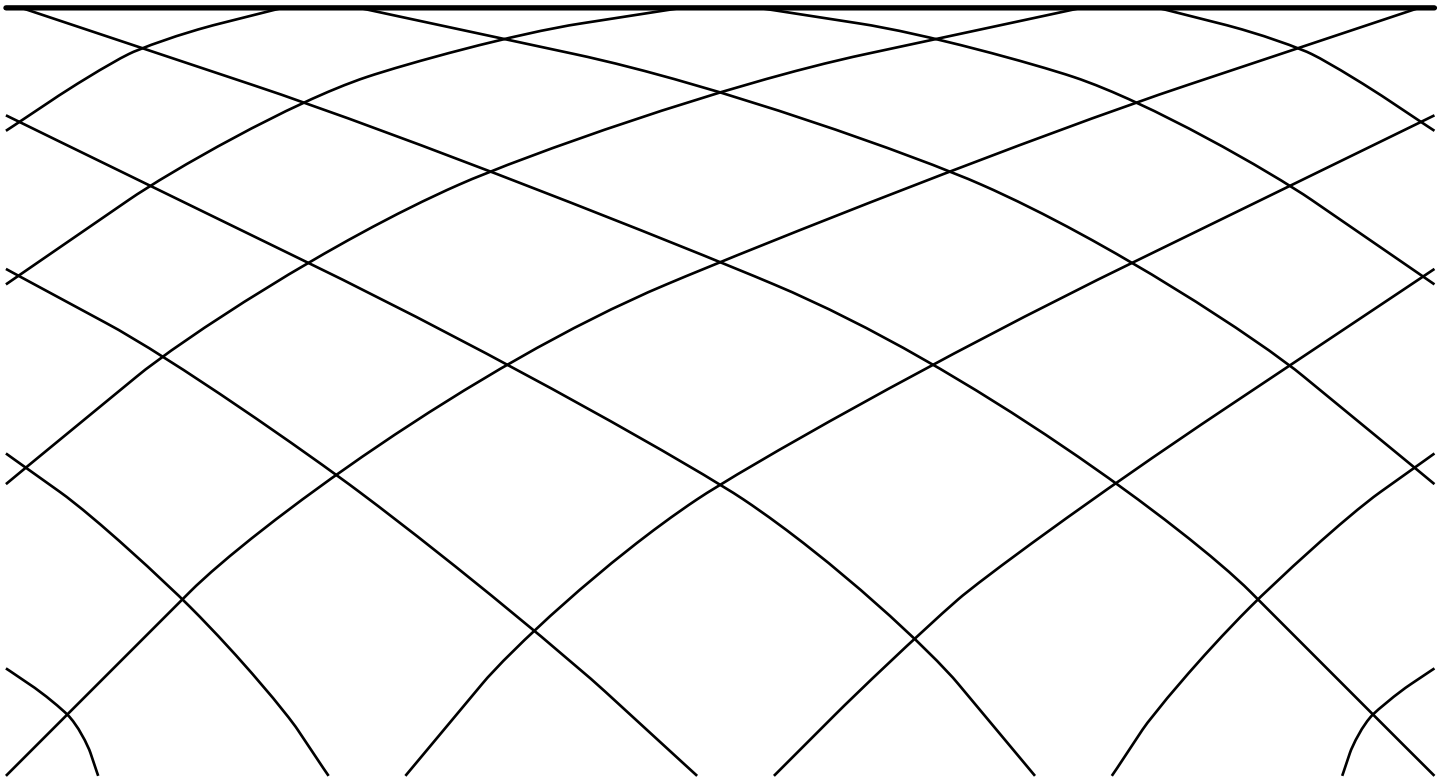
585-221-703
Issue 2
December, 1992

DEFINITY® Monitor I
Operations Guide



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AT&T Technical Publications Department
Middletown, NJ

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Printed in USA

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About this Guide

What´s in this Guide

- How to use Monitor I to plan and implement traffic studies.
- How to interpret the traffic measurements that Monitor I gathers from your AT&T Communications System, which may be one or more of the following:
  - DEFINITY® Generic 2.1 and Generic 2.2 (hereafter abbreviated to Generic 2.2 and Generic 2.1)
  - System 85 (R2V2, R2V3 and R2V4)
  - DIMENSION® FP8 (1.16 and 3.8)
  - DEFINITY G3i and G3r (hereafter abbreviated to G3i and G3r)
  - DEFINITY G3vs and G3s can be supported by entering G3i as product type. The G3vs and G3s switches are not specifically referenced throughout this operations guide, but all G3i references include the G3vs and the G3s switches.
  - DEFINITY Generic 1.1 (hereafter abbreviated to Generic 1.1)
  - System 75 (R1V1*, R1V2 and R1V3).

Note: The screen and report samples shown in this guide are for the Generic 2 (System 85) switch and are generally applicable to the G3r, G3i, Generic 1 (System 75), and DIMENSION switches. When a report or screen is substantially different from the Generic 2 sample, then that screen or report has also been included in this chapter.

Intended Users of this Guide

Refer to Table 1-1 for a list of Monitor I users and the recommended training. For information on AT&T courses, see your AT&T Account Team representative.

* System 75 R1V1 is supported only if it has an **asynchronous** communications board.

TABLE 1-1
Recommended Courses

Type of User	Responsibility	Recommended Courses
Data Entry Personnel	Generate the Monitor I standard reports	INFORMIX-SQL® Database Management System; Basic UNIX® skills and knowledge of Visual Editor (**vi**)
Traffic Managers	Analyze traffic for your communications system	DEFINITY Generic 2.1 and 2.2, Generic 1.1, and G3i and G3r Communications Systems, System 85 R2V4, R2V3, R2V2, System 75 R1V3, R1V2, R1V1 or DIMENSION systems
System Administrators	Back up and recover system files	UNIX® System V Release 3

Related Documentation

- *DEFINITY Monitor I Installation Manual*, 585-221-101
- *DEFINITY Monitor I Planning Manual*, 585-221-610
- *AT&T 3B2 Computer UNIX System V System Administrator's Guide*, 305-569
- *AT&T 3B2 Computer UNIX System V System Administrator's Reference Manual*, 305-570
- *AT&T System V/386 Release 3.2.2 User's and System Administration Reference Manual*, 305-646
- *AT&T System 85 Traffic Data Analysis Guide (R2V1 - R2V4)*, 555-102-502
- *AT&T System 85 Release 2 Version 4 Traffic Data Analysis Guide (System 85 R2V4)*, 555-103-502
- *DEFINITY Communications System Generic 2 and System 75 and System 85 Traffic Measurements*, 555-104-502
- *DEFINITY Communications System Generic 2 and System 75 and System 85 Traffic Tables*, 555-104-503
- *DEFINITY Communications System Generic 2 and System 75 and System 85 Traffic Theory*, 555-104-504
- *DEFINITY Communications System, Generic I and System 75 and System 75 XE Administration and Measurements Reports*, 555-200-500
- *INFORMIX-SQL Relational Database Management System User's Guide**
- *INFORMIX-SQL Relational Database Management System Reference Manual**

All of the manuals listed above (with the exception of the INFORMIX-SQL documents) may be ordered from the Customer Information Center. In addition, the *Business Communications Systems Publications Catalog*, 555-000-010, provides information about switching systems, application processors, terminals, telephones, and related products. This catalog is free and can be ordered by calling:

1 800 432-6600

(between 7:30 and 6:30 p.m. EST)

1 800 255-1242

(from Canada)

or write:

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2855 North Franklin Road
P.O. Box 19901
Indianapolis, IN 46219

* The manuals on INFORMIX-SQL can be ordered directly from INFORMIX Software, Inc.

Using this Guide

The *Monitor I Operations Guide* is divided into two parts. The first part provides basic information about Monitor I, procedures to get you started and to enable you to produce various kinds of reports, and some administrative information. The second part, entitled **Reference**, comprises more detailed information such as packet and traffic data, how to interpret the reports, and equations used in the Monitor I report calculations. The following lists the contents of each chapter of this guide:

1. About This Guide

This chapter lists:

- The various types of Monitor I users and the training each should have
- Conventions used throughout the manual

2. Introduction to Monitor I

Chapter 2 provides:

- An overview of the Monitor I system
- Flowcharts showing switch-specific menu structure
- A procedure for moving around in Monitor I
- Escape commands and some useful information on INFORMIX-SQL

3. Implementing Monitor I

Using this chapter, you will be able to:

- Create a switch database
- Initialize the switch
- Activate the polling mechanism
- Schedule polling

4. Producing Reports

Chapter 4 tells you:

- Some general information about the Monitor I reports
- How to produce the reports

5. Overview of the Monitor I Reports

This chapter presents specific information about:

- Graphable Reports
- Switch Performance Reports

Also included are tables that tell you which reports you can generate on your particular switch.

6. Setting Up Traffic Studies

Use this chapter to set up special studies for running reports that do not use the Monitor I defaults. Some of these studies are:

- Automatic Call Distribution (ACD)
- Call Coverage
- World Class Routing (WCR)

7. Designing Custom Reports

Chapter 7 describes the Monitor I database schema. It also gives procedures for producing Customized Data Dump Reports, Formatted Customized Reports, and On-Line Queries. In addition, Chapter 7 tells you how to administer traffic studies, such as:

- Carrier Usage
- Load Balance
- Main Satellite
- Trunk Group Combination

8. System Administration

Procedures for System Administration are included in this chapter:

- Making a Monitor I backup
- Recovering software and files
- Running Monitor I utilities
- Rotating Monitor I switches

A. Interpreting Monitor I Reports

This is the first appendix in the Reference part of this guide and provides samples of each report available on Monitor I arranged alphabetically, with associated field definitions.

B. Switch Traffic Data

This chapter comprises information on:

- Different types of switch registers
- Traffic measurement packets polled by Monitor I
- Usage measurements for report output

C. Monitor I Equations

The calculations used for many of the report fields are listed here. These are arranged alphabetically, by report title.

D. Mail and Error Messages

This chapter provides:

- Samples of the various mail messages that you will receive from the Monitor I system
- An alphabetical listing of Monitor I error messages, with interpretations and instructions for further action

E. Daily Concatenation Tables

This chapter includes tables showing the daily concatenation of packet data for:

- Generic 2.1 and 2.2
- System 85 R2V2-V4
- DIMENSION
- G3i and G3r
- Generic 1.1
- System 75

F. Information About Alarming

Details on choosing the alarm parameters and where to have alarms sent are provided in this chapter.

Conventions Used in this Guide

TABLE 1-2
Table of Conventions

Convention	Meaning
Enter destination **Unable to connect** **Trending completed**	This typeface indicates system messages or responses.
mtmadm *sysadm restore* *ulimit 99999*	This typeface indicates a response or entry the user must type.
Exit from **switch_dct** Set the **carrier usage** field	The bold typeface applies to files, directories, options, and software references.
RETURN ESC	Rounded corners on a key indicate a key on your standard keyboard.
This command ***overwrites*** existing data.	A bold, italicized typeface indicates emphasized information.
Load <filename>	Substitute your filename for the file or software identified in brackets.

Additional Conventions

Stepping through Menus

This **step** convention shows how to access hierarchical menu selections:

Administrative Menu
└→ *Access Alarm Administration Menu*
└→ *Administer Alarm Destinations*

Introduction to Monitor I

Overview

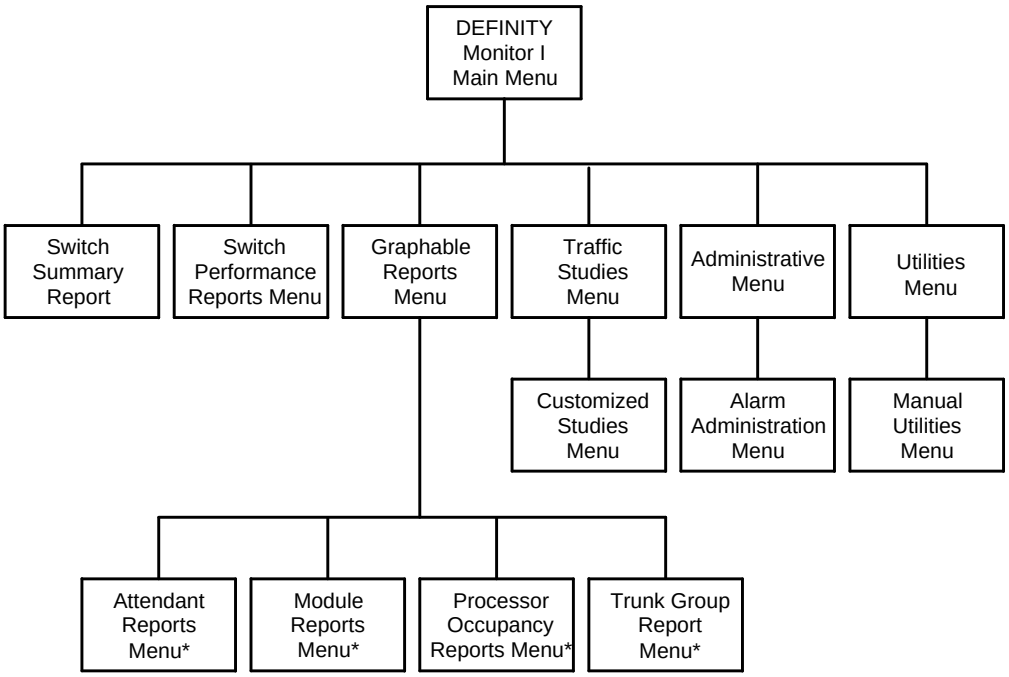
DEFINITY Monitor I is a system for gathering and analyzing voice and data traffic information on your telecommunications network. It lets you do the following:

- Keep close watch on the elements in your network, including
  - Trunks
  - Call management and attendant services
  - Security measurements
  - Switch efficiency
- Produce traffic information reports that
  - Can be run hourly, daily or weekly
  - Show traffic trends over periods of time
- Design your own reports by
  - Using INFORMIX tools
  - Transferring files to a PC to create custom graphic displays.
- Administer studies and run utilities, such as
  - Define trunk group include lists
  - Cut-through to G3i and G3r, Generic 1, and System 75 switches
  - Purge the Monitor I database
  - Audit your switch and database

Monitor I also has a feature that allows you to rotate switch studies if you have more switches in your network than Monitor I can support. This option, configured when you purchase Monitor I, allows you to create databases for all the switches in your network and poll a subset of those switches at one time. You can deactivate the switch subset then activate another set. The maximum number of switches that can be polled is determined in your Monitor I configuration.

