The ID was assigned to the switch in the **corporation add** transaction. Maximum length is 8 characters.

ETN ID: Enter the valid ID associated with the switch. The ID was assigned to the switch in the **corporation add** transaction. Maximum length is 8 characters.

Number
Portability ID:
[System 85 R2V3&V4]
[Generic 2]

This prompt appears if ETN ID is supplied. It is the valid ID associated with the switch in the corporation:add transaction.

Product Time Zone: Enter the correct time zone associated with the switch. Valid entries are:

Valid Entry	Time Zone
AST	Alaskan Standard Time
CST	Central Standard Time
EST	Eastern Standard Time
HST	Hawaiian Standard Time
MST	Mountain Standard Time
PST	Pacific Standard Time
TST	Atlantic Standard Time

Daylight Savings
Time during summer? Enter **y** (yes) or **n** (no).

Nonblocking Indicator:

Enter **e** if the switch is essentially nonblocking.
Enter **n** if the switch is nonblocking.

Administrator's
Logins

For each application present, enter the main administrator's login.

5. Enter the following information for all products.

Directory Update
for this Product?

If this product utilizes the Directory Synchronization feature, enter **y**;
if not, enter **n** and skip to Procedure Step 7.

NOTES:

Enter any pertinent comments about this product in this field. It is a
free format field of up to 72 characters.

6. If Directory Synchronization Feature of Manager IV is used to update an existing Personnel Database for the 3B5 AP Customer Directory Service, page 3 of the product add screen displays.

AT&T Mgr IV 2.2	DEFINITY G2.2	<target>
system-administration product add		Page 3 of 3
Product ID: _____	Corporation ID: _____	
UUCP Address of Customer Directory Service Administrator: _____		
Mail Address to Receive UUCP Error Messages:		
Customer Directory Service CDS) Software Release:		
End of Form		

Enter the following information:

UUCP Address of CDS Administrator

Enter the remote mailing address of the 3B5 AP CDS processor. The
address is the processor name and the login of the CDS
administrator, separated by an exclamation point (!).

Mail Address to receive UUCP Error Message

Enter the login ID of the Manager IV System Administrator.

CDS Software Release

Enter the release number of the CDS software.

7. Execute the product add transaction by pressing **ESC** e or **EXECUTE**.

END OF PROCEDURE

Procedure: Adding Cut-through Access to a Product

Use this procedure to identify each product for which the application provides cut-through access and enter this information into the Manager IV CORE database.

Prerequisite:

Corporate information must be defined first. Use the **system-administration corporation add** command to define corporate information.

Notes:

Product data should be available on the Product Definition Data Collection form completed by the customer prior to installation. (The form is found in *Manager IV Planning and Implementation*.)

For information regarding the addition of Manager IV supported products see "Procedure: Adding a Product" in this section.

Procedure Steps:

1. Login as smsa.
2. Execute the smue to enter Manager IV.

Enter: **smue**

3. Access the product add screen.

Enter application: **system-administration product add**

System Response:

```
AT&T Mgr IV 2.2
system-administration product add                               Page 1 of 3

Product ID: _____ Corporation ID: _____
Product Location: _____
                    _____

Product Type: ADJUNCT

Port Phone Number: _____
```

4. Enter the product information from the Product Definition data collection form(s).

Product ID: A unique identifier for the product. Maximum length is 13 characters.

Corporation ID: The corporation ID assigned through the corporation add transaction. Maximum length is 13 characters.

Product Location: The address of the product. Maximum length is 60 characters.

Product Type: Enter **ADJUNCT** for all products for which Manager IV will provide cut-through access.

Port Phone Number: Enter the product port number as dialed from the product access port.

The number may contain any combination of digits, dash (-), equal (=), asterisk (*), or pound sign (#).

- pause
- = wait for secondary dial tone
- * touch tone asterisk
- # touch tone pound sign
- 0-9** dialed digit

Execute this command by pressing **ESC** e or **EXECUTE**.

END OF PROCEDURE

Procedure: Adding a Port

Purpose:

To add a new product access port to the configuration and to define its attributes.

Notes:

- When adding product access ports, first check the configuration of the ports in the /dev directory, /etc/inittab, as described the "Verifying the Product Access Ports" procedure in Appendix D of this manual.
- To reallocate a product access port, the port must be removed and added with a new configuration.
- The following commands may be used within this program.
 - Enter ? to view this information.
 - Enter ?? for a list of available commands.
 - Enter @ to delete the line you are typing.
 - Enter ! to stop the program.
 - Enter **BREAK** or **DEL** at any time to abort the program.
- The port data should be available on the Manager IV Port Configuration form that has been completed by the Implementation Team. The form can be found in *Manager IV Planning and Implementation*.

Procedure Steps:

1. Login as **smsa**
2. Execute the smue to enter the Manager IV application.

Enter: **smue**

3. Access the port add screen.

Enter: **system-administration port add**

The system will prompt you for the following information.

Port Name The name of the port you want to add. Port names are site-dependent and are assigned during the configuration of the system.

The port names on 3B2-600 or 6386 consist of **/dev/tty** followed by a number.

Conn Type Enter the connection type you want to assign to this port; see below.

TYPE	DESCRIPTION
auto	Dial-out line using modems with integral autodialers.
ded	Dedicated link to a pbx product.

Speed Enter all the line speeds this port will support. Enter one speed per prompt. End the list by entering ! on a line by itself.

Supported transmission speed(s) are:

SPEED	DESCRIPTION
300	300 baud transmission rate.
1200	1200 baud transmission rate.
2400	2400 baud transmission rate.

Recommendations:

- For AT&T 2224CEO asynchronous modems, the recommended speeds are to enter both 300, and 1200.
- For dedicated links, the proper speed is 1200.

Product id If **ded** is entered for Connection Type, this field is prompted. Enter the product id of the pbx product that the dedicated link is connected to.

Enable Port? Enter: **y** or **n**

where: **y** enables the port now

n leaves the port disabled until a later time. (See the "Enabling and Testing Ports" procedure later in this section to enable the port at a later date.)

Comment ([]) [Optional] One line of text for future reference. To view the comment field for each record, use **port display**.

4. After entering all needed data, execute the command by pressing **RETURN**.

END OF PROCEDURE

Procedure: Enabling and Testing Ports

Purpose:

Use this procedure to test each product access port.

Prerequisites:

- Execute **system-administration corporation add** and **system-administration product add** to define corporations and products before using this procedure.
- Product access ports must have been configured through **system-administration port add**.

Procedure Steps:

1. Login as **smsa**
2. Execute the smue to enter the Manager IV application.
Enter: **smue**
3. Use the following table to determine how to proceed.

If	Then
The specific port has already been enabled.	Go to Step 5.
You have not enabled the specific port from the previous procedure (Adding A Port).	Go to Step 4

4. Each product access port that is to be tested must first be enabled individually by using the Manager IV commands.

Enter: **system-administration port enable**

The System will prompt you for the following information:

Port Name The /dev filename for this port. Use **system-administration display** to display the name of each port in the form **/dev/tty** followed by a number..

System Response: "Product port *XX* enabled"

5. Verify the connection to a product by using the **connection create** command from the product administration area of TCM or FM.

The system will prompt you for the following information.

Enter application **tcm** or **fm**

Enter target The Product ID for this product as defined in the product add transaction.

Enter area **product-admin connection create**

If you receive an error message, refer to "Errors While Connecting to a Product" later in this section.

6. Execute any display command for a known entity in the product, such as an extension or trunk group.
7. If Steps 4, 5, and 6 were completed successfully, return to the application level.

Enter: **connection end**

8. Use the **system-administration port disable** command to disable the product access port. To disable a port, you must enter the same information in all fields as you entered in **system-administration port enable**.

Enter: **system-administration port disable**

The System will prompt you for the following information.

Port Name	Enter the /dev filename for this port. Use the command system-administration display to display the name of each port in the form /dev/tty followed by a number.
-----------	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------

System Response: "Product port XX disabled"

Repeat Steps 1 through 6 for each product access port. After each port is tested, then you can enable all the product access ports.

END OF PROCEDURE

RUNNING BACKUPS

The importance of backing up the Manager IV database cannot be overemphasized. Backups should be performed as part of the installation process and as ongoing maintenance once Manager IV is up and running.

Backup During Installation

During installation, it is important to run full backups at the following stages:

1. After installing the Manager IV software and before initializing the database with the switch translation files.
2. After initializing the database with the switch translation files.

Backups—Ongoing Maintenance

Backups are run from the **root** login in any UNIX mode, other than firmware, at the system console. To run a full backup, use the command **bradm full _dump**.

Recommended backup procedures for the Manager IV database include daily backup of Manager IV, CORE and journal record's daily changes, and a weekly full CORE backup. Full CORE backups should be held for 4 weeks before recycling the tapes.

It is also recommended that backups be stored off-premises. Storage services may be purchased from private firms specializing in this area. These firms pick up and deliver tapes daily, and provide fireproof storage as well as delivery of backup tapes to the customer in the event that corrupt files must be restored.

For details on backing up the Manager IV software, refer to procedures in *Manager IV System Administration*.

ERRORS WHILE CONNECTING TO A PRODUCT

While performing the procedure "Enabling and Testing Ports," you may receive an error message when you execute the command **connection create**. The following lists the most common error messages and the action necessary to correct the error.

ERROR: No port allocated

A port has not been configured to access this product. Check the port configuration by using the following system-administration commands:

1. To see the current port configuration, use **port display**.
2. To enable a port, use **port enable**.
3. To add a port use **port add**.

ERROR: Dialing failed, product busy.

Call the switch port number from a regular telephone to verify that the switch is busy.

If the product is not answering, Manager IV tries three times to connect to the product.

ERROR: Dialing Failed, no answer.

Check the product phone number using **product display**.

ERROR: Security failed

Manager IV may be trying to access the product using an incorrect Security Code.

Verify the entry in the Security Code field by using **system-administration product display**. If the Security Code entry is incorrect, correct it by using **system-administration product change**.

[*DEFINITY Generic 2*]

ERROR: Target Forbids Access By This Product

Access must be enabled by a service technician. Proc 277w4 agents 13261 must be enabled.

For more details on connection errors, refer to *Manager IV System Administration*.

6. INITIALIZING THE MANAGER IV DATABASE

After you have completed the procedures in Section 4 and it is determined that the DEFINITY Manager IV software is properly installed and that Manager IV can communicate with the products it manages, you are ready to initialize the Manager IV database with switch data and later, with nonswitch data. This section contains the procedures needed to initialize the Manager IV CORE database.

PREPARING TO INITIALIZE WITH SWITCH DATA

Before beginning switch data initialization, there are several things to consider. The following section discusses:

- The order in which the switch(es) will be initialized.
- What role the TRACS tape(s) play in initialization.
- Who can perform initialization.
- What to do if errors occur.

Order of Initialization

The order of initialization procedures is dependent partly on the Manager IV commands and partly by the number of switches that are being managed by Manager IV. Since initialization can be a time-consuming and CPU-intensive task, it makes sense to order the procedures in the most time-effective manner. Table 6-1 provides guidelines for ordering the initialization activities.

Table 6-1. Switch Data Initialization Guidelines

<p>Single-Switch Customers</p>	<ol style="list-style-type: none"> 1. Execute system-administration corporation add 2. Execute system-administration product add 3. Load TRACS file. 4. Run initfiles process. 5. Execute system-administration initialization setup 6. Execute system-administration initialization start
<p>Multiple-Switch Customers</p>	<ol style="list-style-type: none"> 1. Execute system-administration corporation add for one corporation per network. 2. Execute system-administration product add for each product under the corporation. 3. Load TRACS tape for a switch. 4. Run initfiles process using that switch's DOSS number. 5. Execute system-administration initialization setup for that switch using that switch's target. 6. Define the spare packs for the switch using system-administration hardware change. (This object is not available for Generic 2.) 7. Repeat steps 3 through 6 for each switch. Note: For a Number Portability Network these steps must be completed for at least 2 switches prior to executing step number 8. 8. If the customer has a Number Portability Network, run system-administration network-file create. 9. Run system-administration initialization start successfully for each switch in the Number Portability network. 10. If the customer has a Number Portability Network, run system-administration network-file remove successfully for each Number Portability Network. 11. Run system-administration initialization start successfully for any other switches not in the network (not in the Number Portability Network).

The TRACS Process

For each DEFINITY Generic 2, System 85, or DIMENSION FP8 switch to be administered via Manager IV, the installer must have a TRACS tape. The TRACS tape contains switch translations. Before the switch translation file is delivered to you on tape, several stages of preparation take place.

The Implementation Team arranges for a service technician to make a copy of the switch tape using the **run tape** command. The copy of the switch tape is sent to the TRACS Data Center along with a Tape Retrieval Request Form. The Tape Retrieval Request Form provides the TRACS operator with the following information:

- The name and location of the customer
- The date the TRACS tape is due back to the customer
- The name and phone number of the Technical Consultant

- A name of the Manager IV host processor and switch release and version information
- The DOSS order number.

Once TRACS receives the switch tape, the switch files are disassembled into proc files. Then, errors are resolved and a tape containing the switch translations is made. The Implementation Team conveys the TRACS tape to the service technician. For more detail on the process that goes on before you get a tape from the Implementation Team, refer to *DEFINITY Manager IV Planning and Implementation*.

Who Can Perform Initialization

To perform the initialization procedures, the assigned login must be given permission to access the shell and the **system-administration hardware** object. That is, the login must have a user class of **expert** or **super-admin** along with **init**. If you are an AT&T Technician, use the login **smsa** assigned during installation of Manager IV; **sysadm** allows shell access and **hardware** object*.

Before beginning the initialization process, read over all the procedures in this section and clear up any questions you may have.

The login used to begin the initialization process must be used to complete (or restart) the process. In other words, if initialization should terminate abnormally, it must be restarted under the same login which originally began the process.

PRE-INITIALIZATION PROCEDURES

This section applies to DEFINITY Generic 2, System 85, and DIMENSION System FP8 switches only. Pre-initialization involves loading the TRACS tape, setting up for initialization, defining switch hardware*, and creating a Number Portability file (if applicable).

The following is a list of the basic steps to follow before switch data can be initialized. Refer to this list as you follow the procedures in this section. Exact commands are listed in each procedure.

CAUTION: It is very important to load the TRACS tape and to run all the initialization commands from one login. Use the same login to run these commands:

```
initfiles (shell command)
system-administration initialization setup
system-administration network-file create
system-administration initialization start
system-administration initialization restart
system-administration network-file remove
```

1. Make sure the customer's corporation and products have been identified through the transactions **system-administration corporation add** and **system-administration product add**. For details, refer to the procedures, "Adding a Corporation" and "Adding a Product" in Section 4.
2. Load, unpack, and if necessary, split the TRACS file into smaller pieces. For details, see the procedure, "Loading the TRACS Tape" later in this section.

* This object is not available to the DEFINITY Generic 2 switch.

3. Move the unpacked and split TRACS file to \$WORK/dbdata/hw by executing **system-administration initialization setup**. This command also creates the hardware table on switches prior to DEFINITY Generic 2. Read your mail to see the results of this transaction. For DEFINITY Generic 2, use **results display** to display this file. For details, refer to the "Initialization Setup" procedure later in this section.
4. [For switches other than DEFINITY Generic 2] Identify spare packs, remote modules and groups, and update the hardware table by using **system-administration hardware change**. For details, refer to the procedure, "Defining Switch Hardware," later in this section.
5. [Number Portability Networks only] Create a network extension file by using the command **system-administration network-file create**.

The procedures needed to prepare for switch data initialization are listed below:

- Loading the TRACS Tape
- Initialization Setup
- Defining Switch Hardware*
 - Adding a Spare Pack
 - Adding a Carrier
 - Changing a Locale
- Creating a Number Portability Network File.

* This does not apply to Generic 2 switches.

Procedure: Loading the TRACS Tape

Purpose:

Use this procedure to load, unpack, and, if required, split the TRACS file.

Notes:

- Safely store it away when you have finished loading the TRACS file.
- Database initialization requires a large amount of free disk space. The space needs for initialization are taken into account when a site's disk configuration is designed. You can monitor the number of free blocks available for a file system by using the UNIX command **df**. To determine the block size of a file, use the UNIX command **ls -s filename**.
- The TRACS tape should contain one packed translation file per switch. The naming convention for the single file is T followed by the customer's DOSS number, followed by .z (.z indicates the file is packed). For example, if the customer's DOSS number is 5555566666, then the file name would be T5555566666.z.

The size of the TRACS file may exceed the UNIX file size limit. In order to load this file, you use the **bigfile** command which increases the file size limit for the duration of a single command. (The tape must be read into the /usr/spool/uucppublic/sm directory). A sample command line that would enable you to read in a 6250 bpi tape on tape drive 0 follows:

```
bigfile #blocks cpio -icdumB < /dev/rsa/qtape1
```

where *#blocks* = a file size limit that is larger than the number that has been specified on the tape label.

- The **initfiles** program unpacks and if required, splits the TRACS file into approximately 1 megabyte files.

Use the following format for the **initfiles** command:

```
bigfile 19000 sh $PROG/initfiles DOSS#
```

Procedure Steps:

1. From the shell, login to the system using a login with the init user class. The login used for this procedure must be used to initialize the entire database.
2. The tape must be read in to the /usr/spool/uucppublic/sm directory. Change to that directory.

Enter: **cd /usr/spool/uucppublic/sm**

Note: If this directory does not exist you must create it.

3. Put the TRACS tape on the tape device and make sure the device is online. Read in the TRACS files from the tape.

Enter: **bigfile 19000 cpio -icdumBv < /dev/rsa/qtapen**

where: *-icdumBv* = the same cpio flags that were used to create the tape. This information should be noted on the tape label.

n = the SCSI drive number; in most cases, 1.

System Response: "X blocks"

where: X = the number of blocks on the tape label

4. Check to make sure a file named TDOSS#.z exists (where DOSS# = the customer's DOSS number).

Enter: **ls -l**

5. Unpack and split (if necessary) the TDOSS#.z file.

Enter:

bigfile 19000 sh \$PROG/initfiles DOSS#

System Response: When unpacking and splitting has completed successfully, the system will display the following message which provides information about the release and name of the switch whose procs are on the TRACS tape.

```
initfiles was successful
Customer Name = Customer_Name Switch_Name
Switch Type = System 85, or DIMENSION
Switch Release = Release and issue of switch
```

Note: System 85 R2L5 *Switch Type* refers to DEFINITY Generic 2.

List the contents of the /usr/spool/uucppublic/sm directory.

Enter: **ls -l**

System Response:

- If the unpacked file is approximately 1 megabyte, a file named TDOSS# exists.
- If the file is more than 1 megabyte, files named TDOSS#a-z exist.

END OF PROCEDURE

Procedure: Initialization Setup

Purpose:

Execute this command to move the unpacked and split TRACS file (*TDOSS#a-z*) from the public directory */usr/spool/uucppublic/sm* to *\$WORK/dbdata/hw OSS#a-z*.

For switches other than DEFINITY Generic 2 this command creates the hardware table for these switch types.

Prerequisites:

- Before you execute this command, make sure there is available space in the *\$WORK* directory by using the UNIX command **df**.
- [Non-DEFINITY Generic 2 switches] This procedure will not complete successfully if old hardware tables for the same DOSS number are present on the system. Hardware tables are in the *\$WORK/dbdata/table* directory.
- Complete the procedure, "Loading the TRACS Tape," before beginning this procedure.
- If setup does not complete successfully, see Section 7, "Error Administration-Database Administration."

Notes:

- You receive mail when this command finishes. The mail will indicate whether or not this command was successful. Resolve the error (if any), and restart initialization by entering **initialization setup**.
- If setup does not complete successfully, see Section 7, "Error Administration-Database Administration."

Procedure Steps:

1. Access the initialization setup screen.

The System will prompt you for the following information:

Enter application	system-administration initialization
Enter target	Enter the product ID, which is defined in the product add transaction .
Enter verb	setup
Setup initialization files?	

Enter: **y** (yes) or **n** (no)

If you enter **n**, you return to the verb level.

2. Execute or schedule this transaction.

Note: Executing this command will tie up the terminal for about 5 minutes. (Actual tie-up time is relative to the size of the installation; 5 minutes is an approximation.)

To execute the command, press **(ESC) e** or **(EXECUTE)**.

To schedule the command, press **(ESC) s** or **(SCHED)**.

System Response:

"Command Completed" or "Command Successfully Scheduled."

3. Return to the object level by pressing **ESC** **b**.
System Response: "Enter object"
4. Check your mail to determine if any problems occurred.
Note: Remove the file when initialization is completed.
5. Read the date and time that setup was successfully completed.
Enter: **cat \$WORK/dbdata/custlist**
System Response:
Tdoss#a processed at: date
Tdoss#b processed at: date
.
.
.

END OF PROCEDURE

Procedure: Initpoll Tool (Generic 2, System 85)

Purpose:

Initpoll is a stand alone tool designed to correct discrepancies between the TRACS tape and switch translations with regard to the universal (*tn742/tn746*) or traditional (*sn228/sn229, sn220/sn221*) pack types.

Background:

For universal modules of Generic 2 switches, pack type *tn746* is associated with on/off-site analog lines and can have 16 circuits. Pack type *tn742* is associated with either on-site or off-premises analog lines and can have 8 circuits. However, TRACS does not supply proc data that *HWINIT* can use to determine if the on-site ELLs are associated *tn746* or *tn742* pack types.

Important Guidelines:

To successfully use the **initpoll** tool, follow these guidelines:

- The **initpoll** tool may be run any time after the database is initialized (after executing the **init** command).
- *To avoid the out-of-sync condition between the Manager IV database and the switch translations, run the tool before making any changes to the Manager IV database.*
- Since **initpoll** is a time-consuming task, the best time to run the tool is when no one is actively working on the Manager IV system.
- You can use **initpoll** either for universal or traditional pack types. To correct both universal and traditional packs, you must run the tool twice, for each type separately.

Prerequisites:

- Make sure that initialization has completed.
- Confirm that the switch is available.

Procedures:

Note: You can run **initpoll** in foreground or background at the UNIX shell, or you can schedule this command to run at another time.

- **Shell foreground procedure:**

Enter the following at the shell prompt:

```
initpoll target_name u | t
```

Note: If you prefer, you can direct the command results to a file or printer. For example:

```
initpoll target_name u | t > file
```

where:

target_name = name of the target
u = universal packs
t = traditional packs
file = the filename or printer of choice *if* you are redirecting command output

- **Shell background procedure:**

Enter the following at the shell prompt:

```
nohup initpoll target_name u | t &
```

Note: You can also direct command results to a file or printer.

- **Scheduling procedure:**

1. Access the initialization poll screen from the smue.

The system prompts for the following information:

Enter application	system-administration initialization
Enter target	enter the product ID which is defined in the product add transaction
Enter verb	poll
Start?	Enter either y (yes) or n (no).

2. To execute this command, press the **ESC** e or **EXECUTE** button.
3. To schedule this command, press the **ESC** s or **SCHED** button.
4. To cancel this command, press the **ESC** c or **CANCEL** button.

System Response:

A "Command Completed" or "Command Successfully Scheduled" message is displayed.

Note: If you are running **initpoll** from the shell (either foreground or background), be aware that it takes approximately 5 minutes for this command to complete execution. (However, actual execution time is related to the size of the TRACS file as well as the number of universal on-site analog lines.)

Initpoll Tool Operation

The **initpoll** tool is a two phase process.

Phase I

During *Phase I*, **initpoll** performs as follows:

1. Retrieves information from the switch.
2. Creates the following temporary files in *\$CSMTMP* (if set), otherwise, in */tmp*.
 - *ps.target_name* file contains connection status for the switch. The status may be either *BUSY* or *OK*. *BUSY* means that the connection is not presently available. *OK* designates successful connection.
 - *err.target_name* file contains error messages that may be generated when connecting to the switch.
 - *po.target_name* file contains information on all requested pack types. For each pack, equipment location and number of circuits are provided. Currently, number of circuits is not used in this program.
 - *din.target_name* file is derived from the *po-target_name* file. *Din.target_name* will be finally used to update the database in the event of the out-of-sync condition between the database and the switch translations.

Note:

The **initpoll** tool removes all temporary files if it is executed the second time.

Phase II

During *Phase II*, **initpoll** performs as follows:

1. Updates the database if there is at least one record in the *din.target_name* file.
2. All errors, if any, are sent to *stderr*. If no errors have been generated during a pack update, then the database is assumed to have been successfully updated.

[Non-DEFINITY Generic 2 Switches] Defining or Changing Switch Hardware

Once the hardware table is created using **system-administration initialization setup**, spare packs can be added to existing carriers, new carriers can be added, and locales can be changed using the **system-administration hardware change** or **add** transaction.

Use the procedures in this section to perform the appropriate type of switch hardware modification. There are three:

Adding a Spare Pack Use this procedure to add a spare pack to an existing carrier.

Adding a Carrier Use this procedure to add a new DS1 or non-DS1 carrier along with its associated packs.

Note: The type of carrier **can not** be changed—that is, non-DS1 carriers can not be changed into DS1 carriers, and DS1 carriers can not be changed into non-DS1 carriers. To change a carrier type, the carrier must first be removed using **system-administration hardware remove**, then be redefined using **system-administration hardware add**.

Changing a Locale Use this procedure to change the locale of a carrier.

Note: Adding a spare pack and changing a locale use the same transaction, **hardware change**. Therefore, spare packs can be added and locales can be changed at the same time.

After initialization, hardware modifications are made in the Manager IV database by using the objects; **pack**, **carrier**, **slot**, and **circuit** in the TCM and FM applications.

Procedure: Adding a Spare Pack

Purpose:

Use this procedure before executing the **initialization start** command to enter spare packs into an existing carrier.

CAUTION:

This command is very powerful and should only be used by a knowledgeable user **BEFORE** initialization. After initialization, the object **hardware** should be used only in conjunction with the verb **display**.

Notes:

- The hardware change screen displays the data contained in the hardware table. The hardware table was created during the execution of **system-administration initialization setup**.
- To display the data on a carrier, use **system administration hardware display**.
- If the hardware table was *not* created during initialization setup, you can create the hardware table for each carrier using **system-administration hardware add**; however, this method is **not** recommended.

Procedure Steps:

1. Access the hardware change screen.

The system will prompt for the following information.

Enter application **system-administration hardware**

Enter target *product_ID*

where: *product_ID* is the Manager IV product ID of the switch for which you are adding a spare pack.

Enter verb **change**

System Response:

```
AT&T Mgr IV 1.0
system-administration hardware change

Carrier Location          Module:_____
                          Cabinet:_____
                          Carrier:_____
```

2. Indicate the switch hardware to be changed by completing the appropriate fields.

Module Enter the module number associated with this cabinet. Valid entries are numbers in the following range:

[System 85] **0** through **30**

[DIMENSION System FP8] **0** through **14**.

Cabinet Enter the cabinet number associated with this carrier. Valid entries are numbers in the following range:

[System 85] 0 through 7

[DIMENSION System FP8] 0 through 4.

Carrier Enter the carrier number associated with this group of slots. Valid entries are numbers in the following range:

[System 85] 0 through 3

[DIMENSION System FP8] 0 through 4.

- Execute the command by pressing **ESC** or **EXECUTE**.

The screen will be redrawn with the current pack assignments in the slot fields.

System Response [System 85 non-DS1 Carrier Sample]:

```
AT&T Mgr IV 1.0
system-administration hardware change

Carrier Location:      Module: 0
                      Cabinet: 0
                      Carrier: 0
                      Locale: 0
                      DS1 Carrier?: n

Slot 00:sn232 Slot 05:      Slot 10:      Slot 15:sn232 Slot 20:sn232
Slot 01:sn232 Slot 06:sn232 Slot 11:      Slot 16:sn232 Slot 21:
Slot 02:sn232 Slot 07:sn232 Slot 12:      Slot 17:
Slot 03:sn232 Slot 08:sn232 Slot 13:sn232 Slot 18:sn232
Slot 04:      Slot 09:      Slot 14:sn232 Slot 19:sn232
```

- Enter an appropriate pack type in an available slot.

Pack types are listed in [System 85] Table 6-2; [DIMENSION FP8] in Table 6-3; and can also be obtained using on-line help.

- Execute the command by pressing **ESC** or **EXECUTE**.

Note:

To add packs after initialization is complete, use one of the following commands to enter packtype, module, cabinet, carrier, and slot number for each pack: **tcm database-admin pack add**, **tcm admin pack add**, **fm database-admin pack add**, or **fm admin pack add**. This information is retained only in the database.

Table 6-2. System 85 Circuit Packs

Valid Entry	System 85 Circuit Pack Description
ann11	[System 85 R2] DS1 interface
ann17	MFAT System 85 R2
ann35	[System 85 R2V4 only] ISDN circuit pack
sn221	analog off-premises
sn222	analog on-premises
sn224	Multi-Function Electronic Terminal (MFET) line port
sn224+	ECTS set
sn228	[System 85 R2] analog off-premises
sn229	[System 85 R2] analog on-premises
sn230	Central Office (CO) trunk
sn231	Auxiliary trunk
sn232	Direct Inward Dialing (DID) trunk
sn233	Tie trunk
sn235	[System 85 R2V4] ISDN
sn238t	[System 85 R2] Electronics Industries Association (EIA) port (trunk)
sn238l	[System 85 R2] Electronics Industries Association (EIA) port (line)
sn240	Message register
sn241	Contact Interface
sn242	[System 85 R1] Automatic Number ID
sn243	Data Port
sn243b	Analog Data Modem R1
sn244	[System 85 R2] AN1
sn250	Call Progress Tones
sn251	Touch Tone Recorder
sn252	Touch Tone Sender
sn253	Auxiliary tones
sn254	Attendant Conference
sn255	Tone det.
sn260	Analog Facility Test
sn261	Digital Facility Test
sn270t	digital voice/data port GPP (trunk)
sn270l	digital voice/data port GPP (line)

Table 6-3. DIMENSION System FP8 Circuit Packs

Valid Entries	DIMENSION System FP8 Circuit Packs
lc002	regular line
lc003	message waiting
lc004	basic tone
lc005	tone pack
lc006	attendant conference
lc007	CO,FX,WATS,RA
lc008	CO,FX,WATS,RA
lc009	Direct Inward Dialing (DID) trunk
lc010	Touch tone register
lc011	Tie CCSA, APLT trunk
lc012	Touch tone sender
lc013	Auxiliary trunk
lc015	Trunk status lamp
lc016	message register
lc017	code calling
lc032	auto number ID
lc034	dual data
lc036	RAM control
lc045	attendant interference
lc100	link circuit
lc145	transmission test
lc190	auto wakeup
lc204	replace tone
lc280	international 2-wire
lc285	international loop
lc361	loop signal
lc366	quad data channel
lc567	data trunk
lc568	data cap link

END OF PROCEDURE

Procedure: Adding a Carrier

Purpose:

Use this procedure to add a new carrier and its associated packs **BEFORE** executing the **initialization start** command.

CAUTIONS:

- This command is very powerful and should be used only by a knowledgeable user **BEFORE** initialization. After the database is initialized, the **hardware** object should be used only in conjunction with the verb **display**.
- Hardware modifications are made in the Manager IV database after initialization using the objects; **pack, carrier, slot, locale, and circuit** in the FM and TCM applications.

Notes:

- To add spare packs to an existing carrier, see the previous procedure, "Adding Spare Packs."
- If carrier data must be removed, use **system-administration hardware remove**.
- For more information on DS1 carriers, see *DEFINITY Manager IV Facilities Management Operations*.

Procedure Steps:

1. Access the hardware add screen.

The system will prompt you for the following information.

Enter application **system-administration**

Enter target *product_ID*

where: *product_ID* = the Manager IV product ID of the switch for which you are adding a carrier.

Enter verb **add**

System Response:

```
AT&T Mgr IV 1.0
system-administration hardware add

Carrier Location:      Module:  __
                      Cabinet:  __
                      Carrier:  __
                      Locale:   __
                      DS1 Carrier?:  __
```

2. Enter the carrier information by filling in the appropriate fields.

- Module** Enter the module number associated with this cabinet. This is a required field; valid entries are numbers in the following range:
 [System 85] 0 through 30
 [DIMENSION System FP8] 0 through 14.
- Cabinet** Enter the cabinet number associated with this carrier. This is a required field; valid entries are numbers in the following range:
 [System 85] 0 through 7
 [DIMENSION System FP8] 0 through 4.
- Carrier** Enter the carrier number associated with this group of slots. This is a required field; valid entries are numbers in the following range:
 [System 85] 0 through 3
 [DIMENSION System FP8] 0 through 4.
- Locale** [System 85 only] Enter the locale number associated with this module, cabinet, and carrier. Valid entries are the numbers 0 through 99. Locale can be the same as the module number.
- DS1 Carrier?** Enter **y** to define a DS1 Carrier, or **n** to define a non-DS1 Carrier.

System Response [System 85 DS1 Carrier only]:

```

AT&T Mgr IV 1.0
system-administration hardware add

Carrier Location:      Module: 0
                      Cabinet: 0
                      Carrier: 0
                      Locale: 0
                      DS1 Carrier?: y
Slot 05 Application Type: __          Slot 00 Application Type: __
Slot 18 Application Type: __          Slot 13 Application Type: __

Slot 00: __ Slot 05: __ Slot 10:      Slot 15: __ Slot 20: __
Slot 01: __ Slot 06: __ Slot 11:      Slot 16: __ Slot 21: __
Slot 02: __ Slot 07: __ Slot 12:      Slot 17:
Slot 03: __ Slot 08: __ Slot 13: __ Slot 18: __
Slot 04:      Slot 09: __ Slot 14: __ Slot 19: __
  
```

System Response [non-DS1 Carrier only]:

```

AT&T Mgr IV 1.0
system-administration hardware add

Carrier Location:      Module: 0
                      Cabinet: 0
                      Carrier: 0
                      Locale: 0
                      DS1 Carrier?: n

Slot 00:___   Slot 05:___   Slot 10:___   Slot 15:___   Slot 20:___
Slot 01:___   Slot 06:___   Slot 11:___   Slot 16:___   Slot 21:___
Slot 02:___   Slot 07:___   Slot 12:___   Slot 17:___
Slot 03:___   Slot 08:___   Slot 13:___   Slot 18:___
Slot 04:___   Slot 09:___   Slot 14:___   Slot 19:___
    
```

3. If you are defining a **non-DS1** Carrier, skip to Procedure Step 4.

Define the DS1 Carrier.

- A. Enter a valid Application Type for the appropriate slot. Valid Entries are listed below. (See "System Response" for Manager IV automatic slot assignment.)

DS1 Application Types	
Type	Description
0	<p>Trunks Mix. DS1 can replace a variety of analog trunks including private network tie trunks, CO trunks, FX trunks, and WATS trunks.</p> <p>Packs for this application must be in slot 05 or 18.</p>
1	<p>Digital Multiplex Interface (DMI). DS1 can interface between data ports and a host computer. For example, users can dial into the System 85 and connect to a 3B20.</p> <p>Packs for this application must be in slot 05 or 18.</p>
2	<p>Off-Premise Station Lines (OPS). A single DS1 interface can support up to 24 off-premise terminals. This allows users to access System 85 from a remote location.</p> <p>Packs for this application must be in slots 00, 05, 13, or 18.</p>
3	<p>Remote Carrier Board Connected by T1. The DS1 interface can be used in conjunction with T1 to connect a remote carrier to a System 85. Remote carriers can be placed a maximum of 100 miles away from a System 85.</p>
4	<p>Remote Carrier Board Connected by Fiber. This is the same as application type 3, but the transmission medium is fiber other than T1. This application type is not valid for R2V4 switches; use application type 3 instead.</p>
5	<p>ISDN. DS1 carriers are used for ISDN circuit packs which connect ISDN trunks in the network.</p> <p>Packs for this application must be in slot 05 or 18.</p>

System Response: Manager IV will automatically assign the virtual slots as follows:

- For application types 0 or 1, Manager IV automatically fills in the slot field for the physical slots (05 and 18) with "ann11" and the virtual slots with "ds1."
 - For slot 05, the virtual slots are 00, 01, 02, 06 and 07.
 - For slot 18, the virtual slots are 13, 14, 15, 19, and 20.

Note: If application type 0 or 1 is entered for slots 05 or 18, the application type prompt for slot 00 or 13 is not displayed because it is used as a virtual slot.

- For application type 2:
 - If application type 2 is entered for slot 05, the application type prompt for slot 00 displays. Similarly, if application type 2 is entered for slot 18, the prompt for slot 13 displays.

Slot 00 or 13 can only have application types 2, 3, or 4 since it is a virtual slot when types 0 or 1 are used.

For type 2, virtual slots are 01, 02, 06, 07, 14, 15, 19, and 20.
 - If application type 2 is entered in the physical slots 05, 00, 18, or 13, Manager IV fills in the slots as follows:

Slot 05 with "ann11" and virtual slots 06 and 07 with "ds1"
Slot 00 with "ann11" and virtual slots 01 and 02 with "ds1"
Slot 18 with "ann11" and virtual slots 19 and 20 with "ds1"
Slot 13 with "ann11" and virtual slots 14 and 15 with "ds1"

- For application type 3 or 4, *you must enter* the pack types of the remote carrier in the appropriate corresponding slots of the carrier being added (the local carrier).
 - Manager IV assumes that the local DS1 carrier has an ann15 controlling pack physically inserted in slot 00 and/or 05 and slot 13 and/or 18. It also assumes that there is a corresponding ann16 controlling pack in slots 00 or 05 of the remote carrier.
 - If slot 00 of the remote carrier contains an ann16, slots 01, 02, and 03 can be used for sn228, sn270t/1, sn238t/1, or ann17 packs. If slot 05 of the remote carrier contains an ann16, slots 04, 07, and 08 can be used for the same pack types.
 - Manager IV needs to know the ELLs on the local DS1 carrier in order to administer the local and remote carrier. However, in order to accurately show the pack types on the system inventory reports, Manager IV also needs to know the physical pack types in the remote carrier. To accomplish this, Manager IV pairs the ELLs from the local carrier with the pack types in the remote carrier.
 - For ELLs on the local carrier, enter the physical pack types as they exist in the remote carrier. This table outlines the relationship between the local and remote slots.

Table 6-4. Remote and Local Carrier Slots

In Local Carrier Slot	Enter Pack Type That Is in Remote Carrier Slot
00	01
01	02
02	03
05	04
06	07
07	08
13	01
14	02
15	03
18	04
19	07
20	08

— Note that you must keep track of which remote carriers correspond to which DS1 carriers.

- For application type 5, Manager IV fills in the field for the physical slots 05 and 18 with "ann35," and their associated virtual slots with "isdn" as follows:

Slot 05 with "ann35" and virtual slots 00, 01, 02, 06 and 07 with "isdn."

Slot 18 with "ann35" and the virtual slots 13, 14, 15, 19, and 20 with "isdn."

- If the carrier is being used for MFAT terminals (pack type ann17), clear the application type field. The ann17 pack will be given 8 circuits instead of the usual 4 that are assigned if the pack is located in a non-DS1 carrier. The ann17 pack will also be given 8 circuits if it is placed in any of the free slots: 03, 08, 16, and 21.

- B. Enter an appropriate pack type in other available slots, if desired. Refer to the pack types in Tables 6-2 and 6-3, or use on-line help, to remind you of available pack types.

Note: Slots 04, 09, 10, 11, 12 and 17 are reserved for system control packs and cannot be assigned. The cursor skips over these fields.

- C. Go to Procedure Step 5.

4. Enter valid pack types in the appropriate slot(s). Refer to the pack types in Tables 6-2, 6-3 or use on-line help.
5. Execute the command by pressing **(ESC)** e or **(EXECUTE)**.

END OF PROCEDURE

Procedure: Changing a Locale

Purpose:

Use this procedure before executing the **initialization start** command to change the locale of a carrier.

CAUTIONS:

- This command is very powerful and should only be used by a knowledgeable user **BEFORE** initialization. After the database is initialized, the **hardware** object should only be used with the verb **display**.
- Hardware modifications are made in the Manager IV database after initialization by using the objects **pack, carrier, slot, locale, and circuit** in the TCM and FM applications.

Notes:

- The hardware change screen displays the data that is automatically gathered from the hardware table. The hardware table was created automatically during the execution of **system-administration initialization setup**.
- If a hardware table was not created during initialization setup, you can create the hardware table for each carrier by using the command **system-administration hardware add**; however, this method is **not** recommended.
- If carrier data must be removed, use the **system-administration hardware remove**.
- If you want to display the data on a carrier, use the **system-administration hardware display**.

Procedure Steps:

1. Access the hardware change screen.

The system will prompt you for the following information.

Enter application **system-administration hardware**

Enter target *product_ID*

where: *product_ID* is the Manager IV product ID of the switch whose carrier's locale must be changed.

Enter verb **change**

System Response:

```
AT&T Mgr IV 1.0
system-administration hardware change

Carrier Location          Module:  __
                          Cabinet:  __
                          Carrier:  __
```

- Enter the carrier information by completing the appropriate fields.

Module Enter the module number associated with this cabinet. This is a required field; valid entries are numbers in the following range:

[System 85] 0 through 30

[DIMENSION System FP8] 0 through 14.

Cabinet Enter the cabinet number associated with this carrier. This is a required field; valid entries are numbers in the following range:

[System 85] 0 through 7

[DIMENSION System FP8] 0 through 4.

Carrier Enter the carrier number associated with this group of slots. This is a required field; valid entries are numbers in the following range:

[System 85] 0 through 3

[DIMENSION System FP8] 0 through 4.

- Enter the information by pressing **ESC** or **EXECUTE**.

Sample System Response [System 85 R2V4 DS1 Carrier only]:

```

AT&T Mgr IV 1.0
system-administration hardware change

Carrier Location:      Module: 0
                      Cabinet: 0
                      Carrier: 0
                      Locale: 0
                      DS1 Carrier?: y
Slot 05 Application Type: nc          Slot 00 Application Type: nc
Slot 18 Application Type: nc          Slot 13 Application Type: nc

Slot 00:ds1      Slot 05:ann11 Slot 10:          Slot 15: sn232 Slot 20: ds1
Slot 01:ds1      Slot 06:ds1   Slot 11:          Slot 16: sn232 Slot 21: sn232
Slot 02:ds1      Slot 07:ds1   Slot 12:          Slot 17:
Slot 03:sn232    Slot 08:sn232 Slot 13:sn232 Slot 18: ann11
Slot 04:         Slot 09:         Slot 14:sn232 Slot 19: ds1

```

Sample System Response [non-DS1 Carrier only]:

```
AT&T Mgr IV 1.0
system-administration hardware change

Carrier Location:      Module: 0
                      Cabinet: 0
                      Carrier: 0
                      Locale: 0
                      DS1 Carrier?: n

Slot 00:sn232 Slot 05:      Slot 10:      Slot 15:sn232 Slot 20:sn232
Slot 01:sn232 Slot 06:sn232 Slot 11:      Slot 16:sn232 Slot 21:
Slot 02:sn232 Slot 07:sn232 Slot 12:      Slot 17:
Slot 03:sn232 Slot 08:sn232 Slot 13:sn232 Slot 18:sn232
Slot 04:      Slot 09:      Slot 14:sn232 Slot 19:sn232
```

4. Tab to the Locale field and enter the new locale.

Locale Enter the locale number associated with this module, cabinet, and carrier. Valid entries are the numbers 0 through 99. Locale can be the same as the module number.

5. Enter the information by pressing **ESC** e or **EXECUTE**.

END OF PROCEDURE

Procedure: Creating a Number Portability Network File

[Use this procedure for Number Portability Networks only]

Purpose:

Use this procedure for System 85 R2V3, R2V4 or DEFINITY Generic 2 switches that are in a Number Portability Network. This procedure creates the network extension file needed by the database initialization process.

Background: The sequence of events for initializing switches in a Number Portability Network are as follows:

1. Create the Number Portability Network File,
2. Initialize the switches in the Number Portability Network,
3. Remove the network extension file.

Prerequisites:

- Execute **system-administration corporation add**.
- Identify the switches in the Number Portability Network through **system-administration product add**.
- Execute **initfiles** and **system-administration initialization setup** for all of the switches in the Number Portability Network.

Notes:

- You receive mail when the network-files cread command has completed.
If any errors occur during the execution of the the network file creation a file named **errorfilenp** is written to the **\$HOME/smgr** directory. This file contains any error messages generated by the transaction during execution. This command must complete successfully *before* initialization can begin.
- After you execute this command (network-files create) successfully, use **system-administration initialization start** for each node in the Number Portability Network, then remove the network extension file by using **system-administration network-file remove**.
- Nodes outside of the Number Portability Network can be initialized only after **network-file remove** has been executed for the Number Portability Network.

Procedure Steps:

1. Access the network-file create screen.

The system will prompt you for the following information.

Enter application **system-administration network-file**

Enter target The product ID for any one of the switches in the number portability network for which you have already executed **initialization setup**. The product ID is defined in the **product add** transaction.

Enter verb **create**

Start? **y** (yes) or **n** (no)

If you enter **n**, you return to the verb level.

2. Execute or schedule this transaction.

Note: The length of time that this command takes to complete depends on the number of network extensions. A rough estimate is from 10 to 20 minutes.

To execute, press (ESC) e or (EXECUTE).

To schedule, press (ESC) s or (SCHED).

END OF PROCEDURE

ABOUT SWITCH DATA INITIALIZATION

The initialization program uses these sources of information:

- The corporation information entered through the command **system-administration corporation add**.
- The product information entered through the command **system-administration product add**.
- The switch translation files from Translation, Recovery, Additions, and Conversion System (TRACS).
- [System 85 and DIMENSION System FP8 only] The updated hardware information entered through the command **system-administration hardware change**.
- [Number Portability Networks only] The network extension file created through the command **system-administration network file create**.

In order to perform initialization, you must have a Manager IV login with user class **init** or **super-admin** or you can use the **smsa** login which was set up by **sminstall**.

Figure 6-1 provides a flow chart of the initialization process with references to the command names you will be using.

