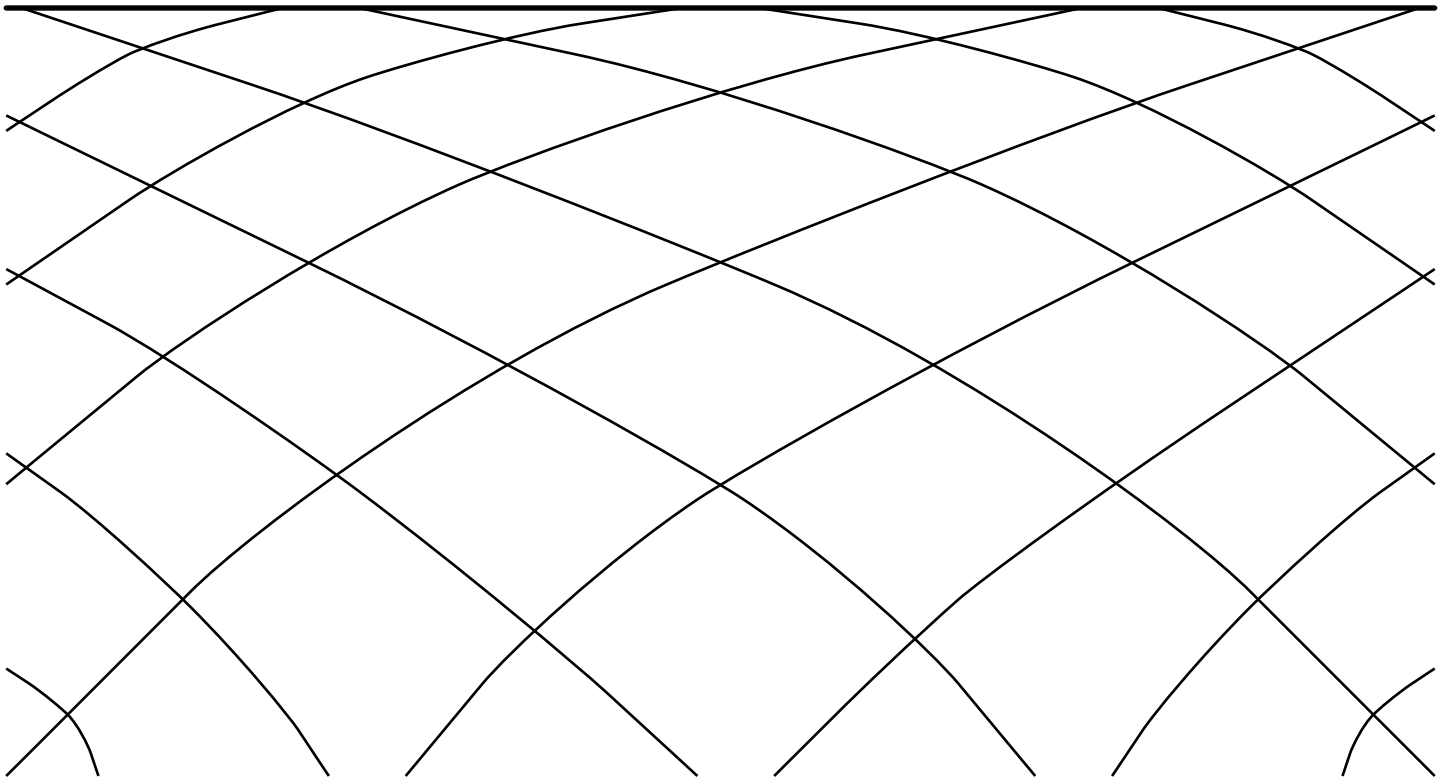
585-223-706
Issue 2
June 1992

Getting Started with DEFINITY®Manager IV



TO ORDER COPIES OF THIS DOCUMENT

CALL: AT&T Customer Information Center
(800) 432-6600
In Canada: (800) 255-1242

WRITE: AT&T Customer Information Center
2855 North Franklin Road
P.O. Box 19901
Indianapolis, Indiana 46219

For more information about AT&T documents, see
Business Communications Systems
Publications Catalog (555-000-010)

NOTICE

While reasonable efforts were made to ensure that the information in this document was complete and accurate at the time of printing, AT&T can assume no responsibility for any errors. Changes or corrections to the information contained in this document may be incorporated into future reissues.

Prepared by
AT&T Technical Publications Department
Lincroft, NJ

Printed in USA

CONTENTS

ABOUT THIS GUIDE

USING THIS GUIDE i

1. MANAGER IV SYSTEM DESCRIPTION

ENHANCED SUPPORT 1-1

WINDOWING CAPABILITIES 1-2
- Windowing Examples 1-2
- Windowing References 1-2

CONFIGURATION 1-3

HARDWARE CONSIDERATIONS 1-3

MANAGER IV APPLICATIONS 1-4
- Toolkit Applications 1-5
- Management Applications 1-5

DATABASES ACCESSED BY MANAGER IV 1-6

UNDERSTANDING THE MANAGER IV HIERARCHY 1-7
- Applications 1-7
- Targets 1-8
- Areas 1-8
- Commands 1-8

HOW MANAGER IV COMMANDS WORK 1-9
- What Happens to a Manager IV Command at the Switch 1-10
- A Typical Manager IV Transaction 1-10

2. MANAGER IV APPLICATION OVERVIEWS

SYSTEM ADMINISTRATION 2-1

ADJUNCT ADMINISTRATION 2-1

UTILITIES 2-2

TERMINAL CHANGE MANAGEMENT (TCM) 2-2
- TCM and Manager IV's Modeling Features 2-3

FACILITIES MANAGEMENT (FM) 2-3

FM Capabilities 2-3

MAINTENANCE 2-4

APPLICATION INTERACTIONS 2-5
Terminal Change Management Interactions 2-5
Facilities Management Interactions 2-5

3. USING MANAGER IV

LOGGING ON AND OFF 3-1
Manager IV and Multi-Tasking Graphics Terminal Users 3-1
Procedure: Logging in to Manager IV 3-1
Procedure: Accessing Manager IV Via the UNIX Shell 3-4
Procedure: Logging Off 3-4

ACCESSING SYSTEM 75 AND GENERIC 1 THROUGH MANAGER IV 3-4

BEFORE YOU PERFORM A MANAGER IV TASK 3-5
Using Function Keys and Escape Sequences 3-5
Using On-Line Help 3-8
Using Transaction Screens 3-10

SYSTEM UTILITIES 3-12
Procedure: Using the shell create Utility 3-13

PERFORMING A MANAGER IV TASK 3-14
Procedure: Using Command Path Prompts 3-14
Typing Ahead 3-18
Abbreviating Command Path Entries 3-19
Combining Abbreviations and Typing Ahead 3-19

MODELING FEATURES: SCRAPBOOK AND CLIPBOARD 3-20
Using The Scrapbook Feature 3-20
Using The Clipboard Feature 3-23

SCHEDULING AND REMOVING MANAGER IV TASKS 3-25
Procedure: Scheduling Manager IV Tasks 3-25
Procedure: Removing Scheduled Entries 3-26

COMMON CAUSES OF MANAGER IV ERRORS 3-27
Entering Incorrect Information 3-27
Communications Problems 3-27
Database/Switch Errors 3-28

UNDERSTANDING SYSTEM AND ERROR MESSAGES 3-29
System Messages 3-29
Warning Error Messages 3-29
Fatal Error Messages 3-30

4. INTRODUCTION TO SERVICE REQUESTS

WHAT IS A SERVICE REQUEST? 4-1

BENEFITS OF USING SERVICE REQUESTS 4-2

MANAGER IV DATABASES AND AREAS: A REVIEW 4-3
- The Switch Database 4-3
- The Manager IV Database 4-3
- Manager IV Areas and SRs 4-3
- Immediate Transactions vs Scheduled SRs 4-4
- Following Up Your Transactions 4-4

PLANNING YOUR SERVICE REQUESTS 4-6
- Assigning a Service Request Administrator 4-6
- Limiting the Size of Service Requests 4-6
- Stacking Service Requests 4-6
- Scheduling Service Requests 4-7

HOW SERVICE REQUESTS WORK 4-7
- Shadow Pending Queue (SPQ) 4-7
- Pending Queue (PQ) 4-8
- Transaction Numbering Within An SR 4-8
- When a Download Succeeds 4-10

5. USING SERVICE REQUESTS

RECORDKEEPING AND CONTROL 5-1
- Service Request Worksheet 5-1

EXECUTING A SERVICE REQUEST 5-3
- Procedure: Opening a Service Request 5-3
- Procedure: Closing A Service Request 5-5
- Procedure: Checking Scheduled Entries 5-6
- Procedure: Displaying Scheduled Entries 5-7
- Procedure: Appending to a Service Request 5-9
- Procedure: Removing Transactions from a Service Request 5-10
- Procedure: Rescheduling a Service Request 5-11
- Procedure: Scheduling a Daily Tape Run [System 85 and Generic 2] 5-14

DAILY FOLLOW-UP PROCEDURES 5-15
- SR Follow-Up for Administrators 5-15
- SR Follow-Up for Users 5-19
- Displaying Service Requests 5-27

6. TROUBLESHOOTING SERVICE REQUESTS

COMMON CAUSES FOR SERVICE REQUEST FAILURES 6-1
- What Happens When a Download Fails 6-1

PROCEDURE: CORRECTING SR FAILURES 6-2

ERROR CORRECTION STRATEGIES 6-3
Problem: Communications Errors 6-3
Problem: Failure to Connect to Switch 6-4
Problem: Equipment Or Feature In Use 6-5
Problem: Database Synchronization Errors 6-5

7. MANAGER IV PROCESS ARCHITECTURE

MANAGER IV PROCESSES 7-1

HOW MANAGER IV PROCESSES SERVICE REQUESTS 7-2
Scheduled SR Download 7-2
Immediate Transaction Download 7-3
Grouped Scheduled SR Downloads 7-3
Administration Process Architecture 7-3
Database-Administration Process Architecture 7-6
Product-Administration Process Architecture 7-7

APPENDIX A. SERVICE REQUEST COMMANDS

daily-tape-run schedule A-1
pending-queue cleanup A-1
results display A-1
results remove A-1
scheduled-entry display A-2
scheduled-entry list A-2
service-request append A-2
service-request change A-2
service-request cleanup A-2
service-request create A-2
service-request display A-3
service-request end A-3
service-request remove A-3
service-request report A-3
service-request error-report A-3
service-request run A-4
service-request unlock A-4
tape run A-4

APPENDIX B. SUPPORTING DOCUMENTATION

DEFINITY MANAGER IV DOCUMENTATION B-1

SYSTEM 75 AND DEFINITY GENERIC 1 DOCUMENTATION..... B-3

SYSTEM 85 AND DEFINITY GENERIC 2 DOCUMENTATION..... B-4

UNIX OPERATING SYSTEM DOCUMENTATION..... B-5

PROCESSOR DOCUMENTATION B-6

APPENDIX C: OPEN LOOK INTERFACE

ADDED BENEFITS FOR MANAGER IV USERS **C-1**

SYSTEM REQUIREMENTS **C-2**
- Hardware Requirements **C-2**
- Software Requirements **C-2**

INSTALLATION **C-2**

BEFORE YOU BEGIN **C-3**
- Mouse Characteristics **C-3**
- Mouse Terminology **C-3**
- An OPEN LOOK Base Window **C-4**
- Conventions **C-5**

INTRODUCTION TO THE OPEN LOOK INTERFACE **C-6**
- Exercise 1: An Introduction to the OPEN LOOK Interface **C-6**

GETTING STARTED WITH OPEN LOOK AND MANAGER IV **C-13**
- Exercise 2. Using Service Requests **C-14**
- Exercise 3: Accessing Multiple Windows **C-28**

CUSTOMIZING THE MANAGER IV COMMAND TREE **C-31**
- Customizing the Manager IV Command Tree **C-31**

GLOSSARY

GLOSSARY **G-1**

INDEX

INDEX **I-0**

1. MANAGER IV SYSTEM DESCRIPTION

DEFINITY® Manager IV is an advanced system administration tool that puts you in control of the various communications systems in your telecommunications network. It provides the following:

- A monitoring and administration center that supports terminal change and facilities management for your AT&T Private Branch Exchanges (PBXs). You can directly access the DEFINITY Communications System Generic 2, System 85 (R2V2 - R2V4), and DIMENSION® Feature Package 8 (Issues 1.16 and 3.8).
- A maintenance application that allows you to identify switch problems and perform routine maintenance.
- Cut-through access to the management system of DEFINITY Communications System Generic 1 and System 75.
- Cut-through access to the management capabilities of AT&T adjunct systems: Information System Network (ISN), Audio Information Exchange (AUDIX), AT&T applications processors, and other AT&T products that use asynchronous access for administration.
- Coresidency with other AT&T System Management products like DEFINITY Monitor I.
- Workflow management via Service Requests, which allow transaction processing during off-peak hours and ensure a high success rate because of their unique record- and data-validation capabilities.
- Reporting capability that allows you to request standard reports or create your own reports from information in Manager IV's unique product-image database.
- Transaction screen models—Scrapbook and Clipboard— that allow faster data entry and promote a higher success rate of transaction requests.
- An easy-to-use interface that ensures you will become familiar with Manager IV's operation quickly.

WARNING:
Manager IV is not a pre-cut tool to be used for bulk provisioning cutover.

ENHANCED SUPPORT

The management applications of Manager IV have been specially designed to support the following advanced capabilities of the DEFINITY 75/85 Communications System:

- **Support for New ISDN Terminals**

  DEFINITY Manager IV provides you with screens to administer Basic Rate Interface (BRI) telephones. Manager IV also provides screens for administering the 7410D, 7434D digital telephones, and the Automatic Call Distribution Console, and the voice terminals and data modules supported by earlier system management products like Centralized System Management (CSM).

- **Support for Generic 2 General Terminal Administration**

  DEFINITY Manager IV lets you use the General Terminal Administration (GTA) feature of DEFINITY Generic 2 to define the characteristics of any multi-appearance voice or data terminal through a task-oriented screen. You can define set types for new AT&T voice and data terminals as

they are announced.

Manager IV also lets you build button characteristics (for instance, the presence of lamps on a set) for the set types you define. Then, you can use the modeling capability of DEFINITY Manager IV to make button assignments for a specific set.

- **Administration of the Universal and XE Modules**

  The DEFINITY Communications System Universal and XE Modules allows greater port density than the traditional module provides. This new module increases cabinet capacity while reducing the inventory and footprint of your DEFINITY Communications System. It also provides DEFINITY Communications System Generic 2 compatibility with System 85 (R2V2-V4) and System 75 equipment.

  Manager IV lets you administer this new module with the physical equipment line location (ELL) data. It also provides automatic mapping to both universal and traditional module circuit assignments, allowing your switch configuration to contain a mix of universal and traditional modules. ELL definitions will vary based on the physical identity of the ELL.

- **Enhanced Reporting Capability**

  DEFINITY Manager IV contains new reports that specifically support DEFINITY Communications System General Terminal Administration, ISDN features, and universal modules. You can use the integrated query language and report writer explained in *Manager IV Query and Report Languages* to create customized reports about your DEFINITY Communications System switches.

WINDOWING CAPABILITIES

You can increase the efficiency of Manager IV by using windowing capabilities available on certain terminals. On the AT&T 730 Multi-Tasking Graphics (MTG) Terminal, the recommended terminal for increased productivity, windowing is provided through Layers, the AT&T windowing utility provided with UNIX.

Windowing Examples

These are just a few examples of using windowing:

- Input information in a task-oriented screen, while checking that information in another report window
- Check the status of Service Requests you recently ran in one window, while entering transactions in a new Service Request in another window
- Examine the same report for two switches and compare productivity.

Windowing References

Refer to UNIX Layers documentation and the user's guides for the AT&T 630 and 730 terminals for information about Layers.

CONFIGURATION

Each DEFINITY Manager IV resides on the AT&T 3B2-600 or AT&T 6386 Work Group Station (6386 WGS) and is based on the UNIX® System V operating system. As your system grows, you can add additional switches to the DEFINITY Manager IV database, depending on the size of the switches and the manner in which Manager IV is configured. See *DEFINITY® Manager IV Planning and Implementation* (585-223-610) for details on planning your Manager IV system.

HARDWARE CONSIDERATIONS

DEFINITY Manager IV supports up to six simultaneous busy-hour administrators on a 3B2-600 or 6386 processor. The administration terminals can be remote or local and can include the following AT&T terminals:

- 615 Business Communications Terminal (BCT)

  The 615 BCT emulation is the recommended DEFINITY Manager IV administration terminal; it combines low cost with high functionality. The system console is the 615 BCT with 4425 terminal emulation.

- 730 and 630 Multi-Tasking Graphics Terminals (MTG)

  The windowing capabilities of the AT&T 730 and 630 terminals allow you to access more than one Manager IV transaction, report, or product at a time.

- AT&T 4410 Teletype Terminal
- AT&T 4425 Dataspeed Terminal
- AT&T 513 Business Communications Terminal
- AT&T 6386 Work Group Station.

Manager IV also supports the DEC® VT100 terminal.

DEFINITY Manager IV reports can be sent to an AT&T 572 printer for basic dot-matrix reports or be forwarded to a compatible laser printer for higher print quality.

Figure 1-1 shows a typical DEFINITY Manager IV configuration using the products described previously:

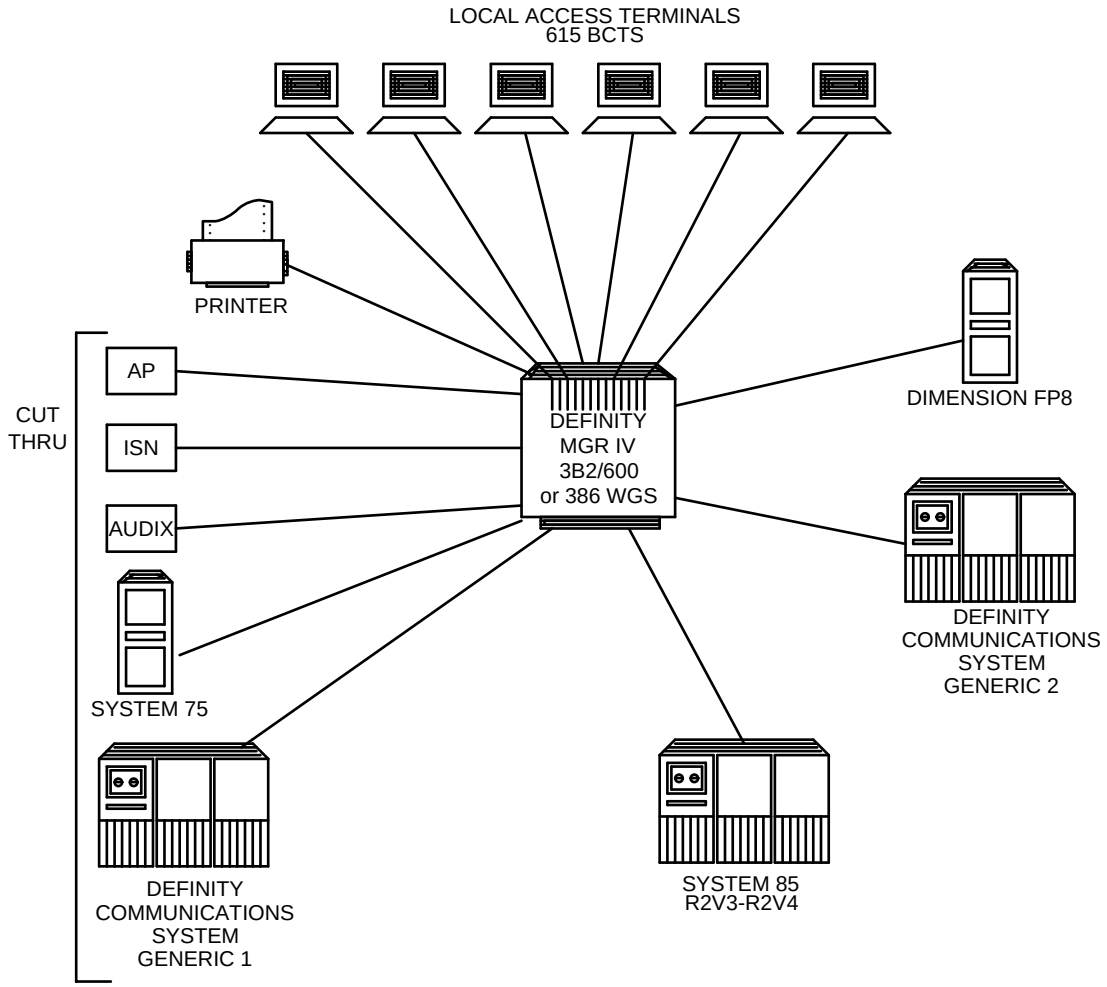


Figure 1-1. Sample DEFINITY Manager IV Configuration

MANAGER IV APPLICATIONS

DEFINITY Manager IV is designed to be responsive to various switch administration requirements. Its specialized applications provide advanced change control for your telecommunications needs, from assigning phones and data terminals to configuring the features on those phones or determining the trunks over which calls travel.

The applications of Manager IV are designed to interact with each other through shared database updates. All records accessed by the DEFINITY Manager IV applications—for example, switch translation information, user records, and equipment inventory— reside on a common, shared database. This database is centrally updated whenever a change to the system is made through one of the applications. This guarantees the accuracy and consistency of information accessed across applications.

Manager IV's three basic applications are "toolkit" applications that allow you to administer Manager IV itself. DEFINITY Manager IV also has three management applications that are specifically designed to manage the switches in your network.

Toolkit Applications

The DEFINITY Manager IV toolkit applications include **System Administration** and **Utilities**, which allow you to access other features and capabilities such as access to the UNIX operating system.

- **System Administration** optimizes the use and security of the DEFINITY Manager IV applications. The System Administration application provides backup and recovery procedures, maintains logs of system activity, administers logins and permission levels to users, and administers data communication ports. This application also gives the DEFINITY Manager IV System Administrator access to the UNIX operating system through the UNIX shell. With the auditing feature of this application, the System Administrator can compare the contents of the DEFINITY Manager IV database with the information in the switch database and then correct any inaccurate information to synchronize the two products.
- **Utilities** provides users with access to general capabilities such as establishing and changing individual passwords, displaying scheduled entries, and standard UNIX utilities like electronic mail.

Adjunct Administration is an additional toolkit application that is also standard with your DEFINITY Manager IV. Adjunct Administration lets you cut through to other products in your network and use the inherent management capabilities of other AT&T systems like System 75, ISN, AUDIX, and of course, DEFINITY Generic 1. You can connect to all these products through a DEFINITY Manager IV terminal.

Management Applications

DEFINITY Manager IV has three management applications that are specifically designed to manage DEFINITY Communications System Generic 2, System 85 (R2V2 - R2V4), and DIMENSION System (FP8, Issues 1.16 and 3.8).

- **Terminal Change Management (TCM)** controls administration of switch equipment, dialing plans, and system-wide features and parameters. It also controls changes to extensions, voice and data terminals, attendant consoles, and switch equipment.
- **Facilities Management (FM)** controls changes to transmission facilities and network features of the telecommunications system. Through FM, users can add or change trunks, administer trunk and network features, and administer routing changes.
- The Manager IV **Maintenance** application allows you to maintain your Generic 2, System 85 R2V2-R2V4, DIMENSION 600 and DIMENSION 2000 switches by running the maintenance-related tasks (procs) that display fault data recorded by the switch and performing maintenance tasks.

MAINTENANCE APPLICATION WARNING:
Before the connection to the specified switch is established, this warning message will be generated: "THE MANAGER IV DATABASE WILL NOT REFLECT CHANGES DONE WITH THIS TRANSACTION." This is a reminder that any administration done via Proc Mode will directly affect the switch but not the Manager IV database which may result in "out-of-sync" conditions. Therefore, if you modify the switch configuration in Proc Mode, you must either update the Manager IV database to keep it "in sync" with the switch, or report any switch updates to the System Administrator.

With TCM and FM, you have the ability to manage your PBXs, including voice and data equipment, trunk groups, and other transmission facilities. Both the TCM and FM applications provide extensive sets of standard activity reports.

More information about Manager IV's applications and their interactions appears in Chapter 2, "Manager IV Application Overviews."

DATABASES ACCESSED BY MANAGER IV

The Manager IV database (or CORE database) is the main database of the system. It contains information about the corporation and the telecommunications network and controls and manages information used by all of Manager IV's applications. This means that information in the database from one application, for instance TCM, can be accessed by other applications, such as FM.

- The portion of this database that contains a copy of switch translation information is called the *product image database*. This database is created during system initialization using the Translations, Recovery, Additions and Conversion System (TRACS) tapes. When there are many changes to products that have not been made to Manager IV, the product image database can be re-initialized using the TRACS process.
- The Manager IV database also stores information about System 75 and non-supported DIMENSION switches that Manager IV does not use. This information, referred to as *non-switch data*, includes user, dial plan, first digits, and set-attribute information. The set attribute information is for supported and non-supported switches; it is used to identify voice terminal types that cannot be correctly obtained from the switch. Non-switch data is manually entered into Manager IV during the bulk initialization process and can be manually updated whenever necessary.

  For information on TRACS or non-switch data, see *DEFINITY® Manager IV Planning and Implementation*, and *DEFINITY® Manager IV Installation, Initialization and Maintenance* .

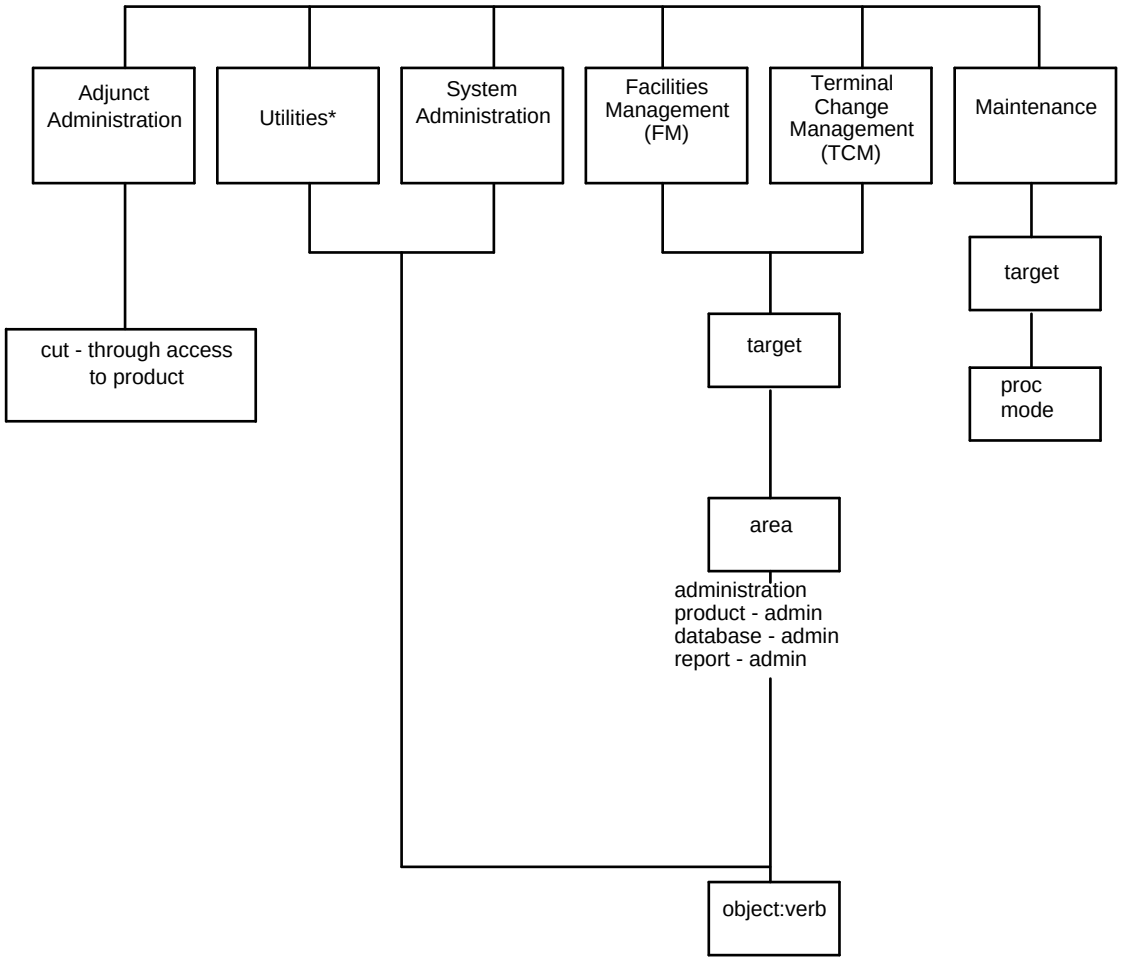
For some products, Manager IV also controls updates to the switch translations (called the *switch* or *product database* in Manager IV documentation). The switch translations are physically located in the switch or adjunct.

- Adjunct information is updated through the Adjunct Administration application.
- System 75 and DEFINITY Generic 1 information is updated through cut-through access to the System 75 and DEFINITY Generic 1 Administration features, using the System 75 and DEFINITY Generic 1 Access applications, respectively.
- Normally, System 85/DEFINITY Generic 2 and DIMENSION System FP8 information is updated through the administration area of FM and TCM. The administration area also updates the Manager IV database. Switch translations can also be updated directly by the product-administration area of FM and TCM.

UNDERSTANDING THE MANAGER IV HIERARCHY

The Manager IV command hierarchy is the organizational framework that arranges Manager IV transactions into a consistent, easily accessible system. When you log on to Manager IV, you specify a command path that routes you through the hierarchy of Manager IV.

Figure 1-2 shows the levels of the Manager IV command path hierarchy:



* Utilities are available from any area of any application.

Figure 1-2. Manager IV Command Path Hierarchy

Applications

After logging on (either directly to Manager IV or through the UNIX operating system), you are asked to specify the *application* to be accessed after logging on. Each application controls a different aspect of Manager IV administration. Your user classification determines which applications you may access. The applications as they appear on the screen are adjunct-administration, system-administration, utilities, TCM (Terminal Change Management), FM (Facilities Management) and maintenance.

Chapter 2 provides more detail on each Manager IV application.

Targets

The *target* is a unique identifier for the PBX being administered. In FM, TCM, and Adjunct Administration, the target equates to a product ID representing either a switch, such as a System 85/DEFINITY Generic 2 or DIMENSION System FP8, or an adjunct product such as the Audio Information Exchange (AUDIX).

Product targets can also be grouped into *target groups* so that one transaction can be used to make changes to more than one target at a time. These transactions are referred to as *multi-node transactions*. Target groups are set up by the System Administrator, but you can restrict a transaction to a subset of the target group when the transaction is executed.

Generally, product and corporation names are input prior to system initialization. You must enter a target or target group name in its exact format. For example, if the product ID for a switch is "NewYork85," you must enter that format exactly; the system will not recognize an entry of "newyork85" or "NEWYORK85."

Some transactions are restricted to certain types of targets and may vary somewhat depending on the type of product or the product release being used. If you attempt to execute a transaction with the wrong target type, an error message appears.

For a list of available product targets, use on-line help, the **product list** command in the System Administration application, or see the Manager IV System Administrator.

Areas

The *area* level of the Manager IV command hierarchy organizes the available commands. In TCM and FM, the Manager IV command hierarchy has four areas:

- administration, which updates both the Manager IV database and the switch database
- database-administration, which updates only the Manager IV database
- product-administration, which updates only the switch database
- report-administration, which produces reports

In some cases, the area of an application restricts the effect of Manager IV transactions to a particular database. For example, in FM and TCM, the "administration" area is used to enter changes to the Manager IV database; then the changes are automatically downloaded to the product. The "database-administration" area is used to enter changes to the Manager IV database only, without changing the product translations, while the "product-administration" area affects only the product translations.

Most of your work will be done in the Administration area of an application; Product and Database Administration are generally used only for error recovery.

System Administration commands are not divided by area; therefore, no area need be specified.

Commands

The *command* is the lowest level in the Manager IV hierarchy. Commands produce the screens where you enter the information needed to perform a specific task. The DEFINITY Manager IV command language uses complete English words in an object-verb format.

- The *object* specifies the hardware, software feature, or report to which you want to apply some action. For example, the TCM object to administer a circuit pack is **pack** and to administer an extension is **extension**.
- The *verb* specifies the action you want to take on the specified object. For example, that action might be to change, add, remove, or display the object. To add a circuit pack, use the TCM command **pack add**, and to display an extension, use the TCM command **extension display**.

You have access only to the commands that apply to the application, target, and area specified. Your login also limits access to commands. The System Administrator is responsible for assigning logins to users.

When these logins are created, the administrator assigns a user class that restricts users by application, product type, target, area, or command. A login can be assigned more than one user class. For more information on assigning user permissions, see *DEFINITY® Manager IV System Administration*.

Refer to the appropriate Manager IV application operations guide to learn how to use Manager IV to perform specific tasks.

HOW MANAGER IV COMMANDS WORK

There are four areas in the TCM and FM applications. One is reserved exclusively for reports. The other areas — administration, database-administration, and product-administration — control commands that update either the Manager IV database, the switch database, or both. Some commands are available in all areas because they affect both the Manager IV database and the switch. Some commands update information that is stored only in the Manager IV database or switch database. Other commands, available only from the database-administration area or the product-administration area, are generally used only to correct discrepancies between the Manager IV database and the switch database.

Most of your work with Manager IV is done from the administration area. Commands in this area work in two distinct stages: first, the command changes information stored in the Manager IV database; second, the command changes information stored in the switch itself. For example, when you add a new trunk group, you use the FM command **trk-grp add**. First the Manager IV database is changed to record that the trunk group has been added; then the Manager IV database downloads this command to the switch — communicating your command in the way that the switch can understand it.

The change in the Manager IV database is always immediate. The change in the switch database will occur either:

- directly after the change in the database if the request is an immediate transaction
- at a later scheduled time if the request is made as a scheduled Service Request

Figure 1-3 illustrates the flow of an immediate or scheduled FM transaction. The immediate request downloads from the Manager IV database to the switch *immediately* after the Manager IV database has been updated. The scheduled Service Request effects an immediate change in the Manager IV database, but does not update the switch *until the scheduled future date and time.*

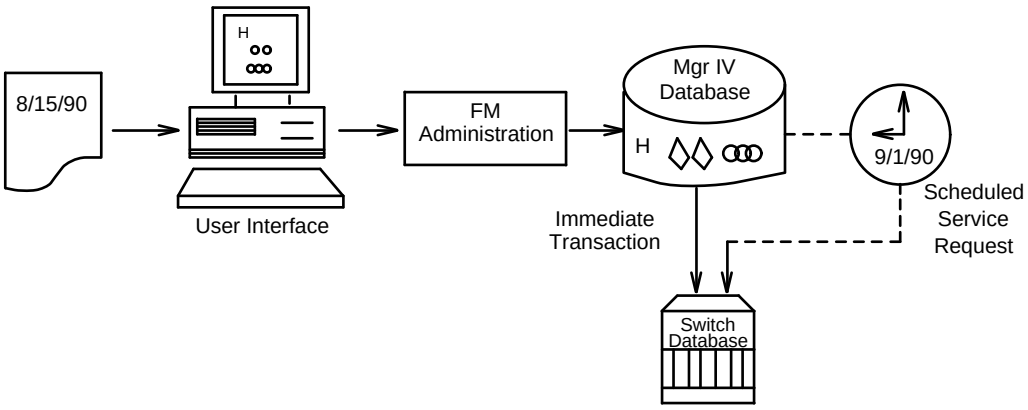


Figure 1-3. Flow of a Manager IV Command

A scheduled Service Request (SR) also allows you to group a series of transactions and schedule them to be downloaded to the switch at a later time. For example, if you know that five new employees will be starting next week, you can create a Service Request today in TCM to add their extensions and schedule the transaction to run in one week.

Before you can execute any transaction that updates the switch, you must first either schedule the transaction in a scheduled Service Request, or establish a connection to the switch using the Utilities command **connection create**. There are several benefits to scheduling your work in SRs; these benefits are discussed in Chapter 4.

All administration commands that update both the Manager IV database and the switch are regarded by Manager IV as Service Requests in terms of the processes performed to complete the transaction. When you run an immediate transaction, Manager IV automatically assigns the transaction an SR number that begins with an asterisk (*). This number will display on your screen if the command fails. You will need this number to troubleshoot and correct the failed transaction. You can use the troubleshooting techniques explained in Chapter 6 to correct errors in immediate transactions and Service Requests.

What Happens to a Manager IV Command at the Switch

When a command is downloaded to the switch, it may be broken down into smaller parts that relate to System 85/DEFINITY Generic 2 or DIMENSION procedures, commonly known as procs. For example, if you look more closely at the FM command **trk-grp add,** you will find that the command may break into several individual commands at the switch level that the switch can decipher and respond to. These respective transactions add the trunk group and its specific characteristics to the switch.

This is important to understand because:

- It is possible for one proc to succeed at the switch while another proc fails, even though both procs represent part of the same Manager IV transaction.
- If a transaction fails at the switch, the error message may contain a proc number related to the error.

A Typical Manager IV Transaction

The following procedure illustrates a typical Manager IV transaction. Don't try to to perform this transaction yet; you will learn about each task in the chapters that follow. Figure 1-4 illustrates this process.

In this example, you would use the TCM application to add 10 analog extensions to a DEFINITY Generic 2.2 switch called "NewYork." You would create a Service Request, and schedule the transaction to run overnight. The following morning, you would check that the extensions were added correctly, and fix any problems that may have occurred.

The numbered steps indicate action that you would take, and the sub-steps indicate the way the system would respond to your entries. Remember, do not perform this now; it is only an example.

1. Log in to Manager IV with a valid login and password.
   - The system checks the user class of the login and assigns access to the appropriate interactive commands.
   - You are prompted to enter a command path, beginning with the application.
2. To open the Service Request, enter **tcm NewYork admin service-request create**. You can type this all at once, or wait for the system to prompt you for each entry. You can also abbreviate each entry by just specifying the initial part of each verb and object as a unique character string. The entire target name must be entered as it exists in the system.
   - The command **service-request create** opens a Service Request (SR) and allows you to schedule the transaction to run overnight or at any designated time.
   - The screen used to create an SR appears.

3. Enter an SR number and the date and time that the request is to be downloaded to the target.
   - The SR number appears on the top of the screen.

4. Add extensions using the TCM application; the target switch in this case is "NewYork." Enter the command path **extension add**.
   - The first page of the "extension" transaction screen is displayed.

5. The extensions to be added have the same attributes, and you want the system to assign the extension numbers. Leave an asterisk (*) in the "Extension No." field and enter **10** in the "No. of Extns" field. Then enter the rest of the extension information.
   - The system checks the entries for certain errors and displays error messages to the screen if incorrect data has been entered. You can access on-line help messages if you are not sure about any field entries. (See "Using On-Line Help" in Chapter 3 for more information.)

6. When the last page of the transaction screen is complete, press **ESC** - **e** to execute the transaction.
   - The system updates the Manager IV database immediately. It assigns the next 10 available extension numbers to the extensions, the appropriate Equipment Line Locations, and the attributes specified. Error messages appear on the screen if the system finds any problem. The system marks the new records in the Manager IV database with "p" (for pending). This prevents them from being updated until the transaction has successfully downloaded to the switch.
   - The system holds the information to be downloaded to the switch until the scheduled time of the SR. These records are broken into transactions that the NewYork switch can process. These transactions relate to System 85/DEFINITY Generic 2 procs.

7. Since this is the only transaction in this SR, you can now close the SR by entering **service-request end**. You can stop the SR if an error is encountered during the downloading of information to the product. To do this, leave the default entry of "n" in the "Continue on Error" field. The SR will stop processing if any error is encountered during the download. This completes the interactive part of the transaction.
   - During the download, if there is any problem that cannot be corrected through Manager IV's automatic recovery mechanisms (for instance, a switch hardware error), Manager IV will have a record of the completed transactions and you may restore the Manager IV database to its original state for failed or pending transactions (or Manager IV will continue processing where it stopped if the SR is rerun).
   - The system writes information about the downloaded transaction to a results file and sends you an electronic mail message containing the name of the file.

8. The next morning you can use **service-request report** to quickly check the status of your SR. Use **results display** to check the contents of the results file. The results file shows that the extensions and their attributes have been added successfully. See Chapter 5 of this manual for more information on reviewing results files. Once the results have been verified, you should use **results remove** to remove the results file.

If the results file indicates an error, you must take appropriate action to correct it. Chapter 6 of this manual explains "Troubleshooting Service Requests."

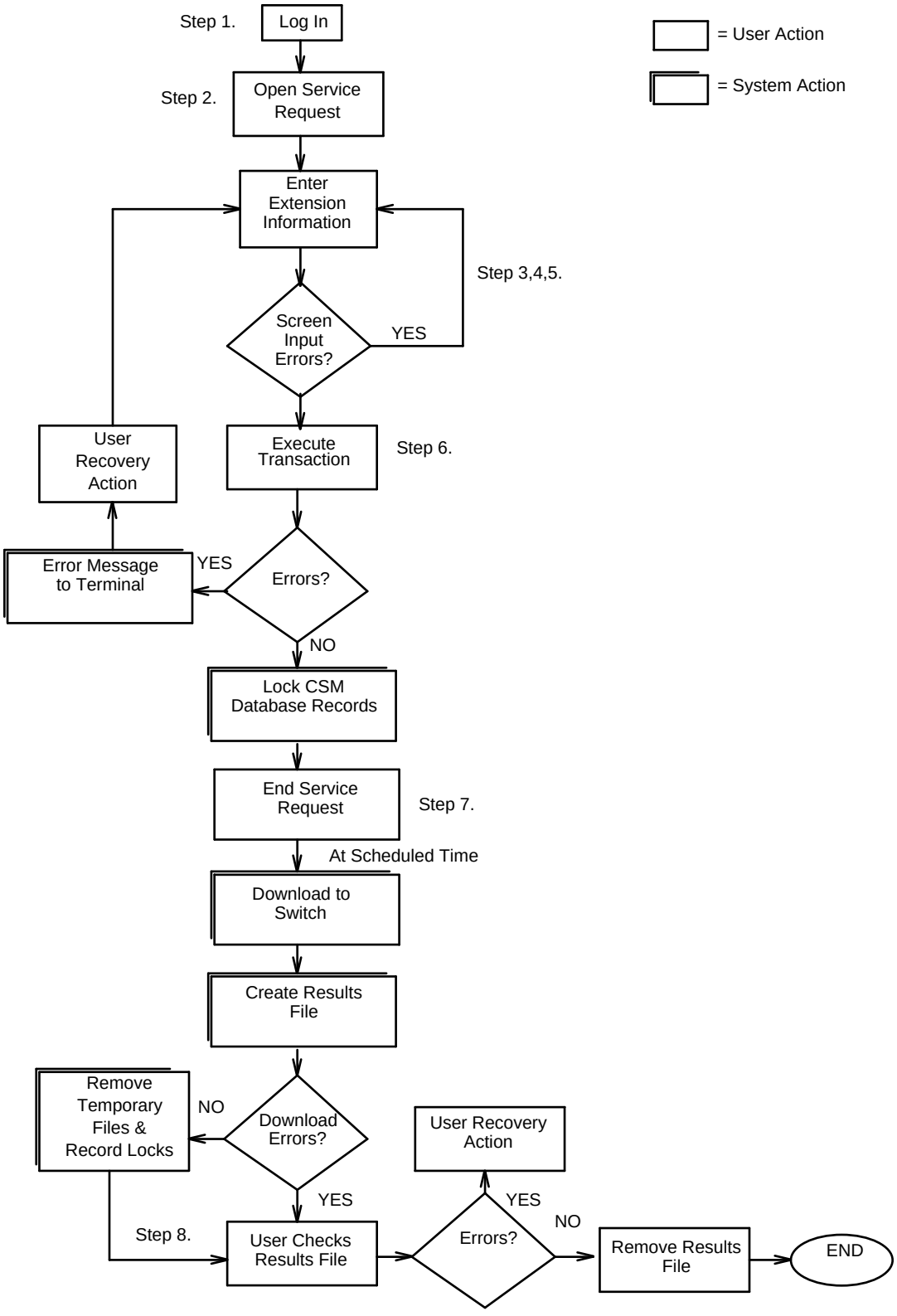


Figure 1-4. Flow of a Typical Manager IV Transaction

2. MANAGER IV APPLICATION OVERVIEWS

This chapter describes the following DEFINITY® Manager IV applications and their interactions:

- System Administration
- Adjunct Administration
- Utilities
- Terminal Change Management (TCM)
- Facilities Management (FM)
- Maintenance

SYSTEM ADMINISTRATION

The System Administration application permits the System Administrator to configure and control the Manager IV system, guard against system abuse, analyze and report system failures, and investigate system/switch discrepancies.