Monitor I Menu Structure

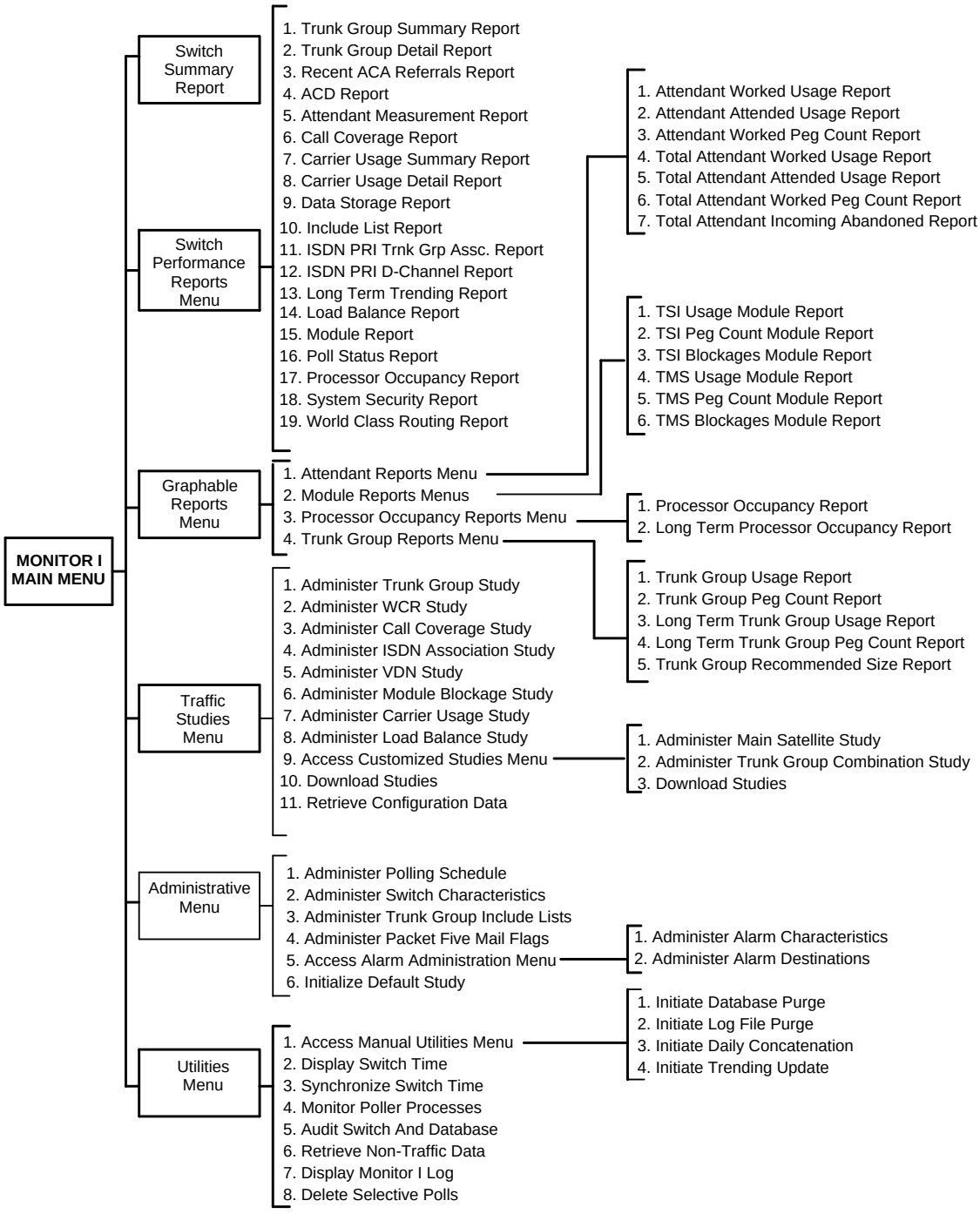
You select the report or option you want from a series of Monitor I menus. The menus are organized as follows:



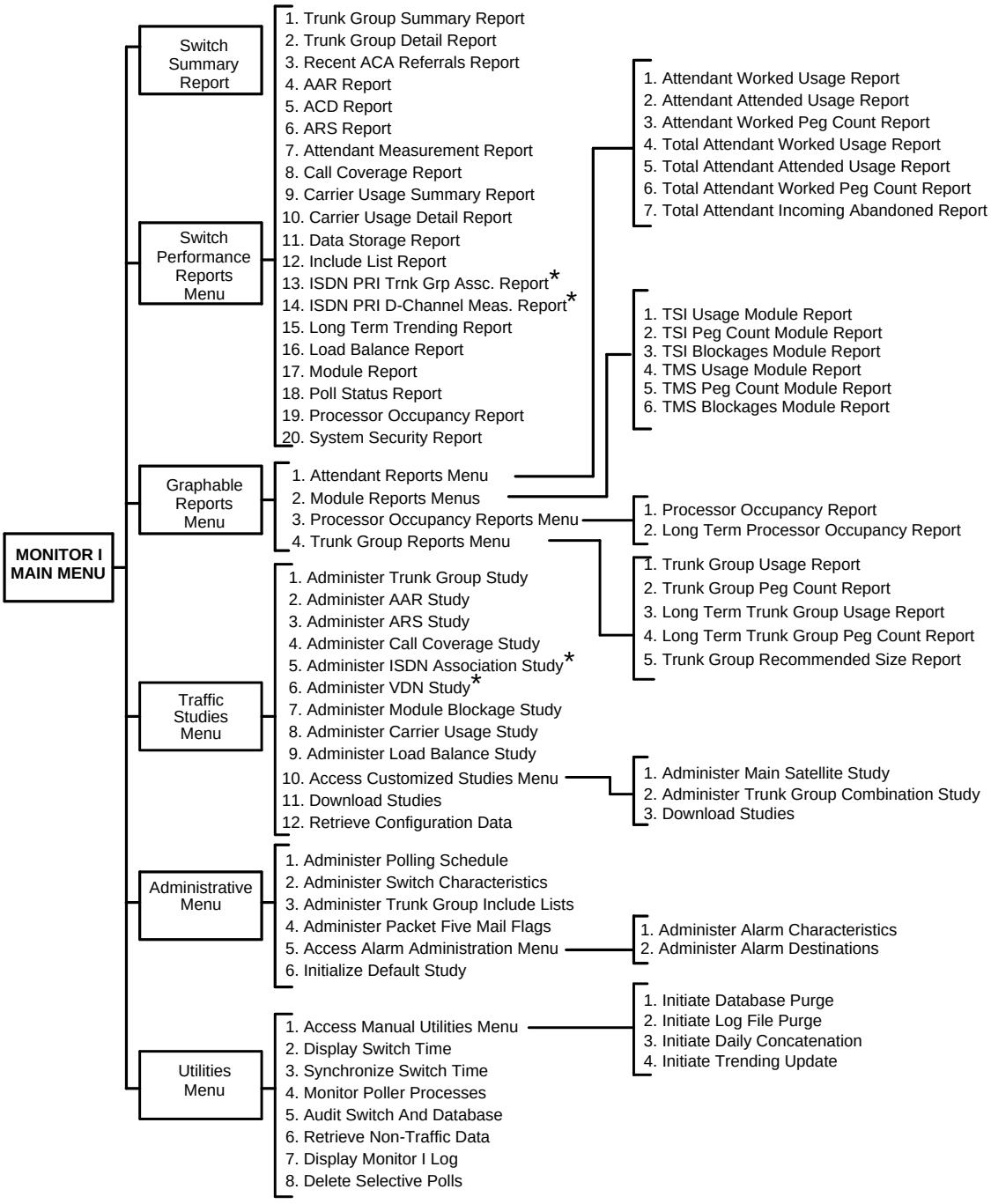
The following pages show the Monitor I menus and reports available for each switch version.

* Not available with G3i, Generic 1 and System 75 R1V1-V3.

Monitor I Menu Structure for Generic 2.2

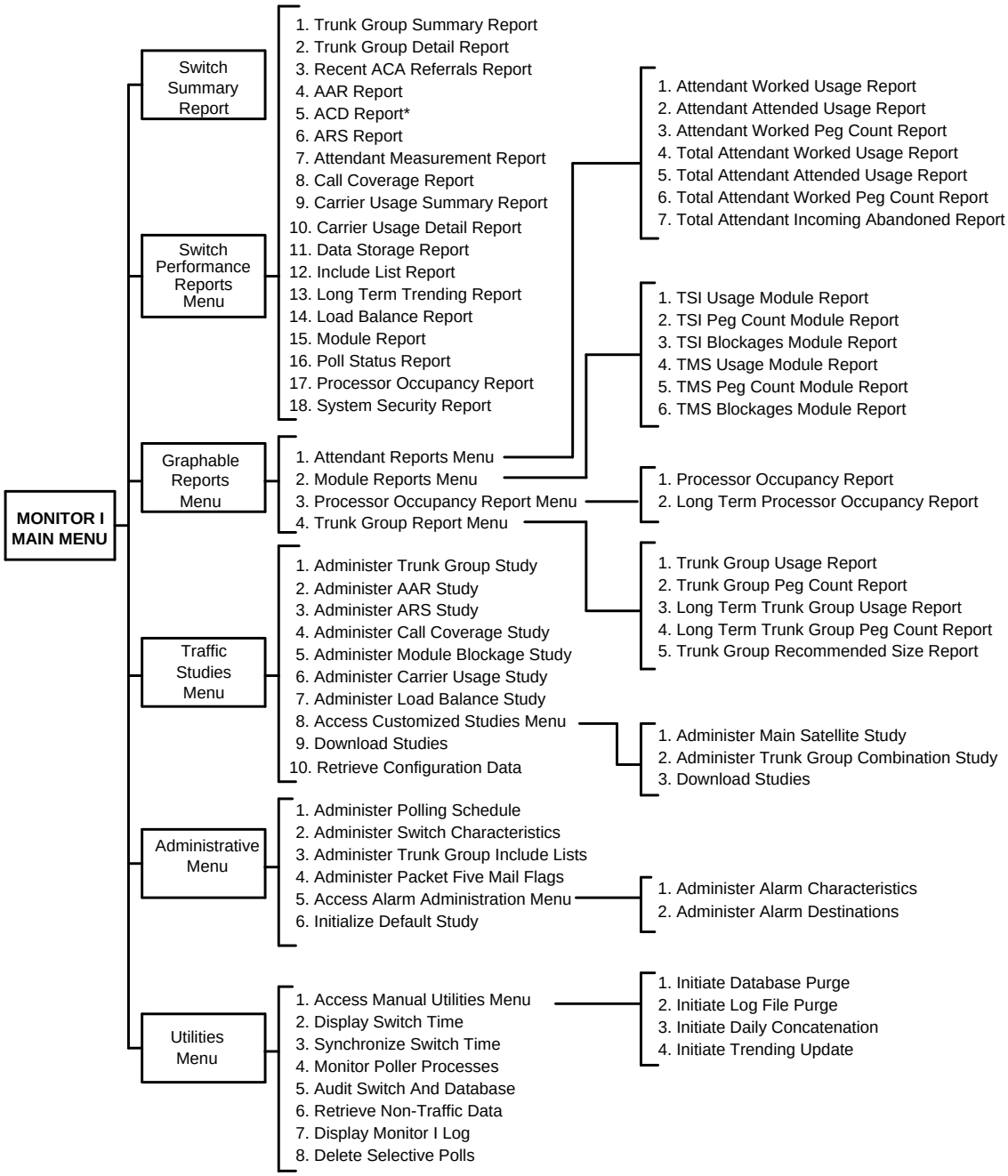


Monitor I Menu Structure for Generic 2.1 and System 85 R2V4



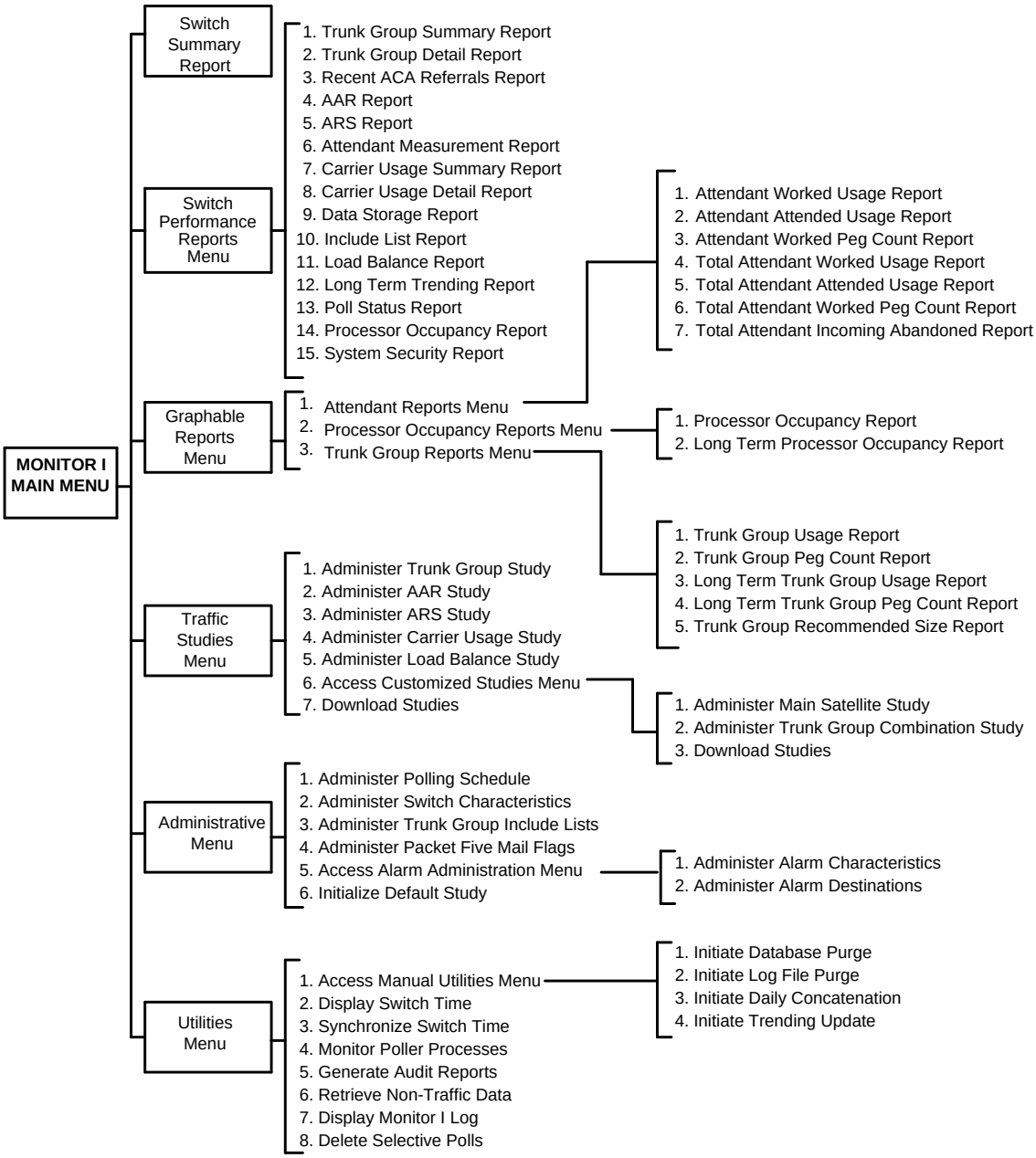
* Available only on the Generic 2 Switch

Monitor I Menu Structure for System 85 R2V2 and R2V3

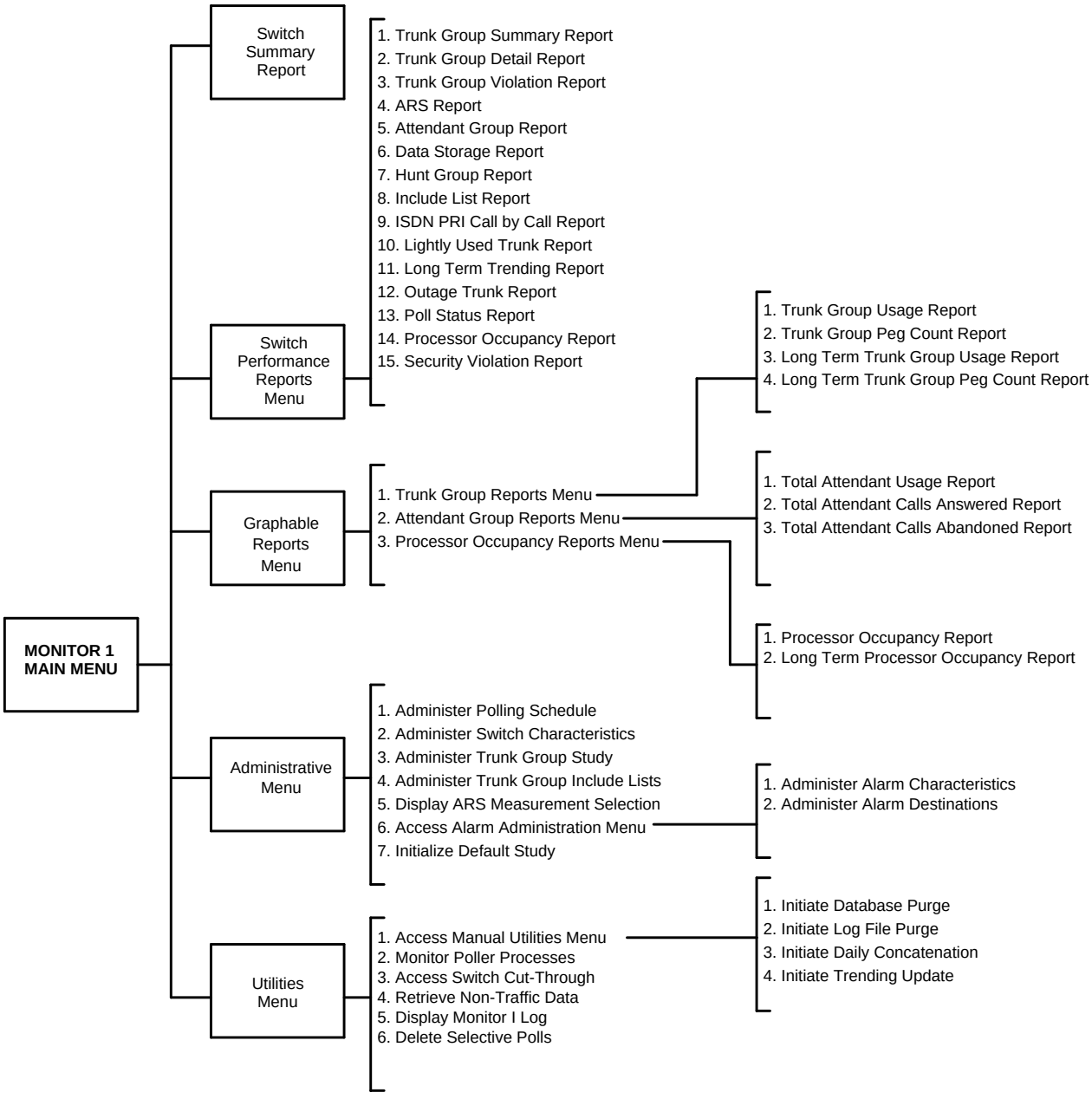


* The Automatic Call Distribution (ACD) Report is called the Uniform Call Distribution (UCD) Report for System 85 R2V2.