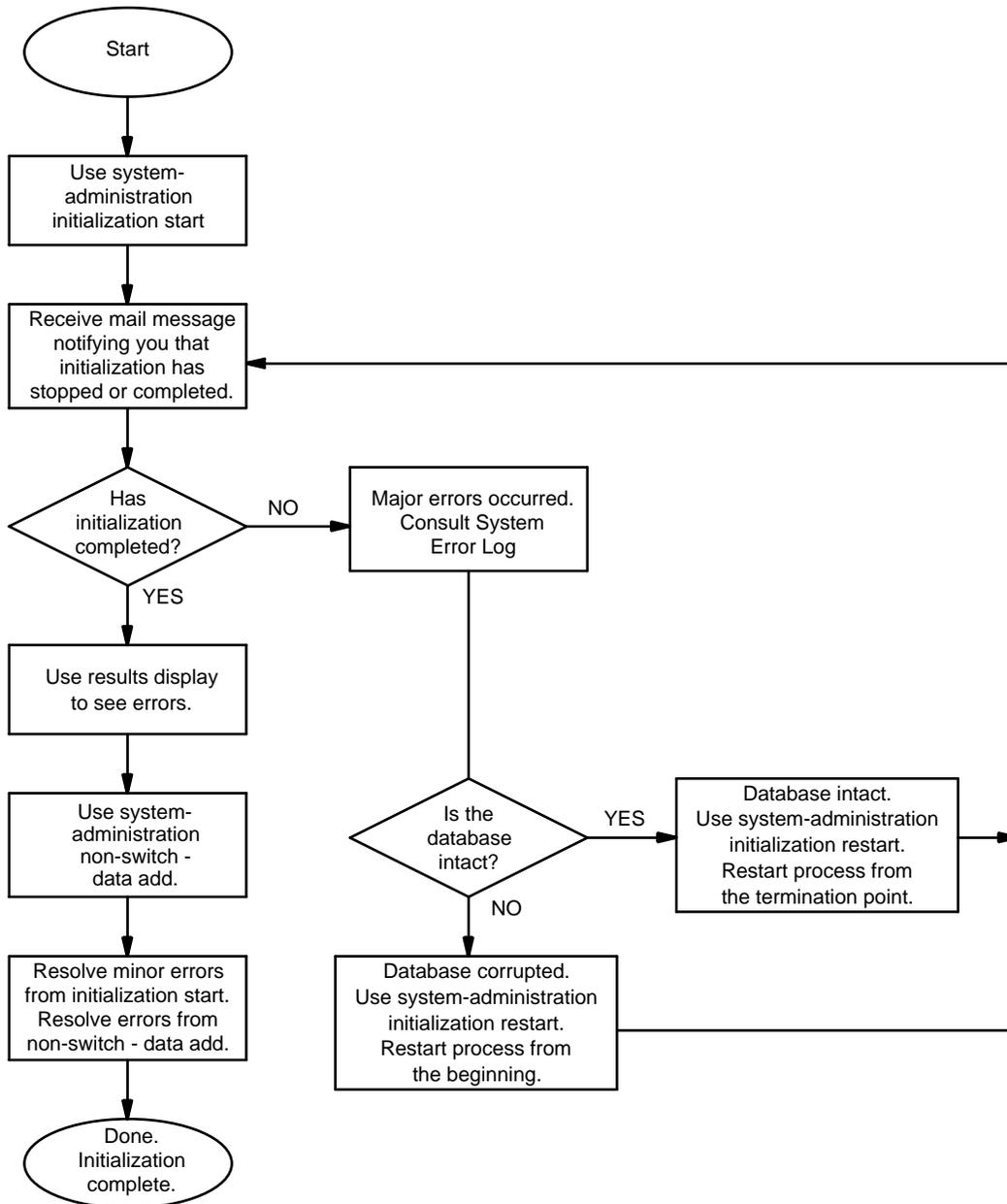


Figure 6-1. Initialization Process Flow Chart

Initialization Program Steps

The initialization program consists of 33 steps. The steps and their functions are listed below.

1. The program equipdb loads the hardware table for System 85 R2V2, R2V3, R2V4, and DIMENSION. For DEFINITY Generic 2, the program hwinit loads the database directly from the TRACS file.
2. The program errhead places headers on the error file.

Notes: Steps 3 through 21 create temporary database files in \$WORK/dbdata (steps 5, 6 and 8 are used only in System 85 R2V2-R2V3). The files created at each step are listed below.

The actual files depend on which release of System 85, DEFINITY Generic 2, or which issue of DIMENSION System FP8 is being initialized. The example below is for Generic 2.2.

3. Files frl.t and syscos.t are created.
4. Files casrlt.t and intercept.t are created.
5. A call is made but no files are created for G2.2.
6. A call is made but no files are created for G2.2.
7. Files links.t and dciurt.t are created.
8. A call is made but no files are created for G2.2.
9. File mrgdac.t is created.
10. Files chan.t, trkgrp.t, trkextn.t, crac.t, autovon.t, and isdnp.t are created.
11. Files wcallcat.t, wdialplan.t, wdmmod.t, wdsend.t, wisdn.t, wnetroute.t, wnetwork.t, wpattern.t, wtollfree.t, and wporta.t are created.
12. File arsclk.t is created.
13. Files nrcall.t and cdr.t are created.
14. Files fmdata.t, rdce.t, and dsconn.t are created.
15. Files conti.t, trunks.t, dchan.t, pcc.t, and dciupt.t are created.
16. Files mrgcos.t, fstdgt.t, bccos.t, cos.t, feadac.t, and abdelbtn.t are created.
17. Files extn.t, ucd.t, ap.t, name.t, set.t, vector.t, desig.t, and equip.t are created.
18. Files termdef.t, termopt.t, btndef.t, and tmp51.t are created.
19. Files smb.t, tmp51.t, tmp52.t, auth.t, and alpku.t are created.
20. Files adgrp.t and nprnx.t are created.
21. Files hnpa.t, fnpa.t, and ccgp.t are created.
22. The temporary database files are committed to the database.

Use **cat \$WORK/dbdata/restartpbxid** to monitor step 22. Step 22 adds the files into the Manager IV database.

The file *restartpbxid* contains two numbers in the form n:n. The first number represents how many files have been committed plus one. (The first file is numbered zero.) The second number is a unique number assigned to each file by initialization. To find out what file these numbers refer to, use Tables 7-2 through 7-7 in Section 7, which list the order in which the files are committed, the order in which the files are created, and the file name.

- 23-26. These steps complete miscellaneous clean up functions and updates.
27. If the TRACS tape was for a new switch (an initialization tape as opposed to a blowback tape), there may be nonswitch data included with the switch data. This is loaded into the database by nswload.
28. The featrust program loads cust file with data from procs 276w1 and 275w4.
29. If the switch is part of a number portability network, the nprout file is *loaded* into the database (for the first switch in the network to be initialized), or *audited* against what is already in the database (for each switch in the network after the first one to be initialized).

Note The nprout file is not required if the customer has all G2.2 switches.

30. [System 85 R2V2, R2V3, R2V4, and DIMENSION only] chgequip and chg2equip load proc 262w1 into the equip file.
31. If the switch is a DIMENSION FP8, the ectsc and ectsc files are populated.
32. If the switch is System 85 or DEFINITY Generic 2, the delta program creates a master file for delta reports.
33. Procedures for cleanup are performed.

Initialization Results

When the initialization program completes, or stops without completing, a mail message is sent to the user who began the process. A message stating "YOU HAVE MAIL" appears at the top of that user's screen.

The mail indicates either that initialization has completed or that it has not completed. In either case, a **results** file is created. The results file contains messages about errors that occurred during initialization. A full explanation of the results file and its descriptive message entries can be found in Section 7 "Error Administration-Database Initialization."

There are three types of errors that can occur while initializing the database with switch data:

- **Major Errors:** These are malfunctions that halt the initialization program before it completes processing. For example, if a file system runs out of space while the initialization program is running, a major error or fatal error has occurred. When a major error occurs, this message appears at the *end* of the results file:

"CUSTOMER DID NOT LOAD SUCCESSFULLY.

The customer cannot be loaded/audited.

Consult your system administrator."

Consult the system error log, the System Administrator's log and the info-log in *Manager IV System Administration*. The info-log will tell you which step of initialization is currently executing. To check info-log enter **cd \$LOG**. Then **cat** the **infomddd** file (where mmdd is the month and day of the log you want to see). At the end of the file a message will display similar to the one below.

"Initialization is currently processing Step 5 out of 33 total steps."

Correct the major error, and restart initialization. (Do not attempt to correct any minor errors that have occurred.) Initialization is usually restarted from the point of termination; however if the database is corrupted you will need to start initialization from the beginning.

- **Minor Errors:** These errors are "soft" errors. They are data inconsistencies that are not acceptable to the initialization program. Minor errors are recorded in the results file with information that helps you correct the error. Minor errors should be corrected using the Manager IV commands available at the user interface after the initialization process is complete (no major errors occurred), and you have executed **system-administration non-switch-data add**.

- **Special Minor Errors:** These are minor errors that are recorded in the results file; however, information to help you correct these errors is provided in this manual, not the results file. The results file lists a case number that corresponds to case number in Section 7 of this manual.

You use several commands to determine where errors exist and how to correct them. These errors are corrected through Terminal Change Management (TCM) commands. Special minor errors can be corrected at the same time minor errors are corrected. Refer to Section 7 "Error Administration-Database Initialization" for more details.

CAUTION: Changes should not be made to the switch through Manager IV or any other system management vehicle while resolving initialization errors unless you are specifically instructed to do so. The goal is to resolve initialization errors by manipulating the database until it mirrors the switch as it appeared on the date the switch tape was sent to TRACS.

File Processing Order

The initialization program extracts procs from the switch translation files, creates temporary files from these procs in the \$WORK/dbdata directory, then commits these files to the database.

The tables in Section 7, "Error Administration-Database Initialization" provide a list of the temporary files in the order that they are created by the initialization program in the \$WORK/dbdata directory for System 85 R2V2, R2V3, R2V4, DEFINITY Generic 2; and also for Dimension FP8, Issues 1.16, 3.8, and 3L7. These temporary files are created during initialization steps 3 to 21 (listed previously under the heading, "Initialization Program Steps").

Entering Changes After Initialization

After the database is initialized with switch data, you may need to update it so that it reflects the current status of the switch.

As you know, the initialization program populates the database with information from switch translation files. The switch translation files contain a snapshot of a switch as it existed on a particular date. Following that date, either you or the customer may have made changes to the switch. Since these changes are made after the switch is installed or after a copy of the switch tape is sent to TRACS for processing, they already exist in the switch, but need to be entered into the Manager IV database.

Changes must be kept to a *minimum*. Refer to the time line in Figure 6-2 for the time period during which it is advisable to avoid changes to the switch.

CAUTION: The installer will enter some changes and the customer will enter some. Once Manager IV is installed and the database is initialized, do not make any changes to the switch by using any system management vehicle such as the Maintenance and Administrative Panel [MAAP] other than Manager IV.

Note: In order to cut-over terminals quickly (without assigning features) use the TCM commands **analog-dialtone add**, **nonanalog-dialtone add**, and **sls-dialtone add**. Some TCM reports that are useful in the pre-Manager IV-cut environment are **db-circuit-pack**, **pbx-circuit pack**, **db-extension ell**, and **pbx-extension-ell**. Refer to Appendix E for details about these commands and reports.

Changes Entered by Installer

You are responsible for maintaining records of any changes made to a new switch during switch installation, such as adding a circuit pack. You enter these changes into Manager IV after database initialization, if they are not included in the switch translation files. Make these changes in the database-admin area of TCM or FM.

Changes Entered by the Customer

Customers are responsible for keeping records of changes they want to make to a switch and changes they have already made to a switch that are not reflected in the switch translation files, such as station changes.

Customers update the database to include changes that they have made since a copy of the switch tape was sent to TRACS. These changes are made in the database-admin area of TCM or FM.

Customers make new changes to both the database and the switch in the **admin** area of TCM or FM.

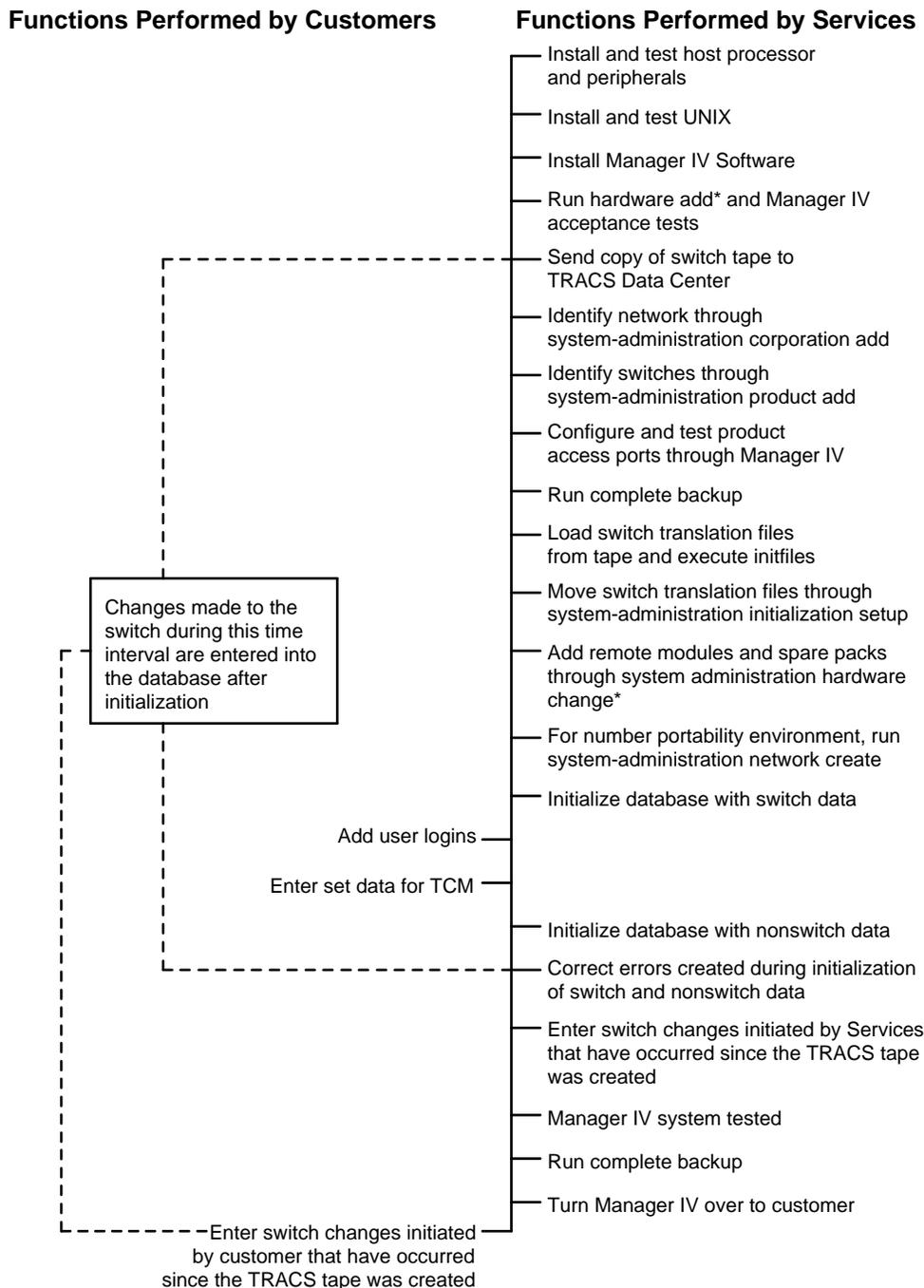


Figure 6-2. Time Interval for Switch Changes

SWITCH DATA INITIALIZATION PROCEDURES

The following is a list of the basic steps you follow during initialization. Before starting these procedures, all the procedures described in "Pre-Initialization Procedures" must have been completed.

1. Start running initialization by using the command **system-administration initialization start**. Read your mail to see the results of this transaction. For details on starting and monitoring initialization, refer to the procedures, "Starting Initialization" and "Monitoring Initialization."
2. If initialization stops, read your mail and look at the results file. If a major error occurs, refer to the System Error Log and System Administrator's log in *Manager IV System Administration* for more information. Resolve major errors and restart initialization. Refer to the procedure, "Restarting Initialization."
3. Resolve minor errors that occurred during initialization, and nonswitch data errors.

The procedures for starting switch data initialization are listed below.

- Starting Initialization
- Monitoring Initialization
- Locating Initialization Results
- Restarting Initialization
- Deleting a Number Portability Network File

* This object is not available to the DEFINITY Generic 2 switch.

Procedure: Starting Initialization

Purpose:

Use this procedure to populate the Manager IV database with the TRACS data from the customer's switches.

Prerequisites:

- [All Switches] Do a CORE backup and make sure these commands have been completed before you start initialization:

system-administration corporation add
system-administration product add

- In addition to defining corporation and product, make sure these tasks have been completed also:
 - the TRACS tape has been loaded
 - **system-administration initialization setup**
 - [Number Portability Networks only]
system-administration network-file create .
- [System 85 R2V3 and R2V4 only] If spare packs data needs to be entered, use the command: **system-administration hardware add** or **change**.

Notes:

- Initializing the database may take up to 48 hours to complete.
- You receive mail when the initialization program completes or if it encounters a major error.

Procedure Steps:

1. Access the **initialization start** screen.

The system will prompt you for the following information:

Enter application **system-administration initialization**

Enter target Enter the product ID for this switch. The product ID is defined in the
product add transaction.

Enter verb **start**

Start? Enter: **y** (yes) or **n** (no)

2. Schedule this transaction.

To schedule, press **ESC** s or **SCHED**.

END OF PROCEDURE

Procedure: Locating Initialization Results

Purpose:

Use this procedure to determine if errors occurred during initialization.

Procedure Steps:

1. Read your mail to determine if initialization errors have occurred.
 - If initialization completed successfully with or without minor errors, the mail message states:
"The database files for target - *target* have been initialized successfully.
Any errors from initialization are logged in *r target*."
Go to Step 2.
 - If initialization did not complete successfully because of a major error, the mail message states:
"Initialization is INCOMPLETE; you will have to restart.
Use 'results display' to view the following results file *r target*."
The results file appears in *\$HOME/smgr* directory. Consult the system error log. See "Correcting Major Errors" in Section 7.
2. Enter **results display** from any application.
Note: The results file appears in the *\$HOME/smgr* directory.
3. Fill in the name of the results file on the results display screen and press **ESC** e or **EXECUTE**.
To print out a copy of a results file screen on your local printer, press **ESC** P. See the procedure, "Correcting Minor Errors" in Section 7.

END OF PROCEDURE

Procedure: Restarting Initialization

Purpose:

Use this procedure to restart the initialization process after a major error has been encountered and corrected.

Prerequisite:

Major errors must be corrected before restarting initialization. See "Identifying and Correcting Major Errors" in Section 7.

Procedure Steps:

1. Access the **initialization restart** screen.

The system will prompt you for the following information:

Enter application **system-administration initialization**

Enter target Enter the product ID for this switch. The product ID is defined in the **product add** transaction.

Enter verb **restart**

System Response: "Restart from termination point?"

- Unless there is some indication that the entire database is corrupted, restart initialization from the termination point.

Press **y** and **ESC** or **SCHED** (to schedule).

- If there is indication of a corrupted database,

Enter: **n**

System Response: "Restart initialization from beginning?"

Note: Restarting from the beginning is necessary only if database corruption is detected.

Press **y** and:

ESC or **SCHED** (to schedule).

END OF PROCEDURE

Procedure: Deleting a Number Portability Network File

[Use this procedure for Number Portability Networks only]

Purpose:

For Number Portability Networks, use this procedure to remove the network file after *all* the switches in the Number Portability Network have been successfully initialized. It is important to remove this file, in case the database is reinitialized at a later time.

CAUTION:

Use this procedure only after *ALL* switches in the Number Portability Network have been successfully initialized.

Procedure Steps:

1. Access the **network-file remove** screen.

The system will prompt you for the following information.

Enter application **system-administration network-file**

Enter target Enter the product ID for one of the nodes in the number portability network. The product ID is defined in the product:add transaction.

Enter verb **remove**

2. Execute this transaction by pressing, **ESC** e or **EXECUTE**.

END OF PROCEDURE

AUTOMATIC LOAD OF NONSWITCH DATA

When a new System 85 or DEFINITY Generic 2 switch is being administered, the customer must input nonswitch data into TRACS. Some of the nonswitch data entered for TRACS is required for the Manager IV database. To reduce the customer's input effort during a Manager IV initialization, Manager IV can automatically load the shared nonswitch data into the Manager IV database. However, not all nonswitch data needed in the Manager IV database is included in TRACS. Below is a list of the nonswitch data which will be loaded:

<u>TRACS Nonswitch Data</u>	<u>Type of Nonswitch Data</u>
Module	jack
Cabinet	jack
Carrier	jack
Slot	jack
Circuit	jack
Remote Module, also called segment number.	equipment
Building	extension user
Floor	extension user
Room	extension user & jack
Organization	extension user
Supervisor	extension user
Set Color	set
Jack Number	jack
Set Mount	set
Speaker	set
Headset	set
User Name	used by Manager IV as a key to store extension user nonswitch data

There are other fields which TRACS collects, but which Manager IV does not store. An example is "department number."

Rules Applying to TRACS Nonswitch Data

The data entered into the TRACS nonswitch data fields directly affects what is loaded into the Manager IV database. It is therefore extremely important that the TRACS data is filled in correctly. The following rules apply:

1. A field which is not filled in for TRACS or which is set to blanks, will not be stored in the Manager IV database.
2. Manager IV stores the TRACS nonswitch data into four categories: extension-user, set, jack, and equipment. Each of these categories has a field from the TRACS nonswitch data which is used as a "key" to store the information in the Manager IV database. The key fields are:

<u>Category</u>	<u>Key</u>
Extension-user	User Name
Jack	Jack Number
Equipment	Module/Cabinet/Carrier/Slot/Circuit
Set	Module/Cabinet/Carrier/Slot/Circuit

If one of the key fields in a TRACS nonswitch data record is filled in incorrectly or left blank, none of the information for that category will be stored in the Manager IV database.

Nonswitch Data Not in TRACS

The TRACS nonswitch data that can be loaded during a Manager IV initialization does not include all the nonswitch data needed by the Manager IV database. The surplus nonswitch data must be collected on the Data Collection forms and entered into the Manager IV database during the initialization process as outlined in the following procedures. Data collection forms can be found in *DEFINITY Manager IV Planning and Implementation*. The surplus nonswitch data is summarized below.

Trunk Group Data	TRACS does not provide any of the nonswitch data needed by Manager IV for trunk groups. The customer must enter all the necessary data.
Set Data	TRACS provides some of the nonswitch data which Manager IV needs. However, the customer must enter into Manager IV the set type for any analog, ects, or retrofit sets*, as well as the price elements for all sets.
Extension User Data	TRACS provides only some of this data. The customer must always enter the authorization codes, mailing address, and account ID associated with an extension user. In addition, it must be stated that TRACS nonswitch data is entered on a per-set basis, and therefore may not provide information for every extension user associated with the switch. The customer must enter into Manager IV all nonswitch data needed for extension users not covered in the TRACS nonswitch data.
Non-Extension User Data	TRACS does not provide nonswitch data for users who are not associated with a particular extension. The customer must enter into Manager IV all nonswitch data needed for non-extension users.

* Not supported for DEFINITY Generic 2.

INITIALIZING THE DATABASE WITH NONSWITCH DATA

Nonswitch data is information that is not provided in the switch translation files, such as organization numbers and some WATS and tie trunk information.

The following nonswitch data may be needed:

- Set attribute data is necessary if the customer wishes to have detailed set information on Terminal Change Management (TCM) reports.
- Extension-user and Non-extension user nonswitch data is necessary if the customer wishes to use the Directory Synchronization feature of Manager IV to update a Personnel Database on an existing 3B5 AP Customer Directory Service (CDS) system.

Nonswitch data is collected by the customer on forms available in *Manager IV Planning and Implementation*. Data collection must be completed by the installation date. During installation, nonswitch data can be input by the customer or AT&T Services Technician on a time-and-materials basis.

Two Step Process

Entering nonswitch data into the Manager IV database is a two-step process.

1. The data is entered into intermediate files through the following System Administration "create" commands:
set-attributes create
extn-user-information create
user-information create
wats-trunk create
tie-trunk create
co-fx-did-aplt create
set-type-name create
2. The data from the intermediate files is incorporated into the Manager IV database by using the system-administration command, **non-switch-data add**.

If errors occur while entering nonswitch data into the intermediate files or incorporating it into the database, refer to Section 7 "Error Administration-Database Initialization."

User Login Requirements

Users must have logins with the "bulk-init" user class in order to enter nonswitch data through the "create" commands. To use the command **system-administration non-switch-data add**, you must have a login with the "init" user class.

Using The Create Commands

There are a few things that you should keep in mind when entering information through the "create" commands:

- The Manager IV escape sequences and function keys do not operate on these screens. The list of available editing commands are listed with the procedures in this section.
- You supply information for trunk groups, set IDs, extension numbers, and user's names through the "create" commands. Once you finish entering all the information for a trunk group, a set ID, an extension number, or a user's name and see the message "Next?" on your screen, you have created a record in one of the intermediate files.

- Once you fill in a record, information is carried over to the next record, reducing the need for repetitive typing. To change the data, just type over the entries.
- Press **TAB** only once between fields.
- You will not be able to go back and correct errors on a record you have already created. There are two ways to correct data entry errors. An experienced UNIX user can edit the intermediate files and correct the error there. An inexperienced UNIX user should retype the entire record by using a "create" command.

Retyping a record does not guarantee that the right record will be incorporated into the database when the **non-switch-data add** command is executed. However, in case the retyped (correct) record is not incorporated into the the database, you will receive an error message that will bring your attention to the existence of a problem with that record. For details on correcting nonswitch data errors in the intermediate files, see Section 7 "Error Administration-Database Initialization."

- Your terminal type affects how the screen appears for the "create" commands. The screen format differs depending upon whether you are using a smart or dumb terminal. On smart terminals, a line of prompts appears. See the samples in "Entering Nonswitch Data—A Sample." On dumb terminals, such as the Teletype 5410, each prompt appears one per line, as shown in the following sample:

```
system-administration wats-trunk create
Trunk Group No. ([    ])>
```

The following steps demonstrate what happens at the user interface and at the file level when a user enters a **system-administration object create** command.

1. At the Manager IV user interface, the first user to enter non-switch data enters a record for account ID 1000 through the command **system-administration wats-trunk create**.
2. At the file level:
 - The directory \$WORK/nswfiles is created.
 - The file ACCTID is created.
 - The account ID 1000 is entered into the ACCTID file.
 - The directory *wproduct ID* is created.
 - A file name 1 is created in the *wproduct ID* directory.
 - All records associated with 1 (account ID 1000) for WATS trunk are put in \$WORK/nswfiles/*wproduct ID/1*.

Note: If you edit the intermediate files, it is crucial to retain the correct number of tabs and new lines in order for the **non-switch-data add** command to work properly. There is a tab between each field. If a field is left blank, tabs appear next to each other, with no field information in between them. To display tabs, newlines, and other special characters from the vi editor, use the UNIX **:!** command.

Create Command Limitations

There are some limitations on the use of the create commands while other Manager IV processes are running (that is, while Manager IV is up and running). The limitations are discussed below.

- A maximum of 20 users can run the create transaction simultaneously. If too many users attempt to use create the following message will appear:
"Too many files being accessed at once, try again later"
- There are also rules governing the number of users that can use the create command simultaneously for a particular set of information. The rules are:
 1. Only one user can enter set attribute or set type name information for a given product ID.
 2. For the other five create transactions—extension user, non-extension user, and the trunk types—only one person can enter information for a given account ID.

If either of the rules are broken, the following message will display on the screen:

"Another user is accessing this file, try again later."

Entering Nonswitch Data-A Sample

The following steps illustrate how to enter nonswitch data on the "create" screens. The screens used in this sample are for **system-administration wats-trunk create** on a smart terminal. On the actual screens, field names and data entry fields do not line up.

To begin entering data, you need to complete the following:

1. Have the data input forms available.
2. Log on to Manager IV with a login that has the bulk-init user class.
3. Enter the command path. In this example, the command path is **system-administration wats-trunk create**.

```
AT&T Mgr IV 1.0
system-administration wats-trunk create

Product ID
>
```

4. Enter the product ID, press **RETURN**, then enter the account ID from the data input form, and press **RETURN**. In this example, the product ID is 799-1695.

```
AT&T Mgr IV 1.0
system-administration wats-trunk create

Product ID
> 799-1695
```

5. A line of labeled fields appear. Enter all the data associated with the first entity. Press **TAB** once to move to the next field. When you complete all the fields for this record, press **RETURN**.

```
AT&T Mgr IV 1.0
system-administration wats-trunk create

Trunk Group No.      Vendor      WATS Band
      [ ]          [ ]          [ ]
> 56                 21           7
```

- When a record is accepted, the message "Next?" appears on the screen. Once you have entered one record, all the information is carried over to the next record except for the entry for the first field. In this case, the first field is Trunk Group Number. Now you only need to modify fields that are different, or type **X** for fields that should be left blank.

```
AT&T Mgr IV 1.0
system-administration wats-trunk create

Next?
Trunk Group No.      Vendor      WATS Band
      [   ]          [ 21 ]      [ 7 ]
>      58            X
```

- When you want to stop entering data, enter **!** when the "Next?" prompt appears, to exit the transaction. Repeat Steps 3-7 until you have entered all nonswitch data.

On smart terminals, once you are accustomed to the "create" commands, you can speed up data entry by typing ahead of the prompts. As long as you press **TAB** between fields and know what fields you are up to, you can keep adding to a record without seeing all the prompts on the screen. You have created a record in the intermediate files when you press **RETURN** and the message "Next?" appears.

Proper Use of Termination Characters

The create transactions use the characters "." and "!" to perform specific termination functions. If the characters are used incorrectly, loss of data may occur. The function and proper use of each of these characters are explained below.

Terminating an Input Record. The "." character is used to end the current input record and proceed to the next record. When you have typed the last field you wish to enter for the current record, hit **RETURN**. The system response indicates if you have reached the next record.

If the system response is "Next?" and a list of fields, you have already moved onto the next record and can begin entering data.

If the system response is a list of additional fields for the current record, you must move to the next record by entering the "." character and **RETURN**. The system will then respond with "Next?" and a list of fields for a new record.

Note: Never enter the "." character on a line which contains record data. This could cause loss of the values on that line. As noted above, fields can be carried over from one record to the next to reduce typing. If "." is entered to end a record because all the data the user is concerned about has been entered, any fields after the "." which the user did not look at, will automatically be populated with the values that are carried over.

Terminating a Create Session. The "!" character is used to end a create session. To end a create session successfully, complete the current record you are working on. When you receive the system response "Next?" accompanied by field prompts for the next record, enter **!** to end your session.

Note: Never enter **!** on a line which contains record data. This could cause loss of the values on that line.

Loading Nonswitch Data into the Manager IV Database

To incorporate the data input through the "create" commands into the Manager IV database, execute the command **system-administration non-switch-data add**. The **non-switch-data add** command takes the records from the intermediate files and adds this information to one or more database records. If at a later time reinitialization is necessary, you can save the nonswitch data by extracting it from the Manager IV database, using **system-administration non-switch-data retrieve**.

Error messages are directed to a file `$WORK/nswfiles/nresults/n product_ID`.

Recommendations

The following is a list of suggestions that may make the initialization process less cumbersome.

- Use **ESC** s or **SCHED** to schedule the **non-switch-data add** transaction and to create a file that lists the errors. This transaction may take several hours to complete processing, depending on the amount of nonswitch data being processed at one time.

Incorporating Data into the Database in Sections

If the customer is setting up many account IDs, you may want to incorporate the nonswitch data into the Manager IV database in sections by using **non-switch-data add** several times.

The following is a possible sequence of transactions:

```
wats-trunk create
non-switch-data add
tie-trunk create
non-switch-data add
co-fx-did-aplt create
non-switch-data add
```

The data can be entered into the database in even smaller pieces. The following is a possible sequence of events:

- Data entry person enters half of the set attributes information through **set-attributes create**.
- Execute **non-switch-data add**.
- Data entry person enters remainder of the set attributes information through **set-attributes create**.
- Execute **non-switch-data add**.

Nonswitch Data Procedures

1. Enter nonswitch data through the "create" commands in System Administration:

set-attributes create
extn-user-information create
user-information create
wats-trunk create
tie-trunk create
co-fx-did-aplt create
set-type-name create

2. Schedule **system-administration non-switch-data add**.
3. Resolve any errors that occur during **system-administration-non-switch-data add**.

Note: Step 1 can be performed while switch data is being initialized. Steps 2, 3, and 4 must be performed after switch data initialization has completed.

The procedures needed to enter nonswitch data into the intermediate files and the Manager IV database, and extract nonswitch data from the database are summarized below.

- Adding Set Attributes Information
- Adding Extension User Information
- Adding User Information
- Adding WATS Trunk Information
- Adding Tie Trunk Information
- Adding CO/FX/DID/APLT Trunk Information
- Adding set-type-name information
- Initializing Nonswitch Data
- Retrieving Nonswitch Data.

Below is a list of the keys needed to move from field to field and edit entries for the following nonswitch data procedures. Refer to it as needed.

- Press **TAB** to move to the next field.
- Press **RETURN** to end a line of input and get to the next line.
- Press **BREAK** or **DELETE** at any time to exit the program without saving your current record.
- Enter **^** to move to the previous field.
- Enter **/** followed by a field name to move to that field
- Enter **X** to clear a field entry carried forward from the previous record.
- Enter **@** to delete the current line you are typing.

- Enter . to end an input for a record and get to the next records.
- Enter ! to exit this transaction and save the data entered.
- Enter ?? to get help for a field.
- Enter ? to get this list of typing commands.

The data required to perform all these procedures should be available on filled out copies of appropriate form found in *Manager IV Planning and Implementation*.

Procedure: Adding Set Attributes Information

Purpose:

Use this procedure to identify non-translation set attributes such as color, mount, and set adjuncts.

[System 85] This transaction is also used to identify set types that cannot be correctly obtained from the switch, for example, analog sets, Electronic Custom Telephone Service (ECTS) sets used with a System 85 and retrofit terminals. The information entered through this transaction is used by Terminal Change Management (TCM).

Note:

- Retrofit set type is not available for DEFINITY Generic 2 switches. Other non-translation set attributes such as color or mount are available for DEFINITY Generic 2 switches.
- The information added through this transaction on ECTS and retrofit sets overwrites the inaccurate set types generated from the TRACS file when you execute **non-switch-data add**. Since ECTS and retrofit sets were not designed for the System 85 Release with which they're being used, TRACS reflects another set type that is appropriate for the switch. Manager IV allows you to correct and administer the actual set type.
- This procedure must be used to replace only set types.

The following chart shows the valid set types that replace set types in the TRACS files. The set types listed in the left-hand column, which are assigned through this transaction, replace the set types given in proc files listed in the right-hand column. These are the only valid substitutions.

Table 6-5. Retrofit of Set Types in Non-switch Data

Set type entered through this transaction:	Replaces set type obtained through TRACS files:
pcdcp	pt510 (System 85 R2V2 and later)
pc7300	pcdcp
pc6300	pcdcp
PT510	7405d with display (System 85 prior to R2V2)
7404d	7403d (System 85 prior to R2V2)
7406d	7405d with a display
7406db (System 85 R2V3)	7405d
7406dc (System 85 R2V3)	7405d
7406db (System 85 R2V4)	7406d
7406dc (System 85 R2V4)	7406d
7407d (prior to System 85 R2V3)	7405d with display
ects10	7203h
ects20	7205h
ects30	7205h
callmtr (up to and including System 85 R2V4)	7407d
7434d (up to and including System 85 R2V4)	7405d
7401 (equal or prior to System 85 R2V4)	7401d
74101d (up to and including System 85	7403d

- The following analog set types not obtained from the switch translations can be entered through this transaction: 2500, 7101a, 7103a-01c and 7104a.

Procedure Steps:

1. Access the **set-attributes create** transaction.

The system prompts:

Enter application **system-administration set-attributes create**

2. Enter the set attribute information.

The System will prompt you for the following information.

Product ID Enter the product ID for this switch. The product ID is defined in the **product add** transaction. (You are prompted only once per session for the product ID).

set ID The maximum length of this field is six characters. An entry usually consists of an extension number and an optional alphabetic suffix.

Enter: *nnnnnx*

where: *nnnnnx* = the set ID

type This field is required for analog sets, ECTS sets on a System 85, and retrofit terminals. See "Note" in this procedure for details. The maximum length of this field is ten characters.

Enter a valid set type. Valid entries are listed below:

[System 85]

Analog sets = **2500, 7101a, 7103a, 7104a, 7103a-01c**

ECTS sets = **ects10, ects20, ects30** |

Retrofit sets = **pt510, 7404d, 7407d, 7406d, pcdcp** |

[Generic 2]

Any alphanumeric up to 9 characters up in length.

[DIMENSION System FP8]

2500, ects0, ects5, ects10, ects20, ects30,

ekt5, ekt10, ekt20, ekt30, sls, other

color The maximum length of this field is eight characters. Enter a valid set color from the table below.

Set Types	Valid entries
7101a, 7103a, 7104a, 7103a-01c	black, white, burgundy
2500	black, white, beige, green, ivory, red
ECTS sets	teak, red, blue, green, black, brown, wal (walnut), yel (yellow), orange
Others	black, brown, white, gray, blue, burgundy, cinn (cinnabar)

mount

Enter: **wall** or **desk**

adjunct

[System 85, DEFINITY Generic 2] Enter one or both of the following adjuncts. If more than one is entered, separate them with a comma (.).

s = speakerphone

h = headset

END OF PROCEDURE

Procedure: Adding Extension User Information

Use this procedure to enter data for the user associated with a particular extension.

Procedure Steps:

1. Access the **extn-user-information create** transaction.

The system will prompt you for the following information.

Enter application **system-administration extn-user-information create**

Enter the extension user information in the following fields.

Product ID	Enter the product ID for this switch. The product ID is defined in the product add transaction. (You are prompted only once per session for the product ID).
Account ID	The user's account ID. This field is a maximum length of 15 alphanumeric characters. (You are prompted only once per session for the account ID).
Extn	Enter the four- or five-digit code associated with the extension.
Org. No.	The user's organization number. The maximum length of this field is 15 digits.
Loc.	Enter the user's location. The maximum length of this field is 7 characters.
Floor	Enter the floor on which the user resides; maximum is 7 characters.
Room	Enter the user's room number. The maximum length of this field is ten characters.
Auth. Code	The authorization codes that this user can use. You can enter up to four authorization codes per user entry. If a user is assigned more than four codes, create another entry for the user. These auth. codes must have been previously defined through fm auth-code add or from the switch data with which the database was initialized.
Electronic Mailing Address	Enter the user's electronic mailing address; maximum is 16 characters.

END OF PROCEDURE

Procedure: Adding User Information

Purpose:

Use this procedure to identify users not associated with extensions.

Procedure Steps:

1. Access the **user-information create** transaction.

The System will prompt you for the following information.

Enter application **system-administration user-information create**

2. Enter the user information in the following fields.

Product ID	The product ID for this switch. The product ID is defined in the product add transaction. (You are prompted only once per session for the product ID).
Account ID	The user's account ID. This field is a maximum length of 15 alphanumeric characters. (You are prompted only once per session for the account ID).
User's Name	Enter the user's name, last name first. The maximum length of this field is 30 characters
Loc.	Enter the user's location. The maximum length of this field is 7 characters.
Floor	Enter the floor on which the user resides; maximum is 7 characters.
Room	Enter the user's room number. The maximum length of this field is ten characters.
Supervisor's Name	Enter the name of the user's supervisor, last name first. The maximum length of this field is 30 characters.
Org. No.	The user's organization number. The maximum length of this field is 15 digits.
Auth. Code	The authorization codes that this user can use. You can enter up to four authorization codes per user entry. If a user is assigned more than four codes, create another entry for the user. These auth. codes must have been previously defined through fm auth-code add or from the switch data with which the Manager IV database was initialized.
Electronic Mailing Address	Enter the user's electronic mailing address; maximum of 16 characters.

END OF PROCEDURE

Procedure: Adding WATS Trunk Information

Purpose:

Use this procedure to add WATS trunk groups as well as their non-translation characteristics to the Manager IV database.

Procedure Steps:

1. Access the **wats-trunk create** transaction.

The system will prompt you for the following information.

Enter application **system-administration wats-trunk create**

2. Enter WATS trunk information in the following fields.

Product ID Enter the product ID for this switch. The product ID is defined in the **product add** transaction. (You are prompted only once per session for the product ID).

Trunk Group No. Enter: 18 - 999 inclusive

Vendor number 0 to 999 inconclusive

WATS band 0 - 9 inclusive

END OF PROCEDURE

Procedure: Adding Tie Trunk Information

Purpose:

Use this procedure to add trunk groups as well as their non-translation characteristics to the Manager IV database.

Procedure Steps:

1. Access the **tie-trunk create** transaction.

The system will prompt you for the following information.

Enter application **system-administration tie-trunk create**

2. Enter tie trunk information in the following fields.

Product ID Enter the product ID for this switch. The product ID is defined in the product:add transaction. (You are prompted only once per session for the product ID).

Account ID The user's account ID. This field is a maximum length of 15 alphanumeric characters. (You are prompted only once per session for the account ID).

Trunk Group No.

Enter: 18 - 999 inclusive

Vendor 0 - 999 inclusive.

Switch ID at far end (enter the product id up to 13 characters)

"DAC at far end" (1 - 3 digits) (1 - 4 for R2V4 and up).

END OF PROCEDURE

Procedure: Adding CO/FX/DID/APLT Trunk Information

Purpose:

Use this procedure to add some trunk types, including CO, FX, DID, and APLT, as well as their non-translation characteristic to the Manager IV database.

Note:

- Types of trunk groups which can be entered through this transaction differ from System 85 type releases.

Procedure Steps:

1. Access the **co-fx-did-aplt create** transaction.

The system will prompt you for the following information.

Enter application **system-administration co-fx-did-aplt create**

2. Enter the trunk information in the following fields.

Product ID The product ID for this switch. The product ID is defined in the **product add** transaction. (You are prompted only once per session for the product ID).

Account ID The user's account ID. This field is a maximum length of 15 alphanumeric characters. (You are prompted only once per session for the account ID).

Trunk Group No.

Enter: 18 - 999 inclusive

Vendor number 0 - 999 inclusive

NPA-NXX at far end 1st digit: 2 - 9, 2nd digit: 0 - 1, 3rd digit: 1 - 9, 4th digit: 2 - 9, 5th digit: 2 - 9, 6th digit: 0 - 9.

END OF PROCEDURE

Procedure: Adding Set Type Name Information [Generic 2]

Purpose:

Use this procedure to add mnemonic set-type names (user defined set-type) for set type encodes 100-200.

Procedure Steps:

1. Access the **set-type-name create** transaction.

The system will prompt for the following information.

Enter application **system-administration set-type-name create**

Enter target The product ID for this switch. The product ID is defined in the
product add transaction.

2. Enter the set-type-name information in the following fields.

Set Type Encode Enter a 3 digit set-type-encode from 100 to 200 inclusive to which
the name is to be associated.

Set Type Name Enter a user defined set-type-name. This can be any alphanumeric
string up to nine characters in length.

3. The system will continue to prompt for additional set-type-encodes until an ! **RETURN** is entered to end the transaction.

END OF PROCEDURE

Procedure: Initializing Nonswitch Data

Purpose:

Use this procedure to incorporate the nonswitch data entered through the system-administration "create" commands into the Manager IV database.

Procedure Steps:

1. Access the **non-switch-data add** transaction.

The system will prompt for the following information.

Enter application	system-administration non-switch-data
Enter target	The product ID for this switch. The product ID is defined in the product add transaction.
Enter verb	add

The following screen will display.

```
AT&T Mgr IV 1.0
system-administration non-switch-data add

Add non-switch data to Manager IV database?:

Choose either the ALL option or one or more of the following:

    ___ Select ALL
    ___ Extension user
    ___ User
    ___ Wiring
    ___ Locales
    ___ WATS Trunks
    ___ CO/FX/DID/APLT Trunks
    ___ Tie Trunks
    ___ Set Attributes
    ___ Set Type Name

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```

2. Enter the following information.

Add non-switch data to Manager IV database?

Enter: **y** (yes) or **n** (no)

Note: If you enter **n**, you will return to the previous command level.

Choose either the ALL option or one or more of the following

Put an **x** next to the appropriate type of nonswitch data which is to be entered into the Manager IV database. If all types are needed, place and **x** next to "Select All."

3. Execute this transaction by pressing **(ESC) e** or **(EXECUTE)**.

Schedule this transaction by pressing **(ESC) s**, or **(SCHED)**.

If you press **(ESC) e** or **(EXECUTE)**, you will be unable to use your terminal until the nonswitch data initialization program completes.

If you press **(ESC) s** or **(SCHED)**, you can schedule this transaction. When the scheduled transaction completes, a mail message is sent to the user who initiated the process, and a results file is created.

All error messages will go to the error file, \$WORK/nswfiles/nresults/n *product_ID*.

END OF PROCEDURE

Procedure: Retrieving Nonswitch Data

Purpose:

Use this procedure to extract nonswitch data from the Manager IV database. This command allows you to save nonswitch data in temporary files. Retrieve the nonswitch data from the Manager IV database when you are going to reinitialize the database with TRACS data.

Note: Nonswitch data can be added back into the database after the database has been reinitialized with switch data using the command **system-administration non-switch-data add**.

Procedure Steps:

1. Access the **non-switch-data retrieve** transaction.

The system will prompt you for the following information.

Enter application **system-administration non-switch data**

Enter target The product ID for this switch. The product ID is defined in the **product add** transaction.

Enter verb **retrieve**

The following screen is displayed.

```
AT&T Mgr IV 1.0
system-administration non-switch-data retrieve

Retrieve non-switch data to Manager IV database?:
Is this for a switch UPGRADE?:n

Normal non-switch data retrieve!