The System Administrator uses the System Administration application with the UNIX operating system commands to perform the following duties:

Managing the Activities of Manager IV Users

The System Administrator adds user logins, which can restrict users to specified products and/or commands, thereby preventing abuse or accidental changes. The System Administrator also monitors user activity to pinpoint and solve problems, and, if necessary, sends system-wide messages to alert users to these problems.

Monitoring the Host Processor and Peripheral Hardware

The System Administrator is responsible for monitoring the operation of the host processor running Manager IV, bringing the system down for backups, and rerouting or canceling printer jobs. The administrator also enables and disables product access ports as necessary.

Performing Routine System Upkeep

For optimal Manager IV operation, the System Administrator must monitor the Manager IV system as a whole. Responsibilities include performing weekly system backups, checking log devices and switching them if they are full, and recovering UNIX or Manager IV files after a loss of data.

DEFINITY® Manager IV System Administration provides details on this application.

ADJUNCT ADMINISTRATION

Adjunct Administration lets you cut through to other products in your network via an AT&T Manager IV terminal and use the inherent management capabilities of other AT&T systems.

Adjunct Administration allows you to accomplish the following:

- Attain remote (cut-through) access to DEFINITY Manager I, a management tool that has extensive administrative capabilities specially designed to support DEFINITY Generic 1.

- Attain remote (cut-through) access to the administrative capabilities of System 75.
- Access the system management capabilities of such network adjunct products as the applications processor (APs), the 3B line of processors, the Information System Network (ISN) processor, the Audio Information Exchange (AUDIX), other DEFINITY System Management products, and other DEFINITY Manager IVs.

  DEFINITY® Manager IV System Administration provides details on this application.

UTILITIES

Manager IV gives you access to general operating system capabilities referred to as system utilities. You can access these utilities from any area of Manager IV in which you are working, except when you are prompted for a "target" or "verb."

For example, if you are in the middle of scheduling a new Service Request, and want to check the status of a pending Service Request, you can use the utilities command **scheduled-entry display**. This utility displays complete information about pending transactions including Service Requests, reports, or scheduled facility tests.

Note: The utility commands **database list** and **database remove** can be accessed from the **system-administration** area only.

Manager IV also provides access to the UNIX shell, where you can take advantage of standard UNIX utilities like electronic mail, system news, and so on.

Chapter 3, "Using Manager IV," provides complete details on utilities.

TERMINAL CHANGE MANAGEMENT (TCM)

Terminal Change Management (TCM) provides a systematic and centralized way to administer changes made to your extensions, voice and data terminals, and attendant consoles in your system. You can easily add or remove terminals and their individual features and attributes, and change attendant console key assignments.

The changes may involve the following:

- System-wide terminal features
- Individual terminal features
- Console keys and features
- Equipment assignments

TCM allows you to reflect management decisions or personnel changes quickly and accurately by tailoring your system to meet your needs. You can do the following:

- Add, change, or remove terminals, terminal feature assignments, and set attributes
- Add, change, or remove attendant console key assignments and display console messages and locations
- Add modules to defined voice terminals
- Add voice and data terminals that are similar to existing terminals without reentering data
- Assign extension numbers either singly or several at a time
- Administer user information in a multiple-switch environment or extension numbers and number groups in a Number Portability network through a single transaction

- Produce reports of current terminal assignments; track assigned and unassigned terminals and circuits
- Partition extensions and attendant consoles in a Tenant Services environment
- Produce Tenant Services partitioning reports

TCM also lets you administer system-wide terminal features including:

- Class-of-service (COS) definitions
- Station ringing assignments
- Dialing plan assignments
- Speed calling/abbreviated dialing
- Custom intercom
- Call coverage
- Uniform Call Distribution/Direct Department Calling (UCD/DDC), Enhanced UCD, and Automatic Call Distribution (ACD) including call vectoring.

TCM and Manager IV´s Modeling Features

Once you have added terminals through TCM, you can use reduce repetitive typing by using two of Manager IV's features, Scrapbook and Clipboard (explained in Chapter 3 of this guide) to add like terminals. You can also add multiple extensions in a single transaction or modules to defined voice terminals. Furthermore, TCM allows you to administer station number portability, track terminal and circuit assignments, and create and monitor equipment inventory.

TCM also gives you access to a hardware database so you can administer carrier slots and circuit packs and generate inventory reports on the available and working equipment.

DEFINITY® Manager IV Terminal Change Management Operations provides details on using this application.

FACILITIES MANAGEMENT (FM)

Facilities Management (FM) allows you to administer all facilities in your system from one location. You can use FM to implement planned changes or react to problems. You can monitor and then change the configuration of your trunks and trunk groups, select network routing paths, and control network access by assigning and changing facility restriction levels (FRLs) and authorization codes, which permit outgoing calls to follow specific access paths. Reports of assignment details are also available.

Day-to-day FM tasks frequently center on such minor changes as adjusting permission levels for outgoing trunks or adding extra trunks to an existing trunk group.

You can get detailed information about your network from FM reports, either before you begin a task or afterwards to check that desired changes have been made.

FM Capabilities

FM commands are divided into the following related task groups.

Administering Network Features

These tasks are used to define network features that apply to the entire network or individual switches within the network. With FM, you can accomplish the following:

- Add, remove, or rearrange trunks and trunk groups including DS-1 and the Integrated Service Digital Network (ISDN) trunks
- Administer trunk features such as queuing short and long holding time boundaries used for restriction levels
- Assign names to trunk groups used for voice, data, modem pools, and host computer access
- Separate trunk types and signaling types
- Administer up to 15 call-processing steps for each call vector that allow you to customize the call patterns and use such switch features as recorded information announcements and automatic AUDIX night coverage for calls that would otherwise be redirected to an unstaffed message center.

Administering Transmission Facilities

With FM, you can manage switch features as well. For example, you can choose routing patterns to send calls over the most cost-efficient facility available and to control network use by permitting and restricting access to certain facilities. With FM, you can accomplish the following:

- Administer Uniform Call Distribution/Direct Department Calling (UCD/DDC), Enhanced UCD, and Automatic Call Distribution (ACD), including call vectoring
- Administer Centralized Attendant Service (CAS)
- Administer facility restriction levels (FRLs) and alternate FRLs that control your outgoing calls
- Define up to 90,000 authorization codes for DEFINITY Generic 2 and System 85 R2V4; define up to 9,000 authorization codes for DIMENSION System FP8 and System 85 R2V2 switches
- Administer the Tenant Services feature (Generic 2.1, System 85 R2V4)
- Administer both Automatic Route Selection (ARS) and Automatic Alternate Routing (AAR) patterns [Generic 2.1, System 85]
- Administer DCIU links and channel assignments and DCIU link alternate routing patterns for DCS environments or between a switch and an AUDIX or an AP Processor (AP)
- Administer your ISDN trunks

FM also provides the ability to test trunk groups. *DEFINITY® Manager IV Facilities Management Operations* provides detailed procedures for performing the FM tasks.

MAINTENANCE

Maintenance is the Manager IV application that gives you access to the procedures (or procs) of Generic 2, System 85 R2V2-R2V4, DIMENSION 2000 and DIMENSION 6000 switches so you can identify and troubleshoot possible problems in the switches in your network.

Depending on the user class your System Administrator has assigned to your login, you can perform the following tasks in the Maintenance application:

- Examine error and alarm logs to find the most serious errors
- Run error-detection tests of circuits to verify if the system is still defective
- Run diagnostic tests

- Resolve alarms in the alarm log and retire alarm indications
- Switch between the duplicated subsystems to place standby subsystems in service
- Make circuits available or unavailable for service
- Monitor system status
- Reinitialize all or part of the system

See *Manager IV System Administration* for more information about the Maintenance application.

APPLICATION INTERACTIONS

Because changes made through one application are shared by all Manager IV applications, you save time, effort and expense, and decrease the possibility of human error. Here are a few examples of how the Manager IV applications interact.

Terminal Change Management Interactions

TCM utilizes information that is updated by the FM application: Class of Service, Authorization Codes, Dial Access Codes, and Call Vectoring [System 85 R2V4 and DEFINITY Generic 2]

Facilities Management Interactions

TCM validates Authorization and Dial Access Codes, changes to System Class of Service, Centralized Attendant Service, and Call Distribution groups, and Call Vectoring information that is defined in FM.

3. USING MANAGER IV

This chapter explains what you need to know to access and use DEFINITY ® Manager IV. The detailed procedures in this chapter will help you understand the user interface before you perform any tasks. These procedures are presented in the order that you are most likely to use them.

WARNING:
Manager IV is not a pre-cut tool to be used for bulk provisioning cutover.

LOGGING ON AND OFF

Logging on gives you access to Manager IV. To log on, you need the following:

- Login ID. Your Manager IV System Administrator assigns this ID.
- Password. The Manager IV System Administrator also assigns this code. Keep your password confidential so unauthorized users cannot use your login.

Your System Administrator has determined whether you will log in directly to Manager IV or initially log in to the UNIX system before accessing Manager IV.

To log in directly to Manager IV, use the following procedure. To access Manager IV via the UNIX operating system, see "Procedure: Accessing Manager IV via the UNIX Shell" below.

Notei: If Manager IV is co-resident with another AT&T application, refer to the *AT&T Co-Resident Applications Front End (CAFE) User's Guide* for specific procedures for accessing Manager IV.

Manager IV and Multi-Tasking Graphics Terminal Users

AT&T 730 and 630 Multi-Tasking Graphics Terminal users must execute the Layers program before running multiple windows and accessing Manager IV. If this does not occur automatically at logon, these users must type **layers** in a non-layers window connected to a host on which the necessary software is installed.

Note: If you are running "Layers" on an AT&T 730 or 630 Multi-Tasking Graphics Terminal, you must reshape your window to 26 lines by 80 columns.

To avoid leaving a process hanging, these users should also log off Layers by selecting **Exit** from the Layers menu after completing a session. All windows disappear, and the UNIX prompt returns.

See the User's Guide for the appropriate multi-tasking graphics terminal for more information on Layers and multi-windowing capabilities.

Procedure: Logging in to Manager IV

Once the Manager IV System Administrator has established your login and password, follow this procedure to log on:

1. Establish a communication link with the processor running Manager IV.
   - If you are using a modem, dial up the Manager IV processor to create a communication link.

- If your terminal is hard-wired to the processor, a communication link already exists.

Your terminal screen looks like this:

```
login:
```

2. Enter your login ID at the login prompt and press **RETURN**.

```
login: xxxx
Password:
```

3. Enter your password at the password prompt and press **RETURN**.
   - If the system has any news, you will see the message "news: <news file>." See the *UNIX System V User's Reference Manual* for instructions on reading system mail.
   - If "Welcome to DEFINITY (TM) Manager IV" appears, proceed to the next step.
   - If "Login incorrect" appears, the system prompts you for a login; repeat step 2.

4. Verify your terminal type. The Term (xxxx) prompt displays the type of terminal your Manager IV System Administrator has associated with your login.
   - If the terminal type displayed is correct, press **RETURN**.
   - If the terminal type displayed is not the type you are working with, enter the correct terminal type and press **RETURN**.

   Entries for valid terminal types include the following:

TYPE	DESCRIPTION
AT386	AT&T 6386 Work Group Station
513	AT&T 513 Business Communications Terminal (513 BCT)
615	AT&T 615 Business Communications Terminal (615 BCT)
4410	AT&T 4410 Dataspeed Terminal
4425	AT&T 4425 Teletype Terminal
vt100	DEC® VT100
630	AT&T 630 Multi-Tasking Graphics Terminal
730	AT&T 730 Multi-Tasking Graphics Terminal

5. Verify the ID of the printer where you want Manager IV to send your printouts. The Printer (xxxx) prompt displays the ID of the printer that your Manager IV System Administrator has associated with your login.
   - If the printer ID displayed corresponds to the type of printer you are using, press **RETURN**.

- If the printer ID displayed is not the one you are using, enter the correct printer ID and press **RETURN**. See your Manager IV System Administrator if you have any questions about your printer ID.

```
Term (xxxx)>
Printer (xxxx)>xxx
Okay(y)?>
```

6. Indicate if the terminal type and printer ID are correct.
   - Press **RETURN** if the information is correct.
   - To change incorrect information enter **n** at the Okay(y)? prompt, and press **RETURN**.

```
Term (xxxx)>
Printer (xxxx)>
Okay(y)?> n
Term (xxxx)>
```

7. Enter the correct data by repeating steps 5 and 6.
8. If the terminal and printer information is correct, press **RETURN**.
9. If your System Administrator has set up your login to directly access Manager IV, you will see the opening Manager IV screen:

```
AT&T Mgr IV 2.2                    Mail









You're at the top of the tree.   For help, press <esc>?.
Enter application:
```

10. Enter the application, target, area, and commands as needed. You can enter this information all at once or wait for the system to prompt you.
11. If you have new mail, the message "Mail" appears at the top of your screen when you log in. To read or save your mail, use the command **shell create**, then follow the instructions in the *UNIX System V User's Reference Manual*.

Procedure: Accessing Manager IV Via the UNIX Shell

To access Manager IV through the UNIX shell, you must perform the following procedure each time you need access to Manager IV:

1. Type **. /etc/envlist** and press RETURN.
2. Type **$PROG/SMUE** and press RETURN.

   The system prompts you to verify your terminal and printer types.
3. Press RETURN.

   The opening Manager IV screen appears.
4. Enter the application, target, area, and commands, as needed. You can enter this information all at once or wait for the system to prompt you.
5. If you have new mail, the message "Mail" appears at the top of your screen when you log in. To read or save your mail, use the command **shell create** (explained in this chapter), then follow the instructions in the *UNIX System V User's Reference Manual.*

Note: If you edit your . profile to contain the line: **PATH = $PATH:**/*appl*/**smgr/usr/prog** (where *appl* is the application software file system name given to Manager IV), you can access Manager IV by typing **SMUE** at the UNIX prompt, and then performing step 3 above.

Procedure: Logging Off

Logging off terminates the communication link you established with the Manager IV processor when you logged on. Be sure that you are logged off successfully. Failure to do so could tie up system resources while you are off the system. You can log off any time that you are at a command path prompt.

To log off of Manager IV:

- Enter **bye** at any command path prompt.

Note

If you receive a broadcast message from the System Administrator that the Manager IV application is being brought down, be aware that you will remain logged into Manager IV but will not be able to perform any tasks until the Manager IV system is re-started. When you receive a second broadcast message that Manager IV has been brought back up, you can resume task activities.

ACCESSING SYSTEM 75 AND GENERIC 1 THROUGH MANAGER IV

Manager IV enables you to connect to System 75 and Generic 1 switches from the same terminal you use to administer your System 85 and Generic 2 switches. However, the user interface differs because when you connect to System 75 or Generic 1, you are connected to its own system management program. Once connected to one of these products, you must use the System 75/Generic 1 command format of verb:object:modifier.

To access a System 75 or Generic 1 switch via Manager IV, do the following:

1. Log on to Manager IV, specifying the terminal type as **sys75**.

   Note: Your system must have the terminfo entry "sys75" for System 75 and Generic 1. The terminfo entry is available on the Terminal Update Utility, fix 2015 (version 1.7 for 3B2 users and version 1.9 for 386 users). This utility package is available from DSG and the Technical Service Center (TSC).

After you log on successfully, the Manager IV smue screen appears.

2. At the application prompt, enter **adjunct administration**.
3. At the target prompt, specify a valid System 75 or Generic 1 product ID, such as a switch LDN or name.
4. At the object prompt, enter **adjunct**.
5. At the verb prompt, enter **talk**.
6. The System 75 or Generic 1 switch generates a login and password prompt. Enter this information, and specify **513** as the terminal type.

   Once you have logged on to System 75 or Generic 1, the function keys will not appear; you must use the keypad. For example, two of the System 75 function keys—Command and Help—are at the top right-hand side on the keyboard.
7. From this point on, use System 75 or Generic 1 system management commands in their verb:object:modifier format.
8. To terminate the System 75 or Generic 1 session:
   - Enter **logoff**, then enter **bye**.

Note: For more information about using Generic 1 or System 75 commands, see the appropriate Administration Manual.

BEFORE YOU PERFORM A MANAGER IV TASK

This chapter provides information you should know before you perform any Manager IV tasks. It covers the use of escape sequences, function keys, on-line help, transaction screens, and the structure of the command path.

This information is also consolidated on the *Manager IV Quick Reference* card, document 585-223-708, which is available from the AT&T Customer Information Center. The quick-reference card contains escape sequences, function keys, service request commands, utilities, and Modeling and Clipboard features. See Appendix B for document ordering information.

Using Function Keys and Escape Sequences

You can use function keys or escape sequences to communicate with Manager IV with only one or two keystrokes.

Screen-Labeled Function Keys

The eight most frequently used escape sequences are assigned to screen-labeled function keys. Figure 3-1 depicts the eight screen-labeled keys assigned in Manager IV. The labeled blocks automatically appear at the bottom of your screen. These eight blocks correspond to the eight keys marked F1 through F8 on the top row of your keyboard. The labeled blocks remain visible until you turn off your terminal.

Note: Screen-labeled keys are supported only on AT&T terminals, excluding the AT&T 630 and 730 Multi-Tasking Graphics Terminals.

To use a particular screen-labeled function key, press the function key on the keyboard that corresponds to the function you want to perform. If you do not have function keys, you can still perform the particular function by using the equivalent escape sequence.

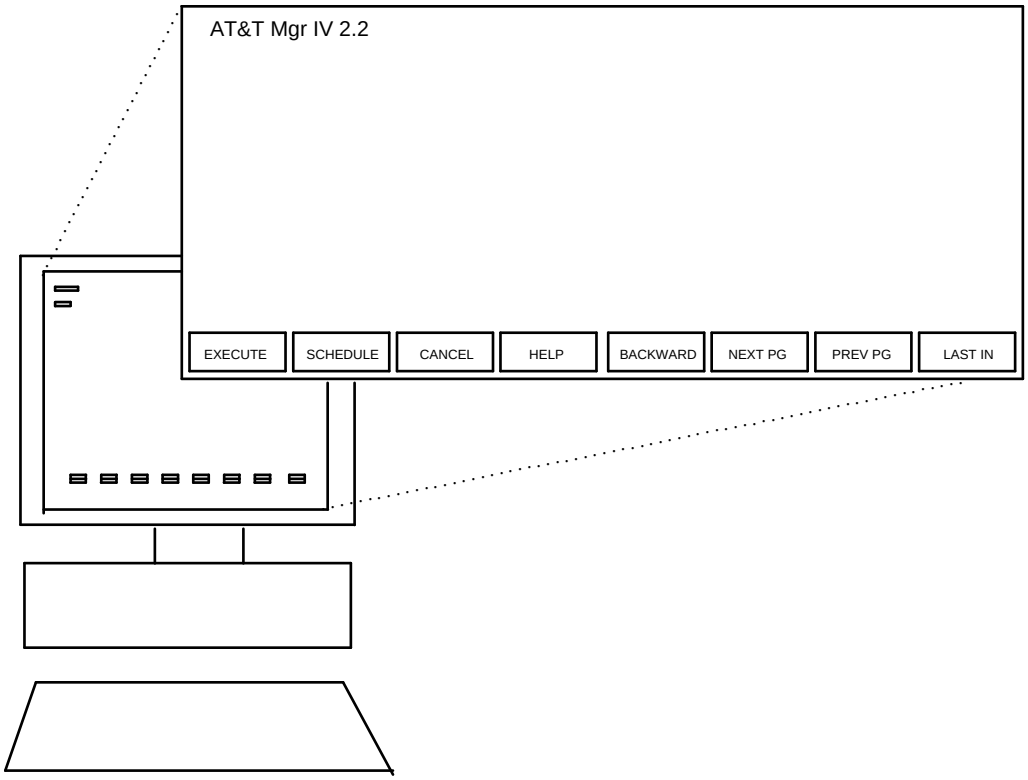


Figure 3-1. Screen-Labeled Function Keys

Escape Sequences

An escape sequence is a combination of two keystrokes that performs a specific function. You can use an escape sequence, for example, to clear a screen of entries or to request on-line help.

To use an escape sequence, first press and release **ESC** and then press the second key in the sequence. Be aware that the second key in an escape sequence may be an upper- or lowercase letter or a special character. The system distinguishes between upper- and lowercase letters, each of which is assigned a different function. For example, **ESC** - **P** prints a paper copy of your current screen, while **ESC** - **p** moves you to the previous page of information in a transaction with multiple pages. Table 3-1, "Function Keys and Escape Sequences," lists the keys and escape sequences that perform specific tasks. The keys are grouped by function or use.

Table 3-1. Function Keys and Escape Sequences

Function:	Use Function Key	Use Escape Sequence
Cancel the information entered and return cursor to last prompt	F3 (CANCEL)	ESC - c
Change to another target		ESC - t
Clear all data entries		ESC - K
Clear data in the present field		ESC - k
Create a scrapbook model		ESC - M
Create a global scrapbook model		ESC - G
Display short help	F4 (HELP)	ESC - ?
Display extended help		ESC - !
Display command help		ESC - v
Display function keys and escape sequences		ESC - r
Execute a transaction	F1 (EXECUTE)	ESC - e
Move cursor to next field		ESC - l
Move to next page	F6 (NEXT PG)	ESC - n
Move to previous page	F7 (PREV PG)	ESC - p
Print copy of screen		ESC - P
Recall a scrapbook model file		ESC - m
Recall a global scrapbook model file		ESC - g

(Continued)

Table 3-1. Continued

Function:	Function Key	Use Escape Sequence
Recover your last data input	F8 (LAST IN)	ESC - i
Recover your last data output		ESC - o
Redraw your screen		ESC - d
Reset function keys		ESC - f
Return cursor to previous field or level in command path	F5 (BACKWARD)	ESC - b
Return cursor to top level in command path		ESC - h
Schedule a command for execution at a later time	F2 (SCHEDULE)	ESC - s
Undo all entries on screen		ESC - U
Undo entry at current field		ESC - u

Using On-Line Help

The following four types of on-line help give you the right amount of information when you need it.

- Short Help
- Extended Help
- Command Help
- Escape Sequence Help

Manager IV offers a scrolling capability so you can move freely forward and backward within a specified Extended Help, Command Help, and Escape Sequence Help.

When you request Extended Help, Command Help, or Escape Sequence Help, the help replaces your transaction screen and the following menu appears in the message window:

```
<esc n>next pg <esc p>prev.pg b=begin e=end u-scroll up d-scroll down
q-exit
```

The following table explains the scrolling options in this menu:

To:	Use:
Scroll page by page forward	Esc - n
Scroll page by page backwards	Esc - p
Scroll forward one line	d or down arrow
Scroll backwards one line	u or up arrow
Zoom to beginning of help	b
Zoom to end of help	e
Quit help	q, CANCEL, or Esc - c

If the help you choose is less than 18 lines, this menu will not appear, and you will be prompted to press RETURN to return the cursor to the field where you requested help.

Short Help

Short help displays the valid entries for your current position in Manager IV. You can use short help for the following:

- Command Path Prompts. The command path prompt appears on your screen directly beneath the command path.
- Transaction Fields. An 80-character display at the bottom of your screen lists valid field entries and sometimes provides a brief description of the field.

To access short help, press F4 (HELP), or ESC - ?.

Short help will also be displayed automatically at the bottom of your screen if the data entered in a field is not valid for that field.

Extended Help

Extended help is used when long lists of valid codes or more detailed descriptions are needed. Since the information may extend over one page, extended help always replaces your transaction screen. Any entries you have made on your screen remain intact, however.

To access extended help, use ESC - !. Pressing RETURN at the end of a help screen returns the cursor to the field where you requested extended help. Pressing q, CANCEL, or ESC - c moves you out of multiple extended help pages and also returns you to the field where you requested extended help.

See "Using On-Line Help" above for instructions on moving backwards and forwards in an Extended Help.

Command Help

Command help displays information on the use of specific object-verb pairs or commands. You can get command help after entering both an object and a verb or while working within a transaction screen.

When appropriate to the specific command, command help displays the following headings and corresponding information:

- **Purpose** This heading explains what the command does and always appears when you use command help.
- **Prerequisites** This explains what conditions must be met before the command can be performed.
- **Cautions** This heading explains how to avoid error conditions and their consequences.
- **Notes** This heading provides additional information to help you to use the command.
- **Postrequisites** This explains anything that must be done after the command is performed.

To access command help, press ESC - v. If you request command help before you have entered a complete command path, you will see the message "Extended help is not available."

Pressing RETURN at the end of a help screen returns the cursor to the field where you requested command help. Pressing q, CANCEL, or ESC- c moves you out of multiple command help pages and also returns you to the field where you requested command help.

See "Using On-Line Help" above for instructions on moving backwards and forwards in a Command Help file.

Escape Sequence Help

Escape sequence help displays the valid escape sequences and function keys. You can access escape sequence help from any Manager IV command level or transaction screen —in fact, from anywhere within Manager IV. When you access escape sequence help, your current screen is replaced with the help information. To access escape sequence help, press ESC - r.

See "Using On-Line Help" above for instructions on moving backwards and forwards in Escape Sequence help.

To cancel escape sequence help, press CANCEL, q, or ESC - c.

Using Transaction Screens

Most administration for Manager IV is performed by entering information on transaction screens that are accessed through a particular command path. This chapter describes important features that are common to all Manager IV transaction screens.

Status Information

The top two lines of the screen contain information about your current status within the system. This information changes as you access different elements of Manager IV and move through the Manager IV hierarchy. The first line is organized, from left to right, as follows:

- System identification, which identifies the Manager IV release number (for example, AT&T Mgr IV 2.2)
- The Service Request number field identifies the name you have assigned to a working Service Request
- The Product type field contains the type and version number of the switch you are administering. For example, "DEFINITY G2.2" appears if the target is a DEFINITY Generic 2.2 switch
- The message "Mail" appears if you have unread mail in your mailbox
- The message "Connect" indicates that you have a live connection to a product
- After you enter the Product or Corporation ID for the product you are administering, the target designation is displayed. The target may be either a 7- to 10-digit LDN or a 1- to 13-character alphanumeric string.

The second line of the screen, the Command History Line, reflects your movement forward or backward through the Manager IV command hierarchy. See "Understanding the Manager IV Hierarchy" in Chapter 1 for a discussion of Manager IV's levels.

The Command History Line, which appears in inverse video, serves three purposes:

- To display the last command entered on the command line.
- To notify the user when a command will take longer than two seconds to respond.

  Upon the execution of a command, Manager IV displays the message "Please Wait." This message is displayed until the system is ready to accept additional user input.
- To display the current page number of the form displayed in the Activity Window.

Manager IV also displays short messages at the bottom of your screen. These messages confirm that a transaction is being processed or indicate that an error condition exists. For more information, see "Understanding System and Error Messages" later in this chapter.

Understanding Data Fields and Entry Restrictions

The fields appearing on a transaction screen may be required, optional, or display-only. Each type has rules regarding its use:

- Required Field. You must make an entry in a required field before you can move the cursor to the next field.
- Optional Field. You can choose whether to make an entry in an optional field before moving to the next field.
- Display-Only Field. You cannot make an entry in a display-only field; it shows system information only.

Moving the Cursor

To move your cursor from one field to another on transaction screens, use the following methods:

- To move the cursor forward to the next field, press **RETURN** or **ESC** - **l**.
- To move the cursor back to the previous field, press **BACKWARD** or **ESC** - **b**.

Understanding Dynamic Transaction Screens

Most Manager IV transaction screens are dynamic, that is, the data fields that appear on a given screen depend on the following factors:

- The target switch on which you are working. For example, fields related to the Call Vectoring feature will only appear for a System 85 R2V4, DEFINITY Generic 2.1, or 2.2 target switch.
- The entries made in previous fields. For example, if you are adding a trunk group, after you enter the trunk type the fields needed to specify its characteristics will appear.

You may not see one or more pages of a multipage screen if the fields on these pages are not applicable to data entered in a previous field, or if fields on that page do not apply to your target switch. If this is the case, the message, "Page *n* blank," where *n* is the number of the blank page, appears in place of the page number on the top right corner of the screen.

SYSTEM UTILITIES

Manager IV provides you with several operating system capabilities, referred to as system utilities. Utilities commands include the following:

connection create	Establishes a connection with a target switch.
connection end	Terminates a connection with a target switch.
connection display	Displays users currently connected to a target switch.
errors display	Displays the error message associated with a specified Manager IV error number.
port add	Defines port attributes so the port can properly communicate with Manager IV and defined products (**for System Administration use only**).
port change	Changes descriptive comments for a port (**for System Administration use only**).
port disable	Disables an outgoing product access port and decreases the number of reservations in one of the port pools **(for System Administration use only)**
port display	Displays the state of availability and the attributes associated with product access ports used to connect the Manager IV processor with other network equipment.
port enable	Activates a product access port when it is returned to service. **(for System Administration use only.)**
port release	Releases a port currently in use. Use for emergency purposes to terminate a connection **(for System Administration use only).**
port remove	Removes a port (**for System Administration use only**).
results display	Displays the contents of a specified results file, which shows the status of each transaction in a scheduled SR. See "Procedure: Checking Results Files" in Chapter 5 for details.
results remove	Deletes a specified results file from the system. See "Procedure: "Removing Results Files" in Chapter 5 for details.
scheduled-entry display	Displays complete information about pending scheduled transactions including scheduled SRs, reports, or scheduled facility tests. See "Procedure: Displaying Scheduled Entries" in Chapter 5 for details.
scheduled-entry list	Displays summary information about pending scheduled transactions. See "Procedure: Checking Scheduled Entries" in Chapter 5 for details.
scheduled-entry remove	Removes a pending scheduled transaction other than an SR. See "Procedure: Removing Scheduled Entries" in this chapter.
shell create	Gives the user access to the UNIX shell. See "Procedure: Using the Shell Create Utility" later in this chapter.

You can access these commands from any level of any application except when you are prompted for a target or verb, or you can enter **utilities** at the application prompt when you first log on to the system.

For example, if you want to see which users are currently connected to a particular target switch when you first log on, use the command path **utilities connection display**. However, if you are in a specific application already and want to check this information, just enter **connection display** at the object prompt.

If you are not sure whether utilities are available to you at any point in a transaction, press **F4** (HELP) or **ESC** - **?** for a list of valid entries.

Note: The utility commands **database list** and **database remove** can be accessed under the **system-administration** hierarchy. For example, to list file name and product ID information, enter **system-administration database list**. The transaction **system-administration database remove** removes files from Manager IV database. The **database** commands are **for System Administration use only**.

Certain UNIX capabilities may be restricted depending on the level of access assigned to an individual user. See your Manager IV System Administrator for more information.

Procedure: Using the shell create Utility

The command **shell create** gives you access to the UNIX shell where you can take advantage of standard UNIX utilities like electronic mail, system news, etc.

1. Enter the command **utilities shell create** if you have just logged on, or just type **shell create** from anywhere else in the Manager IV system.
   - The prompt "env, shell, or list>" appears.
2. Type **shell** and press **RETURN**.
   - If you type **env**, you may set the value of a local environment variable.
   - If you type **list**, you may view the values of all variables in your environment.
3. The UNIX shell ($) prompt appears.

   See the *UNIX System V User's Reference Manual* for information on using standard UNIX utilities.

To return to Manager IV, type **exit** or **Ctrl** **D**.

PERFORMING A MANAGER IV TASK

Once you log on to Manager IV, you can execute a task by entering the command that will display the screen required to administer that task.

Procedure: Using Command Path Prompts

Once you log on successfully, Manager IV leads you step-by-step through the command path. At each prompt, type a valid entry and press **RETURN**. When you press **RETURN**, your entry moves to the PATH field at the top left of the screen (except for the target, which appears in the upper right-hand corner).

After you press **RETURN**, the next prompt appears. After you respond to the final prompt and press **RETURN**, Manager IV displays the screen associated with the command path you have entered.

Here is an example of command path prompts from TCM. A specific choice is given at each level to illustrate the system response. What you actually enter depends on the configuration of your system. Remember that you can also use **ESC** - **?** to access on-line help for a list of valid entries for each prompt.

Notes:

- For commands that require a connection to the product, you must use the command **connection create** to create a connection, or schedule the transaction in a Service Request using **service-request create**. An error message is displayed if you enter a command without following this procedure.
- The System 75 emulation cartridge must be installed on the user's terminal.

1. After successful logon to Manager IV the Enter application: prompt appears. Your screen looks like the following, with the appropriate Manager IV release number filled in:

```
AT&T Mgr IV 2.2









You're at the top of the tree.   For help, press <esc>?.
Enter application:
```

2. If you press **ESC** - **?** a list of valid entries is displayed. Some options shown below may not appear on your screen if your user class prohibits access to those objects.

```
AT&T Mgr IV 2.2


Please enter one of the following:

adjunct-administration
fm
maintenance
system-administration
tcm
utilities

Or, one of the following utilities:

connection
errors
port
results
scheduled-entry
shell



You're at the top of the tree. For help, press <esc>?.
Enter application:
```

3. Enter an application and press **RETURN**. In this example, the application entered is **tcm**.

```
AT&T Mgr IV 2.2
tcm









Enter target:
```

4. Enter a target and press **RETURN**.
   - You need to know the exact format of the target and any other format specifications for it. These specifications are controlled by the customer definition file, which is established when the database is initialized.

- If you press **ESC** - **!** or **ESC** - **?**, a list of allowable targets is displayed, as shown in the next screen.

```
AT&T Mgr IV 2.2
tcm


               Target                Name
               ------                ----
               (201)555-1212         Head Office 85R2V3
               (303)555-7500         Denver 85 R2V4
               blue                  Denver Data Center
               Chicago               Chicago DIMENSION




Press RETURN to continue:
```

- In this example, the target entered is **(201)555-1212**. The message "Target being verified" will flash, and then this screen will appear.

```
AT&T Mgr IV 2.2            DEFINITY G2.2         (201)555-1212
tcm




Target established
Enter area:
```

5. Enter an area and press **RETURN**.
   - If you press **ESC** - **?** a list of valid entries is displayed.
   - Valid entries for TCM and FM are **admin**, **database-admin**, **product-admin**, and **report-admin**.
   - In this example, the area entered is **admin**. This screen appears.

```
AT&T Mgr IV 2.2          DEFINITY G2.2              (201)555-1212
tcm admin




Enter object:
```

6. Enter an object and press **RETURN**.
   - If you press **ESC** - **?** a list of valid entries is displayed.
   - In this example, the object entered is **extension**.

```
AT&T Mgr IV 2.2          DEFINITY G2.2              (201)555-1212
tcm admin extension




Enter verb:
```

7. Enter a verb and press **RETURN**.
   - If you press **ESC** - **?** a list of valid entries is displayed.
   - Valid entries for many objects include **add**, **change**, **display**, **remove**, and **report**.
   - In this example, the **add** verb is entered. The transaction screen for the **extension add** command is shown below.

```
AT&T Mgr IV 2.2            DEFINITY G2.2                  (201)555-1212
tcm admin extension add                                   Page 1 of 4

   Account ID: _______________

    Extension: _____

No. of Extns.: ___      Like Another Extn.?: _              Analog?: _
     Set Type:                  Analog Type:               Hot Line?: _
  Equip. Loc.: * / / /   /           Locale:              Module Type: _

 EXTENSION ATTRIBUTES
  Class of Service: __      LWC Destination: _                  AMW?: _
    Auxiliary ANI?: _                AP No.: _           Audible AMW?: _
 Hunt To Extension: _____ AUDIX Machine No.: _ Bearer Capability COS: __

  Call Pickup Group No.: ___   OR    Call Pickup Group with Extension: __
 Call Coverage Group No: ____ OR   Call Coverage Group with Extension: __

  Univ. Code Calling ID: ___       Attd. Controlled Restriction Group: __
```

You can now perform a transaction by making entries on the transaction screen. This TCM sample transaction screen actually contains four pages; only one is shown here.

Typing Ahead

Once you are familiar with the entries needed for a complete command path, you can type in a string of entries using the type-ahead method. This allows you to do the following:

- Enter a complete command path from the first prompt, thereby avoiding all other prompts.
- Enter the remainder of a command path from any prompt in the path.
- Enter a partial command path from the first prompt, press **RETURN**, and be prompted for the rest.

You can begin entering a command path as soon as you log on to Manager IV successfully and the Enter application prompt appears. Enter the complete command path, leaving a space between each entry. For example, to enter the command path described above, type **tcm (201)555-1212 admin extension add** and press **RETURN**.

Note: When using type ahead, you can designate a target in your command path only if you have not already specified one. If you want to change targets, you must first use **ESC** - **t**.

Abbreviating Command Path Entries

When you enter a command path, you need only type enough letters of each part of the command path to distinguish it from other valid entries. The only exception is a target entry, which must be entered in its entirety.

For example, if you are at the command level of the Manager IV command hierarchy and you use short help to display a list of the valid entries for the verb, you might be given the following list:

```
add
change
display
remove
```

To use the verb "change," you only have to enter a **c** since there are no other valid verb entries beginning with "c." Even though you abbreviate a command path entry, it still displays the entire command path line on the screen so that you can verify that you have entered an abbreviation correctly.

If you do not enter enough of the entry to distinguish it from other valid entries, Manager IV automatically displays the short help listing of all the entries that matched the partial string. If the partial entry does not match any of the valid entries, the entire short help listing of valid entries is displayed.

Combining Abbreviations and Typing Ahead

To save time on command path entries, you can combine the "typing ahead" and "abbreviated command path entry" features. For example, if you use the type ahead feature only to enter the command path for an **extension add** transaction, enter: **tcm (201)555-1212 admin extension add**. However, by combining the type ahead and abbreviated command path entry features, you can obtain the same results by entering a shorter version such as **tc (201)555-1212 ad exten ad**.

MODELING FEATURES: SCRAPBOOK AND CLIPBOARD

This chapter covers the use of the Manager IV modeling features, Scrapbook and Clipboard. Both features help you reduce the entry of repetitive data while performing transactions. Scrapbook allows you to save permanent files of transaction data for repeated or later use, while Clipboard lets you recover your most recent transaction data for immediate use. You can choose which feature is most helpful for the transactions you are performing.

Use the verb **add** with the appropriate objects in constructing model transactions. For example, if you want a model for trunk group administration, use the **trk-grp add** transaction in your model, rather than using the verbs **display** or **change**. This way, you can be assured that all fields will be populated in the model when you want to use it.

Using The Scrapbook Feature

Scrapbook lets you create model transaction screens. A model is a saved copy of a transaction screen that has entries in some or all of its data fields. A single model copies the entire transaction, even if it includes multiple screens.

Manager IV allows you to create models for your own use (personal models), or global models for all users to access. Data saved from the screens can then be read into the same or similar transaction screens when you access them later.

Procedure: Creating a New Personal Model

1. Enter a command path to access a transaction screen using the **add** verb. When the screen appears, enter information into the appropriate data fields.
2. To create a model of your current screen, press **ESC** - **M**.
   - The prompt "Save fields on model name (RETURN to abort):" appears at the bottom of your screen.
3. At the model name prompt, enter a name for the model file and press **RETURN**. The file name can consist of a maximum of 14 alphanumeric or special characters and can be either upper- or lowercase characters. One of three possible responses occurs:
   - If "model <xxx> saved" appears (where xxx is the file you specified) you have executed the transaction successfully. The model is saved in directory "scrap."
   - If you are prompted "replace current one?," the name you specified already exists. Type **y** to overwrite the existing model, or type **n** and enter a different name at the model prompt to create a new model.
   - If "Cannot Create" appears, contact your Manager IV System Administrator.

Procedure: Retrieving Data From a Model

Model files appear in your "scrap/" directory. Follow the procedure below to use a personal model you created.

1. Use the appropriate object and the **add** verb to access a transaction screen.
2. To read the model file into the screen, press **ESC** - **m**.
   - The prompt "Recover fields from model name (RETURN to abort):" appears at the bottom of your screen.

3. At the model name prompt, enter the name of the model file you want to recall and press RETURN.
   - The fields on your current screen fill with the appropriate entries from the model file.
4. You can customize the screen by changing entries in applicable fields.
5. Execute or save your transaction screen by pressing EXECUTE or ESC - e.

Procedure: Changing a Model

To change a model file, follow this procedure:

1. Use the appropriate object and verb to access a transaction screen.
2. Read a model file into the screen by pressing ESC - m.
   - The prompt "Recover fields from model name (RETURN to abort):" appears at the bottom of your screen.
3. At the model name prompt, enter the name of the selected model file and press RETURN.
   - The fields on your current screen fill with the entries from the model file.
4. To change the original model file, type over the entries you want to change. Press RETURN to skip over entries.
5. Press ESC - M.
   - The prompt "Save fields in model name (RETURN to abort):" appears on the bottom of your screen.
6. Reenter the name of the original model file, and press RETURN.
   - The "replace current one?" prompt appears on your screen.
7. You can either replace the existing file or specify a new name for the file you just created.
   - To confirm the update and replace the file, enter **y** at the "replace current one?" prompt, and press RETURN. The old model file is now updated with the new data.
   - To keep your original model file unchanged, enter **n** at the "replace current one?" prompt. Then enter a new name at the model name prompt. This new model contains the changes you have made.

Procedure: Removing a Model

It is important to clean up your files periodically by removing models no longer in use. To remove a model file, follow this procedure:

1. Enter **results remove** and press RETURN.
2. Enter **scrap/** followed by the name of the scrapbook model file you want to remove in the Results File Name field.
3. Press EXECUTE or ESC - e.

Procedure: Using Global Models

When you create model files using ESC - M, the model is stored in your "scrap" directory and only you can access it. Manager IV also has a global model capability that allows you to create a model that is accessible to all users. If you have several Manager IV users, they can all use the same models to input similar data.

Global models are stored in the directory "gscrap." They work the same way as other scrapbook models, but the escape sequences used to create and recall them are different.

Prerequisite: To use global modeling, your System Administrator must first add the **gscrap** directory to the **etc/profile**.

See: Chapter 2, "User Administration" in the *DEFINITY® Manager IV System Administration* manual for instructions on administering the global modeling feature.