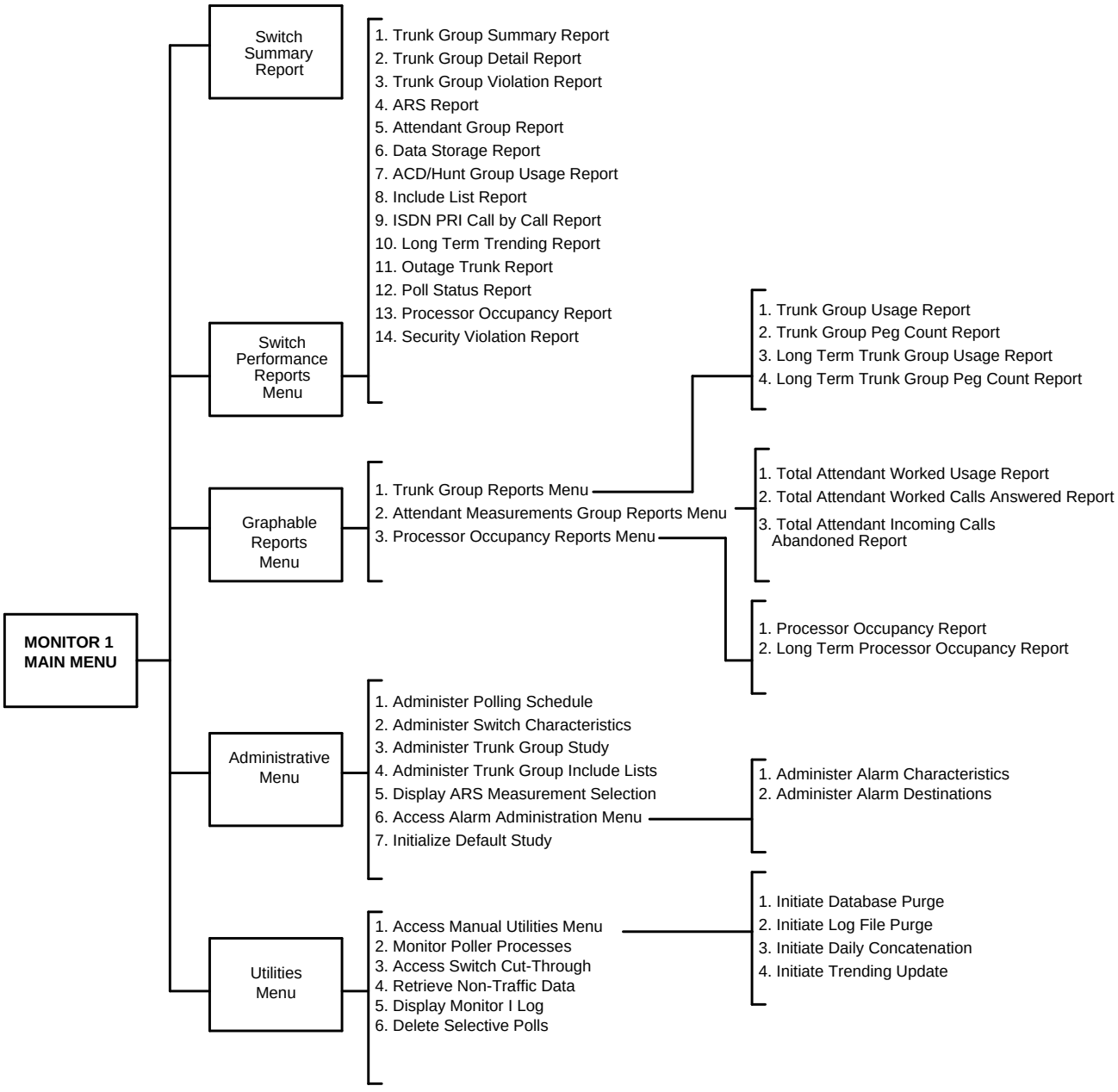
Monitor I Menu Structure for DIMENSION



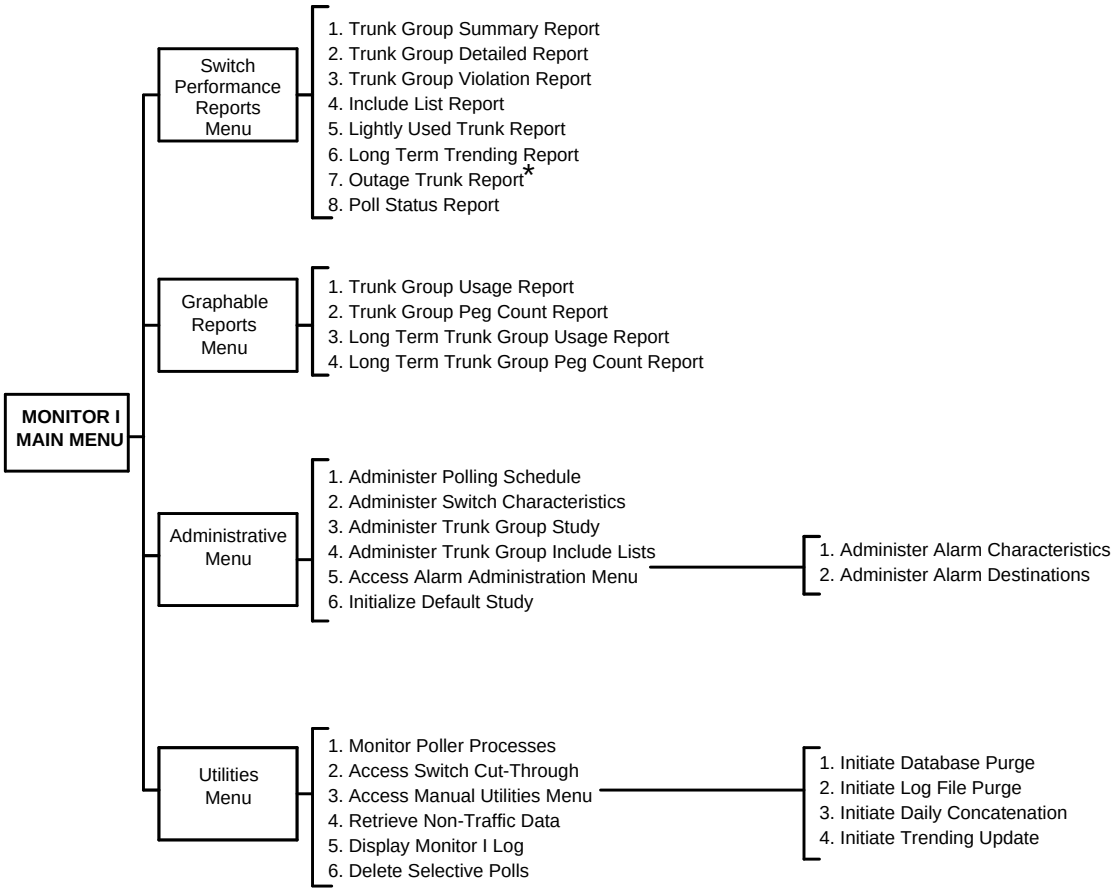
Monitor I Menu Structure for G3i



Monitor I Menu Structure for G3r



Monitor I Menu Structure for Generic 1.1 and System 75 R1V1-V3



* Not available on System 75 R1V1.

Accessing the Menus

Procedure

1. Log on to your Monitor I computer console or terminal using the standard UNIX procedure.*
2. Type *mtm* (Monitor I Traffic Management) at the system prompt (usually a **$**) and press RETURN.
3. Enter the name of your target switch and press RETURN.
   - For further on-line information, type *h* for help, or *l* to see a list of entries if you are not sure what to enter.
4. Follow the instructions on the screen to select a menu option from the main menu or from any submenus that appear.
5. To return to the main menu, type *e* (for exit). This takes you back one menu level at a time until you see the main menu.
6. To exit from Monitor I, type *e* at the **Main Menu**, then type *e* again at the line prompting you to enter your target switch. When the **$** prompt is displayed, you are in the UNIX shell.

* If you are using the Coresident Applications Front End (CAFE), choose MONITOR I from the **CAFE Menu**. Refer to the *CAFE User's Guide* for further information about CAFE.

Escape (Shell) Commands

Table 2-1 lists some examples of commonly used commands that allow you to perform UNIX shell functions without having to log out of the Monitor I application. You can type these commands from any of the Monitor I menus or INFORMIX-SQL screens.

TABLE 2-1
Some Shell Commands

Function	Purpose	Command
1. Access the UNIX shell	Perform UNIX commands (for example, system administration, backups)	**!sh**
2. Read UNIX mail	Check messages sent by Monitor I to notify the administrator of problems or changes in the switch that affect traffic polling	**!mail**
3. See error messages	Read error messages stored in the mtmlog	**!tail $TMLOG/mtmlog**
4. Access INFORMIX-SQL	Access an INFORMIX-SQL screen	**!isql**
5. Display the switch name	Remind you which switch you are accessing while running reports or procedures	**!switch**

Notes

To return to Monitor I from the shell invoked by function 1 type *exit* at the UNIX prompt, then press RETURN and follow the instructions.

Function 4 allows you to access INFORMIX directly, and you must type *e* to exit INFORMIX, press RETURN, and follow the remaining instructions.

Function 5 keeps you in Monitor I, so you are not actually in the UNIX shell.

The INFORMIX PERFORM Screens

You use INFORMIX-SQL PERFORM screens for entering, reviewing, changing, and deleting Monitor I data about traffic studies. The first line, or header, of the PERFORM screen contains a list of the INFORMIX-SQL commands available, including **Query, Next, Previous, Add, Update, Remove, Table, Screen** and **Exit**. This is an example of a PERFORM screen header:

```
PERFORM: [Query]  Next  Previous  Add  Update  Remove  Table Screen  ...
Searches the active database table.          ** 1:  tmprod table**
```

The second line of the screen header describes the function of each command. In the example above, choosing **Query** has caused the system to search the active database table **tmprod**. (The database schema is described in Chapter 7, "Customized Reports.")

To select an INFORMIX-SQL command:

- Use the arrow keys (on certain terminals) or SPACEBAR to move across the command line. You can also use BACKSPACE to move backwards along the command line. As you move through the command options, a short help message explaining the purpose of the highlighted command is displayed under the command line. When the command you want is highlighted, press RETURN to execute it.
- If the command you want is **not** highlighted, enter the command name or the first unique character that represents the command name (for example, enter *e* for **Exit** or *q* for **Query**).

After you select a command under these selection options, the command is executed. If you are using the **Add** command, press ESC after entering data to save the information in the DEFINITY Monitor I database. If you are using the **Query** command, you must also press ESC to begin the query. If you want to cancel the command, press DEL to abort it.

PERFORM Commands

A brief description of some of the PERFORM screen commands is included in Table 2-2, but you should refer to the INFORMIX-SQL documentation that came with your system for more information about the commands.

TABLE 2-2
INFORMIX-SQL Commands

Use This:	To:
CTRL-C	Interrupt or cancel an option
CTRL-D	Delete everything you have entered from the current cursor position to the end of the field
CTRL-K	Move backward through the fields
CTRL-W	See a brief list of available query options
CTRL-X	Delete the character beneath the cursor
ESC Key	Execute the option you choose
Query	Search the active database table
Next	Display the next row in the database after a query
Previous	Display the previous row in the database table after a query
Add	Add new information to the active database table
Update	Change existing database rows
Remove	Delete a row from the active database table
Table	Move back and forth between tables (files) on a split-screen
Screen	Go to the next page of a multi-page PERFORM screen (up to 20 pages)
Exit	Leave the screen and return to the menu where you entered the task
DEL	Abort a command (that is, stops the query or update)

Next, Previous, Update and **Remove** can only be used after a successful query.

Implementing Monitor I

Overview

To collect traffic data on your switches, you must first complete these four steps:

1. Create a switch database for each switch that Monitor I supports.

   Note: You need to contact the AT&T Technical Support Center (TSC) to complete this step.

2. Initialize the switch databases.
3. Activate the polling mechanism.
4. Schedule Monitor I polling for each switch.

To use these procedures, you need to log in as **mtmadm**, which is a Monitor I administrator login, so be sure you have the appropriate password. You should be familiar with INFORMIX-SQL PERFORM screens. Some commonly used INFORMIX-SQL commands are listed in Chapter 2, "Introduction to Monitor I."

After you have completed these four steps, you can begin using Monitor I's default polling schedule and reports.

Step 1 — Create the Switch Database

Overview

Why?

Monitor I keeps a database for each switch. Traffic data for the switch is kept in this database.

When?

After Monitor I has been installed or when a switch is being added to an already functioning system.

What?

Adds a switch and creates an empty database for the specified switch.

Prerequisites

- You should be familiar with the INFORMIX-SQL PERFORM screens to perform this procedure.
- Access to the switch must be authorized at the switch end during installation for all Generic 2 switches accessed by Monitor I. To do this, your Switch Administrator must invoke procedure 277, word 4 (Switch Access Authorization). Ensure that the procedure is invoked twice, to give access to both the Agent ID 40 (Monitor I Services) and Agent ID 41 (Monitor I Customer). See your Switch Administrator if you need help or further information.
- To populate the database with the trunk group names, follow the instructions for Retrieve Non-Traffic Data in Chapter 8, "System Administration."

Notes

- The number of switches that Monitor I can support depends on your hardware configuration and the database storage option you chose when you purchased Monitor I (Extended, Standard or Daily, and Limited). The system asks you for the following information when you are creating a new switch database:
  - Type of switch
  - Switch Release
  - Polling or Data Storage option (Generic 1 and System 75 default to the Extended option)

  If storage space is not available, that is, if not enough space was included for the switch you specified in the original configuration, you will receive a message telling you so, and you will be returned to the UNIX prompt.
- If you accidentally enter the wrong information and need to remove the switch database, refer to the procedure "Removing the Switch Database" in Chapter 8, "System Administration."

Procedure

1 Log in to Monitor I using the standard UNIX procedure.*

2 Enter *mtm* (for Monitor I Traffic Management) at the prompt (usually a **$**).

3 Press *l* to see a list of current databases.

Note: If your system is configured so that you can rotate Monitor I switch studies the system prompts you to enter *a* to list your current active switches or *i* to list your current inactive switches. Answer the prompt and continue with Step 4 of this procedure.

If the switch you are trying to access is currently inactive, a system message notifies you to use **switch_act** before you can access this switch.

For more information on this feature, refer to the "Rotate Monitor I Switches" procedure in Chapter 8, "System Administration."

4 Enter the name of the new switch database you are creating. This name should be different from any that appear in the list of current databases. The name should begin with a letter and should be no longer than 10 characters. It may contain numbers and the underscore. INFORMIX does not differentiate between uppercase and lowercase letters, so do not use uppercase.

5 Answer the series of questions on the screen. Press *h* for help if you do not know how to answer the first prompt.

6 Monitor I begins creating the switch database. This could take up to five minutes, after which the **Administer Switch Characteristics** screen is displayed.

If for some reason Monitor I cannot create the switch database, an error message is displayed and you are prompted to:

Press any key to exit

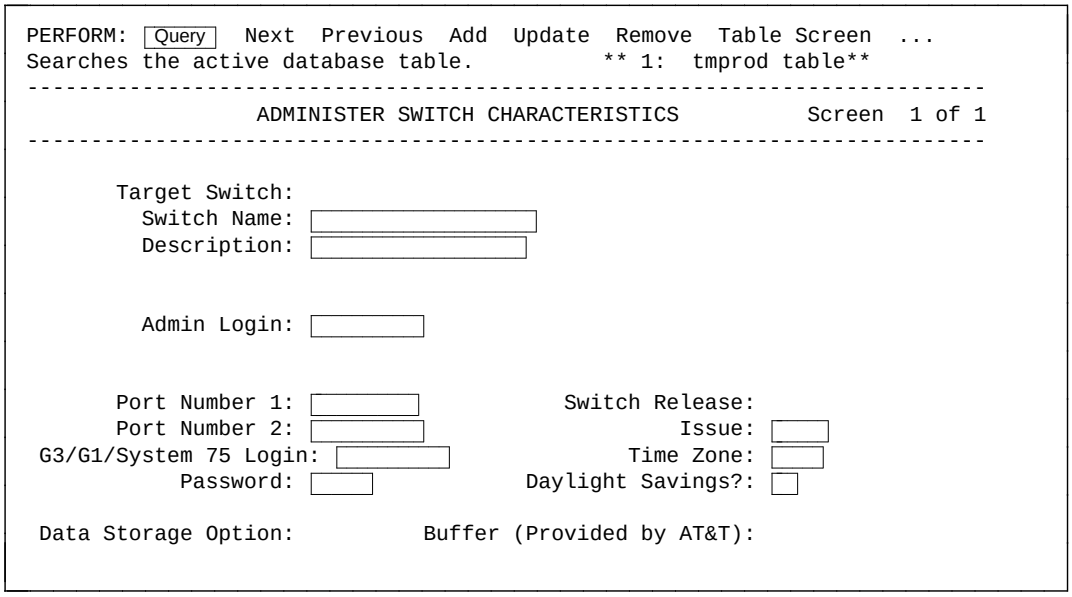
If Monitor I is a coresident application and you originally accessed it using CAFE, you are returned to the **CAFE Menu**. Otherwise, you are returned to the UNIX shell prompt.