Choose either the ALL option or one or more of the following:

    ___ Select ALL
    ___ Extension user
    ___ User
    ___ Wiring
    ___ Locales
    ___ WATS Trunks
    ___ CO/FX/DID/APLT Trunks
    ___ Tie Trunks
    ___ Set Attributes
    ___ Set Type Name

Page 1 of 1
```

2. Enter the following information.

Retrieve non-switch data from Manager IV database?

Enter: **y** (yes) or **n** (no)

Note: If you enter **n**, you will return to the previous command level.

Is this for a switch UPGRADE?:

If the nonswitch data retrieve is being executed due to a switch upgrade, enter **y**. The system will prompt for the new target before displaying the nonswitch data choices.

For initialization, enter **n**.

Choose either the ALL option or one or more of the following:

Place an **x** next to the appropriate type of nonswitch data you wish to retrieve. If all data is required, place an **x** next to "Select ALL."

3. Execute this transaction by pressing **ESC** **e** or **EXECUTE**.

Schedule this transaction by pressing **ESC** **s**, or **SCHED**.

If you press **ESC** **e** or **EXECUTE**, you will be unable to use the terminal you execute this command from, until the non-switch data retrieval program completes, and error messages will appear on the screen.

If you press **ESC** **s** or **SCHED**, you can schedule this transaction. When the scheduled transaction completes, a mail message is sent to the user who initiated the process, and a results file is created.

END OF PROCEDURE

7. RUNNING ACCEPTANCE TESTS

This section includes a series of tests to be performed by Services before turning the Manager IV system over to the customer. The tests in this section include those tests outlined in the DEFINITY Manager IV Acceptance Criteria (found in Appendix A of *DEFINITY Manager IV Planning and Implementation* as well as Alarm testing. Below is a summary of the tests.

Purchased Software is Present

Establishes the existence of all purchased Manager IV applications by accessing one path of each application.

Manager IV System Connectivity

To check accessibility to all ports and supported switches, see the procedure, "Adding a Port" and "Enabling and Testing Ports" in Section 4.

Manager IV and Switch Databases are Synchronized

Demonstrate that the Manager IV database and supported DEFINITY Generic 2, System 85 and/or DIMENSION FP8 switch databases are in sync.

Testing Manager IV Alarms

Enables you to test Manager IV's capability to send error messages to the system error log, the System Administrator's error log, or to NCSC.

Procedure: Purchased Software is Present

Purpose:

To demonstrate that the purchased Manager IV application are present and accessible.

NOTE: As part of the Manager IV Acceptance Criteria, Services will access at least one path in each purchased application and provide the customer with a printed copy of those paths.

Procedure Steps:

1. Access a path in the System Administration (SA) application.
Enter: **system-administration port display**
2. Access a path in the Terminal Change Mangement (TCM) application.
Enter: **tcm admin extension display**
3. Access a path in the Facilities Maintenance (FM) application.
Enter: **fm admin trk-grp display**

END OF PROCEDURE

Procedure: Databases are Synchronized

Purpose:

To demonstrate that the data contained in the switch (product) matches the data contained in the Manager IV database.

NOTES:

1. The command paths listed in the Procedure Steps must be executed for a random sample of each DEFINITY Generic 2, System 85, or DIMENSION FP8 switch administered by Manager IV.
2. The area, **product-admin**, accesses only the product database. The **database-admin** area accesses only the Manager IV database.

Procedure Steps:

1. Display and compare a random sample of five classes-of-service.
Enter: **tcm product-admin class-of-service display**
tcm database-admin class-of-service display
2. Display and compare a random sample of five analog sets.
Enter: **tcm product-admin extension display**
tcm database-admin extension display
3. Display and compare a random sample of five 12-button terminals.
[System 85]
Enter: **tcm product-admin 12-button display**
tcm database-admin 12-button display

[DEFINITY Generic 2]
Enter: **tcm product-admin terminal display**
tcm database-admin terminal display

[DIMENSION FP8]
Enter: **tcm product-admin ects display**
tcm database-admin ects display
4. Display and compare a random sample of five 36-button terminals.
[System 85]
Enter: **tcm product-admin 36-button display**
tcm database-admin 36-button display

[DEFINITY Generic 2]
Enter: **tcm product-admin terminal display**
tcm database-admin terminal display

[DIMENSION FP8]

Enter: **tcm product-admin ects display**
tcm database-admin ects display

5. Display and compare a random sample of five call-coverage groups.

Enter: **tcm product-admin call-coverage-path display**
tcm database-admin call-coverage-path display

6. Display and compare a random sample of five trunks.

Enter: **fm product-admin trk display**
fm database-admin trk display

7. Repeat steps 1-6 for each Generic 2, System 85 and/or DIMENSION FP8 switch administered by Manager IV.

END OF PROCEDURE

Procedure: Testing Manager IV Alarms

Purpose:

Use this procedure to test the capability of Manager IV to route error messages to the system error log file, the System Administrator error log file, or NCSC.

NOTE: The command **crlog** is accessed from the shell level. An explanation of the command and its syntax follows:

Synopsis	<code>crlog [sys, adm, or info] [l, m, or h] [error-number] [debugging] [arguments...]</code>
Description	Crlog is used to route rlog error messages to either the system error log file (<code>\$LOG/info<date></code>) if the first argument is info . Please note that messages intended for the informational log must be entered as a system error log and not as a system administrator error log. The second argument gives a general indication of the priority of the problem, l for low, m for medium, and h for high priority. The third argument is the system assigned error number. The fourth argument provides an automatic call to <code>rlogctx</code> with the specified debugging string. Subsequent arguments are string variables which can fill in the <code>%s</code> parameters defined in the error message.
Output Files	System error messages appear in the file <code>\$LOG/sys<date></code> (i.e.; error messages for March 14 appear in the directory defined by <code>\$LOG</code> in the file <code>sys0314</code>). System administrator error messages appear in the files <code>\$TABLES/maxi</code> and <code>\$TABLES/mini</code> .
Environment Variables	<code>LOG</code> is the directory where error output files appear. <code>TABLES</code> is the directory where error messages reside.

END OF PROCEDURE

8. ERROR ADMINISTRATION-DATABASE INITIALIZATION

This section will help you resolve common errors that occur during DEFINITY Manager IV switch data and nonswitch data initialization. Refer to the sections 12 and 13 of this manual for descriptions of the Manager IV tools used to diagnose and correct problems that occur in an installed Manager IV system.

ERRORS WHILE RUNNING INITIALIZATION START

As previously explained in Section 5, there are three types of errors that can occur while running the **initialization start** or **restart** command. They are:

- Major Errors which must be corrected immediately.
- Minor Errors that can be corrected after initialization completes and nonswitch data is loaded into the database.
- Special Minor Errors that can be corrected after initialization completes and nonswitch data is loaded into the database.

All three types of initialization errors are sent to a results file. The results file contains messages about the type of errors that occurred and information on how to correct the errors.

Interpreting The Results File

Minor errors that occur during initialization are recorded in a results file. The database files are interrelated, and often, errors that appear in the results file reflect this interrelationship. Master files must be processed and committed to the database before other files can be processed successfully. Master files contain fields which other files are dependent upon. Fields in the master files are called parent keys; fields in the dependent files are called child keys. Child keys are added to the database after parent keys.

For example, "class-of-service" is a parent key. If the switch translation files contain an extension with an invalid class-of-service, the initialization program will be unable to add to the database any extension having that invalid class-of-service. An entry will appear in the results file for each of these extensions. To resolve this error, you would have to correct the class-of-service and enter each extension into the database.

Occasionally the switch translations may contain more than one set of information for some entity. If the initialization program encounters more than one set of information for an entity, such as an extension, it will be recorded as an error in the results file, and this text message appears: "Duplicate key -- data already in database." To correct this type of error, compare the extension record in the database with the extension data that appears in the results file, decide which is the correct entry, and correct accordingly.

The results are provided in descriptive messages which allow for easy identification and correction of errors. Field errors are described with the screen label and screen data for the field. Whenever applicable, objects and verbs are used to describe the action that should be taken to correct the errors.

For each error, a list of information is produced for each field included in a Terminal Change Management (TCM) or Facilities Management (FM) transaction. Each line includes:

- The object verb pair necessary to access the appropriate screen for error correction
- The field label that appears on the screen

- The data that appears in each field
- Any conversion information that you may need to interpret the data
- A text message indicating some information on the nature of the error.

Sample Entries

Figure 8-1 provides a sample entry in the results file. The object is **sys-cos**. The verb listed is **add/chg**. With the object **sys-cos**, only the verb **change** is valid. For other objects, you have to determine if the verb **add** or the verb **change** should be used, depending on the number of fields that have already been loaded successfully. If some fields were added successfully and others were not, you would use the verb **change** to enter the missing data. If none of the fields were entered into the database, you would use the verb **add** to enter all the information for that record.

Object	Verb	Label	Data
sys-cos	add/chg	AIOD Active Conversion: 0= not enabled 1= enabled	0
sys-cos	add/chg	Call Waiting Conversion: 0= not enabled 1= enabled	100
sys-cos	add/chg	Multi Function Term Conversion: 0= not enabled 1= enabled	1
sys-cos	add/chg	Paging/Code Calling Conversion: 0= not enabled 1= enabled	1
sys-cos	add/chg	Intercept Treatment Conversion: 0= not enabled 1= enabled	1
Text: Cannot add Call Waiting because the length is invalid.			

Figure 8-1. Entry in the Results File for Minor Error—Sample 1

In Figure 8-1, the Call Waiting field must be corrected. The current data is 100. Referring to the conversion information and the text message you can tell that 100 is an invalid value for Call Waiting. Only 0 or 1 are valid entries for this field.

To resolve this error, check the Customer System Document (CSD) and the information in the product-administration area. Then, enter **sys-cos change** in the database-admin area of TCM, and change the database until it matches the switch. In this case, you would change the entry in the Call Waiting field. You can enable the Call Waiting feature (set the value to 1) if you place an **X** in the field. If you change the field to a blank, the Call Waiting feature is not enabled (the value is set to 0).

Figure 8-2 provides another sample entry from the results file with a different text message. In this example, all fields from the first page of the **extension add** transaction are listed.

Object	Verb	Label	Data
extension	add	Extension No	81213
extension	add	class-of-service	3
extension	add	disable signaling	0
extension	add	Aux ANI	
		Conversion: 0=n, N=no 1=y	
		Y=yes	
extension	add	Call Pickup Group	640
extension	add	Call Coverage Group	516
extension	add	Is message retrieved	y
		Conversion: 0=n, N=no, 1=y,	
		Y=yes	
extension	add	Name Display	lunn, j k
extension	add	Set I. D.	81213
extension	add	LWC Destination	1
		Conversion: 0=NA, 1=sw,	
		2=ap, 3=vms	
Text: record not loaded because '3/516/lunn, j k/81213'			
not added previously.			

Figure 8-2. Entry in the Results File for Minor Error—Sample 2

Notice the section of the text message in single quotes. This information refers to values for fields listed above the text message. For example, 3 is listed as the class-of-service, 516 is the call coverage group, and so on. Each of these fields is a parent key that may not have been previously defined.

To correct this error, verify that each of these parent keys exist in the database by using **display** commands for each of these keys. Correct the missing or incorrect parent key and then add the extension in the database using the **tcn database-admin extension add** transaction. Always check the data in the results file against the data in the CSD and in the switch. After correcting an error in the database, make sure the Manager IV database and the switch match.

Figure 8-3 is a sample entry in the results file for a special minor error. (Case explanations are provided later in this section.)

Object	Verb	Label	Data
extension	add/chg	Extension No	89302
extension	add/chg	Name Display	[trainey, r l]
Text: Process could not load this data. Please load data manually.			
Text: Refer to Correcting Special Errors,			
Case #5			

Figure 8-3. Entry in the Results File for Special Error—Sample 3

The Term *electronic set*

The term *electronic set* may appear in the results file. *electronic set* is used to refer generically to all valid non-analog set types.

If *electronic set* is listed in the results file, then the actual set type should be determined from the CSD which should be at the installation site. Table 8-1 lists the TCM objects and their CSD equivalents.

Table 8-1. Sys 85 and DIMENSION Set Types and TCM Objects

CSD Set Type:	TCM object is:
7203h, 7403d, 7303s	12-button
7205h, 7405d, 7305s,	36-button
515bct	bct
7404d	vds
ects5, ects10, ects20, ects30, ekt5, ekt10, ekt20, or ekt30	ects
pt510	pt510
PDM (Processor Data Module) TDM (Trunk Data Module)	data-module
7406db, 7406dc	lcdt
pcdcp	pc-dcp
7401d	cdt
7407d	idt

NOTE: All DEFINITY Generic 2 set types are administered through the **button** and **terminal** objects.

Processing Order

The initialization program extracts procs from the switch translation files, creates temporary files from these procs in the \$WORK/dbdata directory, then commits these files to the database.

Tables 8-2 through 8-8 list the order in which these temporary files are committed to the Manager IV database during initialization step 21. Only the files that are needed for a switch are committed to the database. For example, the file npnode is only needed for a System 85 R2V3 switch that is in a number portability environment. For other switches, npnode is empty and would not be incorporated into the Manager IV database.

The .t at the end of these file names is stripped off before the file is committed to the database. Files are committed to the database in field table order. To concatenate the field table into a file so that you can print it out, enter: **ftpr** > *filename* from the UNIX shell. Tables 8-3 through 8-8 will come in handy while you are monitoring initialization Step 21.

Table 8-2. Order That Files are Committed for System 85 R2V2

Order in which the files are committed	Initialization File Number	File Name
0	35	ccg.t
1	36	name.t
2	37	ap.t
3	0	frl.t
4	38	cos.t
5	39	mrgcos.t
6	48	equip.t
7	40	set.t
8	41	extn.t
9	42	ccgp.t
10	44	adgrp.t
11	45	adlst.t
12	46	ucd.t
13	47	smb.t
14	1	syscos.t
15	3	nprnx.t
16	4	hnpa.t
17	5	fnpa.t
18	6	links.t
19	7	sixdig.t
20	8	auth.t
21	9	tendgt.t
22	10	sixnnx.t
23	2	dciurt.t
24	11	chan.t
25	24	autovon.t
26	12	mrgdac.t
27	22	rdce.t
28	13	trkgp.t
29	14	fmdata.t
30	26	casrlt.t
31	15	aar.t
32	16	ars.t
33	17	trunks.t
34	25	conti.t
35	19	tollt.t
36	20	nrcall.t
37	21	crac.t
38	23	arsclk.t
39	53	fstdgt.t
40	32	intercept.t
41	54	feadac.t
42	55	fivdgt.t

Table 8-3. Order That Files are Committed for System 85 R2V3

Order in which the files are committed	Initialization File Number	File Name
0	35	ccg.t
1	36	name.t
2	37	ap.t
3	0	frl.t
4	38	cos.t
5	39	mrgcos.t
6	48	equip.t
7	40	set.t
8	41	extn.t
9	42	ccgp.t
10	44	adgrp.t
11	46	ucd.t
12	47	smb.t
13	1	syscos.t
14	3	nprnx.t
15	4	hnpa.t
16	5	fnpa.t
17	6	links.t
18	7	sixdig.t
19	8	auth.t
20	9	tendgt.t
21	10	sixnnx.t
22	2	dciurt.t
23	11	chan.t
24	24	autovon.t
25	27	npnode.t
26	30	rxcc.t
27	31	tolltc.t
28	12	mrgdac.t
29	22	rdce.t
30	13	trkgp.t
31	14	fmdata.t
32	26	casrlt.t
33	15	aar.t
34	16	ars.t
35	17	trunks.t
36	25	conti.t
37	19	tollt.t
38	20	nrcall.t
39	21	crac.t
40	23	arsclk.t
41	53	fstdgt.t
42	32	intercept.t
43	33	dsconn.t
44	54	feadac.t

Table 8-4. Order That Files are Committed for System 85 R2V4

Order in which the files are committed	Initialization File Number	File Name
0	35	ccg.t
1	36	name.t
2	37	ap.t
3	0	frl.t
4	38	cos.t
5	39	mrgcos.t
6	60	desig.t
7	61	tenant.t
8	40	set.t
9	41	extn.t
10	42	ccgp.t
11	44	cdgrp.t
12	46	ucd.t
13	47	smb.t
14	1	syscos.t
15	3	nprnx.t
16	4	hnpa.t
17	5	fnpa.t
18	6	links.t
19	7	sixdig.t
20	8	auth.t
21	9	tendgt.t
22	10	sixnnx.t
23	2	dciurt.t
24	11	chan.t
25	24	autovon.t
26	27	nnode.t
27	30	rnxcc.t
28	31	tollc.t
29	12	mrgdac.t
30	22	rdce.t
31	13	trkgp.t
32	14	fmdata.t
33	26	casrlt.t
34	15	aar.t
35	16	ars.t
36	17	trunks.t
37	25	conti.t
38	19	tollt.t
39	20	nrcall.t
40	21	crac.t
41	23	arsclk.t
42	53	fstdgt.t
43	32	intercept.t
44	33	dsconn.t
45	54	feadac.t

Table 8-4. Order That Files are Committed for System 85 R2V4 (continued)

Order in which the files are committed	Initialization File Number	File Name
46	71	trkextn.t
47	70	dciupt.t
48	18	pcc.t
49	73	arscc.t
50	59	vector.t
51	72	cdr.t

Table 8-5. Order That Files are Committed for DEFINITY G2.2

Order in which the files are committed	Initialization File Number	File Name
0	35	ccg.t
1	36	name.t
2	37	ap.t
3	0	frl.t
4	38	cos.t
5	62	bccos.t
6	39	mrgcos.t
7	48	equip.t
8	60	desig.t
9	63	termdef.t
10	65	btndef.t
11	64	termopt.t
12	40	set.t
13	41	extn.t
14	42	ccgrp.t
15	44	cdgrp.t
16	46	ucd.t
17	47	smb.t
18	1	syscos.t
19	6	links.t
20	8	auth.t
21	2	dciurt.t
22	11	chan.t
23	24	autovon.t
24	12	mrgdac.t
25	22	rdce.t

Table 8-5. Order That Files are Committed for DEFINITY G2.2 (continued)

Order in which the files are committed	Initialization File Number	File Name
26	13	trkgp.t
27	14	fmdata.t
28	26	casrlt.t
29	69	isdnp.t
30	75	wnetwork.t
31	76	wdialplan.t
32	80	wtollfree.t
33	81	wdigitmod.t
34	82	wdigitsend.t
35	83	wisdn.t
36	78	wcallcat.t
37	79	wnetroute.t
38	77	wpattern.t
39	84	wporta.t
40	68	dchan.t
41	17	trunks.t
42	25	conti.t
43	20	nrcall.t
44	21	crac.t
45	23	arsclk.t
46	53	fstdgt.t
47	32	intercept.t
48	33	dsconn.t
49	54	feadac.t
50	71	trkextn.t
51	70	dciupt.t
52	18	pcc.t
53	59	vector.t
54	72	cdr.t

Table 8-6. Order That Files are Committed for DEFINITY G2.1

Order in which the files are committed	Initialization File Number	File Name
0	35	ccg.t
1	36	name.t
2	37	ap.t
3	0	frl.t
4	38	cos.t
5	62	bccos.t
6	39	mrgcos.t
7	48	equip.t
8	60	desig.t
9	61	tenant.t
10	63	termdef.t
11	65	btndef.t
12	64	termopt.t
13	40	set.t
14	41	extn.t
15	42	ccgrp.t
16	44	cdgrp.t
17	46	ucd.t
18	47	smb.t
19	1	syscos.t
20	3	nprnx.t
21	4	hnpa.t
22	5	fnpa.t
23	6	links.t
24	7	sixdig.t
25	8	auth.t
26	9	tendgt.t
27	10	sixnnx.t
28	2	dciurt.t
29	11	chan.t
30	24	autovon.t
31	27	npnode.t
32	30	rnxcc.t
33	31	tollc.t
34	12	mrgdac.t
35	22	rdce.t

Table 8-6. Order That Files are Committed for DEFINITY G2.1 (continued)

Order in which the files are committed	Initialization File Number	File Name
36	13	trkgp.t
37	14	fmdata.t
38	26	casrlt.t
39	69	isdnp.t
40	15	aar.t
41	16	ars.t
42	68	dchan.t
43	17	trunks.t
44	25	conti.t
45	19	tollt.t
46	20	nrcall.t
47	21	crac.t
48	23	arsclk.t
49	53	fstdgt.t
50	32	intercept.t
51	33	dsconn.t
52	54	feadac.t
53	71	trkextn.t
54	70	dciupt.t
55	18	pcc.t
56	73	arscc.t
57	59	vector.t
58	72	cdr.t
59	74	idac.t

Table 8-7. Order That Files are Committed for DIMENSION FP8 1.16

Order in which the files are committed	Initialization File Number	File Name
0	0	frl.t
1	38	cos.t
2	39	mrgcos.t
3	40	set.t
4	41	extn.t
5	46	ucd.t
6	47	smb.t
7	1	syscos.t
8	3	rnx.t
9	4	hnpa.t
10	5	fnpa.t
11	7	sixdig.t
12	8	auth.t
13	10	sixnnx.t
14	12	mrgdac.t
15	22	rdce.t
16	13	trkgp.t
17	14	fmdata.t
18	26	casrlt.t
19	15	aar.t
20	16	ars.t
21	17	trunks.t
22	25	conti.t
23	19	tollt.t
24	20	nrcall.t
25	21	crac.t
26	23	arsclk.t
27	53	fstdgt.t
28	54	feadac.t
29	57	spdcl.t
30	58	csmic.t

Table 8-8. Order That Files are Committed for DIMENSION FP8 3.8

Order in which the files are committed	Initialization File Number	File Name
0	35	ccg.t
1	37	ap.t
2	0	frl.t
3	38	cos.t
4	39	mrgcos.t
5	40	set.t
6	41	extn.t
7	42	ccgp.t
8	46	ucd.t
9	47	smb.t
10	1	syscos.t
11	3	rnx.t
12	4	hnpa.t
13	5	fnpa.t
14	6	links.t
15	7	sixdig.t
16	8	auth.t
17	9	tendgt.t
18	10	sixnnx.t
19	11	chan.t
20	12	mrgdac.t
21	22	rdce.t
22	13	trkgp.t
23	14	fmdata.t
24	26	casrlt.t
25	15	aar.t
26	16	ars.t
27	17	trunks.t
28	25	conti.t
29	19	tollt.t
30	20	nrcall.t
31	21	crac.t
32	23	arsclk.t
33	53	fstdgt.t
34	54	feadac.t
35	55	fivdgt.t
36	18	dsattr.t
37	57	spdcl.t
38	58	esmic.t

Procedure: Identifying and Correcting Major Errors

Purpose:

Use this procedure to identify a major error during initialization and look at the System Error Log and the System Administrator's Error Log to determine what kind of major errors occurred during initialization.

NOTES:

- Major errors stop initialization before it completes. A major error can be identified by the mail message,

"Initialization is INCOMPLETE; you will have to restart"

and the following message at the bottom of the results file:

"CUSTOMER DID NOT LOAD SUCCESSFULLY-----"

"This customer cannot be loaded/audited. Contact your System Administrator."

- For details on interpreting error log messages, refer to *Manager IV System Administration*.

Procedure Steps:

1. Access the shell.

The system will prompt you for the following information.

Enter application > **system-administration shell create**

env, shell, or list? Enter: **shell**

2. Change to the \$LOG directory and display the entire System Error Log file.

Enter: **cd \$LOG**

cat sysmdd

 where: *mmdd* = month and day

3. To see the log entries for a specific login,

Enter: **grep -n login sysmdd**.

 where: *login* = a specific login
 mmdd = month and day

Read the System Error Log. Detailed procedures for interpreting the System Error Logs are provided in *Manager IV System Administration*.

4. To find out the definition of a specific error code,

Enter: **cerrtbl status code**

 where: *status code* = the error code number

For example, **cerrtbl -15**

5. Display the entire Manager IV System Administrator's Error Log file.

Enter: **cat sadmmdd**

6. To see the log entries for a login,

Enter: **grep login sadmmdd**

where: *login* = a particular login

7. Resolve the problem and restart initialization (see the procedure, "Restarting Initialization," in Section 5).

END OF PROCEDURE

MINOR ERRORS DURING INITIALIZATION START

Minor errors that occur during initialization are recorded in the results file. They can be corrected once nonswitch data (if the customer has any) has been initialized.

This section provides a general procedure for correcting minor errors, and discusses TCM object mapping, button errors, and special error cases.

Procedure: Correcting Minor Errors

Purpose:

Use this procedure to correct minor errors that occurred while data was being entered into the database.

CAUTIONS:

- Do not correct any minor errors if the following message appears at the bottom of the results file; "CUSTOMER DID NOT LOAD SUCCESSFULLY." The customer cannot be loaded/audited. Consult your System Administrator, *and* the latest mail message for init indicates: "Initialization is INCOMPLETE. You will have to restart." See the previous procedure, "Correcting Major Errors," in this section.
- Do not correct any minor errors if there is nonswitch data and the command **system-administration non-switch-data add** has not been executed. Refer to "Initializing the Database with Non-Switch Data," in Section 5, for details on entering and initializing nonswitch data.
- Changes should not be made to the switch through Manager IV or any other system management vehicle while resolving initialization errors unless you are specifically instructed to do so. The goal is to resolve initialization errors by manipulating the database until it mirrors the switch as it appeared on the date the switch tape was sent to TRACS.

NOTES:

- Have the Customer System Document (CSD) available when you are correcting minor errors. It is a good idea to verify that the switch is correct by comparing it to the CSD.
- Minor errors do not prevent the initialization process from completing. If there are a number of minor errors, correct each error. Refer to *DEFINITY Manager IV TCM Operations* and *Manager IV FM Operations* for detailed information on specific transactions.
- Figure 8-4 provides a general error correction strategy for correcting minor errors.
- Use the **results display** command to view the *rtarget* results file.

Procedure Steps:

1. Access the results file.

Enter: **results display**

NOTE: **results display** can be entered from any Manager IV application.

2. Type the name of the results file and press **(ESC) e** or press **(EXECUTE)**.
3. Print out the results file so you can keep track of the errors you correct.
Press **(ESC) P**.
4. For each minor error, determine in which application, TCM or FM, the recommended command is located. Refer to the command directories in *Manager IV TCM Operations* and *Manager IV FM Operations*

5. Go to the appropriate application and access the database-admin area.
6. Enter the command listed in the results file.
7. Confirm the data from the results file with the CSD and switch, enter the correct data, and execute the transaction.
8. Check for consistency by displaying and comparing the database-admin record and the product-admin record.

END OF PROCEDURE

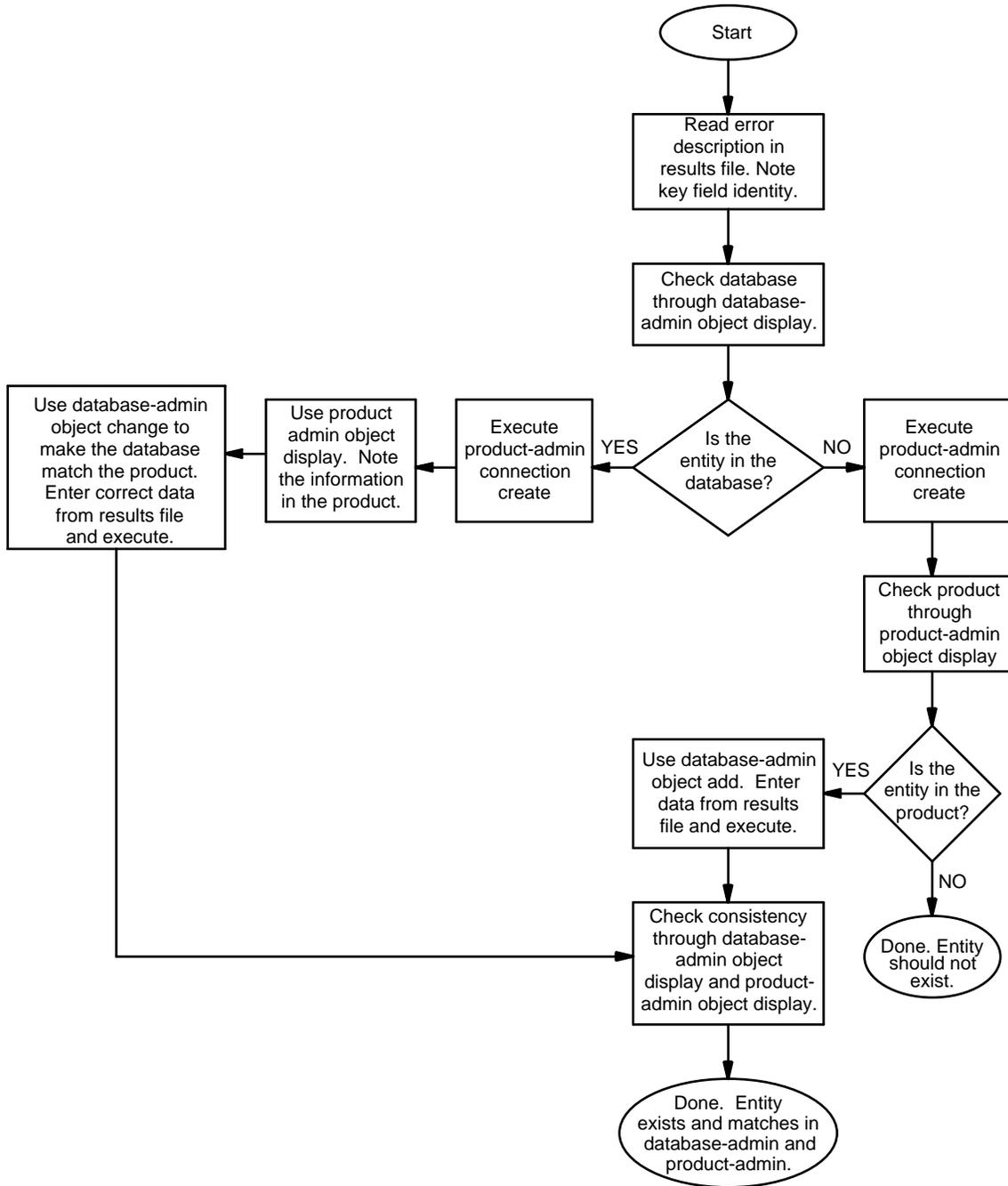


Figure 8-4. Correcting Minor Errors

Object Mapping for TCM

When correcting minor errors, often you need to check the product-admin and database-admin areas of TCM and FM. Most objects are the same in the database-admin and admin areas. However, in product-admin, objects are more proc-related. Therefore not all objects are available in both database-admin and product-admin.

For example, some TCM database-admin objects have more than one corresponding object in product-admin. For these objects, you must identify the part of the transaction that failed and use one of the corresponding product-admin objects. For example,

- To display information about a 36-button terminal in the Manager IV database, access the *tcm target* database-admin 36-button display screen,
- To display information about a 36-button terminal in the product, access the *tcm target* product-admin terminal display screen,
- To display associated information use the *tcm target* product-admin button display, or *tcm target* product-admin dtm display, or *tcm target* product-admin abbreviated-dial display screen.

Table 8-9 lists the TCM objects that do not map across areas. TCM objects that are the same in database-admin and product-admin are not listed.

Table 8-9. TCM Objects That Do Not Map Across Areas

Database-Admin and Admin Object	Product-Admin Object
associated-extension	associated-extension name*
coverage-module	terminal button**
data-module	extension data-module
ects (Dimension only)	ects-terminal button** abbreviated-dial*
<i>electronic set</i>	terminal dtdm* abbreviated-dial* button**
<i>electronic set (Generic 2 only)</i>	set-type dtdm* terminal button**
extension (analog)	extension abbreviated-dial* name*
extension (non-analog)	extension name*
feature-module	terminal button**

* Optional. For example, if an ECTS set does not have abbreviated dialing, the product-admin object abbreviated-dial does not apply.

** More than one. For example, if a feature-module has five assigned buttons, each one is administered individually through the object **button** in product-admin.

SPECIFIC INITIALIZATION ERRORS

The following are some errors which may occur while running the initialization commands.

initfiles-Possible Problems

The boxed errors in this section will appear on the terminal.

ERROR:	Initfiles was interrupted. Please run it again.
ERROR:	Initfiles was interrupted. Please clean out the /usr/spool/uucppublic/sm directory and reload the TRACS file. Then run initfiles again.

Possible Causes	The break key was hit during execution. A line drop occurred.
Resolution	Do as instructed. If the message simply indicates running initfiles again, then do so.

ERROR:	initfiles called without parameter of DOSS number
---------------	---------------------------------------------------

Resolution	Run initfiles again with the DOSS order number for the switch.
------------	----------------------------------------------------------------

ERROR:	The file <i>TDOSS#.z</i> was not in the /usr/spool/uucppublic/sm directory. Check to ensure that the file was properly loaded into this directory.
---------------	----------------------------------------------------------------------------------------------------------------------------------------------------

Possible Causes	The TRACS file was not successfully loaded onto the Manager IV machine. The file was loaded into a directory other than /usr/spool/uucppublic/sm. The file was not named correctly by TRACS.
Resolution	Check to make sure that the TRACS file was loaded into the correct directory, and that the name of the file is <i>TDOSS#.z</i> . Then run initfiles again.

ERROR:	There are old files, <i>TDOSS#a</i> , <i>TDOSS#b</i> , and <i>TDOSS#c</i> in the /usr/spool/uucppublic/sm directory. Please remove these files from the directory and rerun initfiles.
---------------	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Possible Causes	Old files are sitting in the directory. Initfiles has already been run for this TRACS file.
Resolution	Determine if initfiles has already been run for the TRACS file you just loaded. If initfiles has not been run for this TRACS file, back up the files listed in the above message if desired, and remove them. Run initfiles again.

ERROR:	Unpack failed to unpack <i>TDOSS#</i> . The error is: "message from unix unpack command"
---------------	---------------------------------------------------------------------------------------------

Possible Causes	Not enough space in /usr. Corrupted TRACS file
Resolution	Check the space in /usr—increase space if necessary. If the TRACS file is corrupted, contact Software Technical Support Group (STS). Clean out directory. Reload TRACS file Run initfiles again.

ERROR:

No valid header records were found in the TRACS data for doss# *DOSS#* (or invalid headers were found). Obtain TRACS data with valid headers for this doss#. Then clean out the /usr/spool/uucppublic/sm directory, load the TRACS data, and run initfiles again.

Possible Cause

The TRACS proc file did not contain a complete set of valid headers. A set of valid headers is defined as four records beginning with the prefix "softw" or "hdwr", and found at the beginning of the TRACS file. This message is displayed when:

- No header records were found at the beginning of the TRACS data
- Less than 4 header records were found, or
- One or more of the header records had an incorrect prefix.

Resolution

When the fields indicated in the above messages are invalid, the STS organization should be connected with the request that a new TRACS tape be sent. When the new tape is received, clean out the /usr/spool/uucppublic/sm directory, load the data on the system, run initfiles, and then run **initialization setup** again.

initialization setup-Possible Problems

The boxed text will appear in your mail.

ERROR:	Initialization setup was interrupted. Please run it again.
---------------	------------------------------------------------------------

Possible Causes	A signal was sent to the initialization setup process. The break key was hit during execution. A line drop occurred.
Resolution	Run the initialization setup transaction again.

ERROR:	No unpacked files whose names start with <i>TDOSS#</i> were found in /usr/spool/uucppublic/sm. Ensure that the initfiles process was run.
---------------	-------------------------------------------------------------------------------------------------------------------------------------------

Possible Causes	Initfiles was not run for this switch. Initialization setup was already run for this switch.
Resolution	If initfiles was not run for this switch: <ol style="list-style-type: none">1. Ensure that the TRACS file has been loaded into /usr/spool/uucppublic/sm.2. Run initfiles.3. Run initialization setup again.

ERROR:

NOTE: An old TRACS file *hTDOSS#* already exists in *\$WORK/dbdata/hw*. It is dated Sept 19 1992

Possible Cause

Old TRACS or hardware tables are left over from a previous initialization of the database for this *DOSS#*.

Resolution

If you want to save these files, back them up to tape.

Run initialization setup again. It will automatically overwrite the old files with the new ones.

ERROR: (non Generic 2 only)

Initialization setup was unable to create the hardware table *\$WORK/dbdata/table/t DOSS#* correctly. Any error messages appear in *\$HOME/hiDOSS#* (please remove this file when finished). Correct the problem and run initialization setup again.

Resolution

Consult the error file referred to in the above message, as well as the system and system-administration logs in *\$LOG*, to determine the problem and correct it.

Run the **initialization setup** transaction again.

ERROR:	<p>Invalid information found in headers from TRACS data for doss# <i>DOSS# (customer_name, switch_name, product-id target)</i>. Product type is Dimension. Release = <i>feature_package</i>, should be R08 Issue = <i>issue</i> Please obtain TRACS data with valid headers.</p> <p>When new TRACS data is obtained, load the data, and rerun initfiles and initialization setup.</p>
ERROR:	<p>Invalid information found in headers from TRACS data for doss# <i>DOSS# (customer_name, switch_name, product-id target)</i>. Product type is Dimension Release = R08 Issue = <i>issue</i>, should be 1.16, 3L7, or 3.8 Please obtain TRACS data with valid headers</p> <p>When new TRACS data is obtained, load the data, and rerun initfiles and initialization setup.</p>

ERROR:	<p>Invalid information found in headers from TRACS data for doss# <i>DOSS# (customer_name, switch_name, product-id target)</i>. Product type = <i>product_type</i>, should be CS500 (System 85, Generic 2) or D2000 (Dimension). Please obtain TRACS data with valid headers.</p> <p>When new TRACS data is obtained, load the data, and rerun initfiles and initialization setup.</p>
---------------	---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Possible Cause	<p>These messages are caused by invalid information in the TRACS header records. The information specifically referred to above is found in the fourth header record. The first message indicates that the product was a Dimension, but the feature package was something other than 8. (Initialization only supports Dimension blowbacks for Feature Package 8.) The second message indicates that the product was a Dimension FP8, but the issue was other than the three listed. (Again, Initialization only supports Dimension blowbacks for these three issues of FP8.) The third message indicates that the product type was not System 85 DEFINITY Generic 2, or Dimension.</p>
Resolution	<p>When the fields indicated in the above messages are invalid, the STS organization should be contacted with the request that a new TRACS tape be sent. When the new tape is received, load the data on the system, run initfiles, and then run initialization setup again.</p>

ERROR:

Information found in headers from TRACS data for doss# *DOSS#*
(*customer_name*, *switch_name*, product-id *target*) does not
match information entered through product add.

Header Rcds

product type = *prod_type*
release/issue = *release/issue*

Product Add

product type = *prod_type*
release/issue = *release/issue*

(CS500=System 85 or DEFINITY Generic 2, D2000=Dimension)

Please use product change to correct the product information in the Manager IV database or obtain TRACS data with correct headers.

If new TRACS data is obtained, load the data, and rerun initfiles and initialization setup. If product change is used to correct the database, simply rerun initialization setup.

Possible Cause

This message is caused by a discrepancy between the product information specified in the Manager IV **product add** transaction, and the product information contained in the TRACS header records. The information specifically referred to is found in the 4th header record.

Resolution

If the product add information is incorrect, use product:change to correct it, and rerun initialization setup.

If the information in the TRACS headers is incorrect, the STS organization should be contacted with the request to send a new TRACS tape. When the new tape is received, it should be loaded onto the Manager IV system, initfiles run, and **initialization setup** run again.

initialization poll-Possible Problems

The boxed text will appear in your mail.

ERROR:	Initialization poll was interrupted. Please run it again.
---------------	-----------------------------------------------------------

Possible Causes	A signal was sent to the initialization poll process. The break key was hit during execution. A line drop occurred.
Resolution	Run the initialization poll transaction again.

ERROR:	Cannot find data file \$WORK/dbdata/hw/hT <i>DOSS#</i>
---------------	--------------------------------------------------------

Possible Cause	Initialization setup was not run for this target.
Resolution	Initialization poll could not find the TRACS files in \$WORK/dbdata/hw for the target. (There should either be one TRACS data file in this directory called hT <i>DOSS#</i> or several files called hT <i>DOSS#</i> a, hT <i>DOSS#</i> b, hT <i>DOSS#</i> c, etc.) <ol style="list-style-type: none">1. Ensure that:<ol style="list-style-type: none">1. The TRACS file for this switch was loaded onto the system2. Initfiles was run for the switch.3. Initialization setup was run for the switch.2. Run the initialization poll transaction again.

initialization start-Possible Problems

The boxed text will appear in your mail.

ERROR:	Initialization is INCOMPLETE; you will have to restart
---------------	--------------------------------------------------------

LOG Device Contents	<p>The info log in \$LOG indicates that the step being processed by initialization was step 21.</p> <p>The system and system-administrator logs in \$LOG will indicate a status code of -203, -206, -207, -231, or -232.</p>
Resolution	<p>Initialization start stopped because a Manager IV resource, such as shared memory, is depleted.</p> <ol style="list-style-type: none">1. Get into a debug shell from the smue.2. Change directory to \$WORK/dbdata. Enter: cd \$WORK/dbdata3. Look at the contents of the <i>pproductID</i> file to get the PBX ID for the product ID being initialized. Enter: cat pproductID where: <i>productID</i> = the product ID of the switch being initialized (without parenthesis, if any existed)4. There will be a file called <i>groupingpbxid</i> in the \$WORK/dbdata directory. Edit this file and decrease the number in it by 5. For example, if the pbxid is 2, the file will be called <i>grouping2</i>.5. Use the initialization restart transaction to restart initialization from the termination point. If initialization stops again with the same problem, the number in the grouping file should be decreased again by 5 and initialization restarted from the termination point. Never make the number in the grouping file lower than 1. If this number is lowered to 1, and the same problem is still occurring, contact your system administrator.

ERROR:	Initialization is INCOMPLETE; you will have to restart.
---------------	---------------------------------------------------------

Log Devices	No messages.
Possible Causes	<p>A signal was sent to the initialization start process.</p> <p>The break key was hit during execution.</p> <p>A line drop occurred.</p>
Resolution	Use the initialization restart transaction to restart initialization from the termination point.

ERROR:	Initialization is INCOMPLETE ; you will have to restart.
---------------	-----------------------------------------------------------------

Log Device Contents The system and system-administrator logs in \$LOG indicate that a particular file could not be opened or created by a process called **loadadmin**.

Resolution The \$WORK area has run out of space.

1. Increase the space in the \$WORK area.
2. Use the initialization restart transaction to restart initialization from termination point.

ERROR:	File system space may be insufficient
---------------	---------------------------------------

Causes This warning can occur during the initialization or reinitialization of a large database if the system finds that there is a shortage of disk space.

At the start of initialization, a routine called **getsize** runs automatic internal checks to ensure that there is enough disk space to complete initialization. If it seems that there is not enough space, you will receive the warning displayed above, as well as an estimate of the amount of space needed to complete initialization.

Resolution Delete unneeded files whenever you need to free disk space. Keep in mind that the amount of disk space that **getsize** states you need is an estimate, and you may indeed have enough disk space to restart and complete initialization without deleting files. To ascertain that you have enough space to complete initialization, do the following:

1. Note the **getsize** estimate needed for the initialization of your database.
2. Using the UNIX command, **df**, check on the amount of disk space that is actually available.
 - If the amount of available disk space is more than the **getsize** estimate, then you have enough space to complete the initialization of your database. Skip to Step 4.
 - If the amount of available disk space is less than the **getsize** estimate, then you must delete any files that are no longer needed. Proceed to the next step.
3. Enter: **cd \$WORK**

Navigating downward from the \$WORK directory, check subdirectories and delete any files that you no longer need.
4. Use the restart option to continue initialization at the point that the program stopped.

Recommendation Routinely check \$WORK and its connecting subdirectories to delete any files that are no longer needed.

ERROR:	The application flag is not set—Cannot initialize the data base until set. The flag can be changed via product change then rerun dbinit. All errors are logged in the file, <i>rtarget</i> . You can use results display to view the file. Please remove file when finished.
---------------	--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Resolution No Manager IV components were specified for the target being initialized.

1. Use the **system-administration product change** transaction to correctly specify which Manager IV components this product has.
2. Use the **initialization restart** transaction to restart initialization from the termination point.

ERROR:	Cannot find data file \$WORK/dbdata/hw/hT <i>DOSS#</i> All errors are logged in the file <i>rtarget</i> You can use results display to view the file. Please remove file when finished.
---------------	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Possible Cause Initialization setup was not run for this target.

Resolution Initialization start could not find the TRACS files in \$WORK/dbdata/hw for the target. (There should either be one TRACS data file in this directory called *hTDOSS#* or several files called *hTDOSS#a*, *hTDOSS#b*, *hTDOSS#c*, etc.)

1. Ensure that:
 1. The TRACS file for this switch was loaded onto the system
 2. Initfiles was run for the switch.
 3. Initialization setup was run for the switch.
2. Use the **initialization restart** transaction to restart initialization from the termination point.

ERROR: (non DEFINITY Generic 2 only) Cannot find file \$WORK/dbdata/table/t *DOSS#*
 All errors are logged in the file *rproduct-id*
 You can use **results display** to view the file. Please
 remove file when finished.

Possible Cause Initialization setup was not run successfully for this target.

Resolution **Initialization start** could not find the hardware table in \$WORK/dbdata/table for the target.

1. Ensure that:
 - a. The TRACS file for this switch was loaded onto the system.
 - b. Initfiles was run for the switch.
 - c. **Initialization setup** was run for the switch
2. Use the **initialization restart** transaction to restart initialization from the termination point.

ERROR: All errors are logged in the file *rtarget*
 You can use **results display** to view the file.
 Please remove file when finished.

Other Messages At the bottom of the *rtarget* file, the following message appears, "Cannot find Network Dial Plan file—\$WORK/dbdata/net354w5."

Possible Cause **network-file create** was not run before the **initialization start**.

Resolution **Initialization start** was being run for a target which is a member of a number portability network and could not find a file produced by the **network-file create** transaction.

1. Ensure that the **network-file create** transaction has been run once before ANY **initialization start** commands are executed for targets in a number portability network.
2. Use the **initialization restart** transaction to restart initialization from the termination point.

ERROR:	<p>Invalid information found in headers from TRACS data for doss# <i>DOSS# (customer_name, switch_name, product-id target)</i>. Product type is Dimension. Release = <i>feature_package</i>, should be R08 Issue = <i>issue</i> Please obtain TRACS data with valid headers.</p> <p>When new TRACS data is obtained, load the data, and rerun initfiles, initialization setup and initialization start.</p>
ERROR:	<p>Invalid information found in headers from TRACS data for doss# <i>DOSS# (customer_name, switch_name, product-id target)</i>. Product type is Dimension Release = R08 Issue = <i>issue</i>, should be 1.16, 3L7, or 3.8 Please obtain TRACS data with valid headers.</p> <p>When new TRACS data is obtained, load the data, and rerun initfiles, initialization setup and initialization start.</p>
ERROR:	<p>Invalid information found in headers from TRACS data for doss# <i>DOSS# (customer_name, switch_name, product-id target)</i>. Product type = <i>product_type</i>, should be CS500 (System 85, DEFINITY Generic 2) or D2000 (Dimension). Please obtain TRACS data with valid headers.</p> <p>When new TRACS data is obtained, load the data, and rerun initfiles, initialization setup and initialization start.</p>

Possible Cause	<p>These messages are caused by invalid information in the TRACS header records. The information specifically referred to above is found in the fourth header record. The first message indicates that the product was a Dimension, but the feature package was something other than 8. (Initialization only supports Dimension blowbacks for Feature Package 8.) The second message indicates that the product was a Dimension FP8, but the issue was other than the three listed. (Again, Initialization only supports Dimension blowbacks for these three issues of FP8.) The third message indicates that the product type was not System 85, DEFINITY Generic 2, or Dimension.</p>
Resolution	<p>When the fields indicated in the above messages are invalid, the STS organization should be contacted with the request that a new TRACS tape be sent. When the new tape is received, load the data on the system, run initfiles, initialization setup and then run initialization start again.</p>

ERROR

Information found in headers from TRACS data for doss# *DOSS#*
(*customer_name*, *switch_name*, product-id *target*) does not
match information entered through **product add**.

Header Rcds

product type = *prod_type*
release/issue = *release/issue*

Product Add

product type = *prod_type*
release/issue = *release/issue*

(CS500=System 85 or DEFINITY Generic 2, D2000=Dimension)

Please use **product change** to correct the product information in the Manager IV database or obtain TRACS data with correct headers.

If new TRACS data is obtained, load the data, and rerun initfiles, **initialization setup** and **initialization start**. If product change is used to correct the database, rerun **initialization start**.

Possible Cause

This message is caused by a discrepancy between the product information specified in the Manager IV **product add** transaction, and the product information contained in the TRACS header records. The information specifically referred to is found in the fourth header record.

Resolution

If the **product add** information is incorrect, use **product change** to correct it, and rerun **initialization start**.

If the information in the TRACS headers is incorrect, the STS organization should be contacted with the request to send a new TRACS tape. When the new tape is received, it should be loaded onto the Manager IV system, initfiles run, **initialization setup** and then run initialization start again.

SPECIAL ERRORS

Special errors have a text message in the results file that lists a case number and refers you to this manual. Special errors are data errors that may require several commands to resolve.

Special errors can be resolved once initialization completes without a major error and the system-administration non-switch-data add transaction has been run. The following special error procedures are provided in this section.

- Case 1: Extensions
- Case 2: Terminals
- Case 3: Automatic Message Waiting
- Case 4: Abbreviated Dial
- Case 5: User Name
- Case 6: Applications Processor
- Case 7: UCD or ACD Group
- Case 8: Class-of-Service
- Case 9: Call Appearance [System 85, Generic 2]
- Case 9: Extension Line Pickup [DIMENSION]
- Case 10: Equipment/Set
- Case 12: Button
- Case 13: Call Coverage
- Case 14: Terminals without a Call Appearance
- Case 15: Abbreviated Delayed Alerting
- Case 16: Line Pickup
- Case 17: Non-Switch Data From TRACS

Procedure: Case 1. Extensions

Purpose:

Use this procedure to resolve an error that occurs when an extension is not added properly to the database during initialization.

NOTES:

- Have the Customer System Document (CSD) available. Verify that the switch is correct by checking it against the CSD. Refer to *Manager IV TCM Operations* for detailed information on specific transactions.
- Before you use a command in the product-admin area you must execute the command **connection create**.
- If the results file entry for the Equipment Line Location (ELL) field is numeric, the extension is analog; otherwise the extension is non-analog.
- Resolve this error after initialization has completed and you have executed the **system-administration non-switch-data add** transaction.

Procedure Steps:

1. Check the database.

Enter: **tcm target database-admin extension display**.

- If the entry in the field labeled "state" is "a" (available), use **database-admin extension add** to add the extension to the database. Enter the data that appears in the results file and execute the transaction. Go to Step 2.
 - If the entry in the field labeled "state" is "w" (working), use **database-admin extension change** to tailor the database entry for this extension. Enter the data that appears in the results file and execute the transaction. Go to Step 2.
2. When you finish adding or changing data, compare the records by using **database-admin extension display** and **product-admin extension display**.
 - If the records match, you have finished procedures for Case 1.
 - If the records do not match, determine whether the switch data or the Manager IV database record is correct.
 - If the switch data is correct, use **database-admin extension change** to make database and switch data consistent.
 - If the Manager IV database data is correct, use the appropriate extension command from the prod-admin area of Manager IV to make the switch data and Manager IV database consistent.

END OF PROCEDURE

Procedure: Case 2. Terminals

Purpose:

Use this procedure to resolve an error that occurs because a terminal or information related to a terminal fails to get added to the database during initialization.

NOTES:

- Have the Customer System Document (CSD) available. Verify that the switch is correct by checking it against the CSD. Refer to *Manager IV TCM Operations* for detailed information on specific transactions.
- Before you use a command in the product-admin area you must execute the command **connection create**.
- Resolve this error after initialization has completed and you have executed the **system-administration non-switch-data add** command.

Procedure Steps:

1. Check the database.

Enter: **tcn target database-admin electronic set display**

where: *electronic set* = is the set type given in the results file

NOTE: Refer to "The Term *electronic set*" at the beginning of this section, for details on determining the appropriate TCM object.

- If the terminal exists in the database, use **database-admin electronic set change** to enter the data that appears in the results file for this terminal. Go to Step 3.
 - If the terminal does not exist in the database, go to Step 2.