- To create a global model, use the escape sequence ESC - G.
- To recall an existing global model, use the escape sequence ESC - g.

Follow the procedures above to change and remove a model, substituting ESC - G for ESC - M, and substituting ESC - g for ESC - m. Remember that global model files are stored in the directory "gscrap."

Using The Clipboard Feature

With Clipboard, you can avoid entering repetitive data by copying entries on one transaction screen to the same fields on the next screen you call up. Unlike Scrapbook, which creates permanent model files of specific transaction screens, Clipboard consists of a temporary input and output file that carries data field entries between the same or similar transaction screens. The system automatically stores the input and output of the most current executed transaction. With each execution of a transaction, the input and output files are overwritten.

Clipboard is especially useful in recovering from transaction errors. For example, if a transaction fails, you can use Clipboard to recall your original entries on a new screen. You can then retype the necessary corrections to the screen before running the transaction again.

The following procedures demonstrate how to create a Clipboard file and read it into the next screen you call up.

Procedure: Recovering Your Last Input

This procedure uses **ESC** - **i** to read a file of the last input into your current transaction screen. If your current screen is not exactly the same as your previous one, only the relevant entries are read into the corresponding fields. Also, if you are reading data from or to a multipage screen, you still only need to use the Clipboard command once.

Note: Clipboard recovers the data entered on only the *last* transaction you executed.

1. Enter a command path to access a transaction screen.
2. Enter information into the appropriate data fields.
3. Execute the transaction.
4. Enter a command path for the same or similar transaction screen and press **RETURN**.
   - The appropriate screen appears.
5. To read the Clipboard file into the current screen, press **ESC** - **i**.
   - The data entered on your last transaction screen fills the appropriate fields on your current screen.
6. Modify the data on the screen(s) if necessary.
7. Execute the transaction.

Procedure: Recovering Your Last Output

This procedure uses (ESC) - (o) to read the data output from your last transaction immediately into your current transaction screen. If your current screen is not exactly the same as your previous one, only the relevant data reads into the corresponding fields. Also, if you are reading from or to a multi-page screen, you still need to use the Clipboard command only once.

Note: Clipboard recovers the output or display from only the *last* transaction you executed.

1. Enter a command path for a transaction that, when executed, creates screen output or a display. For example, enter the **display** verb for a specific object.
2. Enter information into the appropriate data fields.
3. Execute the transaction.
   - The system responds by displaying output data.
4. Enter a command path for the same or similar transaction, and press (RETURN). For example, enter the **add** or **change** verb for the same object you just displayed.
   - The appropriate screen appears.
5. To read the Clipboard file into your new screen, press (ESC) - (o).
   - The appropriate data output from your last transaction fills the appropriate fields on your current screen.
6. Modify the data on your screen if necessary.
7. Execute the transaction.

SCHEDULING AND REMOVING MANAGER IV TASKS

Procedure: Scheduling Manager IV Tasks

Transactions that are scheduled to run at a future time are referred to as scheduled entries. A Service Request is one type of scheduled entry. SRs are automatically scheduled when you execute the **service-request end** or **service-request change** command as explained in Chapter 5. You can also schedule certain other transactions by executing them with the ESC - s sequence instead of using EXECUTE or ESC - e.

You can schedule a task to run once at a specified time, to be repeated daily at the same time, or to run at constant intervals throughout the day. For example, you can schedule reports to run and print during off hours or at the same time each day or week.

Follow this procedure to schedule a Manager IV task. Note that Service Requests cannot be scheduled using this method.

1. Enter the appropriate command path for the task to be scheduled, and enter the information on the transaction screen.
2. Press ESC - s to schedule the transaction.

```
AT&T Mgr IV 2.2          DEFINITY G2.2                 <target>
tcm report-admin extension report                      Page 1 of 1
                      Scheduling Information


        Schedule Date:

        Schedule Time:

          Task Number:

   Output Destination:
```

3. In the Schedule Date field, enter the date the job should run as **mm/dd/yy**.
   - Enter an asterisk in any field if you want the job to run repeatedly. For example, if you enter ***/01/***, the job will run on the first day of each month. If you enter ***/*/***, the job will run each day.
   - You can also enter a list of up to five days, separated by commas. For example, **12/23,24,25,26/90**.
4. In the Schedule Time field, enter the time the job should run as **hh:mm**.
   - You can also enter asterisks in this field to indicate that the job should run repeatedly. For example, if you enter ***:20**, the job will run at 20 minutes past the hour, every hour.
   - If you enter **OFFHR** in this field, Manager IV schedules the job to run during a non-peak evening hour.
   - You can also enter a list of up to five times, separated by commas, such as **12,1,2,3:00**.

5. In the Task Number field, enter the task number you want to use to identify this job. It can be up to 12 characters.
6. In the Output Destination field, enter **f** to send the task's output to a file, or enter **p** to send it to a line printer.
   - If you enter **f**, the Results File Name prompt appears. This is the name of the file where error or system messages will be written. The Results File name defaults to the Task Number you entered above.
   - If you enter **p**, the Line Printer Name prompt appears. The name of the default printer appears automatically in this field.
7. If you want to change the default Line Printer or Results File name, type over the default entry.
8. Press **F1** (EXECUTE) or **ESC** - **e** to run the transaction. When the job is scheduled, the message "Command scheduled successfully" is displayed.

To check if a transaction is scheduled, use the command **scheduled-entry list** to see a listing of tasks, or the command **scheduled-entry display** to see detailed information about each task. These commands are explained in "Checking Scheduled Entries" in Chapter 5.

To unschedule the transaction, use the command **scheduled-entry remove**, explained below.

Procedure: Removing Scheduled Entries

Use this procedure to remove a scheduled entry, including scheduled reports or facilities tests. Although you can use the **scheduled-entry list** or **display** verbs to view pending Service Requests, you *cannot* use the **remove** verb to remove a pending Service Request. See "Procedure: Removing Transactions from a Service Request" in Chapter 5 or "Procedure: Removing Failed or Pending SRs" in Chapter 6 for information about removing SRs.

1. Enter **scheduled-entry remove** and press **RETURN**.

```
AT&T Mgr IV 2.2              DEFINITY G2.2            <target>
scheduled-entry remove

            Select the scheduled entry you want to remove:



                 Entry Type:
                Task Number:
                 Product ID:
```

2. In the Entry Type field, enter the type of scheduled task to be removed: **print request, pr, shell,** or **application**.
3. In the Task Number field, enter the task number that was assigned to the task when it was scheduled.
4. In the Product ID field, enter the Product ID of the task's target switch.
5. Press **EXECUTE** to run the transaction.
   - The message "Request forwarded to dispatcher" is displayed, followed by the message "Command completed."
   - The scheduled entry is removed.

COMMON CAUSES OF MANAGER IV ERRORS

This chapter explains some of the most likely reasons for error messages to appear during Manager IV transactions. For information on troubleshooting Service Request errors, see Chapter 6 of this guide. For error administration information for a specific application, refer to the appropriate user's guide.

Entering Incorrect Information

Many errors occur because you have mistyped an entry or entered incorrect data. Since mistyped information is sometimes within the legal parameters of the system, you may not always detect these errors before the command executes.

You may be made aware of these errors by one of the following: appearance of a short help message (which lists the parameters of the field in error), an error message that appears after execution, failure of another related transaction, or user complaints.

To avoid these errors:

- Check your entries in each field on the screen before going on to the next page of fields or before executing the command.
- Double-check any information that the system is unable to verify for you. For example, Manager IV can check if the Equipment Line Locations (ELL) are available, but you may need to find out if the actual hardware has been installed.

If you execute the command and receive an error message, do the following:

- Correctly retype your entry in the field indicated by the error message.
- If you detect the error immediately after executing the command, use the Clipboard feature (explained later in this chapter) to recover the input you have already typed; then advance the cursor to the field with the error and enter the correct information.
- If there is no error message but the transaction fails to execute, access the appropriate screen again and check the command help. Enter the correct information; then execute the command.

Communications Problems

A communications problem is a failure in data communications between Manager IV and the switch. These problems, which are normally infrequent, are caused by various hardware conditions. However, you should realize that when such problems occur, a Manager IV transaction that has been successfully applied to the Manager IV database may not be successfully downloaded to the switch.

An example of a communications error message is "AH:SCM:F Unable to communicate with the PBX." This message tells you that there was a communications problem when Manager IV tried to access the product. The abbreviation "SCM" tells you that the Manager IV process known as the Switch Communication Module is reporting the error.

Data communications software can detect and correct most errors (such as those caused by telephone line noise) and can recover from many others (such as telephone connection interruptions or "line drops") through repeated "retries."

"Error Correction Strategies" in Chapter 6 of this manual contains more information about correcting communication errors.

Database/Switch Errors

Database/switch errors occur because of a discrepancy between the information contained in the Manager IV database and the information contained in the switch. Such discrepancies require some adjustment so that both the Manager IV database and the switch are synchronized. Database/switch errors do not automatically generate error messages, because there is no data check between the Manager IV database and the switch. A database/switch error can be detected in several ways.

- If the transaction was a scheduled Service Request, use the follow-up procedures explained in Chapter 5 to be sure that your SR was successful. Resolve any problems as soon as possible, using the troubleshooting techniques explained in "Error Correction Strategies" in Chapter 6.
- If you suspect there may be a conflict between the Manager IV database and the switch, you can use Manager IV **display** verbs in database-administration and product-administration to compare information.

  If you run a display command from the administration area of Manager IV applications, the information on your screen is usually from the Manager IV database. There are some objects, however, that do not retain data in the Manager IV database. For these, the display you see in the administration area reflects the status of the product, not the database.

  If you run a display command in the administration or product-administration area for commands that do not retain data in the Manager IV database, the information comes directly from the switch. Any information that is not stored in the switch will *not* be shown. Refer to the appropriate Manager IV application user's guide for specific display transactions that do not retain data in the Manager IV database.

UNDERSTANDING SYSTEM AND ERROR MESSAGES

Manager IV provides messages to help you avoid and correct errors and inform you of the progress of your transaction.

System Messages

When you type information in the fields on a transaction screen, Manager IV verifies the entries against valid field parameters. If you type an incorrect entry, or attempt to skip past a required field, the short help message for the field will appear on the bottom of your screen.

After your data has been accepted and verified by the system and you execute the transaction, the message " Validating data entered —please wait" flashes.

- Manager IV performs further checks to determine if the information entered is correct. For example, it will check the see if a trunk group already exists. If a problem is found, an error message describing the error is displayed; if the problem is serious enough, no changes are made to the database or sent to the switch. For example, if you tried to add trunk group 85, but this trunk group was already assigned, the database would not be changed.
- If the error is caused by an incorrect field entry, you can redisplay the screen entries you made using Clipboard, a time-saving feature described later in this chapter, then fix the incorrect field entry by typing over it. Or, type (**ESC**) - (**d**) to redraw your screen.

Generally, after field errors are corrected and you execute the transaction, the system displays your input screens. The system prompts you to press (**RETURN**) to page through the screens.

If the transaction is not in a scheduled SR, it downloads to the switch after the Manager IV database is successfully updated. The message "Second phase of command execution—please wait" is displayed.

- Error messages will display to inform you of any errors or warnings, or of any alarms if there is a connection to the product. A transaction is aborted if an error occurs that is not recoverable, or it is retried if the error is recoverable (such as a connection line drop).

If the download to the switch does not complete successfully, the message "Second half of command execution failed Service Request: *_____" is displayed.

- In an immediate transaction, the Service Request number is assigned by Manager IV and always begins with an asterisk. Copy this number, then use the procedures for "Troubleshooting Service Requests" in Chapter 6 of this manual.

The messages "Changing Status in Database, please wait" and "Status Change Succeeded" are displayed to indicate that Manager IV is updating the files it uses to track the success or failure of transactions.

When all error conditions are corrected and the transaction completes, the message, "Command Complete" is displayed.

If an error caused the transaction to fail, the message "Command did not complete successfully" is displayed.

Warning Error Messages

A warning message informs you that because of an error, *part* of your transaction has failed to download to the switch. The word "Warning" is displayed within the message. To correct the error, follow the specific directions in the message.

Fatal Error Messages

A fatal error message informs you that an entire transaction has failed to download to the switch. An **F** is displayed within the message. You must execute the entire command again. If you are not sure whether an error message is warning you that part of a transaction has failed to execute, or informing you that an error is fatal, use the **display** verb of the appropriate object.

Fatal error messages generally include information about the source of the error. For example, the following fatal error message may display: "AH:PBX:F (000,1:5) In use lamp or Feature/SVS active [08]." The letters "AH" at the beginning of the message indicate that the DEFINITY Generic 2 switch has both major and minor alarms. This message also indicates a PBX error ("PBX") related to Proc 000, Word 1, Field 5 ("000,1:5"). The specific proc error message number ("08") is also supplied. Error messages that come from the switch are prefixed "PBX." Switch errors can be referenced in System 85/DEFINITY Generic 2 administration manuals.

4. INTRODUCTION TO SERVICE REQUESTS

This chapter introduces Service Requests (SRs) and the benefits of using them. It explains how SRs work, and recommends how to plan and schedule them.

WHAT IS A SERVICE REQUEST?

A Service Request (SR) lets you group a set of transactions and schedule them to be downloaded to the target switch at a specified time.

All administration transactions entered through the user interface, as explained in Chapter 3, are treated as Service Requests. Immediate transactions update both the DEFINITY ® Manager IV database and the switch database immediately. Scheduled Service Requests allow you to group transactions together and schedule them to be downloaded later to the switch. Think of a scheduled SR as an envelope that holds transactions for downloading until the specified date and time. Scheduled Service Requests can be used in the Facilities Management and Terminal Change Management applications.

TCM/FM SERVICE REQUESTS

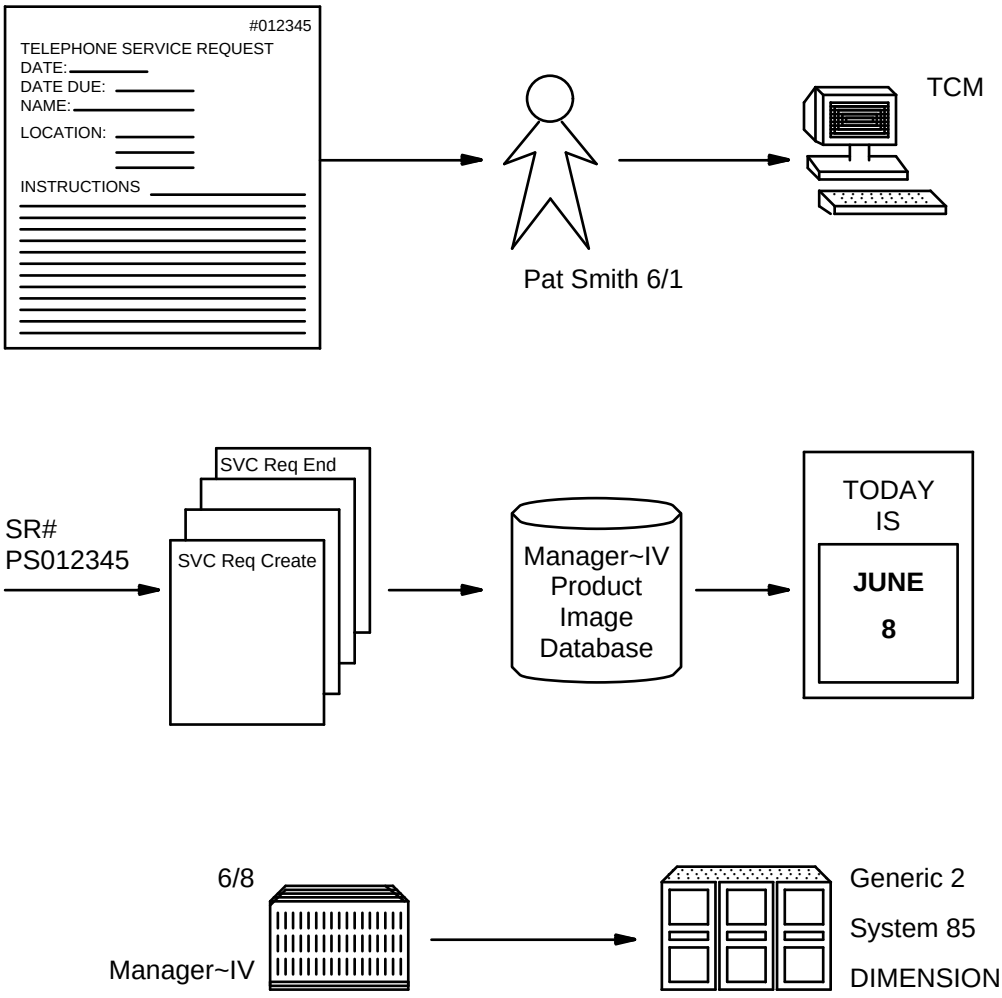


Figure 4-1: Path of a TCM/FM Service Request

BENEFITS OF USING SERVICE REQUESTS

Scheduled SRs help Manager IV to operate efficiently by promoting optimal use of switch and personnel time and resources. Scheduled SRs have several advantages over immediate transactions:

- Scheduled SRs allow Manager IV to perform updates efficiently and with more control. Results files provide a record of updates and associated problems. Service Request commands provide you with a means to track and correct errors, ensuring that the Manager IV database and the switch translations are synchronized.
- Because port access between the switch and Manager IV is limited, only a restricted number of users can connect to a switch at one time. Using **connection create** ties up the communications ports while you enter transaction data; scheduling transactions in SRs allows you to leave the ports free while you enter data. The data is immediately reflected in the Manager IV database, but is downloaded to the switch at the scheduled time.

- SRs allow you to spread your workload more evenly throughout the day or month. For example, you can schedule transactions to run during periods when system use is low, such as evening or night. Or, if you need to make many changes that are effective on a given date, you can enter them in advance over a period of several days or weeks and schedule them to run on the correct date. This improves overall system response by spreading out the system's workload and also frees you from having to wait for your transactions to complete at the switch.
- SRs allow you to group together a limited number of transactions related to the same product or facility. It is easier to track changes to one product when transactions are "stacked" within a single SR. Note that when you group scheduled changes, or when you stack transactions in an SR, you must consider the sizing and stacking recommendations explained in "Planning Your Service Requests" later in this chapter. In Manager IV, multi-node transactions can update several products within a single SR.

MANAGER IV DATABASES AND AREAS: A REVIEW

As explained in Part I of this manual, Manager IV administrative functions maintain and update two databases: the switch database in individual switches managed by Manager IV, and the Manager IV database. These two databases must be kept synchronized in order for Manager IV to accurately maintain and reflect switch information.

Service Request processing provides a means of scheduling, tracking, and recording changed data as it updates the Manager IV and switch databases. To understand how SRs help to maintain database synchronization, let's review the relationship between these two databases and the areas of Manager IV.

The Switch Database

The switch database resides in the switch and contains switch translation and user information. Translations are entries to the part of the switch's software that can be customized to suit your needs.

The Manager IV Database

The Manager IV database resides on the Manager IV processor and is composed of the following:

- The *product-image database*, which is a "mirror-image" of switch translation information. The product image database is populated during system initialization using the Translations, Recovery, Additions, and Conversion System (TRACS).
- Data retained by Manager IV that is not present in the switch.

Because the Manager IV product image database mirrors the switch, you can display the switch information through Manager IV without having to access the switch itself. In addition, information entered into Manager IV transactions can be checked before it is downloaded to the switch, thereby reducing the chance of error.

Manager IV Areas and SRs

In FM and TCM, the main Manager IV applications that use SRs, the Manager IV command hierarchy has four areas:

- Administration, which updates both the Manager IV database and the switch database
- Database administration, which updates only the Manager IV database
- Product administration, which updates only the switch database
- Report administration, which produces reports

Service Request processing is done through the administration area of the Manager IV command hierarchy. Transactions performed in this area generally update both the Manager IV database and the switch database, keeping them synchronized. You cannot schedule SRs for database-administration, product-administration transactions, or reports, although you can schedule individual reports.

Some transactions in the administration area affect only the switch. That is, the data administered by these transactions is not stored in the Manager IV database. These transactions may be entered within an immediate or scheduled SR. If they are entered in scheduled SRs, Manager IV downloads the data to the switch at the scheduled time.

For detailed information on the Manager IV processes that update the Manager IV database and download transactions to the switch, refer to Chapter 7, "Manager IV Process Architecture."

Immediate Transactions vs Scheduled SRs

Manager IV processes both immediate transactions and scheduled Service Request administration transactions in the same way. In both cases, the Manager IV database is updated immediately, then information from your transactions is written to the *pending queue*, a storage area for transactions waiting to be downloaded to the switch.

The differences between immediate transactions and scheduled Service Requests are as follows:

- You assign the SR number to a scheduled SR. Manager IV assigns the SR number to an immediate transaction. SR numbers generated by Manager IV have the following format: an asterisk, followed by the first three characters of the user's login ID, followed by the month and day in the form "mmdd," followed by a two-character string. For example, the SR number "jer0621a6" is for user "jer" and was entered on June 21. If the system assigned this number it would be "*jer0621a6"; the asterisk indicates that Manager IV generated the SR number rather than the user.
- Scheduled SRs download from the pending queue to the switch at the scheduled date and time. Immediate transactions download to the switch immediately after the Manager IV database has been updated.
- When you schedule an SR, the results from the download of transactions within that SR are sent to a file (results file) that you can access. If you schedule an SR for immediate download, the results from that download are displayed directly on your screen.

If you are executing an administration command that updates the switch, you must either be in a Service Request or you must create a connection to the product via the command **connection create**. Creating an SR is the preferred method.

Following Up Your Transactions

The SR commands and procedures explained in Part II of this manual (Chapters 5, 6 and 7) can also be used to correct immediate transactions that have failed at the switch. The system-supplied number for the SR (beginning with an asterisk) will appear on any error messages written to the screen. You can use the SR number to examine errors or reschedule transactions just as you would do with a scheduled SR.

As noted above, Manager IV informs you of errors that occurred during the execution of a transaction (whether it is an immediate or scheduled SR), and provides several tools to correct them. For immediate transactions, be sure to make a note of the system-supplied SR number that appears in error messages on the screen; it will make error recovery much simpler.

Note: It is very important that you follow up on error messages, since failed or partially failed transactions usually mean that the Manager IV database now has different information than the switch database. If you do not resolve these problems as soon as possible, the Manager IV database will not accurately reflect the information in the switch, and the potential for additional errors increases.

Chapter 5 explains how to use and follow up on the outcome of SRs. Chapter 6 provides information about correcting SR errors and keeping the databases synchronized. The appropriate Manager IV application operations guide provides additional information about application-specific errors.

PLANNING YOUR SERVICE REQUESTS

Keep these suggestions in mind when scheduling transactions in SRs. They will make troubleshooting easier and prevent database synchronization problems.

Assigning a Service Request Administrator

Each Manager IV site should have one person responsible for coordinating Service Request processing. This person can be the Manager IV System Administrator or an appointed Service Request Administrator. The SR administrator checks and evaluates the status of all SRs and assists users in resolving failed SRs. Recommended daily procedures are explained in Chapter 5.

Limiting the Size of Service Requests

Manager IV does not restrict the size of an SR, but it is recommended that YOU restrict the number of transactions in ONE SR. The more transactions contained in an SR, the more difficult it is for you to change or remove the transactions or correct errors. In addition, each Manager IV transaction can represent MULTIPLE product transactions (i.e. multiple pending-queue entries represented in **service-request display** as transactions *1.0, 1.1, 1.2,* etc.). Therefore, the potential number of error conditions that could occur when attempting to download to the switch can be greater than the number of transactions in the SR. Also, you must always end your Service Requests using the command **service-request end**.

It is strongly recommended that each SR is limited to 15 - 20 transactions (i.e. object/verb pairs entered at the command line).

Stacking Service Requests

Stacking is the scheduling of a change on top of a pending change. You are stacking when you schedule two or more transactions relating to the same item. You might, for example, add a voice terminal, then change one of its button assignments; or you might change a trunk group's Automatic Circuit Assurance (ACA) thresholds as well as its queuing thresholds.

You *can* stack changes *within* an SR. That is, you may have two transactions within an SR that modify the same item. As with the example above, you can change a trunk group's features within the *same* SR.

You *cannot* stack changes *between* SRs. That is, you may not modify the same item in two different SRs. For example, if you scheduled one SR to change an Automatic Route Selection (ARS) pattern's trunk group preferences and scheduled a second SR to change that ARS pattern's time-of-day plan, you would receive an error message that explains that the record is locked and includes the number of the conflicting SR. This feature is a protection against you or another user accidentally overwriting changes and ensures that transactions are downloaded in their scheduled order.

You *cannot* perform an immediate change on an entity or item that is included in a pending SR. If you attempt to do this, you will receive an error message that includes the number of the conflicting SR. If it is absolutely necessary to make the change immediately, you should remove the conflicting SR, make the change, and then reenter the SR you have removed; or reschedule the SR to run before its current scheduled time.

Scheduling Service Requests

In the interval between the time an SR updates the Manager IV database and the time it downloads to the switch, the Manager IV database records affected by the SR cannot be changed by other SRs or by immediate transactions. Also, the switch and Manager IV database contain different information during this interval. Keep this in mind when scheduling SRs; you may not want to schedule SRs too far in advance.

If two or more SRs are scheduled for the same time with data for the same target, Manager IV automatically groups them together so that they share the same connection. You will not see evidence of this process, but hardware and system resources will be used more efficiently.

Thus, multiple SRs for the same switch should be scheduled for the same time. For example, you might schedule all changes to Switch A at 1:00 a.m., and all changes to Switch B at 2:00 a.m. This scheduling should be coordinated through your SR or System Administrator.

HOW SERVICE REQUESTS WORK

Manager IV administration transactions executed as immediate or scheduled SRs use two database files, the *pending queue* (PQ) and the *shadow pending queue* (SPQ). Figure 4-2 illustrates the flow of an FM transaction, as an immediate or scheduled SR.

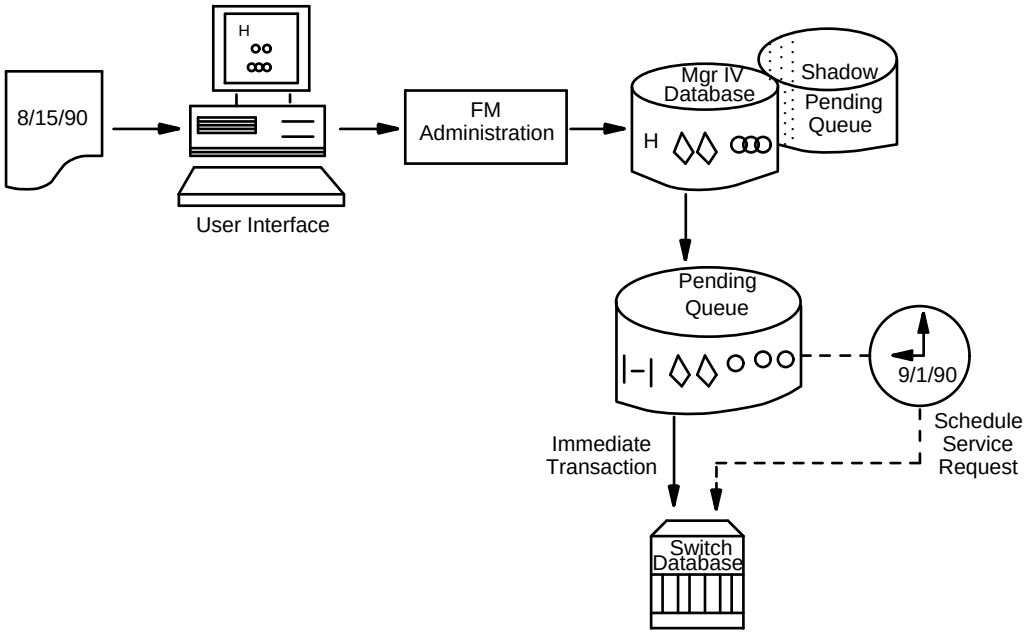


Figure 4-2. Flow of an FM Transaction

Shadow Pending Queue (SPQ)

For FM and TCM administration transactions, Manager IV copies the "original" database records (as they were *before* the transaction was executed) to the SPQ before updating the Manager IV database. This information is stored in the SPQ until the update to the Manager IV database and the download to the switch are successfully completed. The information is retained so that the Manager IV database can be restored if necessary. If the update and download succeed, the copied records are automatically removed from the SPQ. For more information, see "Procedure: Removing Failed or Pending Service Requests" in Chapter 6.

Pending Queue (PQ)

The pending queue holds a copy of the data entered in the transaction screen, as well as the data to be downloaded to the switch, marked with a status code and the SR number. Information entered into the Manager IV database as administration commands may be broken down into multiple entries before being stored in the pending queue for download to the switch. These PQ entries generally correspond to System 85/DEFINITY Generic 2 or DIMENSION Procedures (procs) that the switch can understand. The entries can be thought of as "product" transactions and are derived from the Manager IV database transaction.

It is important to understand that one Manager IV database transaction may correspond to several "product" records (or transactions) stored as entries in the pending queue. For example, the TCM command **terminal add** is used to administer terminal types in the Manager IV database and the switch. For this single Manager IV command, there is a separate PQ entry for the original screen transaction, for the transaction that adds terminal information to the switch, for each of the buttons, and for the terminal's abbreviated dial list.

Manager IV database records that are related to records in the PQ are locked from update by immediate transactions or other SRs until the PQ records have been downloaded to the switch. This is done because the Manager IV database and the switch contain different information in the interval between the update to the Manager IV database and the download to the switch. If other transactions were to be attempted during this time, Manager IV's data checks would not be accurate.

Transaction Numbering Within An SR

To distinguish between Manager IV database records within an SR and the multiple product records entered in the pending queue for download, Manager IV assigns numbers and status codes to all records of the transactions.

The main status codes in the pending queue are the following:

p Pending switch execution (i.e., waiting to be downloaded to the switch.)

n Not for download. This record is a copy of what was input to the transaction screen.

d Change the Manager IV database only.

s The transaction was downloaded successfully to the switch.

f The transaction failed switch download.

r The system is changing the status of the transaction from "pending" to "successful."

e The system is changing the status of the transaction from "pending" to "failed."

When the SR is created, the status code is set to either **p, n**, or **d**. After the download is attempted, the status code **p** is updated to either **s** or **f**. The status flags **e** and **r** rarely appear. The reports produced by the **service-request report** and **service-request display** commands use transaction numbering and status codes so you can check the status of all Service Requests. (See "Daily Follow-Up Procedures" in Chapter 5.)

When a transaction is executed within a Service Request from the administration area of Manager IV, each transaction is assigned a number. The pending queue records that represent original input screens are assigned sequential transaction numbers in the format **<transaction number>.0**, and are given a status of **n** indicating that the record is *not for download* to the product. The corresponding PQ records associated with the Manager IV database record are assigned sequential numbers in the format **<transaction number>.<record number>**, and are assigned a **p** status flag indicating that the record is "pending" download to the switch.

For example, when the **terminal add** transaction is used to add a 12-button terminal, **terminal add** is transaction number one in the SR. The record for the original transaction screen is numbered **1.0**, the PQ entry to add the terminal is **1.1**, the entries to add the buttons are numbered **1.2** through **1.13**, and the abbreviated dial list entry is **1.14**. If the SR had a second transaction, PQ entries would be numbered **2.0**, **2.1**, **2.2** and so on.

Figure 4-3 shows the flow of a **terminal change** administration transaction that is the first transaction in the SR. The figure shows the PQ entries that are held for download to the switch, the new Manager IV database records, the shadow pending queue records that are copies of the old Manager IV database records, and the corresponding contents of the switch.

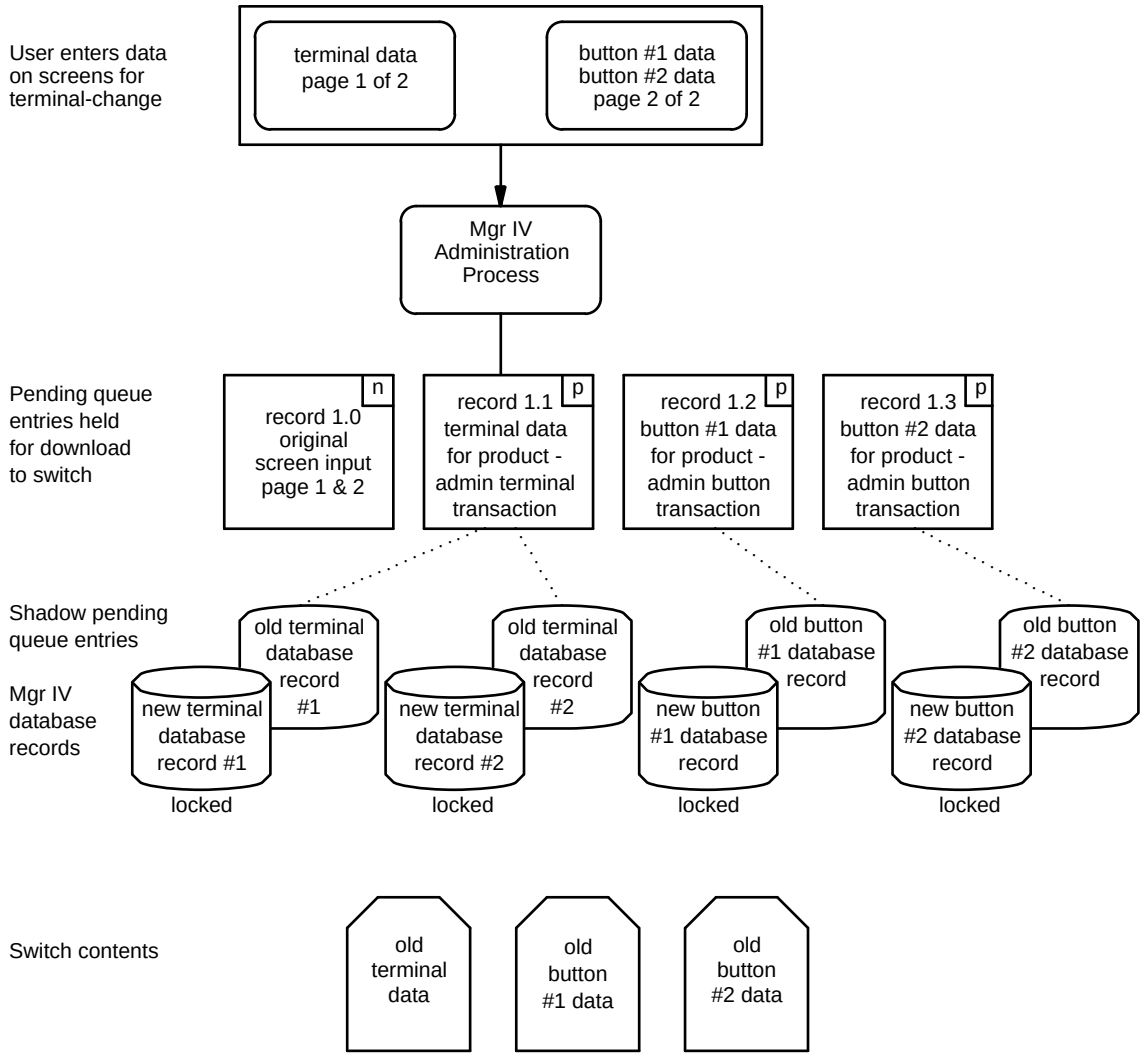


Figure 4-3. Example of a "terminal change" Transaction

Figure 4-3 shows the state of the transaction after it was executed to update the Manager IV database but before the download to the switch is attempted. When the transaction executes, the following occurs:

- The updated Manager IV database records are locked to prevent update by other users or SRs.

- Manager IV copies the input transaction screen to the pending queue, assigning the record the number **1.0**, since this is the first transaction in the SR. This record's PQ status flag is set to **n** to indicate that the record is not for download.
- Manager IV creates additional pending queue records that will make changes to the switch. These corresponding PQ record entries (or product-administration transactions) are assigned numbers **1.1** through **1.3**; if there were more buttons being changed on this set, there would be additional records. These records have a PQ status of **p** to indicate "pending" download.

  Note that in Figure 4-3, terminal database records #1 and #2 correspond to record 1.1 in the PQ; button #1 database record corresponds to record 1.2 in the PQ; and button #2 database record corresponds to record 1.3 in the PQ.
- The shadow pending queue "shadows" the original database records as they were before the transaction was executed.

When a Download Succeeds

When a Service Request downloads successfully, the status flags of **p** for the PQ entries are re-set to **s** (for successful) or **n** (indicating the entry was not for download). When all PQ entries are either **n** or **s**, Manager IV removes all the PQ and SPQ records associated with the SR. All the Manager IV database records (currently locked to prevent other users or SRs from accessing the record) are unlocked once they are downloaded successfully.

Note: Contact your System Administrator if you encounter a "stuck" pending flag, that is, a pending flag field set to "p" even though there are no pending queue entries associated with the product-image database record.

Figure 4-4 shows the **terminal change** transaction after a successful download.

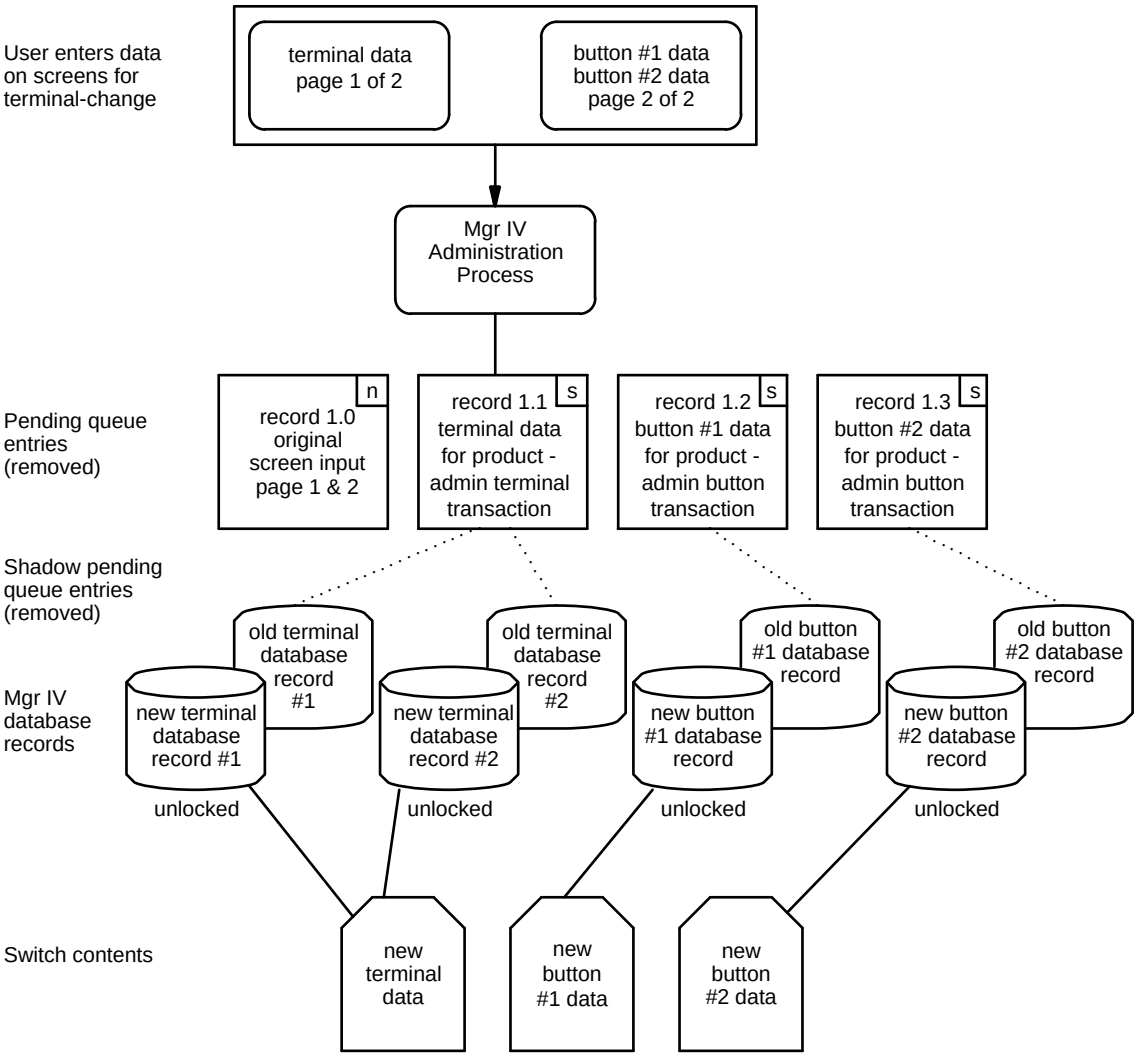


Figure 4-4. Example of a Successful Download

5. USING SERVICE REQUESTS

This chapter describes basic procedures for using and checking scheduled SRs. It details the checks and procedures that you should perform during normal daily operations.

RECORDKEEPING AND CONTROL

It is very important to keep careful track of SRs. You should always ensure that updates to switch translations are correctly downloaded, that the DEFINITY ® Manager IV database is synchronized with the switch, and that "pending" transactions are kept to a minimum.

Service Request Worksheet

To assist all users in maintaining records of their SR processing, a sample Service Request worksheet is included. You can use this sample as a model for creating your own worksheet designed to meet the needs at your site.

Enter this information when the SR is created:

SR #	The Service Request number specified
Date	The date the SR was created
Scheduled Time	The time the SR is scheduled to execute (download to the switch)
Scheduled Date	The date the SR is scheduled to execute (download to the switch)
Transactions	A brief description of each transaction entered in the SR as well as any dependent product transactions

Enter this follow-up information after the SR has run:

Failed	A mark in this column indicates transaction failed to download.
Succeeded	A mark in this column indicates transaction successfully downloaded to the switch.
Mail	A mark in this column indicates mail was received *and* deleted.
Results	A mark in this column indicates results were reviewed *and* deleted.

SERVICE REQUEST WORKSHEET

SR No.	ENTRY DATE	Scheduled		Transactions - Brief Description of Each	FAIL	SUCCEED	MAIL	RESULTS
		Time	Date					

EXECUTING A SERVICE REQUEST

Use this procedure to execute an SR for downloading to the switch. This sequence represents "normal" or daily operations common to all users. Each step is explained in the chapters that follow.

1. Use **service-request create** to open a Service Request. Make sure you record the SR number you assign to the SR. See "Procedure: Opening a Service Request" below for complete instructions.
2. Execute the transactions within the SR. You should group together a limited number of related transactions in one SR.
3. Use **service-request end** to close the SR and schedule it for downloading. See "Procedure: Closing A Service Request" below for complete instructions.
4. You can create and end additional SRs as needed. Remember to group related transaction changes within one SR. Limit the number of transactions within an SR so that results are easier to track and in case you want to append additional transactions to the SR.
5. Once a transaction is entered into an SR, you cannot modify the information in that transaction.
   - At any time before the scheduled download time, you can add transactions to an existing SR using **service-request append**. (This includes stacking transactions to the same facility.) See "Procedure: Appending to a Service Request" below for instructions.
   - You can also remove transactions from an existing SR using **service-request remove**. See "Procedure: Removing Transactions from a Service Request" for instructions.
6. [Optional] After scheduling SRs to be downloaded, use **scheduled-entry list** to view all scheduled SRs awaiting execution. This list will include any SR transactions that are pending, even SRs that have failed and are now scheduled for "retry." See "Procedure: Checking Scheduled Entries" below for complete instructions.
7. For System 85 R2V4 and DEFINITY Generic 2, the Service Request administrator should use the **daily-tape-run schedule** command to establish a daily backup for each target. The command automatically copies current switch translations to tape at the same time each day until you "unschedule" it. See "Procedure: Scheduling a Daily Tape Run" for information.
   - Make sure you schedule **daily tape run** to be executed at a time when all transaction downloading is completed because access to the switch is denied while this command is running.