7 Press *q* (for query) then ESC to populate the fields for the Target Switch, Switch Release, and Data Storage Option. Remember that Generic 1, and System 75 default to the Extended polling option.

8 Press *u* (for update) to enter the appropriate information in each field. The screen that is displayed is shown in Screen 3-1. The field definitions are listed after the sample screen.

---

* If you are using the Coresident Applications Front End (CAFE), choose Monitor I from the **CAFE Menu**. Refer to the *CAFE User's Guide* for more information about CAFE.



SCREEN 3-1
Administer Switch Characteristics Screen

Switch Name — Enter the full name of the switch. You may exceed the 10-character limit imposed on the Target Switch field.

Description — Enter any information that you feel helps describe your switch.

Admin Login — Enter the UNIX mail address of the person monitoring the switch polling (this could be either your Traffic Engineer or System Administrator). You can enter just the login (for example, *wps*). This is a required field.

Port Number 1 — Enter the phone number of the switch. Enter this number in the same manner as you would for the UNIX **cu** command. (Refer to Chapter 1 of the *UNIX User's Reference Manual* for further information on the **cu** command.)

Port Number 2 — Enter the phone number of the second switch port if applicable.

G3/G1/System 75 Login — For G3, Generic 1, and System 75, enter the logins.

Password — Enter the security code for Generic 2, System 85 R2V2-V4, and DIMENSION. For G3, Generic 1, and System 75, enter the passwords.

Switch Release — This field is automatically filled in with the appropriate switch release when you do your initial query.

Issue — This is an optional field, that is, you can choose not to populate it. Enter the release number of the DEFINITY tape (for example, Release 1).

Time Zone	Time zone of your switch (not necessarily the same as ***your*** time zone).
Daylight Savings	Enter *y* if daylight savings time is active; *n* if not.
Data Storage Option	Automatically populated when you create the switch. This field is for display only.
Buffer	This information is entered by the TSC. Display only; you cannot enter data here.

9 Press ESC to submit this screen.

10 Type *e* to exit this INFORMIX screen and return to the **shell**.

11 Contact the TSC (1 800 548-8861) to enter the fields required to complete the process of adding the switch to the database. This ***MUST*** be completed before you can gain access to the switch.

End of procedure

Step 2 — Initialize the Switch Database

Overview

Why?

- For Generic 2, System 85, and DIMENSION switches, initialization is done to populate the database with information that Monitor I gathers from Packet 1 in the switch, including the number, size, and type of your trunk groups. For G3i and G3r, Generic 1, and System 75, similar data is gathered from the List Measurement Trunk-Group screen. Additionally, the G3i and G3r switch also includes a second phase of initialization that obtains non-traffic data, including:
  - the trunk group names and trunk group access codes (tac)
  - the route patterns under study
  - an indication whether ISDN-PRI trunk groups are call-by-call (cbc) types
- To generate the Monitor I default study values and download them to the switch for Generic 2, System 85, and DIMENSION. (Downloading simply means that the data from Monitor I is transferred to the switch.) Downloading is not necessary for G3i and G3r, Generic 1, and System 75.

When?

- Before beginning to poll for the first time.
- When extensive changes are made to the telecommunications facilities, such as adding or removing a number of trunk groups.

Prerequisites

Before beginning initialization, make sure the switch is available for connection and that all users have logged off.

Notes

- The time required for this procedure varies with the size of the switch; it can take anywhere from 15 minutes to an hour or more.
- During initialization, the system prompts for the following information:

  CLEAR the existing customized service objectives .

  Answer *no* if you have previously entered service objectives, traffic table, severity or customized check flags manually (using the trunk group study editor) and wish to save them. See the "Administer Trunk Group Study" procedure in Chapter 6, "Setting Up Traffic Studies."
- During initialization, the system also asks:

  CLEAR the existing customized studies .

  Answer *no* if you have previously entered customized studies such as trunk group combinations or ARS patterns and wish to save them.

Caution

Do not attempt to bring up the poller ***or*** change the polling schedules before you have received mail informing you that initialization is complete.

Procedure

1 Enter the following menu selections from Monitor I's **Main Menu**:

Administrative Menu
└→ *Initialize Default Study*

2 Answer the series of questions on the screen.

- When the switch procedures have been sent to the switch, you will receive mail informing you that initialization is complete.

End of procedure

Step 3 — Activate the Polling Control Mechanism

Overview

Why?	To enable polling of all switches supported by Monitor I.
When?	When you begin using Monitor I.
What?	Switch polling can begin.
Notes	The Polling Control Mechanism is known internally as the **mtmguard**. This term may appear again as you continue working with Monitor I.

Procedure

1 Log in as *mtmadm.*

2 From the UNIX shell prompt, enter *pollstart* and press RETURN.

End of procedure

Step 4 — Schedule Monitor I Polling

Overview

Why?

Allows you to tell Monitor I how often to poll your switches, which packets you want polled, and which computer ports to use to gain access to switch data.

When?

- When you first set up Monitor I.
- Whenever you want to change the polling schedule.

Prerequisites

- Make sure that initialization has been completed and that the Polling Control Mechanism has been activated. To check, type the following at the prompt:

  ps -ef | grep mtmguard

- Be aware of any coresidency requirements (such as sharing dial-up ports) if Monitor I shares a computer with other applications.

Notes

- The amount of polling data retained by Monitor I is based on the disk storage option your company initially selected. Your option choice (extended, standard, or daily and limited polling) is permanently set up by AT&T services at installation time. Refer to "Table 2-1, Definity Monitor I Polling Options," in the *DEFINITY Monitor I Planning Manual* for further information about these storage options.
- Monitor I allows you to create as many databases as you have configured. With the Switch Rotation feature, you can activate a subset of your switches for polling and then deactivate them when polling completes. In this manner polling can be performed on all your switches. See the "Rotating Monitor I Switches" section in Chapter 8, "System Administration" for further details on the switch database and polling capacities of Monitor I.
- The default polling schedule provides for hourly collection of traffic data between 9:00 a.m and 5:00 p.m., Monday through Friday, for all switch releases.
- Generic 2, System 85, DIMENSION: Monitor I polls Packets 4, 5, 6 and 10 in your switch when you use the system defaults. See Appendix B, "Switch Traffic Data" for more information about packets.

  Generic 1 and System 75: Reports, not packets, are polled for these switches and the information is obtained from the SAT screens.

  G3i: The following new report selection fields have been added to the G3i poll screen:

  - Attendant's Group
  - Hunt Group
  - ARS Patterns
  - ISDN Call-by-Call
  - Security Violation
  - Occupancy Summary

Refer to Chapter 5, "Overview of the Monitor I Reports" and Appendix A, "Interpreting Monitor I Reports," for report details.

- Generic 2.2: Because AAR and ARS measurements have been replaced with World Class Routing (WCR) measurements, Packet 7 (formerly ARS data) has been overwritten with WCR data, and Packet 8 (formerly AAR data) has been eliminated.
  Generic 2.1 and System 85: AAR and ARS measurements continue to be supported for these releases.
- See Chapter 6, "Setting Up Traffic Studies" if you want to modify the default polling schedule.
- See Chapter 7, "Designing Custom Reports" if you want to customize the standard Monitor I reports.
- Run **Retrieve Non-Traffic Data** from the **Utilities Menu** if you want to populate the database with trunk group names, as well as AAR, ARS, and WCR* routing patterns and names.
- If your Monitor I system is scheduled for hourly polling, enter a *D* next to the packet description to produce a daily equivalent from the hourly data. However, keep in mind that not all packets can produce these daily equivalents.
- Some packets, such as AAR, ARS, or WCR* need to be administered first through the **Traffic Studies Menu** before relevant data can be collected.

* AAR and ARS patterns are used for Generic 2.1 and System 85 switches, while WCR patterns have replaced AAR and ARS in Generic 2.2.

Procedure

Note: The first screen that is displayed in this procedure applies to the Generic 2, System 85, and DIMENSION switches which poll packets. The screen for System 75, G3, and Generic 1 contains report selection fields instead of packet fields.

1 Enter the following menu selections from Monitor I's **Main Menu**:

Administrative Menu
└→ *Administer Polling Schedule*

System Response: The **Administrative Polling Schedule** screen appears.

2 Type *q* (for query) and then press ESC to populate the screen with the Monitor I default values. Screen 3-2 shows the default values filled in.

```
PERFORM: [Query]  Next  Previous  Add  Update  Remove  Table  Screen  ...
Searches the active database table.          ** 1:  tmpollsch table**
------------------------------------------------------------------------
                       ADMINISTER POLLING SCHEDULE          Screen  1 of 2
------------------------------------------------------------------------

                          Polling Activated ?  [N]
                       Database Initialized ?  Y

Polling Frequency
                                 Polling Days:  [MF]
                     Daily Or Hourly Polling:  [H]
                             Poll Start Hour:  [9]
                               Poll End Hour:  [17]

Packet Selection

Pkt 2              Load Balance:  [N]      9    Processor Occupancy:  [N]
    3            Carrier Usage:  [N]      10     Accumulated Values:  [N]
    4                      ACA:  [Y]      11                   DCIU:  [D]
    5       System Performance:  [D]      12                    CCG:  [N]
    6  Peak And Time Coincident:  [D]      13                    ACD:  [N]
    7                      WCR:  [N]
```

SCREEN 3-2
Administer Polling Schedule, Screen 1

Polling Activated? Enter *Y* to activate polling or *N* to deactivate polling.

Database Initialized? This field is automatically populated with a **Y** to indicate database initialization is in effect.

Polling Frequency?

- **Polling Days?**
  Enter *MF* for Monday to Sunday and *SS* for Saturday and Sunday.

- **Daily or Hourly Polling?**
  Enter type of polling. *H* =hourly and *D* =daily.
- **Poll Start Hour:**
  Enter the 1st hour of the poll, from 1 through 23.
- **Poll End Hour:**
  Enter the last hour of the poll, from 1 through 24. (This value should be greater than or equal to the start hour.)

Packets Enter one of the following selections for each report listed: (Enter report selections for System 75, Generic 1, and G3.)

- *Y* to poll the packet
- *N* to not poll the packet
- *D* to produce a daily poll equivalent

Note: Packets, 4, 5, 6, and 10 show a **Y** in their respective fields because they are the defaults. If you prefer not to poll these packets, change the field to *N*. When you are changing the schedule, you can skip this step if you are only using these default packets in your poll.

3 Press ESC to record any changes you made to the first screen of the polling schedule.

4 Press *s* to access the second **Administer Polling Schedule** screen. Screen 3-3 is a sample of this second screen.

Note: Specific instructions for changing the schedule and selecting additional packets for polling are included in the procedure, "Administer Polling Schedule" in Chapter 6, "Setting Up Traffic Studies."

```
PERFORM:  Query  Next  Previous  Add  Update  Remove  Table [Screen]  ...
Searches the next page of the form.            ** 1:  tmpollsch table**
------------------------------------------------------------------------
                        ADMINISTER POLLING SCHEDULE          Screen  2 of 2
------------------------------------------------------------------------

TMS Measurements

Pkt 6    Zero Mismatch Blockage: [ ]

Port Selection

                          Port 1: [ ]
                          Port 2: [ ]
                          Port 3: [ ]
                          Port 4: [ ]
                          Port 5: [ ]
                          Port 6: [ ]
```

SCREEN 3-3
Administer Polling Schedule, Screen 2

TMS Measurements

- **Pkt 6 Zero Mismatch Blockage:**

N is the default for this field. Enter *Y* to turn off the default so you can obtain the peg count for this field.

See: The Module Report (discussed in Chapter 5, "An Overview of the Monitor I Reports" and in Appendix A, "Interpreting Monitor I Reports") can provide you with peg counts as well as **mismatch blockage data**. Data for mismatch blockage data greater than zero and the associated peg count are always stored, however, **zero** mismatch data is not.

Note: The **Trunk Group Measurements** field for G3, Generic 1, and System 75 automatically defaults to **D** so that daily concatenation is done and daily equivalents are produced from the hourly polls.

Port Selection Enter the device names of the computer ports you are using to connect to the switch. Up to six ports can be connected.

See: "Share Dial-Up Ports" section in Chapter 8, "System Administration" for further details on ports.

5 Press ESC to store any changes you made to the schedule.

6 To exit this screen, type *e*.

See: "Administer Polling Schedule" in Chapter 6, "Setting Up Traffic Studies" for instructions on changing the polling schedule.

End of procedure

How to Stop Polling

Overview

Why? If you accidentally start an incorrect poll.

Notes If a poll is actually in progress when this command is entered, polling of the switch does not cease until that particular poll has been completed. This may take up to 10 minutes.

Procedure

1 Enter the following menu selections from the main menu:

Administrative Menu
→ *Administer Polling Schedule*

System Response: The **Administrative Polling Schedule** screen appears.

2 At the PERFORM screen, change the **Y** in the **Polling Activated?** field to *N*.

3 Press ESC to store your change.

4 To exit this screen, type *e*.

End of procedure

Producing Reports

Overview

- Reports provide an overview of the number and type of calls on your switch.
- Reports can be scheduled to run automatically on a regular basis, for example, hourly, daily, weekly, or even once a year.
- Reports can also be:
  - Displayed on your workstation/terminal screen
  - Sent to an adjunct or remote printer
  - Stored as files
  - Produced in graph form when transferred to a personal computer (PC)
- Reports can also be generated using Monitor I's study defaults (see Appendix B, "Switch Traffic Data").
- You can create additional, customized reports with Monitor I. The procedures in this section of the Guide, however, do not pertain to customized reports. For more information on customizing your own reports, refer to Chapter 7, "Designing Custom Reports."
- Reports can be scheduled to run overnight, during the weekend, or any other time when the system is not being heavily used. You can also schedule reports to run at the same time every week.

  Note: You need to use the UNIX **at** command to set up a single report entry in the short-term queue. Your System Administrator must use the UNIX **cron** command to set up a periodic report entry. Refer to Chapter 8, "System Administration" for further information on the UNIX **cron** utility.

Report Format

There are three types of reports, as listed in Table 4-1.

TABLE 4-1
Types of Reports

Format:	Contains:
All	All of the data collected for the specified time frame
Peak	Only peak measurements and their related time-coincident figures for the specified time frame
Total	An aggregate figure, or sum, for the specified date range

Output Units

Traffic usage on the reports can be expressed in two types of measurement, as shown in Table 4-2:

TABLE 4-2
Usage Measurements

Usage Measurement:	Equals:
Hundred Call Seconds (CCS)	100 seconds of usage
Erlangs	3,600 seconds or an hour of usage 1 Erlang equals 36 CCS

See Appendix B, "Switch Traffic Data" for more detailed information about usage measurements.

Ordering DEFINITY Monitor I Reports

Overview

Why? To study data collected from the switch by Monitor I.

When? To check for particular problems or trouble spots with your switch.

Notes

- The Trunk Group Summary Report is used as an example in the procedure below, but the steps for ordering all of the Monitor I Reports are very similar.
- To exit a report, type *e* when you see the following prompt: **Enter Destination** and then pressing RETURN. You can also exit the report at any time by hitting DEL.

Procedure

1 Log in to DEFINITY Monitor I and enter the name of the switch you wish to study.

2 At the **Main Menu** select:

- **Switch Summary Report** * if you want an overview of your switch.
- **Switch Performance Reports Menu** if you want to generate one of the more specific Monitor I reports.
- **Graphable Reports Menu** if you want to produce a report that you can download and graph.

A screen is displayed similar to the one shown below. (Remember, the Trunk Group Summary Report, accessed from the Switch Performance Reports Menu, is used here only as an example.)

```
                          TRUNK GROUP SUMMARY REPORT

                          Output Destination Choices

       t(erminal): Send the report to the TERMINAL
        p(rinter): Send the report to the PRINTER
           f(ile): Send the report to a FILE
s(hort-term Queue): Set up a schedule file for one time execution
 l(ong-term Queue): Set up a schedule file for periodic execution
 DEL key or e(xit): Exit from the report

Enter Destination:
```

* The Switch Summary Report is available for the G3i switch but ***not*** for the Generic 1.1 and System 75 switches.