2. Check the CSD, note the Equipment Line Location (ELL) [System 85] or the ECTS controller location [DIMENSION]. Check the product to see if the terminal exists.

Enter: **product-admin terminal display**.

- If the terminal exists, use **database-admin electronic set add** to enter the set ID and the other data that appears in the results file for this terminal. Execute the transaction. Go to Step 3.
- If the terminal does not exist, the terminal is invalid. The information in the switch and the database match for this terminal. You have finished procedures for Case 2.

3. When you finish adding or changing data, compare the records by using **product-admin terminal display** and **database-admin *electronic set* display**.
 - If the records match, you have finished procedures for Case 2.
 - If the records do not match, determine whether the data in the database or the switch is correct.
 - If the database data is correct, use the appropriate terminal change transaction in the prod-admin area to correct the switch data.
 - If the switch data is correct, use the appropriate database-admin *electronic set* transaction to correct the database.

END OF PROCEDURE

Procedure: Case 3. Automatic Message Waiting

Purpose:

Use this procedure to resolve an error that occurs when the Automatic Message Waiting feature fails to get added to an extension during initialization.

NOTES:

- Have the Customer System Document (CSD) available. Verify that the switch is correct by checking it against the CSD. Refer to *Manager IV TCM Operations* for detailed information on specific transactions.
- Before you use a command in the product-admin area you must execute the command **connection create**.
- Resolve this error after initialization has completed and you have executed the **system-administration non-switch-data add** transaction.

Procedure Steps:

1. Determine if the extension is valid by following the procedure listed in "Case 1. Extensions."
 - If the extension is invalid in both the switch and the database, the switch and the database match for this extension. Ignore this error message. You have finished procedures for Case 3.
 - If the extension is invalid *and*
 - [System 85] the entry in the "MOD" field in the results file is a dash or a zero, use **database-admin extension change** to change the entry in the field labeled "Automatic Message Waiting" to **y**. Go to Step 2.
 - [DIMENSION System FP8] The entry in the "Circuit" field in the results file is a dash, use **database-admin extension change** to change the entry in the field labeled "Automatic Message Waiting" to **y**. Go to Step 2.
2. When you finish adding or changing data, compare the records by using **database-admin extension display** and **product-admin extension display**.
 - If the records match, you have finished procedures for Case 3.
 - If the records do not match, change the data in the database record or the switch until the data in the switch and the database are consistent.

END OF PROCEDURE

Procedure: Case 4. Abbreviated Dial

[System 85 and DEFINITY Generic 2 only]

Purpose:

Use this procedure to resolve an error that occurs while abbreviated dial information is processed during initialization.

NOTES:

- Have the Customer System Document (CSD) available. Verify that the switch is correct by checking it against the CSD. Refer to *Manager IV TCM Operations* for detailed information on specific transactions.
- Before you use a command in the product-admin area you must execute the command **connection create**.
- Table 8-10 provides information on the results file entries for abbreviated dialing errors.
- Resolve this error after initialization has completed and you have executed the **system-administration non-switch-data add** transaction.

Procedure Steps:

1. Determine if the extension is valid by following procedures listed in "Case 1: Extensions."
 - If the extension is invalid in both the switch and the database, the switch and the database match for this extension. Ignore this error message. You have finished procedures for Case 4.
 - If the extension is valid, go to Step 2.
2. Determine if the set is analog.

Enter: **database-admin extension display**

 - If the set is an analog, use **database-admin extension change** to enter the data from the results file. Go to Step 6.
 - If the set is non-analog, check the CSD for the set type. Go to Step 3.
3. Is there a set ID given?
 - Yes.

Use **database-admin electronic set change** to enter the data from the results file and execute the transaction. Go to Step 6.
 - No. Go to Step 4.
4. Check the CSD to determine the Electronic Line Location (ELL) in order to display the switch terminal record.

Enter: **product-admin terminal display**.

 - If the set is in the product, go to Step 5.
 - If the set is not in the product, the database and product match for this extension. You have finished procedures for Case 4.

5. See if the set is in the database.

Enter: **database-admin** *electronic set* **change**.

- If the set is in the database,

- A. Display it.

Enter: **database-admin** *electronic set* **display**.

- B. Remove it.

Enter: **database-admin** *electronic set* **remove**.

- C. Re-add the set.

Enter: **database-admin** *electronic set* **add**

NOTE: Use Clipboard to recall data—this updates the set ID on the extension record.

- D. Go to step 6.

- If the set is not in the database, add the set using **database-admin** *electronic set* **add**. Enter the data from the results file and execute the transaction. Go to Step 6.

6. When you finish adding or changing data, compare the records by using:

database-admin *electronic set* **display**,
product-admin terminal display, and/or
product-admin extension display, and
database-admin extension display.

- If the records match, you have finished procedures for Case 4.
- If the records do not match, change the data in the database record or the switch until the data in the switch and the database are consistent.

END OF PROCEDURE

Table 8-10 shows how values in the results file translate to the terminal screen. If the fields in the results file appear as follows, then you need to use **database-admin** *electronic set add* for non-analogs or **database-admin extension add** for analogs and perform the prescribed action.

Table 8-10. Abbreviated Dial Information in the Results File

If These Values Appear In The Results File:						Action to Take:
ext /grp list#	list type	list size	sys list access	controller	grp list to share	
group #	0	size				assign a group list to the terminal or extension.
setid#	[1,2]			1	group #	assign a terminal or extension as the controller of the group list.
setid#	[1,2]			0	group #	assign a terminal or extension to share the group list (that is, not the controller of the group list).
setid#	[1,2]	size				assign a personal list to an extension or terminal.
setid#	[3]	[0,1]				assign a system list access to an extension or terminal.
setid#	[4]					[System 85 R2V3 only] assign default terminal dialing.

The following is a list of the valid entries for the fields listed in Table 8-10.

ext #	=	10-9999 [System 85 R2V3] 10-99999
grp #	=	1-500
size	=	5, 10, 15, 20, 25, 30 [System 85 R2V3] 5 to 95 (by fives)
list type	=	0 - group list, 1 - list A, 2 - list B, 3 - system list access, [System 85 R2V3 only] 4 - default terminal dialing
terminal access to system list	=	0 - no access, 1 - access
[]	=	indicates choice of enclosed values

Procedure: Case 5. User Name

[System 85 and DEFINITY Generic 2 only]

Purpose:

Use this procedure to resolve an error that occurs when a user's name fails to get associated with an extension during initialization.

One name may be associated with several extensions. Extensions having the same user's name may get associated with each other rather than with the name. You will determine if these extensions are valid and change the entry in the "Name" field to the true name.

NOTES:

- Have the Customer System Document (CSD) available. Verify that the switch is correct by checking it against the CSD. Refer to *Manager IV TCM Operations* for detailed information on specific transactions.
- Before you use a command in the product-admin area you must execute the command **connection create**.
- Resolve this error after initialization has completed and you have executed the **system-administration non-switch-data add** transaction.

Procedure Steps:

1. Examine the fields labeled "Extension Number" and "User Name" in the results file.
 - If there is an extension number listed in the Name field, follow procedures in "Case 1: Extensions" to determine if the extension number listed in the "User Name" field is valid. Go to Step 2.
 - If there is a name in the Name field, follow procedures in "Case 1: Extensions" to determine if the extension number listed in the Extension Number field is valid. Go to Step 3.
2. Follow procedures in "Case 1: Extensions" to determine if the extension number listed in the Name field is valid.
 - If the extension is valid, note the name listed on the extension record when you access the **database-admin extension display** screen. Go to step 4.
 - If the extension is not valid, the information in the switch and the database match for these extensions. You have finished procedures for Case 5.
3. Follow procedures in "Case 1: Extensions" to determine if the extension number listed in the "Extension Number" field is valid.
 - If the extension is valid, use **database-admin extension change**. Enter the true user's name. Go to Step 5.
 - If the extension is invalid, the information in the switch and the database match for these extensions. You have finished procedures for Case 5.

4. Display the name in the database.

Enter: **database-admin extension change**.

- If a user's name is given in the Name Display field, Enter this name in the Name Display field. Go to Step 5.
 - If a user's name is not given in the Name Display field, look at the order forms. enter this name in the Name Display field. Go to Step 5.
5. When you finish adding or changing data, compare the records by using **database-admin extension display** and **product-admin extension display**.
 - If the records match, you have finished procedures for Case 5.
 - If the records do not match, change the data in the database record or the switch until the data in the switch and the database are consistent.

END OF PROCEDURE

Procedure: Case 6. Application Processor

Purpose:

Use this procedure to resolve an error that occurs when information related to an Applications Processor (AP) fails to get added to the database during initialization.

NOTES:

- Refer to *Manager IV TCM Operations* for detailed information on specific transactions.

Procedure Steps:

1. Determine if the AP exists in the database.
Enter: **tcm target database-admin ap display**.
NOTE: Use the AP number given in the results file.
 - If the AP exists, go to Step 3.
 - If the AP does not exist, go to Step 2.
2. Check the Customer System Document (CSD) to see if the AP should exist.
 - If the AP should exist, use **database-admin ap add**. Enter the data that appears in the results file for this AP. Go to Step 3.
 - If the AP should not exist, the AP is invalid. The switch and the database match for this AP. You have finished procedures for Case 6.
3. When you finish adding or changing data, compare the records in the CSD and in the database.
 - If the records match, you have finished procedures for Case 6.
 - If the records do not match, change the data in the database record or the switch until the data in the CSD and the database are consistent.

END OF PROCEDURE

Procedure: Case 7. UCD or ACD Group

Purpose:

Use this procedure to resolve an error that occurs when information related to a Uniform Call Distribution (UCD) or Automatic Call Distribution (ACD) group fails to get added to the database during initialization. This error can be corrected in Terminal Change Management (TCM) or Facilities Management (FM).

NOTES:

- Have the Customer System Document (CSD) available. Verify that the switch is correct by checking it against the CSD. Refer to *Manager IV TCM Operations* or *Manager IV FM Operations* for detailed information on specific transactions.
- Before you use a command in the product-admin area you must execute the command **connection create**.
- Resolve this error after initialization has completed and you have executed the **system-administration non-switch-data add** transaction.

Procedure Steps:

1. Access the FM or TCM application to see if a UCD or ACD group exists in the database.

Enter: *target* **database-admin ucd-group display**, or

Enter: *target* **database-admin acd-group display**.

NOTE: Use the UCD or ACD group number given in the results file.

- If the UCD or ACD group is found, use **database-admin ucd-group change** or **database-admin acd-group change**. Enter the data that appears in the results file for this group. Go to Step 3.
- If the UCD or ACD group is not found, go to Step 2.

2. See if a UCD or an ACD group exists in the switch.

Enter: **product-admin ucd-group display**, or

Enter: **product-admin acd-group display**.

NOTE: Use the UCD or ACD group number given in the results file.

- If the UCD or ACD group is not found, the group is invalid. The switch and the database match for this group. You have finished procedures for Case 7.
- If the UCD or ACD group is found, use **database-admin ucd-group add** or **database-admin acd-group add**. Enter data that appear in the results file for this group. Go to Step 3.

3. When you finish adding or changing data, compare the records by using **database-admin ucd-group display** and **product-admin ucd-group display** or **database-admin acd-group display** and **product-admin acd-group display**.
 - If the records match, you have finished procedures for Case 7.
 - If the records do not match, change the data in the database record or the switch until the data in the switch and the database are consistent.

END OF PROCEDURE

Procedure: Case 8. Class of Service

Purpose:

Use this procedure to resolve an error that occurs when information related to a class-of-service is not added properly to the database during initialization.

NOTES:

- Have the Customer System Document (CSD) available. Verify that the switch is correct by checking it against the CSD. Refer to *Manager IV TCM Operations* for detailed information on specific transactions.
- Before you use a command in the product-admin area you must execute the command **connection create**.

Procedure Steps:

1. Display the class-of-service listed in the database.

Enter: **tcm target database-admin class-of-service display**.

- If the entry in the "state" field is **a** (available), use **database-admin class-of-service add**. Enter the data that appears in the results file for this class-of-service. Go to Step 2.

NOTE: Enter an **x** in each field that has a 1 as the given data in the results file. If the ALL field is set to 1, enter **x** in the ALL field on the class-of-service add screen. Leave all fields blank that have 0 as the given data.

- If the entry in the "state" field is **w** (working), use **database-admin class-of-service change**. Enter the data that appears in the results file for this class of service. Go to Step 2.

2. When you finish adding or changing data, compare the records by using **database-admin class-of-service display** and **product-admin class-of-service display**.
 - If the records match, you have finished procedures for Case 8.
 - If the records do not match, change the data in the database record or the switch until the data in the switch and the database are consistent

END OF PROCEDURE

Procedure: Case 9. [System 85 and DEFINITY Generic 2] Call Appearance

Purpose:

Use this procedure to resolve an error that occurs when information related to call appearances fails to get added to the database during initialization.

NOTES:

- [DIMENSION] See the following procedure, "CASE 9: Extension Line Pickup."
- Have the Customer System Document (CSD) available. Verify that the switch is correct by checking it against the CSD. Refer to *Manager IV TCM Operations* for detailed information on specific transactions.
- Before you use a command in the product-admin area you must execute the command **connection create**.
- Resolve this error after initialization has completed and you have executed **system-administration non-switch-data add**.

Procedure Steps:

1. Determine if the extension is valid by following the procedure listed in "Case 1: Extensions."
 - If the extension is invalid, the switch and the database match for this extension. Ignore this error message. You have finished procedures for Case 9.
 - If the extension is valid, go to Step 2.
2. Check the entry in the Call Appearance field in the results file.
 - If the entry in the Call Appearance field is greater than 12, go to Step 3.
 - If the entry in the Call Appearance field is less than 12, go to Step 4.
3. The Call Appearance is incorrect. The button may need to have a feature assigned to it. Note the Equipment Line Location (ELL) from the CSD. Check the switch by using **product-admin button display**.
 - If the button is not found, the button does not exist in the switch or the database. You are finished procedures for Case 9.
 - If the button is found, note the button attributes and set type. Use **database-admin electronic set change** to add in the Call Appearance information. Go to Step 6.
4. Check the CSD for the set type. Verify that the terminal is valid by using **database-admin electronic set display**.
 - If the set exists in the database, use **database-admin electronic set change** to add in the Call Appearance information. Go to Step 6.
 - If the set does not exist in the database, check the CSD for the ELL. Go to Step 5.

5. Use **product-admin terminal display**.
 - If the set is in the product, the database and the switch match for this set. You have finished procedures for Case 9.
 - If the set is not in the product, use **database-admin *electronic set* add**. Enter data from the results file and execute the transaction. Go to Step 6.
6. When you finish adding or changing data, compare the records by using **product-admin terminal display** and **database-admin *electronic set* display**.
 - If the records match, you have finished procedures for Case 9.
 - If the records do not match, change the data in the database record or the switch until the data in the switch and the database are consistent.

END OF PROCEDURE

Procedure: Case 9. [DIMENSION] Extension Line Pickup

Purpose:

Use this procedure if a line appears on more than 16 sets.

NOTES:

- Have the Customer System Document (CSD) available. Verify that the switch is correct by checking it against the CSD. Refer to *Manager IV TCM Operations* for detailed information on specific transactions.
- Before you use a command in the product-admin area, you must execute the **connection create** command.
- Resolve this error after initialization has completed and you have executed **system-administration non-switch-data add**.

Procedure Steps:

1. Verify that the extension is valid. Use "Case 1. Extensions."
 - If the extension is valid, go to Step 2.
 - If the extension is invalid, the extension should not exist. You have finished procedures for Case 9.
2. Check the CSD for set type.
Enter: **database-admin electronic set display**
 - If the set is in the database, go to Step 3.
 - If the set is not in the database, go to Step 4.
3. Enter: **product-admin button display**
 - If the button is in the product, note the button attributes. Use **database-admin ectx change** to add in or change line pickup information. Go to Step 5.
 - If the button is not in the product, the button should not exist. You have completed procedures for Case 9.
4. Check the CSD for the ECTS controller location to see if the set is in the switch.
Enter: **product-admin terminal display**
NOTE: Use the ECTS from the CSD.
 - If the set is in the switch, use **database-admin ectx add** to enter the data in the results file. Go to Step 5.
 - If the set is not in the switch, you have completed procedures for Case 9.

5. Check consistency through **database-admin** *electronic set display* and **product-admin terminal display**.
 - If the records match, you have finished procedures for Case 9.
 - If the records do not match, change the records in the database or switch until they are consistent.

END OF PROCEDURE

Procedure: Case 10. Equipment/Set

Purpose:

Use this procedure to resolve an error that occurs when information related to a set fails to get added to the database during initialization.

NOTES:

- Have the Customer System Document (CSD) available. Verify that the switch is correct by checking it against the CSD. Refer to *Manager IV TCM Operations* for detailed information on specific transactions.
- Before you use a command in the product-admin area you must execute the command **connection create**.
- Resolve this error after initialization has completed and you have executed **system-administration non-switch-data add**.

Procedure Steps:

1. Read the contents in the results file.
 - If a set ID is given in the results file, go to Step 3.
 - If an Equipment Line Location (ELL) [System 85], Generic 2, or Electronic Custom Telephone Set (ECTS) controller location [DIMENSION System FP8] is given in the results file, determine the set ID associated with the ELL or ECTS by using **database-admin station-attributes display**. Go to Step 2.
2. Is a set ID displayed through **station-attributes display**?
 - Yes. Go to Step 3.
 - No. Go to Step 4.
3. Check the Manager IV database for the set type.
Enter: **database-admin electronic set display**.
 - If the set is in the database, use **database-admin electronic set change** to add in information from the results file, then execute the transaction. Go to step 5.
 - If the set is not in the database, check the CSD for the ELL or ECTS. Go to step 4.
4. Check the product to see if the set exists.
Enter: **product-admin terminal display**.
 - If the ELL or ECTS is assigned in the product, use **database-admin electronic set add** to add in information from the results file and execute the transaction. Go to Step 5.
 - If the ELL or ECTS is not assigned in the product, the database and switch match for this set. You have finished procedures for Case 10.

5. When you finish adding or changing data, compare the records by **product-admin terminal display** and **database-admin *electronic set* display**.
 - If the records match, you have finished procedures for Case 10.
 - If the records do not match, change the data in the database record or the switch until the data in the switch and the database are consistent.

END OF PROCEDURE

Procedure: Case 12. Button

Purpose:

Use this procedure to resolve an error that occurs when information related to buttons fails to get added to the database during initialization.

NOTES:

- Have the Customer System Document (CSD) available. Verify that the switch is correct by checking it against the CSD. Refer to *Manager IV TCM Operations* for detailed information on specific transactions.
- Before you use a command in the product-admin area you must execute the command **connection create**.
- Resolve this error after initialization has completed and you have executed **system-administration non-switch-data add**.

Procedure Steps:

1. Read the contents in the results file.
 - If a set ID is given in the results file, go to Step 3.
 - If an Equipment Line Location (ELL) [System 85], Generic 2 or the ECTS controller location [DIMENSION] is given in the results file, determine the Set ID associated with this ELL or ECTS by using **database-admin station-attributes display**. Go to Step 2.
2. Is a set ID displayed by **station-attributes display**?
 - Yes. Go to Step 3.
 - No. Go to Step 5.
3. Check the CSD for the set type.
Enter: **database-admin electronic set display**.
 - If the set is in the database, go to Step 4.
 - If the set is not in the database, go to Step 5.
4. Check the button assignment for this set in product-admin, database-admin, and the CSD.
 - If the button assignments are same, go to Step 6.
 - If the button assignments are not the same, determine which button assignments are correct. Change the product or database as appropriate. Go to Step 6.
5. Check the product to see if the set exists.
Enter: **product-admin terminal display**.
 - If the ELL is assigned in the product, check button assignments in the CSD and through **product-admin button display**. Use **database-admin electronic set add** to add in information from the results file and execute the transaction. Go to Step 6.
 - If the ELL is not assigned in the product, the database and switch match for this set. You have finished procedures for Case 12.

6. When you finish adding or changing data, compare the records by using **product-admin terminal display** and **database-admin *electronic set* display**.
 - If the records match, you have finished procedures for Case 12.
 - If the records do not match, change the data in the database record or the switch until the data in the switch and the database are consistent.

END OF PROCEDURE

Procedure: Case 13. Call Coverage

Purpose:

Use this procedure to resolve an error that occurs when information related to a call coverage path fails to get added to the database during initialization.

NOTES:

- The switch allows extensions to be associated with call coverage groups to be assigned that have not been previously defined; Manager IV considers this an error. When an extension is covered by a Call Coverage Group that is not defined in the switch, Manager IV will make default assignments for the coverage points and parameters in the Manager IV database. You will add in the default coverage points and parameters in the switch in order to make the database and the switch agree. Once the database and the product match, you can change the settings for coverage points and parameters by using **tcn admin call-coverage-path change**.
- Have the Customer System Document (CSD) available. Verify that the switch is correct by checking it against the CSD. Refer to *Manager IV TCM Operations* on specific transactions.
- Before you use a command in the product-admin area you must execute the command **connection create**.
- Resolve this error after initialization has completed and you have executed **system-administration non-switch-data add**.

Procedure Steps:

1. Does the following text message appear in the results file?

"Warning - This call coverage group was undefined in the proc data and therefore was assigned the above default attributes."

 - Yes.

Use **product-admin call-coverage path add**. Enter the data that appears in the results file for this call coverage path and execute this transaction. Go to Step 6.
 - No. Go to Step 2.
2. Examine the contents of the results file.
 - If the call coverage point is an extension, follow procedures in "Case 1: Extensions" to determine if the extension is valid. Go to Step 3.
 - If the call coverage point is a Uniform Call Distribution (UCD) or Automatic Call Distribution (ACD) group, determine if the group is valid. Follow procedures in "Case 7: UCD or ACD Groups." Go to Step 3.
3. Determine if the extension or group is valid or not valid.
 - If the extension or group is valid go to Step 4.
 - If the extension or group is not valid, you are done with procedures for Case 13.

4. Display the call coverage path listed in the database.

Enter: **database-admin call-coverage-path display** .

- If the call coverage path exists, use **database-admin call-coverage-path change**. Enter the data that appears in the results file for this call-coverage path. Go to Step 7.
- If the call coverage path does not exist, go to Step 5.

5. Display the call coverage path listed in the product.

Enter: **product-admin call-coverage-path display** .

- If the call coverage group exists, use **database-admin call-coverage-path add**, then go to Step 7.
- If the call coverage group does not exist, the database and the switch match. You have completed procedures for Case 13.

6. Are the coverage parameters and points desirable?

- Yes. Go to Step 7.
- No. Use **admin call-coverage-path change**, then go to Step 7.

7. When you finish adding or changing data, compare the records by using **call-coverage-path display** in the database-admin area and the product-admin area.

- If the records match, you have finished procedures for Case 13.
- If the records do not match, change the data in the database record or the switch until the data in the switch and the database are consistent.

END OF PROCEDURE

Procedure: Case 14. Terminals without a Call Appearance

Purpose:

Use this procedure to resolve an error that occurs when terminals do not get associated with extensions during initialization. You receive this message in the results file:

"The set is invalid. Value=ELL. Value should be in proc052n1/set file. Refer to Case 14."

NOTES:

- [DIMENSION] Check if set is accessed by a trunk only. If it is, you must manually add it. Otherwise, if it should pick up an extension, proceed as for System 85 using Electronic Custom Telephone Set (ECTS) instead of Equipment Line Location (ELL).
- Have the Customer System Document (CSD) available. Verify that the switch is correct by checking it against the CSD. Refer to *Manager IV TCM Operations* for detailed information on specific transactions.
- Before you use a command in the product-admin area you must execute the command **connection create**.
- Resolve this error after initialization has completed and you have executed **system-administration non-switch-data add**.

Procedure Steps:

1. Check the CSD to see if an extension is assigned to this terminal.
 - If an extension is assigned to this terminal, go to Step 2.
 - If an extension is not assigned to this terminal, go to Step 4.
2. Determine if the extension is valid. Use procedures in "Case 1: Extensions."
 - If the extension is valid, go to Step 3.
 - If the extension is not valid, the database and the product match. You are finished with procedures for Case 14.
3. Determine if the set is in the product.

Enter: **product-admin terminal display**.

 - If the set is in the product, use **product-admin terminal remove**, then use **admin electronic set add** to add the set and Call Appearances. Go to Step 6.
 - If the set is not in the product, use **admin electronic set add** to add the set and the Call Appearances. Go to Step 6.
4. Are you adding the Call Appearance now?
 - Yes. Assign an extension to this terminal. Go to Step 5.
 - No. Perform either of the following.
 - Recommended—Use the appropriate product-admin *electronic set remove* transaction to remove the ELL from the switch. You have finished procedures for Case 14.
 - Use the appropriate database-admin *electronic set add* transaction to add the ELL to the database. You have finished procedures for Case 14.

5. Choose one of these methods to assign an extension to the terminal.
 - Method 1:

Add the set in the database and the Call Appearance buttons in the product. Use **database-admin *electronic set add*** and give the terminal a set ID. Then, add in the Call Appearance buttons to the product by using **product-admin button add**. Go to Step 6.
 - Method 2:

Remove the terminal from the product and then add in the terminal in both the database and the product. Use **product-admin terminal remove**, then use **admin *electronic set add***. Go to Step 6.
6. When you finish adding or changing data, compare the records for the extension and the terminal in the database-admin and product administration areas.
 - If the records match, you have finished procedures for Case 14.
 - If the records do not match, change the data in the database record or the product until the data in the switch and the database are consistent.

END OF PROCEDURE

Procedure: Case 15. Abbreviated Delayed Alerting

Purpose:

Use this procedure to resolve an error that occurs when abbreviated delayed alerting information for a call appearance fails to get added to the database during initialization.

NOTES:

- Have the Customer System Document (CSD) available. Verify that the switch is correct by checking it against the CSD. Refer to *Manager IV TCM Operations* for detailed information on specific transactions.
- Before you use a command in the product-administration area you must execute the command **connection create**.
- Resolve this error after initialization has completed and you have executed **system-administration non-switch-data add**.

Procedure Steps:

1. Read the contents in the results file.
 - If a set ID is given in the results file, go to Step 3.
 - If an Equipment Line Location (ELL) [System 85], Generic 2 or Electronic Custom Telephone Set (ECTS) controller location [DIMENSION] is given in the results file, go to Step 2.
2. Determine the set ID associated with the ELL or ECTS.
Enter: **database-admin station-attributes display**.
 - If a set ID is given, go to Step 3.
 - If a set ID is not given, go to Step 4.
3. Check the CSD for the set type to see if the set is in the database.
Enter: **database-admin electronic set display**
 - If the set is not in the database, go to Step 4.
 - If the set is in the database, go to Step 5.
4. Check the product to see if the set exists.
Enter: **product-admin terminal display**.
 - If the set is in the switch go to Step 5.
 - If the set is *not* in the switch, then the set does not exist. You have completed the procedures for Case 15.
5. Check the Alert type in the CSD, then check the Alert type in the switch.
Enter: **product-admin button display**.
 - If the Alert type is 2 or 3, and the CSD and the switch match, go to Step 6.
 - If the Alert type is 2 or 3, but the CSD and the switch do *not* match, determine which is correct and then go to Step 6.
 - If the Alert type is *not* 2 or 3, the database values are preset to 0, so the values in the database and the switch match. You have completed the procedures for Case 15.

6. Check the CSD and the switch for the Abbreviated Delayed Alerting value.
 - If the Abbreviated Delayed Alerting values are both 2, go to Step 9.
 - If the Abbreviated Delayed Alerting values are *not* both 2, go to Step 7.
7. Check to see if there is an ADX button in the CSD and in the switch for one of the sets picking up this extension number.
 - If there is an ADX button in the switch and the CSD, go to Step 8.
 - If either the switch or the CSD do not have an ADX button, you must assign an ADX button to this set in the switch and the database. Go to Step 8.
8. Update the call appearance button for Alert type and Abbreviated Delayed Alerting. Alert type = 2 or 3; Abbreviated Delayed Alerting = 1. Go to Step 10.
Enter: **database-admin** *electronic set change*
9. Update the call appearance button for Alert type and Abbreviated Delayed Alerting. Verify or assign an ADX button to this terminal. Alert type = 2 or 3; Abbreviated Delayed Alerting = 2. Go to Step 10.
Enter: **database-admin** *electronic set change*
10. Check consistency between database and switch. Resolve inconsistencies.
 - If the records match, you have finished procedures for Case 15.
 - If the record do not match, change the data in the database record or the switch until the data in the switch and the database are consistent.

END OF PROCEDURE

Procedure: Case 16. Line Pickup [DIMENSION FP8 only]

Purpose:

Use this procedure if the line pickup feature is assigned to a button number other than 0 for a Straight Line Set (SLS) or an Electronic Custom Telephone Set (ECTS).

NOTES:

- Have the Customer System Document (CSD) available. Verify that the switch is correct by checking it against the CSD. Refer to *Manager IV TCM Operations* for detailed information on specific transactions.
- Before you use a command in the product-admin area, you must execute the **connection create** transaction.
- Resolve this error after initialization has completed and you have executed the **system-administration non-switch-data add** command.

Procedure Steps:

1. Check the CSD for set type.
2. Check the product for set type.
 - If the set type is not on the product, you've completed procedures for Case 16.
 - If the set type is on the product and the product and CSD match, look for the assignment of button 0.
 - If button 0 = has an extension line assigned, you have finished procedures for Case 16.
 - If button 0 does not have an extension line assigned, go to Step 3.
3. Add the line pickup on button 0 to the database with the same attributes in the product.
4. Check the database and switch data for consistency.
 - If the records match, you have finished procedures for Case 16.
 - If the records do not match, adjust the database and switch data until they are consistent.

END OF PROCEDURE

Procedure: Case 17. Non-Switch Data From TRACS

Purpose:

Use this procedure to resolve an error that occurs when non-switch data from TRACS fails to be loaded to the database during initialization.

NOTES: Refer to *Manager IV TCM Operations* for detailed information on specific transactions.

Determine whether the error occurs in user name attributes, jack no., or terminal attributes and use the appropriate sub-procedure below.

Procedure Steps:

- I. The error occurs in user name attributes (including user name, location, room, organization, supervisor's name, and floor):
 1. Use **tcm database-admin station-attributes display** to find the extension number which is associated with the equipment location in error message.
 2. Use **tcm database-admin extension change** transaction to make changes to the user name attributes in question.
 3. When you finish adding or changing data, compare the records by using **tcm database-admin extension display**.

- II. The error occurs in jack no.:
 1. Use **tcm database-admin wire add** to add jack number if it is missing.
 2. When you finish adding or changing data, compare the records by using **tcm database-admin wire display**.

- III. The error occurs in terminal attributes (including set color, set mount, speakerphone, headset):
 1. Use **tcm database-admin station-attributes display** to find the setid which is associated with the equipment location in error message.
 2. Use **tcm database-admin terminal change** transaction to make changes to the terminal attributes in question.
 3. When you finish adding or changing data, compare the records by using **tcm database-admin terminal display**.

NOTE: For releases prior to Generic 2, terminal is an aggregate term. It can be 12-button, 36-button, idt, bdt, lcdt, bct, vct, ects, or pt510.

END OF PROCEDURE

ERRORS DURING NONSWITCH DATA ENTRY

The following chart lists common errors that can happen during nonswitch data entry. These errors can occur when you execute any of the following "create" commands:

system-administration wats-trunk create
system-administration tie-trunk create
system-administration co-fx-did-aplt create
system-administration extn-user-information create
system-administration user-information create
system-administration set-attributes create
system-administration set-type-name create

ERROR: Command did not complete successfully.

If this message appears at the bottom of the screen when a create command is done, one of Manager IV's internal programs has failed, and a message will appear in the System Error Log. Return back to the verb level. Do not try to enter more data.

There are a variety of reasons why this command may not complete successfully. The following possibilities exist:

- There is not enough space in the bulk data input directory, \$WORK/nswfiles.
- The read/write permissions are incorrect for \$WORK/nswfiles. Use the UNIX command **ls -l** to find out the current read/write permissions. Use the UNIX command **chmod** to change the read/write permissions.
- The user does not have the correct user class. The login should have the bulk init user class to use the bulk transactions. Use the Manager IV command **system-administration login change** to change a user's class.

ERROR: System error. Can't create files.

This message also appears if the directory \$WORK/nswfiles cannot be created or found. Again, check to make sure there is enough space, the read/write permissions are correct, and the typist's login has the user class bulk-init.

ERROR: System error. Consult System Error Log.

If you receive this message, there is an internal software problem. Check the System Error Log.

ERROR: Too many files being accessed at once. Try again later.

This message appears if more than 20 files are being accessed at once.

ERROR: Another user is accessing this file. Try again later.

This message appears if more than one user is trying to access this file.

ERRORS DURING NON-SWITCH-DATA ADD

Nonswitch data is initialized into the Manager IV database by completing three steps:

1. Data is entered into intermediate files through the system-administration "create" commands.
2. Data is incorporated into the Manager IV database by using **system-administration non-switch-data add**.
3. Data errors that result from executing **system-administration non-switch-data add** are resolved by editing the intermediate files and rerunning non-switch-data add or by making changes through Manager IV user interface transactions.

The following paragraphs provide information on how the nonswitch data directory is set up, how to edit the intermediate files, and how to correct errors through the Manager IV user interface.

NOTE: If fewer than 20 errors occur during the non-switch-data add transaction for any one information type, such as WATS trunk or set attributes, the intermediate files are deleted. If you do not want these files deleted, copy the files before executing **system administration non-switch-data add**.

If you choose to edit the intermediate files, it is useful to be familiar with the organization and naming conventions used in the nonswitch data directory. Also, it is crucial to maintain one (TAB) between each field. Figure 8-5 provides a schematic drawing of the non-switch data directory.

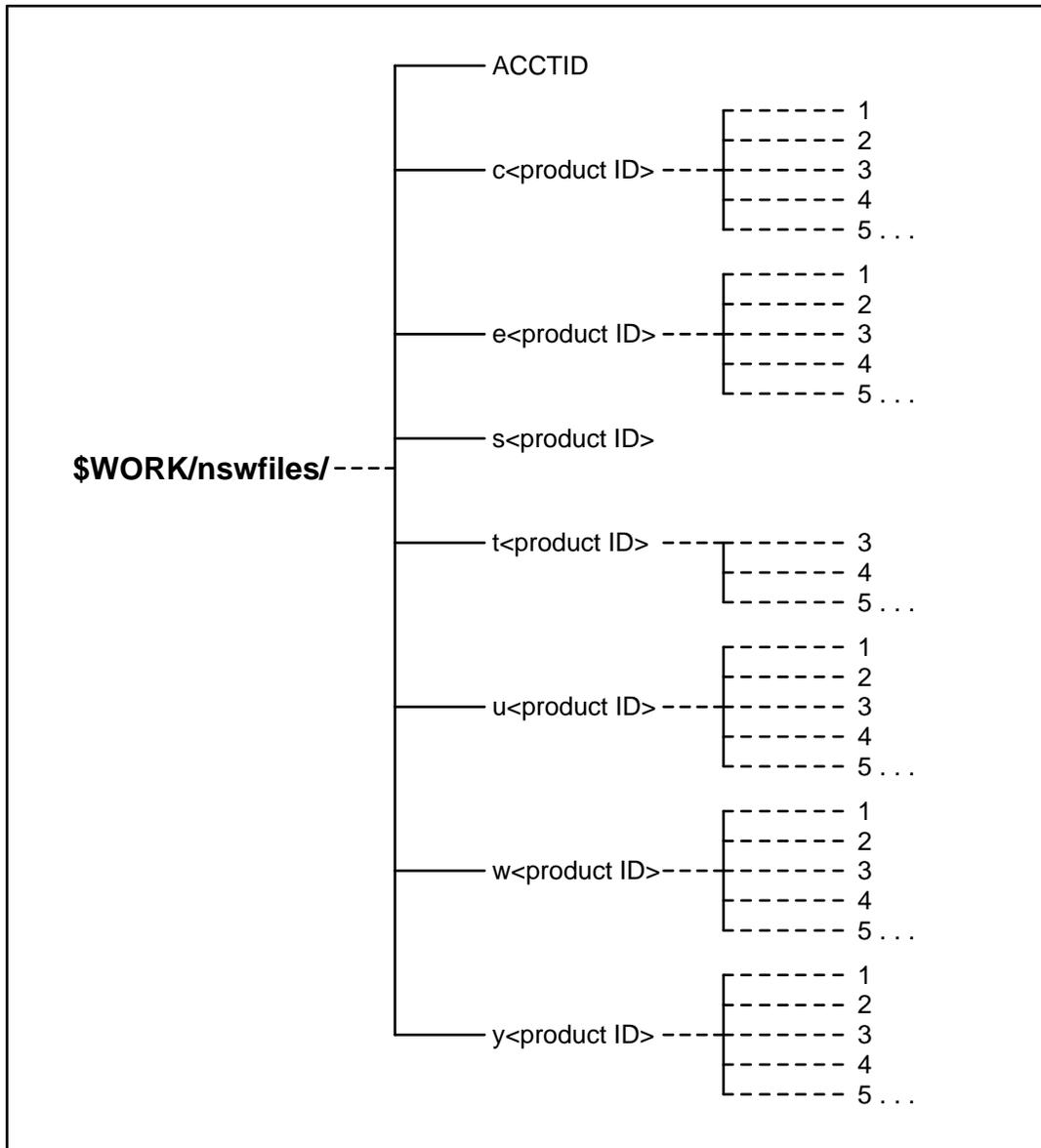


Figure 8-5. Schematic of /nswfiles

Table 8-11 describes the contents of the subdirectories and files in the /nswfiles directory.

Table 8-11. File Descriptions in /nswfiles

File or Directory	Description
\$WORK/nswfiles	This is the directory where the intermediate files for nonswitch data are located. (In other words, the output of any system-administration object create command.) \$WORK is an environment variable set up during installation. The directory /nswfiles is created the first time one of the create commands is executed.
ACCTID	This file contains a list of all the account IDs for which you enter nonswitch data.
<i>cproduct ID</i>	This directory contains the data entered through system-administration co-fx-did-aplt create .
<i>tproduct ID</i>	This directory contains the data entered through system-administration tie-trunk create .
<i>wproduct ID</i>	This directory contains the data entered through system-administration wats-trunk create .
<i>sproduct ID</i>	This file contains the data entered through system-administration set-attributes create .
<i>eproduct ID</i>	This directory contains the data entered through system-administration extn-user create .
<i>uproduct ID</i>	This directory contains the data entered through system-administration user create .
<i>jproduct ID</i>	This file contains wiring data from system-administration non-switch-data retrieve .
<i>rproduct ID</i>	This file contains remote module data from system-administration non-switch-data retrieve .
<i>yproduct ID</i>	This file contains the data entered through system-administration set-type-name create .
1, 2, 3, ...	Under each directory that corresponds to a system-administration object create command, files appear that are named by a number. Each number corresponds to an account ID in the ACCTID file. For example, if the first entry in ACCTID is account number 100, any information that is entered for that account will appear in a file named 1 in each of the directories. If no information for account 1 (account ID 100) for a specific class of information (such as WATS trunk) is entered, that account number will not appear in that directory. In Figure 8-5, files 1 and 2 do not appear in the <i>tproduct ID</i> directory because no tie trunk information was entered for these accounts.

The following error messages may appear when you execute **system administration non-switch-data add**.

ERROR: Command did not complete successfully.

This message appears when one or more types of nonswitch data could not be added into the database because the update terminated abnormally. Refer to Table 8-12, "Correcting Non-Switch Data Errors," for details.

ERROR: Product is unsupported.

Check to see if you made a typographical error while entering the Product ID. Check entry through **system-administration product display**. If there is no record on this product, use **system-administration product add** to create the product record in the database.

ERROR: Bad product/system/type.

Check to see if you made a typographical error while entering the Product ID. Check entry through **system-administration product display**. If there is no record on this product, use product add to create the product record in the database.

ERROR: Can't access files.

The directory cannot be found or cannot be created. Check the system error log.

The **non-switch-data add** transaction (nswdta) expects certain entities to exist in the Manager IV database for System 85 and DIMENSION System FP8. These entities include account IDs, trunk groups, vendors, names, extension numbers, price elements, set IDs, and extension users. If these entities have not been established in the Manager IV database, you may have to enter information through one of the Manager IV user interface transactions. Use Table 8-12 to resolve these types of errors, then rerun **system-administration non-switch-data add**.

Table 8-12. Correcting Nonswitch Data Errors

The entity is not in the database,

- And the entity is valid,
use a Manager IV transaction to create the entity in the database.
- And the entity is invalid,
add a new record with the correct data by using the corresponding **system-administration object create** command,
or, correct the intermediate files in the directory /nswfiles.

The trunk group or vendor is not in the database,

- And the trunk group or vendor is valid,
add the trunk group through **fm trk-grp add**. Refer to *Manager IV FM Operations* for details.
- And the trunk group is invalid,
correct the trunk group by adding a new record through **system-administration object create**.
or, correct the intermediate files by determining the number file from the ACCTID file, then correct the entries for trunk group in the number file.

NOTE: If you correct an error by editing the intermediate files, it is crucial to retain the correct number of tabs and newlines in order for the **non-switch-data add** command to work properly. To display tabs, newlines, and other special characters from the vi editor, use the UNIX **:!** command. There is a tab between each field. If a field is left blank, tabs appear next to each other, with no field information in between them.

9. MANAGER IV-CDS DIRECTORY SYNCHRONIZATION FEATURE

The Directory Synchronization feature provides a means by which extension user changes made through the Manager IV Terminal Change Management (TCM) application can be applied to the Personnel Database of the 3B5 AP Customer Directory Service (CDS).

Directory Synchronization provides a one-way flow of administrative data between Manager IV and CDS. If the feature is "turned on," the Manager IV processor will notify the CDS administrator of TCM changes via a remote mail message sent by uucp. The administrator can then inspect, edit, and execute the changes.

The CDS Bulk Load Tape process is used to initialize the Personnel Database of the 3B5 AP CDS from the Manager IV extension and name database. The following procedure can be used to install and test this software.

Procedure: Installing & Testing Directory Synchronization

Procedure Steps

1. The following software must be present:

Software	Purpose
/usr/prog/blkld	Daemon for cds-bulk-load tape run ; should be at least delta level 8.2.
/work/masks/blkld	Mask for cds-bulk-load tape run ; should be at least delta level 8.2.
/work/masks/prodcol	Mask for product add and change commands; must be at least delta level 8.4.

Issue the following shell commands to verify the existence of the software.

Enter: **what /usr/prog/blkld | grep blkld**

what /work/masks/blkld

what /work/masks/prodcol

2. Verify that the controller knows about the daemon and that the daemon is active.

Enter: **echo "m" | upct1 | grep blkld**

3. Verify the tape drive.

The **cds-bulk-load tape run** process expects to have a magnetic tape device accessible and working. The tape device density capability must be compatible with the 3B5-AP magnetic tape device (default is 1600 bpi).

A. Mount a tape.

B. Create two files on the tape.

Enter: **echo "TEST FILE 1" > \$BLKLDTNR**

echo "TEST FILE 2" > \$BLKLDTR

C. Verify that the strings were entered into the new files.

Enter: **cat \$BLKLDTNR**

cat \$BLKLDTR

System Response:

The strings "TEST FILE 1" and "TEST FILE 2" should be displayed.

4. Verify the environment variables.
 Enter: **echo \$BLKLDTR \$BLKLDTNR**
 System Response:
 If nothing but "\$" echos back to the screen, the default device filenames, BLKLDTR=/dev/rmt/0m and BLKLDTNR=/dev/rmt/0mn, will be used.
5. Enable the cds-bulk-load tape process.
 Enter: **system-administration product change**
 System Response:
 The system-administration product change screen will display. On the second screen, at the "CDS Update for this product?" prompt, enter **y**.
6. Ready the tape drive.
7. Run the cds-bulk-load-tape process.
 - A. The system will prompt for:

Enter application	Enter: system-administration cds-bulk-load-tape
Enter target	Enter the product ID of the switch. The product ID was defined by the product:add transaction.
Enter verb	Enter: run

 System Response:
 The screen should display a message to mount the cds-bulk-load tape. If this message does not appear, the mask may not be present. Call AT&T.
 - B. When the tape drive is ready, press **(ESC)** **e** to start the program.

 NOTE: If there is no daemon key found, this means the controller does not know about blkld as a defined daemon. The def daemon definition file is not the correct version.

System Response:
 The tape should start spinning. When the program completes successfully, the following message will display, "#records-written Successfully."

 NOTE: If the message, "Unsuccessfully Completed" displays, see the following heading, "CDS Unsuccessfully Completion."
8. The output file should have the four files on it. Display the files and verify their content.
 - A. Enter: **cat \$BLKLDTNR**
 Check the header. It should read "Manager IV Bulk Transfer."
 - B. Enter: **cat \$BLKLDTNR**
 Check the sequence number header. It should be "001."
 - C. Enter: **cat \$BLKLDTNR**
 Check the contents header. It should read:
 "ext,name,mcscov,machine,room,loc,org,super,cf1,cf2,cf3,cf4,cf5,cf6."

D. Enter: **cat \$BLKLDTR**

The data records should display in the above format. The ext, name, mscov fields are required, the rest are optional. Press **BREAK** to end the display of records.

END OF PROCEDURE

NOTE: Refer to the *CDS Directory Administration Guide* to load the output tape from Manager IV to the host where the Directory Synchronization software resides.

CDS Unsuccessful Completion

If the cds-bulk-tape-load transaction does not complete successfully, check the following points.

- Make sure the tape device is ready.
- Check the environment variables. They may be incorrect or not in effect.
- The tape device driver filename may not be established properly, or may be linked to /dev/null.
- **BREAK** was pressed.

If you cannot find the problem, rerun with tracing set to at least levels 3 and 50. Then look at the x.blkld\$\$ file.

CDS Disk File Output

If a tape drive is not desired for the output device, a disk file name may be used. Both environment variables, BLKLDTR and BLKLDTNR, may have the same or separate filenames.

10. PERFORMING A MANAGER IV UPDATE

The performance and features of DEFINITY Manager IV are enhanced on a quarterly basis by supplying customers with a new set of Manager IV software tapes. The software updates are announced and detailed in a Release Letter. The installation of the update tapes is handled using straight UNIX commands.

The following procedure details the necessary steps for performing a Manager IV update.

Procedure: Performing a Manager IV Update

Purpose:

The following procedure provides you with the steps to read in the Manager IV update tape(s).

Procedure Steps:

1. Log in as root.
2. Execute the environmental list.
Enter: `./etc/envlist`
3. Shut down the Manager IV application.
Enter: `$$SYSROOT/etc/stopsm.`
4. Set permission of special files to be writable.
Enter: `$$SYSGEN/fldpermit -u`
5. Change to the system root directory.
Enter: `cd $$SYSROOT`
6. Increase the process limit.
Enter: `ulimit 8192`
7. Mount the Manager IV software tape(s) on the tape drive and read in its contents.
Enter: `su smgr -c "cpio -iBcumdv </dev/rSA/qtape1 >>tape.out 2>&1 & "`

NOTES: The above command will enable you to do the following:

- Execute the command in the background in order not to tie up your terminal.
- Direct the standard output and any possible errors to the file *tape.out*. This allows you to monitor the progress of the tape if you wish. It also provides you with a list of the contents of what is contained on the tape.

When reading in multiple tapes, release tapes must be read first and then any incremental update tapes. Multiple tapes require executing this step for each new tape.

To monitor tape progress:

Enter: `tail -f tape.out`

or

Enter: `cat tape.out`

8. Remove the ALL.co file. (If you do not remove it now, all the .co files will be incorporated and appended to the existing ALL.co file when you reset the permissions of the special files in step 8.)

Enter:

```
cd $WORK/ctree  
rm ALL.co
```

9. After the tape(s) has been read, reset the permissions of the special files.

Enter: **\$\$SYSGEN/fldpermit**

10. Bring up the Manager IV application.

Enter: **\$\$SYSROOT/etc/startsm**

END OF PROCEDURE

11. MANAGER IV SERVICE PROCEDURES

DEFINITY Manager IV application software must be properly maintained to provide satisfactory switch administration. You, the Manager IV service technician, are responsible for some of the service and maintenance procedures that uphold the integrity of the software. If you cannot find the procedure you need in this document, refer to *DEFINITY Manager IV System Administration*

This section contains information on:

- logging on and off the host processor in both single- and multi-user modes
- considerations before and after service
- Manager IV host processor remote console operation
- responding to alarm codes.

LOGGING ON AND OFF

The following information tells you how to log on to the Manager IV host processor to perform service functions.

Operating Modes

You may log on to Manager IV in either of two operating modes: single-user or multi-user.

Single-User Mode

You must use single-user mode to execute selected Manager IV system software commands which perform diagnostic and corrective service procedures. Single-user mode requires super-user permissions to operate the processor. All application user terminals are locked out of the system. Only the system console, located at the Manager IV host processor, can be used to interact with the host processor through the UNIX shell. A remote system console can operate the Manager IV host processor only if the processor's remote system console port access is connected.

Multi-User Mode

Multi-user mode permits any compatible computer terminal to communicate with Manager IV through the System Management User Executive (SMUE). Manager IV application users may access their applications through the multi-user mode only. You may use the multi-user mode for access to most of the routine maintenance procedures described in *Manager IV System Administration*.

Login Permissions

The single-user login is **root** and it is used to operate the system console through the UNIX shell. In multi-user mode, the **root** or **smmaint** logins are used to perform Manager IV maintenance functions. More permissions are assigned to the **root** login than are assigned to the **smmaint** login. For example, **root** provides access not only to the Manager IV maintenance files accessible through **smmaint**, but also to the Manager IV administration files, such as those used to assign permissions. The multi-user logins assigned to Manager IV application users have permissions to operate commands only through the Manager IV user executive process.

System Passwords

When you log on to the UNIX shell, you may be told to use the system password used by the Manager IV System Administrator or you may be instructed to use a different system maintenance password. The Manager IV System Administrator controls system security by issuing temporary system maintenance passwords to maintenance personnel who require access either to the UNIX shell or to the Manager IV user executive. The temporary password is valid only for the maintenance period. When you complete your work, notify the Manager IV System Administrator to deactivate the temporary password.

Logging Off

Log off the system from the UNIX shell by pressing **CTRL** **d** or **EXIT**. To log off from SMUE, enter **bye** and press **RETURN**. The logging on and off procedures are summarized in Table 11-1.

Table 11-1. Logging On and Off Manager IV

Operating Mode	Service Technician Location	Login	Password	Log Off
Through the UNIX shell	Local or remote system console	root	Normal system password	CTRL d or EXIT and RETURN .
		smmaint	Temporary maintenance password	
Through the Manager IV user executive process	Any terminal	user ID	Temporary maintenance password	bye RETURN .

MANAGER IV SERVICE CONSIDERATIONS

When you respond to a Manager IV service call, you must first assess the urgency of the required action: whether your visit is for an emergency or for routine maintenance which can be scheduled for a convenient time. Always advise the Manager IV System Administrator of the required service or maintenance and its impact on the system. Since your work may entail bringing the system into single-user mode, the System Administrator must schedule your visit, in order to avoid unwarranted interruption of user operations.

If the system must be shut down to single-user mode, plan on adequate time to warn the users with a message. To protect the users' work against possible loss, you should announce a system shutdown at least 30 minutes in advance, and back up the transaction log areas to tape immediately following the shutdown. In situations when a more immediate shutdown is required, a two-minute warning will be adequate.

Manager IV Host Processor Remote Console Operation

If you are servicing Manager IV from a remote location, notify the Manager IV System Administrator for admission to the system before beginning your maintenance procedures. The System Administrator will issue a temporary password that will permit you to log onto that Manager IV in multi-user mode. If you require single-user mode, inform the System Administrator and await further instructions.

If the Manager IV host processor is equipped to communicate with a remote system console, you will be able to perform single-user activities from either the local front console or from a remotely located console at another site such as the AT&T NCSC. The AT&T 3B2 and 6386 Computer System Consoles, provide dedicated remote access ports.

Once you obtain approval from the System Administrator and the system has been readied for remote access, you execute commands to the on-site service technician, who assists you by loading tapes or operating switches at the host processor.

Diagrams of the relative locations of the Manager IV host processor and the NCSC can be found in *Manager IV Planning and Implementation*.

Considerations Before Service

Some maintenance procedures do not affect Manager IV operation, but many diagnostic and corrective service functions rob Manager IV of processor resources, which can prevent the Manager IV users' data from being recorded and scheduled for downloading to the managed switch. Table 11-2, "Maintenance Procedure vs. Affected Resources," shows how different procedures affect users who are logged onto the system. The table lists in one column each Manager IV service and maintenance procedure, while the adjacent column notes what system resources are affected during the procedure. If ALL is indicated, Manager IV users must log off the system. If NONE is indicated, Manager IV users may continue using the system.

Table 11-2. Maintenance Procedure vs. Affected Resources

Service or Maintenance Procedure~~~		Affected System Resources
BACKUP:	CORE journal (transaction log areas) complete UNIX files systems incremental UNIX files	ALL NONE ALL NONE
RECOVERY:	CORE complete UNIX files systems incremental UNIX files	ALL NONE

(Continued)

Service or Maintenance Procedure		Affected System Resources
DATABASE:	loading files removing files performing sanity checks	ALL ALL ALL
BOOTING:	Manager IV processor	ALL ALL
SHUTDOWN:	processor	ALL
SOFTWARE DIAGNOSTICS:	dbio dfdb df/du fmgr hs msgdump portrelease rawdbio rmaudit rmgr semdump shmdump statpoll upctl updb	ALL NONE NONE NONE NONE NONE NONE NONE NONE ALL NONE NONE NONE NONE NONE NONE
HARDWARE DIAGNOSTICS:	processor and peripheral equipment	**

** Consult appropriate hardware service documentation.

MANAGER IV ALARM CODES AND REQUIRED ACTIONS

Manager IV is equipped to transmit error messages as alarms to the supporting NCSC. The format of these alarm messages includes the product identifier of the reporting Manager IV and an alarm code number. Use the following list of alarm code numbers and required action to direct your troubleshooting efforts when alarm messages are received from a reporting Manager IV.

Table 11-3. Manager IV Alarm Codes and Required Actions

ALARM CODE	MEANING OF MESSAGE/CAUSE	ACTION REQUIRED
3	<p>The Manager IV controller process exited abnormally.</p> <p>System resources may be inadequate.</p>	<p>Execute stopsm to terminate all Manager IV processes. Then execute startsm to restart Manager IV processes. Note that you must be logged in as root to use.</p> <p>If the controller dies shortly after restart, escalate the problem to the next support tier.</p>
4, 7	<p>All database activity terminated. Active log full; no standby log available.</p> <p>Someone forgot to dump the logs this morning or else they are filling up faster than normally anticipated.</p>	<p>Execute bradm log_dump. Check amount of system activity. Is a new switch being added? Extra activity would account for shorter intervals between dumps. Refer to backup procedures in <i>Manager IV System Administration</i> for notes about backup tape characteristics.</p>
6	<p>fork () failed for <string> errno -<no.></p> <p>System resources may have been allocated to other activities.</p>	<p>Execute the ps command. Look at the number of processes running. Check this number against the maximum number of processes in the configuration plan. Adjust as necessary.</p>
	<p>There may be a lot of hanging processes.</p>	<p>Check for proper UNIX version. For hanging processes, use kill -15 <process ID> and reboot Manager IV, using procedures outlined in <i>Manager IV System Administration</i>'s.</p>

(Continued)

Table 11-3. Continued

ALARM CODE	MEANING OF MESSAGE/CAUSE	ACTION REQUIRED
8	Cannot fork process	<p>See Alarm Code No.~6.</p> <p>Check System Error log for 6th field program name, 7th field (process ID), 8th field (subroute name). Find out what failed. Check for recurring errors.</p>
10	<p>Cannot access UNIX system table <string>.</p> <p>String is a file name. It could be any file. It will be a UNIX table rather than a Manager IV table.</p>	<p>Check to see if the file exists by executing ls -l<string></p> <p>Check <i>UNIX System Administrator's Reference Manual</i> for the proper syntax of the ls command.</p> <p>If file does not exist, restore the file using backup tapes. Refer to the <i>UNIX IV System Administrator's Guide</i> for file recovery procedures.</p>

(Continued)

Table 11-3. Continued

ALARM CODE	MEANING OF MESSAGE/CAUSE	ACTION REQUIRED
12	<p>Memory mismatch detected— aborting transactions.</p> <p>This is a switch error that the switch does not alarm.</p>	<p>Duplicate processor error (one processor's memory is out of sync with the other's). Neither switch transaction will download without error.</p> <p>[PBX error no. 99]</p> <p>See the <i>System 85 Maintenance Manual</i> for the corrective procedure.</p>
13	<p>Translation table corrupted—aborting transactions.</p> <p>This is a switch error that the switch does not alarm.</p>	<p>[PBX error no. 75]</p> <p>Refer to the <i>System 85 Service and Maintenance Manual</i> for the corrective procedures.</p>
18	<p>The customer has exceeded the purchased Manager IV capacity and the grace period has expired. All Manager IV product access will now cease.</p>	<p>The customer must purchase a Manager IV software license with a larger port capacity.</p> <p>Ports include all System 85, DEFINITY, Generic 2, and DIMENSION System FP8 stations, trunks, and translated spare ports.</p>
19	<p>The customer has exceeded the purchased Manager IV capacity. The grace period extends until <date of expiration>. On that date, all Manager IV product access will cease.</p>	<p>The customer must purchase a Manager IV software license with a larger port capacity.</p> <p>Ports include all System 85 DEFINITY Generic 2, and DIMENSION System FP8 station and trunk administered ports.</p>
20	<p>Manager IV Size-Sensitive Pricing (SSP) software has not been able to successfully complete a poll of a particular customer switch for a specified period of time.</p>	<p>Make sure the customer switch is operational, and that Manager IV Product Access is working properly. Check that the Manager IV scheduler is operating properly. Check that the Manager IV SSP poller program has not been deleted and is executable.</p>

(Continued)

Table 11-3. Continued

ALARM CODE	MEANING OF MESSAGE/CAUSE	ACTION REQUIRED
21	<p>Thresh file created successfully. The Manager IV Size-Sensitive Pricing software has created the SSP threshold file which was not already present.</p> <p>This should occur only when the customer is being newly installed or upgraded to a version of Manager IV which includes SSP software. If this message occurs at any other time, it means that the threshold file was removed, possibly because of a disk problem, an error, or tampering.</p>	Perform a capacity upgrade to set the customer's port capacity to the amount specified by the customer's Manager IV software license.

Considerations After Service

After completing Manager IV service or maintenance procedures, always execute a full backup of all Manager IV and UNIX operating system files. When backups are complete you may restore normal Manager IV operations. Upon restoring Manager IV operations following a system failure (such as a disk drive head crash), advise the Manager IV System Administrator to notify all application users to check the files they were working on before the failure and to be sure their latest file entries have been retained. When your Manager IV service or maintenance procedures are completed, ask the System Administrator to remove the temporary password and reinstate the normal system password.

12. ADMINISTRATION OF CUSTOMER DIRECTORY SERVICE SYNCHRONIZATION

All regularly scheduled DEFINITY Manager IV maintenance procedures apply to a fully functioning host processor that supports the Manager IV application software by reacting correctly to all user entries. One of the maintenance procedures you may need for smooth operation is the administration of Customer Directory Service Synchronization.

CUSTOMER DIRECTORY SERVICE SYNCHRONIZATION

The Directory Synchronization feature provides a means by which Terminal Change Management (TCM) updates within Manager IV can be applied to the Personnel Database of the 3B5 Applications Processor (AP) or 3B15 Customer Directory Service (CDS). The feature uses cooperating software between Manager IV and CDS and also cooperation between the people administering Manager IV and CDS.

Capabilities

Directory Synchronization provides a one-way stream of administrative data between Manager IV and CDS. It facilitates consistency between switch translations and the AP's Directory. If you are using CDS, each System 85 or DEFINITY Generic 2 switch in your telecommunications system should have associated with it a master AP. Information describing the extensions handled by that switch is automatically communicated to that switch's master AP by Manager IV. The information communicated is derived from entries made in the administration area for the TCM commands, **extension add**, **extension change**, and **extension remove**. **Database-admin** and **product-admin** commands do not result in CDS update.

Manager IV passes station records containing common Manager IV/CDS fields to each switch's master AP. In order to activate the Directory Synchronization feature, the feature must be "turned on" using the product command in the system administration area. Then, any extension transactions that affect names will result in CDS incremental updates and will be contained on bulk tapes. Entry in the User Name field on the third page of the **extension add**, **extension change**, and **extension remove** screens will provide automatic notification of changes to CDS. These transactions always send the extension number (up to five digits) if a name is specified. If the Leave Word Calling (LWC) destination is set to 2, CDS is told that Message Center Service (MSC) coverage is activated; otherwise, CDS is sent and MSC coverage is not activated.

The name associated with the extension can be a maximum of thirty characters. It is important to note that the particular characters permitted by the switch, but not allowed by CDS (such as %, !, [], , =, ^, #, \$, &, <>, ', :, *, |, (), ", _ , /, { }, @, and '), are translated into the question mark character (?) on entering CDS.

Optional information, includes Applications Processor (AP) number (for controlling the station's lamp if LWC is set to two), number of the room that the station is in, location of the building that the station is in, organization number (truncated to ten on entry to CDS), name of supervisor associated with the name associated with the extension, and information from six customer definable fields.

The administrator of each switch's master AP must check the information received from Manager IV. Although the Manager IV database and the switch allow the same name to be associated with several stations, CDS does not. CDS will reject all but the first record that contains a specific name. This means that the Manager IV System Administrator must use unique names or that the administrator of each switch's master AP can re-input the rejected entries each time the Manager IV update is done, changing the names to ensure uniqueness. The administrator of each master AP must also manage information from fields that Manager IV and CDS do not share. Data that Manager IV and CDS do not have in common includes information on a station's primary user, name of the switch supporting the station, and additional information.

Bulk Directory Update

Bulk update of the master AP's CDS database allows this database to be initialized and periodically synchronized fully with Manager IV. The recording is done on tape on a per-switch basis. The administrator of each switch's master AP controls when or if the bulk update is applied. When applied, fields and records not contained in the tape are preserved by CDS across a bulk update. Records that are applied automatically have any necessary field translations made (including optional information, such as organization number, or information not shared by Manager IV and CDS, such as a station's primary user). In addition, the master AP administrator is provided with an audit report containing "before" and "after" images of the changed records.

Incremental Directory Update

CDS Directory Synchronization is an optional feature available to Manager IV installations that use the TCM application. Your System Administrator should consult section 8 of this guide for information on how to install the CDS Directory Synchronization feature. Bulk Directory Update is performed by your System Administrator using **cds-bulk-tape run**. See *Manager IV System Administration* for information on **cds-bulk-tape run** transactions.

On a periodic basis, Manager IV provides each switch with an incremental update of the database records meaningful to that switch. The increment includes all updates and deletions relevant to the switch since the last time that an incremental update was sent. The frequency of increments is daily (at 6:00 am).

Administering Directory Synchronization

The CDS Directory Synchronization feature provides initialization, automatic notification, and easy update of TCM data that affect the Personnel Database. Be aware that particular aspects of the CDS Directory Synchronization feature necessitate careful monitoring. The dual administration of the CDS Directory Synchronization feature requires careful coordination and cooperation on the parts of both the Manager IV System Administrator and the administrator of the master AP.

Because CDS has restrictions that are not present in the switch or Manager IV, the CDS administrator must manually intervene in the update process. This necessitates the cooperation of both the CDS and Manager IV administrators in resolving any error conditions which may occur. For example, if Manager IV attempts to assign the same name to two or more extensions, the switch will be changed, but CDS will not. In this case the CDS administrator should ask the Manager IV administrator to change one of the names associated with the extension so that CDS may be updated successfully. Similar errors can result from unusual special characters used in names associated with extensions.

A Bulk Directory Update tape is used to initially load a Directory on the master AP. Local fields and local extensions are then added. These local extensions may be numerous—as many as 10% of all extensions at a typical location. These may include PBX users who are not uniquely named in the Manager IV database and popular Direct Digit Dial (DDD) numbers. The administrator of the master AP can then use CDS Save/Restore commands to move the database to the other APs connected to the switch that have nine-track tapes connected to the switch in order to create archives.

The administrator of the master AP receives daily mail items from Manager IV. The mail items contain incremental changes to CDS. Using standard UNIX commands, the administrator can inspect, edit, and then execute the changes.

Full database synchronization should also be performed at some frequency which you can best determine through experience. You may begin by having the full synchronization performed on a quarterly basis and then adjust your scheduling according to your telecommunications system's needs. In the full synchronization process, the administrator of the master AP applies a new Bulk Directory Update tape; local fields and extensions do not have to be administered again. A full visual audit of the database is, however, warranted using Command Line CDS or CDS Directory Print as the audit facility.

For more information on how to update CDS from the Manager IV tape and also how to deal with uncollected CDS messages, see the Appendix in the *CDS Directory Administrator's Guide for 3B5 AP*.

13. DATABASE ADMINISTRATION

There are several situations which may arise which will require the database to be resized. You may need to add disk file space to the system if you are running out of room. You can check the percentage of space used by the files; if that is too small you may need to add disks before the database is expanded.

There may be times when you do not need to add disk devices, but do need to compress files. See the section on "File Compression" later in this chapter.

To add to your database, you must perform these activities. Each is described in detail in this section.

- Determine the additional disk capacity required.
- Install additional devices.
- Add devices to the database.
- Execute file compression procedures.

DATABASE ADMINISTRATION TOOLS

In order to perform the abovementioned tasks, Database Administration Tools (DBA Tools) have been created in order to simplify the process of maintaining the CORE database. See Section 14, "Directory Of Tools" for manual pages.

Since these tools have been included as a part of the CORE Query Processor, they may only be invoked from CQP or the CORE Terminal Monitor (CTM). The exception is **statpoll**, which is run from the UNIX shell. The procedures indicate when and how to invoke CTM. For more information on CQP and CTM, refer to *Manager IV Query and Report Language*.

DISPLAYING MANAGER IV FILE SPACE

Purpose:

Use this procedure to display the requested CORE data file(s), the size of the file(s), and the percentage of space used by those files. If the database is running out of space it must be promptly resized before its condition causes a system shutdown.

Procedure Steps:

1. From the UNIX shell:

Enter: `~~statpoll -p -a file1 file2...`

System Response:

```
Polling file file
TOTAL NUMBER OF RECORDS:
NUMBER OF RECORDS IN SUBFILE 2:
NUMBER OF RECORDS IN SUBFILE 3:
DIRECTORY SIZE:
NUMBER OF 2K BLOCKS:
NUMBER OF 4K BLOCKS:
NUMBER OF 8K BLOCKS:
NUMBER OF 16K BLOCKS:
AVERAGE RECORD LENGTH:
FILE LOADING (lfctr):
TIME:
```

NOTE: The **-a** option will poll all non-key files and their related key files. The option is ignored for key files and the r000 file.

END OF PROCEDURE

INSTALLING ADDITIONAL DEVICES

The Manager IV database is allocated on one or more UNIX raw disk devices (note, not UNIX file systems). The first step in adding additional raw disk devices for the database is the selection of one or more available contiguous slices on an existing disk drive or a newly installed disk drive. Each of the slices is associated with a raw disk device file name in the directory `/dev`. Following this selection, the major and minor device numbers are determined, the file `/etc/mk_disk` is updated, and the device is installed.

Procedure: Adding Devices to the CORE Database

Purpose:

Use this procedure to add devices to the CORE Database.

Procedure Steps:

1. Perform a full backup. See *Manager IV System Administration* for more information.
2. Determine the major and minor device numbers for the starting slice or raw disk device using this command:

ls -l /dev/rdisk/ device file name

For example, if the *device file name* on a 3B2-600 is **c1t4d1sa**, then the major and minor numbers would appear as the fifth and sixth entries in the output of the **ls -l** command:

```
ls -l c1t4d1sa
crw-rw-rw- 1 root  root  124, 26 Apr 14 13:21  c1t4d1sa
```

The major and minor numbers in this example are 124 and 26, respectively.

3. After the major and minor numbers have been determined, edit the **mk_disk** file in the directory `/etc`. A one-line entry is added specifying the name of the CORE device (such as `/dev/coredb03`), a "c" for character device, the major device number, the minor device number, the owner (sys), and the permissions (666). Note the following example:

```
/dev/coredb03 c 0 19 sys 666
```

4. Enter: **/etc/mknod device c major minor**

where:

- *device* is the name of the CORE device (e.g. `/dev/coredb03`)
- *major minor* are the major and minor device numbers for the starting slice, or raw device.

This will create the new CORE device.

5. Enter the following:

```
chown sys /dev/coredb $xx$   
chgrp sys /dev/coredb $xx$   
chmod 666 /dev/coredb $xx$ 
```

where $xx = 00, 01, 02, 03, \dots$ etc.

This will insure system ownership of the database.

6. Edit the file **/etc/fsfile**. This file contains an entry for all of the available devices on the system. An entry includes the device number, device name, starting page offset, and number of pages. An example of such an entry would be:

```
dev03 /dev/coredb03 0 276420
```

Include an entry for the device being installed.

7. Execute the following to bring up the database while in single-user mode:

```
./~/etc/envlist  
/etc/fmboot  
/etc/rmboot  
/etc/dbboot
```

8. Enter the following:

```
LOGGING=no  
export LOGGING
```

9. Invoke the **create dev** command once for each device you add to the CORE database.

Enter: **ctm**

At the prompt (*), enter:

```
create dev dev-name where npgs = n [and stpg =n]
```

where:

- *dev-name* is the UNIX name of the new device; it must be enclosed with quotes
- *npgs* is the number of 512-byte pages to be allocated to the device
- *stpg* is the starting page (offset) within the device; the default is zero.

For example, the following would add the device `/dev/coredb03` of 200,000 pages to the database beginning at page 0: **create dev "/dev/coredb03" where npgs = 200000**.

At this point, the device is not added, but the command itself is checked for validity.

In order to execute the **create dev** command check mode must be turned off.

Enter: **setv check off**

Enter the **create dev** command again in order to add the device.

A "successful completion" message is returned when the device has been created.

To validate the work done, from the CTM environment execute: **print devs \g**. A listing of all existing database devices is displayed in the form `/dev/coredb0 n` .

10. To ensure that the CORE database backup includes the new raw device, the file **envlist.br** must be updated in the directory /etc. Find lines in that file of the following format:

```
CORE0=/dev/coredb00  
CORE1=/dev/coredb01  
CORE2=/dev/coredb02  
DEC1="core0 manually $CORE0"  
DEC2="core1 manually $CORE1"  
DEC3="core2 manually $CORE2"  
DEC4=  
DEC5=  
CORE="$DEC1 $DEC2 $DEC3 $DEC4 $DEC5"
```

Add lines to that file for the new device. Continuing the example,

```
CORE3=/dev/coredb03  
DEC4="core3 manually $CORE3"
```

11. Perform a full backup. See *DEFINITY Manager IV System Administration* for more information.

END OF PROCEDURE

FILE COMPRESSION

The only scenario for compressing files should be when it is determined that the database does not have enough space to hold new data. See the following procedure.

Procedure: File Compression

Purpose:

Use this procedure to increase available space by compressing files.

NOTES: Files may need to be compressed in the following situations:

- when LOADING ALERT errors are reported in the System Administrator's log.
- using the **statpoll** utility program to determine when the database is near capacity. See section 14 of this document for the **statpoll** manual page.

Procedure Steps:

1. From the UNIX shell, shut down the Manager IV application.

Enter:~\$**SYROOT/etc/stopsm**

2. As a precaution against data loss, take a full backup of the database. See *DEFINITY Manager IV System Administration* for specific steps to take a full backup.

3. Boot the database.

Enter:~**fmboot**

Enter:~**rmboot**

4. Execute the **rmcprs** transaction.

Enter:~**rmcprs~filename Unix temp. filename**

NOTES: The above command dumps the designated file to the temporary UNIX file which compresses the file. It is then loaded back into its original Manager IV filename. For example, to compress the "extn" file.

If you have multiple files that must be compressed, the above set must be completed for each file.

5. Take a full backup of the database. See *Manager IV System Administration* for specific steps to take a full backup.

6. Bring up the Manager IV application.

Enter:~\$**SYROOT/etc/startsm**

END OF PROCEDURE

DATABASE FILES

Database files can be loaded, saved, removed and displayed. These procedures associated with the database must be run from the UNIX shell and not from Manager IV. Access to database commands is restricted to the System Administrator or other authorized personnel with the special "smdba" login id.

These procedures can take considerable time, depending on the number of records involved. Therefore, it is recommended that this be done during non-business hours so as not to degrade performance.

Procedure: Saving Database files

Purpose:

Follow this procedure to save (copy) Manager IV database files to a UNIX file. If you are moving or removing database files, it is advisable to save the files first in case there is a problem. Use the **database list** command to obtain the necessary file name and product ID (subfile) required to save files.

NOTES: This process can take a considerable amount of time depending on the number of files saved. Try to schedule during non-business hours.

This procedure must be run from the UNIX shell as super user.

Procedure Steps:

1. Enter:~~~~~.~/etc/envlist
2. Enter the following and press **RETURN** after each line.

```
ulimit 32768
COLMOD=old
export COLMOD
dbio
```

- You should set your ulimit large enough so all records can be held within a single file.
 - You will receive the "Transaction Enter>" prompt.
3. Enter: **save**.
 - You will receive the "Ofile" prompt.
 4. Enter the name of a UNIX file in your HOME directory which is to hold the database files you wish to save.
 - Pick a file name that does not exist; the file will be created for you.
 - You will receive the prompt "Filename subfile."

NOTE: depending on the terminal type, this prompt may appear as two separate prompts; first "Filename," then "subfile."

5. Enter the filenames and PBX IDs of the subfiles to be saved.
 - If you wish to save all files for subfile 3, enter *** 3**
 - If you wish to save all the subfiles for the *extn* file, enter **extn ***

6. Enter: ! when you are finished.
 - Once the ! is entered, the saving process begins. If there are many records, it may take several hours. However, as each file is saved, the system will tell you that the file was copied successfully.
 - When the files have been saved, you will receive the "Transaction Enter>" prompt.
7. Enter: ! to exit the procedure.

END OF PROCEDURE

Procedure: Loading Database Files

Purpose:

Follow this procedure to load saved files back into the Manager IV database. Use the **database list** command (under the system-administration hierarchy from SMUE) to obtain the necessary product ID (subfile) required to load saved files. If you are reloading files, the old files must first be removed using the **database remove** command. Duplicate files are not permitted.

NOTE: This procedure must be done from the UNIX shell.

Procedure Steps:

1. Enter the following and press **RETURN** after each line.
COLMOD=old
export COLMOD
dbio
 - You will receive the "Transaction Enter>" prompt.
2. Enter: **load**.
 - You will receive the "Ifile" prompt.
3. Enter the name of the UNIX file which contains the CORE files you wish to load into the database.
 - You will receive this prompt "Filename old-subfile new-subfile."
4. Enter the names of the file you wish restored in this format: the subfile number (as it appears via **database list**), and the new subfile number to be used within this database.
 - If you wish to restore all the files and do not wish to change the subfile number, you may enter * * *.
5. Enter: **!** when you are finished entering file names to be restored.
 - Once **!** is typed the loading process will begin. If there are many records, this may take up to several hours. However, as each file is loaded, you will receive a message that the file was successfully loaded or if any error occurred.
 - When all the files have been loaded, you will receive the "Transaction Enter >" prompt again.
 - Enter: **!** to exit the procedure.

END OF PROCEDURE

Procedure: Removing Database Files

Purpose:

Follow this procedure to remove files from the Manager IV database. Removed files are unrecoverable; therefore it may be wise to save important files before you remove them. This may be particularly important if files are being moved from one Manager IV database to another. Manager IV file names and product IDs are required to remove a file. Use the **database list** command to view the names and ID numbers.

NOTE: This procedure is *not* run from the UNIX shell; it is run from Manager IV.

Procedure Steps:

1. Enter the command **database remove** at the "Enter Application> " prompt.
 - You will receive the prompt "DB File:."
2. Enter the name of the database file you wish to remove and then, press **TAB**
 - An asterisk (*) may be entered to designate that *all* files are to be removed.
3. Enter the PBX IDs of the files to be removed and press **RETURN**

END OF PROCEDURE

Procedure: Displaying Database Files

Purpose:

This procedure will allow you to review which Manager IV database files have been saved as UNIX files.

NOTE: This procedure is run from the UNIX shell and not from Manager IV.

Procedure Steps:

1. Enter the following and press **RETURN** after each line.

```
COLMOD=old
export COLMOD
dbio
```

- You will receive the "Transaction Enter>" prompt.

Enter: **display**.

- You will receive the " I file:" prompt.

2. Enter the name of the UNIX file in your HOME directory where you saved the database files.
 - A list of database file names, PBX IDs, records and bytes will be displayed.
 - You will receive the " Transaction Enter>" prompt.
3. Enter: ! to exit the procedure when you are finished.

END OF PROCEDURE

14. ERROR ADMINISTRATION: DIAGNOSTICS

This section helps you to begin troubleshooting by isolating a likely error category and using the information found in the error logs to diagnose the source of the error. The four general error source categories are listed below:

- Administrative errors
- Application software errors
- UNIX operating system errors
- Hardware errors.

You must select only one category at a time for analysis. You can then concentrate on eliminating the less likely causes of the abnormality until you can either isolate the problem to a source within that category or eliminate that category from consideration. As you continue to eliminate possible sources within each category, you will narrow the field to fewer and fewer choices. Eventually, a single source will emerge from all of the elimination procedures. Correcting the error will involve applying a tool to fix the source.

USING DIAGNOSTIC TABLES

The following pages contain diagnostic tables (Tables 14-1 through 14-4) for each of the source categories. When your preliminary analysis of possible error sources points toward a single category, continue your efforts by referring to the appropriate diagnostic table. Each table is divided into the following columns:

- Symptom
- Error Sources
- Diagnostic Tools.

After locating the proper diagnostic table, look in the symptom column for the description that best fits the Manager IV abnormality. "Unexpected system shutdown" or "Cannot perform daily backup" are examples of symptoms that may be reported by Manager IV users. Before you can properly isolate the problem, you will need to use the information provided in the error messages that were created by the failure.

Using Manager IV Diagnostic Tools

The error source analysis must be directed by applying a series of diagnostic tools that are built into Manager IV to provide answers to the guiding questions mentioned above. Read across the appropriate diagnostic table to the column, Diagnostic Tools. Each possible error source can be examined using one or several of the available Manager IV diagnostic tools that are listed in that column. Choose a diagnostic tool and refer to Section 14 "Directory of Tools" for further instructions.

Use the appropriate diagnostic tool, not to fix the problem (you can not do that until you are certain that you have located the absolute source of the error), but rather to test that source for proper operation. Remember that diagnostic tools are not used to correct the problem; they are used to locate the problem. Corrective procedures are applied only after the problem has been properly diagnosed.

For a complete procedure that illustrates how the Manager IV diagnostic tools may be used to determine the source of system abnormalities, refer to "Using Manager IV Diagnostic Tools to Monitor System Operation," which follows the diagnostic tables.

Table 14-1. Administrative Errors

SYMPTOM	ERROR SOURCES	DIAGNOSTIC TOOLS
Unexpected Shutdown No response at users' terminals	Backups of journal devices done properly? Database corruption?	bradm log_dump rmaudit -v ALL
Slow response	Unusually large number of entries logged recently?	msgdump updb
System performance hanging up	Disk space allocated properly?	statpoll df
Threshold alarm	Software load tuning okay?	upctl
Changes entered (Manager IV user service requests) not downloading to switch	Sufficient number of ports assigned? Database Corruption?	Use connection display to determine ports in use by whom and for what. Use reservation display to determine current port configuration. rmaudit -v ALL sr-status display

Table 14-2. Application Software Errors

SYMPTOM	ERROR SOURCES	DIAGNOSTIC TOOLS
<p>Unexpected Shutdown</p> <p>Database update failure</p>	log_dump operating?	<ol style="list-style-type: none"> 1. Error log messages. 2. ps
	ck_log operating?	<ol style="list-style-type: none"> 1. Check crontab. 2. Check disk drive. 3. ps
	crontab operating?	<ol style="list-style-type: none"> 1. Check system console for message at boot time. 2. ps
<p>Cannot execute service requests</p>	user exec operating?	<ol style="list-style-type: none"> 1. Check system console for message at boot time. 2. ps
	controller operating?	<ol style="list-style-type: none"> 1. Check system console for message at boot time. 2. ps
	scheduler operating?	<ol style="list-style-type: none"> 1. Check system console for message at boot time. 2. ps
<p>Cannot execute daily backup</p>	bradm day_dump operating?	<ol style="list-style-type: none"> 1. Check log_dump. 2. Check environment variables. 3. Check tape label. 4. Check device name. 5. Check access to tape or disk drive. 6. ps

(Continued)

Table 14-2. Continued

SYMPTOM	ERROR SOURCES	DIAGNOSTIC TOOLS
Cannot execute journal backup	bradm log _dump operating?	<ol style="list-style-type: none"> 1. Check environment variables. 2. Check tape label. 3. Check device name. 4. Check access to tape or disk drive. 5. ps
Cannot execute full core database backup including UNIX system	bradm full_ dump operating?	<ol style="list-style-type: none"> 1. Check environment variables. 2. Check tape label. 3. Check device name. 4. Check access to tape or disk drive. 5. ps
Cannot switch log devices and back up UNIX file changes to disk	Crontab operating?	<ol style="list-style-type: none"> 1. Check system console for message at boot time. 2. ps
	bradm inc _sw operating?	<ol style="list-style-type: none"> 1. Reboot system. 2. Retry command. 3. ps
	bradm incr_dump operating?	<ol style="list-style-type: none"> 1. Reboot system. 2. Retry command. 3. ps
	bradm log _sw operating?	<ol style="list-style-type: none"> 1. Reboot system. 2. Retry system. 3. ps

(Continued)

Table 14-2. Continued

SYMPTOM	ERROR SOURCES	DIAGNOSTIC TOOLS
Cannot switch log devices	Crontab operating?	1. Check system console for message at boot time. 2. ps
One log area operating. Cannot switch active and standby log areas	Crontab operating?	Check system console for message at boot time.
	bradm ck_log operating?	1. Check crontab. 2. Check disk drive. 3. ps
Cannot execute bradm crash	Log device lost?	1. Check tape label and device name. 2. ps
Cannot expand database	Manager IV database operating?	statpoll upctl updb
Cannot remove database files	Manager IV database operating?	upctl updb

Table 14-3. UNIX Operating System Errors

SYMPTOM	ERROR SOURCES	DIAGNOSTIC TOOLS
Unexpected shutdown	File system corrupt?	<ol style="list-style-type: none"> 1. Shut down processor to firmware mode. 2. Reboot system. 3. Check all file systems.
	Disk space insufficient?	<ol style="list-style-type: none"> 1. df 2. statpoll
Cannot boot UNIX	disk error? root file system corrupt? UNIX file system corrupt? reboot sequence operating?	<ol style="list-style-type: none"> 1. Shut down processor to firmware mode. 2. Check for disk read/write errors. 3. Recover root file and reboot system.
Cannot execute file recovery	root login operating?	<ol style="list-style-type: none"> 1. Check login permissions. 2. Reenter root. 3. Try cop as alternative.
	fsck operating?	<ol style="list-style-type: none"> 1. Shut down processor to firmware mode. 2. Reboot system.
Cannot execute daily backup	root login operating?	<ol style="list-style-type: none"> 1. Check login permissions. 2. Check password. 3. Reenter root command. 4. Try cop as alternative.
Cannot execute journal backup	root login operating?	<ol style="list-style-type: none"> 1. Check login permissions. 2. Check password. 3. Reenter root command. 4. Try cop as alternative.

(Continued)

Table 14-3. Continued

SYMPTOM	ERROR SOURCES	DIAGNOSTIC TOOLS
Cannot execute full core database backup including UNIX system	root login operating?	<ol style="list-style-type: none">1. Check login permissions.2. Check password.3. Reenter root command.4. Try cop as alternative.
Cannot back up UNIX database file changes to INC slice	root login operating?	<ol style="list-style-type: none">1. Check login permissions.2. Check password.3. Reenter root command.4. Try cop as alternative.
Cannot switch log devices	root login operating?	<ol style="list-style-type: none">1. Check login permissions.2. Check password.3. Reenter root command.4. Try cop as alternative

(Continued)

Table 14-3. Continued

SYMPTOM	ERROR SOURCES	DIAGNOSTIC TOOLS
One log area operating. Cannot switch active and standby log areas.	root login operating?	<ol style="list-style-type: none"> 1. Check login permissions. 2. Check password. 3. Reenter root command. 4. Try cop as alternative
Cannot shut down processor	root login operating?	<ol style="list-style-type: none"> 1. Check login permissions. 2. Check password. 3. Reenter root command. 4. Try cop as alternative.
	shutdown operating?	<ol style="list-style-type: none"> 1. Check login permissions. 2. Reenter command.
	console lockout?	<ol style="list-style-type: none"> 1. Try remote system console.
Cannot boot the system	root login operating?	<ol style="list-style-type: none"> 1. Check login permissions. 2. Check password. 3. Reenter root command. 4. Try cop as alternative.
	disk error? root file system corrupt? UNIX file system corrupt? reboot sequence operating?	<ol style="list-style-type: none"> 1. Shut down processor to firmware mode. 2. Check for disk read/write errors. 3. Recover root file and reboot system.
	fsck operating?	<ol style="list-style-type: none"> 1. Shut down processor to firmware mode. 2. Reboot system.

(Continued)

Table 14-3. Continued

SYMPTOM	ERROR SOURCES	DIAGNOSTIC TOOLS
Cannot execute bradm crash	UNIX file system operating?	<ol style="list-style-type: none"> 1. Shut down processor to firmware mode. 2. Reboot system. 3. Check all file systems.
Cannot edit database	root login operating?	<ol style="list-style-type: none"> 1. Check for existence of directory. 2. Check permissions.
Slow response at terminals	Database being checked for consistency.	ps
Cannot execute service requests	Database inconsistencies?	updb
	File system corruption?	<ol style="list-style-type: none"> 1. Shut down to firmware mode. 2. Reboot system. 3. Check all file systems.

Table 14-4. Hardware Errors

SYMPTOM	ERROR SOURCES	DIAGNOSTIC TOOLS
Unexpected shutdown	Disk drives operating?	1. Check disk drive for indications of failure.
	Power outage?	1. Check logs for record of power failure.
Changes entered by Manager IV users not downloading to switch	Ports busy?	1. Execute connection display to determine ports currently in use. 2. Execute port display to determine ports currently enabled.
	Port allocation okay?	1. Execute reservation display to determine port allocation.
	Ports operating?	1. From UNIX shell, execute <code>logc start=t</code> to display connection attempts.
	Is line manager (linmgr) operating?	1. ps
	Switch operating?	1. Check switch for indications of failure.

(Continued)

Table 14-4. Continued

SYMPTOM	ERROR SOURCES	DIAGNOSTIC TOOLS
Cannot execute journal backup	Tapes okay?	<ol style="list-style-type: none"> 1. Check tape label. 2. Check tape drive for defects.
	Tape drives operating?	<ol style="list-style-type: none"> 1. Check tape drive for indications of failure.
Cannot execute bradm crash	CORE disk pack operating?	<ol style="list-style-type: none"> 1. Check disk drive for indications of failure.
Inc_sw not executed by crontab	Processor down at time crontab was scheduled to run inc_sw?	<ol style="list-style-type: none"> 1. Check system log for record of unscheduled shutdown.
Cannot back up UNIX database file changes to INC slice	Processor down at time crontab was scheduled to run incr_dump?	<ol style="list-style-type: none"> 1. Check system log for record of unscheduled shutdown.
Cannot switch log devices	Processor down at time crontab was scheduled to run ck_log?	<ol style="list-style-type: none"> 1. Check system log for record of unscheduled shutdown.
One log area operating. Cannot switch active and standby log areas	Processor down at time crontab was scheduled to run ck_log?	<ol style="list-style-type: none"> 1. Check system log for record of unscheduled shutdown.

(Continued)

Table 14-4. Continued

SYMPTOM	ERROR SOURCES	DIAGNOSTIC TOOLS
Cannot expand database	Disk drives operating?	1. Check disk drive for indications of failure.
Cannot load database files	Disk drives operating?	1. Check disk drive for indication of failure.
Cannot remove database files	Disk drives operating?	1. Check disk drive for indications of failure.
Cannot reboot system	Disk drives operating?	1. Check disk drive for indications of failure.

USING MANAGER IV DIAGNOSTIC TOOLS TO MONITOR SYSTEM OPERATION

When a Manager IV customer reports an abnormality, perform the following diagnostic procedures to check the system for operating difficulties.

Procedure: Checking the System for Operating Difficulties

Purpose:

Use this procedure to check for system operation problems.

Procedure Steps:

1. Examine the Data Communication Error Log Reports for the day.
2. Examine the System Error Log entries for the day. Avoid examining multiple log entries that indicate a single error source. For example, the message "dbfind failed with -106" might appear repeatedly in the error file but there is only one error source. If you cannot explain each message in this file, contact the next tier of AT&T for assistance.
3. Examine the System Administrator Error Log entries for the day. Every message in this file requires action. If you cannot explain each message, contact the next tier of assistance at AT&T.
4. Run a message dump and examine the bottom summary line to ensure that Manager IV has not run out of some critical resource. To do this,

Enter: **msgdump**

System output [Sample]:

```

$ msgdump
Processes currently waiting on a message queue:
KEY      ID      PID      UID      REASON
1007768 144      7768     0        waiting to receive message
1007691 1573     7691     0        waiting to receive message
1023494 900      23494    0        waiting to receive message

Message Queues in use:
KEY      ID      CBYTES  CNUM     LSPID   LRPID   TYPE    SIZE
1023494 900      0        0        23619   23494
1060004 601      0        0        24682   23615

Space usage:
  Maximum number of message queues(MSGMNI): 300
  Actual message queues allocated: 145
  Actual message queues in use: 4

  Maximum number of message headers(MSGTQL): 100
  Actual message headers in use: 0

  Maximum message size(MSGMAX): 8192
  Actual largest message: 0

  Maximum bytes on one queue(MSGMNB): 12288
  Actual largest queue size: 0

  Maximum total message space(MSGSEG*MSGSSZ): 24576
  Total message space used in bytes: 0

```

Check the bottom summary line of the output to ensure that Manager IV has not, nor is it close to running out of, some critical resource. Check each message queue for messages and ensure that there are no messages on the queue. There should be none. If any queues have messages, wait 15 seconds and run another msgdump. If the same messages are still pending, contact the next tier of assistance at the AT&T NCSC to investigate.

5. Do a semaphore dump and examine the bottom summary line to ensure that Manager IV has not run out of some critical resource. To do this,

Enter: **semdump**

System output [Sample]:

```

$ semdump
Active semundo structures:

KEY      ID      SEM NUM VALUE  PID    UID
1000146 156      0      -7768  7768   0
1000146 156      1        1    7768   0
1000096 4633     0      -7691  7691   0
1000096 4633     1        1    7691   0
1000094 701      0     -23494 23494   0
1000094 701      1        1    23494   0
1000144 79       0     -23619 23619   0
1000144 79       1        1    23619   0
1060004 358      0        -1    23615   0
1060006 3936     0        -1    7764    0

KEY      ID      SEM NUM VALUE  PID    UID

Semaphores in use:

KEY      ID      SEM NUM VALUE  LPID   NCNT   ZCNT
1000170 0       0        0    24687   0     0
1000170 0       1        1    24687   0     0
1000094 701     0     23494  23494   0     0
1000094 701     1        0    23494   0     0
1000001 1052    0        0    23460   0     0
1000001 1052    1        1    23460   0     0
1000002 1053    0        4    2674    0     0
1000002 1053    1        1    2674    0     0
1000251 5       0        0    23464   0     0
1000251 5       1        1    23464   0     0

Space usage:

Maximum number of undo structures(SEMMNU): 350
Actual number of undo structures in use: 7

Maximum number of undo entries per process(SEMUME): 10
Maximum number of undo entries found: 2

Maximum number of semids(SEMMNI): 350
Actual semids allocated: 157
Actual semids used: 20

Maximum number of semaphores(SEMMNS): 650
Actual semaphores allocated: 205
Actual semaphores in use: 36
    
```

Check the bottom summary line of the output to ensure that Manager IV has not, nor is it nearly running out of some critical resource.

- Do a shared memory dump and examine the bottom summary line to ensure that Manager IV has not run out of some critical resource. To do this,

Enter: **shmdump**

System Sample output:

```

$ shmdump
Attached memory segments:

PID    UID    KEY    ID      SEGSZ
Shared memory in use:
KEY    ID      LPID   SEGSZ  NATTACH
1010001    0      0      144    0
1000120    101    24687  14020  0
1002060    102    24687  349288 0
1000020    3      2749   512    0
1002061    104    24687  20992  0
1000121    105    3142   13928  0
1002000    106    2749   654296 0
1002001    7      266    29696  0

Space usage:

        Maximum segments per process(SHMSEG): 6
        Actual maximum segments per process found: 0

        Maximum number of segments(SHMMNI): 100
        Actual number of segments allocated: 8

        Maximum memory allowed in clicks(SHMALL): 6144
        Actual memory allocated in clicks: 2118
    
```

Check the bottom summary line of the output to ensure that Manager IV has not, nor is nearly, running out of some critical resource.

- Read the output of the up control (upctl) transaction and ensure that the number of processes running for each clone-daemon process is greater than or equal to the low-water mark. Run the map transaction of upctl. To do this,

Enter: **upctl**

Enter: **map**

- Read the output and ensure that the number of processes running for each clone-daemon process is greater than or equal to the low-water mark. If it is not, contact the next tier of assistance at AT&T.

- Run the process summary command to see which processes are running. To do this,

Enter: **ps -elf**

System output [Sample]:

```

$ ps -elf
 F S  UID  PID  PPID  C  PRI  NI  ADDR  SZ  WCHAN  STIME  TTY  TIME  CMD
 3 S  root    0    0  0  0  20  1548  4  800713c8  Mar  2  ?    0:00  swapper
 1 S  root    1    0  0  39 20  363c  82  7ffff800  Mar  2  ?    23:39  /etc/init
 3 S  root    0    0  0  0  20  3643  4  8000b978  Mar  2  ?    0:01  swapper
 1 S  root  8109    1  0  28 20  88bc  56  8006d950  13:23:21 ?    0:00  /etc/getty -t 60 tty01 1200
 1 S  root    43    1  0  30 20  37cf 100  8004aa60  Mar  2  ?    0:24  /etc/cron
 3 S  root    54    1  0  26 20  39f8  61  80032880  Mar  2  syscon  0:01  /usr/lib/errdemon
 1 S  root 28690    1  0  28 20  5534  56  8006de6c  08:53:39 tty20  0:00  /etc/getty -t 60 tty20 9600
 1 S  root 28685    1  0  28 20  f112  56  8006dec4  08:53:05 tty21  0:00  /etc/getty -t 60 tty21 9600
 1 S  lp 16486    1  0  26 20  8fbc  96  8004873a  18:08:30 ?    0:00  /usr/lib/lpsched
 1 S  hbk 27223  485  0  28 20  d19c 109  8006ebd4  07:27:29 ttyih  0:01  -sh
 1 S  wgs 28082  485  0  30 20  e1ff 197  8004bae0  08:27:28 ttyir  0:01  /usr/sbin/ksh
 1 S  ehk 28226  485  0  30 20  f99a 108  8004bb38  08:37:22 ttyii  0:01  -sh
 1 S  mrb 13676  485  0  30 20  ef85 197  8004bb90  16:23:14 ttyip  0:02  /usr/sbin/ksh
 1 R  wgs 28692 28691 10  65 20  537b 106          08:53:43 ttyir  0:00  ps -elf
    
```

(Your output to this command will probably be much longer. See the *UNIX System User Reference Manual* for a more detailed explanation of the command and its options.) Investigate all processes that were started more than 30 minutes ago and that are still running. To do this look under the column labeled "STIME", the start time of the process. If these processes are either pure daemons or clone-daemons whose low-water marks are greater than 0, all is fine. If these processes have low-water marks equal to 0, there may be a bug. Contact the next tier of assistance at AT&T.

Check all processes for size. If any process size is greater than 1150 pages, the process may be growing too large and will soon fail if it hasn't already. Contact the next tier of assistance at AT&T.

10. Check for locked database semaphores. To do this,

Enter: **\$\$SYSGEN/sread**

Check for locked semaphores. Your output will show a number after the category "semaphore value." Locked semaphores have a 0 value. If there are no locked semaphores (that is, if the semaphore value equals a number other than 0), continue with the procedure.

If you find a locked semaphore, repeat the sread command. If the semaphore does not clear after 4 attempts, the database may be permanently locked. Contact the next tier of assistance at AT&T.

11. Check for active transactions. To do this run the file manager tool as follows:

Enter: **fmgr**

Enter: **tt -a**

Press **RETURN** to view additional entries.

Enter a **q** to quit the process.

If no information is returned, the program is functioning as it should.

If you get a response, it will look like the following:

```
$ fmgr
> tt -a
    tte[0].trid: 733
    tte[0].pid:      13772
    tte[0].dcon: 1   locons
    tte[0].status:  0
    tte[0].inuse: 3
    tte[0].icnt: 0
    tte[0].logopt:  2   nologging
    tte[0].breads: 0
    tte[0].bwrits:  0
    tte[0].dreads: 0
    tte[0].dwrits:  0
    tte[0].xlvl: 0
    tte[0].ltx:    -1

    tte[1].trid: 1463
    tte[1].pid:      266
    tte[1].dcon: 1   locons
    tte[1].status:  0
    tte[1].inuse: 3
    tte[1].icnt: 0
    tte[1].logopt:  2   nologging
    tte[1].breads:  1
    tte[1].bwrits:  0
    tte[1].dreads: 0
    tte[1].dwrits:  0
    tte[1].xlvl: 0
    tte[1].ltx:    -1
```

The output will include the TRID number. Note these numbers and their process identification numbers (PIDs). In the above example, they are 13772 and 266.

Wait 30 seconds and rerun the file manager tool with the **tt -a** option.

```

$ fmgr
> tt -a
    tte[0].trid: 733
    tte[0].pid:      13772
    tte[0].dcon: 1   locons
    tte[0].status:   0
    tte[0].inuse: 3
    tte[0].icnt: 0
    tte[0].logopt:   2       nologging
    tte[0].bread:   0
    tte[0].bwrits:  0
    tte[0].dreads:  0
    tte[0].dwrits:  0
    tte[0].xlvl: 0
    tte[0].ltx:     -1

    tte[1].trid: 1463
    tte[1].pid:      266
    tte[1].dcon: 1   locons
    tte[1].status:   0
    tte[1].inuse: 3
    tte[1].icnt: 0
    tte[1].logopt:   2       nologging
    tte[1].bread:   1
    tte[1].bwrits:  0
    tte[1].dreads:  0
    tte[1].dwrits:  0
    tte[1].xlvl: 0
    tte[1].ltx:     -1

```

If you get the same TRID number as before, a database page is permanently locked. Note the PID associated with the locked page. This is part of the **tt -a** output. In the above example, these numbers are 13772 and 266.

If the process is still running, find its name using the process summary tool,

Enter: **ps -ef | grep PID**

where PID is the process ID you want to see. For example, the commands would be:

```

$ ps -ef | grep 13772
$ ps -ef | grep 266
  UID  PID  PPID  C   STIME  TTY  TIME  COMMAND
  hmg   266   253  2  11:24:53  ttylo  67:52  rmbuttou
  hmg  2661   502  1  12:07:50  ttylo9   1:57  stty
  root  2669   202  1  12:08:10    ?    19.27  init
  root  2667   202  1  12:08:10    ?    19.78  init
  root  2664   202  1  12:07:51    ?    19.65  init
  root  2668   202  1  12:08:10    ?     0.35  init

```

Note that PID 13772 does not return so it is not a currently running process. PID 266 is there but it is hidden within lots of output; it is the process called “rmbuttou.” Once you determine the offending process name, there may be a bug which needs to be investigated. Contact the next tier of assistance at AT&T.

12. Issue the UNIX command **df** to ensure that all UNIX file systems have sufficient free blocks.

The field that has a block count is the number of remaining free blocks for that file system. You should also check the block usage of the database subfile by issuing the following command:

Enter: **statpoll all**

If more than 80% of total data space is used, you may have to expand the file. You will find procedures for determining this need in this manual. Consult Tier 4 Services for assistance.

13. Go to the controller run directory and check for any recent *core* files.

Enter: **cd \$WORK/dbl/bg/control**

Enter: **ls -l core**

System sample output:

```
-rw-rw-r-- 1 maintain mgr 965632 Jan 7 16:27 core
```

If there are any *core* files, as there are above, use the **what** command:

Enter: **what core**

to determine the load module that *core* dumped and contact the next tier of assistance at AT&T.

14. Run the process status tool:

Enter: **ps -ef**

and ensure that the controller, dispatcher, and line manager pure daemons are running. Automatic alarm origination is an optional feature that may not be contracted for in this Manager IV installation. Check with the NCSC to determine if alarm origination has been contracted for. If Manager IV alarm origination is active for this customer, ensure that smalarm is running. If any of these processes are not running, contact the next tier of assistance at AT&T.

15. Run the field table tool **ftread** and examine the lines of output that start with “UID=.” The output follows:

```

$ ftread
Seg = intdb4  Rel = 4  Id = 120
Seg = prod  Rel = 6  Id = 121
UID=-2  PID=-2  STAT=0  FIF=x0  BLK=0  MARK=0  TAG=0
Version = 2003
CURRENT DATE = Mon Dec 30 13:42:13 1985
VERSION DATE = Mon Dec 30 13:42:13 1985
VERSION = 510
INITIAL DATE = Wed Dec 11 16:49:19 1985

Dbname = prod
Nfile = 89
File name = cog
Nfields = 10
File id = 1
Packing option = 1
M_ID = 5
M_SIZE = 5
M_INDEX = x3
M_TYPE = x5
M_SIZE = 5
M_ID = 101
M_SIZE = 2
M_INDEX = x1
M_TYPE = x5
M_SIZE = 2
M_ID = 102
M_SIZE = 2
M_INDEX = x1
M_TYPE = x5
M_SIZE = 2
M_ID = 103
M_SIZE = 2
M_INDEX = x1
M_TYPE = x5
M_SIZE = 2
M_ID = 104
    
```

If all UIDs equal -2, Manager IV is working properly. If any UIDs do not equal -2, print the entire contents of that output line, wait 5 minutes, and rerun **ftread**. If the same output lines that you printed earlier reappear (where UID did not equal -2), a record may be permanently locked. The name of the offending process can be found because the same **ftread** output line with UID also includes the PID. Contact the next tier of assistance at AT&T.

NOTES: Consider every line of the error log files to represent a problem that needs to be fixed. Action should be taken against each line.

Avoid examining multiple log entries that indicate the same error.

END OF PROCEDURE

USING ERROR CORRECTION TABLES

Tables 14-5 through 14-8 indicate procedures you can use to correct Manager IV abnormalities. When the error has been traced to a specific source in one of the error categories, turn to the appropriate error correction table and perform the steps as directed. Each table is divided into three columns: Error Source, Corrective Procedure, and Refer To. To use the tables, find the source of the abnormality in the first column. Follow the sequence of corrective procedures listed in the second column. For further information about these procedures use the resources listed in the third column.

Table 14-5. Correcting Administrative Errors

ERROR SOURCE	CORRECTIVE PROCEDURE	REFER TO
Database backups not done properly	<ol style="list-style-type: none"> 1. Run daily backup. 2. Back up journal to tape. 3. Back up database. 	<i>Manager IV System Administration</i>
Large number of entries exceeds current system disk capacity	<ol style="list-style-type: none"> 1. Perform frequent backups. 2. Reconfigure file space allocations. 3. Supply additional disk space. 4. Perform Manager IV database growth procedure. 	<i>Manager IV System Administration</i>
Disk space improperly allocated	<ol style="list-style-type: none"> 1. Reconfigure file space allocations. 	Installation section of this manual
Improper software load tuning	<ol style="list-style-type: none"> 1. Reset daemon levels. 	upctl
Insufficient number of ports assigned	<ol style="list-style-type: none"> 1. Reallocate port assignments. 	Installation section of this Manual <i>Manager IV System Administration</i>
	<ol style="list-style-type: none"> 2. Supply additional ports as required. 	Hardware vendor

Table 14-6. Correcting Application Software Errors

ERROR SOURCE	CORRECTIVE PROCEDURE	REFER TO
ck_log not operating properly	1. Check entry.	Display of entry.
	2. Check disk drive operation.	Correcting Hardware Errors.
Crontab not operating properly	1. Check that crontab daemon was activated at system boot time.	1. System console for message "CRON STARTED" at boot time. 2. File /etc/rc for crontab daemon.
		<i>UNIX System Administration Reference</i> for CRON <i>UNIX System User Reference</i> for Crontab.
Manager IV controller not operating Manager IV scheduler not operating	1. Check that controller daemon was activated at system boot time. 1. Check that scheduler daemon was activated at system boot time.	1. System console for possible failures during system boot time. 2. File startsm for activation of line manager and process daemons. 3. Check system error logs for failure messages.

(Continued)

Table 14-6. Continued

ERROR SOURCE	CORRECTIVE PROCEDURE	REFER TO
bradm day_dump not operating	1. Check setting of log parameter. 2. Check setting of LOGF in environment variable list. 3. Get pathname for LOGF from environment variable list.	File envlist.br
	4. Enter pathname to find log file.	LOGF <i>pathname</i>
	5. Read log file and look for errors logged by bradm.	
bradm log_dump not operating	1. Same as bradm day_dump not operating	1. File envlist.br 2. LOGF <i>pathname</i>
bradm full_dump not operating	1. Same as bradm day_dump not operating	1. File envlist.br 2. LOGF <i>pathname</i>
bradm inc_sw not operating	1. Same as bradm day_dump not operating	1. File envlist.br 2. LOGF <i>pathname</i>
bradm incr_dump not operating	1. Same as bradm day_dump not operating	1. File envlist.br 2. LOGF <i>pathname</i>
bradm log_sw not operating	1. Same as bradm day_dump not operating	1. File envlist.br 2. LOGF <i>pathname</i>
Log device lost	1. Halt bradm ck_log or bradm log_dump	The next tier at AT&T for further instructions.

Table 14-7. Correcting UNIX Operating System Errors

ERROR SOURCE	CORRECTIVE PROCEDURE	REFER TO
Unable to boot Manager IV	1. Reboot UNIX operating system.	Appropriate reboot procedure for Manager IV processor.
	2. Boot Manager IV	Booting Manager IV
Unable to log on as root or su to root	1. Check for proper password.	Display of entry
	2. Check for entry in password file.	<i>Manager IV System Administration</i>
UNIX utility fsck not operating	1. Check for proper permissions.	<i>UNIX System Administrator Reference Manual</i> <i>UNIX System Administrator Guide</i>
	2. Check device name.	Manager IV environment variable list The Installation section of this manual
UNIX system shutdown calls not operating	1. Check for proper permissions	<i>UNIX System Administrator Reference Manual</i> <i>UNIX System Administrator Guide</i>
System console locked out	1. Reboot system console.	Appropriate processor operation manual.
	2. Replace or repair system console.	Hardware vendor
Unable to log on as smmaint	1. Check for proper password	Display of entry.
	2. Check for entry in password file.	<i>Manager IV System Administration</i>

Table 14-8. Correcting Hardware Errors

ERROR SOURCE	CORRECTIVE PROCEDURE	REFER TO
One or more disk drives not operating	1. Hardware maintenance needed.	Hardware vendor for further information.
Power outage	1. Reboot after unscheduled power-out shutdown.	Appropriate procedure for Manager IV processor.
Ports not operating	1. Check initialization state. 2. Hardware maintenance needed.	Hardware vendor for further information.
Switch inoperative	1. Hardware maintenance needed.	Hardware vendor for further information.
Tape drive inoperative	1. Make sure drive is on line and tape is rewound. 2. Hardware maintenance needed.	Hardware vendor for further information.
Processor was down when crontab was scheduled to run inc_sw	1. If conditions permit (time is early morning, before day dump) run bradm inc_sw as soon as system is up.	Switching log devices and backing up root and UNIX database file changes to disk.
Processor was down when crontab was scheduled to run incr_dump	1. If conditions permit (time is early morning, before day dump) run bradm incr_dump as soon as system is up.	Backing up UNIX database file changes to disk.
Processor was down when crontab was scheduled to run log_sw	1. If conditions permit (time is early morning, before day dump) run bradm log_sw as soon as system is up.	Switch log devices.

15. DIRECTORY OF TOOLS

This section provides an alphabetical listing of Manager IV service and maintenance commands and their functions. These commands are referred to for diagnostic procedures. See *DEFINITY Manager IV System Administration* for backup and recovery tools.

MANAGER IV DIAGNOSTIC TOOLS

The following diagnostic tools are designed exclusively for determining the operating status of Manager IV processes. The information provided for each tool includes

- the name of the tool
- a synopsis of the executable command including any optional characters
- a description of the function of the tool including explanations of required variable data entries
- applicable notes, such as files containing additional information
- output files (where applicable)
- sample output generated by the tool (where applicable)
- environment variables (where applicable).

MANAGER IV DIAGNOSTIC TOOLS: dbio

NAME: dbio - lists files, removes files, saves file, transfers files

SYNOPSIS: **dbio**

DESCRIPTION: The **dbio** process is used to dump CORE subfiles into a UNIX file and restore them later to another database. It provides the facility to list the contents of an entire database. It lists the subfiles, the main Listed Directory Number (LDN) and Delivery Operations Support System (DOSS) number of each subfile (if it is associated with a specific product). If the stat field is set to "yes", it also lists the number of records and bytes in each subfile. Finally, specified files may be deleted from the database. A pattern-matching capability is provided to permit ease of input.

PROCEDURE: **dbio** has the following two modes of operation:

1. It can be run interactively from the UNIX shell by setting COLMOD=old. This mode uses the Manager IV collect facility so there are help messages for each of the prompts. In this mode of operation, if SCRIPT is set to some writable file, all of the transactions entered will be logged into that file. Should it ever be desirable to repeat the original **dbio** run. This file can be fed into dbio as standard input.
2. It can be run via mask input from the System Management User Executive (SMUE) as a daemon process.

The following commands are acceptable to the **dbio** process. In the UNIX shell mode, these commands are entered as transaction types. In the SMUE mode, these commands are entered as the verb portion of the object:verb pairs.

- **List** (audit if run in shell mode). Produces a detailed listing of all of the subfiles in the database. This list includes the file template name, the Private Branch Exchange (PBX) ID, and the LDN and DOSS numbers (if this subfile is associated with a product). If the stat field is set to yes the number of records and the number of bytes in the subfile are also listed.
- **Save**. Copies the specified CORE subfile to a specified UNIX file. You are prompted for the UNIX dump file name and a list of CORE subfiles to be dumped. For the CORE subfiles the user may specify an asterisk for the file name. In that case, all files of the specified subfile will be dumped. If you specify an asterisk for the subfile, all subfiles of the specified file will be dumped. You may not specify an asterisk for both the file template name and the subfile.
- **Display**. Lists the table of contents of the dumped UNIX file. You are prompted for the name of the dump file.

- **Load.** Once a set of CORE subfiles has been dumped to a UNIX file, this UNIX file may be transported to another machine by normal UNIX commands such as **uucp** or **cpio**. You can then load the dumped CORE subfiles into the CORE database. "Load" will prompt you for the subfiles to be restored. You may list individually the subfiles to be restored. For each subfile you must supply the file name, the old subfile, and the new subfile. If you enter an asterisk for all three inputs, all files on the dumped UNIX file are restored, and the new subfile numbers are the same as the old ones. If you enter an asterisk for the file template name, all subfiles specified in the old subfile field are restored to the newly specified subfile number. If you enter an asterisk for the old subfile, all subfiles of the specified file template name are restored. The new subfile number will match the old one. "Load" will always restore parent subfiles before children subfiles so you need not worry about subfile sequences.
- **Remove.** Once a set of files has been moved to a new subfile or machine, delete the old subfiles. The "remove" command provides this function. You are prompted for the file names and subfiles to be deleted. An asterisk in the file template name slot deletes all files of the specified subfile. An asterisk in the subfile slot deletes all files of the specified file template name. An asterisk is not permitted in both slots. "Remove" will always delete children subfiles before deleting parent subfiles so sequence is not inconsequential.

INPUT FILES: User input or script file.

OUTPUT FILES: Terminal or file dumps may go to the specified file.

**ENVIRONMENT
VARIABLES:**

FTFILES — directory from which ft file is read.

RMDBNAME — name of database that **dbio** is to work upon.

SCRIPT — full pathname of the file to which your input is dumped thereby allowing later exact duplication of all transactions

COLMOD — set to "old" or "daemon" depending on the desired mode of operation.

MANAGER IV DIAGNOSTIC TOOLS: msgdump

NAME: msgdump - shows message queues.

SYNOPSIS: **msgdump** [-**dcx**] [-**p** pid] [-**i** ID] [-**k** key] [-**C** corefile] [-**N** namelist]

DESCRIPTION: **msgdump** prints out

- the processes waiting for messages
- currently active message queues
- a space synopsis.

PROCEDURE: Currently active message queues have been allocated with a "msgget(2)" and have been used at least once. However, they need not have a message currently on queue.

Messages are printed by type and size by using one of the **-dcx** options for a decimal, character, or hexadecimal dump.

The space synopsis shows the UNIX parameter values and the space used for the number of message queues, number of message headers, maximum queue size, and maximum total message size. Space information for message queues includes the number of allocated queues and the number of active queues.

msgdump selectively prints information based on one of the following:

- msgid (-i)
- key (-k)
- process ID (-p)
- Use the -C and -N flags to dump message information on a CORE file other than the running kernel.

MANAGER IV DIAGNOSTIC TOOLS: pfclean

- NAME:** pfclean - detects, reports, and corrects invalid pending flags
- DESCRIPTION:** The function of the Pending Flag Cleanup Tool is to detect, report, and clean up pending flags from all records affected by service requests that have been removed or executed successfully and carry an invalid pending flag.
- This command will also correct the problem of an existing shadow pending queue record that does not have a corresponding pending queue record.
- BACKGROUND:** For every record in the srfile (service request file) and spq (shadow pending queue) files, a corresponding record should exist in the pq (pending queue) file. If a corresponding pq file entry does not exist, an error condition exists.
- Additionally, there are two types of errors that may occur within a product-image database file:
1. The value of the PENDF field is non-null, but the value of the SRNUM field is null.
 2. The value of the PENDF and SRNUM fields is non-null; however, there are no entries in the srfile and the pending file for the corresponding service request.
- PROCEDURE:** As previously stated, reporting and correction of the above error conditions can be accomplished by using the pfclean tool. To execute the tool from the UNIX command line enter:

```
pfclean [-c] -s
```

or

```
pfclean [-c] target CORE-file [primary-key]
```

The pfclean arguments are as follows:

- | | |
|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| -c | if specified, this argument instructs pfclean to correct errors upon detection. |
| -s | this instructs pfclean to check only the spq (shadow pending queue file), srfile (service request file) against pq (pending queue file) to insure that the correct entries are present in each file. |
| target | the Manager IV target for which errors are to be checked and/or corrected. |
| CORE-file | the Manager IV product-image CORE database file for which errors are to be checked and/or corrected. |

primary-key if specified, only the record in the specified CORE file with the designated primary key is checked and/or corrected; otherwise, every record in the specified CORE file will be checked and/or corrected.

NOTES: The length of time that it takes for this command to complete its execution is dependent on the number of records that must be checked. If you execute this command without designating a specific set of records, *all* records affected by service requests are checked.

To avoid occupying a terminal for any undue length of time this command should be run in the background.

It is also recommended that you set this command up as part of the CRON process and direct pfclean to report errors to the log. This should be done on a daily basis during your off-peak operating hours. You should then check the pflog (see the last item) once a week for errors and take the appropriate corrective action.

The trunk group and extension files should be checked along with any additional files that you deem necessary.

The pfclean transaction does not return error or status messages to the terminal. All error or status messages are logged in the *\$LOG/pflogMMDD(month, day)* file.

OUTPUT SAMPLES: The following output samples are broken down into four sections:

- pfclean failure entries
- pfclean using the **-s** (report on the srfile, spq file, and pq file only) option
- pfclean using the **-s** and **-c** (report and correct the srfile, spq file, and pq file) options
- pfclean using the **-c** option and designating a specific file name.

Note: The data contained in these log entries is for illustrative purposes only.

pfclean failure:

pfclean (08129) 14:23:52 ::

```

pfclean startup failed: incorrect options.
correct usage:
pfclean [-c] -s
or
pfclean [-c] pbx database-file [prime-key]
```

pfclean (08137) 14:25:07 ::

```

pfclean startup failed: incorrect options.
pfclean invoked with illegal database file specified.
target name = Newport
file name = pq
```

pfclean report only: *(report on the srfile, spq file, and pq file)*

pfclean (08248) 14:34:38 ::

pfclean startup: -s option, report only.

pfclean (08129) 14:34:40 ::

corporation name = Faxform
srfile record for service request pj0610a should be deleted,
no corresponding pending queue record.

pfclean (08129) 14:37:38 ::

pbx name = Newport
spq record for pqpky key 222622262 2226 6 should be deleted,
no corresponding pending queue record.

pfclean (08129) 14:40:41 ::

corporation name = Faxform
spq record for pqpky key 222622262 2226 8 should be deleted,
no corresponding pending queue record.

pfclean (08248) 14:41:44 ::

pfclean completed.

pfclean report and correct: *(report and correct errors in the srfile, spq file and pq file)*

pfclean (08373) 14:42:46 ::

pfclean startup: -c -s options, report and correct errors.

pfclean (08373) 14:42:49 ::

corporation name = Faxform
srfile record for service request pj0610a deleted,
no corresponding pending queue record.

pfclean (08373) 14:42:50 ::

corporation name = Faxform
srfile record for service request pj0610 deleted,
no corresponding pending queue record.

pfclean (08373) 14:46:18 ::

pbx name = Newport
spq record for pqpky key 222622262 2226 6 deleted,
no corresponding pending queue record.

pfclean (08373) 14:50:43 ::

pbx name = Newport
 spq record for pqpky key 222622262 2226 8 deleted,
 no corresponding pending queue record.

pfclean (08373) 14:50:47 ::

pfclean completed.

pfclean specific file:

pfclean (08947) 15:02:57 ::

pfclean startup: -c option, report and correct errors.
 target name = Newport
 file name = nrcall

pfclean (08947) 15:02:58 ::

pbx name = Newport
 database file name = nrcall
 primary key = 2
 pendf flag = p
 service request number = pj0610

pfclean setting pendf flag equal to null,
 no corresponding pending queue record.

pfclean (08947) 15:03:00 ::

pbx name = Newport
 database file name = nrcall
 primary key = 4
 pendf flag = r
 service request number = pj0610

pfclean setting pendf flag equal to null,
 no corresponding pending queue record.

pfclean (08947) 15:03:01 ::

pfclean completed.

MANAGER IV DIAGNOSTIC TOOLS: portrel

NAME: portrel - release either a user's or scheduled task's port connection that cannot be released using normal commands such as connection:end.

PROCEDURE:

1. Enter the utilities command path to create access to the UNIX shell.

```
Manager IV Release R <no.>  
PATH:  
Enter application> utilities shell create  
  
env, shell, or list > shell  
$
```

2. Enter **portrel**. You will be prompted for the product ID and the PBX port.

NOTES:

- Product ID identifies the product that is connected to the port as shown by the path connection display.
- To determine the PBX port, execute connection:display.

MANAGER IV DIAGNOSTIC TOOLS: rmaudit

NAME: rmaudit - audit record manager file sets

SYNOPSIS: **rmaudit [-v] [filename or ALL] 2>&1 &**

DESCRIPTION: **rmaudit** audits the named file for potential problems such as unresolved chains in the record manager set structure. There must be ample space in the current directory's file system for the audit data. This requirement is typically about 5% of the space allocated to the actual files.

NOTE: **rmaudit** automatically quiesces the database.

PROCEDURE: If the -v option is specified, trace statements are printed tracking the progression of the command as the set extraction and set audit commands are executed.

To monitor the audit and save its output, audit must be invoked as **nohup rmaudit [args] &**.

Enter **tail -f nohup.out** to get progressive output. Press **BREAK** to interrupt the output without stopping the rmaudit process.

The filename may specify either the file manager or the record manager file name. The record manager's in-core tables are interrogated to determine the relationship between that file and others.

If ALL is used as the keyword, all files are extracted and all sets are audited.

ENVIRONMENT

VARIABLES: FSNAME
FSYSTEMS
RMDATABASE

OUTPUT: The output of the rmaudit command formatted as follows:

```
Extracting ownr
      244 records
Extracting hash
      3594 records
Auditing oh

Extracting heap
      4660 records
Auditing ohp

-----
Unresolved chains - Set is ohp

RLNK              BEGIN              END              FLNK
heap 1 31 22      ownr 1 2 6        ownr 1 2 6        heap 1 45 25
ownr 1 2 6         heap 1 45 25      heap 1 45 25      heap 1 91 22
ownr 1 2 6         heap 1 91 22      heap 1 31 22      ownr 1 2 6