Appendix A of *Getting Started with Manager IV* contains a Service Request command directory. You can also use the *Manager IV Quick Reference* as a guide to Service Request Commands. See Appendix B for document ordering information.

Procedure: Opening a Service Request

Follow these steps to open a Service Request and enter transactions into it.

1. After logging in to the system, enter the appropriate application (such as **fm**) and specify a target.
2. Enter **admin** to specify the administration area.
3. Enter **service-request create** to open the SR.

```
AT&T Mgr IV 2.2            DEFINITY G2.2                  chicago
fm admin service-request create                           Page 1 of 1

          THE SCHEDULED TIME IS IN THE TARGET'S TIME ZONE

    Service Request Number: __________

                Due Date:__/__/__      Due Time: __:__



     After this command has executed, you will be in service
     request mode.  All transactions will be automatically added to
     this service request until you complete the request
     with the service-request end command.
```

4. In the Service Request Number field, enter an SR name of up to 10 characters to identify the SR.
   - Immediate transactions are assigned an SR number by Manager IV. The SR numbering convention makes it easy for users to recognize and identify their SRs. A Manager IV-assigned SR number begins with an asterisk (*) followed by nine alphanumeric characters in the following format:
     - — the first three characters of the user's login
     - — the current month and day in **mmdd** format
     - — two random alphanumerics ranging from 00 to zz

     For example, for a transaction run by user "jer" on May 8, the SR number might be ***jer0508a3**.
   - When naming scheduled SRs, tracking SRs will be easier if you use an SR numbering convention similar to that used by Manager IV. Use the first three characters of your login and the current date in the **mmdd** format.
5. In the Due Date field, enter the month, day, and year that the SR should download to the switch.
6. In the Due Time field, enter the time (as **hhmm** based on a 24-hour clock) that the SR should download.
   - In order to compensate for time zone differences between various regions of the country, Manager IV automatically computes the correct execution time (based on the Due Time field) for the time zone of the target switch. If you are working with multiple switches in one SR, the first product (or target) included in the SR determines the time zone for the due time.
7. Press **F1** (EXECUTE) or **ESC** - **e** to execute the **service-request create** command.
   - The SR is now opened. You will remain in this SR until the SR is closed using the command **service-request end**. Any administration transactions you perform while Manager IV is in this SR (except displays) are assigned to this SR number.
   - The SR number appears on the first line of the transaction screen as shown in the following screen.

```
AT&T Mgr IV 2.2  SR:jer0508a3       DEFINITY G2.2   chicago
fm admin service-request




Enter verb:
```

8. Record the SR number, creation date, and scheduled time and date on your SR Worksheet.
9. To begin adding transactions to this SR, press **ESC** - **b** to return to the previous level in the command path (the object level). Repeat this step until you reach the command path prompt that you want.
10. Assign transactions to the SR.
    - Enter the appropriate object-verb in the command path.
    - Complete the transaction screen as you would when working in the immediate mode, pressing **ESC** - **e** after each transaction.
    - If the transactions are successfully added to the SR, the system message "Command added to the service request" displays at the bottom of your screen.
    - The above message does not appear if you are executing a display transaction from the SR or if the transaction is cancelled, or if invalid input data causes the transaction to fail in the Manager IV database.

Procedure: Closing A Service Request

Follow this procedure to close an SR and schedule it for downloading at the due date and time specified in the **service-request create** command.

1. Complete all transaction processing for this SR.
2. Press **ESC** - **b** to go to the object level of the command path.
3. Enter **service-request end**.
    - This screen shows SR processing in the **fm** application in the **admin** area.

```
AT&T Mgr IV 2.2    jer0508a3   DEFINITY G2.2          <target>
fm admin service-request end                          Page 1 of 1


                        Continue on error? n


     When this is executed, you will no longer be in service request
     mode.  The service request will be automatically scheduled for
     the due date and time.
```

4. Specify the "Continue on Error" option. Press **RETURN** to select **n** (no). Enter **y** to select yes.
   - The default for Continue on error is **n**. With this option the scheduled SR will stop downloading transactions to the switch at the point where any transaction within the SR fails to download successfully. Subsequent transactions within the SR *will not* download until the error is corrected and the SR is rescheduled.
     — The "no" option is recommended because it prevents further inconsistencies between the Manager IV database and the switch. Transactions within SRs usually depend on the success of other transactions in the SR; if one transaction fails it is likely that the successful download of subsequent transactions within the SR will cause out-of-synch conditions between the Manager IV and switch databases.
     — When Continue on error is set to **n**, it is easier to determine causes for transaction errors and to choose recovery methods.
   - If you choose the "yes" option, transactions following the failed transaction within the SR will continue downloading. Choose this option only if your transactions are *not* dependent on each other. If subsequent transactions depend on a failed transaction and you choose to continue processing, you run the risk of additional errors and out-of-synch conditions between the Manager IV and switch databases.

     Note: The download of some transactions within a Service Request may be skipped even if "y" has been entered in the Continue on Error? field. This occurs because Manager IV will look for any dependencies on previous transactions within a given Service Request, before it attempts the download of each transaction.

5. Press **EXECUTE** or **ESC** - **e** to execute the **service-request end** command.
   - The message "Service request is now scheduled" displays on the bottom of your screen.
6. Press **RETURN** to return to the command path.

Procedure: Checking Scheduled Entries

Use this procedure to check that an SR is scheduled properly. The **scheduled-entry list** command lists all scheduled tasks including SRs, daily tape runs, reports, and SRs that have been rescheduled or retried. The information for each scheduled task includes the scheduled date and time for each execution, the entry type, the product identification, and the task number.

The scheduled entry list is sorted by date and time; SRs are listed in the order of the next execution.

If you want to see detailed information for any scheduled entries, use the command **scheduled-entry display**. For information see "Procedure: Displaying Scheduled Entries," after this procedure.

1. Enter **scheduled-entry list** and press **RETURN**.
2. Press **ESC** - **e** to execute this command.
   - A listing of all SRs awaiting execution appears. The list contains the next execution date and time, entry type, product ID, and task number. The task number corresponds to the SR number.

```
AT&T Mgr IV 2.2                  DEFINITY G2.2                <target>
tcm admin scheduled-entry list


  Next Execution          Entry Type        Product ID        Task Number
------------------     ---------------     -------------    --------------
06/26/89 Mon    23:00  Service Request     9992244          *cyu062615
09/04/89 Thurs 14:00   Service Request     9992244          jsc0507bb
09/04/89 Thurs 15:70   Service Request     9992222          gil0123dd
09/05/89 Fri    13:30  DailyTape           9992222          tape0605aa
09/05/89 Fri     6:00  Application         9992244          jer0519a3



Press RETURN to continue
```

3. Press **RETURN** to page through the list. At the last page, the system message "Command completed" appears at the bottom of the screen.
4. Check the listing to see if the SR you just created has been scheduled properly.
5. Press **RETURN** to go to the command path.

Procedure: Displaying Scheduled Entries

Use this command only when you need to check detailed information about a scheduled task. This information can be used to investigate SR failures.

You have the option of displaying all information for scheduled entries or selecting the information for the display.

1. Enter **scheduled-entry display.**

```
AT&T Mgr IV 2.2              DEFINITY G2.2           <target>
fm admin scheduled-entry display                     Page 1 of 2

          Display Information for All Entries in Table? y
```

2. Select information for the display:

- Enter **n** to specify the selection criteria for entries to display, then go to Step 4.
- Or press **RETURN** to select the default selection of **y** to display *all* scheduled entry information.

3. Press **ESC** - **e** to execute **scheduled-entry display**. Go to step 5 to select information for the display.
4. Specify selection criteria for the scheduled entries to display.

```
AT&T Mgr IV 2.2              DEFINITY G2.2                <target>
fm admin scheduled-entry display                          Page 1 of 2

               Display Information for All Entries in Table ? n

               Select Entries by the following:

  Scheduled Time: _____________________ Next Execution: _____________
  Task Number: ___________               Owner: _________
  Entry Type: ___________________        Product Time Zone: _____
  Product ID: ______                     Connection Required: _
  Product Type: ______                   Feature Package: _______
  Hardware Configuration: __             Security Code: ______
  Retry Count: _                         Send Mail: _
  Create Results File: _                 Results Filename: ___________
  Polling Frequency: _
```

- Specify the selection criteria by entering data for any of the fields on the screen. For example, you can display scheduled entries for a specific Task Number or Product ID by entering the task number or product ID in the appropriate field.

5. Press **RETURN** to go on to page 2.
6. Enter **y** at the Display All Fields prompt if you want to display all fields for the scheduled entries to be displayed. If you enter **n**, the screen changes to the following and you must select the fields you wish to display.

```
AT&T Mgr IV 2.2                DEFINITY G2.2                  <target>
fm admin scheduled-entry display                              Page 2 of 2

                     Display All Fields? n

                          Display the following fields:

               _ Scheduled Time                    _ Next Execution
               _ Task Number                       _ Owner
               _ Entry Type                        _ Product Time Zone
               _ Product ID                        _ Connection Required
               _ Product Type                      _ Feature Package
               _ Hardware Configuration            _ Security Code
               _ Retry Count                       _ Send Mail
               _ Create Results File               _ Results Filename
               _ Polling Frequency
```

7. Select the scheduled entry fields you want displayed by entering an **x** in front of the options. Press **RETURN** to tab through the unselected options.
8. Press **ESC** - **e** to execute **scheduled-entry display**.

   Scheduled entries by selected options are displayed.
9. Press **RETURN** to page through all the scheduled entries. To exit the display, press **BREAK**.

   - The following sample displays a scheduled entry selected by Entry Type = Service Request, Product Type = CS500 (System 85), Product Time Zone = -5y, and Connection Required = y.

```
AT&T Mgr IV 2.2              DEFINITY G2.2                   <target>
fm admin scheduled-entry display
Schedule Time: 5 28 * 14 0      Next Execution:  5/28/88 14:00
Task Number: jon0527d1          Owner: jon
Entry Type: Service Request     Product Time Zone: -5y
Product I.D.: 9992244           Connection Req? y
Product Type: CS500             Version: R2V4
Hardware:                       Security Code:
Retry Count: 0                  Send Mail? y
Create Results: y               Results Name: jon0527d1.i
Command Line: service-request/run extract 461206012
```

Procedure: Appending to a Service Request

Follow this procedure to add more transactions to an existing SR. You can also use this to stack transactions within an SR.

For this sample procedure, the FM application is used.

1. Enter **service-request append.**

```
AT&T Mgr IV 2.2              DEFINITY G2.2                    <target>
fm admin service-request append                               Page 1 of 1


         Service Request Number: __________
```

2. In the Service Request Number field, enter the number of the SR to which you want to append transactions and press **F1** (EXECUTE) or **ESC** - **e**.
   - The SR number displays on the screen.
3. Press **RETURN** to continue.
   - The SR you entered is now re-opened, and you will remain in it until the SR is closed by executing **service-request end**. Any transaction changes you perform in the administration area, except displays, are assigned to this SR.
4. Press **ESC** - **b** to return to the previous level in the command path. Repeat this step until you reach the path prompt you want.
5. Assign a new transaction to the SR. Enter a command path for any transaction screen and press **RETURN**.
6. Complete the transaction screen as you would when working in immediate mode.
7. Press **F1** (EXECUTE) or **ESC** - **e** to complete transaction processing within this SR.
8. The message "Command added to service request" displays on the bottom of your screen.
9. Repeat steps 4 through 8 to assign any other transactions to the SR. Remember to consider sizing limitations when adding transactions to the SR.
10. When you are finished adding transactions, close the SR using the command **service-request end** as you did when the SR was first closed.
11. Update your SR worksheet with the new transaction information.

Procedure: Removing Transactions from a Service Request

This command allows you to remove an entire SR or the last **x** transactions (where **x** equals a number) entered into the SR.

Transactions in an SR can only be removed in the reverse order in which they were entered. For example, if an SR contains four input transactions and you wish to remove the third transaction entered, you must remove the last two transactions in the SR as well. Once a transaction is entered into an SR, you cannot modify the information that is entered into that transaction. To change it, you must remove the incorrect transaction and add a new transaction with the correct information.

If **service-request remove** is executed before the SR is downloaded to the switch, the pending entries associated with the transactions selected to remove are deleted and the Manager IV database is returned to its original state.

If **service-request remove** is executed after an SR is downloaded and some transactions within the SR have failed to download the pending queue entries associated with the failed or pending transactions selected to remove are deleted and the Manager IV database is returned to its original state only for those transactions.

Before running the **service-request remove** command, you may want to use **service-request display** to review the transactions in your SR and determine which ones you want to or can remove. See "Displaying Service Requests" in this chapter for details.

1. Enter **service-request remove**.

```
AT&T Mgr IV 2.2              DEFINITY G2.2            <target>
fm admin service-request remove                       Page 1 of 1

        Service Request Number: _______

       Remove all transactions? y
```

2. At the Service Request Number field, enter the SR number of the SR containing the transactions you want to remove.
3. To remove only specific transactions, enter **n** over the default **y**.
   - The Remove Last _ transactions prompt appears. At this prompt, enter the *number* of transactions you want to remove, counting from the last one entered into the SR.

     For example, if the SR contains four transactions and you want to remove the third and fourth transactions entered, enter a **2** in this field. This removes the last two transactions from the SR.
4. Press **F1** (EXECUTE) or **ESC** - **e**.
   - If the status flags for these transactions were either **p** or **f**, the information in the SPQ records for the last two transactions is written to the Manager IV database, restoring it to its state before the transactions were run. In addition, the flag that locked these records to restrict them from being accessed by other users or SRs is removed.
   - The PQ and SPQ records for the last two transactions in the SR are removed.
5. Update your SR worksheet to reflect the deleted transactions.

Procedure: Rescheduling a Service Request

When you reschedule a Service Request you change the date and time the SR is scheduled to download to the switch. There are two ways to do this:

- The command **service-request change** reschedules the SR to run at a new specified date and time.
- The command **service-request run** runs the SR immediately. You should only use this command if there are a limited number of transactions in the SR and if the switch is currently available. When this command is executed, the results of the SR are displayed on the screen as they are received from the switch (as with other immediate transactions). Unlike scheduled SRs, the results from this transaction are not stored in a results file. Be sure to note the results of SRs that run immediately, since you will not be able to go back and check them.

These commands can also be used to rerun failed or partially failed SRs. Note that if you use **service-request change** or **service-request run** with an SR number containing transactions which have a **p** or **f** status, only these "pending" or "failed" transactions within the SR are rescheduled.

To schedule the SR to run at a different time than that originally entered:

1. [Optional] Enter **service-request display** to review the SR before you change the date it is scheduled to download.
2. If you have already reviewed the results file using **results display** you should remove it using **results remove**. If you do not remove it, the new results files will append to old results files when the SR is rerun, making it difficult to determine which download attempt generated which results. More information on checking results files can be found in "Procedure: Checking Results Files" later in this chapter.
3. To reschedule the SR, enter **service-request change.**

```
AT&T Mgr IV 2.2            DEFINITY G2.2            chicago
fm admin service-request change                   Page 1 of 1

            THE SCHEDULED TIME IS IN THE TARGET'S TIME ZONE


     Service Request Number: __________

               New Due Date: __/__/__          Due Time: __:__
```

4. Enter the Service Request number of the SR you want to reschedule, the new due date, and the due time in the appropriate fields, pressing **RETURN** after each entry.
5. Press **F1** (EXECUTE) or **ESC** - **e** to execute the command.
   - The message "Database processing has begun for SR= <SR number> TARGET= <target number>" displays on the bottom of your screen. No target information is provided.
6. Press **RETURN** to continue.
   - The message "Database processing is completed for SR= <SR number> TARGET= <target number>" displays on the bottom of your screen when processing is complete. No target information is provided.
7. Press **RETURN** to return to the command path.
8. Update your SR worksheet to reflect the new scheduled date and time.

To run a Service Request immediately:

1. If you have already reviewed the results file using **results display** you should remove it using **results remove** to save space. More information on checking results files can be found in "Procedure: Checking Results Files" later in this chapter.
2. Enter **service-request run** and press **RETURN**.

```
AT&T Mgr IV 2.2              DEFINITY G2.2           chicago
tcm admin service-request run                        Page 1 of 1



          Service Request Number:

               Continue on error? n
```

3. Enter the SR number you wish to run.
4. Enter **y** if you want the SR to continue running if an error is encountered. If not, press **RETURN** to retain the default of **n**.
5. Press **ESC** - **e** to execute **service-request run**.
6. The SR is executed immediately, and a series of screens and messages appears. Press **RETURN** to page through the screens.
   - The message "Starting Service Request <SR number>" tells you that processing has begun for the SR.
   - The message "Starting Service Request <SR number> for switch <target>" tells you that processing has begun for the first target switch in the SR.
   - If a connection to the switch is established successfully, the message "Connection established" appears.
   - Manager IV then displays the transactions within the SR as it performs the updates.
     — If a transaction fails, you will see an error message such as the following:

     "AH:PBX:F (051;1;3) Equipment Location Is Assigned [12]

     Press RETURN to continue"

     — This error message shows a fatal (F) PBX error (PBX) relating to Proc 051, Word 1 in field 3. The error code (12) is the PBX error code that indicates that the equipment location of the terminal was already assigned in the switch.
     — The error messages also tell you if the switch is reporting any alarms. The letters "AH" at the beginning of the error message indicate that the DEFINITY Generic 2 switch has both major and minor alarms.
   - After the error message appears, the original screen that caused the error displays.
   - If the SR for this target succeeds, you see the message "Service Request <sr number> for switch <target> succeeded." If it fails, you see the message "Service Request <sr number> for switch <target> failed."
   - The message "Changing status in Database, please wait." appears. This indicates that Manager IV is changing status flags in the database and cleaning up the SPQ.
   - When this process is completed successfully, you see the message "Status Change Succeeded."
   - Manager IV then processes any transactions for other targets that may be in the same SR.

- If the complete SR succeeds, you see the message "Service Request <sr number> succeeded." If it fails, you see the message "Service Request <sr number> failed."
- The system message "Command completed" displays at the bottom of the last screen if the SR is successful. If it fails, the message "Command did not complete successfully" appears.

7. Update your SR worksheet with the execution time and results of the SR.

Procedure: Scheduling a Daily Tape Run [System 85 and Generic 2]

The command **daily-tape-run schedule** allows you to schedule a backup to be run at the same time each day, preferably during off-hours. Run this command to schedule a daily backup for each switch. This is a critical step in Service Request operations. The **daily-tape-run schedule** command does not allow you to schedule more than one tape run per day for a switch.

1. From the FM or TCM application, enter the command **daily-tape-run schedule**.

```
AT&T Mgr IV 2.2                  DEFINITY G2.2              <target>
tcm admin daily-tape-run schedule                           Page 1 of 1

                THE SCHEDULED TIME IS IN THE TARGET'S TIME ZONE

                     Start Time for Daily Tape Run: __:__

After this command has been executed, a service request containing the
tape run command will be scheduled each day at the time entered above.
If you wish to discontinue the automatic scheduling of daily tape run,
use the scheduled-entry remove command.   If you wish to reschedule
daily tape run, execute this command again.
```

2. Enter the time (as **hh:mm**) that the tape run should start.
   - Backing up the switch may take more than an hour, and Manager IV cannot connect to the switch while the switch tape is being run. Because of this, schedule the backup for off-hours so it does not conflict with other scheduled SRs.
3. Press **F1** (EXECUTE) or **ESC** - **e** to execute the command.
   - This message appears: "Scheduled task 'DailyTapeaa' will create a service request each day at <hh:mm>."
4. Press **RETURN**.

The scheduled tape run now appears as a scheduled entry with the name "DailyTape *aa*" where *aa* is a unique identifier assigned by the system for each switch. The scheduled backup appears each day as a Service Request with the name "tape*mmddaa* where *mmdd* is today's date, and *aa* is a unique identifier for the target switch. You can use any of the SR or scheduled entry commands to check the task's status.

If the scheduled tape run fails for any reason, you should remove the SR for the failed run (named "tape*mmddaa*".) The tape run will process automatically at the next scheduled time. If you must do a tape run before the next regularly scheduled run, be sure that the two processes will not overlap.

To change the time of the scheduled tape run, execute the command **daily-tape-run schedule** again, and enter the new time. To unschedule the tape run, execute the command **scheduled-entry remove**. Specify the Entry Type as **Application**; then specify the appropriate task number and Product ID (LDN).

Note: This command differs from **tape run**, which runs a backup immediately. See Appendix A for more information.

DAILY FOLLOW-UP PROCEDURES

The SR administrator and all users who enter SRs should perform these recommended daily follow-up procedures to check that SRs have processed completely and correctly.

SR Follow-Up for Administrators

Every morning *without fail* the Service Request administrator should check the status of all SRs in the system using the **service-request report** or **service-request display** command.

- The **service-request report** command provides a summary report of all Service Requests — successful, failed, and pending — in the system. Use this report to quickly see which SRs are unresolved so you can remove or reschedule them.
- The **service-request display** command provides more information about pending and failed SRs. You can choose from a non-detailed or detailed service-request display.
  - — The non-detailed display provides the SR number, the scheduled date and time the SR downloaded, the transactions within a particular SR, the target, the object and verb for each transaction, and the status of each transaction.
  - — The detailed display lets you view the actual contents of each pending queue entry in the SR. It provides transactions scheduled to download on a specific day or transactions scheduled in a specific SR.

Depending on the number of SRs in the system, these commands can take several minutes to run. You can schedule these reports so they will run during off hours. If you want, you can schedule them to run to a printer each night so that the reports are available each morning.

It is recommended that the administrator keep hardcopy of the **service-request report** or keep a log book.

After using these commands to display SRs, the administrator evaluates failed SRs and assign the SR to the appropriate user for investigation and recovery. The administrator looks specifically at the partially downloaded and failed SRs.

When users notify the administrator that a problem SR has been resolved, the administrator records the recovery and resolution.

The following procedures explain how to use these commands to check the status of all SRs.

Procedure: Reporting the Status of Service Requests

This procedure explains how to use the **service-request report** command to obtain a summary of all the Service Requests in the system.

1. Enter **service-request report** to view the status of scheduled SRs.

```
AT&T Mgr IV 2.2              DEFINITY G2.2              <target>
tcm admin service-request report                        Page 1 of 1

  Select one or more of the following to indicate the report criteria:

  x Single Day:__/__/__      _ Single User              x Scheduled
  _ All Days                 x All Users                x Unscheduled
  _ Range  From:_/_/_                                   x Successful
             To:_/_/_



  Select one of the following to order the report:

  _ By Date
  x By User
```

2. Select the criteria for the report by entering **x** in front of the appropriate fields. Press **RETURN** to tab through the fields.

   - The default selection criteria provides a report on all Scheduled, Unscheduled, and Successful service requests for All Users on a Single Day. You must enter the desired date next to the Single Day field (for instance, 12/30/89 for December 30, 1989).

     The default report sorts Service Requests by user.

   - To run an SR activity report on a Single User, enter **x** next to the Single User field, then enter that user's login in the input field that is added to the screen. Select the SR categories you want (Scheduled, Unscheduled, and Successful). The report will automatically be sorted By Date.

   - To request a report on a Range of Dates, exter **x** next to the Range field, then enter the starting and ending dates of the desired Range in the To and From fields that appear following the Range field.

   - The report provides information about Successful Service Requests for only the last 14 days. This restriction does not apply to Scheduled and Unscheduled Service Requests.

3. Press **ESC**- **e** when all selections have been made to execute the command.

   The system generates a summary report for the SR criteria you selected. The following is a sample report on all Service Requests for user cyu for All Days. The report consists of a series of screens showing information about SR activity for this user.

   If this report is displaying at your terminal, press **RETURN** after each screen to page through the entire display.

   - The first service request report screen shows successful SRs. It includes the SR number, download date, start time, end time, user (in this example only user cyu's SRs will be reported), and the target.

```
AT&T Mgr IV 2.2        DEFINITY G2.2        Connect          <target>
tcm admin service-request report                             Page 1 of 1
             COMPLETELY SUCCESSFUL SERVICE REQUESTS

                     DOWNLOAD      DOWNLOAD
                      START           END
SR NUMBER    DATE     TIME            TIME          USER         TARGET
---------  --------  --------      --------       -----        ------
cyu123     08/27/89  16:19:27      16:24:46       cyu          9992255
cyu123     08/27/89  16:30:27      16:34:46       cyu          9992255
```

— Make a record of the SRs that downloaded successfully.

— Remember to delete the corresponding mail messages and results files for your own SRs. Users should delete them for their SRs.

- The next report screen shows Service Requests downloaded with failed transactions. It includes the SR number; date; user; the status flag indicating whether the SR was Scheduled (S) Unscheduled (NS), Working (W), or Not Working (NW); the target; the number of each type of transaction; and the total number of transactions for each SR.

  The Working (W) and Not Working (NW) flags are transient states and will appear only if the **service-request report** is run while other users are still in the middle of their service requests.

```
AT&T Mgr IV 2.2            DEFINITY G2.2        Connect   <target>
tcm admin service-request report                          Page 1 of 1
            SERVICE REQUESTS DOWNLOADED WITH FAILED TRANSACTIONS

                           SCHED            NUMBER OF TRANSACTIONS
SR NUMBER     DATE   USER  FLAG   TARGET    p   d   e   f   r   s  sum
---------  -------   ----  -----  --------- ----------------------------
*cyu04030  04/03/89  cyu   NS     9992255   -   -   -   1   -   -  1
```

— This screen includes all SRs that were partially downloaded. This includes SRs with at least one failed transaction; however, all transactions in the SR might have failed.

— Make a record of these SRs. You will need to contact users to make sure they are taking steps to correct the errors.

— To see the status of individual transactions within the SR, use **service-request display**. This is explained in "Procedure: Displaying Service Requests" in the next chapter.

- The next screen displays SRs pending to download.

```
AT&T Mgr IV 2.2           DEFINITY G2.2           Connect  <target>
tcm admin service-request report                           Page 1 of 1
                  SERVICE REQUESTS PENDING DOWNLOAD

                            SCHED             NUMBER OF TRANSACTIONS
 SR NUMBER   DATE     USER  FLAG  TARGET    p   d   e   f   r   s   sum
 ----------  -------- ----- ---- --------- ----------------------------
 *cyu033104  03/31/89 cyu    NS   9992255   1   -   -   -   -   -   1
 *cyu033108  03/31/89 cyu    NS   9992255   1   -   -   -   -   -   1
 *cyu062615  06/26/89 cyu     S   9992244   3   -   -   -   -   -   3
```

— The information displayed includes the SR number; date; user; status flag indicating whether the SR was Scheduled (S) Unscheduled (NS), Working (W) or Not Working (NW); the target; number of each kind of transaction within each SR; and the total number of transactions for each SR.

The Working (W) and Not Working (NW) flags are transient states that will only appear if the **service-request report** is run while other users are still in the middle of their service requests.

— Make a record of these SRs.

- The summary screen displays last.

```
AT&T Mgr IV 2.2               DEFINITY G2.2     Connect  <target>
tcm admin service-request report                         Page 1 of 1

                  SERVICE REQUEST SUMMARY REPORT
                           FOR USER: cyu


              Completely Successful Service Requests:   2

 Service Requests Downloaded with Failed Transactions:   2

                    Service Requests Pending Download:   4

                             Scheduled Service Requests:   1

                          Unscheduled Service Requests:   4
               Unscheduled SRs more than one month old:   4
                Unscheduled SRs more than one week old:   4
               Unscheduled SRs more than four days old:   4
```

— The summary report gives the following information for user cyu: total number of successful SRs, SRs downloaded with failed transactions, SRs pending download, and total number of scheduled SRs.

— The summary report also provides information on unscheduled SRs, dividing the number of unscheduled SRs into those more than one month, one week, and four days old.

— The "Command completed" message is displayed at the bottom of the last page. Press **RETURN** to go to the command path.

SR Follow-Up for Users

It is important for all users to keep a careful record of their Service Request processing. Manager IV provides several tools to help you follow the progress of a Service Request once it's been scheduled.

Every morning *without fail* users who have scheduled SRs must do the following:

1. Run **service-request report** (select Single User and enter your login after that field) to see at a glance whether any SRs failed and the status of each transaction. See "Procedure: Reporting the Status of Service Requests" for complete instructions.

   Note: Any interactive Service Requests that you run will not appear on the Service Request report. No mail message is sent advising you about Service Request results as this information is immediately available to you on your terminal screen.

2. Check your electronic mail to see where the results of SRs are stored. See "Procedure: Checking Mail" for complete instructions.
3. Check the results files to determine the status of SRs and/or the cause of any failures. Make a note of any problems. See "Procedure: Checking Results Files" for complete instructions.
4. Run **service-request error-report** to determine the cause of failures of all transactions in a Service Request. See "Procedure: Running Service-Request Error-Reports" for complete instructions.
5. If there are failed SRs, look at a detailed display of the failed SRs to determine the best method of recovery or correction. See "Procedure: Displaying Service Requests" in this chapter for complete instructions.
6. After checking their contents, remove the results files and mail for successful SRs. This conserves disk space. If you do not remove the results files associated with completely successful SRs, after two days Manager IV changes their suffix from **i** to **s**; after eight days, Manager IV automatically removes them from the system.
7. Follow up on failed transactions using procedures outlined in Chapter 6, "Troubleshooting Service Requests."

Procedure: Checking Mail

If you have new mail, the message "Mail" appears on the top of your screen when you log in. You should always check this mail. To read or save your mail, use the command **shell create**; then follow the instructions in the *UNIX System V User's Reference Manual*.

You will receive an electronic mail message telling you where to find the results of your SRs that have executed. The mail message will give you the filename of the results; this filename matches the Service Request number you specified and has a suffix of **.i**.

The following is a sample mail message concerning a Service Request run in the TCM application.

```
From smgr Tue Apr 21 08:03 EDT 1990
The results of running
/service-request/run; Task Number eag042106
can be found
in /usr/abc/smgr/eag042106.i
```

When you receive a mail message regarding one of your Service Requests, you should do the following:

- Record the results filename or write the output from the mail message to a file.
- Update your SR worksheet.

Procedure: Checking Results Files

Use **results display** to display the file that contains the results of a scheduled SR's attempt to download. Use the information in the file to determine the status of your SRs and/or the cause of any SR failures.

To display other user's results files, you must have permissions to access their results files, otherwise you will receive an error message.

1. Enter the command **results display**.

```
AT&T Mgr IV 2.2                    DEFINITY G2.2              <target>
tcm admin results display                                     Page 1 of 1

                Results File Name: eag042106

               Results File Owner: eag

                 Detailed Display? y

     Select the transaction output to be displayed.

     Transaction sequence numbers: all

     You can further restrict the output to:

          Successful Transactions: _

        Unsuccessful Transactions: _
```

2. Enter the name of the results file that you want to see. The results file name was found in the mail message you looked at earlier; this filename matches the Service Request number you specified, and has a suffix of **.i**.
3. At the Detailed Display prompt:
   - Enter **n** if you do not want to see a detailed display. You will see only the first screen shown in step 6.
   - Press **RETURN** if you want to see a detailed display. You must then enter the display criteria.
4. Enter the transaction numbers you want to display. Request **all** transaction sequences if you wish to view the results of all your executed SRs.

5. Select either successful or unsuccessful transactions:

   - Enter **y** next to Successful Transactions if you want to see successful transactions as well as unsuccessful ones.
   - If you have failed SRs, enter **y** next to Unsuccessful Transactions to view only unsuccessful transactions. Record the numbers of the failed SRs.

6. The output from the requested transactions will appear as a series of screens. The screens appear just as they would have if you had executed an immediate transaction or if you had run the SR using the command **service-request run**. All messages that would have appeared on the screen are logged instead in the results file.

   Press **RETURN** to page forward through the screens.

   The following example shows the screens for a failed TCM transaction.

```
AT&T Mgr IV 2.2               DEFINITY G2.2                <target>
tcm admin results display


                    Output from transaction # 1 follows.

                    PATH: /tcm/admin/service-request/end

                    TARGET: 9992244

                    Transaction completed unsuccessfully.

                    Time begun: 04/21/88 08:00:54

                    Time completed: 04/21/88 08:03:03


Press RETURN to continue
```

   - This screen summarizes the results for the entire SR. It shows the transaction number, target, and time the transaction attempted to download. It is the only screen that appears if you select **n** at the Detailed Display prompt.
   - The next screen contains the message "Starting Service Request <SR number>."
   - The next screen contains the message "Starting Service Request <SR number> for switch <target>."
   - Connection messages appear next. If the connection was established successfully, the message says "Connection established." If not, you will see an error message.
   - The next screen summarizes information for transaction 1.1. Note that in TCM, transaction 1.0 is not shown since it is not for download to the switch.

```
AT&T Mgr IV 2.2                  DEFINITY G2.2                <target>
tcm admin results display


                  Output from transaction # 1.1 follows.

                  PATH: /tcm/admin/extension/remove

                  TARGET: 9992244

                  Transaction completed unsuccessfully.

                  Time begun: 04/21/88 08:01:27

                  Time completed: 04/21/88 08:01:58



Press RETURN to continue
```

- This screen lists the command and target for transaction 1.1; it indicates whether the transaction was successful and the time of the download.

```
AT&T Mgr IV 2.2              DEFINITY G2.2              <target>
tcm admin results display









AH:PBX:F  (000,1:5), In use lamp on or Feature/SVS active. [08]


Press RETURN to continue
```

- This screen shows the results (in this case, the error message) for transaction 1.1.

  The error message at the bottom of the screen indicates that there was a fatal error related to Proc 000, word 1, field 5. The error code "08" is the code from the PBX and indicates that a feature or lamp was in use at the time the download was attempted.

```
AT&T Mgr IV 2.2                 DEFINITY G2.2           Connect 9992244
tcm product-admin extension remove                      Page 1 of 1
                YOU ARE DIRECTLY ACCESSING THE PRODUCT


    Extension: _____   Put Extension Into Recent Disconnect Interval? y
```

- This screen shows the actual screen entry for transaction 1.1.
- Additional screens would show the same information for subsequent transactions (for example 1.2, 1.3, 2.1, and so on) in the SR.

7. The end of the results file contains the same messages that would appear for immediate transactions. These include the following messages:
   - Changing status in database, please wait
   - Status Change Succeeded
   - Service Request <SR number> for Switch <target> Succeeded (or Failed)
   - Service Request <SR number> Succeeded (or Failed)

Procedure: Running Service-Request Error-Reports

This procedure explains how to use the **service-request error-report** command to obtain a summary of all failed transactions within a given Service Request. This summary is derived from both the Manager IV database and the associated results file.

Failed Service Request transactions may create an out-of-sync condition between the Manager IV database and switch translations. The **service-request error-report** command allows you to quickly and easily diagnose the download failures by providing necessary information for each failed transaction within a given Service Request. You may use this information to fix a problem thus preventing additional errors and preserving the database and switch synchronization.

To identify the download failures, you may also use such transactions as: **service-request display, service-request report**, and **results display**. The **service-request error-report** command is *NOT* a replacement but an additional command to analyze the Service Request failures. If the same Service Request number has been used more than once, the error report will provide switch errors only for the last time the Service Request was scheduled to run.

It is very important to remove the results file before rescheduling the Service Request for a later date. This may eliminate the problem if exceeding the UNIX file size limit; it will be easier to maintain and view the results file via the **results display** *command, etc.*

If you re-run a Service Request with "Continue on error?" set to "n" which was run before with "Continue on error?" set to "y", the error report will display a message "The database and results file do not match." In this case, one of the following two scenarios may occur:

With a Single Target,

If all failed entries are associated with a single target within a Service Request, then only the first failed transaction will show the latest download failure.

With Multiple Targets,

If at least one failed entry is associated with more than one target within a Service Request, all failed entries for the first failed target will show the latest download errors. All remaining entries for the other failed targets will show download errors from the previous download.

1. Enter the **service-request error-report** command to view switch errors for all transactions within a given Service Request. The following screen displays:

```
AT&T Mgr IV 2.2  SR: 0123456789   DEFINITY G2.2          (000)000-0000
tcm admin service-request error-report                   Page 1 of 1



                    Service Request Number: mls1225

                     Service Request Owner: mls
```

2. Enter the Service Request Number (1-10 characters). Press **Return**.
3. Enter the Service Request Owner. This field defaults to the user's login ID. You may also run an error report for someone else's Service Request. If you cannot access someone's results file, the error report will generate an error message. Press **Execute** to invoke an error report for failed transactions if any.
4. The error report may not be generated if the following error conditions exist:
   - *Connection errors*. ???
   - *The Service Request contains no download failures.* The error report provides information only on transactions which failed to download to the switch. The system will display the following error message: "Service Request # contains no failed transactions".
   - *The Service Request does not exist in the database but still has a results file on the system* . The error report will give you an error message: "Service Request # does not exist in the database".
   - *A login ID is not known to the system.* As the result, the following error message displays: "Login id # does not exist".
   - *System error.* The error message is displayed: "System error. Contact System Administrator."
   - *The results file is not found.* The following error message appears: "Service Request error report for # does not exist".
   - *The results file is corrupt or too big to be displayed.* One of these error messages will be generated accordingly: "File # is corrupt" or "File # is oversized and corrupt". Following are possible causes of the results file corruption and actions to be taken to resolve a problem:

     Cause of corruption: *The results file has reached its system limit* This will happen if you have either created a very large Service Request, or you have run the same Service Request a number of times.

     Action to be taken: Save the old results file if needed and reschedule the Service Request with the "Continue on error" set to "n" (use **service-request change**).

     Cause of corruption: *No more space on the disk.*

     Action to be taken: Contact your System Administrator to remove unwanted files.

     Cause of corruption: *The process ("extract") died while writing to the results file.*

     Action to be taken: Ask your System Administrator to scan system logs to identify the culprit process or save the old results file if needed and reschedule the Service Request with the "Continue on error" set to "n".

     Cause of corruption: *The Service Request is currently being downloaded to the switch.*

Action to be taken: Wait until you have received mail from the system verifying that your Service Request has been downloaded to the switch.

Note: Service Request errors related to system problems such as "Could not connect", etc. are identified as system failures and are not part of the transaction download failure. Use the **results display** command to determine the cause of the connection problems.

5. This example shows the error report screens for failed TCM transactions.

```
AT&T Mgr IV 2.2  SR: 0123456789   DEFINITY G2.2          (000)000-0000
tcm admin service-request error-report                    Page 1 of 2

                    Service Request Number: mls1225

TRANS.
NUMBER     TARGET            OBJECT              VERB       IDENTIFIER
------  ------------ ---------------------- ---------- ---------------
2.1     blx10b       terminal                add        000e0404
M:PBX:F (051,1:1), Equipment location is assigned. [12]

3.10    blx10b       button                  add        77320
M:PBX:F (052,1:6), Button is already assigned. [81]

3.28    blx10b       button                  add        77320025
M:PBX:F (054,1:9), Lock/Unlock dial access code cannot be assigned to a
button. [86]

4.1     blx10a       trk-grp                 add        33
M:PBX:F (100,1:1), Equipment location is assigned. [12]

4.5     blx11a       extension               add     unknown
M:PBX:F (000,1:1), Equipment location is assigned. [12]
```

6. This screen provides information for failed transactions *2.1, 3.10, 3,28,* and *4.1*. For each transaction number, the following data is provided: the transaction number, target, object, verb, identifier, and the switch error.

   The identifier is used to show which switch resource generated the error condition. For example, for transaction number 2.1, the identifier is the equipment location *000e0404*; for transaction number 3.28, the identifier is the concatenation of the set ID, module number and button number. For transaction 4.1, the identifier is the trk-grp number *33*. The identifier is derived from the switch image database and mainly depends on how the information is stored in the database. Therefore, you may see an inconsistent identifier for various failed transactions within a Service Request.

   If an identifier for a transaction cannot be determined, the identifier field for this transaction is set to "unknown". In such event, you may use the **results display** (detailed) or **service-request display** (detailed) command to determine the identifier.

Procedure: Removing Results Files and Mail

Use the **results remove** command to delete the contents of a results file.

You should remove the results files for failed SRs before you rerun or reschedule them. If you do not delete the results file and the SR is rerun, the results for the rerun will be appended to the old results, making it difficult to determine which results belong to each download.

To prevent running out of disk storage space, read your mail often and remove the results files for your successful SRs. If you do not remove the results files associated with completely successful SRs after two days, the system changes the results file suffix from **.i** to **.s**. After eight days, Manager IV automatically removes them from the system.

After reviewing all SRs, remove the associated mail messages.

Displaying Service Requests

Use **service-request display** to display a list of pending and failed SRs. A pending SR is an SR that has not yet been downloaded to the product. A failed SR is an SR that attempted to download, but was not completely successful. Displaying failed SRs is often useful during error recovery.

When you use **service-request display,** you may choose from two types of display: a non-detailed display, and a detailed display.

- The non-detailed display lists the SR number, scheduled due date, and the status of each pending queue entry for each transaction in the SR.
- The detailed display allows you to view the actual contents of each pending queue entry in the SR from your original input screens, the actual pending queue entries, or both.

The following procedures illustrate the use of non-detailed and detailed Service Request displays from within the TCM application. The transaction scheduled within the SR is **terminal add**.

Procedure: Selecting a Non-Detailed SR Display

The non-detailed display lists the SR number, the scheduled due date, and the status of each pending queue entry for each transaction in the SR. This display can help you determine which transactions have failed in a given SR.

1. Enter **service-request display** to display the status of transactions within an SR. The service-request display field appears.

```
AT&T Mgr IV 2.2          DEFINITY G2.2                    chicago
tcm admin service-request display                         Page 1 of 1


                                  Detailed display? _
                            Only failed transactions? _

        Select one of the following to indicate display criteria:

        _ Date
        _ Service Request No.
        _ All changes for the target
```

2. Enter **n** in the "Detailed display" field to select a non-detailed display for SRs. (The following procedure explains how to select a detailed SR display.) Entry in this field is required.
3. Select a display for all or only failed transactions.
   - If you want to display only the transactions that failed to download successfully, enter **y** in the "Only failed transactions?" field.
   - If you want to display all transactions, enter **n** in the "Only failed transactions?" field.