3 Enter the appropriate responses to the prompts as they appear and press RETURN after each entry. If you enter an invalid response, the system displays a help message. Each system prompt is described below.

```
Enter Destination:
```

For the destination of the report output, enter your choice from the following list of valid choices.

- **t(erminal):** Enter *t* and press RETURN to send the report to your terminal. To page through reports displayed on your terminal, press RETURN at the colon (:). When you see the **(EOF):** , press RETURN twice to return to the main menu.
- **p(rinter):** Enter *p* to send the report to a printer. Use the UNIX **lp** command designation for the printer, or press RETURN to use the default printer.
- **f(ile):** Enter *f* to send the report to a file. Use a standard UNIX path name with the file name at the end, for example, **/usr/local/myreport**, where **myreport** is the file name, and **/usr/local** are its parent directories. If you specify only a file name, and not a path, the file is placed in your current directory. If you want, you can specify an environment variable name, for example, **$HOME/myreport**. Monitor I does the translation for you. The file name can be up to 14 characters for a UNIX file and 8 characters for a graphable report.
- **s(hort-term Queue):** Enter *s* to set up a short-term queue that holds the report to be executed later. To use this option, you need to use the UNIX command **at**. The system displays more information as you go through the procedure.
- **l(ong-term Queue):** Enter *l* to set up a long-term queue. Your System Administrator must set up a schedule in the UNIX **cron** utility if you want to use the long-term queue.

```
Enter Start Date (mm/dd/yy):
```

Enter the starting date for report, using the **mm/dd/yy** format, for example, *10/01/91*.

```
Enter End Date (mm/dd/yy):
```

Enter the ending date for the report, using the **mm/dd/yy** format.

```
Enter Start Hour (1-24 or <return> for daily):
```

Enter the starting hour for which you want data, or press RETURN to get data that is

concatenated to produce a daily total or that gives you the peak measurement for the entire day.* Monitor I's first Start Hour is 1 a.m., so use *1* if you want data collected between midnight and 1 a.m. To see data for 9 a.m. to 5 p.m., enter *10* as your start hour and *17* as your end hour.**

```
Enter End Hour (1-24):
```

If you specified a starting hour, you must specify an ending hour, following the example above. However, if you chose *daily*, this prompt is not displayed.

```
Enter Units (Erlangs or <return> for CCS):
```

To see the report measurements expressed in Erlangs, type *erlangs* at this prompt. Press RETURN for CCS units.

```
Enter (all or <return> for peak):
```

This prompt enables you to request a report showing either peak data only with related time-coincident information or all the data available for the specified time frame. Some reports, such as the Trunk Group Detail Report, can be ordered to show total data (that is, aggregate figures) for the specified time frame.

4 Depending on the report you are ordering, you may be asked for other information, such as a trunk group name, trunk group include list, trunk group number or attendant number. Enter the appropriate responses to these prompts. Your responses will depend on the type of information you want presented on your report.

If you ordered a report to be set up in the short- or long-term queue, you will receive additional information from the system here.

5 When the report is completed, follow the instructions on your screen to go back to your original menu.

End of procedure

* For more information on daily concatenation, see Chapter 8, "System Administration."

** Start Hour is called **Begin Time** and End Hour is called **End Time** on reports for G3i, Generic 1, and System 75. Also, G3i, Generic 1, and System 75 use the ***beginning*** of the poll hour for the Begin Time on the reports (in other words, a Begin Time of 9 means the hour between 9 a.m. and 10 a.m.), whereas Generic 2, System 85, and DIMENSION use the ***end*** of the poll hour (Start Hour of 9 means the hour between 8 a.m and 9 a.m.). When you order a report, however, specify the start and end times for ***all*** switches in the same manner.

Overview of the Monitor I Reports

This section contains overviews of all of the Monitor I reports. It is divided into two parts:

- Graphable Reports
- Switch Performance Reports, including the Switch Summary Report.

For samples of the reports and the associated field definitions, refer to Appendix A, "Interpreting Monitor I Reports".

Note: Not all reports are available for all switches; see Table 5-2 for a matrix of reports and switches offered by Monitor I. Keep in mind that a report that is common for all or most switches will emphasize the Generic 2 functionality; however, report features for another switch that are appreciably divergent from the Generic 2 sample are noted in the following overview.

Graphable Reports Overview

General

The Monitor I graphable reports are designed so that you can download their output to a Personal Computer (PC) spreadsheet program and display or print the data in graph form.* You can also view or print this data at your workstation. Once plotted in graph form, they offer traffic management and administration an actual picture of the network's traffic trends for a specified period of time.

Graphable reports provide an historical summary of different aspects of your traffic network. Your summary can specify time periods ranging from days of hourly polls to six weeks of daily polls for the short-term queue or up to two years, in some cases, for the long-term queue. All of the graphs that you create plot the report values versus time.

Sending Data to a File

Monitor I formats each graphable report sent to a file in two ways, as discussed below.

WK1 Extension

The first format has a .WK1 extension after the file name (for example, *filename.WK1*). It is written in binary code and is compatible with LOTUS 1-2-3®. The .WK1 file is formatted in Monitor I so that each field of data adjusts to an individual cell in the spreadsheet program. This enables you to more easily plot graphs using the spreadsheet program's menus. If you want to develop your own macro package for these reports, consult the documentation for the spreadsheet program you are using.

CSV Extension

Monitor I gives the second format a .CSV extension and produces an ASCII file, which can be used with any LOTUS-compatible or noncompatible spreadsheet program. Transfer the Monitor I data to your PC using a communications package such as the Corporate Microsystems, Inc. MLINK© Data Communications System Terminal Emulator program, or the Communications Research Group BLAST® program. MLINK will run on a 3B2/600 and BLAST will run on both the 3B2 and the 6386. Ask your Customer Service Representative for more information regarding the purchase of MLINK, BLAST, or other UNIX-to-PC file transfer packages.

After you transfer the .CSV file to your PC you have to import it into your spreadsheet program

* You can then create graphs by either using the spreadsheet program's menus or by developing specific macros to plot the data.

since, unlike the .WK1 file, it is not automatically generated in a spreadsheet format. To create a graph from this .CSV file you have to separate the data fields into individual cells. Then, format the file appropriately for the particular kind of graph you want to create, either through menus or with macros. Because of the number of steps involved, the .CSV file is useful if you do not have a LOTUS-compatible spreadsheet package or if you want to send it to a printer.

Types of Graphable Reports

The Graphable Reports Menu allows you to access four report submenus.* From these submenus, you can generate up to 20 different graphable reports. The four graphable submenus are:

- Attendant Reports

  There are seven attendant reports that can be generated on demand or on a scheduled basis. You can get information on a specific attendant or, by requesting one of the "total" reports, on all of the attendants in your company. You can compare attendant **worked** usage to attendant **attended** usage. That is, you can see the difference between how much time the attendant is actually plugged in to receive calls (attended usage) and how many calls are actually answered (worked usage). These reports draw on data from Packet 6.

- Module Reports

  The six module reports draw on data from Packet 6. The TSI (Time Slot Interchanger) reports enable you to plot TSI peg counts, blockages, and usage against the specified time frame. You can plot peg counts, usage and blockages against time for the TMS (Time-Multiplexed Switch, available for Generic 2 only) using the remaining three reports.

  Note: Module reports are only applicable to Generic 2 and System 85 switches.

- Processor Occupancy Reports

  The Processor Occupancy Report measures how much processor time is being used during the specified period. The graph you create with this report shows the call processor occupancy plotted against this specified time frame. The Long Term Processor Occupancy report gives you peak processor occupancy per day for up to two weeks.

- Trunk Group Reports

  The Trunk Group Reports allow you to graph usage and peg count data for the specified period of time. The Long Term reports will give you data for up to two years. The Trunk Group Recommended Size Report tells you the number of trunks you should have to meet your desired Grade of Service (GOS). The GOS is further explained in the **Trunk Group Detail Report**, in this section.

Table 5-1 shows which graphable reports are available for each switch type.

* Only the Trunk Group Reports are available on G3i, Generic 1, and System 75 switches.

Graphable Reports

TABLE 5-1
Graphable Reports

Reports	Switch Type						
	G2.1 G2.2	Sys85 R2V4	Sys85 R2V3	Sys85 R2V2	DIM	G3r G3i	G1.1 & Sys 75
Attendant Attended Usage	●	●	●	●	●		
Attendant Worked Peg Count	●	●	●	●	●		
Attendant Worked Usage	●	●	●	●	●		
Long Term Processor Occupancy	●	●	●	●	●	●	
Long Term Trunk Group Usage	●	●	●	●	●	●	●
Long Term Trunk Group Peg Count	●	●	●	●	●	●	●
Processor Occupancy	●	●	●	●	●	●	
TMS Blockages Module	●	●	●	●			
TMS Peg Count Module	●	●	●	●			
TMS Usage Module	●	●	●	●			
TSI Blockages Module	●	●	●	●			
TSI Peg Count Module	●	●	●	●			
TSI Usage Module	●	●	●	●			
Total Attendant Attended Usage	●	●	●	●	●		
Total Attendant Incoming Abandoned	●	●	●	●	●	●	
Total Attendant Worked Peg Count	●	●	●	●	●	●	
Total Attendant Worked Usage	●	●	●	●	●	●	
Trunk Group Peg Count	●	●	●	●	●	●	●
Trunk Group Recommended Size	●	●	●	●			
Trunk Group Usage	●	●	●	●	●	●	●

Switch Performance Reports Overviews

General

The remainder of the reports covered in this section provide data on the following:

- Trunk group activity

  Note: Information on trunk groups is a concern of traffic managers and those responsible for the smooth flow of calls through an Automatic Call Distribution (ACD) system.

- Attendants
- Call coverage
- Processor occupancy
- Facilities

For Peak Field details, specific report samples and explanations of report fields, see Appendix A, "Interpreting Monitor I Reports."

Table 5-2 shows which performance reports are available for each switch type.

Switch Performance Reports

TABLE 5-2
Switch Performance Reports

Reports	Switch Type							
	G2.2	G2.1	Sys85 R2V4	Sys85 R2V3	Sys85 R2V2	DIM	G3r G3i	G1.1 & Sys75
AAR		●	●	●	●	●		
ACD	●	●	●	●				
ARS		●	●	●	●	●	●	
Attendant Measurement	●	●	●	●	●	●	●	
Call Coverage	●	●	●	●	●			
Carrier Usage Detail	●	●	●	●	●	●		
Carrier Usage Summary	●	●	●	●	●	●		
Data Storage	●	●	●	●	●	●	●	
Hunt Group							●	
Include List	●	●	●	●	●	●	●	●
ISDN PRI Call-by-Call							●	
ISDN PRI D-Channel	●	●						
ISDN PRI Trunk Group Association	●	●						
Lightly Used Trunk							●†	●*
Load Balance	●	●	●	●	●	●		
Long Term Trending	●	●	●	●	●	●	●	●
Module	●	●	●	●	●			
Outage Trunk								●*
Poll Status	●	●	●	●	●	●	●	●
Processor Occupancy	●	●	●	●	●	●	●	
Recent ACA Referrals	●	●	●	●	●	●		
Security Violation							●	
Switch Summary	●	●	●	●	●	●	●	
System Security	●	●	●	●	●	●		
Trunk Group Detail	●	●	●	●	●	●	●	●
Trunk Group Summary	●	●	●	●	●	●	●	●
Trunk Group Violation							●	●
UCD					●			
WCR	●							

† Available for G3i only.

* Not available for System 75 R1V1.

AAR (Automatic Alternate Routing) Report (Generic 2.1, System 85, DIMENSION)

Why? To tell you if your cost-saving routing plans are functioning as intended.

What? AAR carries calls between two points in a private network. Each AAR pattern lists trunk groups in order of preferred use.

Notes

- Every switch contains a prescribed number of available traffic patterns, and each pattern has a certain amount of preference routes associated with it.

  Generic 2.1 and **System 85** have 30 traffic patterns and 16 preference routes for each pattern.

  DIMENSION FP8 3.8 has 24 patterns and 16 preferences for each pattern.

  DIMENSION FP8 1.16 has 24 patterns and 4 preferences for each pattern. If the primary preference in a pattern is unavailable, the system searches the alternate preferences until it finds an available one. Each preference route is associated with a trunk group.

- An AAR Report cannot be generated with the Monitor I default study packets. You must set up special studies for these reports using Packet 8. See Chapter 6, "Setting Up Traffic Studies."

TABLE 5-3
AAR Report Profile

Switch:	G2.1*, Sys 85 R2V2-R2V4, DIM
Data Source:	Packet 8
Output Units:	Peg Count
Format:	Peak, All
Peak Field:	Offer Peg (Total calls offered to the pattern)

See Appendix A, "Interpreting Monitor I Reports" for a sample **AAR Report** (Generic 2.1) and field definitions.

* For Generic 2.2, see the WCR Report.

ACD (Automatic Call Distribution) Report (Generic 2 System 85)

Why?

- To provide a picture of the way each group of ACD agents is handling incoming calls.
- To determine the volume and source of both internal and external calls to the group.

When? When you want to check whether agents are processing calls efficiently and/or if callers waiting in queue are hanging up in frustration.

What? The report has up to five sections, depending on your type of switch and the release, as shown in Table 5-4.

TABLE 5-4
ACD Report Availability

Report Section	G2.2	G2.1	Sys85 R2V4	Sys85 R2V3	Sys85 R2V2
ACD Usage	•	•	•	•	•
ACD Group Call Flow	•	•			
ACD Call Redirection	•	•	•		
ACD Call Vectoring - Call Vectoring Information	•	•	•		
ACD Call Vectoring - Vector Direction Number Information	•	•			
ACD Agent	•	•	•	•	•

Notes

TABLE 5-5
ACD Report Profile

Switch:	G2, R2V2-V4
Data Source:	Packets 1,6 and 13
Output Units:	CCS, Erlangs
Format:	Peak, All
Peak Field:	*

For System 85 R2V2, this report is called the **UCD**, or **Uniform Call Distribution** report.

See Appendix A, "Interpreting Monitor I Reports" for a sample **ACD Report** (Generic 2.2) and field definitions.

ARS (Automatic Route Selection) Report (Generic 2.1, System 85, DIMENSION, G3i and G3r)

Why? To tell you if your cost-saving routing plans are functioning as intended.

What? Automatic Route Selection (ARS) patterns ensure that calls from the private network are routed to the public network in the most cost-efficient way. Each ARS pattern lists trunk groups in order of preferred use, based on the cost of the calls carried in that preference. The first preference is always the least expensive route between two points, and the next preference is the next least expensive route, etc. Use of the more costly routes is restricted by the network or Switch Administrator through Facility Restriction Levels (FRLs). FRLs are route restriction levels based on users' work-related needs to place certain types of calls. Lowering the FRL on one pattern can sometimes result in more efficient use of your system.

Notes

- The switch routes the call over the first available, least expensive preselected trunk facility using your company's specified sequence of routes.

  Generic 2.1 and **System 85** have a maximum of 30 patterns available, each with 3 time-of-day plans and 16 route (or associated trunk group) preferences.

  DIMENSION FP8 3.8 has a maximum of six patterns available, each with 3 time-of-day plans and 16 route (or associated trunk group) preferences.

  DIMENSION FP8 1.16 has a maximum of six patterns available, each with 3 time-of-day plans and 10 route (or associated trunk group) preferences.

- An ARS Report cannot be generated with the Monitor I default study packets. You must set up special studies for these reports using Packet 7. See Chapter 6, "Setting Up Traffic Studies."

- The ARS Report is also available for the G3i and G3r switch; this report provides traffic data for ARS patterns as a whole as well as details on how traffic is distributed on individual trunk groups in each pattern. Up to 254 patterns are available and each pattern can contain a maximum of six trunk groups. A maximum of 20 patterns can be measured at a time.

* The peak field for ACD depends on which report section you are looking at. See "Peak Fields for Monitor I Reports" in Appendix A, "Interpreting Monitor I Reports" for more details.

TABLE 5-6
ARS Report Profile

Switch:	G2.1*, Sys 85, DIM	G3i, G3r
Data Source:	Packet 7	list measurements route-pattern (last hour/yesterday)
Output Units:	Peg Count	Call Count
Format:	Peak, All	Peak, All
Peak Field:	Offer Peg	Calls Offrd (***if*** a peak report)

See Appendix A, "Interpreting Monitor I Reports" for sample **ARS Reports** and field definitions.

* For Generic 2.2, Packet 7 now contains World Class Routing measurements. See the WCR Report at the end of this chapter.

Attendant Measurement Report

Why?

To obtain more information on attendant console activity than is offered in the daily Switch Summary Report. This report gives you information that helps manage the attendant group(s) efficiently. It also helps you to answer the following questions about each attendant's performance.

- Are incoming calls receiving prompt attention?