-----
audit of set ohp failed

Extracting hash2
      4308 records
Auditing oh2

Auditing hh
```

MANAGER IV DIAGNOSTIC TOOLS: rmcprs

NAME: rmcprs - compress oversized files

SYNOPSIS: **rmcprs [-d] [-l]**

DESCRIPTION: **Rmcprs** allows files to be compressed if they have accumulated a good deal of unusable space. Files are dumped from the database to UNIX, compressed and then loaded back on to the system.

PROCEDURE:

To dump a file to UNIX:

Enter: **rmcprs -d filename**

To load the file back on to the database:

Enter: **rmcprs -l filename**

MANAGER IV DIAGNOSTIC TOOLS: statpoll

NAME: statpoll - gather CORE database file sizing statistics

SYNOPSIS: statpoll [-ps] [-a] [-d] file 1 [file2 ...]
statpoll [-ps] ALL

DESCRIPTION: Statpoll examines files in the CORE database, and gathers statistics on file sizing parameters. It can process any number of files, where *file* is the file the field belongs to (i.e. extn), and *FIELD* is the FID name (i.e.) COS). If *ALL* is specified, the files in the CORE database are polled in order of file id, with all key files immediately following their associated parent files.

The statistics gathered by *statpoll* can simply be printed and examined, or they can be stored in the *filehis* file. this file can then be used to examine a file's history of growth, and to determine if any patterns are evident.

In the default mode, *statpoll* will only print its results to stdout, and will not update any database files.

The mutually exclusive options p and s can be used to override the default setting:

- p Print out statistics, and update the filehis file.
- s Update the filehis file, but do not print out statistics.

The following options can also be specified irrespective of other options:

- a For each *file* that is a non-key file, poll *file*, and then poll all of its related key files. If *file* is a key file (or the r000 file), the option is ignored.
- d Print the number of records with distinct and duplicate hash keys. This option is used for verifying that hash algorithm is producing key uniformly.

The following statistics are printed for each file:

TOTAL NUMBER OF RECORDS - number of records for all subfiles in the file.

NUMBER OF RECORDS IN SUBFILE *n* - number of records in individual subfile *n* (data files only).

DIRECTORY SIZE - size (in bytes) of the extendible hashing file directory.

NUMBER OF *n*K BLOCKS - number of blocks allocated with block size of *nk* bytes.

NUMBER OF UNIQUE PKEYS - (-d option only) - number of records with a distinct hash key.

AVERAGE RECORDS LENGTH - the size of the average record, including CORE overhead.

FILE LOADING (lfctr) - percentage of the total file size containing actual data.

TIME - date and time the poll completed.

The following statistics are printed at the end of the poll when **ALL** is specified for the file name:

TOTAL PAGED ALLOCATED - total number of CORE pages.

TOTAL PAGED USED - total number of CORE pages actually used.

MANAGER IV DIAGNOSTIC TOOLS: semdump

NAME: semdump - shows semaphore allocation

SYNOPSIS: **semdump** [-p] [-i] [-k] [-C corefile] [-N namelist]

DESCRIPTION: **semdump** reports

- Active semaphore undo structures
- Processes sleeping on a semaphore
- Active semaphores. These are the allocated semaphores with an operation time exceeding 0.
- Space synopsis. This shows the total usage of undo structures, undo entries, semaphore ID numbers and semaphores. It shows the
 - maximum value for each type of data
 - name of the kernel parameter, in parentheses
 - number allocated by a semget(2) or semop(2)
 - number in active use

semdump selectively prints the information based on either the semid (-i), the key (-k) or the process ID (-p). The -C and -N flags can be used to dump the semaphore information on a core file other than the running kernel.

MANAGER IV DIAGNOSTIC TOOLS: shmdump

NAME: shmdump - shows shared-memory resource allocation.

SYNOPSIS: **shmdump** [-p] [-i] [-k] [-C corefile] [-N namelist]

DESCRIPTION: **shmdump** reports

- attached shared memory segments by process
- currently allocated shared memory segments
- a space synopsis showing
 - UNIX parameter values
 - actual space used for the number of shared memory segments
 - maximum number attached per process
 - total memory allocated.

shmdump selectively prints the information based on the shmid (-i), the key (-k), or the process ID (-p). The -C and -N flags can be used to dump the shared memory information on a core file other than the running kernel.

MANAGER IV DIAGNOSTIC TOOLS: upctl

NAME: upctl - update daemon table

SYNOPSIS: **upctl**

DESCRIPTION: The upctl (up-control) process is used to update the table that specifies, to the controller, the daemons configured into the Manager IV system. **upctl** uses the collect facility to have the full help and input validation facilities as provided by collect.

upctl first prompts for the transaction type. Currently, the following six transaction types are supported:

- Add a daemon to the system (add)
- Delete an existing daemon (delete)

These two transactions (add or delete) should *never* be performed without Tier 4 directive.

- Change an existing daemon (change)
- Print the current daemon table (print)
- Stop the controller (kill)
- Start the controller (start)
- Dump the controller's core daemon table (map).

PROCEDURE: The "add" transaction prompts for the new daemon name, the maximum number of bytes to be allowed in its public queue message buffer, the low-water number of daemons to be started when the system is booted, and the high-water number of daemons to be allowed (the maximum number of daemons ever permitted). **upctl** automatically assigns the daemon a key. Once this information is added, **upctl** will automatically update the daemon table \$TABLES/def with the new daemon information. For the new daemon to become active the controller must be killed and restarted.

To delete an existing daemon execute the delete transaction. It prompts for the name of the daemon to be deleted. For the daemon to be removed from the system, the controller must be killed and restarted.

To change an existing daemon execute the change transaction. It prompts for the name of the daemon to be modified. The old values of message queue bytes, low-water number of daemons, and high-water number of daemons are displayed. The new values are then entered. To change the message queue bytes, the controller must be killed and restarted. However, if either the low-water or high-water number of daemons is changed, the controller will reflect this change without having to be restarted. Should the low-water mark be increased, a corresponding number of new daemons will be started. Should it be reduced, a corresponding number of daemons will be killed off. If you wish to change all of the daemons to the same value of message queue bytes and low- and high-water marks, type "all" for the daemon name.

The print transaction prints the on-disk daemon table.

The kill transaction kills the controller.

The start transaction starts the controller.

The map transaction dumps the controller's core table of daemons. Included for each daemon in this table are the number of clones that are currently running (NUM) and the number of idle clones (IDLECNT). The idle count tracks the number of clones that are ready to process user transactions. This IDLECNT value *must* be less than or equal to the NUM value. If it is not, the controller should be restarted. The map option will issue a warning if this discrepancy exists.

INPUT FILES: User input or script file.

OUTPUT FILES: \$TABLES/def

**ENVIRONMENT
VARIABLES:**

TABLES — directory in which controller daemon file is kept.

SCRIPT — the full path name of the file where your input to **upctl** is dumped so your work may be repeated later by feeding **upctl** this file.

MANAGER IV DIAGNOSTIC TOOLS: updb

- NAME:** updb - interactively enter data manipulation language commands
- SYNOPSIS:** **updb**
- DESCRIPTION:** The **updb** process is used to interactively enter Database Manipulation Language (DML) commands. It uses the Manager IV collect facility so there are help messages for each of the prompts.
- Before **updb** can be used, a database must already exist. The field table must already be in memory.
- Once **updb** is invoked, it prompts for the type of transaction to be performed. Files may be opened or closed. Records may be accessed sequentially or via primary or secondary keys.
- PROCEDURE:** Should an **updb** prompt require further explanation, additional helpful information can be found by entering "??". The **open** and **close** transactions ask for a file name and subfile number. The **number** transaction returns the number for a given target. The find transaction asks for the mode and the key field ID to be used for primary or secondary key searches. If you wish to find the records sequentially, type "." for key ID. If you wish to find the records via the libdml random dump capability, type either -1 for key ID to find the first record in the file or -2 to find subsequent records. Note that only the files opened with the subfile "none" are eligible for random dump treatment. When accessing records based on primary keys, or for the first secondary key record, for the field value, enter the value of the key being searched on. For subsequent records with the same secondary key, type ".". If you want all the field IDs returned type "." for the "IDs returned" prompt.
- In addition to supporting all of the dml primitives, **updb** also provides a transaction **xdump** that permits dumping all or part of any subfile. **xdump** also permits the selective dumping of fields within a record. If the contents of the fields dumped are non-ASCII, **updb** will print the non-ASCII fields in hexadecimal format. Another transaction, **bdump**, provides you with a listing of all the subfiles in the database.
- The **keyexist** transaction is used to determine whether a particular primary, secondary, global, or child key exists in a file.
- The **path** transaction is used to reverse the path of sequential finds.
- updb** also supports a "version" transaction that lets you display both the field table version with which CORE was created and the field table version in the current field table. These must match for the database to be usable. A mismatch indicates a serious error situation that must be carefully investigated.
- INPUT FILES:** User input or script file. Field table.
- OUTPUT FILES:** Terminal or file dumps may go to the specified file.
- ENVIRONMENT VARIABLES:** FTFILES — directory from which the field table file is read.

UNIX OPERATING SYSTEM DIAGNOSTIC TOOLS: acctcom

NAME: acctcom - reads data files and prints information on executed UNIX commands

SYNOPSIS: For a complete description of this command, please refer to the *UNIX System User Reference Manual*.

UNIX OPERATING SYSTEM DIAGNOSTIC TOOLS: df/du

NAME: df/du - report on remaining free blocks or block usage on disk devices

SYNOPSIS: For a complete description of **df** (report on free blocks), please refer to the *UNIX System Administrator's Reference Manual*.

For a complete description of the **du** (disk usage), please refer to the *UNIX System User Reference Manual*.

UNIX OPERATING SYSTEM DIAGNOSTIC TOOLS: ps [-ef]

NAME: ps - report on currently running processes

SYNOPSIS: For a complete description of **ps**, please refer to the *UNIX System User Reference Manual*.

APPENDIX A: SUPPORTING DOCUMENTATION

This appendix contains information on documentation for DEFINITY Manager IV, related products (System 75/DEFINITY Generic 1 and System 85/DEFINITY Generic 2), and the UNIX operating system.

All of the following documentation can be ordered by calling the AT&T Customer Information Center (CIC) at 1-800-432-6600, or by writing to:

AT&T Customer Information Center
ATTN: Customer Service Representative
P.O. Box 19901
Indianapolis, IN 46219

DEFINITY MANAGER IV DOCUMENTATION

Detailed information about specific aspects of Manager IV planning, installation, and day-to-day operation are included in the Manager IV manuals listed below. Document numbers and ordering information can be found on the back of this manual's title page.

Introduction to DEFINITY Manager IV presents a general overview of Manager IV. The *Introduction* is designed to help customers become familiar with Manager IV and evaluate its benefits. It contains a description of Manager IV capabilities, a discussion of major benefits, an explanation of AT&T service and support, and a detailed description of each of the Manager IV applications.

Getting Started With DEFINITY Manager IV provides the procedural and reference information necessary to use Manager IV. The first part of this guide includes a general overview of Manager IV, a system description, Manager IV application overviews, and instructions for administering the Manager IV user interface. The second part gives you detailed information about service requests.

DEFINITY Manager IV Planning and Implementation provides information on planning and implementing Manager IV. The manual helps customers to determine their configuration needs and outlines the activities that must be completed by the customer and AT&T from the initial planning stages to Manager IV cutover.

DEFINITY Manager IV Installation, Initialization, and Maintenance provides the installer with procedural and reference information needed to install and initialize Manager IV on its processor. The manual also describes and suggests solutions for possible problems that may arise during the execution of these procedures. Customers may need to refer to some of the initialization procedures if they need to reconfigure Manager IV or if they install new equipment that changes the network configuration.

The manual also provides the service technician or the qualified customer with the procedural and reference information needed for routine software maintenance.

DEFINITY Manager IV Query and Report Languages explains the commands used in the Query and Report Languages and provides instructions for using them to supplement standard reports.

Manager IV Operations Guides

The Manager IV operations manuals provide detailed procedures for using each Manager IV application. These guides each contain the following information:

- How the application fits into Manager IV's overall structure
- How to access Manager IV and use the commands provided by the application
- Detailed procedures needed to perform the tasks related to the application
- A list of the application's commands

Application administrators should refer to these guides for information about their specific application.

DEFINITY Manager IV System Administration provides the Manager IV System Administrator with the reference and procedural information needed to monitor Manager IV and the products it supports. It enables the System Administrator to analyze and improve the overall performance of the system configuration.

DEFINITY Manager IV Facilities Management Operations provides the FM user with the procedural and reference information needed to configure and control a telecommunications system. Procedures include configuring trunks and trunk groups, remotely accessing trunk-testing hardware, selecting network routing paths, assigning and changing Facility Restriction Levels (FRLs) and authorization codes.

DEFINITY Manager IV Terminal Change Management Operations provides the TCM user with the procedural and reference information needed to administer voice and data terminals and attendant consoles for the products supported by Manager IV.

DEFINITY GENERIC 1 DOCUMENTATION

The documentation in support of DEFINITY Generic 1 is structured similar to System 75. The following documents are common to System 75 and Generic 1:

DOCUMENT	ORDER NUMBER
Feature Description	555-200-201
Administration and Traffic Measurements	555-200-500
Voice Terminal Operations	555-200-701
Console Operations	555-200-700
Application Notes	555-209-000
Pocket Reference	555-200-202

The following documents are specific to DEFINITY Generic 1:

Introduction	555-200-024
System Description	555-204-200

Installation	555-204-104
Maintenance	555-204-105

SYSTEM 85/DEFINITY GENERIC 2 DOCUMENTATION

DOCUMENT	ORDER NUMBER
Introduction to System 85	555-103-020
Reliability and Maintenance	555-103-102
Feature Facts	555-104-751
Equipment Room Floor Plans and Specification Planning Manual	555-103-603
System Description	555-103-201
Features Reference Manual	555-103-301
System 85 Feature Translations Manual (Release 2, Version 1 and 2)	555-101-107
System 85 Feature Translations Manual (Release 2, Version 3)	555-102-107

UNIX OPERATING SYSTEM DOCUMENTATION

UNIX System V Release 3.2 Release Notes	305-565
UNIX System V Release 3.2 Administration Guide	305-569
UNIX System V Release 3.2 User's Reference Manual	307-012
UNIX System V Release 3.2 System Administrator's Reference Manual	305-570
UNIX System V Release 3.2 System Administrator's Reference Manual Updates	305-571
UNIX System V Release 3.2 User's Guide	307-231
ASSIST Software User's Guide	307-234

Systems Software Development Tools User's Guide	307-235
UNIX System V Release 3.1 Cartridge Tape Utilities Guide	306-006
Network Support Utilities Release Notes	307-233
Release 3 Streams Primer/ Remote Filesharing Utilities Release Notes	307-229

APPENDIX B. DIAL TONE TRANSACTIONS AND REPORTS

This appendix describes a group of TCM commands and reports designed specifically for use in a precut environment. The precut environment and how it relates to a large switch is discussed, as well as Manager IV improvements for the precut situation.

THE PRECUT ENVIRONMENT

"Precut" refers to the time period from when the switch arrives at the customer site until the time the switch is "cut," that is, prior to the time when users are making and receiving voice and/or data calls through the switch. Typically, this is the time when massive station changes need to be made to the original customer order. Because of the volume of changes, dial tone is provided first, so that the installers can verify that the wiring and cross-connects have been done correctly. Other features are added to the switch at a later time. Changes are made to Manager IV, working sets are verified, and circuit packs are swapped. In short, "precut" is a time when there is a great deal of activity to meet the customer deadline; changes to the switch are being administered around the clock.

As a result of massive changes and on-site troubleshooting that occur in a precut environment, user needs in a precut situation are unique. During precut, changes must be implemented quickly; the Manager IV database and the switch must be in synchronization.

In order to meet unique user needs during precut, a set of TCM transactions have been developed to provide dial tone in a more expedient manner. The dial tone objects for these transactions are: **analog-dialtone**, **nonanalog-dialtone**, and **sls-dialtone**. In addition to these transactions, four TCM reports are provided. These reports list circuit information and extension to Equipment Line Location (ELL) assignments. The reports include two Manager IV Database Reports and two Switch Reports. Used in conjunction with the dial tone transactions, these reports aid in implementing changes and synchronizing data during precut.

PRECUT USER TYPE

The dial tone transactions omit some features and datachecks available in regular TCM transactions. The Manager IV Database and Switch Reports require connection to the switch for longer periods of time than most Manager IV transactions. Because of these differences, any user requiring access to dial tone transactions and reports must be defined with a user type of "pre-cut."

If several users need access to the dial tone transactions and reports, it is recommended that multiple logins with "pre-cut" permission be created for the duration of precut activity and then be removed.

Users with a "pre-cut" and "tcm" user type have access to all TCM commands, as well as the dial tone transactions and reports.

DIAL TONE TRANSACTIONS

The dial tone transactions provide dial tone to analog and non-analog terminals in a more expedient manner than the TCM extension and terminal transactions. This is accomplished in several ways:

- Only data needed to provide dial tone is requested on the input screen
- Standard terminal configuration values are defaulted
- Datachecks are stripped down to the essentials
- No spare search on extension or ELLs is available
- On the product download side, only those procedures (procs) which are required to provide dial tone are administered to the switch.
- Only one pending record is created for the entire dial tone transaction.

The dial tone transactions appear under the TCM administration, database-administration, and product-administration areas. Under the administration area, these transactions can be run in both immediate and service request modes.

The dial tone transactions and their various object verb combinations are provided here. For more information see *Terminal Change Management Operations*.

ANALOG-DIALTONE

VERBS

add
display
remove

COMMANDS

analog-dialtone add

Purpose:

- Adds dial tone to an analog voice terminal. It is designed to expedite precut changes by providing administration of only the fields required to put the extension in a working state. These fields include: Equipment Line Location, (ELL), Class-of-Service (COS), and Analog Type.

Prerequisites:

- Use **carrier add** in the admin or database admin areas to add a carrier to the system, and to add an analog circuit pack to the carrier. Or if the carrier already exists, use **pack add** to add the pack to the carrier. Use **carrier-parameters** in the product admin area to enter data in the switch database.
- Define the first digit of the extension number using **first-digit change**.
- Use **number-group add** to open a number group that includes the extension number.
- Use **class-of-service add** to define a valid Class of Service (COS) for the extension number.

CAUTION:

- You cannot administer optional extension features, user information, Abbreviated Dialing capabilities, or set attributes using this command. If you need to administer any of these features immediately, use **extension add** instead.
- The extension number and ELL must be specified by the user. If you want Manager IV to pick spare extensions or ELLs, use the extension add transaction.

NOTE:

- This transaction consists of only one screen. Only the data needed to assign dial tone is provided on the screen.

analog-dialtone display

Purpose:

- Displays the following information for an analog terminal: extension number, Class-of-Service (COS), and Analog Type.

CAUTION:

- Should only be performed on extensions which have been added using **analog-dialtone add**.

analog-dialtone remove

Purpose:

- Removes dial tone capability from an analog terminal.

CAUTION:

- Should only be performed on extensions which have been added using **analog-dialtone add**.

Prerequisites:

- Before removing dial tone, use **analog-dialtone display** to view data.

NOTES:

- The recent disconnect interval is defaulted to **y**. The default can be overwritten if the extension should not be assigned a recent disconnect interval.
- The recent disconnect interval information is not stored in the database. A recent disconnect interval can be displayed directly from the product using **recent-disconnect display** in the administration or product administration areas.

NONANALOG-DIALTONE

VERBS

add
display
remove

COMMANDS

nonanalog-dialtone add

Purposes:

- Adds dial tone to a non-analog extension and its associated multi-function voice terminal in a single transaction. (This means you only have to use one command to administer dial tone to non-analog extensions and terminals.) It is designed to expedite precut changes by providing administration of only the fields required to put the extension in a working state. These fields include: Equipment Line Location (ELL), Class-of-Service (COS), set type, origination preference, termination preference, and up to three call appearance buttons.

Prerequisites:

- Use **carrier add** to add a carrier to the system and an appropriate circuit pack to the carrier. If the carrier has already been added, use **pack add** to add the pack.
- Define the first digit of the extension number using **first-digit change**.
- Use **number-group add** to open a number group that includes the extension number.
- Use **class-of-service add** to define a valid Class-of-Service (COS) for the extension number.

CAUTIONS:

- You cannot administer add-on modules, terminal attributes, Abbreviated Dial capabilities, default terminal dialing, or other button assignments using this command. If you need to administer any of these features immediately, use the appropriate terminal-type object verb transaction (such as **12-button add**) instead.
- You cannot administer extension features or user information using this command. If you need to administer these features immediately use **extension add** instead.

NOTES:

- This transaction provides only one screen. Only the data needed to assign dial tone is provided
- Originating preference is defaulted to 2
- Terminating preference is defaulted to 0
- Attributes of call buttons are defaulted.

nonanalog-dialtone display

Purpose:

- Displays the following for non-analog extension and terminals: extension number, Equipment Location Line (ELL), Class-of-Service (COS), set type, originating preference, termination preference, and up to three call appearance buttons.

CAUTION:

- Should only be performed on extensions added using **nonanalog-dialtone add**.

nonanalog-dialtone remove

Purpose:

- Removes dial tone capabilities from a non-analog extension and terminal in a single transaction.

Prerequisite:

- Before removing dial tone use **nonanalog-dialtone display** to view data.

CAUTION:

- Should only be performed on extensions added using **nonanalog-dialtone add**.

NOTES:

- The recent disconnect interval is defaulted to **y**. The default can be overwritten if the extension should not be assigned a recent disconnect interval.
- The recent disconnect interval information is not stored in the database. A recent disconnect interval can be displayed directly from the product using recent-disconnect display in the administration or product administration areas.

SLS-DIALTONE

VERBS

add
display
remove

COMMANDS

sls-dialtone add

Purposes:

- Adds dial tone capabilities to straight line set (SLS) in a single transaction.
- Designed to expedite precut changes by providing administration of only the fields required to put the SLS in a working state. These fields include: Equipment Line Location (ELL), Class-of-Service (COS), and Analog Type.
- Originating and terminating preference, as well as attributes of its call appearance button, are automatically assigned and cannot be changed.

Prerequisites:

- Use **carrier add** to add a carrier to the system and an appropriate circuit pack to the carrier. If the carrier already exists, use **pack add** to add the pack.
- Define the first digit of the extension number using **first-digit change**.
- Use **number-group add** to open a number group that includes the extension number.
- Use **class-of-service add** to define a valid Class-of-Service (COS) for the extension number.

NOTE:

- This transaction provides only one screen. Only the data needed to assign dial tone is provided.

sls-dialtone display

Purpose:

- Displays the following for straight line sets: extension number, Equipment Location Line (ELL), Class of Service (COS), Analog Type, origination preference, termination preference, and a call appearance button.

CAUTION:

- Should only be performed on extensions added using **sls-dialtone add**.

sls-dialtone remove

Purpose:

- Removes dial tone capabilities from a straight line set in a single transaction.

Prerequisite:

- Before removing dial tone use **sls-dialtone display** to view data.

CAUTION:

- Should only be performed on extensions added using **sls-dialtone add**.

NOTES:

- The recent disconnect interval is defaulted to **y**. The default can be overwritten if the extension should not be assigned a recent disconnect interval.
- The recent disconnect interval information is not stored in the database. A recent disconnect interval can be displayed directly from the product using recent-disconnect display in the administration or product administration areas.

DIAL TONE REPORTS

Along with the dial tone transactions, four reports have been developed: two Manager IV Database Reports, which display data directly from the Manager IV database and the two Switch Reports, which display data directly from the switch. Because of the precut situation, swapping circuit packs or updating the product (without immediately updating the Manager IV database) can cause the data in the switch and the Manager IV database to be unsynchronized. These reports can be used to keep the data synchronized, as well as find discrepancies which need correction.

These reports are presented in the same format as the TCM reports in Sections 9 and 10, of *TCM Operations*. Refer to these sections for information about producing reports and the format conventions used in the Report Directory. You may also want to check *TCM Operations* for more information.

MANAGER IV DATABASE: DB CIRCUIT PACK REPORT

PATH: tcm report-admin db-circuit-pack report

PURPOSE: This command reports circuit packs that have an Equipment Line Location (ELL) from the database.

CAUTIONS: This command does not access the product for information. It goes directly to the database for information. This command takes a while to run, so please be patient. Do not run this command during peak hours.

**SELECTION
OPTIONS:**

- One module number.

**SORT
ORDER:** Output is arranged by pack type.

**SAMPLE
OUTPUT:**

DATABASE CIRCUIT-PACK REPORT				
Pack	Equip-Loc	State		
----	-----	-----		
tn556	00/0/c/08/00	w	()
tn556	00/0/c/08/01	a	()
tn556	00/0/c/08/02	w	()
tn556	00/0/c/08/03	a	()
tn556	00/0/c/08/04	w	()
tn556	00/0/c/08/05	a	()
tn556	00/0/c/08/06	w	()
tn556	00/0/c/08/07	a	()
tn556	00/0/c/08/08	w	()
tn556	00/0/c/08/09	a	()
tn556	00/0/c/08/10	w	()
tn556	00/0/c/08/11	a	()
tn556	00/0/c/08/12	a	()
tn556	00/0/c/08/13	a	()
tn556	00/0/c/08/14	a	()
tn556	00/0/c/08/15	a	()

MANAGER IV DATABASE: DB EXTENSION ELL REPORT

PATH: tcm report-admin db-extension-ell report

PURPOSE: This command reports extension numbers that have an equipment line location (ELL) from the database.

CAUTIONS: This command does not access the product for information. It goes directly to the database for information. This command takes a while to run, so please be patient. Do not run this command during peak hours.

**SELECTION
OPTIONS:**

- A range of extension numbers from first to last extension.

SORT

ORDER: Output is arranged in ascending numerical order of extension numbers.

SAMPLE

OUTPUT:

EXTN	EQUIP
-----	-----
20003	00/0/1/07/2

SWITCH: PBX CIRCUIT PACK REPORT

PATH: tcm report-admin pbx-circuit-pack report

PURPOSE: This command reports the current status of circuit packs such as, "working", "available", in conjunction with the Equipment Line Location (ELL).

PREREQUISITE: Before reporting circuit packs with ELLs, a connection to the product cannot exist. This command performs its own connection.

CAUTION: This command does not access the database for information. It goes directly to the product for information. This command is resource intensive and should only be used during off-peak hours.

SELECTION

OPTIONS: One module number.

SORT

ORDER: Output is arranged by pack type.

SAMPLE

OUTPUT:

PBX CIRCUIT PACK REPORT																												
					<-----Circuit----->																							
					Pack																							
Mod	Cab	Car	Slot	Type	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	2	2	2			
---	---	---	---	---	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3
00	0	c	07	dsl_r	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a		
00	0	c	13	dsl_r	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a		
00	0	c	08	dsl_v	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a		
00	0	c	14	dsl_v	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a		
00	0	c	09	isdn_r	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a		
00	0	c	10	isdn_r	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a		

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SWITCH: PBX EXTENSION ELL REPORT

PATH: tcm report-admin pbx-extension-ell report

PURPOSE: This report collects data directly from switch. It lists the Equipment Line Locations (ELLS) for assigned extension number. For non-analog extensions, the equipment location is that of the home set of the extension. This report has the same format as the db-extension-ell report and can be used to resolve database/switch synchronization problems. This report can also be used to find available extensions when using the dial tone transactions. Output can be displayed or sent to a printer.

SELECTION

OPTION: A range of up to one hundred extension numbers.

SORT

ORDER: Output is arranged in ascending numerical order by extension number.

SAMPLE

OUTPUT:

EXTN	EQUIP
-----	-----
20003	00/0/1/07/2

APPENDIX C: MANAGER IV INSTALLATION TRAINING

Appendix C describes the Manager IV installation training available from AT&T as well as lists the prerequisites for that training.

SERVICES COURSES

The AT&T Services Division offers a number of courses related to the installation of DEFINITY Manager IV.

The following courses (or equivalent knowledge/experience) are prerequisites for Manager IV installers:

- For all Manager IV installations
 - Introduction to Processors (Course #T320, three days in length)
 - Connecting Terminals, Printers, and Modems (Course #T323, four days)
 - Introduction to UNIX (Course #T325, five days)
 - Manager IV Installation and Maintenance, System Administration, and User Training (Course #T790, four days)*

- Manager IV installations on a 3B2
 - 3B2-XM System Training (Course #T665, 1 day)
 - 3B2 Remote Package**
 - Manager IV Installation and Maintenance, System Administration, and User Training (Course #T790, 3 days)
 - SCSI interface (Course #T0093, 1.5 days)

For more information on these courses and class availability, contact your regional training coordinator, Services Regional Training Contact, or the Marketing Branch Office.

* NCSC Personnel should take course T791 instead of T790

** This training is covered in the 3B2 Remote Management Package Manual # 305-455.

APPENDIX D. FIELD SERVICE INSTALLATION TASKS

This appendix provides information and procedures specific to the field technician's function of installation preparation. This appendix covers the following:

- Installation prerequisites
- Installation of UNIX on the host processor [3B2-600] [6386]
- Preinstallation sanity checks
- Hardware connectivity information.

PREREQUISITES TO INSTALLATION

Use the following checklists to verify that the minimum required hardware, software, and data collection forms needed to install Manager IV are available.

Materials Checklist

All equipment that was recommended for the site by the Account Team and the configuration program must be present before the installation process begins. The Materials Checklist lists the minimum materials needed for an installation.

- 120MB tape cartridges for backups (customer provides tapes)
- A dedicated printer for the console
- Remote console capability
- Communication ports that support uucp
- Communication ports that support Product Access
- Installed modems, communication lines, and cabling for Product Access and uucp
- Manager IV tapes
- An installed host processor [3B2-600] [6386] as ordered through DOSS
- UNIX System V Release [6386] 3.2.2 or [3B2-600] 3.2.1
- Tape cartridges for backups

Data Checklist

All data needed during the installation and initialization process is collected by the customer (with the aid of the Implementation Team) and recorded on forms provided in *Manager IV Planning and Implementation*. (Form IDs listed in parentheses are keyed to the IDs on the forms themselves.) The data applies to both site configuration and particular Manager IV applications. Use the following Data Checklist to insure that *all* the applicable forms are completed and available before proceeding with the Manager IV installation.

- Input Parameters Worksheet and/or the DOSS Input Report
- Configurator Output (including the number and types of modems and ports for this site)
- Manager IV Port Configuration Form (sa2)
- Corporation Information (sa3)
- Product Definition Form (sa4)
- User Class/Login-ID Assignments (sa1)
- Nonswitch data forms:
 - Unassigned Equipment Inventory Form (tcm1)
 - Set Attribute Form (tcm2)

THE MANAGER IV TAPES AND TAPE CARTRIDGES

The Manager IV application software is distributed tape cartridges.

When installing the Manager IV tapes, make sure the write-protection tabs are set to "SAFE." After a successful installation, the Manager IV tapes/cartridges should be stored in a safe place. Take the following precautions:

- Always put a protective guard around them when not in use.
- Keep them away from magnetic fields. This means not only magnets, but any electric appliances, especially:
 - Microwave ovens
 - Tape recorders/players
 - Televisions or CRTs
 - Electrical motors (including blenders, food processors, printers, etc.)
 - Generators
- Keep them out of sunlight.
- Keep them away from dampness.
- Never touch the recording surface.
- Do not put heavy objects on them.

GUARDING AGAINST LOSS OF DATA ON THE HOST PROCESSOR

To ensure minimum downtime and no data loss since the latest backup in a power failure, two pieces of hardware and a software package must be installed on your host processor.

- Hardware:
 - Uninterrupted Power Supply (AT&T IKVA UPS)
 - Alarm Interface Card (AIC board) [3B2-600]
 - Remote Maintenance Card (RMC board) [6386]
- Software:
 - Remote Maintenance Package (RMP)

The hardware items listed above are part of the standard Manager IV [3B2-600] [6386] configuration, which is ordered through DOSS. The Remote Maintenance Package (RMP) is part of the UNIX System Administration Installation software package that is provided with your Manager IV system on floppy disks to each Manager IV site. If the hardware (the [3B2-600] AIC board [6386] RMC and the UPS) and the software (RMP) are installed correctly and if the installation program, `sminstall`, is run correctly, your host processor will shut down smoothly in an AC power failure.

Power Failures

If your host processor is equipped with the AIC board and the UPS, and the RMP is installed, the following series of events occurs in an AC power failure.

1. The UPS detects an AC power failure, switches to battery power, and notifies the AIC board [3B2-600] or RMC [6386], which sets the "AC FAILED."
2. The sanedaemon notices the AC FAILED bit and executes the `$$SYSROOT/etc/acfail` program. (The sanedaemon is run automatically once every minute by the RMP).
3. The `$$SYSROOT/etc/acfail` program runs the following script that performs a graceful shutdown before the UPS runs out of battery power.

Note: As originally provided, the `$$SYSROOT/etc/acfail` script is empty and must be edited using a standard UNIX editor to include the following single command:
`$$SYSROOT/etc/acfail`. This release of Manager IV will edit `$$SYSROOT/etc/acfail` automatically in the software installation or upgrade steps.

4. When a power failure is detected, Manager IV issues the following warning message to any logged in terminal:

```
AC ELECTRIC POWER FAILURE DETECTED
SHUTDOWN BEGINNING IN 1 MINUTE
PLEASE LOG OFF
```

5. If power is restored in the next minute, Manager IV issues the following message to all logged in terminals:

```
AC ELECTRIC POWER RESTORED
THE SYSTEM WILL NOT BE SHUTDOWN
```

Otherwise, immediate shutdown procedures will begin.

6. If the UPS reports both an AC FAILED condition and also a LOW BATTERY condition, then the AIC board [3B2-600] or RMC [6386] will force a PANIC. PANIC does not permit the `$$SYSROOT/etc/acfail` script to shut down the system gracefully. If the condition clears during the PANIC, the system will reboot; otherwise, it will remain in firmware mode.

INSTALLING UNIX ON THE 3B2-600

Although the 3B2-600 is shipped with UNIX installed, the technician who installs the 3B2-600 must reinstall UNIX to insure that all appropriate utilities are loaded correctly. The steps which must be taken to reload UNIX are listed below.

1. Perform a full system restore. See the "Procedure: Performing a Full System Restore" further along in this section.
2. Load UNIX utilities from SCSI tape as described in the *AT&T 3B2-600 Owner/Operator Manual (Release 3)*.
3. Once UNIX has been installed on the processor, the following system setup message will be displayed:

```
This machine has to be set up by you.  When
you see the 'login' message, type setup....
```

- When the 'Console Login' prompt is displayed, type '**setup**' to start the interactive process.

System setup consists of setting the date, time, and timezone on the processor. Also, setting passwords for administrative logins, creating logins, and setting the processor's node name. Refer to the section, "Initial Setup" in the *AT&T 3B2-600 Owner/Operator Manual* for details.

Note: It is also possible to run system setup from the **sysadm syssetup** command. When the syssetup menu is displayed on the screen, select option "setup" and follow the prompts. You must be logged on as **root** to perform system setup in this manner.

Procedure: Performing a Full System Restore [3B2-600]

This procedure provides the necessary steps for performing a full system restore.

Documents Used In This Procedure:

AT&T 3B2-600 System Administrator's Guide

Prerequisites:

This operation must be done in single-user mode. All other individuals must be logged off the system.

CAUTION: A full system restore should not be performed until you copy any files that you want to keep onto a floppy diskette or tape. All files are destroyed in this procedure.

Procedure Steps:

1. Change directory to root (/), and bring the system to the firmware mode (run-level 5).

```
cd /
sysadm firmware
```

2. Choose the "Full Restore" option by entering the number **1**. See the following screen.

```
UNIX System V Release 3.2.1 Installation
          1) Full Restore
          2) Partial Restore

When responding to a question, you may use the "backspace" key
to erase the last character typed or the "@" key to erase the
entire line. Enter "help" for additional information.

Selection? [ 1 2 quit help ] 1

          - FULL RESTORE selected -
```

3. Select the disk to hold the ROOT file system.

The system will generate a list of the possible number of ROOT disks configured on the system. At the end of this list enter **RETURN** to choose the system default (disk 1). See the following screen.

```
Select disk to hold the ROOT file system [(1 - 5) quit help](default 1)
```

4. Select the disk that will hold the USR file system.

After making the above selection, the system generates a list of the disks on which the USR file system can be configured. When prompted enter the number **1**. See the following screen.

```
Select disk to hold the USR file system [(1 - 9) quit help](default 6) 1
```

Note: At this point the system begins reformatting the disk.

The selections made in this step and the previous one mean that the ROOT and USR file systems reside on the same disk (disk 1).

5. Partition the formatted disk.

After the disk has been formatted you will be prompted for specific information regarding the partitioning of the disk. Enter the following information as illustrated on the screen below.

```
Use the default hard disk partitioning? [ yes no help ] (default yes) no  
  
How many blocks for the "sysdump" partition?  
[ (0 - 131072) quit again help ] (default 32768) RETURN  
  
How many blocks for the "swap" partition?  
[ (3500 - 248997) quit again help ] (default 20640) 32925  
  
How many blocks for the "root" partition?  
[ (8928 - 225315) quit again help ] (default 25830) RETURN  
  
How many blocks for the "usr" partition?  
[ (9360 - 209160) quit again help ] (default 209160) RETURN  
  
Making file system on the hard disk(s) ... (please wait)
```

Note: As indicated on the above screen, you designate the system default in all instances except the swap partition.

6. Proceed with installing the initial core system files.

After the system has completed the partitioning of your core system, you will be prompted to either proceed or to specify different partitioning. Enter **go** at the prompt to begin installing the initial core system files. See the following screen.

```
Type "go" to proceed, "again" to start over [ go again]  go
```

At this point the system will install the initial core system files and return the UNIX prompt when it has completed. At this point you are ready to load the UNIX utilities.

END OF PROCEDURE

INSTALLING UNIX ON THE 6386

The following section provides information regarding UNIX installation on the 6386 processor.

Procedure: Installing UNIX [6386]

Purpose:

The following procedure provides you with the steps for installing UNIX on the 6386 processor.

You must be logged on as / (root) to perform this procedure.

Documents Used In This Procedure:

- *AT&T UNIX System V/386 Release 3.2.2 User's/System Administrator's Guide*
- *AT&T UNIX System V/386 Release 3.2.2 User's System Administrator's Reference Manual*

Notes: As a supplement to the procedure steps you can find specific screen output and prompts in the *386 User's/System Administrator's Guide*.

Procedure Steps:

1. Boot the machine.
Insert 3 1/2" floppy bootable tape
Enter: **CNTRL-ALT-DEL**
2. Strike **Enter** to install UNIX on the hard drive.
3. Enter **n** to indicate that this is new installation of UNIX.
4. Enter **y** to continue.
5. Enter **y** to indicate that you want to format the hard disk.
6. The system will ask you if you want to partition the disk at 90 percent UNIX and 10 percent MS-DOS. You want 98 percent of the disk devoted to UNIX and 2 percent for MS-DOS.
Enter: **n**
7. Select the first menu item (Create a partition) on the screen.
Enter: **1**
8. Designate the type of partition you want to create.
Enter: **1** (UNIX system)
9. Select the percent of the disk that is to be used for UNIX.
Enter: **98**
10. Activate the partition.
Enter: **y**
11. Create another partition.
Enter: **1**

12. Designate the type of partition that you want to create.
Enter: **1** (MS-DOS)
13. Select the percent of the disk that is to be used for MS-DOS.
Enter: **2**
14. Do not activate the partition.
Enter: **n**
The system will respond with data regarding the partition, such as status and type.
15. Update the disk configuration and exit the partition screen.
Enter: **4**
16. Perform a surface analysis of the disk.
Enter: **y**
17. Indicate that the current allocation is unacceptable.
Enter: **n**
18. Indicate that you want to separate root and usr.
Enter: **y**
19. Indicate that you do not want any additional usr file systems.
Enter: **n**
20. Indicate that you want crash/dump area on the disk.
Enter: **y**
21. Indicate that you want a swap/paging area on the disk.
Enter: **y**
22. Indicate the size of crash/dump area.
Enter: **36**
23. Define the size of the swap/paging area.
Enter: **36**
24. Indicate the number of cylinders for root.
Enter: **13**
25. Indicate the number of cylinders for the usr file system.
Enter: **200**
26. Indicate that the current allocation is acceptable when prompted.
Enter: **y**
27. Reboot the processor.

END OF PROCEDURE

At this point you can load the UNIX utilities on to the 6386 processor. Refer to *AT&T UNIX System V/386 Release 3.2.2 User's/System Administrator's Guide* for specific information.

INSTALLING UNIX ON THE NCR 3332

The following section provides information regarding UNIX installation on the NCR 3332 processor.

Procedure: Installing UNIX [NCR 3332]

Purpose:

The following procedure provides you with the steps for installing UNIX on the NCR 3332 processor. You must be logged on as / (root) to perform this procedure.

Documents Used In This Procedure:

- *AT&T UNIX System V/386 Release 3.2.2 User's/System Administrator's Guide*
- *AT&T UNIX System V/386 Release 3.2.2 User's/System Administrator's Reference Manual*

Procedure Steps:

1. Boot the machine.
Insert 3 1/2" floppy bootable tape
Enter: **CNTRL-ALT-DEL**
2. Strike **Enter** to install UNIX on the hard drive.
3. Enter **n** to indicate that this is new installation of UNIX.
4. Enter **y** to continue.
5. Enter **y** to indicate that you want to format the hard disk.
6. The system asks if you want to partition the disk at 90 percent UNIX and 10 percent MS-DOS. You want 98 percent of the disk devoted to UNIX and 2 percent for MS-DOS.
Enter: **n**
7. Select the first menu item (**Create a partition**) on the screen.
Enter: **1**
8. Designate the type of partition you want to create (MS-DOS first).
Enter: **2** (MS-DOS)
9. Select the percent of the disk that is to be used for MS-DOS.
Enter: **2**
10. Do not activate the partition.
Enter: **n**
11. Create another partition.
Enter: **1**
12. Designate the type of partition that you want to create.
Enter: **1** (UNIX system)

13. Select the percent of the disk that is to be used for UNIX.
Enter: **98**
14. Activate the partition.
Enter: **y**
The system will respond with data regarding the partition, such as status and type.
15. Update the disk configuration and exit the partition screen.
Enter: **4**
16. Perform a surface analysis of the disk.
Press: **<Enter>**
17. Indicate that the current allocation is unacceptable.
Enter: **n**
18. Indicate that you want to separate **root** and **usr**.
Enter: **y**
19. Indicate that you DO want an additional **usr** file system.
Enter: **y**
20. Indicate that you want a crash/dump area on the disk.
Enter: **y**
21. Define the size of the swap/paging area.
Enter: **64**

(Note that you will have 497 cylinders to work with according to the system. However, when adding up the cylinders used, you actually are assigning 499.)
22. Indicate the size of the crash/dump area.
Enter: **64**
23. Indicate the number of cylinders for root.
Enter: **33**
24. Indicate the number of cylinders for the **usr** file system.
Enter: **200**

Keep in mind the use of two 535-megabyte hard drives is standard. Leave the "regular" **usr** filesystem partitioned for 200 cylinders. (For the gigabyte disk, using the remainder of the disk for one filesystem would be 839 cylinders. That is exceptionally large and, ideally, needs to be broken up into multiple filesystems.)
25. The remaining cylinders are designated to **/usr2**.
138 cylinders should remain.

At this time, the system only allows you to partition one additional **/usr[2]** filesystem. You need to edit the partitions file and use the UNIX command **mkpart** to partition the disk for any other needed partitions. This cannot be accomplished until later on in the process.

26. Indicate that the current allocation is acceptable when prompted.
Enter: **y**
At this time, all the files on the SCSI boot disk are copied to their respective directories on the hard disk.
IMPORTANT: Wait for the prompt before continuing!
27. At the prompt, reboot the processor.
Wait for the next prompt to reboot the system.
Remove the floppy and then strike: **CNTRL-ALT-DEL**
28. Load in the UNIX Foundation Set (cartridge tape).
Enter: **C**, followed by **<ENTER>** when ready. The system will start loading UNIX.
29. You are prompted for "root" and "install" passwords.
Enter and re-enter these passwords.
30. You are prompted to select the **FOUNDATION SET ADD-ON PACKAGES**.
Press: **Enter**
Although you may load additional packages, the recommended package numbers to load are:
Enter package numbers: **1 <RETURN> 3 <RETURN> 4 <RETURN> 5 <RETURN> 6 <RETURN>**
Enter: **<Esc>**
31. Confirm your selections.
Press: **<Enter>** twice.
The selected packages will now load.
32. Remove tape cartridge and insert SCSI Support Package Floppy Version 2.3.
Press: **<Enter>**
The floppy loads and the system indicates a reboot is needed.
33. Remove the floppy and reboot.
Enter: **CNTRL-ALT-DEL**
34. When the system boots up, load in additional software from floppys. For example, Equinox software driver, etc.
Enter: **installpkg**

If loading multiple floppys, press **<ESC>** after each one is loaded. This returns you to the prompt and **installpkg** can be entered again. When all floppys are loaded, you can press **<ENTER>** and the system will reboot automatically after all the floppys have been installed.

END OF PROCEDURE

At this point you can load the UNIX utilities on to the NCR 3332 processor. Refer to *AT&T UNIX System V/386 Release 3.2.2 User's/System Administrator's Guide* for specific information.

PRE-INSTALLATION SANITY CHECKS

During the planning stages the following steps are taken to assign the product access ports.

1. The DOSS information regarding the number of ports required and the hardware needed to provide these ports is obtained.
2. The Manager IV Port Configuration Form is completed.
3. Modems and communication lines are installed.
4. UNIX is installed and UNIX names are assigned to Manager IV ports.
5. The UNIX installer records the UNIX port names in the "Port Name" field of the Manager IV Port Configuration Form.

Procedure Summary

Prior to installing Manager IV, certain checks must be performed on product access ports to ensure a valid port configuration. This section includes the procedures necessary to test the ports. Later, after Manager IV is installed, ports will be added to the database and tested again (see Section 5). The following procedures are provided:

- Verifying the Product Access Ports
- Testing the Product Access Ports

Procedure: Verifying the Product Access Ports [3B2-600]

Purpose:

Product access ports enable Manager IV to connect to a switch or adjunct. Ports used for product access must be configured *exclusively* for product access. Use this procedure to ensure that the product access ports are properly configured through UNIX and that these ports are accessible by Manager IV.

Notes:

- Product access port assignments are listed on the Manager IV Port Configuration forms that have been completed by the Implementation Team. The Manager IV Port Configuration Form is found in *Manager IV Planning and Implementation*. Have that form on hand.
- This procedure is performed from the root login.

Procedure Steps:

1. Check the configuration for the product access ports in the /dev directory.

Enter: **ls -l /dev/tty***

System Output [Sample]:

```
crw-rw-rw   2  root   other  1,  3 May 5 17:06 /dev/tty104
```

The listed entries should conform to the following conventions:

- Character device—first letter must be "c"
 - Root ownership
 - Read/write permission for owner, group, and others—"rw-rw-rw-"
2. Verify that product access ports are not also defined as uucp ports by listing the files used for uucp. Product access ports should not be listed.

Enter: **cat /usr/lib/uucp/Devices**

3. Verify that the product access ports are listed in the `/etc/inittab` file and that the action field entry is off. If needed, edit the file to correct the entries and add comments for each port to specify what the port is for.

Enter: **cat /etc/inittab**

Sample Output:

```
9:245:respawn:/etc/getty -t 60 tty101 9600 #Terminal Port
10:245:respawn:/etc/getty -t 60 tty102 9600 #Terminal Port
11:245:respawn:/etc/getty -t 60 tty103 9600 #Terminal Port
12:245:respawn:/etc/getty -t 60 tty104 9600 #Terminal Port
13:245:respawn:/etc/getty -t 60 tty105 1200 #CSSO Port
14:245:off:/etc/getty          tty106 1200 #Alarm Orig. Port
15:245:off:/etc/getty          tty107 1200 #uucp Port.
16:245:off:/etc/getty          tty109 1200 #Product Access Port
17:245:off:/etc/getty          tty110 1200 #Product Access Port
18:245:off:/etc/getty          tty111 1200 #Product Access Port
19:245:off:/etc/getty          tty112 1200 #Product Access Port
```

END OF PROCEDURE

Procedure: Verifying the Product Access Ports [6386]

Purpose:

Product access ports enable Manager IV to connect to a switch or adjunct. Ports used for product access must be configured *exclusively* for product access. Use this procedure to ensure that the product access ports are properly configured through UNIX and that these ports are accessible by Manager IV.

Notes:

- Product access port assignments are listed on the Manager IV Port Configuration forms that have been completed by the Implementation Team. The Manager IV Port Configuration Form is found in *Manager IV Planning and Implementation*. Have that form on hand.
- This procedure is performed from the root login.

Procedure Steps:

1. Check the configuration for the product access ports in the /dev directory.

Enter: **ls -l /dev/tty***

System Output [Sample]:

```
crw-rw-rw   2  root   other  1,  3 May 5 17:06 /dev/ttyh04
```

The listed entries should conform to the following conventions:

- Character device—first letter must be "c"
 - Root ownership
 - Read/write permission for owner, group, and others—"rw-rw-rw-"
2. Verify that product access ports are not also defined as uucp ports by listing the files used for uucp. Product access ports should not be listed.

Enter: **cat /usr/lib/uucp/Devices**

3. Verify that the product access ports are listed in the /etc/inittab file and that the action field entry is off. If needed, use the Peripheral Setup item of the System Administration menu within the UNIX face utility to correct the entries and add comments for each port to specify for what each port is used.

Enter: **cat /etc/inittab**

Sample Output:

```
S03:23:respawn:/usr/lib/uucp/uugetty -r -t60 ttys01 9600 #Term. Port
S04:23:respawn:/usr/lib/uucp/uugetty -r -t60 ttys02 9600 #Term. Port
S05:23:respawn:/usr/lib/uucp/uugetty -r -t60 ttys03 9600 #Term. Port
S06:23:respawn:/usr/lib/uucp/uugetty -r -t60 ttys04 9600 #Term. Port
S07:23:respawn:/usr/lib/uucp/uugetty -r -t60 ttys05 9600 #Term. Port
S08:23:off:/etc/getty ttys06 1200 #Alm Org. Port
S09:23:off:/etc/getty tty107 1200 #uucp Port.
S010:23:off:/etc/getty tty109 1200 #Prd. Ac. Port
S011:23:off:/etc/getty tty110 1200 #Prd. Ac. Port
S012:23:off:/etc/getty tty111 1200 #Prd. Ac. Port
S013:23:off:/etc/getty tty112 1200 #Prd. Ac. Port
```

END OF PROCEDURE

Procedure: Testing the Product Access Ports [3B2-600 & 6386]

Purpose:

Use this procedure to test each product access port by using UNIX commands.

This procedure applies to the product access modems recommended for use with Manager IV.

Prerequisites:

- The UNIX uucp package must have been installed before this procedure can be used.
- The CSSO dial-in port must have been configured and tested.

Procedure Steps:

1. From the UNIX shell, edit /usr/lib/uucp/Devices and make the following entry:

#Manager IV Product Access Port test

Direct *port-file* - Any direct

where: *port-file* = port's device file name without the /dev prefix. For example: tty102.

2. Ensure that the computer port can connect to the attached modem.

Enter: **cu -s1200 -l *port-file***

System Response:

- If the system responds "Connected," go to Step 3.
- If the system responds "Cannot Access Device," do the following:
 - Check the read/write permissions on /dev/*port-file*.
 - Check the modem to ensure that the autocal feature is installed and that all the S1 switches are in the up (enabled, closed) position.
 - Check the hardware connections: the computer port, the cable, and the modem.

Once you resolve any problems, and you receive the message "Connected," go to Step 3.

3. Ensure that the computer port communicates with the connected modem.

Enter: **(RETURN)**

System Response: The modem should respond with:

DATAPHONE II Automatic Caller 1200 bps
Dial, Enter command or H for "Help"
:

No response indicates a hardware problem with the port, the modem, or the cable connecting the port to the modem; or incorrect option settings on the modem.

Once you resolve any problems and you receive the message indicated above and the ":" prompt, go to Step 4.

4. Ensure that the modem cancel character is set correctly.

Enter: @

System Response: The modem should send the message "Cancelled" to your screen. If this message is received, go to Step 5; otherwise go to Step 4A.

- A. Set the modem cancel character.

Enter: **RETURN**

System Response: The modem should respond with "Invalid Command" followed by a ":" prompt.

- B. Enter: **c @ RETURN**

System Response: The modem should respond with "Cancel Character is @". A different response indicates a probable modem hardware problem.

Once you resolve any problems and ensure that the cancel character is correctly set to @, go to Step 5.

5. Ensure that the modem can successfully dial a call using a Central Office (CO) line.

- A. Enter: *C+telno*

where: *C* = the dial access code for a CO line. For example: **9**.

telno = the external phone number for the CSSO dial-in port

System Response:

```
Dialing...
Ringing...
Answered...
login:
```

- B. Enter the normal log on sequence, then exit.

System Response:

- If the system responds with "Disconnected", go to Step 6.
- If the system responds with "login" terminate the cu command by entering ~. Go to Step 6.
- If any of the following messages appear, you must resolve the error before proceeding to Step 6.

"No dial tone" indicates phone line connected to the modem is faulty.

"<C>+... No dial tone" indicates no CO access for phone line connected to the modem.

"Busy" indicates CSSO dial-in port is in use, incorrect phone number, or phone line problem.

"No Answer" indicates CSSO dial-in port not properly configured, CSSO modem is faulty or not optioned for auto-answer, wrong phone number, or phone line problem.

"Not Connected" indicates modem-to-modem handshake not successful. One or both modems are faulty or optioned incorrectly.

6. Once you successfully dial a CO line, go through the log on and disconnect sequence until you have completed testing the port by using UNIX commands. As the last step in this process, **remove the entry that you entered in Step 1 from /usr/lib/uucp/Devices**.

END OF PROCEDURE

CONNECTIVITY INFORMATION

This section covers connectivity information for the Manager IV host processor communications ports and charts for switch settings on modems.

PRODUCT ACCESS PORTS

Figure D-1 shows how the components link together between the host processor and the 3B2 or 6386 processors. The maximum length of the M25A cable is 50 cable-feet. An asynchronous dial-out port on the host processor and a 2224CEO modem with the autocall feature are required to access System 85, System 75, Information Systems Network (ISN), Audio Information Exchange (AUDIX), and an adjunct processor. This arrangement is also used for a uucp dial-out port. For System 75, a pooled modem board (Product ID 63119) is required on the System 75 end also.

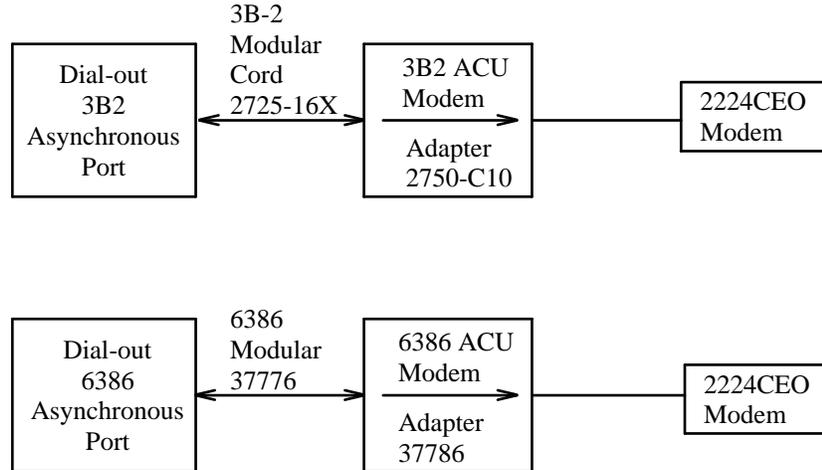


Figure D-1. 3B2 and 6386 Wiring Scheme: Dial-out Asynchronous Port

Modem Settings for Dial-Out Ports

There are three types of modems which are supported by Manager IV: 2224CEO, 2224AD, and 2224BD. The correct setting for each type of modem when used with a dial-out asynchronous port are explained below.

Note: The main processor serial ports are not supported for dialing out; only the Eports/IPC/Equinox ports should be used for dialing out.

2224CEO Modem

With new systems, the 2224CEO modem is used. In order for the 2224CEO modem to work in the Manager IV Product Access environment, the factory defaults for switch settings and software options have to be changed slightly. The "S1" switch, located behind the sliding panel on the faceplate of the modem, must be set as follows:

	Position							
Switch	1	2	3	4	5	6	7	8
S1	D(F)	D(F)	D(F)	D(F)	D(F)	U(C)	D(F)	D(F)
D=switch down; U=switch up (F)=factory setting; (C)=setting for Manager IV if different from factory.								

Note: One the hardware switch options have been changed, press the modem reset button (to the left of switch S1). Reset will make the new setting take effect.

The software options on the 2224CEO must also be modified from the factory options. Options are set by interacting with the modem software.

1. Connect to the modem in one of the following ways:

- Directly— Attach a terminal directly to the modem using a normal 25-pin RS232C cable. Set the terminal speed to 1200, 2400, or 4800.
- Via Ports—
 - A. Attach the modem to one of the Manager IV Product Access ports using an ACU/MODEM connector.
- Add the following line to the /usr/lib/uucp/Devices file:

Direct *ttyNN* - Any direct

where: *ttyNN* is the device filename for the port to which the modem is connected

- Change the owner of the device file to uucp.
- Connect to the modem using **cu**.

Enter: **cu -s2400 -l*ttyNN***

where: *ttyNN* = the device filename for the port to which the modem is connected

2. Once connected to the modem, press **CR** (carriage return) to display the modem heading, followed by a prompt.
3. View the current options.

Enter: **o**

4. Verify that the options listed match the values listed below. Options indicating "C" will most likely not match the values listed below, since they are options specific to the settings required by Manager IV. All options should be verified.

Option Number	Value	Setting (F=factory M=Mgr IV setting)	Option Number	Value M=Mgr IV setting)	Setting (F=factory
1	y	F	33	n	F
2	y	F	34	1	M
3	y	F	35	3	F
4	y	F	36	0	M
5	y	F	37	0	F
6	N/A		38	0	F
7	y	M (dial-in)	39	5	F
	n	M (Product Access)	40	y	M
8	N/A		41	0	M
9	n	F	42	n	M
10	n	F	43	n	F
11	n	F	44	n	F
12	y	M	45	n	F
13	n	F	46	n	F
14	n	F	47	N/A	
15	y	F	48	N/A	
16	n	F	49	N/A	
17	10	F	50	N/A	
18	n	F	51	n	F
19	n	F	52	f	F
20	1	F	53	f	F
21	0	F	54	y	F
22	:	F	55	n	F
23	^H	F	56	y	F
24	@	F	57	N/A	
25	\$B	F	58	n	F
26	\$.:	F	59	N/A	
27	n	F	60	N/A	
28	n	F	61	N/A	
29	0	F	62	N/A	
30	n	F	63	n	F
31	y	F			
32	I	F			

5. Change any options listed which do not match the options listed in the above step.

Enter: **oN=value**

where: *N* = the option number
value = correct value for the option

For example, to change option 12 to "y", enter: **o12=y**

6. When all options have been modified to reflect the ones listed in this book, display the options and re-verify their values.

Enter: **o**

Remote Console Access with the Remote Maintenance Package (RMP)

Use the following 2224CEO modem settings for Remote Console Access with the Remote Maintenance Package (RMP):

1. Ensure that S1 switch positions 6 and 7 are **up**.
2. Ensure that the following options are set:
 - 012 = y
 - 034 = 1
 - 036 = 0
 - 041 = 0

The rest of the option settings are the factory default settings.

For further information on the options and installation of the 2224CEO modem, see *Dataphone II 2224CEO Modem User's Manual* order number, 999-100-292.

2224AD Modem

The following diagram shows the location of switches on the 2224AD when used as a dial-out asynchronous port:

0 = open

1 = closed (that is, the rocker switch points to the number)

Switch	Position							
	1	2	3	4	5	6	7	8
S1	1	1	1	1	-	-	-	-
S10	1	1	1	1	1	1	1	-
S9	1	1	1	1	1	1	1	1
S8	1	1	1	1	1	1	1	1
S14	0	-	-	-	-	-	-	-
S12	0	0	0	0	0	0	-	-
S7	-	0	1	1	0	0	0	0

2224BD Modem

The following table shows the allowable settings for a 2224BD modem, when used as a dial-out:

0 = open

1 = closed (that is, the rocker switch points to the number)

Location	Switch	Position							
		1	2	3	4	5	6	7	8
front	S1	1	1	1	1	-	-	-	-
back	S8	1	1	1	1	1	1	1	1
back	S9	1	1	1	1	1	1	1	1
back	S10	1	1	1	1	1	1	1	1
inside	S6	0	0	0	0	1	0	0	0
inside S7	0	0	0	0	1	1	-	-	

DIALUP LINK CONNECTION

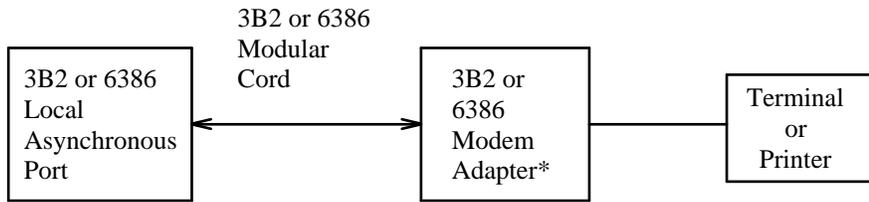
The connection between the host processor and the System 85 or DEFINITY Generic 2 switch is accomplished through a dialup connection. The recommended Generic 2 switch port is the PPG0 port. For specific wiring information, please see, *Manager IV Planning and Implementation*.

TERMINAL AND PRINTER PORTS

The following diagrams show how the components link together between the Manager IV host processor and printers and terminals.

Connecting a Printer or Terminal Locally

One local asynchronous port is required for each local terminal or printer, as shown in Figure D-2.



* If terminal or printer is equipped with RS232C interface, for the:

- 3B2: use 2750-C-09 (modular - to - 25 pin male RS232C adapter) or 2750-C12 (modular - to - pin female RS232C adapter).
- 6386: use the 37782 (modular - to - 25 pin male RS232C adapter).

Figure D-2. Local Terminal or Printer

Connecting a Terminal Remotely

As shown in Figure D-4, one dial-in asynchronous port and a 2224 modem with the autocal feature is required for every simultaneous user located more than 50 cable-feet away from the host processor. This arrangement is also necessary for a remote terminal for access by AT&T National Customer Support Center (NCSC).

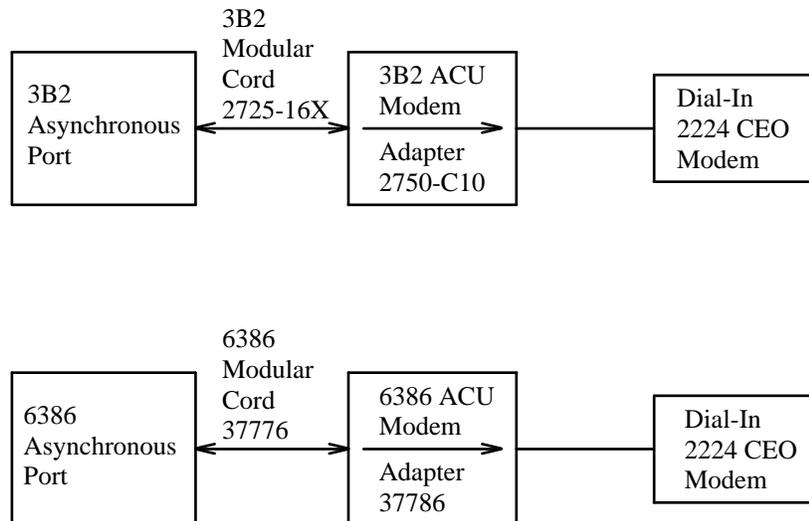


Figure D-3. 3B2 and 6386 WGS Wiring Schemes: Dial-In Asynchronous Ports

Modem Settings for Dial-In Ports

Manager IV supports the use of three types of 2224 modems: 2224CEO, 2224AD, and 2224BD. The following tables represent the correct settings which must be used for Manager IV.

2224CEO Modems

For correct modem settings see "Modem Settings for Dial-Out Ports" previously discussed in this appendix. Pay particular attention to the setting for software option 7; for dial-in, the correct value is "y."

2224AD Modems

The following table presents allowable settings for the 2224AD modem when used with a dial-in asynchronous port:

0 = open

1 = closed (that is, the rocker switch points to the number)

Switch	Position							
	1	2	3	4	5	6	7	8
S1	0	1	1	0	-	-	-	-
S10	1	1	1	1	1	1	1	-
S9	1	1	1	1	1	1	1	1
S8	1	1	1	1	1	1	1	1
S14	0	-	-	-	-	-	-	-
S12	0	0	0	0	0	0	-	-
S7	-	0	1	1	0	0	0	0

2224BD Modems

The following table shows the allowable settings for a 2224BD modem, when used as a dial-in asynchronous port:

0 = open

1 = closed (that is, the rocker switch points to the number)

Location	Switch	Position							
		1	2	3	4	5	6	7	8
front	S1	0	1	1	0	-	-	-	-
back	S8	1	1	1	1	1	1	1	1
back	S9	1	1	1	1	1	1	1	1
back	S10	1	1	1	1	1	1	1	1
inside	S6	0	0	0	0	1	0	0	0
inside	S7	0	0	0	0	1	1	-	-

Printer Option Settings

The recommended printer option settings for the 5320 are:

CPI : 10
LPI : 6
FLGT: 66
LMGN: 1
RMGN: 80
TMGN: 1
BMGN: 66
CHAR: ASCI
ALTF: ASCI
WRAP: YES
PCTL: NO
EMUL: ANSI
VIEW: MAN
LFON: NO
CRON: NO
CMOD: IMDM
PRTY: NONE
BAUD: 9600
FLOW: CHAR
SRTS: EIA
DC24: NO
DALM: NO
DEOT: NO
LP : NO
ECHO: NO
ABAA: NO
BUFR: 2K
ALGN: 0

HTAB: 1,9,17,25,33,41,49,57,65,73,81,89,97,105,113,121,129
VTAB:

RTRN: <-

AUT1:
AUT2:
AUT3:
AUT4:
AUT5:
AUT6:

ANBK: <=Model 5320

NCSC ALARM PORT

As shown in Figure D-4, a dial-out asynchronous port, a 2224 modem with the autocall feature are necessary for sending alarms to the NCSC.

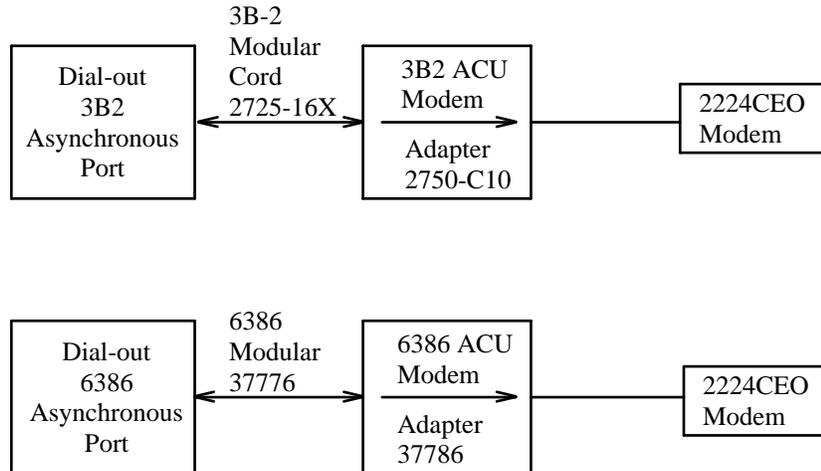


Figure D-4. Dial-Out Asynchronous Port for Sending Alarms to the NCSC

Modem Settings for Dial-Out Ports

Manager IV supports three types of 2224 modems: 2224CEO, 2224AD, and 2224BD. The factory settings for the modems must be changed in order for the ports to operate correctly with Manager IV. The following tables provide the correct modem settings.

2224CEO Modem

Refer to the previous discussion on 2224CEO Modem settings for dial-out ports for correct switch and software option settings.

2224AD Modem

The following table presents allowable settings for the 2224AD modem when used with a dial-out asynchronous port:

0 = open

1 = closed (that is, the rocker switch points to the number)

Switch	Position							
	1	2	3	4	5	6	7	8
S1	1	1	1	1	-	-	-	-
S10	1	1	1	1	1	1	1	-
S9	1	1	1	1	1	1	1	1
S8	1	1	1	1	1	1	1	1
S14	0	-	-	-	-	-	-	-
S12	0	0	0	0	0	0	-	-
S7	-	0	1	1	0	0	0	0

2224BD Modem

The following table shows the allowable settings for a 2224BD modem, when used as a dial-out:

0 = open

1 = closed (that is, the rocker switch points to the number)

Location	Switch	Position							
		1	2	3	4	5	6	7	8
front	S1	1	1	1	1	-	-	-	-
back	S8	1	1	1	1	1	1	1	1
back	S9	1	1	1	1	1	1	1	1
back	S10	1	1	1	1	1	1	1	1
inside	S6	0	0	0	0	1	0	0	0
inside	S7	0	0	0	0	1	1	-	-

Setting Up the Silent Knight Converter

The Silent Knight® Auto Dialer plugs into the ALM port on the AIC board [3B2-600], RMC board [6386]. Jumper Options, terminal setting, and pinouts are discussed in the following sections and depicted in Figure D-5 and Figure D-7.

Jumper Options

There are 9 jumper options labeled 1 through 9 on the Silent Knight option strip. The options must be left in for momentary (latching) activation or cut out for continuous (non-latching) activation as depicted in Figure D-5.

Figure D-5. Silent Knight Jumper Options

Silent Knight Terminal Strip and Pinouts for 3B2/600

The 4 pins must be wired to the terminal strip and the terminal strip itself must be wired as depicted in Figure D-6 [3B2/600].

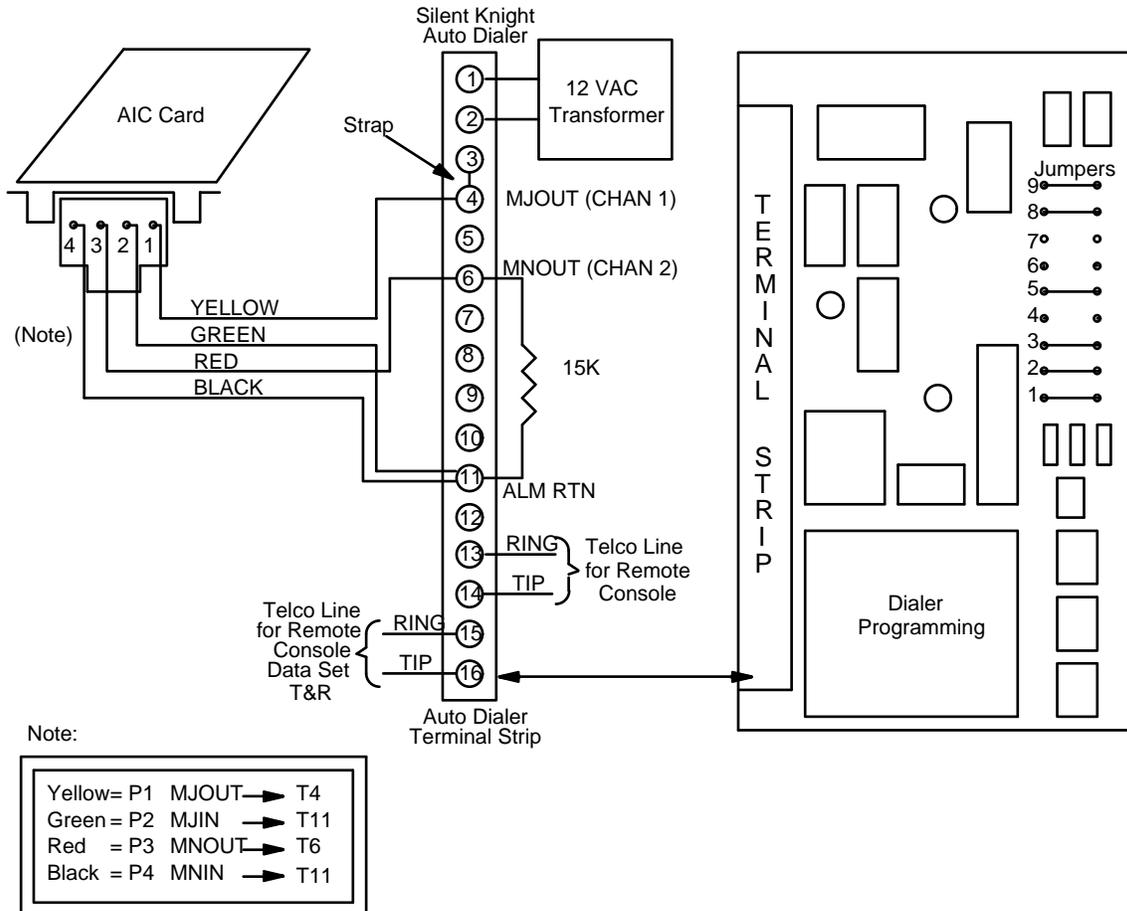


Figure D-6 [3B2/600]. Silent Knight Terminal Strip & Pinout Wiring for 3B2/600

Silent Knight Terminal Strip and Pinouts for 6386

The 4 pins must be wired to the terminal strip and the terminal strip itself must be wired as depicted in Figure D-6 [6386].

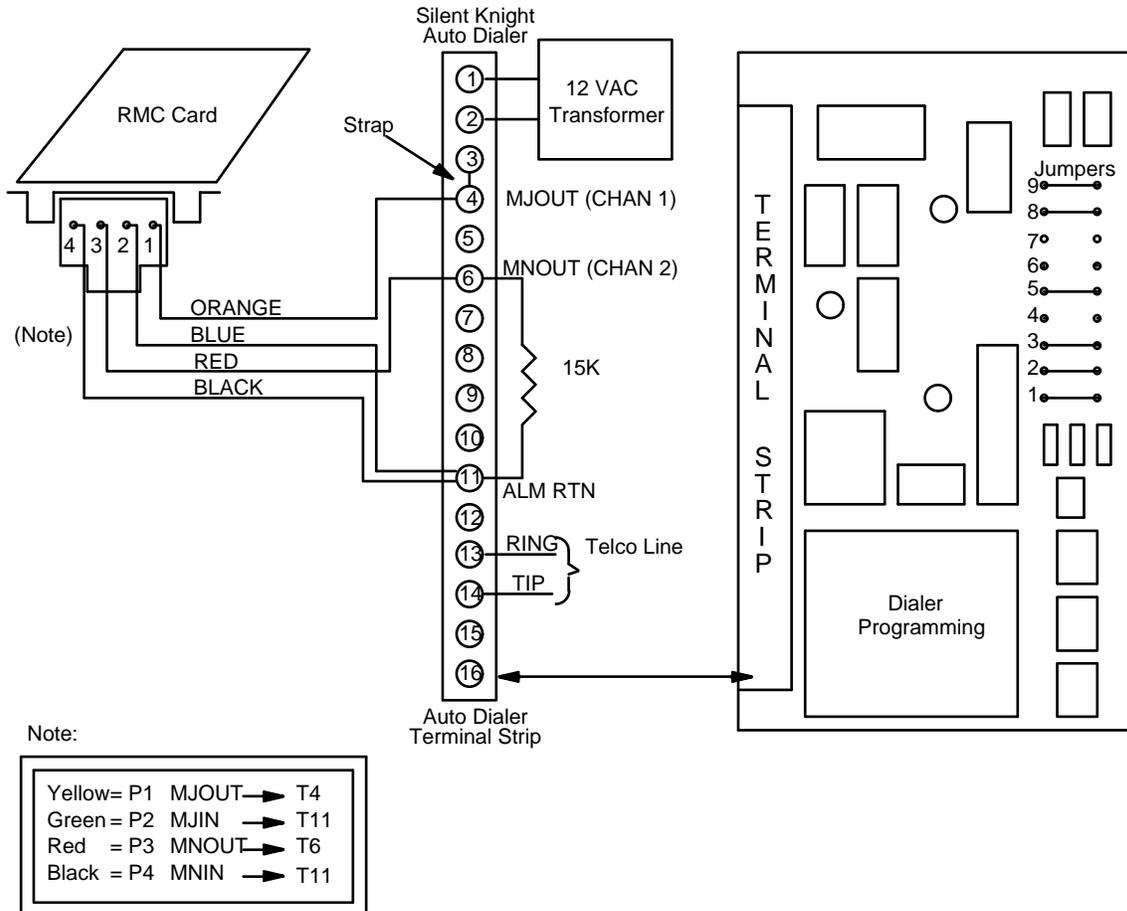
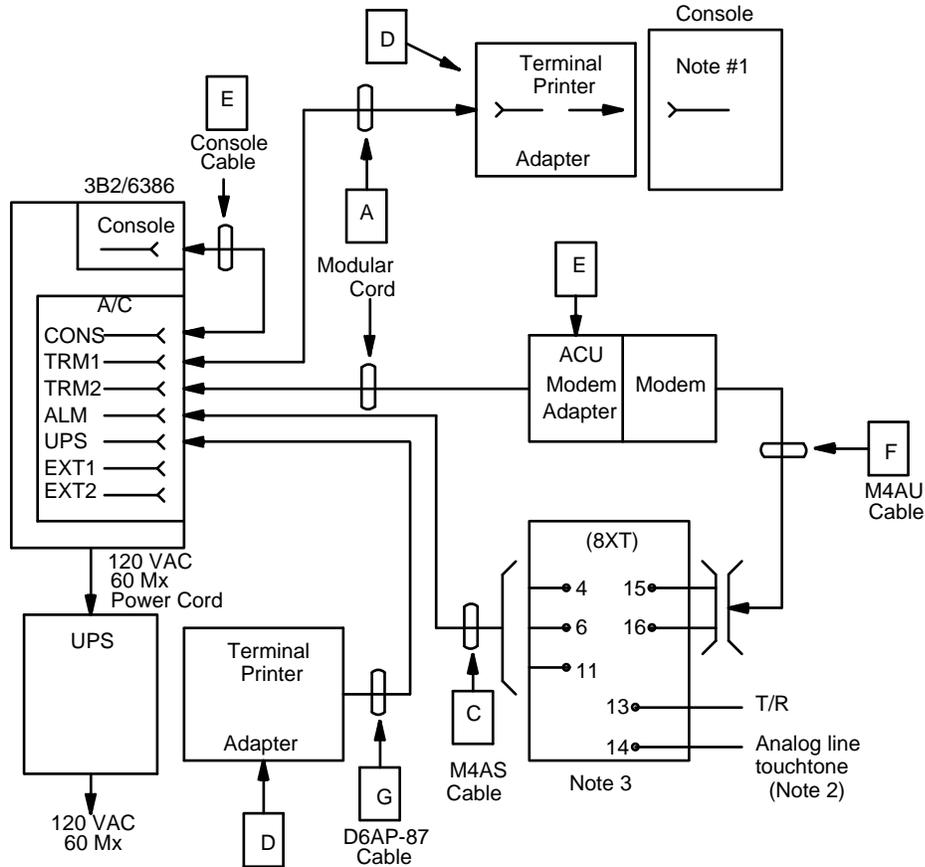


Figure D-6 [6386]. Silent Knight Terminal Strip & Pinout Wiring for 6386

Installing the AIC or RMC Board

Figure D-7 shows the proper wiring for the AIC card. See the key for this diagram on the following page for the correct cabling and connector PECs.



CONNECTING THE REMOTE MAINTENANCE PACKAGE

Notes:

- 1A - for Manager IV the console should be a 6320 Σ /w keyboard.
- 1B - for VNMS the console should be a 610 BCT Σ /w 513 emulation.
- 2 - this line will be used for remote console access by the NCSC and for organization of hardware alarms by Silent Knight.
- 3 - the dialer must be programmed (via screw terminal field). The NCSC will provide the field installer with the dialed number and account code to be programmed.

Figure D-7. Installing the AIC/RMC Board

Key for Figure D-7

<u>Reference</u>	<u>Equipment</u>	<u>PEC</u>	<u>Description</u>
A	3B2 Modular Cord	2725-16G	7-feet (M-M)
		2725-16N	14-feet (M-M)
		2725-16S	25-feet (M-M)
		2725-16V	50-feet (M-M)
	6386 Modular Cord	37776	10-feet (M-M)
B	Modular Cord	37778	25-feet (M-M)
		37780	50-feet (M-M)
		P/O 73262	7-feet (M-M)
C	M4AS Cable	2721-03S	25-feet, 6-pin, Modular plug-to-spade Connector
D	Terminal/Printer Adapter #232-21-25-010	2750-C09	Required for AIC/RMC Connectivity to Console
		[6386] 37782	
E	ACU Modem Adapter [3B2]	2750-C10	Modular-to-25-pin RS232 adapter
	ACU Modem Adapter [6386]	37786	Modular-to-25pin RS232 adapter
F	M4AU Cable	2721-04S	25-feet, 8-pin Modular plug-to-spade connector
G	D6AP-87 Cord	2725-06N	14-feet, 6 conductor cord
		2725-06S	25-feet, 6 conductor cord

APPENDIX E: UPDATING A SWITCH ON THE MANAGER IV NETWORK

This appendix provides the procedures for upgrading a System 85 R2V3 or R2V4 to a DEFINITY Generic 2 switch.

The upgrade process is performed during an "upgrade weekend." To expedite the upgrade process, the preparations discussed in this section must be completed at the times specified.

INITIAL PREPARATIONS

Initial preparations for an upgrade include the order of TRACS tapes.

The types of preparations needed are related to the characteristics of a customer's existing system. The preparations are explained in the following text. Perform only the applicable preparations.

Order TRACS Tape for Switch Upgrade, or New Switch

If the customer is planning a switch upgrade, or if a new switch is being added to Manager IV, a new TRACS tape is required. About 3 to 4 weeks prior to the upgrade weekend, a copy of the customer's switch translation data must be made and sent to the Software Technical Support (STS) Group. STS will load the tape onto TEACS and run a TRACS audit. The NCSC must work with STS to clean up the TRACS data to prepare it for blowback. During this period a "freeze" on switch changes is imposed - little or no changes can be made at the customer site to the switch data. For complete understanding of preparing switch data for blowback, refer to *DEFINITY Manager IV Planning and Implementation*.

SECONDARY PREPARATIONS

Preparations for Switch Upgrades

Perform the tasks listed under this heading for any switch that is being upgraded. A summary of the preparations is listed below:

- Clean up scheduled/failed Service Requests (SRs) and Results Files
- Cancel all scheduled processes.

Clean Up Scheduled/failed SRs and Results Files

All scheduled SRs should be executed or removed. To speed the removal of the old switch target, the customer must resolve all failed Service Requests (SRs) and remove all results files.

Procedure: Ensure SRs are Cleared

Purpose:

Use this procedure to extract extraneous entries from the Service Request and/or the Pending Queue for all switches. And to ensure that there are no processes scheduled to run for any switches.

Procedure Steps:

1. Login as **csmsa**
2. List the Service Requests associated with your targets.

Enter: **tcm admin service-request display**

Note the associated Service Requests.

3. Begin the program which will identify outstanding Service Requests (SRs).

Enter: **/usr/btl/tools/pr_verify**

Note: To exit pr_verify, press **(BREAK)**.

System Response:

```
This program will verify whether there are any entries for a particular
target that would cause a product remove to fail. Any blocking items
are listed so the user can identify items to be removed or the remove
to work.
```

```
The areas checked are:
```

- ```
1) pending queue or service requests
2) srfile or service requests
3) targrp file or membership in target groups
4) schedule list or scheduler tasks (and service requests)
```

```
Please enter target to verify:
```

4. Enter the Product ID of the target which is being upgraded.

Note: pr\_verify must be run for each target that is being upgraded.

Enter: *productid*

where *productid* = the name of the target

### System Response:

```

The target is referenced in the pending queue by these service
requests:

527705040
imbs00311g

The target is referenced in the srfile by these service requests:
ijab111084
attmtask3

The target is referenced in the scheduler by these entries:
Hourly Traffic Poll

Transaction "product remove" blocked as target productid is
still active

```

5. Clear the outstanding Service Requests listed in the top half of the system response by using the service-request:remove transaction.
6. Run pfclean.
7. Re-run the pr\_verify program for the **same** target.

Enter: **pr\_verify**

8. Clear pending flags for each target.

Enter: **/usr/btl/tools/pfclean -c *product id***

where *product id* = the name of the target.

Repeat Steps 2 to 7 for all targets.

9. If there are still outstanding Service Requests, they must be manually removed using the steps below.
  - A. Obtain the name of the corporation with which the target is associated. Use the product display transaction.
  - B. Obtain the number of the corporation subfile associated with the target.

Enter: **\$SYSGEN/exupdb**

System Response: Transaction >

- C. Enter: **number *corp\_name***

where: *corp\_name* = the name of the corporation associated with the target (see Step A).

System Response: The PBX ID of the corporation (usually 1) will display.

- D. Remove the corporation subfile.

Note: This step may take a few minutes.

Enter: **m r srfile *pbxid***

where: *pbxid* = the number of the corporation subfile obtained in Step C.

- E. Reopen a new, empty, corporation subfile.

Enter: **o srfile** *pbxid*

**where:** *pbxid* = the corporation subfile number obtained in Step C.

System Response:

```
Warning: file does not exist
```

Ignore the warning.

- F. Create the srfile.

Enter: **m c 0**

```
FILE srfile pbxid CREATED SUCCESSFULLY
```

### END OF PROCEDURE

Any process that is scheduled to run for a switch to be upgraded must be canceled. Use the appropriate application transaction to cancel scheduled processes, or use the **scheduled-entry remove** transaction.

## UPGRADE STEPS

---

This section describes the procedures for switch upgrades on the 3B2-600 or 6386 processors.

### UPGRADE CHECKLIST

Before attempting an upgrade, complete the Upgrade Checklist.

| <b>MATERIALS</b>    |                                                                                                                                                         |
|---------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|
| Software Tapes      | - [For Upgraded/Additional Switches] TRACS cartridge tapes<br>- cartridge tapes for backup                                                              |
| Data                | - Customer's configuration parameters for the processor (obtained from the Upgrade IPW)<br>- Upgrade Information Form (UIF) is complete.                |
| Documentation       | - <i>Manager IV Upgrade</i><br>- <i>Manager IV System Administration</i><br>- <i>Manager IV Getting Started</i><br>- 3B2-600/6386 UNIX & System Manuals |
| <b>PREPARATIONS</b> |                                                                                                                                                         |
| Switch Upgrades-    | IPW parameters have been checked<br>- Backup 1 week previous to upgrade<br>- TRACS tapes on site<br>- Failed SRs are resolved                           |

## AUTOMATED UPGRADE PROGRAMS

---

Switch upgrades were designed to be as easy as possible. To expedite the upgrade and to eliminate as much human error as possible, interactive automated upgrade programs were designed. The automated programs perform the majority of the upgrade task with very little intervention. They are described below:

### **sw\_upgr**

The automated upgrade program, **sw\_upgr** (switch upgrade), performs the following automated functions:

1. Identification of switches that are being upgraded.
2. Create new targets for upgraded switches using the product add transaction.
3. Save non-switch data for upgraded targets.
4. [If Number Portability Network is present] Delet Number Portablity (NP) Network files in order to make the NP network appear as an ordinary multi-node network.
5. Remove old products from the database.

## Checkpoint File (**conv.chkpt**)

The upgrade scripts are comprised of smaller subscripts which perform the actual steps for the upgrade. The checkpoint file, **conv.chkpt**, keeps a record of each subscript successfully completed. The **conv.chkpt** file is referenced in the event of a restart to determine the steps already completed and at which step to proceed.

If for any reason, a particular step of the upgrade must redone, the name of the subscript which performs that step must be removed from the **conv.chkpt** file.

Note: The **product remove** and **product add** commands are entered into the **conv.chkpt** file when the first product is removed or added successfully. In the event that multiple switches are being upgraded, and a product remove/add command fails for any product other than the first, the *prod\_rem* (remove) or *prod\_add* line must be removed from the **conv.chkpt** file after the problem has been corrected so the appropriate script can be restarted.

The following table lists the "master" script, the subscript(s) which it runs, and the particular upgrade step which the subscript(s) performs.

| Master Script | Subscript(s) | Switch Upgrade Step                               |
|---------------|--------------|---------------------------------------------------|
| sw_upgr       | prod_add     | Product add transaction                           |
|               | conval       | Creates alias file record for new target(s)       |
|               | nsw_ret      | Nonswitch-data retrieve                           |
|               | np_null      | [Number Portability only] Nulls out NPID          |
|               | prod_rem     | Product remove                                    |
|               | sw_upgr      | All steps of master script completed successfully |

## Line Drop/Interrupt Protection

The upgrade scripts were designed to provide protection against unintentional line drops and/or accidental interrupts. Each script is essentially a "master" script which controls the execution of many smaller scripts. The smaller scripts perform the individual steps needed to perform the upgrade. Line drops and/or breaks are trapped by the master script and held until the step which is currently processing completes.

Once a step is completed, two things happen:

1. The name of the completed step is written to a checkpoint file (conv.chkpt). The checkpoint file contains the name of each step which has been completed. This file is referenced when a script is restarted to determine the proper step at which to proceed. For a complete explanation of the checkpoint file, see the previous heading, "Checkpoint File."
2. The master script "holding" area is checked by the completed step before proceeding to the next step.

If a line drop is found, the program will exit.

If a delete or break is found, the script will prompt:

```
Received a signal - do you want to continue (y/n) ?
```

To continue, enter **y**; otherwise, enter **n**, fix the problem (if any) and restart the master script as outlined in the appropriate procedural information.

## UPGRADE STEPS OVERVIEW

---

The following table summarizes the upgrade steps, lists their associated procedures, and indicates the type of upgrade for which the step must be performed.

| Name                         | Related Procedure                |
|------------------------------|----------------------------------|
| 1. Perform a Full Backup     | Procedure: Perform a Full Backup |
| 2. Perform V4 Switch Upgrade | Procedure: Execute sw_upgr       |
| 3. Initialize Switches       | Procedure: Initialize Switches   |

## PERFORM A FULL BACKUP

---

### Procedure: Perform A Full Set of Backups

#### Purpose:

To ensure that pertinent data is not lost due to hardware or software problems that may occur during the upgrade weekend, a set of full backups on the existing system must be performed prior to beginning the upgrade scripts.

Notes: A set of full backups must be performed one week prior to the upgrade date. If circumstances occur which prohibit a successful switch upgrade recovery will be taken from the full backup performed during the upgrade. If the upgrade backup is unusable, the week-old backup will be used to restore the software and logs will be applied to bring the database up-to-date.

**There is no substitution for performing at least one full set of backups during the upgrade.**

#### Procedure Steps:

1. Enter: **bradm full\_dump**

Note: For a complete description of performing a system backup, refer to *Manager IV System Administration*.

At this point, you can begin the switch upgrade.

**END OF PROCEDURE**

## PERFORMING SWITCH UPGRADE

---

The following procedures are used to upgrade a System 85 R2V2, R2V3 or R2V4 to a DEFINITY Generic 2 switch on the 3B2/600 or 6386 processor. The presence of Number Portability is included.

You must be using Manager IV release V4.2 or a later software release before performing the following procedures.

NOTE 1: UNIX must be left in multi-user mode; however, additional users must be restricted from system use during the upgrade.

NOTE 2: [Number Portability Networks] Except where explicitly indicated, the steps in this procedure can be used to properly upgrade systems using a Number Portability Network.

NOTE 3: New target names for upgraded switches must differ from the original target names.

NOTE 4: If there is any problem during the following steps, you may terminate the script by pressing **QUIT** to terminate `sw_upgr`.

### Procedure: Execute `sw_upgr` (Switch Upgrade)

1. On the remote terminal of the processor, log in as **smmaint**. Then change to the **root** login, using the UNIX **su** command.
2. Change to the `/work/convert` directory.

*Enter:* **cd /work/convert**

3. Execute the environment list.

*Enter:* **. /etc/envlist**

4. Begin the `sw_upgr` script.

*Enter:* **sh sw\_upgr**

*System Response:*

```

Reading cust file ...

Found the following target(s):
headquarters: System 85
kentwood: Dimension 2000
stow: System 75

Are any switch upgrades being performed?

```

5. *Enter:* **y**

Note: In a Number Portability Network where switch upgrades or the addition of a network node is planned, a reinitialization of the entire network is required.

*System Response:*

```
For each upgradable product, enter the corresponding
NEW ldn, or simply <RETURN> if no upgrade is being done:
Enter NEW ldn for headquarters: branches
```

The system will poll the names of the existing System 85 switches eligible for update and ask for the new Product ID. In a Number Portability Network, you will be prompted for all switch names.

6. Enter the Product IDs for switches being upgraded.

NOTE: New target names must be different from the original target names.

*System Response:*

When all new targets have been entered, the script will automatically put the user into the **product:add** transaction screen for the first new target. The new targets must be added to the database.

[Number Portability networks (NP)] If an NP network is present, the script will perform functions to make the original NP network appear as an ordinary multi-node configuration so that the remainder of the steps can be executed. Add the Number Portability Network ID (NPID) when adding the new targets into the database.

System Response:

```
Perform product:add for "branches" ...
```

After a few seconds, Page 1 of the **product add** screen appears.

System Response:

|                                                                     |                       |             |
|---------------------------------------------------------------------|-----------------------|-------------|
| AT&T Mgr IV 2.2                                                     | DEFINITY G2.2         | <target>    |
| system-administration product add                                   |                       | Page 1 of 3 |
| Product ID: _____                                                   | Corporation ID: _____ |             |
| Product Location: _____                                             | _____                 |             |
| Product Type: DEFINITY G2                                           |                       |             |
| Release: 2                                                          |                       |             |
| Equipment Serial Number: _____                                      |                       |             |
| DOSS Order Number: _____                                            |                       |             |
| Port Phone Number 1: _____                                          | Port Type 1:          |             |
| Port Phone Number 2: _____                                          | Port Type 2:          |             |
| Security Code: _____                                                |                       |             |
| SWITCH FEATURES                                                     |                       |             |
| Call Vectoring?_ Tenant Services?_ Expert Agent?_ Call Work Codes?_ |                       |             |
| Trad. Modules: _____                                                |                       |             |
| Univ. Modules: _____                                                |                       |             |
| XE Modules: _____                                                   |                       |             |

7. Enter the product information from the Product Definition data collection form(s). The type of product being defined determines the required fields and valid entries. The charts below list the required fields and valid entries by product. Use the charts as a guide when entering the information.

Product ID:

The Product ID is a unique identifier for the managed product. Each Product ID cannot contain blank spaces and has a maximum length of 13 characters.

Corporation ID:

The corporation ID is assigned through the **corporation add** transaction. Maximum length is 13 characters.

Product Location:

The Product Location is the address of the product. Maximum length is two lines of up to 60 characters.

Product Type:

This is the code that identifies the type of product being added.

| CODE               | PRODUCT                                                       |
|--------------------|---------------------------------------------------------------|
| <b>ADJUNCT</b>     | All products for which Manager IV provides cut-through access |
| <b>SYS85</b>       | System 85 products                                            |
| <b>D2000</b>       | DIMENSION products                                            |
| <b>DEFINITY G2</b> | DEFINITY Generic 2 products                                   |

- **System 85:**

Release: [System generated] A single digit: **(2)**.

Version: A single digit: **(2,3, or 4)**.

Issue: Issue number: *default* **(1.0)**

- **DIMENSION 2000:**

Bus Type: Enter **1** for single bus; **2** for dual bus

Feature Package: [System generated] A single digit: **(8)**

Issue: Issue number: **1.16** or **3.8**

Hardware Configuration: Switch memory size. Maximum length is 2 characters. The first letter represents memory size and a trailing D represents a dual processor. Sample entries are: **B** or **CD**.

Valid entries are:

- **B**
- **C** (not valid for FP8 Issue 3.8)
- **D** (not valid for FP8 Issue 1.16)
- **F**
- **D** (dual processor).

- **DEFINITY Generic 2:**

Release: A single digit: **(1** for G2.1; **2** for G2.2).

Provide identification for the product, the network, the present applications, and the administrators' logins. This information should be on the Product Definition Data Collection Form. Use the field descriptions below as a guide when entering information.

Equipment Serial Number: Enter the serial number in the form:

<NNNN-YY-XXXXXXXXXX-Z>

where: NNNN = Product Code - 4 digits identifying the product type

YY = Manufacturer's Code - 2 digits identifying the manufacturer

XXXXXXXXXX = Serial Number - 9 characters unique to the product

Z = Check digit - 1 character (numeric or dash [-])

DOSS Order Number: Enter the DOSS Order number in the following format:  
<XXXXXXXXXXNN>

where: XXXXXXXXXX = DOSS Sales Order Number

NN = DOSS Segment Number

Port Phone Number 1: Enter the product port number as dialed from the product access port or "dedicated". This field is required.

The number may contain any combination of digits, dash (—), equal (=), asterisk (\*), or pound sign (#).

— pause

= wait for secondary dial tone

\* touch tone asterisk

# touch tone pound sign

**0-9** dialed digit

Port Type 1: [DEFINITY Generic 2] This field appears only in Generic 2. Enter **r** for RMATS, **p** for PPG or **n** for none.

Port Phone Number 2: [System 85 and DEFINITY Generic 2] This field is optional and cannot be designated as *dedicated*. This field has the same format as the "Port Phone Number 1" and is used to specify the second dial-up port.

Port Type 2: [DEFINITY Generic 2] This field appears only in Generic 2. Enter **r** for RMATS, **p** for PPG or **n** for none.

Security Code: Security codes are stored in the switch.

[DIMENSION 2000] Enter the four-digit security code.

[System 85 and DEFINITY Generic 2] Enter the six-digit security code.

NOTE: If unrestricted switch alarm dial-out is required on System 85, only "Port Phone No. 1" should be specified. The number used should be the switch port without the dial-out capability. This ensures that the dial-out port is never busy for servicing Manager IV when a switch alarm occurs.

### Switch Features

[D2000 and SYS85 only] Asgnd Modules:

Enter the assigned module numbers. Valid entries are a single digit separated by commas (,) or a range of numbers separated by dashes (—), i. e. 2, 3, 4-7.

[System 85R2V4 or DEFINITY G2] Call Vectoring

A system generated field informing you whether Call Vectoring is present.

[System 85 R2V4 or DEFINITY G2] Tenant Services

A system generated field informing you whether Tenant Services is present.

[System 85 R2V4 or DEFINITY G2] Trad. Univ., or XE Modules:

System generated fields providing specific information on the type of modules present.

[DEFINITY G2.2] Expert Agent?

A system generated field informing you whether Expert Agent Selection is present.

[DEFINITY G2.2] Call Work Codes?

A system generated field informing you whether Call Work Codes is present.

Page 2 of the product add screen displays:

|                                                   |                       |             |
|---------------------------------------------------|-----------------------|-------------|
| AT&T Mgr IV 2.2                                   | DEFINITY G2.2         | <target>    |
| system-administration product add                 |                       | Page 2 of 3 |
| Product Record                                    |                       |             |
| Product ID: _____                                 | Corporation ID: _____ |             |
| Distributed Communications System (DCS) ID: _____ |                       |             |
| Electronic Tandem Network (ETN) ID: _____         |                       |             |
| Product Time Zone: EST                            |                       |             |
| Daylight Savings Time During Summer? y            |                       |             |
| Non-Blocking Indicator:n                          |                       |             |
| TCM Administrator's Login:                        |                       |             |
| FM Administrator's Login:                         |                       |             |
| Directory Update for this product?                |                       |             |
| NOTES: _____                                      |                       |             |
| End of Page 2                                     |                       |             |

DCS ID: Enter the valid ID associated with the switch. The ID was assigned to the switch in the **corporation add** transaction. Maximum length is 8 characters.

ETN ID: Enter the valid ID associated with the switch. The ID was assigned to the switch in the **corporation add** transaction. Maximum length is 8 characters.

Number  
Portability ID:  
[System 85 R2V3&V4]  
[Generic 2] This prompt appears if ETN ID is supplied. It is the valid ID associated with the switch in the corporation:add transaction.

Product Time Zone: Enter the correct time zone associated with the switch. Valid entries are:

| Valid Entry | Time Zone              |
|-------------|------------------------|
| AST         | Alaskan Standard Time  |
| CST         | Central Standard Time  |
| EST         | Eastern Standard Time  |
| HST         | Hawaiian Standard Time |
| MST         | Mountain Standard Time |
| PST         | Pacific Standard Time  |
| TST         | Atlantic Standard Time |

Daylight Savings  
Time during summer? Enter **y** (yes) or **n** (no).

Nonblocking Indicator:

Enter **e** if the switch is essentially nonblocking.  
Enter **n** if the switch is nonblocking.

Administrator's  
Logins For each application present, enter the main administrator's login.

8. Enter the following information for all products.

Directory Update  
for this Product? If this product utilizes the Directory Synchronization feature, enter **y**;  
if not, enter **n** and skip to Procedure Step 11.

NOTES: Enter any pertinent comments about this product in this field. It is a  
free format field of up to 72 characters.

9. If Directory Synchronization Feature of Manager IV is used to update an existing Personnel  
Database for the 3B5 AP Customer Directory Service, page 3 of the product add screen displays.

|                                                                 |                       |             |
|-----------------------------------------------------------------|-----------------------|-------------|
| AT&T Mgr IV 2.2                                                 | DEFINITY G2.2         | <target>    |
| system-administration product add                               |                       | Page 3 of 3 |
| Product ID: _____                                               | Corporation ID: _____ |             |
| UUCP Address of Customer Directory Service Administrator: _____ |                       |             |
| Mail Address to Receive UUCP Error Messages:                    |                       |             |
| Customer Directory Service (CDS) Software Release:              |                       |             |
| End of Form                                                     |                       |             |

Enter the following information:

UUCP Address of CDS Administrator

Enter the remote mailing address of the 3B5 AP CDS processor. The  
address is the processor name and the login of the CDS  
administrator, separated by an exclamation point (!).

Mail Address to receive UUCP Error Message

Enter the login ID of the Manager IV System Administrator.

CDS Software Release

Enter the release number of the CDS software.

10. Execute the product add transaction by pressing **(ESC) e** or **(EXECUTE)**.

Display the new targets using the command **product:display** in the system-administration area.

Exit from SMUE by entering **bye**.

NOTE: If the product was added successfully, press **(RETURN)**; otherwise, press **q** to quit. Resolve the problem. To restart, delete the **product remove** line in conv.chkpt.

11. The system will automatically retrieve nonswitch data for upgrade targets.

```
Performing non-switch-data retrieve for "headquarters"

Retrieve non-switch data to MGR IV database?: y
Is this for a switch UPGRADE: y

UPGRADE retrieve selected! - Enter NEW target: branches

Choose either the ALL option or one or more of the following:

 x Select ALL
 Extension user
 User
 Wiring
 Locales
 WATS Trunks
 CO/FX/DID/APLT Trunks
 Tie Trunks
 Set Attributes
```

The ALL option retrieves the data from each switch automatically.

12. If you have number portability, you will see the following *System Response*:

```
Nulling out NPID for <old target name>
```

This will be performed for the number of switches being upgraded.

13. The **product remove** command then removes old targets from upgraded switches only.

*System response:*

```

Performing product remove for "headquarters"...

AT&T Mgr IV 1.0 MAIL
PATH system-administration product remove

Removing the product means that the customer will need to reinitialize
before being able to access the data for the switch -
ARE YOU SURE YOU WANT TO REMOVE THE PRODUCT? y

Before removing the product please make sure that there are
no more service requests in the sr queue,
that the product is not part of a target group and
that there are no entries in the scheduler queue.

Also before the product is removed the backup date will be checked.
If the backup was done prior to 48 hours: product will not be removed.
If the backup was done between 24 to 48 hours:
you could still lose more than a days worth of updates.
Would you still like to remove the product? y

 Product I.D.(TARGET): headquarters

```

The script answers "yes" to the two questions on the above screen which enables the removal of the product.

Note: Further information on the **product remove** command is provided *Manager IV System Administration*. If the **product remove** transaction fails, consult this document and/or escalate the problem to the next maintenance tier.

When conversions are completed, "Switch upgrades preparation complete. Ready to perform initialization(s)" is displayed. The database is now ready for the initialization of the new target.

## END OF PROCEDURE

## INITIALIZE SWITCHES

---

### Procedure: Initialize Switches

For each upgraded switch or additional switches being added at upgrade time, initialization procedures must be run.

[Number Portability Networks] If one or more switches were upgraded in a Number Portability (NP) Network, the entire network must be reinitialized. Perform the **init:setup** transaction for at least two nodes before creating the NP Network. Use the procedures listed in the *Manager IV Installation, Initialization, and Maintenance Manual*. Procedures include:

- [Additional Switches only] Product:add
- Loading the TRACS tape
- Initialization Setup
- [Number Portability Networks only] Creating a Number Portability Network
- Starting Initialization
- Monitoring Initialization
- Locating Initialization Results
- [Number Portability Networks only] Deleting Number Portability Network File

After completing the switch initialization procedures, nonswitch data for each upgraded switch must be retrieved, using **system-administration non-switch data add**.

**When multiple switch initializations are being performed, the following steps must be performed after each switch initialization.**

- Perform a CORE backup
- Reboot the processor to multi-user mode.

The upgrade is complete.

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