   The cursor moves to the first display criteria field.
4. Select the display criteria for SRs.
   - If you want to display all SRs scheduled for a particular date, enter **x** in front of the Date field. Enter the desired date in the input field that is added to the screen.
   - If you want to display a particular SR, enter **x** in front of the Service Request No. field. Enter the desired SR number in the input field that is added to the screen.
   - If you want to display all transactions that apply to a particular target, enter **x** in front of the "All changes for Target" field.
5. Press **F1** (EXECUTE) or **ESC** - **e** to execute the non-detailed SR display.
6. The system generates a non-detailed display for the information you selected. The following is a sample non-detailed display for a particular SR:

```
AT&T Mgr IV 2.2              DEFINITY G2.2                    chicago
tcm admin service-request display


          THE SCHEDULED TIME IS IN THE TARGET'S TIME ZONE
 SERVICE REQUEST NO.: jer0602a0   DATE: 12/12/99  TIME: 6:55 EST SCHEDULED? YES

    TRANSACTION NO.       TARGET          OBJECT           VERB      STATUS
    ------------------------------------------------------------------------
          1.0             9992244     terminal              add        n
          1.1             9992244     terminal              add        p
          1.2             9992244     button                add        p
          1.3             9992244     button                add        p
          1.4             9992244     button                add        p
          1.5             9992244     button                add        p
          1.6             9992244     abbreviated-dial      add        p
```

- The non-detailed display provides the SR number, the scheduled date and time the SR downloaded, the transactions within a particular SR, the target, the object and verb for each transaction, and the status of each transaction.
- Transactions within SRs are given one of seven status flags:

  p indicates that the transaction is "pending" download to the product.

  s indicates that the transaction has "successfully" downloaded to the product.

  f means the transaction has "failed" to download to the product. The results file shows the error message.

  n indicates that the transaction is original input and is only retained in the Manager IV database; it is not data for the product.

  d means the transaction changes the "database" only and does not affect the product.

  r means pre-successful state. This means the system is changing the status of the transaction from "pending" to "successful." This status code rarely appears.

  e means pre-failed state. This means the system is changing the status of the transaction from "pending" to "failed." This status code rarely appears.
- The original input transaction (illustrated in this sample) is assigned transaction number **1.0**. According to the transaction numbering conventions within SRs, any "dependent" or associated transactions are indicated by a **1.n** where **n** is the number of sequential "dependent" transactions. In this sample, there are six dependent transactions within the SR, numbered 1.1 through 1.6. For more information, see "How Service Requests Work" in Chapter 4.

7. Press **RETURN** to page through all screens.
   - The "Command completed" message displays at the bottom of the screen. Press **RETURN** to go to the command path. This completes the non-detailed display.

Procedure: Selecting a Detailed SR Display

The detailed display lets you view the actual contents of each pending queue entry in the SR. You have the option of choosing the detailed display in the form of your original input screens and field entries, pending queue entries, or both of these forms together.

The detailed display provides transactions scheduled to download on a specific day or transactions scheduled in a specific SR. If you specify an SR number, you can choose to display only certain transactions within the SR.

Use this report to check failed SRs by viewing the original transaction changes within the SR. The detailed display will provide the original input from the transaction screens and/or pending queue entries.

Refer to Chapter 6, "Troubleshooting Service Requests," for SR recovery procedures.

1. Enter **service-request display** to display the status of transactions within an SR. The service-request display screen appears.

```
AT&T Mgr IV 2.2              DEFINITY G2.2           chicago
tcm admin service-request display                 Page 1 of 1


                                Detailed display? _
                          Only failed transactions? _

        Select one of the following to indicate display criteria:

        _ Date
        _ Service Request No.


        Select one of the following to indicate format:

        _ Original input transactions
        _ Pending queue entries
        _ Both original input transaction and pending queue
          entries
```

2. To select a detailed display, enter **y** in the "Detailed display?" field.
3. Select a display of all transactions or only failed transactions.
   - If you want to display only the transactions that failed to download successfully, enter **y** in the "Only Failed transactions?" field.
   - If you want to see all transactions, enter **n** in the "Only Failed transactions?" field.
   - The cursor moves to the first display criteria field.
4. Select the display criteria for SRs:
   - If you want to display all SRs scheduled for a particular date, enter **x** in front of the Date field. Enter the desired date in the input field that is added to the screen.
   - If you want to display a particular SR, enter **x** in front of the Service Request field. Enter the desired SR number in the input field that is added to the screen. You can also request a display of specific transaction numbers by entering the transaction numbers in the Transaction Number field that appears.
5. Select a display of only original input transactions, only pending queue entries, or both.
   - If you want to display the transaction screens one at a time, as you originally entered them into the SR, enter **x** in front of the "Original input transactions" field.
   - If you want to see the transactions broken down into pending queue entries (that is, product administration transactions), enter **x** in front of the "Pending queue entries" field.

- If you want to see information formatted as original input transactions followed by the corresponding pending queue entries, enter **x** in front of the "Both original input transactions and pending queue entries" field.

6. Press **ESC** - **e** to execute the detailed display.
7. The system generates the detailed display with the information and format selected. The following screens are from a sample detailed display for SR jer0602a0. The screens show both the original and the pending queue entries.

   - If you try to view the pending queue entries for your SR number and find that there are no entries present, the SR has already run successfully and all entries were automatically removed from the pending queue.

```
AT&T Mgr IV 2.2              DEFINITY G2.2                  chicago
tcm admin service-request display
COMMAND LINE: /tcm/admin/extension/add
TARGET: chicago
SERVICE REQUEST NO.: jer0602a0
TRANSACTION NUMBER:   1.0
```

   - This is the header screen for the SR. It summarizes information about the SR.

8. To view all transactions within the SR, press **RETURN** after each screen.

```
AT&T Mgr IV 2.2                DEFINITY G2.2            chicago
tcm admin service-request display
  terminal                :add          SR:jer0602a0   12/12/89    STATUS: n
                                 Last Service Request No.: jer0602a0
                                                      Date: 12/12/89


  Set I. D.: 44343

   Set Type: 7405d     Equip. Loc.: 07/2/0/00/1       Locale:

Origination Preference: 2    Termination Preference: 2  Terminal Alarming? n

TERMINAL OPTIONS

Data Module? n        Display Module? n

ABBREVIATED DIALING

       A List Type:
       B List Type:
System List Access? n
```

   - This is page one of the original input screen for the transaction, in this case, the TCM command **terminal add**. The remaining transactions are dependent product transactions associated with the **terminal add** transaction.

```
AT&T Mgr IV 2.2          DEFINITY G2.2              chicago
tcm admin service-request display                 Page 2 of 3

Set ID: 44343         Set Type: 7405d









SPECIAL EQUIPMENT/ADJUNCTS

   Speakerphone? n     Price Element 1:      Price Element 2:
        Headset? n     Price Element 3:      Price Element 4:

TERMINAL ELEMENTS

       Set Mount:       Set Color:
```

This is page two of the original input screen.

```
AT&T Mgr IV 2.2           DEFINITY G2.2                   chicago
tcm admin service-request display                       Page 3 of 3

    Set I. D.: 44343          Set Type: 7405d

03:CALL10020011111111        08:          13:PROG        25:

04:ALST66                    09:          15:            27:

05:AD                        10:          17:            29:

06:RLS                       11:          19:            31:

07:                          12:          21:            33:

                                          23:            35:
02:AMW 44343                              24:            36:

End of Form
```

- This is page three of the original input screen.
  - If you selected a display of pending queue entries, pressing **RETURN** will display the pending queue entries for the product transactions.

```
AT&T Mgr IV 2.2                    DEFINITY G2.2                 chicago
tcm admin service-request display

     terminal:                add:      SR jer0602ao   12/12/89    STATUS: p




         Set Type: 7403d                 Equip Loc: 00/0/3/03/0

         Origination: 2                  Termination: 0



Page 1 of 1
```

- Note that each associated product transaction is assigned its own status code. The status of each transaction is indicated by one of seven possible letters:
  - **p** for pending; the transaction has not yet been downloaded to the product.
  - **s** for successful; the transaction successfully downloaded to the product.
  - **f** for failed; the transaction attempted to download to the product, but was unsuccessful. The results file shows the error message.
  - **n** for data not retained in the product. The original transaction has this status code.
  - **d** for database. "Database" means that the transaction changes the database only and does not affect the product.
  - **r** for pre-successful state. This means that the system is changing the status of the transactions from "pending" to "successful." This status code rarely appears.
  - **e** for pre-failed state. This means that the system is changing the status of the transaction from "pending" to "failed." This status code rarely appears.
- If you use this command prior to the SR's scheduled time, all of the pending-queue entry status fields display "n" (not for product download) or "p" (pending). If you use this command after the SR's scheduled time and there are still pending queue entries for the SR number, one or more of the entries failed to execute ("f") are still pending ("p"), or were successful ("s").
- The following screens show some sample pending queue entries for the **terminal add** transaction.

```
AT&T Mgr IV 2.2                    DEFINITY G2.2                 chicago
tcm admin service-request display                              Page 1 of 1
  button                 :add          SR:jer0602a0    12/12/89   STATUS: p


                         Equip Loc: 07/2/0/00/1

                    Button Number: 03

                       Set Module: 0

                      Button Type: CALL
     Is this a data module button?
                     Extension No: 44344
                Call Appearance: 01
                       Line Type: 1
                      Alert Type: 1
         Alerting Transfer Encode: 0
                      Orig. Only: 0
              A/D Alerting Encode: 1
                    Home Terminal: 1
                SAC Group Member: 0


End of Form
```

```
AT&T Mgr IV 2.2                   DEFINITY G2.2                  chicago
tcm admin service-request display                              Page 1 of 1
  button                  :add          SR:jer0602a0   12/12/89   STATUS:p


                         Equip. Loc: 07/2/0/00/1

                    Button Number: 04

                       Set Module: 0

                      Button Type: CALL
      Is this a data module button?
                     Extension No.: 44344
                Call appearance: 02
                       Line Type: 0
                      Alert Type: 1
          Alerting Transfer Encode: 0
                      Orig. Only: 0
               A/D Alerting Encode: 1
                    Home Terminal: 1
                SAC Group Member: 0
End of Form
```

```
AT&T Mgr IV 2.2                    DEFINITY G2.2                    chicago
tcm admin service-request display                                 Page 1 of 1
  button                  :add          SR:jer0602a0   12/12/89   STATUS:p


                          Equip. Loc: 07/2/0/00/1

                       Button Number: 06

                          Set Module: 0

                        Button Type: AD



End of Form
```

```
AT&T Mgr IV 2.2                    DEFINITY G2.2                    chicago
tcm admin service-request display                                 Page 1 of 1
  button                  :add          SR:jer0602a0   12/12/89   STATUS: p


                          Equip. Loc: 07/2/0/00/1

                       Button Number: 08

                          Set Module: 0

                        Button Type: BUSY

                  Signalling Terminal: 07/2/0/00/0
```

6. TROUBLESHOOTING SERVICE REQUESTS

This chapter provides information on the most common reasons for transaction and SR failures, procedures for investigating these failures, and possible recovery methods. Recovery from download failures will be easier if you keep careful track of SR processing and cleanup outlined in "Daily Follow-Up Procedures" in Chapter 5.

To investigate and correct SR failures, you need to understand the relationship between the records stored in the pending queue (PQ) and the shadow pending queue (SPQ) for the SR. In addition, to determine which specific transactions have failed in an SR, you should understand how the transactions are numbered. This information can be found in Chapter 4, "Introduction to Service Requests."

Remember that the SR recovery procedures explained in this chapter can also be used to resolve errors in immediate transactions that were run in the administration area. These transactions do not have results files, but the error message and the DEFINITY Manager IV-assigned SR number appear on the screen when a download error occurs. You can enter the Manager IV-assigned SR number in SR commands to investigate errors or rerun failed transactions.

COMMON CAUSES FOR SERVICE REQUEST FAILURES

Manager IV offers many tools to check and correct the Service Requests you create. However, Service Requests occasionally fail. The most common causes of SR failure include the following:

- Communications errors
- Failure to connect to the switch
- Equipment or feature that is being administered is in use
- Internal PBX (or switch) problems. AT&T should be notified of these problems.
- The Manager IV database and the switch are not synchronized.

What Happens When a Download Fails

When a Service Request fails, some or all of the transaction changes in the SR are not downloaded to the switch. The failed PQ "product" transactions or entries are marked with a status of **f** (failed). Other PQ entries within the SR may have **s** status flags (successfully downloaded), while some PQ entries may be marked with a **p** status (pending) if they are awaiting execution.

All transactions in the SR must have an **s** status or an **n** (non-switch data) status in order for the SR to be successful. After the download is attempted, SRs that have transactions with any other status flag are considered unsuccessful.

Figure 6-1 illustrates a **terminal change** transaction with an unsuccessful PQ entry. Pending queue entries 1.1 and 1.3 downloaded successfully; they have status flags of **s**, and the switch contains the new information. Record 1.2, which changed button #1, failed to download. This record has a status flag of **f**, and the switch still contains the old information for button #1. Note that the Manager IV database contains new information for all transactions, and that the shadow pending queue is holding a copy of the old information from the Manager IV database.

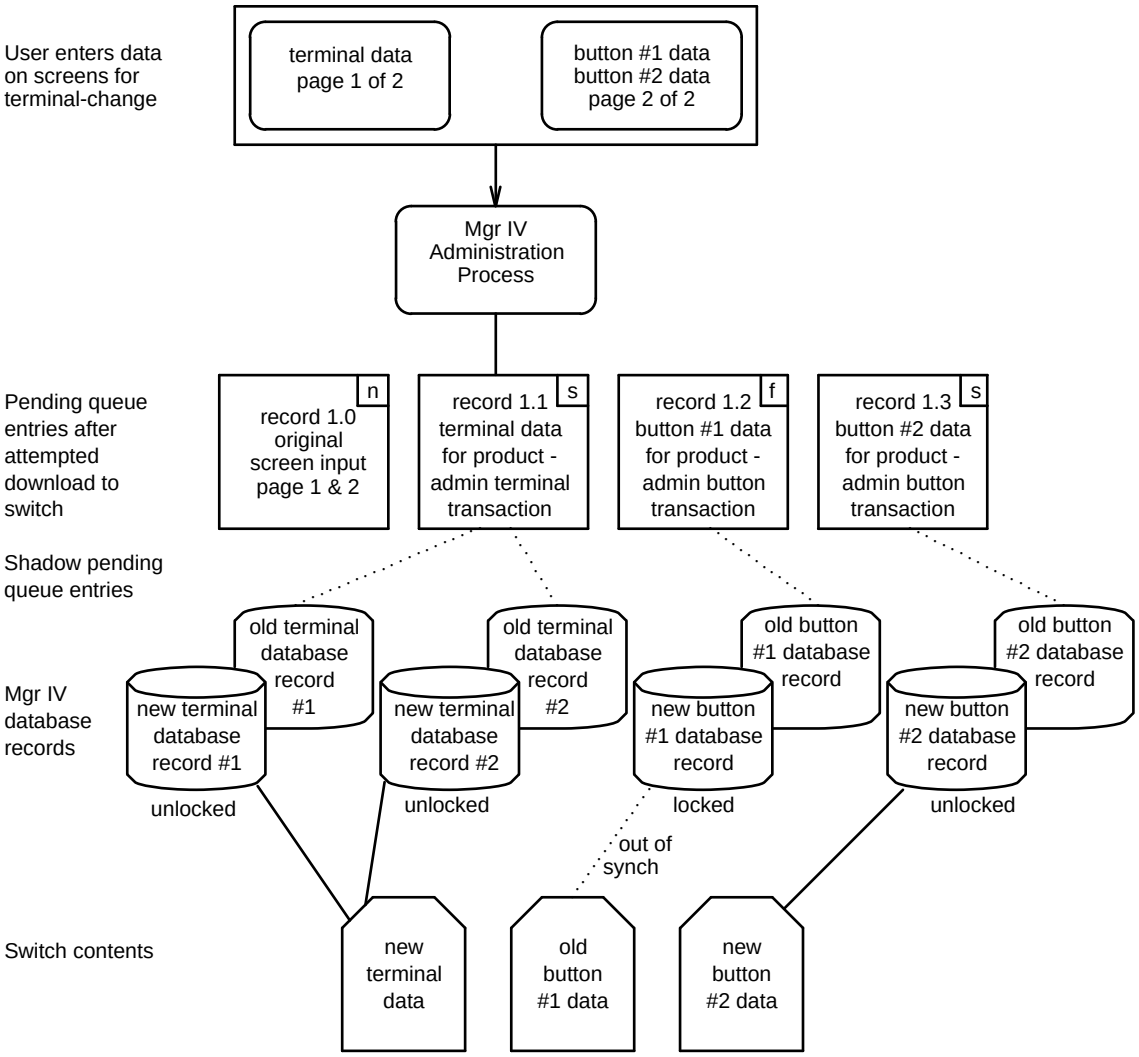


Figure 6-1. An Unsuccessful Download

As Figure 6-1 illustrates, the Manager IV database and the switch are now out of synch and will remain that way if you do not follow up on the unsuccessful SR. The switch has the old information for button #2, and the Manager IV database has the new information. In addition, until you follow up on the error, the pending and shadow pending queue entries that correspond to the failed transaction will not be removed, and the corresponding Manager IV database records will remain locked to prevent further updates.

PROCEDURE: CORRECTING SR FAILURES

This general procedure outlines the steps you should follow to investigate and correct SR failures.

1. Use the "Daily Follow-Up Procedures" explained in Chapter 5 to determine whether there are any failed SRs to be corrected. Make a note of problem SRs.
2. For SRs that downloaded or attempted download at a scheduled time, use **results display** to view the results of transactions within the SR.
   - Select the detailed option.

- Select only the "unsuccessful" transactions because this will help you analyze the displayed information.
- See "Procedure: Checking Results Files" in Chapter 5 for details.

3. To check specific SRs, use **service-request display**. The detailed display provides the original input from the transaction screens and/or associated pending queue entries.
   - If the "Continue on error?" option was set to **n** [the default entry], any PQ entries following the first failed transaction will automatically retain the **p** status flag.
   - Select the option for only failed transactions to see only the unsuccessful transactions.
4. Follow the instructions in "Error Correction Strategies" below to resolve the problems.

ERROR CORRECTION STRATEGIES

This chapter provides details on why the most common SR errors occur and suggests strategies for resolving each type of error.

Problem: Communications Errors

Two types of communications errors can occur:

- Noise on the line between Manager IV and the switch or between the user's terminal and Manager IV.
- Line drops where the connection between Manager IV and the user's terminal is broken, or the connection between Manager IV and the switch is broken.

Communications errors can cause two problems when working with SRs:

- If they occur while the SR is attempting to download, the SR will fail. See "Procedure: Recovering from Communications Errors" for instructions.
- If a line drop occurs while you are entering an SR, the SR will be stuck in the "working" state and you will need to change its status before you can resume work. See "Procedure: Changing the Status of an SR" below for instructions.

Service Request Retry Strategy

Communications problems are often temporary or transient, and SRs that fail because of them will often run with no problem at a later time. For this reason, SRs that fail to download because of communications errors are automatically rescheduled by Manager IV. In the case of a line drop between Manager IV and the switch, the SR is first rescheduled for immediate execution for a maximum of three retries. If a connection can't be made, the SR is rescheduled for download at a suitable Manager IV-specified interval and another three attempts are made. Manager IV will make a total of twelve attempts to connect to the switch.

After twelve retry failures, the SR is given an **f** status flag and no further attempts are made. The SR will appear on reports as a failed SR. Use the procedures in the next chapter to resolve the problem.

Procedure: Recovering from Communications Errors

Follow these steps to correct an SR that failed because of a communications problem during the download:

1. Use "Investigating and Correcting SR Failures" to determine the type and time of the failure.
2. Reschedule your SR using **service-request change** or run it immediately using **service-request run**.
3. If it fails again, there is probably more than a transient problem with the communication lines. Contact your Manager IV System Administrator with the information about the SR, the time it attempted to download, and any error messages you received.
4. The System Administrator will investigate and resolve the problem.
5. When the problem is resolved, reschedule your SR using **service-request change**. You can also use the **service-request run** command if there is a limited number of transactions in the SR and if the switch is currently available. Remember that **service-request run** executes the SR immediately and does not create a results file.

Procedure: Changing the Status of an SR

While you are entering an SR, the SR is placed in a "working" state that prevents other users from accessing the SR. If a line drop occurs between the user's terminal and the Manager IV processor, or if there is noise on the line, the SR will be "locked" in the working state as a result of the interruption.

Before you can resume work on the SR, you need to change the status of the SR from "working" to "available." To do this, use the following procedure.

Note: In case of a Manager IV system failure, the Manager IV System Administrator will execute the **service-request cleanup** command to change the status of all SRs that were in the working state when the system failed.

1. Enter **service-request unlock**.
2. Enter the SR number of the SR to be changed.
   - The status of the SR is changed from "working" to "available."
3. Once the SR status is changed, you may continue to add transactions to the existing SR by executing **service-request append**.
   - This command adds additional transactions to an existing SR that is awaiting execution. See "Procedure: Appending Transactions to an SR" in Chapter 5 for complete instructions.
4. When all transactions within the SR have been executed, use **service-request end** to close and schedule the SR.
5. If you continue to see error messages resulting from communications problems, notify your Manager IV System Administrator.

Problem: Failure to Connect to Switch

There are three reasons for connection failures:

- The switch responds with a busy signal because the called port is busy when the connection is attempted.
- The switch login sequence fails because the switch is busy running its own jobs (such as maintenance programs or translation backups). The message that Manager IV displays to you is "Unable to set required modes." This message may be sent after a specified time-out threshold has been reached.

- Manager IV can’t connect to the switch due to equipment problems.

Manager IV tries to prevent these errors by making these checks when a connection is attempted:

- Manager IV checks to see if another user is connected to the switch.
- If no other user is connected to the switch, Manager IV checks to see if there is a free outgoing port. If there are no ports available, the message "No lines available" displays at your terminal.
- Manager IV checks to see if there are hardware errors on the outgoing port’s communication device. If there are, the message "Modem in trouble" displays.

For most connection failure conditions, Manager IV will use its "Retry Strategy" to attempt to make a connection. If it cannot connect after a maximum of twelve retries, the SR becomes unscheduled and appears as a failed SR on display reports.

Manager IV cannot correct errors caused by switch equipment errors. If such an error is detected, the SR becomes unscheduled and appears as a failed SR on display reports.

If your SR failed because of a communications problem:

1. Contact your Manager IV System Administrator with the information about the SR, the time it attempted to download, and any error messages you received.
2. The System Administrator will investigate and resolve the hardware or communications problem.
3. When the problem is resolved, reschedule your SR using **service-request change**. You can also use the **service-request run** command if there is a limited number of transactions in the service request and if the switch is currently available. Remember that **service-request run** executes the SR immediately and does not create a results file.

Problem: Equipment Or Feature In Use

This type of error condition occurs when a facility (such as a set, extension, or trunk) or feature (such as a message waiting lamp) that you are trying to administer is in use at the time the switch translation is attempted.

These errors are usually transient; SRs that fail because of them will often run without error at a later time.

Procedure: Recovering from Equipment-in-Use Errors

Use the following strategy to recover from errors resulting from switch equipment or features in use.

1. Use the "Investigating and Correcting SR Failures" procedure to determine the type of failure.
2. You should verify that the equipment is not in use due to an unusual problem (such as a busied-out trunk) or take steps to assure that the equipment will be free at the time of the scheduled download.
3. Reschedule the SR for download to the switch using **service-request change**. If there are a limited number of transactions in the SR and you wish it to download immediately, use **service-request run**.
4. If the error repeats, contact your Manager IV System Administrator.

Problem: Database Synchronization Errors

Database synchronization errors occur when the Manager IV database and the switch do not contain matching data. This can mean that although the data checks performed by Manager IV accept the transaction, the transaction still fails at the switch because the switch does not match the Manager IV database.

The Manager IV database and the switch usually become unsynchronized when changes are made directly at the switch and corresponding changes are not made to the Manager IV database, or when changes are made in Manager IV that are not made in the switch. Out-of-synch conditions can also result from

incorrect SR recovery methods, or from not following up on failed SRs.

Here are some examples of how out-of-synch conditions occur and what can happen when they do.

- You add a trunk to a trunk group. The circuit pack to which it is added is available in the Manager IV database, so the data checks made by Manager IV accept the transaction. However, the circuit pack is already assigned in the switch, so the transaction fails when it downloads. The Manager IV database and the switch may now contain different information for that circuit pack. The trunk cannot be used until the SR is corrected, and any transactions in the SR that depend on this transaction will also fail.
- A change is made to the switch translations using an administration vehicle other than Manager IV. However, you are not informed of the change, and the Manager IV database and the switch become unsynchronized. Subsequent administration transactions and SRs involving these records may fail.

  This problem can be avoided if users who access the switch are informed that administration must be done using Manager IV.
- You remove a terminal and add a different terminal to the same ELL. However, instead of running the transaction in the administration area, which will update both the Manager IV database and the switch, you run the transaction in the database-administration area (or the product-administration area). The Manager IV database and the switch become unsynchronized.
- You remove a terminal and add a different terminal using the same Equipment Line Location (ELL). The terminal remove transaction fails at the switch, however, because the terminal is in use. Therefore, the add transaction will also fail at the switch because the ELL is already assigned. The Manager IV database and the switch now contain different information for the terminal and ELL.

  Continuing this example, you check results files and discover that the SR did not download correctly. Without displaying the information in the Manager IV database and corresponding switch records, you execute a **pending-queue cleanup** to remove all pending queue records for the failed SR. The Manager IV database and the switch now contain different information for the terminal and ELL, and the SR cannot be corrected and re-run because the PQ and SPQ records are gone.

The following are three recommended ways to recover from database errors and restore synchronization between Manager IV and the switch.

- Fixing the error and re-running the failed SR
  - — This is the preferred method of recovery, since it allows Manager IV to use its SR checks and controls.
  - — First determine whether the Manager IV database or the switch translations contain the "correct" information.
  - — Then correct either the switch (using a product-administration command) or the Manager IV database (using either an administration or database-administration command) and reschedule the SR.
- Removing the failed SR using **service-request remove** with the option to remove all transactions specified as **y**
  - — This method returns the Manager IV database to its state before the transaction ran and deletes records related to the SR from the pending queue. Only failed or pending records are affected; transactions that have already downloaded are not removed.
- Removing all "pending" transactions in the failed SR from the pending queue
  - The **pending-queue cleanup** command is used to do this. The command leaves the changes that were made to the Manager IV database but removes corresponding PQ and SPQ records.

- It should be used only under certain conditions and with extreme caution, since it relies on the user to manually check that the databases are synchronized. *Only* use this command if you determine that the database and switch contain correct information despite the SR error, or if you intend to manually bring the switch and Manager IV database back into synchronization.

Note: If your system uses the Universal Outward Feeds feature of Manager IV to share data with an outside application, keep in mind that the troubleshooting method you choose may affect the data that is output by Universal Outward Feeds. Universal Outward Feeds can only output the data you update by using the commands performed in the administration or service-request modes.

Universal Outward Feeds *cannot* output data you update using the product- administration and database-administration commands. Therefore, if you are troubleshooting out-of-synch conditions and make corrections in these two areas, the receiving application will not receive these changes.

See your System Administrator if you are uncertain as to the status of shared data elements. Information about the Universal Outward Feeds feature is in Appendix C of *Manager IV System Administration*.

Procedure: Fixing the Error and Re-running the SR

This is the first and preferred choice for recovering from errors caused by out-of-synch conditions.

1. Use the procedures for "Investigating and Correcting SR Failures" to determine the type of error.
2. Isolate and correct the problem.
   - In the example shown in Figure 6-1, a call appearance button has been assigned for an extension that does not exist in the switch.
   - Use the appropriate Manager IV product-administration display command to look at the information in the switch. In this case, check the extension of the call appearance using **product-admin extension display**, and see that it does not exist in the switch.
   - Use the appropriate Manager IV database-administration display commands to look at the information in Manager IV. In this case when you use **database-admin extension display**, verify that the extension does exist in the Manager IV database. The synchronization problem was probably caused by a change that was made to the switch without using Manager IV.
   - To correct the problem, use the appropriate Manager IV product-administration transaction to correct the error in the switch. In this case, the product-administration transaction **extension add** can be used to add the terminal to the switch.

     Remember that Universal Outward Feeds cannot output data from transactions performed in the product-administration or database-administration areas to the outside application. See your System Administrator if you think the error recovery methods you are using affect the integrity of the data being output by Universal Outward Feeds.
3. Once the synchronization error has been resolved, reschedule the SR using **service-request change**, or rerun it immediately using **service-request run**.
   - The SR will resume processing where it failed. Only those "pending queue" transactions with a status of **f** (failed) or **p** (pending) are executed for download to the switch.

     Our example in Figure 6-1 should succeed now, because the extension referred to on the call appearance button now exists in the switch.
4. Use the follow-up procedures to check results files.

Procedure: Removing Failed or Pending SRs

Use this method when you cannot isolate and resolve an SR error and you want to undo its effects so that you can create a new one. This method completely removes or *backs out* all failed or pending SR records that have not successfully downloaded to the switch. For failed or pending transactions, this method restores the Manager IV database to its state before the SR ran.

Because this method cleanly removes both the pending product transactions and the updated Manager IV database records, it helps prevent inconsistencies between the Manager IV database and the switch from increasing.

1. Use the procedures for "Investigating and Correcting SR Failures" to determine the type of error.
2. Use the **service-request remove** command to remove pending or failed SR records and restore associated Manager IV database records.
3. Enter **y** in the Remove all transactions field.
   - The message "Database processing has begun for SR number= <SR number>" appears.
   - PQ entries with **p** or **f** status flags are deleted from the queue. The message "Deleted all entries for SR number = <SR number>" appears.
   - Manager IV database records associated with those pending queue entries are replaced with the corresponding SPQ records. The SPQ records are a copy of the original database records.
   - Note that any product transactions associated with Manager IV database transactions with an **s** status (successful) are not affected. If you want to remove these transactions, you must remove them by entering a new transaction that will restore them to their old values.
4. The effects of the failed SR have now been reversed. If you want to open a new SR and enter the correct transactions, use **service-request create**.
5. When all transactions have been executed, use **service-request end** to close the SR.

When A Service Request Is Removed

When the **service-request remove** command runs, Manager IV looks for failed or pending PQ entries, removes them, and replaces the corresponding Manager IV database information with the associated SPQ records.

In the example in Figure 6-1, suppose the call appearance button that was changed on the terminal was actually changed to reference an incorrect extension number, and the old information was correct. The simplest correction strategy would be to remove the SR and restore the Manager IV database to its original state. Figure 6-2 illustrates the Manager IV database after the SR that was shown in Figure 6-1 is removed.

The SPQ record associated with the failed PQ entry for button #1 is used to change button #1 in the Manager IV database back to its old value. This synchronizes the Manager IV database and the switch, which now both contain the *old* information for button #1. The other PQ and SPQ records are removed, and the Manager IV database records are unlocked.

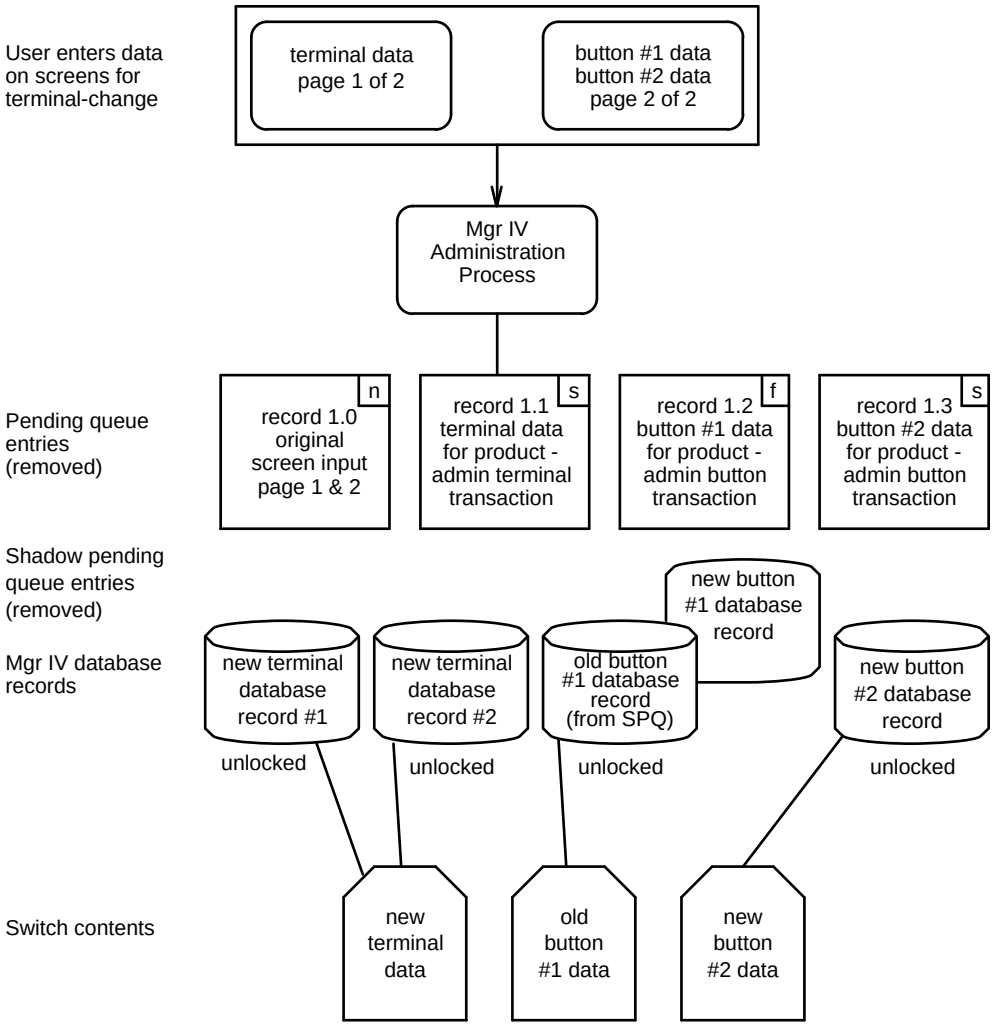


Figure 6-2. Manager IV Database After Service-Request Remove

Removing Pending Transactions in the SR

This method of recovery is used when you determine that a pending or failed SR should be corrected by a method other than rescheduling or rerunning the SR.

When an SR does not run, the failed or pending SR transaction changes remain in the pending queue. As long as these PQ records exist, the associated records in the Manager IV database are locked from further update to prevent stacking transactions between SRs. Data in the Manager IV database associated with transaction changes in the pending queue cannot be changed until the PQ records are removed.

The **pending-queue cleanup** transaction removes the PQ and SPQ entries and unlocks the database record so it can be accessed again. It is similar to the **service-request remove** command; however, **pending-queue cleanup** does *not* write SPQ records to the Manager IV database to restore it to its state before the transaction was run. The Manager IV database remains unchanged.

Note: For this reason, the command should be used with extreme caution, only when you are sure that the Manager IV database and the switch are synchronized. If you run this command without checking information in the switch and the Manager IV database, it is possible that you will cause additional synchronization problems.

You may need to use this command whenever you correct a failed SR using a method other than rescheduling or rerunning the SR. For example:

- After you have used product-administration commands to manually put the switch and Manager IV database in synch
- Before you use database-administration commands to manually put the switch and Manager IV database in synch

To determine whether you should use **pending-queue cleanup** to resolve a failed or partially failed SR:

1. Check the information for the failed record in the Manager IV database using the appropriate display command in the database-administration or administration area.
2. Check the corresponding information in the switch using the appropriate display command from the product-administration area.
3. Compare the two displays.
   - If the two databases are synchronized, you can run **pending-queue cleanup** to remove PQ and SPQ records for the pending SR.
   - If the two databases are not synchronized, you must determine which information is correct and take steps to bring the databases back into synch.
4. If the Manager IV database has the correct information, you can use a product-administration transaction to correct the switch. After checking that the transaction was successful, you can run **pending-queue cleanup** to remove the pending SR.
5. If the switch has the correct information, you will not be able to change the Manager IV database until the pending SR is removed. Run **pending-queue cleanup** to do this, then do one of the following:
   - Use a database-administration command to correct the Manager IV database.
   - Create a new SR with the correct information and allow it to download to the switch. You can do this if you were changing information, but you might not be able to do this if you were adding or removing translations.

Remember that Universal Outward Feeds cannot output data from transactions performed in the product-administration and database-administration areas. Consult your System Administrator if you think the error recovery methods you are using affect the integrity of the data output by Universal Outward Feeds.

When Pending-Queue Cleanup Runs

The **pending-queue cleanup** command removes all of the SR's PQ and SPQ records and unlocks all of the Manager IV database records locked by the SR.

In the example in Figure 6-1, suppose you determine that the Manager IV database has the wrong information for the call appearance button that failed to download. You will have to correct the information for the button in the Manager IV database; to do this, you must first execute **pending-queue cleanup** for that SR.

Figure 6-3 shows what happens when **pending-queue cleanup** is used to correct the error. The PQ and SPQ records are all removed, and the Manager IV database records are unlocked. No further processing is done on this SR; however, the copy of the old information for button #1 that was saved in the SPQ is *NOT* put back into the Manager IV database. This leaves the Manager IV database and the switch unsynchronized. You must take steps to correct this error after the **pending-queue cleanup** is run. After the command completes, you must create another SR to change button #1 on the terminal to match the information that is in the switch.

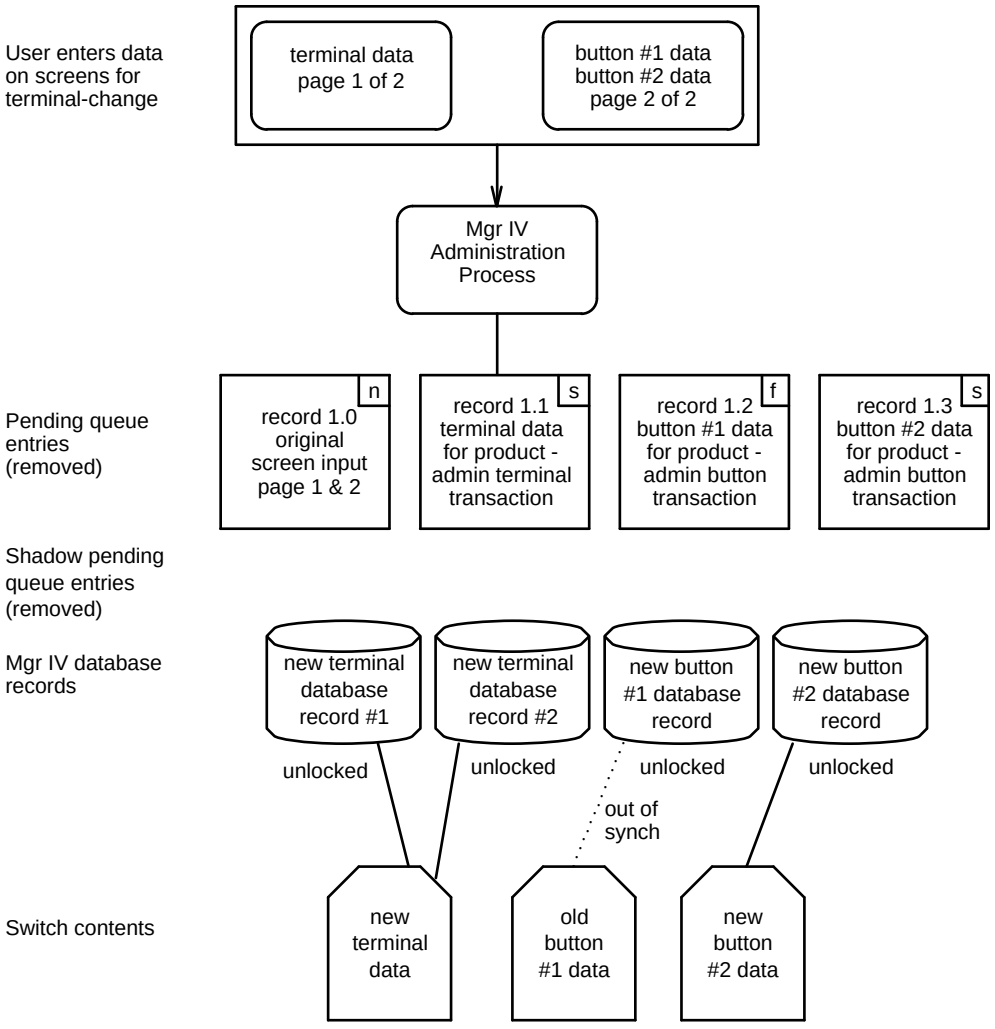


Figure 6-3: Using pending-queue cleanup

7. MANAGER IV PROCESS ARCHITECTURE

This chapter presents a detailed description of the Service Request subsystem's architecture, thus explaining how the DEFINITY® Manager IV processes work together to process immediate and scheduled SRs in the administration area, and individual transactions in the database administration and product administration areas.

MANAGER IV PROCESSES

DEFINITY Manager IV performs its tasks through a series of processes that receive and transfer instructions and information among applications, Manager IV databases, and supported products. Although these processes are transparent as you perform a task, an understanding of the processes may help you resolve errors or problems. The following description of Manager IV process architecture provides a conceptual overview about the components involved in processing Manager IV tasks.

The Manager IV processes are created when the system is booted and allowed to run thereafter. The following is a list of the main processes. You may encounter these process names in system error messages.

smue (System Management User Executive) performs all the Manager IV user interface functions, allowing the user to move through the Manager IV command hierarchy, access transaction screens, and display results and reports.

scheduler records all the tasks to be executed at a later date or time like SRs, reports, and any transactions scheduled for execution using the **ESC** - **s** command sequence. (See Chapter 3 of this manual for information on escape key sequences.) The scheduler is sometimes referred to as the dispatcher.

daemon The process that makes changes to the Manager IV database.

extractor is invoked when the product part of an administration transaction is downloaded to the product. All transaction data is stored in a Service Request in the pending queue (PQ) file and is sent to the **scm** (see below) for downloading. If the transfer of data to the product is successfully downloaded, the extractor deletes the SR. If a connection to the switch cannot be attained at the scheduled time, or if there is a data communications error, the extractor retries the SR at a later time. If the download fails, or if the SR has been rescheduled or "retried" three times, extractor fails the SR.

scm (Switch Communication Module) used to communicate with System 85/DEFINITY Generic 2 and DIMENSION switches. The **scm** takes the user's input, converts it to a format the switch can understand, likewise translates the switch response into a format understandable to the user, and finally sends data back to the original process that sent the user's input.

grouper used to reduce communications costs. If the scheduler finds more than one SR scheduled at a particular time for the same target, the scheduler invokes the grouper. The grouper groups up to 50 SRs for a specific switch and uses one connection to download the grouped SRs. Without the grouper, the extractor would have to download each SR individually, thus requiring 50 separate connections.