  Average Delay, or Average Speed of Answer, provides the information in the Switch Summary Report when that question is asked. If the Average Delay exceeds 15 seconds, you probably want to know the reason. The Attendant Measurement Report tells you how many attendants were available at the time and what call load they handled.

- How long do incoming calls wait in queue to reach the attendant?

  In the Switch Summary Report, that measurement is referred to as the Average Delay of Delayed Calls. Are callers hanging up before the attendants reach them? Here, again, the Attendant Measurement Report can point to reasons why callers are being kept waiting.

- How much time do attendants spend in handling a call? Do you need more attendants at certain periods?

The Attendant Measurement Report shows you alternative staffing requirements, that is, what the average waiting period would be if you added or subtracted attendants from your staff.

When?

On demand or on a scheduled basis. Some traffic managers run weekly Attendant Measurement Reports as part of their normal routine. Others run the report less frequently but on a regular basis. Still others run it only when they are aware of problems concerning attendant service. They can learn of problems by monitoring the Switch Summary Report or directly from users.

What?

The Attendant Measurement Report is drawn from Packet 6, a default packet. The report contains four sections:

- **Summary**
  A summary on traffic coming to your attendants that includes:
  - Total amount of time in Centum Call Seconds (CCS) that a console was available (attended usage)
  - Average time spent on each call
  - Number of calls placed in queue
  - Number of incoming calls abandoned in queue by callers
  - CCS for all calls entering the attendants' queue
  - Number of calls handled
  - Usage for all active consoles (worked usage)

- **Force Management Alternatives**
  Provides automatic calculations on the average call delays and queue waiting periods. This data is expressed in seconds. It also gives you the percentages of delayed calls with your present staffing level and what you would experience with reduced staffing and with augmented staffing.
- **Attendant Statistics**
  Provides data on individual attendant consoles including:
  - time each attendant was available to handle calls
  - time each attendant actually spent on calls
  - number of calls handled
  - average number of seconds spent in handling each call
- **Centralized Attendant Service Measurements**
  Is the last section of the report, which provides data for branch activity and the attendants at the main location. If there is no Centralized Attendant Service Measurement data, the following message is displayed on this report:

  No Data Available

Notes The report version for G3i and G3r contains the Summary, Force Management Alternatives, and Delay Statistics sections only.

TABLE 5-7
Attendant Report Profile

Switch:	G2, Sys 85, DIM	G3i, G3r
Data Source:	Packet 6	list measurement attendant-group
Output Units:	CCS, Erlangs, Seconds	CCS, Erlangs, Seconds
Format:	Peak, All	Peak, All
Peak Field:	Worked Usage	Time Talk (***if*** a peak report)

See Appendix A, "Interpreting Monitor I Reports" for sample **Attendant Measurement Reports** and field definitions.

Call Coverage Report (Generic 2, System 85)

Why? To show what happens to unanswered incoming calls when these calls are sent to coverage, to a message center, or to Audio Information Exchange (AUDIX®).

When? Often at the request of management and sales departments.

What? This report contains two parts:

- data on each coverage group or answering point
- information on the handling of both internal and external calls.

The report shows if you have enough coverage points for the volume of calls that come into your system. If you have four call coverage groups, for example, that are not able to handle most calls going to coverage, perhaps you need additional groups.

Notes The Call Coverage Report cannot be generated with the DEFINITY Monitor I study defaults. Follow the procedure described in Chapter 6, "Setting Up Traffic Studies" for setting up Call Coverage studies.

TABLE 5-8
Call Coverage Report Profile

Switch:	G2, Sys 85
Data Source:	Packet 12
Output Units:	Peg
Format:	Peak, All, Total
Peak Field:	Total Offer Group

See Appendix A, "Interpreting Monitor I Reports" for a sample **Call Coverage Report** and field definitions.

Carrier Usage Detail Report (Generic 2, System 85, DIMENSION)

Why? To show the usage per circuit within the carrier you are studying.

When? When you want to study busy patterns within a single module.

Notes

TABLE 5-9
Carrier Usage Detail Report Profile

Switch:	G2, Sys 85, DIM
Data Source:	Packet 3*
Output Units:	CCS
Format:	Peak, All
Peak Field:	Total Port Usage (G2, Sys 85) Port Usage (DIM)

See Appendix A, "Interpreting Monitor I Reports" for a sample **Carrier Usage Detail Report** and field definitions.

* Packet 3 does not provide peak hour data if you are doing daily polling, that is, there is no daily concatenation of hourly data.

Carrier Usage Summary Report (Generic 2, System 85, DIMENSION)

Why? To show the total usage and usage per half carrier within the carrier you are studying.

When? When you want to study busy patterns within a single module.

Notes

TABLE 5-10
Carrier Usage Summary Report Profile

Switch:	G2, Sys 85, DIM
Data Source:	Packet 3*
Output Units:	CCS, Erlangs
Format:	Peak, All
Peak Field:	Total Usage

See Appendix A, "Interpreting Monitor I Reports" for a sample **Carrier Usage Summary Report** and field definitions.

* Packet 3 does not provide peak hour data if you are doing daily polling, that is, there is no daily concatenation of hourly data.

Data Storage Report

Why? To show which traffic data packets were polled for a particular switch at a particular time.

When? You want to check if the appropriate packets have been polled.

Notes

TABLE 5-11
Data Storage Report Profile

Switch:	G2, Sys 85, DIM	G3i, G3r
Data Source:	TPdatastor file	TPdatastor file
Output Units:	None	None
Format:	Matrix of ***packets*** polled	Matrix of ***reports*** polled
Peak Field:	Not applicable	Not applicable

See Appendix A, "Interpreting Monitor I Reports" for sample **Data Storage Reports** and field definitions.

Hunt Group Report (G3i and G3r)

Why? To determine how effectively incoming calls that are to terminate to the most idle hunt group are being handled.

What? The Hunt Group Report provides the means to monitor Direct Department Calling (DDC) and Uniform Call Distribution (UCD).

When? You need to check the efficiency of how a hunt group is working.

Notes

TABLE 5-12
Hunt Group Report Profile

Switch:	G3i, G3r
Data Source:	list measurements hunt-group (last hour/yesterday)
Output Units:	CCS or Erlangs
Format:	All and Peak
Peak Field:	Total Usage (if a peak report)

See Appendix A, "Interpreting Monitor I Reports" for a sample **Hunt Group Report** and field definitions.

Include List Report

Why?

To find out what predefined include lists exist in the Monitor I database. These include lists are used in the Trunk Group Summary and Trunk Group Detail Reports, and the System 75 Lightly Used Trunk Report and Outage Trunk Report.

When?

When you want to determine which include lists have been predefined in the Monitor I database.

Notes

TABLE 5-13
Include List Report Profile

Switch:	All
Data Source:	TMinclude file
Output Units:	N/A
Format:	N/A
Peak Field:	N/A

See

Appendix A, "Interpreting Monitor I Reports" for a sample **Include List Report** and field definitions.

ISDN Reports (Generic 2)

Why?

- To check the traffic on your trunk groups associated with ISDN Primary Rate Interface (PRI) B-Channels.
- To check the transmitted and received connections on the ISDN Primary Rate Interface (PRI) D-Channels.

What?

Monitor I provides two reports on the ISDN-PRI: the ISDN-PRI Trunk Group Association Report covers trunk groups associated with B-Channels, and the other provides information on D-Channels.

Notes

Integrated Services Digital Network (ISDN) is an international digital network architecture that provides a growing variety of services. Today, it offers signaling, voice, and data capabilities while serving as an access interface. It will eventually provide ***one-plug access*** to many business and consumer services.

ISDN uses B- and D-Channels. B-Channels carry voice and data, while D-channels make the connection and carry signaling information. In order to run the PRI Trunk Group Association Report, you must first set up studies for that area (see Chapter 6, "Setting Up Traffic Studies.") However, special studies are not required for the ISDN-PRI D-Channel Measurement Report.

TABLE 5-14
ISDN Reports (Generic 2) Profile

Switch:	G2
Data Source:	Packet 6
Output Units:	CCS, Erlangs
Format:	Peak, All*
Peak Field:	Total Usage

See

Appendix A, "Interpreting Monitor I Reports" for a sample **ISDN-PRI Trunk Group Association Report** and **ISDN-PRI D-Channel Measurement Report** and and their field definitions.

* The **All** option is ***only*** available for the ISDN PRI Trunk Group Association Report.

ISDN-PRI Call-by-Call Report (G3r, G3i)

Why?

To check the traffic on your ISDN Primary Rate Interface (PRI) trunk groups that have Call-by-Call (CBC) service selection.

What?

The ISDN-PRI CBC Report provides basic last-hour traffic measurements for the trunk group that has Usage Allocation Plan (UAP) administered for the measurement hour.

Notes

The Call-by-Call selection allows a single trunk group to handle calls for a variety of services and facilities. The traffic measurement provides the data to determine sizing for CBC trunk groups and partitioning of the trunk group for the service and features.

This report contains two sections: traffic measurements on the ISDN-PRI trunk group itself and traffic measurements on the service, feature, or facility selected by the trunk group.

TABLE 5-15
ISDN Call-by-Call Report Profile

Switch:	G3i, G3r
Data Source:	list measurements cbc-trunk group (last hour)
Output Units:	CCS or Erlangs
Format:	Peak, All
Peak Field:	Total Usage

See

Appendix A, "Interpreting Monitor I Reports" for a sample **ISDN Call-by Call Report** and field definitions.

Lightly Used Trunk Report (G3i, Generic 1 and System 75)

Why? To list the trunks with the lowest number of calls carried for each trunk group.

When? When you need to know which trunk is used the least.

What? This report contains the total number of occurrences of a trunk being lightly used and the total number of calls carried for each lightly used trunk in the trunk group.

Notes This report is available only for G3i, Generic 1 and System 75 R1V2 through R1V3.

TABLE 5-16
Lightly Used Trunk Report Profile

Switch:	G3i, G1 and Sys 75 R1V2-V3
Data Source:	list measurements lightly-used-trunk (yesterday or last hour)
Output Units:	Peg Count
Format:	Total
Peak Field:	Not applicable

See Appendix A, "Interpreting Monitor I Reports" for a sample **Lightly Used Trunk Report** and field definitions.

Load Balance Report (Generic 2, System 85, DIMENSION)

Why? To check the traffic volume across modules.

When? When you want to ensure that the traffic volume within and between modules is balanced.

What? Load balance measurements reflect activity both within a single module and between specified modules. These measurements are designed to be used to balance traffic volume across all modules and minimize intermodule call volume.

Notes Calculations for the average busy bouncing hour (ABBH) are done for the daily report, but not for hourly reports.

TABLE 5-17
Load Balance Report Profile

Switch:	G2, Sys 85, DIM
Data Source:	Packet 2
Output Units:	CCS, Erlangs
Format:	Peak, All
Peak Field:	Peak Total Usage Peak Inter Mod Usage

See Appendix A, "Interpreting Monitor I Reports" for a sample **Load Balance Report** and field definitions.

Long Term Trending Report

Why? To determine how well your trunks are handling the load during periods of heaviest traffic.

What? The Long Term Trending Report provides the following kinds of information about trunk groups based on data gathered for as long as two years.

- Peak and average usage during the period specified for the study.
- Amount of time during the peak period that trunks were out of service.
- Busiest hour, on average, for the trunk group during the study period. This is known as the Average Bouncing Busy Hour (ABBH). The ABBH is based on daily polling or daily concatenation of hourly polling. See Appendix C, "Monitor I Equations" for a list of equations used by Monitor I in making calculations.
- Number of trunks recommended for this trunk group based on the designated level or grade of service, or determined when the system was designed. Remember that these are only recommendations. You might want to consult the *AT&T Traffic Analysis Reference Binder* before you increase the number of trunks.

Notes Monitor I saves data on the peak busy hour and the ABBH each week for as long as two years. For example, if your system has been gathering traffic data for six months, 26 weeks of data is reflected in the report. You can choose to see only the **peaks of peaks**, that is, the busiest times stored for the long-term data, or you can ask for all the data available. The peak option provides recommendations on the number of trunks required to handle worst case situations. The **all** option lets you see the periods, or seasons, when your switch is the busiest. Plan to order the Long Term Trending Report at a time when Monitor I is not busy, after business hours during the week or over the weekend. Depending on the amount of data involved, it can take as long as an hour to generate this report.

TABLE 5-18
Long Term Trending Report Profile

Switch:	G2, Sys 85,	G3i, G3r
Data Source:	Packet 6	Mon I Trending Utility
Output Units:	CCS, Erlangs	CCS, Erlangs
Format:	Peak, All	Peak, All
Peak Field:	*	Peak Call Count for Switch Summary section, Peak Usage for Trunk Detail section.

See Appendix A, "Interpreting Monitor I Reports" for a sample **Long Term Trending Report** and field definitions.

* The summary section of the report peaks off the **Call Count** field when you order the peak option; the trunk group section peaks off **Trunk Group Usage**.

Module Report (Generic 2 and System 85)

Why? To provide measurements gathered within each module and between module pairs.

When? You need to report on activity within modules and/or between module pairs.

What?

TABLE 5-19
Module Report Availability Profile

	Measurements for Traditional Modules	Measurements for Universal Modules	Measurements for XE Modules	Intermodule Exceptions
Generic 2	•	•	•	•
System 85 R2V2-V4	•			•

- The **Measurements for Traditional Modules** section provides data on the Time Slot Interchanger (TSI). The TSI circuitry rearranges the order of time slots within a module so that up to 256 voice and data port-to-port connections can occur simultaneously.
- The **Measurements for Universal Modules** section deals with the Time Division Multiplexer (TDM). A TDM allows a number of different users to transmit information over the same facility by sharing the available time. (***Multiplexing*** simply means that several signals of the same frequency are combined and transmitted together as one higher frequency signal over a common path.)
- The **Measurements for XE Modules** section of the report provides data on XE modules for Generic 2. The XE module consists of a module processor carrier containing one or two module processors and up to three 18-slot port carriers.
- The **Intermodule Exceptions** section provides peg count and blockage information on the Time Multiplexed Switch (TMS), which switches voice or data messages between modules. This function is time shared on a per time-slot basis.

Notes When you request the Module Report, an extra prompt is displayed asking if you want **all** data or only **mismatch blockage data**. If you ask for mismatch blockage data, the report will provide only mismatch blockage data greater than zero. If you do not set the value in the **Pkt 6 Zero Mismatch Blockage** field to *Y*, you will not get an actual peg count but only data greater than zero.

TABLE 5-20
Module Report Profile

Switch:	G2, R2V2-V4
Data Source:	Packet 6
Output Units:	CCS, Erlangs
Format:	Peak, All
Peak Field:	*

See Appendix A, "Interpreting Monitor I Reports" for a sample **Module Report** and field definitions.

* The peak field for Module Blockage depends on which report section you are viewing. See "Peak Fields for Monitor I Reports" in Appendix A, "Interpreting Monitor I Reports" for more details.

Outage Trunk Report (G3i and G3r, Generic 1 and System 75)

Why? To list the trunks in each trunk group with the highest number of sampled outages* during the measurement period.

When? When you need to know which trunks were out of service for the specified time frame.

What? This report tells you which trunks were out of service when sampled as well as the number of times the trunk was out of service.

Notes The Outage Trunk Report is available only for G3i, G3r, Generic 1, and System 75 R1V2 through R1V3.

TABLE 5-21
Outage Report Profile

Switch:	G3i and G3r, G1 and Sys75 V2-V3
Data Source:	Screen; List Measurements Outage Trunk (yesterday or last hour)
Output Units:	Peg Count
Format:	All, Total
Peak Field:	Not applicable

See Appendix A, "Interpreting Monitor I Reports" for a sample **Outage Trunk Report** and field definitions.

* Sampled outages means trunks sampled for out-of-service condition.

Poll Status Report

Why?

- To show you how the polling is progressing.
- To provide feedback about impediments at the switch that may hinder the polling process.
- To show whether polls are succeeding, failing, or not polling.
- To provide clues about the reliability of the data you are gathering.

When?

- You want a listing of all hourly polls or only successful hourly polls.
- You want a listing of all daily polls or only successful daily polls.*

Notes

The data collected for this report may be affected by the following switch-related elements:

- Major alarms. (See Chapter 8, "System Administration" and Appendix F, "Information about Alarming.")
- Short hours, or periods of data collection in the switch that represent less than the full hour of polling.
- Major switch translations, which indicate that large blocks of traffic-sensitive equipment, such as trunks used in alternate routing, or modules, have been added, removed from the system, or reassigned.

TABLE 5-22
Poll Status Report Profile

Switch:	All
Data Source:	Packet 5
Output Units:	None
Format:	Indicates status of each poll
Peak Field:	Not applicable

See

Appendix A, "Interpreting Monitor I Reports" for a sample **Poll Status Report** and field definitions.

* The number of successful polls indicated on the cover page of the report does not include clear polls, that is, polls that do not have any data because the data has been cleared or discarded.

Processor Occupancy Report

Why?

To provide information on the processor's work load in two situations:

- during the time of peak call count (or, for System 85 R2V3 and R2V2, during the time of peak connection count)
- during the time when the processor is working the hardest.

Data in these two report columns is often the same, but sometimes it will differ. After providing the total occupancy rate, the report shows the percentage of time used in processing calls and the time devoted to system management. These two figures summed should equal the total occupancy percentage. The remaining unused processor capacity is shown; this figure, added to the total occupancy, should not exceed 85 percent for Generic 2 and R2V3-V4, 75 percent for System 85 R2V2, 70 percent for G3i and G3r, and 65 percent for DIMENSION.

When?

- You need to provide occupancy percentages for the switch processor.
- You need usage measurements and peg counts on various kinds of switch tasks.

What?

Processor Occupancy is the term used to describe the work load being carried by your switch's main processor. It is always expressed as a percentage of the time during an hour that the processor is busy, either handling calls or performing system management functions.

Notes

- Processor Occupancy is available for all switches except for all releases of System 75.
- Occupancy above the recommended rate can cause problems. This does not mean that occasional Processor Occupancy measurements at or above this rate are cause for immediate concern. It does mean, however, that you may want to monitor and then analyze Processor Occupancy data until you know the frequency and understand the causes of readings that approach or exceed the recommended rate.
- To see Processor Occupancy data in graph form, you can use the Processor Occupancy Graphable Reports discussed later in this section.

TABLE 5-23
Processor Occupancy Report Profile

Switch:	G2, Sys 85, DIM	G3i, G3r
Data Source:	Packets 5, 6	list measurements occupancy-summary
Output Units:	CCS, Erlangs	Occupancy in percentage, calls in peg counts
Format:	Peak	All and Peak
Peak Field:	Peak Call/Connection Count and Peak Processor Occupancy	Call Processing (CP) Occupancy

See Appendix A, "Interpreting Monitor I Reports" for sample **Processor Occupancy Reports** and field definitions.

Recent ACA (Automatic Circuit Assurance) Referrals Report (Generic 2, System 85, DIMENSION)

Why?

To help you and your attendants detect potential trunk problems early.

What?

The report provides information on the 32 most recent instances when an attendant was notified that a trunk serving a particular switch is handling calls of abnormally short or long duration. For example, callers experiencing poor transmission frequently hang up and dial again; this results in an abnormally short call. Extremely long calls can be caused by the failure of the trunk circuit to close after both parties to the call have hung up. The ACA feature detects these problems by comparing trunk holding times to standards established by the user.

Notes

TABLE 5-24
Recent ACA Referrals Report Profile

Switch:	G2, Sys 85, DIM
Data Source:	Packet 4
Output Units:	Peg Count
Format:	All
Peak Field:	Not applicable

See

Appendix A, "Interpreting Monitor I Reports" for a sample **Recent ACA Report** and field definitions.

Security Violation Report (G3i and G3r)

Why?

To determine if any invalid attempts were made to access the system.

What?

This report provides the following data:

- The number of invalid login attempts.
- The number of invalid barrier codes attempted when accessing the Remote Access feature.
- The time the security violations measurements were last cleared from the system.

Notes

The report monitors the following ports for invalid login attempts:

- EIA ports
- dial-up ports
- network control dial-up ports.

TABLE 5-25
Security Violation Report Profile

Switch:	G3i, G3r
Data Source:	list measurements security-violations
Output Units:	Peg Count
Format:	all
Peak Field:	Not applicable

See

Appendix A, "Interpreting Monitor I Reports" for a sample **Security Violation Report** and field definitions.

Switch Summary Report

Why?

- To give you a quick look at the performance of one switch in your telecommunications network.
- To summarize the state of the major traffic components on your switch.
- To point to potential trouble spots that may cause problems.

When?

Reports can be run daily or weekly, depending on traffic fluctuations on your switch.

Switches:?

G2, Sys 85, DIM, G3i, G3r:

Sections

Eight sections comprise this report:

1. Peak Processor Summary
2. Peak Module Information
3. Peak Attendant Information
4. Total Security Violations
5. Studies Currently Set Up
6. Total Poll Information
7. Peak Trunk Group Threshold Violations
8. Total Recent ACA Referrals for Trunk Groups

Notes

TABLE 5-26
Switch Summary Report Profile

Switch	G2, Sys 85, DIM	G3i, G3r
Data Source:	Packets 4,5,6 and 10	list measurement occupancy summary
Output Units:	CCS, Erlangs	Occupancy in percentage, calls in peg counts
Format:	Peak	Peak

See

Appendix A, "Interpreting Monitor I Reports" for sample **Switch Summary Reports** and field definitions.

System Security Report (Generic 2, System 85, DIMENSION)

Why? To summarize activity that may indicate a breach of security at the switch.

What? This report provides important information data about:

- Mode changes made by users while administering the switch.
- Remote access by users calling in from outside the switch (available for Generic 2 and System 85 R2V4 only).

Notes The report has five sections. When you order the Total Format, summations of peg counts over the entire reporting period are provided. When you order the Peak Format, peak peg counts with associated polling times are provided. The 10 most recent blockages of calls due to invalid speaker identification are also shown if your company has implemented the Speaker Verification Code feature on your Generic 2 or R2V4 switch. Your company determines the acceptable percentage of security violations on remote access trunks. If the percentage exceeds this level, you might want to inform your Security Department.

TABLE 5-27
System Security Report Profile

Switch:	G2, Sys 85, DIM
Data Source:	Packet 10
Output Units:	Peg Count
Format:	Peak, Total
Peak Field:	*

See Appendix A, "Interpreting Monitor I Reports" for a sample **System Security Report** and field definitions.

* The peak field for System Security depends on which report section you are looking at. See "Peak Fields for Monitor I Reports" in Appendix A, "Interpreting Monitor I Reports" for details.

Trunk Group Detail Report

Why?

To see more in-depth information about potential problem areas noted in the Switch Summary Report. To answer questions such as:

- How much of the traffic is voice-related and how much involves data?
- How much demand does each type of call make on your trunks?
- If you want to improve service, how many trunks should you add to this trunk group?

When?

You can get more valuable information from this report if you have entered additional data through the **Trunk Group Editor** screen described in Chapter 6, "Setting Up Traffic Studies." One area of interest to traffic engineers is Grade of Service (GOS). Your company, perhaps working in conjunction with a traffic engineer, has chosen various Grades of Service for its telecommunications network. That is, it has decided on levels of service that seem the most cost-effective for its business. You can set the GOS for various kinds of trunks, and there are three traffic tables to aid you in interpreting the data (Retrial, Erlang B and Erlang C).

Notes

An additional field, the Trunk Access Code (tac) has been added to the G3i and G3r version of this report.

TABLE 5-28
Trunk Group Detail Report Profile

Switch:	All
Data Source:	Packets 1 and 6
Output Units:	CCS, Erlangs
Format:	Peak, All
Peak Field:	Not applicable

See

Appendix A, "Interpreting Monitor I Reports" for a sample **Trunk Group Detail Report** and field definitions.

Trunk Group Summary Report

Why?

- To give the traffic manager an overall picture of how trunk groups are functioning in relation to each other.
- To let you know if some groups are carrying more of the switch traffic load than was intended, and if so, is it because other trunks have maintenance problems?

When?

You need to examine the overall health of the traffic on all trunk groups that terminate in the switch.

Notes

TABLE 5-29
Trunk Group Summary Report Profile

Switch:	All
Data Source:	Packets 1 and 6
Output Units:	CCS, Erlangs
Format:	Peak, All
Peak Field:	Not applicable

See

Appendix A, "Interpreting Monitor I Reports" for a sample **Trunk Group Summary Report** and field definitions.

Trunk Group Violation Report (G3r, G3i, Generic 1 and System 75)

Why? To determine what trunk groups have violated their designed Grade of Service (GOS).

When? If you have received mail informing you that some of your trunks have violated their GOS.

What? This report tells you the current number of trunks in each trunk group that has violated the designed GOS for the specified period. It also gives you a recommended minimum number of trunks for each trunk group in violation to meet your designed GOS.

Notes

TABLE 5-30
Trunk Group Violation Report Profile

Switch:	G3r, G3i, G1, Sys 75
Data Source:	list measurements trunk group (yesterday or last hour)
Output Units:	CCS, Erlangs
Format:	All
Peak Field:	Not applicable

See Appendix A, "Interpreting Monitor I Reports" for a sample **Trunk Group Violation Report** and field definitions.

UCD (Uniform Call Distribution) Report (System 85 R2V2)

Notes

The UCD (Uniform Call Distribution) Report is the System 85 R2V2 version of the ACD (Automatic Call Distribution) Report. Refer to the ACD Report overview at the beginning of this section for further information on this report.

See

Appendix A, "Interpreting Monitor I Reports" for a sample **UCD Reports** and field definitions.

WCR (World Class Routing) Report (Generic 2.2)

Why? To tell you if your cost-saving routing plans are functioning as intended.

What? World Class Routing patterns ensure that calls from both the public and private network are routed through the public network in the most cost-efficient way. Each WCR pattern lists trunk groups in order of preferred use, based on the cost of the calls carried in that preference. The first preference is always the least expensive route between two points, and the next preference is the next least expensive route, etc. Use of the more costly routes is restricted by the network or Switch Administrator through Facility Restriction Levels (FRLs). FRLs are route restriction levels based on users' work-related needs to place certain types of calls. Lowering the FRL on one pattern can sometimes result in more efficient use of your system.

Notes

- WCR replaces both AAR and ARS measurements in Generic 2.1, System 85, and DIMENSION. Packet 7 now contains the WCR data which formerly included data for ARS. Packet 8, which contained AAR data, is no longer functional for Generic 2.2.
- A maximum of 63 patterns are available for WCR.
- A WCR Report cannot be generated with the Monitor I default study packets. You must set up special studies for these reports using Packet 7. See Chapter 6, "Setting Up Traffic Studies."
- WCR uses eight networks. Networks 1 through 7 for routing. In addition, Network 1 has separate toll and toll-free Dial Access codes. Network 0 is not used for routing, rather it is a special network that provides an interface for the Internal Dialing Plan.

TABLE 5-31
WCR Report Profile

Switch:	G2.2
Data Source:	Packet 7
Output Units:	Peg Count
Format:	Peak, All
Peak Field:	Offer Peg

See Appendix A, "Interpreting Monitor I Reports" for a sample **WCR Report** and field definitions.

Setting Up Traffic Studies

Many Monitor I reports can be produced with the system's default study and polling parameters. However, to produce the remainder of the standard reports or to have additional information included on your reports, you need to do one or more of the following:

- Designate different or additional packets to be polled using the Poll Schedule Record (Administer Polling Schedule on the Monitor I menus).
- Set up one or more of the following traffic studies for reports that cannot be produced using the Monitor I defaults.
  - AAR (Generic 2.1, System 85, and DIMENSION)
  - ARS (Generic 2.1, System 85, and DIMENSION)
  - Call Coverage
  - Carrier Usage
  - Integrated Services Digital Network (ISDN) trunk group associations *
  - Load Balance
  - Vector Directory Numbers (VDN) used to process incoming calls to ACD groups *
  - World Class Routing (WCR) (Generic 2.2 only)

This section explains how to set up and run these special reports.

* ISDN and VDN information is available for Generic 2 switches only.

AAR, ARS and Call Coverage Studies (Generic 2.1, System 85 and DIMENSION)

Overview

Why? To determine how well your system is routing calls, for example, whether calls are being handled in the most efficient and cost-effective way.

Notes

- The PERFORM screens used to enter information about call routing and call coverage facilities are split vertically. The left side (PENDING STUDIES) is used to add, update, or remove patterns and groups; this data is stored in a pending file until downloaded (transferred) to the switch. The right side of the screen (CURRENT STUDIES) reveals the patterns or groups that are stored by the switch already. See the information on the **INFORMIX PERFORM Screens** in Chapter 2, "Introduction To Monitor I" for details.
- To print trunk group names on the AAR and ARS reports, run the **Non-Traffic Data Retrieve** from the **Utilities Menu** (Generic 2.1 and System 85 only).
- For Generic 2.2, AAR and ARS are incorporated into WCR. See "WCR, Call Coverage Studies" at the end of this chapter.

Procedure

1 From the **Traffic Studies Menu**, select one of the following:

- **Administer AAR Study**
- **Administer ARS Study**
- **Administer Call Coverage Study**

2 Choose *a* from the menu to **add** the pending study.

3 Enter *a* in the Action field.

4 Enter the number of the AAR or ARS pattern or Call Coverage Group you are adding in the Pattern Number field.

5 Press ESC to add the new data to the pending file.

6 Repeat Steps 1 through 5 until all AAR patterns, ARS patterns, or Call Coverage Groups have been added.

7 Remember to download the studies to the switch, using the procedure for **Download Studies** at the end of this section.

8 To cancel an AAR or ARS study, remove all the patterns. To remove a current or pending study, refer to "How to Remove a Pending Study" at the end of this section.

End of procedure

Carrier Usage Study

Why? To study busy patterns within a single module. You can study up to two modules.

Who? Switch Administrator

Notes

- The Carrier Usage Study does some limited on-line validation, that is, if you enter incorrect data for certain fields, the system prompts you with acceptable alternatives.
- If incorrect data was entered in those fields that do not have immediate validation, the following message is displayed when you try to download again: **study failed.** If this happens, check the **mtmlog** for more information.
- You must repopulate the carrier usage section of the database in order to prevent mismatching data by selecting *Retrieve Configuration Data* from the **Traffic Studies Menu**.
- The data for the Carrier Usage Study is contained in Packet 3. (Refer to Appendix B, "Switch Traffic Data" for more information about packets.)

Procedure

1 Enter the following menu selections from Monitor I's **Main Menu**:

Traffic Studies Menu
↳ *Administer Carrier Usage Study*

2 Choose *a* from the menu to **add** the pending study.

3 Enter the module number you want to study.

4 Enter the Cabinet, Carrier, and Slot you want to study and press ESC to store the data.

- Each prompt for **Slot** corresponds to the following four physical slots on a traditional carrier:

  Slot encode 0 = Quarter carrier 1 (slots 0 through 03)
  Slot encode 1 = Quarter carrier 2 (slots 5 through 8)
  Slot encode 2 = Quarter carrier 3 (slots 13 through 16)
  Slot encode 3 = Quarter carrier 4 (slots 18 through 21)

  If the specified module is a universal or XE module, the traffic studies are made on a slot basis (0 through 20 for universal, 0 through 18 for XE).

5 Remember to download the studies to the switch using the "Download Studies" procedure described later in this section.

6 Select the *Retrieve Configuration Data* option from the **Traffic Studies Menu** to repopulate the carrier usage section of the database.

7 Set the **Carrier Usage** field (Packet 3) on the **Poll Schedule Record** to *y* or *d* (for daily concatenation). If this field contains an **n**, you do not get carrier usage data on any report you try to customize.

End of procedure

ISDN Association Studies (Generic 2)

Why? To study the trunk groups with ISDN associations for a Generic 2 switch.

Notes For information on the Network Service Number and the Customer Identification Code (CIC), see the *Feature Translation Service Manual*, Proc 279.

Procedure

1 Enter the following menu selections from Monitor I's **Main Menu**:

Traffic Studies Menu
↳ *Administer ISDN Association Study*

2 Choose *a* from the menu to **add** the pending study.

3 Enter *a* in the **Action** field.

4 Enter the ISDN Association Number and the Network Service Number.

5 Enter the trunk group ID number.

6 Enter the CIC Encode.

7 Press ESC to add the new data to the pending file.

8 Repeat Steps 2 through 7 until ***all*** ISDN associations to be studied have been added.

9 Remember to download the studies to the switch, using the procedure, "Download Studies" described later in this section.

End of procedure

Load Balance Study

Why? To balance traffic volume across all modules and to minimize the intermodule (least efficient) call volume.

Who? System Administrator

Notes

- The Load Balance Study does some limited on-line validation, that is, if you enter incorrect data for certain fields, the system prompts you with acceptable alternatives.
- If incorrect data was entered to those fields that do not have immediate validation, then the following message is displayed when you try to download again: **study failed** . If this happens, check the **mtmlog** for further information.

Procedure

1 Enter the following menu selections from Monitor I's **Main Menu**:

Traffic Studies Menu
↳ *Administer Load Balance Study*

2 Choose *a* from the menu to **add** the pending study.

3 Enter *y* in the **Load Balance Study Active?** field.

4 Enter the number of the trunk group you wish to study, or press RETURN to study all trunk groups.*

5 Press ESC to store the data.

6 Remember to download the pending studies to the switch using the procedure, "Download Studies" described later in this section.

7 Set the **Load Balance** field (Packet 2) on the **Poll Schedule Record** to *y* or *d* (for daily concatenation).

End of procedure

* For DIMENSION switches, you can choose to study only two specific trunk groups.