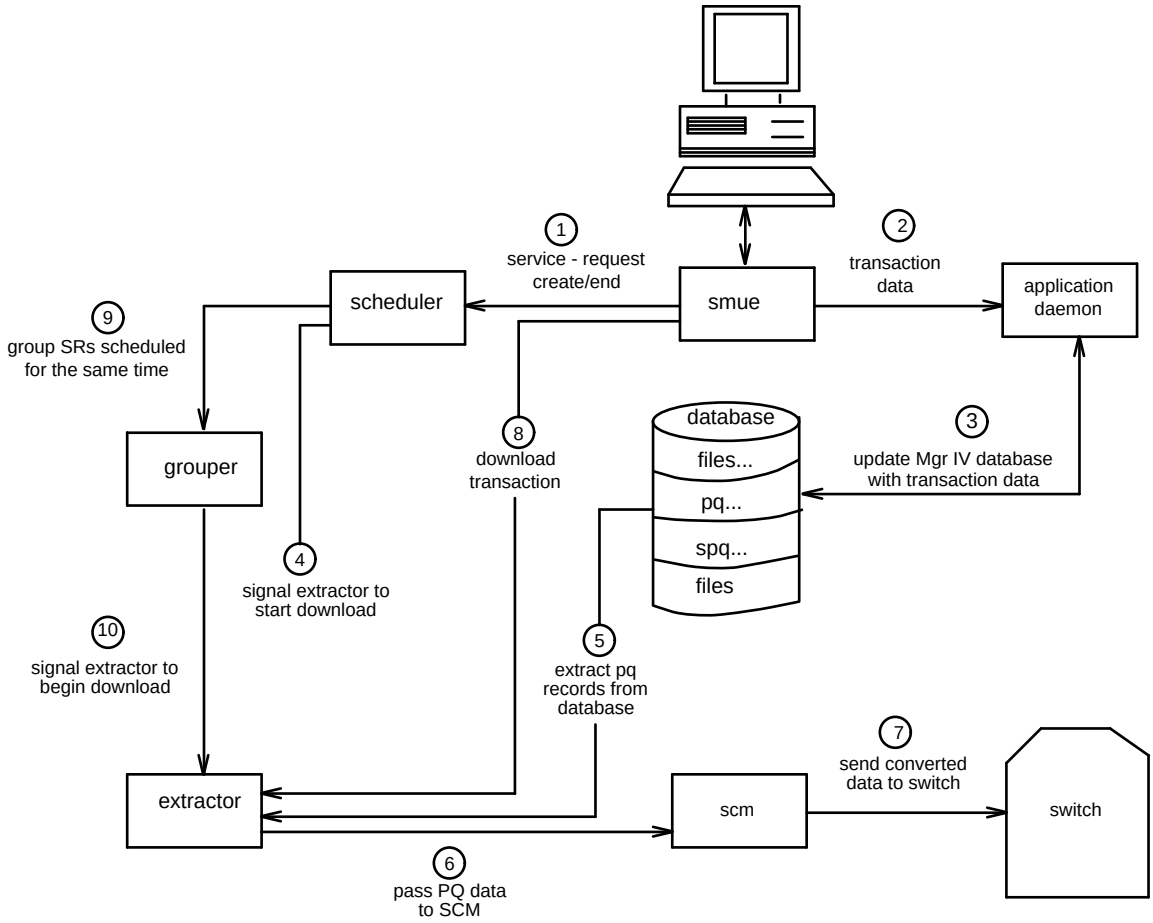


Figure 7-1. Manager IV Process Architecture

HOW MANAGER IV PROCESSES SERVICE REQUESTS

Figure 7-1 illustrates the transfer of data from the user to the Manager IV database and the switch database.

Scheduled SR Download

To schedule an SR to be downloaded to the switch at a later time, use **service-request create** to specify the download time. When transactions are executed within the SR, each transaction passes data to the appropriate **application daemon** (path #2). The daemon saves the original transaction data in the **SPQ**, and the new data with your transaction changes is stored in the **PQ**. The daemon then sends a copy of the new transaction changes to the **database** (path #3).

When all transactions have been executed within the particular SR, close the SR using **service-request end**. This allows the **scheduler** (path #1) to consider the SR for execution. When the specified download time for the SR is current (or past), the **scheduler** requests the **extractor** to execute the SR (path #4). The **extractor** establishes a connection to the appropriate switch, extracts the PQ records from the database (path #5), and passes them on to the **scm** (path #6). The **scm** uses the established connection to transfer the copy of the new data in the PQ to the switch (path #7). Results are also extracted from the switch by the **scm** and passed back to the **extractor**, which will place them in your results file.

Immediate Transaction Download

To run a transaction immediately, the **user** establishes the connection to the switch and allows Manager IV to generate a "temporary" Service Request with an SR number preceded by an asterisk (*). This means that you do not have to create or end a Service Request. Most of the processes operate in the same way as they do in a scheduled SR download except that when the new transaction data is executed, it is not passed to the **scheduler**. Instead, the **smue** automatically activates the **extractor** to download the transaction (path #8) after the **application daemon** has sent the transaction changes to the database.

In immediate transactions, results are displayed immediately on your screen rather than going to a results file. Pay close attention to error messages and displays that appear on the screen; if you miss the display, you will not have a copy of the new data sent to the switch and recovery will be more complicated if there is a problem.

The command **service-request run** processes a scheduled SR as an immediate transaction by scheduling the SR to run immediately.

Grouped Scheduled SR Downloads

When the **scheduler** receives an SR to be downloaded, it also checks to see if any other SRs need to be downloaded to the same target (switch) at the same time. If so, it passes up to 50 of these SRs on to the **grouper** (path #9). The **grouper** establishes the connection to the switch and invokes the **extractor** only once for each "group" of SRs (path #10). This saves time because a connection doesn't have to be established for each downloaded SR if multiple SRs share the same target and download time. When the last SR has been executed, the **grouper** disconnects from the switch.

Administration Process Architecture

Most of your administration transactions should be run as scheduled SRs from the administration area. In this area both immediate and scheduled SRs update the Manager IV database first, then update the switch database. Both types of SRs store transactions in the PQ file to be downloaded to the switch. Remember, immediate transactions are sent to the switch immediately, while a scheduled SR schedules transactions for download at a specified time.

In a scheduled SR, the results from the download of transactions within an SR are sent to a "results" file that can be accessed by the user. In an immediate transaction, where the transaction is executed interactively, results from the switch download are sent directly to the user's screen.

Figures 7-2 and 7-3 illustrate the administration process for immediate and scheduled SRs.

Phase 1: Update Manager IV Database

Transactions processed in the administration area gather data from the user via the **smue** and pass it on to an **application daemon**. The **application daemon** updates the Manager IV **database** and saves a copy of the original database record in the shadow pending queue **(SPQ)** so that the original state of the Manager IV database is recoverable if necessary. Packets with the data needed for the **scm** to make corresponding changes to the switch are sent to the pending queue **(PQ)**. These changes for the switch match the new records in the Manager IV database.

In immediate transactions, the **application daemon** sends any results from the database transaction changes back to the **smue**. The **smue** displays these results at the user's terminal and begins Phase 2, the switch download. In scheduled SRs, records of transaction changes wait in the PQ pending the scheduled download.

Phase 2: Switch Download

During this phase, pending queue entries are sent to the switch. In immediate transactions, the **extractor** is invoked immediately after Phase 1; in scheduled SRs, the **extractor** is invoked at a later time by the **scheduler**. In either case, the **extractor** is started and sends the PQ records in a packet to the **scm**. The **scm** downloads the data to the switch, extracts results, and sends the results in a packet to the **extractor**. Again, for immediate transactions, the results are interactively displayed to the user. For scheduled SRs, results are stored in a results file for later examination.

In either case, if the transaction changes are successfully downloaded to the switch, Manager IV automatically removes the corresponding PQ and SPQ records. If the transaction failed to download successfully, the user can use the appropriate SR commands to investigate and recover from the failure. (Remember that Manager IV automatically assigns an SR number preceded by an asterisk (*) to immediate transactions.)

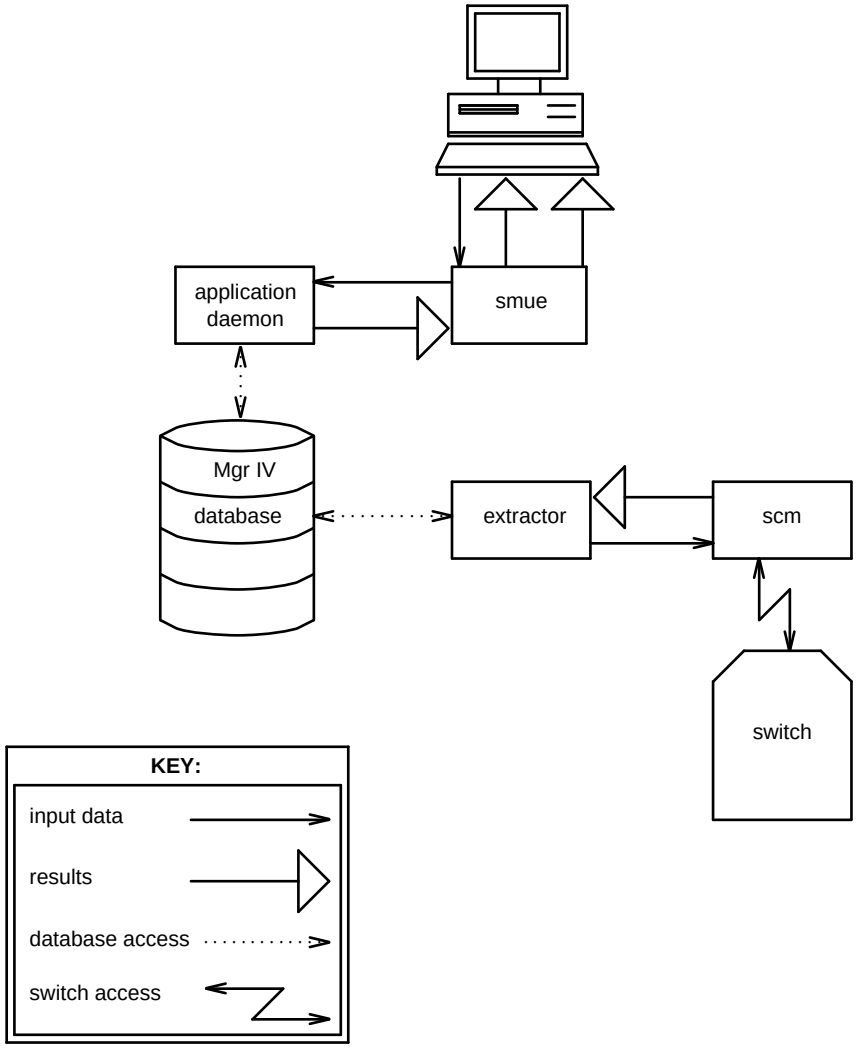


Figure 7-2. Process for Immediate Administration Transactions

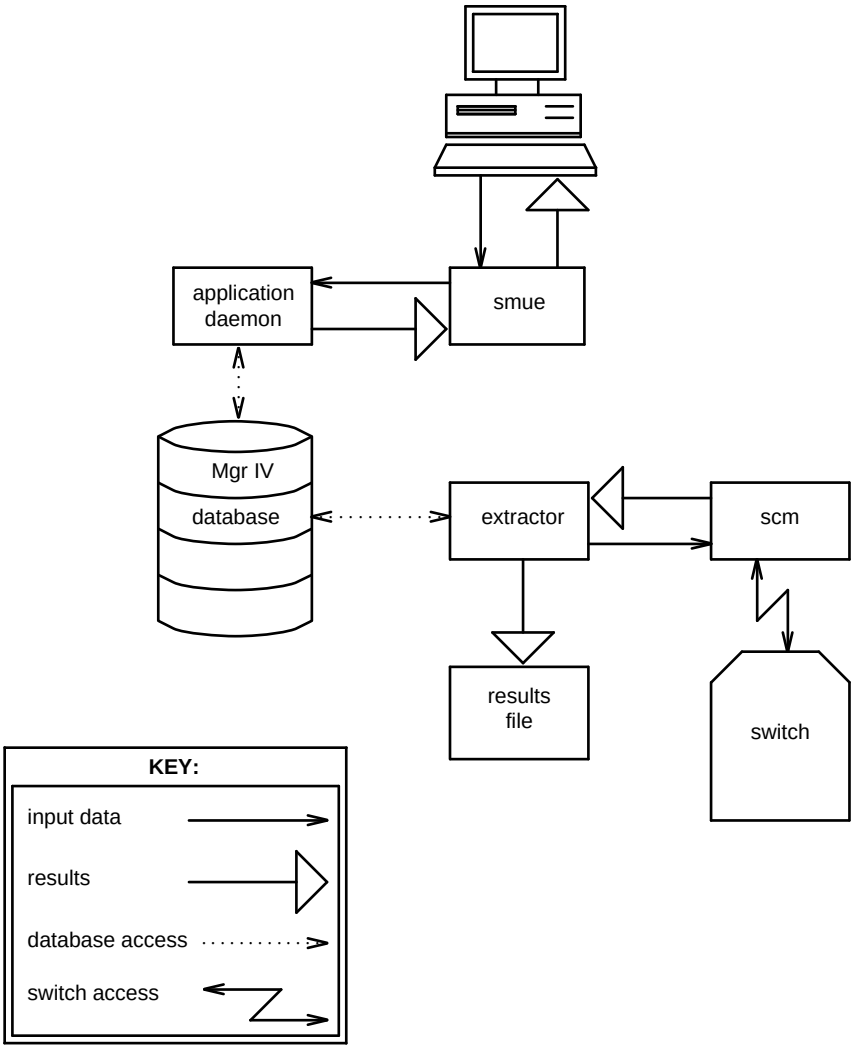


Figure 7-3. Process for Administration Transactions in Scheduled SRs

Database-Administration Process Architecture

In the database-administration areas, Manager IV processes transactions and sends them only to the Manager IV database files. Figure 7-4 illustrates this process. Transactions should only be run from the database-administration area when you are investigating or resolving error conditions between the Manager IV and switch databases. These transactions should be run in conjunction with recovery methods where you determine exactly what information is present in the Manager IV database and the switch.

For transactions processed in the database-administration area of Manager IV, the user's data is collected by the **smue** in the same manner previously described for administration transactions. The **smue** then passes records of the changed transactions in a packet to the **application daemon**. The daemon processes the packet of changed input and updates the corresponding transaction records in the Manager IV **database**. Any results are sent to the user's terminal by the **smue**.

Some transactions only exist in the database area of Manager IV. These transactions usually administer only Manager IV data and are retained only in the database-administration area.

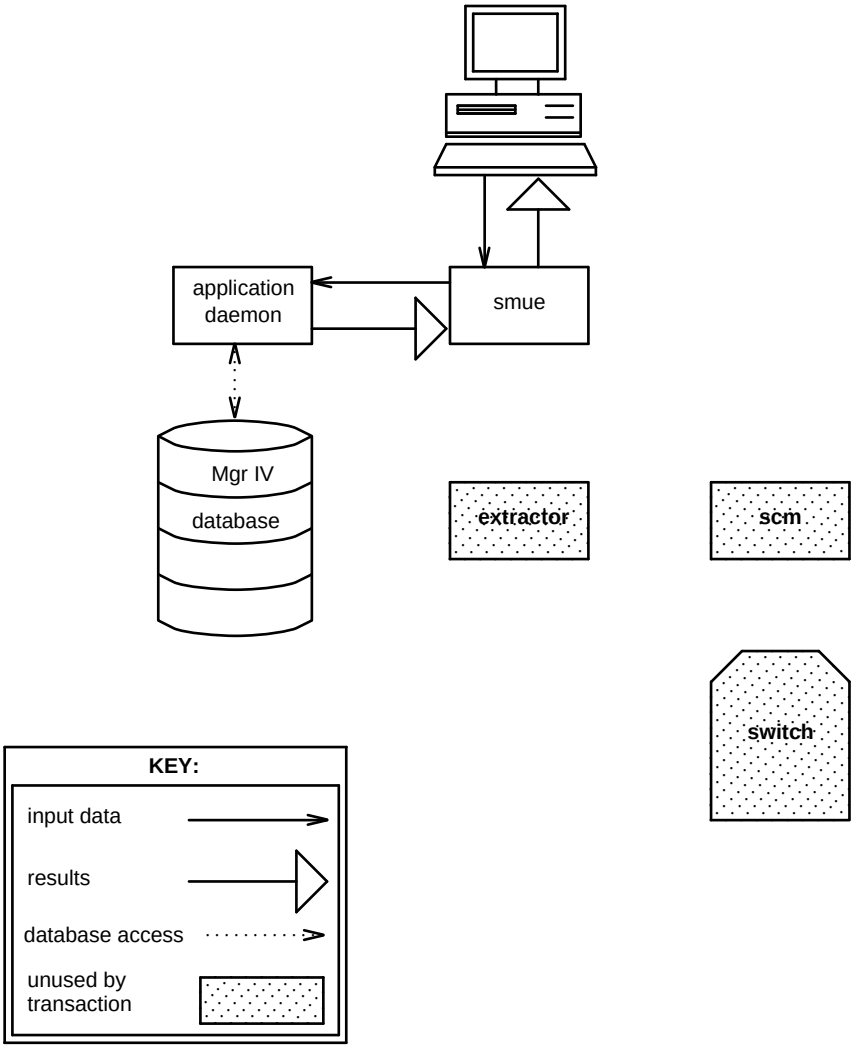


Figure 7-4. Process for Database-Administration Transactions

Product-Administration Process Architecture

In the product-administration areas, Manager IV processes transactions and sends them to the appropriate switch database only. Figure 7-5 illustrates this process.

Because product-administration transactions update only the switch, no copy of what the user enters is retained in the Manager IV database. For this reason, it is *not* a recommended mode of operation except when investigating or resolving error conditions between the Manager IV and switch databases.

Usually, inconsistencies between the Manager IV database and the switch database are a result of transactions failing to download to the switch. You can use display objects executed in the product-administration area to help determine what information is actually present in the switch.

In the product-administration area, the user's transaction changes are collected by the **smue** and grouped into a packet. The **smue** checks the packet to ensure that the transaction changes are valid and passes it on to the **scm**. The **scm** extracts relevant data from the packet and sends the data to the switch. Results are grouped in a second packet and sent to the user via the **smue** for display.

Some Manager IV transactions are product-only and do not exist under the database-administration area of Manager IV; however, they are available in the administration area. These transactions usually administer switch resources that are not stored in the Manager IV database. Most product administration transactions should only be used for error recovery. See Chapter 6, "Troubleshooting Service Requests" for details.

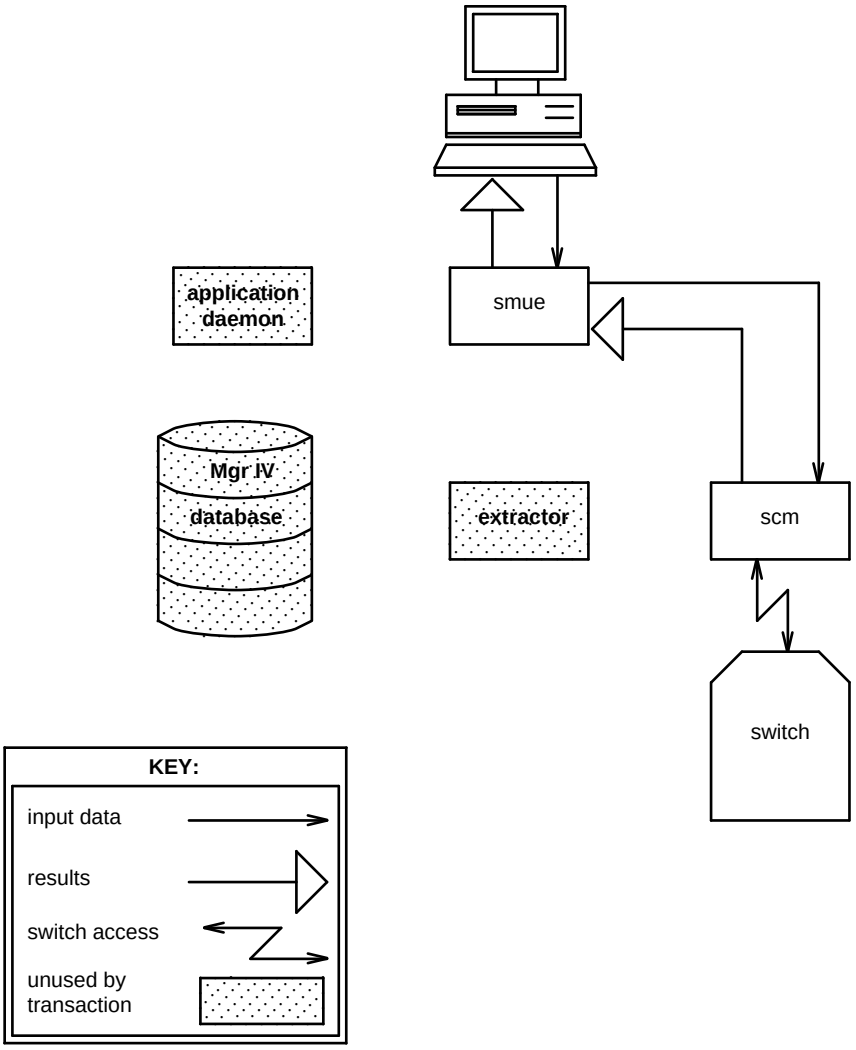


Figure 7-5. Process for Product-Administration Transactions

APPENDIX A. SERVICE REQUEST COMMANDS

This appendix provides information about all commands used to administer Service Requests in DEFINITY® Manager IV. A brief description of the commands is provided in the following alphabetical listing.

Use this chapter as a quick refresher to remind you of the function of each command. Detailed procedures for using the commands are included in Chapter 5, "Using Service Requests" and Chapter 6, "Troubleshooting Service Requests."

daily-tape-run schedule

Use this command to schedule a tape backup of switch translations to run each day at the same time. The command should be used to schedule a daily backup for each switch.

See "Procedure: Scheduling a Tape Run" in Chapter 5 for details.

pending-queue cleanup

Use this command to remove all of the entries in an SR that are in the pending queue. When you correct an SR error by a method other than rerunning or rescheduling the SR (such as using product administration commands), the failed or pending transactions remain in the pending queue. As long as these records exist, associated records in the Manager IV database are locked and cannot be changed. This command must be used to remove pending entries; it removes only the records from the pending queue and does not alter the data in the Manager IV database.

Note: This command should only be used *only* when you are certain that all SR errors have been corrected and that the Manager IV database and the switch are synchronized. Use Manager IV display commands to verify this before removing the pending queue records.

See "Procedure: Removing Pending Transactions in the SR" in Chapter 6 for details.

results display

Use this command to display the file that contains the results of a scheduled SR's attempt to download. The results file identifies all of the entries sent to the pending queue as successful or unsuccessful.

When you use this command, you must be logged onto Manager IV with the same login name as when you initiated the SR. If you are not, the message "<file> : not found" appears.

The results of successful transactions should agree with what is in the Manager IV database. Once you have examined the results, delete the results file by using the **results remove** command.

See "Procedure: Checking Results Files" in Chapter 5 for details.

results remove

Use this command to delete the contents of a results file. If you do not delete the results file, and you re-run an SR, the results for the re-run will be appended to the old results. Additionally, deleting results files helps conserve available disk space.

See "Procedure: Removing Results Files" in Chapter 5 for details.

scheduled-entry display

Use this command to check to see if an SR has been scheduled to run. It displays all scheduled entries awaiting execution, including SRs or any tasks that were scheduled using the ESC - s sequence. You have the option of displaying all information for scheduled entries or selecting only a subset of the available fields. You may select from the following list of fields: Scheduled Time, Next Execution Date, Task Number (equivalent to SR number), Owner, Entry Type, Product Time Zone, Product Identification, Connection Required, Product Type, Feature Package, Hardware Configuration, Security Code, Retry Count, Send Mail, Create Results File, Results Filename, and Polling Frequency.

See "Procedure: Displaying Scheduled Entries" in Chapter 5 for details.

scheduled-entry list

Use this command to get a summary list of all scheduled entries including SRs. For each scheduled entry, the list includes a one-line summary of the scheduled date and time for execution, the entry type, the product identification, and the task number.

See "Procedure: Checking Scheduled Entries" in Chapter 5 for details.

service-request append

Use this command to add additional transactions to an existing SR that is awaiting execution. You can check to see if the SR is awaiting execution by using **service-request display** or **scheduled-entry list** to display all entries awaiting execution.

See "Procedure: Appending to a Service Request" in Chapter 5 for details.

service-request change

Use this command to change:

- The date when the SR will be downloaded.
- The time when the SR will be downloaded.

When used before an SR is scheduled to download to the switch, this command reschedules all transactions in the SR. When this command is used after an SR has partially failed to download to the switch, only the pending and failed transactions are rescheduled.

See "Procedure: Rescheduling a Service Request" in Chapter 5 for details.

service-request cleanup

The System Administrator uses this command after a system failure to change the working status of all SRs that were being worked on when the system failed.

See Chapter 3 of *DEFINITY Manager IV System Administration* for details.

service-request create

Use this command to open a Service Request so that transactions may be scheduled for later downloading to the switch.

See "Procedure: Opening a Service Request" in Chapter 5 for details.

service-request display

Use this command to display the transactions that you entered into SRs. You have the option of viewing all changes or only failed changes. You can also select from two types of displays, detailed or non-detailed.

See "Procedure: Displaying SRs" in Chapter 5 for details.

service-request end

Use this command to close the SR after transactions have been entered into it. When you use this command, you are prompted to decide whether or not you want the system to continue processing the transactions in an SR if any transaction fails to download. The default for the "Continue on error?" field is **n,** for no. Since most transactions in an SR should depend on each other, you will usually leave this default. However, you can change it if your transactions are not dependent on each other.

See "Procedure: Closing a Service Request" in Chapter 5 for details.

service-request remove

Use this command to cancel all or part of an SR and restore the Manager IV database to its original state. The command removes an SR from the list of scheduled SRs and returns the Manager IV database to its state before the transaction ran.

You can remove an entire SR, or you can remove the last *n* (where *n* is a number) input transactions that you entered into an SR. You can only remove transactions in the reverse order in which they were entered in the SR. For example, if an SR contains four transactions and you want to remove the third transaction entered, you must remove the last two transactions in the SR.

If this command is used before an SR is downloaded to the switch, it removes all the pending entries for all transactions and returns the database to its original state. If this command is executed after an SR has partially failed to download to the switch, only the pending and failed transactions are removed from the pending queue and the database.

See "Procedure: Removing Transactions from a Service Request" in Chapter 5 and "Procedure: Removing Failed or Pending SRs" in Chapter 6 for details.

service-request report

Use this command to report on the status of successful, failed, and pending Service Requests. You can run the report for a single user or for all users.

Depending on the criteria you specify, the report can provide the total number of SRs, the number of completely successful requests, the number of requests that downloaded with failed transactions, and the Service Requests pending to download.

See "Procedure: Reporting the Status of SRs" in Chapter 5 for details.

service-request error-report

Use this command to determine the cause of failures of all transactions in a Service Request. The command provides a summary of all failed transactions within a given Service Request. For each transaction, the transaction number, target, object, verb, identifier, and the switch error are displayed.

See "Procedure: Running Service-Request Error-Reports" in Chapter 5 for details.

service-request run

Use this command to process an SR immediately or rerun a failed SR immediately. When the command is executed, the results of the SR are displayed on the screen as they are received from the switch rather than being stored in a results file. If the command is run after an SR has downloaded, only the failed and pending transactions are downloaded.

See "Procedure: Rescheduling a Service Request" in Chapter 5 for details.

service-request unlock

Use this command to change the working status of a specific SR. While you are working on an SR, that SR is given a working status that prevents other administrators from making changes to it. If you are interrupted by a line-drop or terminal problem, the SR will be "stuck" in working state when the connection is restored. This command changes the status of a specific SR so that work on it can resume.

See "Procedure: Changing the Status of an SR" in Chapter 6 for details.

tape run

This command runs a tape backup of switch translations. Use this command to run a backup immediately. To schedule a backup to run at the same time each day, use the command **daily tape run.**

See "Procedure: Scheduling a Daily Tape Run" in Chapter 5 for details.

APPENDIX B. 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 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.

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.

The *DEFINITY Manager IV Quick Reference* card puts Service Request commands, Escape Sequences, Scrapbook, Clipboard, and Utilities information at your fingertips.

DEFINITY Manager IV Planning and Implementation Manual provides information on planning and implementing Manager IV. The manual helps customers 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 Initialization, Installation 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 User Guides

The Manager IV user guides 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.

The *DEFINITY Manager IV System Administrator's Checklist* is a quick reference card that reminds the System Administrator about tasks that should be performed regularly and offers a guide to backup and recovery.

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, and assigning and changing Facility Restriction Levels 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.

SYSTEM 75 AND 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 AND DEFINITY GENERIC 2 DOCUMENTATION

DOCUMENT	ORDER NUMBER
An Introduction to AT&T System 85	555-103-020
System 85 Feature Facts	555-102-751
An Introduction to DEFINITY 75/85 Communications System Generic 2	555-104-020
DEFINITY Communications System Generic 2 and System 85 System Description	555-104-201
DEFINITY Communications System Generic 2 and System 85 Feature Description	555-104-301
System 85 Features Reference Manual	555-103-301
DEFINITY 75/85 Communications System Administration Procedures	555-104-506
DEFINITY Generic 2 Administration of Features and Hardware	555-104-507
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
System 85 Feature Translations Manual (Release 2, Version 4)	555-103-107
System 85 Maintenance Service Manual (R2V1 and R2V2)	555-101-108
System 85 Maintenance Service Manual (R2V3)	555-102-108
System 85 Maintenance Service Manual (R2V4)	555-103-108

UNIX OPERATING SYSTEM DOCUMENTATION

UNIX System V Release 3.1 Release Notes	305-565
UNIX System V Release 3.1 Administration Guide	305-569
UNIX System V Release 3.1 User's Reference Manual	307-012
UNIX System V Release 3.1 System Administrator's Reference Manual	305-570
UNIX System V Release 3.1 System Administrator's Reference Manual Updates	305-571
UNIX System V Release 3.1 User's Guide	307-231
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

PROCESSOR DOCUMENTATION

DOCUMENT	ORDER NUMBER
AT&T 3B2 Computer UNIX System V Release 3 System Administrator's Guide	305-611
AT&T 3B2 Computer UNIX System V Release 3 Owner/Operator Manual	305-612
AT&T 3B2 Computer UNIX System V Release 3 User's and System Administrator's Reference Manual	305-646
UNIX System V/386 Release 3.2 User's/System Administrator's Reference Manual	307-077
UNIX System V/386 Release 3.2 User's Guide	307-079
UNIX System V/386 Release 3.2 Operations/System Adminstration Guide	307-085

APPENDIX C: OPEN LOOK INTERFACE

The AT&T OPEN LOOK™ Graphical User Interface is a software application that creates a user-friendly, graphical environment for the UNIX® Operating System. The OPEN LOOK Interface replaces the traditional UNIX system commands with graphics that include windows, menus, icons, and other symbols. Using a hand-held pointing device called a mouse, you can select commands, manipulate windows, and access on-line help messages *without* using the keyboard.

This interface allows you to have multiple applications, including DEFINITY ® Manager IV, running all at the same time by creating more than one window on your screen.

Manager IV has been customized to provide OPEN LOOK capabilities that enhance the standard Manager IV interface. This appendix is designed to introduce you to this customized interface, and to explain the additional capabilities that the Manager IV OPEN LOOK Interface provides.

This appendix assumes that you are familiar with Manager IV. If you are a new user, you should read Sections 1, 2 and 3 of *Getting Started with Manager IV* before you begin the exercises in this appendix.

In many cases, the OPEN LOOK Interface offers more than one way to complete a task. For instance, there are two ways to "close" a window and reduce it to a small graphic symbol called an icon. Where possible, this appendix explains alternative methods. See the *AT&T OPEN LOOK Graphical User's Interface User's Guide* for a complete discussion of OPEN LOOK features and functionality.

ADDED BENEFITS FOR MANAGER IV USERS

The OPEN LOOK Graphical User's Interface provides several time-saving features that enhance Manager IV's already easy-to-use interface:

- Multi-tasking capabilities that allow you to open a window to perform a task in one application, such as reading UNIX mail, while another application (such as Manager IV) runs in the background in another window.
- Built-in escape sequences on task buttons on Manager IV System Management User Executive (SMUE) screens. You can perform most of Manager IV's escape sequences by selecting one of the 12 task buttons.
- "Point-and-shoot" functionality that permits you to point the cursor at the field on a Manager IV screen you want, instead of tabbing through many unwanted fields.

All of these features are explained in the practice exercises that follow.

SYSTEM REQUIREMENTS

AT&T OPEN LOOK Release 2.0 is supported on the entire family of AT&T 386 Work Group System products with UNIX System V Release 3.2.2.

Hardware Requirements

You must have a 386-based computer to run the OPEN LOOK Interface, with the following configuration:

- Recommended 8 Megabytes of Random Access Memory. You may need additional memory if your application is large.
- 40,000 blocks of free disk space in "/usr" and 2,000 free blocks in "/" for installation of the system.
- EGA monitor AT&T 314, 313 or AT&T 318, 319 (color) with the VDC-750 or
- VGA monitor AT&T 329M (color) or AT&T 323 (monochrome) with the VDC-600.
- Mouse.

If you have a 730-based computer, set the Environment Variable *COLORPREF=1:0:0:1* before running the OPEN LOOK Interface.

NOTE TO 386 USERS: The **Break** key is currently non-functional with this release of the OPEN LOOK Graphical User Interface. Use the **Delete** key to perform functions usually associated with the **Break** key.

Software Requirements

The software requirements are as follows:

- UNIX System V Release 3.2.1 or 3.2.2.
- OPEN LOOK End User System 2.0.
- Manager IV OPEN LOOK add-on package.
- Network Support Utilities Package.
- Mouse Drive package.

INSTALLATION

The OPEN LOOK Graphical User Interface is installed after the Manager IV software has been installed and Manager IV logins have been provided. The UNIX® command **installpkg** is used to install the Manager IV XMUE. This process must be performed by **root** on the system console.

For complete installation instructions, see the *OPEN LOOK Graphical User's Interface User's Guide*.

BEFORE YOU BEGIN

If you have not used a mouse before, you should become familiar with mouse characteristics and terminology and the OPEN LOOK window before using Manager IV and the OPEN LOOK Interface.

Mouse Characteristics

The **SELECT**, **ADJUST**, and **MENU** buttons shown in the figure below each perform a specific function.

Picture of mouse here with button labels

- The left **SELECT** button selects objects or manipulates controls.
- The center **ADJUST** button adds to or takes away from a group of selected objects, or adds text to a window, depending on the application in which you're working.
- The right **MENU** button displays and chooses from menus.

NOTE: If you are left-handed, you may want to change the button definitions on the mouse. See the *OPEN LOOK Graphical User's Interface User's Guide* for instructions.

Mouse Terminology

The following terms appear in the practice exercises in this appendix:

Press	Press and hold mouse button down without releasing it.
Release	Let go of the mouse button to initiate the action.
Click	Quickly press and release a mouse button before moving the pointer.
Double-click	Quickly press and release a mouse button twice in succession without moving the pointer.
Move	Slide the mouse without pressing any buttons.
Drag	Slide the mouse while holding one or more buttons.

NOTE: If you need to move the pointer further in one direction on the screen, but can't move the mouse any further in that direction in your work area, pick up the mouse and move it to another spot in your work area. The pointer stays in the same place on the screen while you move the mouse in the air; putting the mouse down in a roomier area gives you more room to manipulate the mouse.

An OPEN LOOK Base Window

The OPEN LOOK window environment consists of the workspace and the windows, icons, and menus on the workspace.

The **workspace** is the background screen area on which windows, menus, and icons appear. Think of the workspace as a convenient work area, not unlike the desk at which you sit. You can move windows and icons around on this workspace or stack them like piles of paper. You can even "pin" windows and icons to the screen the way you would pin a memo to your office bulletin board.

An OPEN LOOK **base window** is a rectangular area framed by a solid border on which an application's contents are displayed.

An **icon** is a small pictorial representation of a base window.

The figure below shows a base window in the workspace, and points out some key elements of the base window. Window elements are defined below the figure.

- **Control Area**. A region within a window, excluding the header and footer, which contains controls such as buttons, and check boxes.
- **Header**. The header is the strip that spans the top portion of the window. The title of the application running in the window appears in the header.
- **Window Menu Button**. The window menu button is a small square button with an inverted triangle that appears in the header to the left of the application title.
- **Pane**. The pane is the area of the base window where data pertaining to the application appears.
- **Scrollbar**. Scrollbars are used to move text or graphics vertically or horizontally. You use the mouse to drag the scrollbar up or down to display previously hidden information.

Conventions

The following style conventions are used in this appendix:

- Input the user enters appears in **bold type**.
- Keyboard keys are shown with the key graphic. For instance, **Enter** and **b** are examples of keyboard keys.
- Depending on the terminal and keyboard you are using, you may have to substitute **RETURN** for **Enter** when completing the practice exercises in this appendix. The **Enter** key is used exclusively in this appendix.
- The **SELECT**, **ADJUST**, and **MENU** mouse buttons appear in bold type and all capital letters.
- Program and button names appear in all capital letters. For instance, the TARGET task button allows you to choose a target for a transaction.
- Submenu items—like the now button on the EXECUTE menu— appear exactly as they appear on the screen, usually in lowercase letters. For instance, press **MENU** and drag the pointer to highlight the now button on the EXECUTE menu.

INTRODUCTION TO THE OPEN LOOK INTERFACE

The best way to get acquainted with the OPEN LOOK Interface is to pick up the mouse and perform a few simple tasks. In Exercise 1, you will initialize the OPEN LOOK Interface, pin a pop-up window to the screen, access and iconify the File Manager application, and run a second application in another xterm window.

Some of the tasks in each exercise are made of a series of sub-steps. Be sure to read **all** the sub-steps *before* performing each step. When you feel comfortable with the basics of using a mouse and the OPEN LOOK Interface, you can go on to Exercises 2 and 3, which combine the OPEN LOOK Interface and Manager IV.

Exercise 1: An Introduction to the OPEN LOOK Interface

1. Turn on your computer and enter your usual login ID and password.
2. At the UNIX system prompt (usually $) type **olinit** to initialize the OPEN LOOK Interface and press **Enter**.

   If you cannot access the OPEN LOOK Interface by typing **olinit**, it is probably because you have not been identified as an OPEN LOOK user to the system. See your system administrator or the *OPEN LOOK User's Guide* for instructions on adding yourself to the system or for establishing an automatic OPEN LOOK startup.
3. An **X** appears in the middle of the screen. After a few seconds, the screen refreshes and the **X** turns into the basic pointer. When you hear a beep, this means the OPEN LOOK Interface is ready.
4. Put the mouse on a flat surface near your computer and move it around. Notice how the pointer moves with the mouse. Now, pick up the mouse and move it to another location. Notice that the pointer on the screen does not move when you move the mouse in the air; only when you put the mouse down and move it around on a flat surface.

5. Access the OPEN LOOK Workspace menu:

   The Workspace menu shown below should appear pinned in the upper left corner of your screen each time you initialize the OPEN LOOK Interface. If the Workspace menu does not appear, follow the steps below to display the window and pin it to your screen:

   - Press and hold **MENU** (the right mouse button). The Workspace menu appears:

     Workspace menu here;fn=wspace

   - Without releasing **MENU**, "pin" the Workspace menu to the screen so you can refer to it:

     — Position the pointer on the pushpin in the top left corner of the Workspace menu.

     — Release **MENU** (the right mouse button).

     The Workspace menu is "pinned" to the screen. The Workspace menu header may change color.

     NOTE: See your system administrator or OPEN LOOK documentation to automatically display and "pin" the Workspace menu to your screen when you intialize the OPEN LOOK interface.

- Now, "unpin" the Workspace menu:
  - Position the pointer on the pushpin in the top left corner of the Workspace menu.
  - Click **SELECT** (the left mouse button).

  The Workspace menu disappears from the screen.
- Select an item from the Workspace menu:
  - Press and hold **MENU** again to access the Workspace menu.
  - Drag the pointer down to the Utilities button on the Workspace menu.
  - Without releasing **MENU**, drag to the right to the triangular symbol on the Utilities button.

    As you drag, you see the Utilities submenu that lists the available utility programs.

    Utility submenu here

  - Without releasing **MENU**, drag the pointer (downwards if necessary) to highlight the File Manager button.
  - Release the **MENU** button.

A screen similar to the following appears:

File Manager screen here;fn=man.ps

The File Manager is an OPEN LOOK application that lets you view and manipulate the UNIX file system without leaving the OPEN LOOK Interface.

- Practice moving a window around on the screen:
  - Position the pointer on the File Manager window header.
  - Press and hold **SELECT** and drag the pointer to move the window downwards.
  - Release **SELECT** when you have finished moving the File Manager window around on the screen.

  This feature is helpful when you have multiple windows on the screen and one window is partially covering another.
- Since you do not need the File Manager at the moment, close the File Manager window and convert the window to an icon:
  - Position the pointer on the window header and press and hold **MENU**. The Window menu appears.
  - Drag the pointer to highlight Close and release **MENU**.

The File Manager application is reduced to an icon on the screen, similar to the following:

file manager icon here

- To move the icon, position the pointer on any part of the icon. Press and hold **SELECT** and drag the icon to a new location. Release **SELECT** when the icon is in the center of the screen.

6. Now, create a Terminal Emulator (xterm) window so you can run another application on the screen:
   - Position the pointer in the workspace (area surrounding the File Manager icon on your screen) and press and hold **MENU**.

     The Workspace menu appears.
   - Without releasing **MENU**, drag the pointer down the Workspace menu to highlight the Programs button.
   - Without releasing **MENU**, continue to drag the pointer to the triangular symbol on the right of the Programs button. As you continue to press **MENU** and drag to the right of the Programs button, you see a submenu listing the applications programs available from the workspace.
   - Drag the pointer to highlight the Xterm button on the submenu and release **MENU**. (There may be any number of programs besides Xterm listed on your Programs submenu.)

A window similar to the following appears. The xterm window may partially or completely cover the File Manager icon, depending on where you moved the icon in step 10 above.

xterm window here;fn=xtwind

Without pressing any buttons, move the mouse around the screen, both in and out of the xterm window. Notice that the pointer resembles a capital "I" when inside the xterm window, and changes back to the pointer when outside the xterm window.

The xterm window gives you a UNIX prompt. You can execute UNIX commands from this window to run any UNIX applications. For example, the animated polyhedron program *ico* is one of the unsupported applications that is packaged with the OPEN LOOK Interface.

7. Run the *ico* application from the xterm window:
   - Type **ico &** at the UNIX system prompt and press **Enter**.

The following *ico* window appears inside the Terminal Emulator window:

8. After you have watched *ico*, quit the xterm window where *ico* is running:
   - Move the pointer to the header of the xterm window.
   - Press and hold **MENU**. The Window menu appears.
   - Drag the pointer to highlight Quit and release **MENU**.

   The *ico* application and the xterm window disappear, leaving the File Manager icon on the screen.

   NOTE: If you quit from the header of the *ico* window, the Terminal Emulator window remains. Repeat the instructions in step 8 to quit the Terminal Emulator window.

9. Quit the File Manager icon:
   - Move the pointer to the icon.
   - Press and hold **MENU**. The Window menu appears.
   - Drag the pointer to highlight Quit and release **MENU**.

You should see a blank screen with a pointer. Now that you have had some experience with the mouse and the OPEN LOOK Interface, turn to Exercise 2 to use the OPEN LOOK Interface with Manager IV.

GETTING STARTED WITH OPEN LOOK AND MANAGER IV

In this section you will use the OPEN LOOK Interface to access Manager IV and perform several tasks.

In Exercise 2, you will access Manager IV, open a Service Request, enter transactions into it, and close the Service Request, using many OPEN LOOK features.

There are two ways to access Manager IV from the Workspace menu:

- You can select xterm from the Programs submenu, create an xterm window, and invoke Manager IV at the UNIX prompt. If you choose this method, the Manager IV interface operates as it is described in *Getting Started with Manager IV*.
- Or, you can select Mgr IV from the Programs submenu. With this method, you can use task buttons, OPEN LOOK's point-and-shoot functionality, and other OPEN LOOK shortcuts.

Both methods are explained in Exercise 2. Note that in both methods, screen-labeled function keys (**F1** through **F8**) are not represented in this interface.

In Exercise 3, you will access multiple windows and exit from Manager IV and the OPEN LOOK Interface.

Remember to read all the substeps in a task first before performing the task.

It is still possible to perform Manager IV transactions the conventional way — by typing Manager IV commands and using the Escape sequences explained in Section 3 of *Getting Started with DEFINITY Manager IV*. But with a little practice, you will find that Manager IV and the OPEN LOOK Interface offers an efficient, time-saving alternative.

Exercise 2. Using Service Requests

To perform this exercise, you should have initialized the OPEN LOOK Interface, and be facing the blank OPEN LOOK screen. If not, perform steps 1 through 3 from Exercise 1 first.

In the first part of Exercise 2, you will learn the two methods of accessing Manager IV through the OPEN LOOK Workspace menu.

Method 1: Accessing Manager IV through an Xterm Window

1. From the blank OPEN LOOK screen, do the following:
   - Press and hold **MENU** (the right mouse button) to access the Workspace menu.
   - Drag the pointer to highlight the Programs button on the Workspace menu. Without releasing **MENU**, continue to drag to the triangular symbol to the right of the Programs button.

     As you drag, you see the Programs submenu that lists the available application programs.
   - Drag the pointer to highlight the xterm button on the Programs submenu and release **MENU**.

   In a few seconds, an xterm window appears, like the one shown below:

   (*terminal emulator window here;fn=xtwind*)

   You can run any application or program from an xterm window, and also perform any UNIX system command in the xterm window.
2. At the prompt in the xterm window, type **smue** to access Manager IV.

After a few seconds, the opening Manager IV screen appears inside the Terminal Emulator window, as shown below:

mgr iv inside term emulator window

You can perform Manager IV tasks through this window by typing the appropriate commands and using the Escape sequences described in *Getting Started with Manager IV*. Or, you can quit Manager IV and the xterm window and go on to the next section to access Manager IV via the Mgr IV button on the Programs submenu.

3. Quit Manager IV:
   - Type **bye** at the Enter application prompt. The xterm window remains.

4. Quit the xterm window by doing one of the following:
   - Position the mouse in the xterm window header and press and hold **MENU**. The Window menu appears.

     Drag the pointer to highlight the quit button, and release **MENU**.

     OR

   - Type **Ctrl** - **d** to exit the shell.

CAUTION: All Manager IV processes are terminated when you close the xterm window. Be sure that all commands have completed successfully before quitting this window to avoid possible loss of data.

Method 2: Accessing Manager IV through the Mgr IV Task Button

The second way to access Manager IV is via the Mgr IV button on the Programs submenu.

1. Access Manager IV this way by doing the following:

   - Press and hold **MENU** to access the Workspace menu.
   - Drag the pointer to highlight the Programs button on the Workspace menu, and continue to drag to the right of the Programs button.

     As you drag, you see the Program submenu that lists the available application programs.
   - Without releasing **MENU**, drag the pointer to highlight the Mgr IV button on the Programs submenu and release **MENU**.

   You will see the message "Loading Mgr IV. Please wait."

   In a few seconds, the following window appears:

(*Insert Manager IV opening window here--perry1*)

The first 11 buttons on the left side of the screen correspond to frequently performed Manager IV tasks. Task buttons followed by a right arrow (shown in this appendix as ">") contain submenus.

These task buttons perform 21 of the 23 Manager IV escape sequences; only the escape sequences **ESC** - **b** (to return cursor to previous level or field in command path) and **ESC** - **h** (to return cursor to top level in command path) are not represented among the task buttons.

The twelfth button, Properties.., allows you to customize the Manager IV command tree. See "Customizing the Manager IV Command Tree" after the exercises for more information.

The purpose of each task button is described below:

PATH>	Access the Manager IV command path hierarchy.
TARGET>	List, select or change valid Manager IV targets.
PAGE>	Page through Manager IV transaction screens for previous or next page.
RECALL>	Recall last input or last output from a screen.
MODEL>	Create or retrieve personal or global models.
UNDO>	Undo this field, undo all fields, clear this field, clear all fields.
EXECUTE>	Execute or schedule a transaction.
HELP>	Access short, extended or command help.
PASTE	Cut and paste text from flat files or long help.
CANCEL	Cancel current command.
EXIT	Exit from Manager IV.
Properties..	Customize Manager IV command tree.

Screen-labeled function keys (**F1** through **F8**) are not represented in this interface.

2. Enter a target using the Manager IV OPEN LOOK Interface:
   - Position the pointer on the TARGET task button.
   - Press and hold **MENU** (the right mouse button) and drag the pointer to the right to access the TARGET submenu.

perry2

   - Without releasing **MENU**, continue to drag the pointer down the TARGET submenu until you have highlighted the target that you want.

- Release the **MENU** button to enter that target.

You see the message "Target established" above the Enter application prompt.

3. Use the OPEN LOOK Interface to enter the Manager IV command path **tcm admin service-request create**:

   NOTE: Do not release **MENU** until you have highlighted the complete command path.

   - Position the pointer on the PATH task button.
   - Press and hold **MENU** and drag the pointer to the right to access the Applications submenu.

     The screen looks like the following:

     show PATH and application here--perry3

   - Drag the mouse down the Applications submenu to highlight the tcm button; do not release the **MENU** button.

     You must select a target before selecting an application (see step 2 above). Until you select a target, the tcm and fm choices will be disabled, as indicated by a "graying out" of the tcm and fm buttons.

   - Continue to drag the mouse to the right of the Applications submenu. As you drag, you see the Areas submenu.

show PATH, application and area submenu--perry4

- Drag the pointer to the Admin button on the Areas submenu. Do not release the **MENU** button.
- Continue to drag the mouse to the right of this submenu. As you drag, you see the Objects submenu.

show PATH, application area and object submenu here--perry5

The objects presented depend on the switch type, area and user classification. If service request does not appear on the first objects screen, drag the pointer down to highlight the <MORE> button and continue dragging to the right of the first object screen.

A second object menu screen appears.

- Drag the pointer down to highlight the service request button on the Objects submenu. Do not release **MENU**.
- Continue to drag the mouse to the right of the Objects submenu. As you drag, you see the Verbs submenu.

Show PATH, application, area, object and verb submenu here--perry6

- Drag the pointer to highlight the create button, and release the **MENU** button to enter the highlighted **tcm admin service-request create** command line.

  The screen used to create a Service Request appears.

(*enter Service Request screen here)--perry7*

Notice that the menu buttons representing the command you just entered appear below the Manager IV header.

NOTE: In the steps above, you pressed **MENU** and dragged the mouse to select a command path. It is also possible to select a command path by positioning the pointer on the PATH button and clicking **MENU**. The next level menu will appear and stay on the screen.

Position the cursor on the button you want and click **MENU**. Repeat this until you have selected the entire command path.

Various shortcuts for selecting objects are discussed in full in the *OPEN LOOK Graphical User's Interface User's Guide*. For example,if you change the SELECT Mouse Press: option in the Miscellaneous Workspace Property Window to "Displays Default," the system default will execute if you click **SELECT** on a menu or submenu item. For consistency, the dragging method is used in the exercises in this Appendix.

In the next three steps, you will *type* the information required for each field. Use the following OPEN LOOK features while you are completing the screen:

- Press **Enter** to move through the fields, or use the mouse to position the pointer at the field you want and click **SELECT**.

  Type the required information.

- To undo any entry, position the pointer on the UNDO task button, and press and hold **MENU**. Drag the pointer to highlight the appropriate submenu item —Undo This Field, Undo All, Clear This Field, or Clear All—and release **MENU**.

4. In the Service Request Number field, type a Service Request name of up to 10 characters to identify the Service Request.
5. In the Due Date field, type the month, day and year that the Service Request should download to the switch:
6. In the Due Time field, enter the time (as **hhmm** based on a 24-hour clock) that the Service Request should download.
7. Using the OPEN LOOK Interface, execute the **service-request create** command:

   - Position the pointer on the EXECUTE task button and press and hold **MENU**. Drag the pointer to the right to access the EXECUTE submenu. Without releasing **MENU**, continue to drag the pointer to highlight Now. Release **MENU**.

     NOTE: If you try to select the Schedule option from the Execute submenu, you will see the message "Entered function not allowed for this command."

   The Service Request is now opened. You will remain in this Service Request until you close the Service Request using the **service-request end** command.

8. Press **Enter** to return to the command path.

9. Using the mouse, enter several transactions of your choosing in the Service Request.

   You can enter transactions from the current path buttons that appear below the Manager IV header:

   - If you are entering transactions from a new application, position the pointer on the PATH button, press and hold **MENU**, and drag the mouse to the right.
   - If you are staying within TCM, but changing to a different area, position the pointer on the tcm button, press and hold **MENU**, and drag the mouse to the right.
   - If you are staying within tcm admin, but changing to a different object and verb, position the pointer on the admin button, press and hold **MENU**, and drag the mouse to the right.

   For example, to enter the transaction **tcm admin extension add**, do the following:

   - Position the pointer on the admin button and press and hold **MENU**.
   - Without releasing **MENU**, drag the pointer to the right to access the object submenu:

perry8

- Without releasing **MENU**, drag the pointer to highlight extension. If extension does not appear on the first object submenu screen, drag the pointer to highlight <MORE> and continue dragging to the right.

  A second object submenu screen will appear. Without releasing **MENU**, drag the pointer to highlight extension and continue dragging the pointer to the right to access the verb submenu.

perry11

- Drag the pointer to highlight add and release **MENU** to enter the entire command.

The menu buttons below the Manager IV window header reflect this new command.

perry13

10. Complete the transaction screens and execute each transaction. The following OPEN LOOK features are available to help you complete the transactions:

    - To access Manager IV help, position the pointer on the HELP task button. Press **MENU** and drag the mouse to the right until the HELP submenu appears. Drag the pointer to highlight the menu item you want—Short, Extended or Command—and release the **MENU** button.

      Extended and command help are provided in separate scrollable windows, so you can view this information while preserving the contents of the screen in which you are working. A portion of command help for the Service Request transaction appears below:

      Insert service request long help here--perry14 .

      — To scroll down the help window, position the pointer on the down arrow on the scrollbar. Press and hold **SELECT** and drag the pointer downwards.

      — To scroll up the help window, position the pointer on the up arrow on the scrollbar. Press and hold **SELECT** and drag the pointer upwards.

      — To exit the help window, position the pointer on the help window header and do one of the following:

      Press and hold **MENU** to access the Window menu. Drag the pointer to highlight the Dismiss button; continue to drag the pointer to the right to access the Dismiss submenu. Drag the pointer to highlight This Pop-Up and release **MENU**.

      OR

      Click **SELECT** on the help window "pushpin" to pull the pin out.

      In both cases, the help window disappears and you have exited the help window.

    - To move to any input field on a transaction screen, move the pointer to the desired field and click **SELECT** (the left mouse button).

      Type the required information for that field.

      NOTE: The cursor will not skip over required fields; you must complete required fields before moving on to desired fields.

- To undo any entry, position the pointer on the UNDO task button and press **MENU**. Drag the pointer to the appropriate submenu item — Undo This Field, Undo All, Clear This Field, or Clear All— and release **MENU**.

UNDO menu here--perry15

- The PASTE button allows you to "paste" text from other windows—reports, files, or long help—onto the Manager IV screen where you are working. See the *OPEN LOOK Graphical User Interface User's Guide* for instructions on cutting and pasting text between windows.
- To cancel a transaction, position the pointer on the CANCEL task button and click **SELECT**.

- To execute a transaction, position the pointer on the EXECUTE task button and press and hold **MENU**. Drag the pointer to the right to highlight the EXECUTE submenu; continue to drag the pointer to highlight Now. Release **MENU**.

Insert EXECUTE menu here--perry16

— When executing transactions, Manager IV will not accept the Schedule option for transactions entered in a Service Request. In these cases, you will see the message "Entered function not allowed for this command."

— It may take a few seconds for each transaction to execute.

11. When you have completed all transactions for this Service Request, use the mouse and the path menu buttons below the Manager IV header to select the command **tcm admin service-request end**.

    Do not release **MENU** until the entire command path is highlighted.

12. Specify the "Continue on Error?" option. Press **Enter** to choose the default **n** (no). Enter **y** to select yes.

13. Execute the **service-request end** command:

    - Position the pointer on the EXECUTE task button. Press and hold **MENU** and drag the pointer to the right to access the EXECUTE submenu. Without releasing **MENU** drag the pointer to highlight Now and release **MENU**.

14. Press **Enter** to return to the command path.

This concludes Exercise 2. To practice the OPEN LOOK Interface's windowing and file maintenance applications, go on to Exercise 3.

Exercise 3: Accessing Multiple Windows

In this exercise, you will use the OPEN LOOK Interface's Windowing capability to access multiple applications during a single session. You will also learn how to change active input focus from one window to another, and exit Manager IV and the OPEN LOOK Interface.

To perform this exercise, you should be at the Manager IV Command prompt. Refer to Exercise 2 for instructions on accessing Manager IV through the OPEN LOOK Interface.

1. Without leaving the Manager IV window, create an xterm window to access another application. You can run any application or program from an xterm window, and can also perform any UNIX system command in the xterm window.

   In this exercise, you will access the UNIX Operating System via the xterm window.

   - Move the pointer to the Workspace (area surrounding the Manager IV window) and press and hold **MENU**. The Workspace menu appears. Drag the pointer to highlight the Programs button, and continue to drag to the right until the Programs submenu appears.
   - Drag the pointer to highlight the Xterm button and release **MENU**. In a few seconds, the xterm window appears, partially covering the Manager IV window.

   (*Insert overlapping windows here--perry17)*

   - At the prompt in the xterm window, type the appropriate UNIX command to read your mail, send mail to another user, or perform any other UNIX task.
   - Move the xterm window so more of the Manager IV window is exposed:
     — Position the pointer on the xterm window header.
     — Press and hold **SELECT** and drag the pointer downwards to move the Terminal Emulator window downwards.
     — Release **SELECT** when the Manager IV window is halfway exposed.

     You can also move through your "pile" of windows by selecting Back from the Window Menu. This command moves a window or icon to the back of the workspace, behind other windows or

icons.

To do this:

— Position the pointer on the window header and press and hold **MENU**.

The Window menu appears.

— Drag the pointer down to highlight Back.

— Release **MENU**.

The top window has been moved behind the other windows on the screen. Repeat these steps to view each window in the pile.

2. When you have completed the UNIX tasks, leave the xterm window open and return to the Manager IV window to perform additional tasks.

   If you try to type information on the Manager IV window at this point, you will get no response. To perform tasks in the Manager IV window, you must first change the active input area —area of the screen that accepts input from the keyboard—from the xterm window to the Manager IV window:

   - Move the pointer to the Manager IV header (area where the application title is displayed) and click **SELECT**.

     This changes the active input area to the Manager IV window. Any data you enter will appear in the Manager IV window.

3. When you are finished, quit from any windows currently running:

   - Position the pointer on the window header and press and hold **MENU**.

     The Window menu appears.

   - Drag the pointer down to highlight Quit.
   - Release **MENU**.
   - Repeat these steps to quit each window on your screen.

   The pointer is now on the blank workspace.

4. Quit the OPEN LOOK Interface and return to the UNIX prompt:

   - Press **MENU** to access the workspace menu.
   - Drag the pointer to highlight Exit and release **MENU**.

     The following message appears.

(Do you want to exit all running programs and the workspace? screen here)

- Move the pointer to the Yes button and click **SELECT** to end the OPEN LOOK session.

  All applications (if you did not quit them) are dismissed and you are returned to the UNIX prompt.

CUSTOMIZING THE MANAGER IV COMMAND TREE

The objects under the Terminal Change Management, Facilities Management and System Administration applications are too numerous to list within a single pop-up window. And since each Manager IV user is likely to use a different set of objects regularly, you can customize the Manager IV command tree to display up to 30 frequently used objects in the first objects pop-up window.

When you select the Properties.. button on the Manager IV window, you gain access to the Properties: Administer Object Groups submenu. Through this submenu, you can literally check off up to 30 "high-runner" objects to appear in the first objects pop-up window in the Manager IV command path.

You can view remaining objects in a second pop-up window by selecting the <MORE> button at the bottom of the first objects window. If necessary, you can access additional pop-up windows by selecting the <MORE> button at the bottom of each pop-up window.

The following procedure explains how to customize the Manager IV command tree. The Properties: Administer Object Groups allows you to edit object groups for the following areas:

- tcm-admin, database-admin, product-admin
- fm-admin, database-admin, product-admin
- system-administration
- tcm report-admin
- fm report-admin

In this exercise, you will edit the tcm-admin objects menu.

Customizing the Manager IV Command Tree

1. From the TCM application in Manager IV, position the pointer on the Properties.. button and click **SELECT**. The Path Editor Properties Base Window appears:

perry18

2. Position the pointer on the tcm-admin, database-admin, product-admin button and click **SELECT**. The tcm admin, database-admin, product admin Checkbox window appears.

perry19

3. Up to 30 "high-runner" objects are checked off in the Checkbox window. Review this selection and add or remove objects according to those objects you use most frequently:

   - To scroll upwards or downwards in this window, position the pointer on the up or down arrow on the scrollbar, press and hold **SELECT**, and drag the pointer in the appropriate direction.
   - To select or deselect an object, do the following:

     — Position the pointer on the object's checkbox.

     — Click **SELECT**.

     If the object was checked, it now does not have a check mark next to it.

     If the object was not checked, it now has a check mark next to it.

4. When you have completed your review and selection, exit the Checkbox window:

   - To save the current checked-off objects when exiting the Checkbox window, position the pointer on the Save button and click **SELECT.**
   - To exit the Checkbox window *without* saving the most recent changes, position the pointer on the Cancel button and click **SELECT**.

GLOSSARY

The following glossary defines the major terms used in DEFINITY® Manager IV documentation. Glossary items that appear in other definitions are italicized to make it easy to find additional information.

AAR. See *Automatic Alternate Routing*.

Abbreviated Dialing. A *switch* feature that allows the user to store frequently called telephone numbers or dial access codes in the system memory and use a shortened dialing procedure (or programmed buttons) to access these numbers.

ACA. See *Automatic Circuit Assurance*.

ACB. See *Automatic Callback*.

Account Support Representative (ASR). The liaison between the customer and AT&T who refers the customer to the appropriate technical support.

ACD. See *Automatic Call Distribution*.

ACU. See *Automatic Calling Unit*.

Add-on module. A piece of equipment that attaches to a *voice terminal* to expand its capabilities. Examples include a *Call Coverage Module*, a *Function Key Module*, a *Digital Display Module*, and a *Digital Terminal Data Module (DTDM)*.

Adjunct Administration. A standard Manager IV *application* used to administer *network* adjuncts through an asynchronous link (*cut-through* access) that accesses the adjuncts' system management features.

Advanced Private Line Termination (APLT). A service that provides access to and termination from private-line *networks* such as a *Common Control Switching Arrangement (CCSA)* or an *Enhanced Private Switched Communications Service (EPSCS)* network. APLT provides network inward dialing and direct outward dialing to the private network.

After-image. A picture of an updated file block recorded in the transaction log. The after-images are used during the file recovery process.

Agent. A person operating an *attendant console* or *voice terminal* as a member of an *Automatic Call Distribution* group or *split*.

AICM. See *Automatic Intercom*.

AIN. See *Auto-In*.

AIOD. See *Automatic Identification of Outward Dialing*.

Alert type. The type of alerting (ringing) or status lamp flashing associated with a call appearance on a *voice terminal*.

Alerting Transfer (ATRF). A switch feature that allows alerting (ringing) to be transferred to other voice terminals.

Alternate FRL. A restriction level used to change *network* access controls for periods of other than normal activity such as evenings or weekends. They can be activated/deactivated from the *attendant console*.

Alternate Voice and Data (AVD). A *DS1* interface that provides end-to-end digital connectivity. This interface is especially useful for data calls between switches because modems are not required.

Analog terminal. A single line *voice terminal* that handles analog voice signals over a two-wire tip and ring connection.

ANI. See *Automatic Number Identification*.

AP. See *Applications Processor*.

APLT. See *Advanced Private Line Termination*.

Application. In Manager IV, a set of software administrative capabilities grouped by common purpose. The Manager IV applications are *Terminal Change Management (TCM)*, *Facilities Management (FM)*, *System Administration*, *Adjunct Administration*, and *Utilities*.

Applications Processor (AP). An adjunct minicomputer system that controls many functions and features not directly associated with call processing.

Area. A level within the Manager IV command hierarchy that groups related *commands*.

Area code. See *Numbering Plan Area (NPA)*.

ARL. See *Attendant Release Loop*.

ARS. See *Automatic Route Selection*.

ASR. See *Account Support Representative*.

Associated extension. A non-working extension number (sometimes a *Listed Directory Number (LDN)*) that is associated with an existing, previously assigned extension, usually the controller of a group or *split*. For switches with call distribution features, calls to a call distribution group or split are routed to the split's queue using an associated extension number. The system then distributes the calls to an available agent from the queue.

Asynchronous. A method of transmitting data in which time intervals between transmitted characters may be of unequal length. Each character is preceded by a start bit and ends with a stop bit. Asynchronous transmissions are generally lower in cost but less efficient than synchronous transfer of data.

Asynchronous Data Unit (ADU). A small device that attaches to EIA (RS-232C) equipment allowing the signals to be transmitted over dedicated wiring or standard building wiring for greater distances than standard RS-232C signals. A pair of ADUs plus a special Crossover Cable may connect RS-232C devices together, thus acting as limited-distance modems.

ATMS. See *Automatic Transmission Measurement System*.

ATND. See *Attendant Call*.

ATRF. See *Alerting Transfer*.

Attendant. The operator of an *attendant console*.

Attendant Call (ATND). Identifies the type of call being handled by the *attendant console* operator.

Attendant console. An electronic call-handling unit with pushbutton control used by *attendants* to answer and place calls and monitor some system functions.

Attendant overflow. The function of the *Tenant Services* feature that allows calls directed to a given attendant partition to overflow and terminate to a designated overflow partition.

Attendant partition. A division of a *System 85* R2V4 and *DEFINITY Generic 2* switch that is specified in support of the *Tenant Services* feature. An attendant partition can serve one, several, or all *Extension partitions*. The assignment of attendant partitions to extension partitions allows attendant calls to be routed to different attendants based on the calling or called extension partition.

Attendant Recall (RCL). A *switch* feature that allows a user on a two-party call or a conference call to call the *attendant* for assistance.

Attendant Release Loop (ARL). A *switch* feature that allows an *attendant* to hold an incoming trunk call off the console if completion of the call has to be delayed. This frees the console to handle other incoming calls.

Attributes. The assigned characteristics of *terminals*, *data modules*, *extensions*, and special calling groups.

Audio Information Exchange (AUDIX). Voice-mail feature for *System 85/DEFINITY Generic 2* and *System 75/DEFINITY Generic 1*. AUDIX consists of a Voice Mailbox (VMB), Call Answering (CA), and Leave Word Calling (LWC). In Manager IV, AUDIX is administered through the *Adjunct Administration* application.

Authorization code. A four- to seven-digit code assigned to a user so the user can temporarily override *Facilities Restriction Levels (FRLs)* associated with a line *class of service* or incoming trunk. Authorization codes are assigned through *Facilities Management (FM)*.

Autodialer. See *Automatic Calling Unit*.

Auto-In (AIN). A *Uniform Call Distribution (UCD)* mode that allows an answering station to receive an incoming UCD call immediately upon disconnect from a previous call. This feature is provided only for *System 85* R2V3 and *DIMENSION FP8*, Issue 3.8.

Automatic Alternate Routing (AAR). A *switch* feature that establishes alternative paths for calls made between two points within a private network based on a predetermined set of routing patterns or preferences. Although AAR manages *on-network* calls, it may route a call using *off-network* facilities if no on-network facilities are available.

Automatic Appearance. A *System 85* R2V2 (and forward) and *DEFINITY Generic 2* button feature that allows a *station* to receive incoming calls while *off-hook*.

Automatic Call Distribution (ACD). A *switch* feature that permits calls to terminate directly to the *agent* in an ACD group whose terminal has been idle the longest. On *System 85* R2V2/V4, *DIMENSION System FP8*, Issue 3.8, and *DEFINITY Generic 2*, ACD functionality is provided by *Enhanced Uniform Call Distribution (EUCD)*; on System 85 R1 and R2V1, and DIMENSION System FP8 Issue 1.16, it is provided by *UCD*.

Automatic Callback (ACB). A *switch* feature that allows users who placed a call to a busy internal voice terminal to be called back automatically when the called voice terminal becomes available.

Automatic Calling Unit (ACU). Also referred to as an autodialer. A special device that automatically dials certain outgoing calls. In Manager IV, ACUs are connected to *product access ports* for automatic connections to *products*.

Automatic Circuit Assurance (ACA). A *switch* feature that assists in identifying possible *trunk* malfunctions. The switch measures and records the holding time of each call and compares it to predetermined thresholds. Unusually long or short calls that can indicate trunk problems are referred to the *attendant*, who may test the trunk in question.

Automatic Identification of Outward Dialing (AIOD). Provides automatic identification of *extension numbers* on outward calls in conjunction with automatic message accounting facilities at the local *Central Office (CO)*. This switch feature permits individual extension billing on toll calls and the equivalent on private *network* calls. AIOD is also used with Tie Trunk groups to permit the same capability on a private network.

Automatic Intercom (AICM). A *switch* feature that provides a dedicated voice path between two multiappearance *voice terminals*.

Automatic Message Waiting. A *switch* feature that automatically lights the message lamp on a *terminal* when a message is left at the *Message Center* or via *Leave Word Calling*.

Automatic Number Identification (ANI). The automatic identification of a calling *terminal's* telephone number.

Automatic Route Selection (ARS). A method of routing *off-network* calls based on preselected preferences, which are usually based on the least expensive path. A *routing pattern* is an ordered list of the trunks or *trunk groups* that can be used to route a call.

Automatic Selection. A Manager IV feature that allows the system to automatically select available *extension numbers* or *Equipment Line Locations (ELLs)* when the user does not specify them. On a *TCM screen*, the *fields* with automatic selection are designated with an asterisk (*) as the *default* value.

Automatic Transmission Measurement System (ATMS). A *System 85* and *DEFINITY Generic 2* feature that tests the transmission quality of outgoing and two-way trunks.

Auxiliary Work (AUX). See *Busy-Out Function*.

AVD. See *Alternate Voice and Data*.

Back up. To make a copy of a file in case the original file is lost or damaged.

Barrier code. A security code used to allow a remote user to access a *switch* and to prevent unauthorized access to a system. There is one barrier code per *switch*.

Basic Rate Interface (BRI). An internationally standardized terminal interface similar to *Digital Communications Protocol (DCP)* used by System 85.

Baud rate. The signaling rate at which data flows between communication devices.

BCT. See *Business Communications Terminals*.

Bearer Capability. The type of call a trunk can support. For *ISDN*, five call types are recognized: voice and voice-grade data, and four types of data calls.

BEX. See *Broadband Exchange*.

Bisynchronous. A data communications protocol that interfaces the *AP* to an IBM host computer.

Blowback. The process of recovering the Manager IV *product image database* by running a tape containing switch translations through the AT&T *Translation, Recovery, Additions, and Conversion System (TRACS)*, which converts the files to Manager IV format.

BMIS. See *Business Maintenance Information System*.

Boot. The method for loading the computer's operating system. In Manager IV, booting the system loads the UNIX operating system into the Manager IV processor.

BRI. See *Basic Rate Interface*.

Bridged call appearances. The appearance of an *extension* on more than one *terminal*. Hybrid and digital *(non-analog)* terminals can have bridged call appearances.

Broadband Exchange (BEX). Public switched communication system of Western Union, featuring various bandwidth connections.

Business Communications Terminals (BCT). A family of AT&T terminals that provide the user with the ability to enter data and message information via a keyboard.

Business Maintenance Information System (BMIS). An internal AT&T system that tracks the progress of customer problems from the first report received to the resolution of the problem.

Busy-Out Function. A *switch* feature that allows a member of a *UCD group* to control the availability of their voice terminal for UCD calls.

BX.25. A *protocol* link that allows Manager IV to remotely access *System 75/DEFINITY Generic 1* and other *network* adjuncts. Also used over *Data Communications Interface Unit (DCIU)* links to other switches or *Applications Processors*.

Cabinet. An upright case that houses switching and interface equipment for a *Private Branch Exchange (PBX)*. Cabinets are configured in functional groups known as *modules* and are specified as part of the *Equipment Line Location (ELL)*.

Call Appearance (CALL). A position on a *voice terminal* from which the terminal's extension number can be accessed. A lamp next to the call appearance button shows the status of that appearance. Multi-appearance *voice terminals* can be equipped with several call appearance buttons for the same or different *extensions* to allow a user to handle more than one call at the same time.

Call Coverage. A *switch* feature administered in *Terminal Change Management (TCM)* that provides automatic call redirection to alternate answering points for message taking and call screening.

Call Coverage group. A group of *extensions* that ring simultaneously when a call is redirected by *Call Coverage*. Each group is identified by a number.

Call Coverage module. An *add-on module* that provides 20 additional buttons to which *Call Appearances* or features may be added.

Call Coverage path. An ordered list of alternate answering positions or coverage points, accessed in sequence when a call redirects from a *voice terminal*. Each path is identified by a number.

Call Forward—Busy/Don't Answer (CFBD). A *switch* feature that redirects all calls for a *terminal* to another terminal if the called *extension number* is busy or is not answered after a specified interval. The user designates the forwarding destination when activating this feature.

Call Forward—Follow Me (CFFM). A *switch* feature that allows calls for a *terminal* to be routed to another terminal or the *attendant*. This feature can be activated or cancelled by the user or the attendant.

Call Pickup (CPU). A *switch* feature that allows a *terminal* user to answer at his or her own voice terminal any call directed to another *extension* within the user's *Call Pickup Group*.

Call Pickup Group. A group of extensions administered so that any user in the group can answer a call directed to any other voice terminal in the group.

Call type. A call type is identified with a *first digit table* that tells the switch how many digits to collect before processing the call. Valid call types include extension numbers, feature access codes, trunk access codes, calls to the *attendant*, and prefixed extensions.

Call Vectoring. A *System 85* R2V4 and *DEFINITY Generic 2* feature that allows the customer to define the processing of incoming calls through a set of predefined call processing steps called a *vector*. The principal application of Call Vectoring is for calls terminating at *Automatic Call Distribution (ACD)* answering positions.

Carrier. Equipment within a *cabinet* that is designed to hold *circuit packs*. The physical location of the carrier and any circuit packs within the carrier are specified as part of an *Equipment Line Location (ELL)*.

CAS. See *Centralized Attendant Service*.

CCSA. See *Common Control Switching Arrangements*.

CDS. See *Customer Directory Service*.

Central Office (CO). The location housing telephone switching equipment that provides local telephone service and access to toll facilities for long distance dialing.

Central Office trunk. A telecommunications channel that provides access from the *PBX* to the public network through the local *central office.*

Centralized Attendant Service (CAS). A *switch* feature that permits multiple switches to consolidate attendant functions at a defined central location.

CFBD. See *Call Forward—Busy/Don't Answer*.

CFFM. See *Call Forward—Follow Me*.

Channel. A path for electrical transmission between two points without common-carrier provided equipment.

Circuit. Also known as a *port*, the hardware on a *circuit pack* that provides the access point from *terminals* or *trunks* to the *switch*. The *Equipment Line Location* (ELL) refers to the physical location of the circuit and gives the *module*, *cabinet*, *carrier*, and *slot* in which it is located.

Circuit pack. A *switch* subassembly used to provide different switching functions. The *slot* in which the circuit pack is located is specified as part of an *Equipment Line Location (ELL)*.

Class of Restriction (COR). A *System 75/DEFINITY Generic 1* feature used to assign a variety of restrictions to facilities, such as *trunk groups, voice terminals, data modules, Uniform Call Distribution (UCD)* groups, and *attendant consoles*.

Class of Service (COS). Also called line class of service, a designation (number) that defines access to the features and restrictions that can apply to individual *extensions*.

Clone-daemon. A Manager IV software process that runs only when needed. More than one clone daemon can run at one time so that similar requests can process simultaneously.

CO. See *Central Office*.

Code restrictions. The denial of call completion to designated *voice terminal lines* attempting to dial off-network calls to selected *office* and *area codes*. The calls denied are a function of the particular *trunk group* dialed.

Command. An instruction transmitted from the user to the processor to perform a particular function. In Manager IV, a command is entered in *object:verb* format.

Command path. The sequence of commands used to route a user through the Manager IV hierarchy to a transaction *screen* where data is entered and/or a transaction executed.

Common Control Switching Arrangements (CCSA). A private telecommunications network using dedicated *trunks* and a shared switching center to interconnect company locations.

Compact. A *Terminal Change Management (TCM)* function that compresses switch databases to economize space.

Components file. The Manager IV file that contains information about which system *applications* are present.

Configuration. The arrangement of the software and hardware of a computer system or network. Manager IV's configuration includes either a standard or *custom processor*, requisite peripheral equipment, and software *applications*.

Configuration file. The Manager IV file that allows the installer to verify that the correct software and hardware is present.

Controlled Restriction Group (CRG). A group of *voice terminals* that may have incoming or outgoing calls denied access by the attendant.

Controlled Restriction Level (CRL). A *switch* feature that allows the attendant or other authorized user to control an extension or extension group's access to features or calling privileges.

Controller. A Manager IV *pure daemon* software process that controls other Manager IV software processes.

Controlling Terminal. The terminal within an assigned Call Distribution (*ACD, UCD, or EUCD*) group that is used to activate or deactivate functions for the group.

Conversion. A system's ability to translate a dialed number to the correct number of digits for routing through *Automatic Route Selection (ARS)* or *Automatic Alternate Routing (AAR)*.

COR. See *Class of Restriction*.

COS. See *Class of Service*.

Coverage. Any *switch* feature that allows calls designated for a particular *terminal* to be redirected to another terminal for handling or for retrieving messages.

Coverage point. The *extension* or *Call Coverage Group* in a *Call Coverage path* to which calls may be redirected from another *terminal*.

CPU. See *Call Pickup*.

CRG. See *Controlled Restriction Group*.

CRL. See *Controlled Restriction Level*.

CRONTAB. A preset schedule or chronological table of automatic system activities.

CSMS. See *Customer Service Manager System*.

Custom intercom. A DIMENSION system feature allowing users to dial *extensions* within the *switch* by pressing one or two buttons on a *voice terminal*.

Custom processor. A computer used to support Manager IV *configurations* for larger telecommunications *networks* when the standard processor does not have enough processing capacity.

Customer Directory Service (CDS). A *System 85/DEFINITY Generic 2* feature that maintains a database of user/extension information on a 3B5 *Applications Processor* (3B5 AP). In Manager IV, *TCM's* Directory Synchronization feature provides updated user/extension information to the CDS administrator. This information can then be applied to the CDS database.

Customer Service Manager System (CSMS). Receives trouble reports from Manager IV customers and relays these reports to the appropriate services support organization.

Cut. The process of turning over a functional Manager IV system to the customer following successful installation by AT&T.

Cut-through. A method of establishing a connection to a distant office or PBX. In Manager IV, *System 75/DEFINITY Generic 1* and network adjuncts are remotely administered using cut-through access.

DAC. See *Feature Dial Access Code* and *Trunk Dial Access Code*.

Daemon. See *clone-daemon* or *pure daemon*.

Data Communications Interface Unit (DCIU). A circuit that provides interprocessor communications between the *switches* in a *Distributed Communications System (DCS)* cluster or between the *switch* and the *Applications Processors (APs)* or *Audio Information Exchange (AUDIX)*.

Data Communications Interface Unit (DCIU) link. A private-line data facility (data link) connecting two *Data Communications Interface Units (DCIUs)*.

Data Communications Interface Unit (DCIU) logical channel. A message slot on a *Data Communications Interface Unit (DCIU) link*. One of the logically independent streams of data that are multiplexed onto a single data link.

Data Communications Interface Unit (DCIU) network channel. The association between two link/logical channel pairs so that the *Data Communications Interface Unit (DCIU)* message received on one link/logical channel pair is transmitted on the other pair.

Data Communications Interface Unit (DCIU) port. A gateway to or from a switch application, such as *Distributed Communications System (DCS)* nodes or *Message Center* on an *Applications Processor (AP)*.

Data line. A link between a *switch* and a data *terminal*.

Data module. An interface unit between data equipment and the *switch*.

Data terminal. A hardware device that receives and transmits data from the user to the processor.

Database. A structured set of *files* and *records*. See also *Manager IV database*, *Product image database* and *Call Storage Facility*.

Database initialization. The process by which the *Manager IV database* is populated. These processes use the *TRACS* system to load switch translations, manual entry of *precut changes* and *non-switch data*, and entry of *System Administration* data such as user *logins* and *user class* assignments.

DCIU. See *Data Communications Interface Unit*.

DCIU link. See *Data Communications Interface Unit link*.

DCIU logical channel. See *Data Communications Interface Unit logical channel*.

DCIU network channel. See *Data Communications Interface Unit network channel*.

DCIU port. See *Data Communications Interface Unit port*.

DCP. See *Digital Communications Protocol*.

DCS. See *Distributed Communications System*.

DDC. See *Direct Department Calling*.

DDD. See *Direct Distance Dialing*.

Dedicated link. A Manager IV feature that allows the Manager IV host processor to be directly connected to a *System 85* R2V3, R2V4 and *DEFINITY Generic 2* switch.

Dedicated Switch Connection (DSC). A *System 85* (R2V3 forward and DEFINITY Generic 2) feature that provides a direct link between two *ports* so that the user on one port is automatically connected to the other port when the user's terminal handset is picked up.

Default. An alternative value, attribute, or option that is assumed when none has been specified by the user. In Manager IV, the most common field entries are supplied as defaults so the user does not need to enter a response.

DEFINITY 75/85 Communications System. Name given to AT&T's enhanced premises product line, representing the merger of AT&T's previously distinct System 75 and System 85 architectures.

DEFINITY 75/85 Communications System Generic 1. An enhanced AT&T *Private Branch Exchange (PBX)* based on existing System 75 software, running on the 80286 processor and supporting up to 1,600 lines.

DEFINITY 75/85 Communications System Generic 2. An enhanced AT&T *Private Branch Exchange (PBX)* based on existing System 85 software, running on the 501CC processor and supporting both single and multi-module configurations.

DEFINITY Manager I. AT&T's system management product that provides administration and maintenance support for *DEFINITY Communications System Generic 1*.

DEFINITY Manager II. AT&T's low-cost administration and maintenance management tool for *DEFINITY 75/85 Communications System Generic 2*.

DEFINITY Manager III. Feature-rich administration management alternative for growing single site or multi-site *DEFINITY 75/85 Communications System Generic 2* customers, also supporting System 85 R1-R2V4, and DIMENSION™ 2000 and 600.

DEFINITY Manager IV. System management tool for *DEFINITY 75/85 Communications System Generic 2*, *System 85 (R2V2 - R2V4)*, and *DIMENSION FP8*, issues 1.16, 3.7, and 3.8 that provides multi-site, multi-user administration management through forms on the screen.

DEFINITY Monitor I. Performance management tool with a broad range of options for monitoring traffic performance on *DEFINITY 75/85 Communications System Generic 2*, *System 85 R2V2-R2V4*, and *DIMENSION FP8* Issues 1.16 and 3.8. Also provides trunk group performance data on *DEFINITY Generic 1* and *System 75*.

Dial Intercom (DICM). A *switch* feature that allows a *terminal* user to gain rapid access to other internal *voice terminals* by dialing a one- or two-digit code.

Dialing Plan. A *switch's* guide to the digit translation necessary to identify *call types* and process calls. Call types are identified by the first dialed digit. In a Number Portability Network, the dialing plan shows all extensions available on each switch in the network.

DID. See *Direct Inward Dialing*.

Digital Communications Protocol (DCP). The signaling protocol used by *System 85* to provide simultaneous voice and data communications over the same link to the system via one signaling channel and two information channels.

Digital Display Module. See *Display Module*.

Digital Terminal Data Module (DTDM). An interface that connects a *switch* to a *data terminal* for simultaneous voice/data communication.

Digital voice/data circuit pack (sn270). An interface between the switching *network* and the *Digital Communications Protocol (DCP)* that provides digital access to the system.

Digital Services-1 (DS1) Interface. A communications interface that multiplexes up to 24 voice or data signals onto a single carrier. It can be used as an alternative to analog facilities and provides digital access to remote groups.

Digital Voice Terminal. A voice terminal that converts acoustic (analog) voice signals into digital electronic signals. Also called *non-analog*.

DIMENSION FP8. A PBX switching system that uses a digital computer to control call switching and signaling. FP8 refers to the Feature Package, or set of features, included with a particular version of the switch.

Direct Department Calling (DDC). A *switch* feature that refers incoming calls to a group of voice terminals. The call is routed to the first available terminal in the administered sequence.

Direct Distance Dialing (DDD). Telephone *exchange* service that allows a person to call outside a local area without operator assistance.

Direct Extension Selection Busy Lamp Field (DXS/BLF). A *switch* feature that allows the *attendant* to place or extend calls to an *extension* by pressing a Group Select button and a Direct Extension selection button instead of dialing the extension number.

Direct Inward Dialing (DID). A *switch* feature that allows an incoming call to reach a specific *extension* without *attendant* assistance.

Disk. A flat, circular plate used as a magnetic medium for reading, writing, and storing data files.

Dispatcher. A *pure daemon* software process that schedules and executes tasks.

Display module. An *add-on module* that displays call-related information on a 40-character display line. It is an adjunct to the 7405D voice terminal and is built-in to the 7406d, 7407d, 515 BCT, and PT510 terminals.

Distributed Communications System (DCS). A private *network* configuration that links two or more switches so that certain features appear to operate as if the network were one switch.

Don't answer timing. A parameter that specifies the number of rings before a call redirects to the next point in a *call coverage path*.

Download. A transfer of data from one system to another. In Manager IV, download refers to the process by which data is transferred from the Manager IV *product image database* to the *switch* database. Changes may be downloaded to the switch immediately or may be scheduled for a later time.

DS-1. A telecommunications channel that allows the efficient processing of voice and data transmission by multiplexing up to 24 channels on two pair of wires.

DSC. See *Dedicated Switch Connection*.

DTDM. See *Digital Terminal Data Module*.

Dummy extensions. *Extensions* that are not assigned to voice terminals.

Dump. Another name for the procedure used to copy or *back up* files from one location to another.

DXS. See *Direct Extension Selection/Busy Lamp Field*.

ECTS. See *Electronic Custom Telephone Service*.

EIA. The EIA interface board that provides connectivity between *System 85* and *Generic 2* and EIA terminals and host computers.

EKT. See *Electronic Key Telephone.*

Electronic Custom Telephone Service (ECTS). A service that provides multibutton electronic telephones with stored-program control and electronic controllers for interfacing between users and the *switch*. An ECTS set has only one line, but can have access to many switch features.

Electronic Key Telephone (EKT). A *voice terminal* with buttons or keys that provide multiple extension line pickups and access to switch features. The same extension number cannot appear twice on an EKT.

Electronic Key Telephone System. A telephone system that permits the use of features such as call pickup, hold, call status lamp signals, and multiple extension line pickups.

Electronic Tandem Network (ETN). A *network* of privately owned *trunk* and *switching* facilities that links all system facilities, regardless of location, into a single, fully integrated network. An ETN must have a *uniform numbering plan* and each *node* must have a *location code*.

ELL. See *Equipment Line Location*.

Enhanced Private Switched Communications Service (EPSCS). A private telecommunications network that provides advanced voice and data communications services to companies with many locations.

Enhanced Uniform Call Distribution (EUCD). A System 85 R2V2 and DIMENSION System FP8, Release 3.8 feature that permits incoming trunk calls, local voice terminal calls, and attendant extended calls to terminate to an idle voice terminal in a group of terminals. Replaced by *Automatic Call Distribution* in *System 85* R2V3 and V4 and *Generic 2*.

EPSCS. See **Enhanced Private Switched Communications Service.**

Equipment Line Location (ELL). The seven-digit number representing the physical location of a port or circuit. The format of the number is: *module* (digits 1 and 2), *cabinet* (digit 3), *carrier* (digit 4), *slot* (digits 5 and 6), and *circuit* (digit 7).

ETN. See *Electronic Tandem Network*.

EUCD. See *Enhanced Uniform Call Distribution*.

Exchange. The code established by a communications common carrier for the administration of communications services in a specified area. Also referred to as *Central Office (CO)* if local or *Foreign Exchange* if not local.

EXCL. See *Manual Exclusion*.

Exclusive-locks. A Manager IV safety feature that restricts a block or share of memory to access only by the process that has been assigned to it.

Execute. In Manager IV, the term that means carrying out a *transaction*.

Extension. A number (usually three to five digits) that logically connects a *terminal* to an *Equipment Line Location (ELL)* within a *switch*. Extensions are assigned to terminals in *Terminal Change Management (TCM)*.

Extension number group. A group of *extension numbers* administered at the same time by a *switch*. The first number in an extension number group must end in 0, and the last in 9.

Extension partition. A division of a *System 85* R2V4 and *DEFINITY Generic 2* switch that supports the *Tenant Services* feature. One or more extensions can be assigned to an extension partition, and each extension must be assigned to only one extension partition. An *Attendant Partition* can also be assigned to an extension partition.

Extractor. A Manager IV *clone daemon* process that manages the execution of *Service Requests (SRs)*.

Facilities Management (FM). A standard Manager IV *application* that allows the user to control changes to the transmission facilities and system-wide features of the telecommunications *network*.

Facility. A general term used for the telecommunications pathway and associated equipment in a network.

Facility Restriction Level (FRL). A value from 0 to 7 assigned to *terminals*, *authorization codes*, and *trunks* that determines if a call attempt is permitted and which routes can be used or denied in the process of routing calls. See *Originating FRL* and *Terminating FRL*.

Feature. A function or capability of a product or an application within Manager IV.

Feature button assignments. The features assigned to the labeled buttons on a *voice terminal* enabling the user to access the *feature* from the terminal.

Feature Dial Access Code (DAC). A one- to three-digit code dialed by a user to access a particular feature. The DAC can also be assigned to a feature button and accessed by pressing the button.

Feature Key Module. An expansion module with up to 24 programmable feature buttons that may be used with the 7205H or 7405D *voice terminals*.

Field. A unit of data on a *screen* or in a database *file*.

File. A collection of *database* records with the same context or meaning.

First Digit Table. See *Dialing Plan*.

FM. See *Facilities Management*.

FNPA. See *Foreign Numbering Plan Area*.

Foreign Exchange (FX). Any *Central Office (CO)* outside of the one that provides local access to the public telephone network.

Foreign Numbering Plan Area (FNPA). The area outside of the one served by the local *Central Office*.

FRL. See *Facility Restriction Level*.

FSAC. See *Field Service Administration Center*.

FX. See *Foreign Exchange*.

Generic 1. See *DEFINITY 75/85 Communications System Generic 1*.

Generic 2. See *DEFINITY 75/85 Communications System Generic 2*.

Grade of service. In traffic *networks*, the proportion of calls that receive no service (blocking) or poor service (long delay). Also called a service objective.

Hardware bridged analog set. An *analog terminal* that has the same *extension number* and *Equipment Line Location (ELL)* as another analog terminal.

HNPA. See *Home Numbering Plan Area*.

Home Numbering Plan Area (HNPA). The area served by the local *Central Office*.

Home terminal. The *voice terminal* assigned as the primary appearance for a given extension that has bridged *appearances* at other terminals.

Hop. Communication between two *DCIUs* via an intermediate DCIU.

Hunt sequence. The order in which the system checks *extension numbers* to find the first idle terminal when routing or redirecting a call.

Hunt-to extension. The *extension* to which a call is directed by a hunting extension.

Hybrid voice terminal. A *voice terminal* that supports *features* permitting the handling of simultaneous calls. Also called *non-analog*.

Implementation stage. The period of time between the customer commitment to buy DEFINITY Manager IV and Manager IV system *cut*.

Implementation Team. The committee responsible for coordinating activities related to the purchase and preparation for installation of Manager IV.

Incoming Call (INC). Any call received by the station user or attendant from the public or private *network*.

Incremental backup area. A designated disk slice used to temporarily store updates to the *UNIX operating system* database files so that the files can be reconstructed in case of system problems.

Information Systems Network (ISN). AT&T's high-speed packet-switching local area *network* connecting mainframes, minicomputers, printers, and *data terminals*. Manager IV can administer ISN through *adjunct administration*.

Initialization. In Manager IV, the process of populating the Manager IV *database* with switch and *non-switch* data and conducting operation performance testing in order to make Manager IV operational.

INS. See *Integrated Network Services.*

Integrated database. A database that has been consolidated to eliminate redundant data. In Manager IV, the integrated database allows an *application* to use a *file* that is maintained by

another application.

Integrated Network Services (INS). A carrier facility over which ISDN calls are placed.

Integrated Services Digital Network (ISDN). A *network* that provides end-to-end digital connectivity to support a wide range of voice and data services. *System 85* R2V4 and *DEFINITY Generic 2's* ISDN capability allows the customer to connect to both public and private networks that use current ISDN standards.

Intercept. A signal given to users to indicate that the system cannot or will not complete the call as dialed.

Interexchange Carrier (IXC) Access. A *System 85* and *DEFINITY Generic 2* feature that allows calls to any IXC vendors (e.g. AT&T, MCI, Sprint etc.) to use the *Automatic Alternate Routing* and *Automatic Route Selection* features.

Inter-lata calling. Calls placed between *Local Access and Transport Areas (LATA).*

Interoffice trunk. A *trunk* type that directly connects two local *Central Offices (COs)*.

Intertoll trunk. A *trunk* type that connects two *toll offices* in different telephone *exchanges*.

Intra-lata calling. Calls placed within *Local Access and Transport Areas (LATA).*

ISDN. See *Integrated Services Digital Network*.

ISN. See *Information Systems Network*.

IXC. See *Interexchange Carrier (IXC) Access*.

LATA. See *Local Access and Transport Area*.

LDN. See *Listed Directory Number*.

Leave Word Calling (LWC). A *switch* feature that allows callers to leave a message for the called party by pressing a terminal button or dialing a *Feature Dial Access Code (DAC)*.

Line. A communication link between a *switch* and one of its *voice terminals*. Each line is associated with a unique *extension number*.

Line Class of Service. See *Class of Service*.

Linked Universal Data Module (LUDM). A data module that contains two *DCP* ports: one that interfaces to the switch and one for linking the switch port to any *Digital Communications (DCP)* voice terminal or to another LUDM.

Listed Directory Number (LDN). The published local telephone number for a private switching system. LDN calls are usually routed to the *attendant*.

Local Access and Transport Area (LATA). A rating area within which all calls are handled by the local telephone company. Intra-LATA calling is supported by regional operating companies controlled by the Public Utilities Commission. Inter-LATA calling is supported by the interchange companies controlled by the Federal Communications Commission (FCC).

Location code. Also referred to as an RNX, a two- or three-digit number that identifies a *Private Branch Exchange (PBX)* on a private *network*.

Login ID. A unique character string that identifies a user to the system. Login IDs are assigned by the *Manager IV System Administrator*.

LUDM. See *Linked Universal Data Module*.

LWC. See *Leave Word Calling*.

MAAP. See *Maintenance and Administration Panel*.

Main location. A centralized area where attendants answer calls routed from branch locations.

Main/satellite. A private *network* with more than one *switch*. Calls are placed and received through the main location. *Satellites* share the same *Listed Directory Number (LDN)* as the main but are generally unattended. The entire configuration appears as one switch to internal and external users.

Maintenance and Administration Panel (MAAP). A control panel used for local

administration and maintenance tasks on a *switch*.

Malicious Call Trace. A *System 85* R2V4 and *DEFINITY Generic 2* feature that allows the user to obtain information that may identify the calling party of a malicious call.

Manager IV. See *DEFINITY Manager IV*.

Manager IV database. The main database of the Manager IV system is composed of the *product image database*, which contains a copy of *switch translation information*, user records, equipment inventory, and *non-switch data*.

Manager IV System Administrator. The person assigned to monitor all Manager IV software processing, perform daily system and preventive maintenance, and troubleshoot errors as required.

Manual Exclusion (EXCL). A *switch* feature that prevents other terminal users with a bridged appearance from bridging onto an active call on the appearance.

Manual-In (MIN). [*System 85* R2V2-3 and DIMENSION] A *Uniform Call Distribution (UCD)* attribute that allows answering positions to limit incoming calls. When a call disconnects, the *agent* becomes unavailable until the Manual-In button is pressed again.

Manual Intercom (MICM). A *switch* feature that allows a multiappearance *terminal* user to access other terminal users assigned to the same intercom group. Up to three users can be connected to a single call at one time.

Manual signaling. A *switch* feature that allows a user to signal another user by pressing an assigned button.

Materials on Job (MOJ). The date of arrival at the Manager IV installation site of the processor and peripheral equipment ordered by the customer as part of a Manager IV *configuration*.

Message Center. An answering service that allows an *agent* to answer calls and accept and store messages for later retrieval by users.

Message Oriented Signaling (MOS). Call-related signaling over a D (Data) channel that takes the form of a set of standard messages. Used with *ISDN*.

Message retrieval. A *voice terminal* feature that allows a user to retrieve messages at the voice terminal that were taken by the *message center* or *Leave Word Calling* feature.

MET. See *Multibutton Electronic Set*.

MFDT. See *Multi-Function Digital Terminal*.

MFET. See *Multi-Function Electronic Terminal*.

MICM. See *Manual Intercom*.

MIN. See *Manual-In*.

Miscellaneous Trunk Restriction Groups (MTRG). A *switch* feature that denies call access to selected *trunk groups*. Users are denied access to these restricted trunk groups via the *Class of Service* associated with their *extensions*.

Modem Pooling. A *switch* feature that provides shared conversion resources when a data module accesses, or is accessed by, an analog line or trunk.

Modular TDM. Provides an interface between a *switch* and private line facilities, private line modems, synchronous-to-synchronous multiplexers, and asynchronous-to-synchronous multiplexers.

Module. The part of a *Private Branch Exchange (PBX)* switching system that includes the switching *network* (in the module control *carrier*) and its associated port *circuits* (in port carriers). *Switches* can be single modules or multimodule. The module is the part of the *Equipment Line Location (ELL)* that refers to the physical location of a circuit.

MOJ. See *Materials on Job*.

MTRG. See *Miscellaneous Trunk Restriction Groups*.

Multibutton Electronic Set (MET). DIMENSION *ECTS* and *EKT* sets used on a *System 85* and *DEFINITY Generic 2* switch.

Multi-Function Digital Terminal (MFDT). A *System 85* and *DEFINITY Generic 2* digital voice terminal with multiple line pickup and button access to features. It can have multiple call appearances of one or more extension numbers.

Multi-Function Electronic Terminal (MFET). A *System 85* and *DEFINITY Generic 2* voice terminal with multiple line pickup and button access to features. It can have multiple call appearances of one or more extension numbers.

Multi-node transaction. A Manager IV transaction that updates more than one *target* at a time. It may use a *target group* as a target.

Multiple Call Handling. A function of the *ACD* feature that allows an ACD message center agent to place a call on hold and remain available to receive ACD calls.

Multipoint. Each endpoint in a multipoint link is a terminal, and this *ISDN BRI* feature allows up to eight terminals to share a single multipoint link.

Names database. A *database* for *System 85* and *DEFINITY Generic 2* that contains the names associated with *extension* and *trunk groups*.

Network. Two or more interconnected switching systems.

NNX. Also referred to as an Office Code or *Exchange*, a number representing a particular *Central Office (CO)*.

No-answer interval. See *Don't Answer Timing*.

Node. A switching or control point for a network. In *Electronic Tandem Networks*, nodes are either tandem (receive signals and pass them on) or terminal (originate or terminate a transmission path).

Non-analog terminal. A *hybrid* or *digital* voice terminal.

Non-switch data. Information, such as set attributes, user information, and trunk identification, which is not accessible from a switch or not available in the *product image database*. The data is manually entered and updated in the *Manager IV database*.

NPA. See *Numbering Plan Area*.

Number group. See *Extension number group*.

Numbering Plan Area (NPA). Synonymous with area code, a three-digit code representing a particular geographical area.

Object:verb format. The syntax of Manager IV *commands*. The verb refers to the action, and the object refers to the item that is acted upon.

Off-hook. A term signifying that the *voice terminal* handset has been lifted.

Off-network. The term used to describe calls routed off the private *network* using public facilities.

Off-premises station. A remote station that is connected to the switch through a two-wire line circuit.

Office code. See *NNX*.

On-line help. A Manager IV feature that allows the user to access help information for various *commands* and *screens*.

On-network. The term used to describe calls that are routed via a customer's private *network*.

Originating FRL. The *facility restriction level (FRL)* assigned to a caller's extension, incoming trunk group, or authorization code. FRL values are 0 to 7; 7 is the least restrictive, 0 is the most restrictive.

Originating preference. An *attribute* assigned to a multiappearance *terminal* that determines which *call appearance* will be automatically seized for a call when the user does not manually select one.

Originating Test Line (OTL). The *circuit*, situated at the originating or near-end *switch*, used in testing trunks with *Automatic Transmission Measurement System* (ATMS).

Overflow Partition. An *attendant partition* that is assigned to receive excess incoming calls from another attendant partition. Used with the *Tenant Services* feature.

Override (OVER). The capability of a user to break into an existing two-party connection. A four-second burst of tone is sounded to advise the other two parties.

Pack. See *Circuit pack*.

Password. A word or string of characters used with a user *login ID* that permits user access to Manager IV . Passwords are created by the owner of the login.

PBX. See *Private Branch Exchange*.

PC. See *Priority Calling*.

PCD. See *Programmable Communications Device*.

PCSF. See *Pieced Call Storage Facility*.

PDM. See *Processor Data Module*.

Pending queue. A *Manager IV database file* that stores pending changes.

Peripheral device. Equipment, such as printers or terminals, that is additional to the basic processor.

Planning stage. The period of time between the customer's decision to purchase Manager IV and the *Materials on Job* (*MOJ*) date.

Point-to-Point. A configuration that supports a single terminal for each physical port.

Port. A point of access to a processor using *trunks* or *lines* for transmission of data.

Port Group. A pool of *ports* that share the same protocol, connection, dialer type, and speed.

Pre-cut changes. Changes to *switches* administered by Manager IV that are made after the switch tape is sent to *TRACS*, but before Manager IV becomes operational. These changes are made through the *Maintenance and Administration Panel (MAAP)*. After Manager IV becomes operational, the pre-cut changes must be duplicated in the Manager IV database to synchronize it with the switch databases.

Preference. An ordered list of *trunk groups* that defines an *Automatic Alternate Routing* (*AAR*) or an *Alternate Route Selection* (*ARS*) pattern. The first preference is usually the most direct or least costly route.

Primary extension number. The first terminal in an *ACD* group from which incoming calls are redirected to other terminals in the group using a specified *hunt sequence*.

Primary rate interface (PRI). The *Integrated Services Digital Network (ISDN)* interface that covers network connections among switches (for both private and public networks), switch-to-host computer connections, and host computer-to-network connections.

Priority Calling (PC). A *switch* feature that directs a priority tone to the called party.

Private Branch Exchange (PBX). A private, customer-based telecommunications switching system. Also referred to as a *switch*.

Proc. Abbreviation used for a procedure that administers *System 85* and *DEFINITY Generic 2* using the *Maintenance and Administration Panel (MAAP).*

Processor Data Module (PDM). Provides a DCE-type RS-232C interface for data terminals, AP-16s, host computers, and other devices.

Product. A *switch* or *adjunct* that can be managed by Manager IV.

Product access port. An asynchronous link that is used to access *products* managed by Manager IV.

Product image database. The portion of the Manager IV *database* that maintains copies of the *switch translation information*.

Programmable Communications Device (PCD). An intelligent device connected between the Manager IV processor and the *ports* that interprets Level II *synchronous protocol*.

Prompt. Message on the *screen* indicating that a response is required from the user.

Protocol. A set of conventions that facilitate

communication between machines.

Pure daemon. A Manager IV software process that is started at system *boot* time and remains running thereafter.

Queue. An ordered sequence of calls waiting for an idle trunk or other resource.

Queuing. The placing of calls (or other events such as messages) in a waiting sequence whenever all *lines*, *trunks*, *agents*, or other limited resources are busy.

RCG. See *Remote Group*.

RCL. See *Attendant Recall*.

Reboot. A machine routine that reloads the operating system into the computer.

Recent disconnect interval. The period of time during which a disconnected extension cannot be reassigned to a new user. During this time, a recorded message gives callers information about the disconnected extension.

Record. A group of related *fields* in a database.

Recovery. The process of using file *backups* to reconstruct *files* that have been lost or damaged.

Release Link Trunk (RLT). A telecommunications channel used with *Centralized Attendant Service* (*CAS*) to connect attendant-seeking calls from a branch location to a main location.

Remote access. The Manager IV capability that provides AT&T personnel with diagnostic and maintenance access to the Manager IV host processor from a remote location.

Remote Group. Also known as *Remote Carrier Group (RCG)*, a *System 85* (R2V3 forward) and *DEFINITY Generic 2* feature that allows system port circuit packs to be located up to 100 miles from the main switch. This serves small clusters of distant voice or data terminals with complete feature transparency.

Remote Module. A *System 85* Release 2 switch *module* connected to the switch by a fiber optic link. Each module can serve approximately 900 lines and can be located up to 13,000 feet away from the switch.

Restore. The process of recovering lost or damaged *files* by retrieving them from available *backup* tapes or from another disk *device*.

Restriction. A switch feature that denies access to a specified group of dialed numbers or facilities.

Retrofit terminal. A *terminal* that has been adapted for use with an earlier *product* version than the version for which it was designed.

RJE link. A software communication package that allows the Manager IV processor to communicate with an IBM host system.

RNX. See *Location code*.

Root. In Manager IV, the *login ID* of the system user with access to the UNIX shell.
In UNIX, the highest segment in the file path hierarchy.

Route Advance. A *System 85* and *DEFINITY Generic 2* feature that automatically routes outgoing calls over alternative *trunk groups* when the first-choice trunk group is busy.

Routing pattern. See *Preference*.

SAC. See *Send All Calls*.

SAM. See *System Access Manager*.

Satellite location. A location in a private *network* that places and receives calls through the main location. A satellite shares the same LDN as the main but is generally unattended.

Scratch disk/tape. Any reusable disk or tape available to record data.

Screen. See *Transaction screen*.

Send All Calls (SAC). A *switch feature* that allows users to temporarily redirect non-priority calls to their coverage path.

Service objective. See *Grade of Service.*

Service Profile IDentification. A unique number assigned to an ISDN terminal during terminal

initialization to identify it.

Service Request (SR). A Manager IV feature that allows the user to enter one or more transactions and schedule them to be *downloaded* to the *switch* at a later date and time.

Set ID. The name assigned to an individual *voice terminal* when it is added to the network. The *switch* does not use this name.

Set mount. The term used to describe the placement of a *terminal*, for example "wall mount."

Shell. See *UNIX shell*.

Single Line Set. See *Straight Line Set*.

Slot. The location on a *carrier* in which *circuit packs* are inserted.

SMUE. See *System Management User Executive*.

Speed Calling. A DIMENSION system feature that allows users to dial numbers outside the *switch* by pressing one or two buttons on a voice terminal.

Split. A group of *agents* assigned to handle incoming calls at *voice terminals*.

Staffed (STAF). [*System 85* R2V2-3 and DIMENSION] A *Uniform Call Distribution* (*UCD*) answering position mode that indicates when the *agent* is present.

Station. A *voice terminal*, or telephone set.

Station Number Steering. An attribute of the *main-satellite* feature. Main-satellite switches use the initial digits of a dialed extension number to steer the call to the appropriate switch. The call is then routed to its final destination. This attribute requires a *uniform numbering plan*.

Status Lamp. An indicator lamp showing the status of a call appearance by the state of the lamp (lighted, flashing, fluttering, or dark).

Straight-Line Set (SLS). An *analog terminal* described to the *switch* as a multifunction terminal without button assignments so that the terminal can be assigned bridging capabilities or appear on a Terminal Busy button on a multifunction voice terminal.

Subtending. A subtending system is a lower order switching system in the network hierarchy.

Switch. A hardware device that controls and directs voice *traffic*. A customer-based switch is known as a *Private Branch Exchange* (*PBX*). A digital switch also controls data traffic.

Switch translation information. The call processing instructions contained in the *switch databases*. This data is obtained from the switch database and reconfigured for Manager IV by *TRACS* and used to populate the Manager IV *product image database*.

Synchronous. A mode of digital transmission in which discreet signal elements are transmitted at a fixed and continuous rate.

System Access Manager. Replaces the *MAAP* and System Management Terminal as the basic administration vehicle for the *DEFINITY Generic 2 switch.*

System Administration. A standard Manager IV *application* used to issue user *login IDs* and access permissions, administer Manager IV operating characteristics, and log system activity.

System Administrator. See *Manager IV System Administrator*.

System Class of Service. A designation that defines the features and characteristics of a specific *switch* in the network.

System 85. An advanced AT&T digital *Private Branch Exchange* (*PBX*) switching system supporting up to 30,000 lines that provides voice and data communications for its users. Manager IV access *Generic 2* and System 85 directly to administer their features and related peripheral equipment. Manager IV supports Generic 2 and System 85 R2V2 and R2V4..

System Management User Executive (SMUE). The Manager IV process that acts as the interface between the user and other Manager IV processes. The SMUE parallels the function of the *UNIX shell*.

System 75. An advanced AT&T digital *Private Branch Exchange* (*PBX*) switching system supporting up to 800 lines that provides voice and data communications for its users. Manager IV accesses *Generic 1* and System 75 on a cut-through basis.

Tandem office. A switching office that is used to complete calls between the local end offices; the tandem office is not directly connected to subscribers.

Tandem switch. A switch that provides electronic tandem switching features and trunk-to-trunk switching functions in an *Electronic Tandem Network (ETN)* environment.

Tape. A tape with a magnetizable surface layer on which data can be stored.

Target. In the Manager IV command hierarchy, the unique name that identifies the entity being administered. It can be a PBX ID, an LDN, or a corporation ID.

Target group. A set or group of product targets established so that one transaction can be used to make changes to more than one target at a time. These transactions are called *multi-node* transactions.

TCM. See *Terminal Change Management*.

TDM. See *Modular Trunk Data Module*.

Tenant Services. A *System 85* R2V4 and *DEFINITY Generic 2* feature that allows a large System 85 to appear to users of the switch as many small, independent switches. This is done by assigning resources to *extension partitions* and *attendant partitions*. It allows the switch to be shared by a wide assortment of user groups, known as "tenants."

Terminal. Voice or data user interface equipment such as a telephone (*voice terminal*), computer workstation (*data terminal*), or *attendant console*.

Terminal Change Management (TCM). A standard Manager IV *application*, used to administer *extension, terminal,* and *attendant console features* on an individual and system-wide basis.

Terminal dialing capability. A *data terminal* capability that allows a user to dial a telephone number from the terminal's keyboard.

Terminal emulation. The capability that allows a *data terminal* to communicate with a system as if it were another type of data terminal.

Terminal/user assignments. The *TCM* capability that assigns *terminals* and their users particular *attributes*, *features*, and access levels.

Terminating FRL. The **facility restriction level (FRL)** assigned to a trunk group within a pattern. FRLs range from 0 to 7; 7 is least restrictive to users, 0 is most restricted.

Terminating preference. An *attribute* assigned to a multiappearance *terminal* that designates the appearance at which an incoming call appears.

Terminating Test Line (TTL). The *circuit*, situated at the terminating or far-end *switch*, used in testing trunks with *Automatic Transmission Measurement Service (ATMS)*.

36-button terminal. A *voice terminal* with 6 fixed-feature buttons and 34 customer-selectable feature buttons. These include the 7205H, 7305S, and 7405D voice terminals.

Threshold. A limit against which a quantity being measured is checked for exception reporting.

Tie trunk/line. A private-line communications *channel* that directly links two *switches*.

Time-coincident value. A *traffic* measurement that is taken at the same time that another selected measurement reaches its *peak value*.

Toll center. A *Central Office* (*CO*) where *channels* and *toll message circuits* terminate.

Toll message circuit. A circuit connecting two *exchanges* in different localities.

Toll office. An *exchange* with the function of controlling the switching of toll traffic.

TRACS. See *Translations, Recovery, Additions, And Conversions System*.

Traffic. The flow of information or messages through a communications *network* through voice, data, audio, or video services.

Traffic engineering. A *network* planning activity that determines the number and type of communication paths required between switching points and the call-handling capability of the switching points.

Transaction. A specific task requested by the user to be performed by Manager IV.

Transaction screen. The form that displays at the terminal so the Manager IV user can enter information and execute a *transaction*.

Translation The variable portions of the switch software that can be customized to suit the customer's needs.

Translations, Recovery, Additions, and Conversion System (TRACS). The AT&T system that retrieves *switch* database translations and information and converts it for transmission to the Manager IV processor.

Tributary location. A location in a private *network* that places and receives calls through the main location. A tributary has a unique LDN and is generally attended.

Trunk. A communications channel between two *switches*. Specific trunks are dedicated to specific types of calls.

Trunk Data Module (TDM). See *Modular TDM*.

Trunk Dial Access Code (DAC). A one- to three-digit code used to access *trunks* and *trunk groups*.

Trunk group. A set of *trunks* engineered as a unit to establish connections within or between switching systems. All trunks assigned to the same trunk group have the same features and functions.

Trunk restriction groups. See *Miscellaneous Trunk Restriction Group (MTRG)*.

TTL. See *Terminating Test Line*.

12-button terminal. A *voice terminal* with six fixed-feature buttons and 10 customer-selectable feature buttons. These include the 7203H, 7303S, and 7403D voice terminals.

Uniform Call Distribution (UCD). A *System 75/DEFINITY Generic 1, DIMENSION* and *System 85* (R1 and R2V1) feature that allows incoming calls to be evenly distributed among a group of voice terminals by routing a call to the terminal that has been idle the longest.

Uniform Call Distribution group (UCD group). A set of *voice terminals* arranged to receive incoming calls using the *UCD* feature.

Uniform Numbering Plan. The plan used to process and route calls on a private *Electronic Tandem Network*. The plan identifies each switch location by a unique *location code* or *RNX*.

Universal Outward Feeds. Manager IV feature that allows Manager IV to output selected switch and non-switch data in a standard format for use by other system management applications.

UNIX operating system. The operating system developed by AT&T Bell Labs and used by the Manager IV processor.

UNIX shell. The command language that provides a user interface to the *UNIX operating system*.

UOF. See *Universal Outward Feeds*.

User class or type. The permissions assigned to *login IDs* that define the specific Manager IV applications and *transactions* to which a user may have access.

Utilities. A standard Manager IV *application* that provides the user with general UNIX operating system capabilities. Utilities *commands* can be accessed from any level in any Manager IV application.

Vector. A set of predefined call processing steps used to process incoming calls. Vectors are used with the *System 85* R2V4 and *DEFINITY Generic*

2 Call Vectoring feature.

Vector Directory Number (VDN). A "soft" extension number that is used for dialed access to vectors. Calls cannot be made from this extension, and it is not assigned an Equipment Line Location.

Voice Data Station (VDS). A 7404D terminal with six buttons and an integrated *Digital Terminal Data Module* (*DTDM*).

Voice/data terminal. A terminal that provides simultaneous voice/data transmission such as any AT&T Personal Terminal (PT) or a voice terminal with a *DTDM*.

Voice terminal. A telephone set.

Wide Area Transmission Service (WATS). Outgoing telephone service that provides dial access to specific calling zones via a direct access line. The customer is charged a flat monthly fee for the line instead of being charged based on the number or length of calls placed. Incoming WATS lines provide 800 service where the called party is charged for the call.

INDEX

A

Abbreviated command path entry, 3-19
Aborted transactions, 3-29
Active input area, OPEN LOOK, C-29
Adjunct Administration, 1-5, 1-6, 2-1
Administration commands, 4-4
Alarms, switch, 5-13
Application interactions, 1-4, 2-5
Applications, Adjunct Administration, 1-5, 2-1
  Facilities Management (FM), 1-5, 2-3
  in command hierarchy, 1-7
  Manager IV, 1-4
  System Administration, 1-5, 2-1
  Terminal Change Management (TCM), 1-5, 2-2
  Utilities, 1-5, 2-2
Area, database administration, 1-8
  in Manager IV command hierarchy, 4-3
  product administration, 1-8
  of Manager IV , 1-8
Audio Information Exchange and Manager IV, 1-1

B

BACKWARD function key, 3-8
Base window, in OPEN LOOK, C-4
BCT function keys, 3-7

C

Changing the status of an SR, 6-4
Checking mail, 5-19
  scheduled entries, 3-26, 5-6
Clipboard, 2-3, 3-23
Closing a Service Request, 5-5
Command help, 3-9
    displaying, 3-7
Command path, abbreviations, 3-19
    entering using type-ahead, 3-18
    prompts, 3-9, 3-14
    prompts, example, 3-14
command, service-request error-report, A-3, 5-19, 5-23, 5-24
Commands, 1-8, 3-9
  escape sequences, 3-5
  function keys, 3-5
  Manager IV, 1-9
  utilities, 3-12
Communications errors in Service Requests, 6-3
Configuration, Manager IV, 1-3
connection command, 3-12
  display command, 3-12
  end command, 3-12
Connection indicator, on-screen, 3-10
Continue on error flag, in Service Requests, 5-6
CORE database, 1-6
Co-residency, and Manager IV, 1-1
corruption, results files, 5-25
Creating a Service Request, 5-3
Cursor control, 3-11
Customizing command tree, in OPEN LOOK, C-31
Cut-through, Manager IV, 1-1

D

daemon, 7-1
daily tape run command, A-1
Data entry, restrictions, 3-11
    with Clipboard, 3-23
    with Scrapbook, 3-20
database list command, 2-2, 3-13
  remove command, 2-2, 3-13
Database, administration, 1-8, 7-6
  Manager IV, 4-3
  synchronization, 4-4, 4-6
    errors, 6-5
Database/switch data, errors, detecting, 3-28
DEFINITY G2, documentation, B-4
Discrepancies, database/switch, 3-28
Display commands, 6-7
Displaying Service Requests, pending and failed, 5-27
Display-only fields, 3-11
Documentation, DEFINITY G2, B-4
  Generic 1, B-3
  Manager IV, B-1
  System 75, B-3
  System 85, B-4
Download, example of, 7-2
  example of successful, 4-10
  example of unsuccessful, 6-1
  grouping SR, 7-3
  immediate transaction, 7-3
  timing of Service Request, 4-4

E

Ending a Service Request, 5-5
Equipment in use error, 6-5
Error messages, 3-29
    displaying, 3-12
    error report, 5-24
    fatal, 3-30
    for Service Requests, 4-4
    warning, 3-29
Error report, error messages, 5-24
    Identifier, 5-26
Errors, common causes, 3-27
  communications, 3-27, 6-3
  correcting, 3-27
  database/switch, 3-28
  equipment in use, 6-5
  fixing, 6-7
  in Service Requests, 6-1
  incorrect information, 3-27
Errors display command, 3-12
ESC function key, 3-6, 3-7, 3-8
Escape sequences, 3-5, 3-6, 3-7
    displaying, 3-7
    help, 3-10
    scheduling jobs with, 3-25

EXECUTE function key, 3-7
Executing a transaction, 3-7
Extended help, 3-9
  displaying, 3-7
Extractor, 7-1

F

Facilities, administering, 2-3
Facilities Management, 1-5
Failures, Service Request, 6-1
  Service Request, investigating, 6-2
Features, administering network, 2-4
Fields, extended help for, 3-9
  function keys for, 3-7
  help for, 3-9
  on-screen, 3-11
  short help for, 3-9
  types of, 3-11
File Manager, OPEN LOOK, C-9
Files, model, 3-20
FM (Facilities Management), 2-3
  interactions with other applications, 2-5
Follow-up procedures for SRs, 5-15
    administrators, 5-15
    users, 5-19
Function keys, 3-5, 3-7
  displaying, 3-7
  escape sequences, 3-6, 3-8
  help, 3-9
  screen-labeled, 3-5

G

General terminal administration, and Manager IV, 1-1
Generic 1, documentation, B-3
Global model files, recalling, 3-7, 3-22
Grouped SR downloads, 7-3
Grouper, 7-1

H

Hardware administration, 2-1
  considerations, 1-3
  requirements, OPEN LOOK, C-2
Help, displaying command, 3-7
  displaying extended, 3-7
  extended, 3-9
  scrolling capabilities, 3-8
  through OPEN LOOK, C-25
  types of, 3-8
HELP function key, 3-7
Host Processor, monitoring, 2-1

I

Identifier, error report, 5-26
Immediate transactions, 4-4
  troubleshooting, 6-1
Information Systems Network (ISN) and Manager IV, 1-1
Initialization, and database, 4-3
  and database creation, 1-6
Initializing OPEN LOOK, C-6
Installation, OPEN LOOK, C-2
Interactions, Manager IV applications, 2-5

L

LAST INPUT function key, 3-8
Locking Manager IV records, 4-8
Logging off, 3-4
  on, 3-1
Login permissions, assigning, 1-9
Logins, assigning, 3-1

M

mail display command, 5-19
Mail, displaying, 5-19
  messages, onscreen, 3-10
  system, 3-3
Management Applications, 1-5
Manager IV, 1-1
  and AUDIX, 1-1
  and coresidency, 1-1
  and ISN, 1-1
  applications, 1-1
  command hierarchy, 1-7
  database, 1-6, 4-3
    updating, 7-3
  processes, 7-1
  support for general terminal administration, 1-1
    for ISDN terminals, 1-1
  task performance, 3-14
  through OPEN LOOK, C-14
Messages, screen, 3-11
Model, creating global scrapbook, 3-7
  creating scrapbook, 3-7
  files, 3-20
    changing, 3-21
    creating, 3-20
    global models, 3-22
    recalling, 3-7
    removing, 3-21
    retrieving data from, 3-20
Mouse terminology with OPEN LOOK, C-3
  with OPEN LOOK, C-3
Moving to previous page, 3-7
Multi-node transactions, 1-8
Multi-tasking graphics terminal, and Manager IV, 1-3

N

NEXT PG function key, 3-7
Non-detailed displays, for Service Requests, 5-27
Non-switch data, in Manager IV database, 1-6

O

Objects, in commands, 1-8
Object-verb pairs, 3-9
On-line help, 3-8
OPEN LOOK, accessing Manager IV, C-14
  and Manager IV help, C-25
  base window, C-4
  benefits, C-1
  changing active input area, C-29
  customizing command tree, C-31
  File Manager, C-9
  hardware requirements, C-2
  initializing, C-6
  installation, C-2
  mouse terminology, C-3
  software requirements, C-2
  system requirements, C-2
  task button functionality, C-17
  Terminal Emulator window, C-11, C-28
  using a mouse, C-3
Opening a Service Request, 5-3

Optional fields, 3-11

P

Passwords, assigning, 3-1
Pending queue (See PQ), 4-4, 4-8
pending-queue cleanup command, A-1, 6-9
Port access, between switch and Manager IV, 4-2
port disable command, 3-12
 display command, 3-12
 enable command, 3-12
 release command, 3-12
 remove command, 3-12
PQ cleanup, example, 6-10
PQ (Pending Queue), 4-8
 status codes, 4-8, 5-33
PREV PG function key, 3-7
Previous page, moving to, 3-7
Printers, ID, 3-2
Printing screen, 3-7
Problems, hardware, 3-27
Procedure, appending to a Service Request, 5-9
 changing a model, 3-21
  SR status, 6-4
 checking mail, 5-19
  results files, 5-20
  scheduled entries, 5-6
 closing a Service Request, 5-5
 creating a new model, 3-20
 displaying scheduled entries, 5-7
 finding and correcting SR failures, 6-2
 fixing errors and rerunning SRs, 6-7
 logging off, 3-4
 logging on, 3-1
 opening a Service Request, 5-3
 recovering from communications errors, 6-4
  from equipment-in-use errors, 6-5
  your last input, 3-23
  your last output, 3-24
 removing a model, 3-21
  failed or pending SRs, 6-8
  results files, 5-27
  scheduled entries, 3-26
  transactions from a Service Request, 5-10
 reporting on SR status, 5-15
 rescheduling a service request, 5-11
 retrieving data from a model file, 3-20
 Running Service-Request Error-Reports, 5-23
 scheduling a daily tape run, 5-14
  Manager IV tasks, 3-25
 selecting a detailed SR display, 5-29
  a non-detailed SR display, 5-27
 using command path prompts, 3-14
  global models, 3-22
Procs, System 85, 1-10
Product administration, 1-8, 7-7
  commands, 4-4
 database updates, 1-6
 ID, 1-8, 3-10
 image database, 1-6, 4-3
Prompts, command path, 3-9, 3-14

R

Recalling global model file, 3-7
 scrapbook file, 3-7
Recordkeeping, 5-1
Records, locking and stacking Manager IV, 4-8
Recovery, escape sequences, 3-8
 with Clipboard, 3-23
Redrawing screen, 3-8
Removing an SR, 6-8
 scheduled entries, 3-26
 transactions from an SR, 5-10
Required fields, 3-11
Rescheduling a Service Request, 5-11, 6-7
Restrictions, UNIX, 3-13
results display command, A-1, 3-12, 5-20
Results file, 1-11
  and Service Requests, 4-4
  corruption, 5-25
 remove command, A-1, 3-12, 5-27
 removing, 3-12
Retries, Service Requests, 6-3
RETURN key, moving through fields, 3-14

S

SCHED function key, 3-8
Scheduled entries, 3-25
  displaying, 3-12
  removing, 3-26
 entry list command, 3-12
 Service Requests, 4-4
scheduled-entry display command, A-2, 3-12, 5-7
  list command, A-2, 5-6
  remove command, 3-12
  remove command, 3-26
Scheduler, role of, 7-1
Scheduling a command, 3-8
 tasks, 3-25
SCM (Switch Communication Module), 7-1
Scrapbook, 2-3, 3-20
 file, recalling, 3-7
  creating, 3-20
 global models, 3-22
 model, creating, 3-7
  creating global, 3-7
Screen, printing a paper copy of, 3-6, 3-7
 redrawing, 3-8, 3-10
 undoing entries on, 3-8
Screen-labeled function keys, 3-5
Screens, cursor control, 3-11
 data fields on, 3-11
 dynamic, 3-11
 messages on, 3-11
 multipage, 3-9, 3-11
 status information, 3-10
 using, 3-10
Scrolling capabilities in help, 3-8
Service Request, administrator, 4-6, 5-15
  append, 5-9
  benefits of, 4-2
  changing, 5-11
  changing status, 6-4
  checking status of, 1-11
  cleaning up PQ, 6-9
  closing, 5-5
  commands, A-1
  continue on error, 1-11
  creating, 1-10
  definition, 4-1
  displaying, 5-15, 5-27
   error reports, 5-23
   results, 5-20
  ending, 1-11

executing, 5-3
failed, 6-8
failures, 6-1
following up, 5-15
follow-up for administrators, 5-15
for users, 5-19
mode, 4-4
non-detailed displays, 5-27
number, 4-4, 5-4
onscreen, 3-10
opening, 5-3
pending, 6-8
planning, 4-6
recordkeeping, 5-1
removing, 5-10, 6-8
results, 5-27
reporting on, 5-15
rescheduling, 5-11
results file, 4-4
retry strategy, 6-3
running, 5-12
scheduled, 1-9, 1-11, 4-4
scheduled-entry list, 5-6
size, 4-6
stacking, 4-6
status, 5-15
timing, 4-6
troubleshooting, 6-1
working status, 6-4
Worksheet, 5-1
blank form, 5-2
and immediate transactions, differences, 4-4
detailed display, 5-27, 5-29
non-detailed display, 5-27
summary report, 5-16
transaction status flags, 5-28
Service-request append command, A-2, 5-9
change command, A-2, 5-11
cleanup command, A-2
create command, A-2, 5-3
display, 5-15
display command, A-3, 5-27
end command, A-3, 5-5
error-report, command, A-3, 5-19, 5-23, 5-24
remove command, A-3, 5-10
report, A-3, 5-15
run command, A-4, 5-12
unlock command, A-4, 6-4
Shadow pending queue (See SPQ), 4-7
shell command, 3-12
Short help, 3-9
displaying, 3-7
Sixtythreeeightysix personal computer, 1-3
SMUE (System Management User Executive), role of, 7-1
Software requirements, OPEN LOOK, C-2
SPQ (Shadow Pending Queue), 4-7
Stacking Manager IV records, 4-8
Service Requests, 4-6
Status codes, in PQ, 5-33
information, onscreen, 3-10
of an SR, 6-4
Supported terminals, 1-3
Switch alarms, 5-13
Switch Communication Module (see scm), 7-1
connections, failures, 6-4
database, 4-3
errors, 3-28
translation updates, 1-6
type, onscreen, 3-10
updating process, 3-29
System 75, administration, 1-6
and Manager IV database, 1-6
documentation, B-3
Manager IV and, 1-1
System 85, Documentation, B-4
procs, 1-10
System Administration, 2-1
applications, 1-5
Administrator, assigning logins and passwords, 3-1
duties, 2-1
architecture, software, 7-1
failure, and SRs, 6-4
identification, onscreen, 3-10
messages, 3-29
requirements, OPEN LOOK, C-2

T

tape run command, A-4
Target groups, 1-8
onscreen, 3-10
entering, 3-15, 3-19
in Manager IV, 1-8
Task buttons, in OPEN LOOK, C-17
executing Manager IV, 3-14
Manager IV, before you perform, 3-5
scheduling Manager IV, 3-25
TCM, Terminal Change Management, 1-5, 2-2
interactions with other applications, 2-5
Terminal administration, 2-2
Terminal Emulator, OPEN LOOK, C-28
window in OPEN LOOK, C-11
types, valid, 3-2
Terminals, supported, 1-3
Threebtwo 600 processor,, 1-3
Time zones, in Service Requests, 5-4
TRACS (Translations, Recovery, Additions and Conversion System), 1-6, 4-3
Transaction, executing, 3-7
numbering, 4-8
typical Manager IV, 1-10
Transactions, aborted, 3-29
immediate, 4-4
unscheduling, 3-26
Translations, and switch database, 4-3
Recovery, Additions and Conversion System (TRACS), 1-6
Troubleshooting Service Requests, 6-1
Trunks, administering, 2-3
Type-ahead method, 3-18

U

Undoing entries on screen, 3-8
Universal Module, and Manager IV, 1-2
UNIX utilities, 3-12
Unscheduling transactions, 3-26
User class, assigning, 1-9
Utilities, 1-5, 2-2
accessing, 1-8, 3-12
commands, 3-12

V

Verbs, in commands, 1-8
Voice terminal administration, 2-2

W

Work Group Station, 6386, 1-3
Worksheet, Service Request, 5-2