Module Blockage Study

Why? To provide traffic data on the modules that make up your switch.

Notes

- System 85 can contain up to 31 modules.
- If your Generic 2 switch contains more than 500 trunk groups, you may need to remove modules from the Monitor I database. This trunk group restriction relates to the maximum number of Peak and TCs allowed in the switch. For example, if these values exceed 4000 for Generic 2 or R2V4, it's preferable to remove a module before you remove trunk groups, since trunk groups yield more important traffic data. If your Peak and TC values surpass the amount allowed for your switch, the initialization of your database will fail. (See Chapter 3, "Implementing Monitor I.")

Procedure

1 Enter the following menu selections from Monitor I's **Main Menu**:

Traffic Studies Menu
↳ *Administer Module Blockage Study*

System Response:

```
Module to be Added/Removed:
```

2 Enter the number identifying the module, from 0 through 30.

3 Press ESC.

End of procedure

Polling Schedule

Why? To change the default polling schedule of hourly polling from 9 a.m. through 5 p.m., Monday through Friday.

Notes

- The default poll packets for Generic 2 and System 85 are 4, 5, 6, and 10. (See Appendix B, "Switch Traffic Data" for information on packets.)
- If you change your polling schedule, keep in mind the storage space you have available for traffic data. (See the *DEFINITY Monitor I Planning Manual* for more information.)

Procedure

1 Enter the following menu selections from Monitor I's **Main Menu**:

Administrative Menu
↳ *Administer Polling Schedule*

System Response: The **Administer Polling Schedule** screen is displayed. (See Chapter 3, "Getting Started with Monitor I.")

2 Type *q* (for query) and then press ESC to populate the screen with the Monitor I default values.

3 Type *u* to update the default values.

4 Modify the desired fields on this screen. (See the example below.)

5 Press ESC to save your changes.

End of procedure

Example

To change your polling schedule so that you are no longer using the defaults:

1 Access the **Administer Polling Schedule** screen as shown in the previous procedure. (See Chapter 7, "Designing Custom Reports" for more information.)

2 Type *q* and press ESC.

3 Type *u* to update the default values.

4 Change the **Polling Days** field from **MF** to *SS*.

5 Change the **Poll Start Hour** field from **9** to *8*.

6 Change the **Day or Hour Poll** field from **H** to *D*.

7 Enter a *Y* next to any additional packets/reports you want polled.

If Monitor I is doing hourly polling, but you wish to produce daily concatenation, enter *D* next to the packets you wish to be concatenated. For further information on daily concatenation, see Chapter 8, "System Administration."

8 Press ESC to save your changes.

End of procedure

Trunk Group Study

Why? To name a trunk group, to modify the description of a trunk group, or to add or remove trunk groups.

When? Any time you make minor adjustments to your trunk groups that do not require reinitialization, including adding or removing a trunk or trunk group or adding trunks to an existing trunk group. (After significant changes, you should reinitialize Monitor I. Refer to Chapter 3, "Implementing Monitor I.")

Who? Switch Administrator

Notes

- If you wish to identify a trunk group in a particular way (for example, by location, function, or name):
  - Run the *Retrieve Non-Traffic Data* utility from the **Utilities Menu**.
  - Query the **PERFORM** screen using the trunk group number and update the trunk group name field.
- This traffic study is also called the **Trunk Group Editor**. Use the Trunk Group Editor procedure:
  - To add or remove a trunk group from the Monitor I database as trunk groups are added to or removed from the switch. (Do this only if your change is minor and does not require you to reinitialize the database.)
  - To change the **Service Objective, Traffic Table, Check**, or **Severity** fields.
- The G3i and G3r switch contains the following additional fields on this screen: the trunk access code (tac) and the ISDN-PRI with which you can indicate whether the collected data is call-by-call (cbc).

Procedure

1 Enter the following menu selections from Monitor I's **Main Menu**:

Traffic Studies Menu
↳ *Administer Trunk Group Study*

System Response: The **Traffic Studies Menu** is displayed as shown in Screen 6-1.

Note: For G3i and G3r, Generic 1, and System 75, the **Administer Trunk Group Study** option is on the **Administrative Menu**.

2 At the **Administer Trunk Group Study** screen, type *q* (for query) and then press ESC to populate the screen.

Note: If you want to see information for a particular trunk group, select *Query*, enter the number of the trunk group you want to work with in the **Trunk Group To Be Added/Removed** field, and press ESC.

3 To make changes to the values for a trunk group, select *Update* from the **INFORMIX** menu. Use the field definitions given below and the directions from the dynamic Help messages on your screen to assist you in entering information.

Press ESC to save your data when you have finished entering information.

Note: Remember to download the information to the switch, using the procedure, "Download Studies" described next in this section.

```
PERFORM: [Query]  Next  Previous  Add  Update  Remove  Table Screen  ...
Searches the active database table.          ** 1:  tctrkgp table**
--------------------------------------------------------------------------------
                        ADMINISTER TRUNK GROUP STUDY            Screen  1 of 1
--------------------------------------------------------------------------------

               Trunk Group To Be Added/Removed: [90]
 Trunk Group Name:
 Trunk Group Type: [33]
      Description: [1 - WAY OUT AUTOMATIC]
    Facility Type: TIE                  ISDN Trunk Group? [n]
        Direction: OG                    D-Channel Group: [0]
 Dial Access Code: [#92]                        Quantity: [12]
       Queue Info: [p63n63]                        Table: [RETRIAL]
    Route Advance: [0]                 Service Objective: [P03]
         DCS Info? [n]                            Check: [m]
          Rmt Tnd? [n]                          Severity: [WRN]
      Rmt Non-Tnd? [n]                      Terrestrial? [n]

Default values:  Table=           Serv Obj=        Check=      Sev=


15 row(s) returned.
```

SCREEN 6-1
Administer Trunk Group Study Screen

Trunk Group Name	Name assigned to the trunk group.
Trunk Group Type	Type of trunk group identified numerically.
Description	If you are adding a trunk group, this field is automatically populated when you enter the **Trunk Group Type**.
Facility Type	Description of the trunk type, for example, DID or WATS. If you are adding a trunk group, this field is automatically populated when you enter the **Trunk Group Type**. This value cannot be updated or changed.

Direction	Identifies whether the trunk is incoming, outgoing or 2-way. If you are adding a trunk group, this field is automatically populated when you enter the **Trunk Group Type**. This value cannot be updated or changed.
Dial Access Code	Dial access code associated with the trunk group.
Queue Info	Queuing information. Enter *n* for non-priority queue length. Enter *p* for priority queue length.
Route Advance	This field tells Monitor I whether the trunk group is part of a routing pattern. A value of one (1) in this field indicates that the trunk ***is*** part of a routing pattern; a value of zero (0) indicates that it is not. The last trunk group in the pattern should always have a value of zero (0) in the **Route Advance** field.
DCS Info?	Enter *y* if the trunk group is part of a Data Communications System.
Rmt Tnd?	Enter *y* if this is a remote tandem trunk group. Enter *n* if it is not.
Rmt Non-Tnd?	Enter *y* if this is a remote non-tandem trunk group. Enter *n* if it is not.
ISDN Trunk Group?	Enter *y* if this is an ISDN trunk group. Enter *n* if it is not.
D-Channel Group	Enter the D-channel group number (1 to 255) if this is an ISDN trunk group.
Quantity	This field ***cannot*** remain zero (0). After you enter a value for the **Quantity** field and press RETURN, Monitor I checks the type of trunk, direction, queue information, route advance, and DCS information, and populates the following fields: ▪ **Table** ▪ **Service Objective** ▪ **Check** ▪ **Severity**

The **Quantity** field can be changed to examine efficiency improvements (that is, you can check various **what-if** situations).

System-recommended default values for the **Table, Service Objective, Check**, and **Severity** fields are shown at the bottom of the screen.

WARNING: If you change values for the **Table, Service Objective, Check**, and/or **Severity** fields, press ESC to save them before you pass the **Quantity** field a ***second*** time during an **Add** transaction. If you do happen to pass the **Quantity** field a second time during the same **Add** transaction, then these four fields (**Table, Service Objective, Check**, and **Severity**) revert to their system-recommended default values. This assures you of the correct values for each field and shows you the standard you would be deviating from if you decide to change them.

Table

There are four possible entries for this field:

- ERLANGB
- ERLANGC
- RETRIAL
- NA (not applicable)

Service Objective

You can set the service objective to be anywhere from blockage of 1/1000 to 70/100; this can be useful for **what-if** testing.

Check

Enter *a* for **alarm**, *m* for **mail**, *b* for **alarm *and* mail**. For no action, enter *off*, and if not applicable enter *NA*.

Severity

Enter the alarming severity, *WRN, MIN,* or *MAJ*.

Terrestrial?

Enter *y* if this is a terrestrial trunk group. Enter *n* if it is not.

Default values

These fields are populated when you update, or add trunk groups. The fields show the Monitor I recommended values for the **Table, Service Objective, Check**, and **Severity** fields for the particular trunk group.

End of procedure

VDN Study (Generic 2)

Why? To study Vector Directory Numbers within your network (for Generic 2 switches).

Procedure

1 Enter the following menu selections from Monitor I's **Main Menu**:

Traffic Studies Menu
↳ *Administer VDN Study*

2 Choose *a* from the menu to **add** the pending study.

3 Enter *a* in the **Action** field.

4 Enter the Vector Directory Number to be added.

5 Press ESC to add the new data to the pending file.

6 Repeat Steps 2 through 5 until ***all*** the VDNs have been added.

7 Remember to download the studies to the switch, using the procedure, "Download Studies" described in this section.

End of procedure

WCR, Call Coverage Studies (Generic 2.2)

Why? To determine how well your system is routing calls, for example, whether calls are being handled in the most efficient and cost-effective way.

Notes

- The PERFORM screens used to enter information about call routing and call coverage facilities are split vertically. The left side (PENDING STUDIES) is used to add, update or remove patterns and groups; this data is stored in a pending file until downloaded (transferred) to the switch. The right side of the screen (CURRENT STUDIES) reveals the patterns or groups that are stored by the switch already. See the information on the **INFORMIX PERFORM** Screens in Chapter 2, "Introduction to Monitor I" for details. I To print trunk group names on WCR reports, run *Retrieve Non-Traffic Data* from the **Utilities Menu**.
- If you have a Generic 2.1, System 85, or DIMENSION switch, set up routing by administering AAR and ARS features. See "AAR, ARS and Call Coverage Studies" at the beginning of this chapter.

Procedure

1 Select one of the studies after entering the following menu selections from Monitor I's **Main Menu**:

Traffic Studies Menu
↳ ● *Administer Call Coverage Study*
● *Administer WCR Study*

2 Choose *a* from the menu to **add** the pending study.

3 Enter *a* in the **Action** field.

4 Enter the number of the WCR pattern or Call Coverage Group you are adding in the **Pattern Number** field.

5 Press ESC to add the new data to the pending file.

6 Repeat Steps 1 through 5 until all WCR patterns or Call Coverage Groups have been added.

7 Remember to download the studies to the switch, using the procedure, "Download Studies" described in this section.

8 To remove a WCR study, remove all the patterns. To remove a current or pending study, refer to the "Remove a Pending Study" procedure in this section.

End of procedure

Miscellaneous Activities for Traffic Studies

Download Studies (Generic 2, System 85, DIMENSION)

Why? So that study information is transferred from Monitor I to the switch.

When? When you have created a pending study or a group of pending studies.

Who? System Administrator

Notes

- Do not update or add pending transactions until mail has arrived informing you that the study download has completed.
- You can add studies one at a time or in a group. Once a pending study is downloaded to the switch, it becomes ***current***.

Procedure

1 Enter the following menu selections from Monitor I's **Main Menu**:

Traffic Studies Menu
└→ *Download Studies*

Note: You can also select *Download Studies* from the **Customized Studies Menu**.

- Mail is sent to you when the download is complete.

End of procedure

Removing a Pending Study (Generic 2, System 85, DIMENSION)

Why? To remove studies you have mistakenly entered.

Procedure

1 Enter the following menu selections from Monitor I's **Main Menu**:

Traffic Studies Menu
↳ *<Administer Study menu selection>*

2 Choose the Query option by pressing *q* or RETURN.

3 Press ESC to display the first row of data for the pending study.

4 Press *n* until you locate the study you want to delete.

5 To remove the study, select *Remove*. The system warns you that you are removing pending studies and ask you to confirm your choice.

6 Press *y* or RETURN to continue or *n* to stop.

7 To delete other studies, continue pressing *n* to locate the row(s) you want to remove and repeat the above procedure, or press *e* to exit this procedure.

End of procedure

Removing a Current Study (Generic 2, System 85, DIMENSION)

Why?

- You no longer wish to study a pattern, for example, WCR for Generic 2.2 (or AAR/ARS).
- When the number of Peak and TCs exceeds the allowable number. Removing modules from being studied is an effective way to reduce Peak and TC registers.

Notes

Removing a current study (that is, one that has already been downloaded to the switch) is slightly different from removing one that is pending. You must:

- Set up a remove transaction for the study, creating a new pending transaction
- Download this new pending transaction to the switch.

Procedure

1 Enter the following menu selections from Monitor I's **Main Menu**:

Traffic Studies Menu
↳ *<Administer Study menu selection>*

2 To access the current studies, choose the **Table** option by pressing *t* or by moving the cursor to **Table** and pressing RETURN.

3 Choose the *Query* option by pressing *q* or RETURN.

4 Press ESC to display the first row of data for the current studies.

5 Press *n* until you locate the study you want to delete.

6 To remove the study, use the *Table* option again to return to the pending mode.

7 Choose the *Add* option or press *a.*

8 Enter the letter *r* for remove in the **Action** field.

9 Press ESC.

10 To delete other studies, continue pressing *n* to locate the row(s) you want to remove, then repeat the above procedure. To exit this procedure, type *e.*

11 From the **Traffic Studies Menu**, select the **Download Studies** option to download the transactions you have set up (which are now pending).

12 Type *e* to exit the menu.

End of procedure

Retrieving Configuration Data (Generic 2, System 85, DIMENSION)

Why? To retrieve carrier usage and D-channel equipment locations from the switch and store them in Monitor I.

When? After administering the Carrier Usage Study

Who? System Administrator

Notes

- This transaction takes approximately 10 to 15 minutes.
- If Monitor I can not connect to the switch, a message is displayed on your screen.

Procedure

1 Enter the following menu selections from Monitor I's **Main Menu**:

Traffic Studies Menu
↳ *Retrieve Configuration Data*

2 Answer the system prompts.

- A mail message is sent when the retrieval is complete.

End of procedure

Designing Custom Reports

Overview

Monitor I provides a selection of report types and formats that covers the detailed traffic analysis requirements of most traffic engineers. Monitor I provides default study and polling parameters for many of these reports, but you can change studies to produce reports that better suit your situation. For example, you can set up additional studies and order different polling schedules.

Monitor I also allows you to:

- Design your own reports, based on your unique needs and your preferred way of studying traffic.
- Draw on the complete set of traffic measurements collected from the switch for these reports or concentrate on a particular area of interest to you.

This section deals with producing reports that contain data not included in the Monitor I standard reports or that present data in a way different from the standard reports. It describes:

- The Monitor I database schema
- How to produce various types of custom reports
- How to set up special studies

There are three methods for creating customized reports with Monitor I. An example of each is presented in this section. They are presented in order of increasing difficulty.

1. **Data Dump Reports**. These can be executed easily by most Monitor I users.
2. **Formatted Reports**. You may want to have your UNIX operating system and INFORMIX-SQL database manager user's manuals handy when you execute these reports.
3. **On-line Queries**. These require knowledge of INFORMIX-SQL. Refer to your *INFORMIX-SQL User Guide* and the *INFORMIX-SQL Reference Manual*.

Most of the information for traffic reports — both standard and customized — comes from the switch. The remainder of the data is drawn from information you have entered through INFORMIX-SQL screens, traffic studies, and customized studies.

The Monitor I Database Schema

Overview

There is a unique database schema provided for each switch release used with Monitor I. Instructions for accessing the entire schema for all the switch releases or just a single schema table for a particular switch release are contained in the next section of this chapter, "Accessing the Monitor I Schema."

Note: The schema may change with new releases of Monitor I software, so AT&T cannot guarantee that your customized reports will still run if you upgrade to a future release.

Schema Description

The Monitor I database stores the following types of information:

- Studies currently underway
- Studies you have entered through INFORMIX-SQL screens, but which are in a pending table and have not yet been downloaded to the switch
- Miscellaneous data, including polling schedules
- Poll data gathered from the switch.

Each of these types of information is stored in a different kind of file or table.* You can determine the type of INFORMIX-SQL table by the prefix of the table name. The prefixes used by Monitor I are shown in Table 7-1.

TABLE 7-1
Prefixes for Monitor I Tables

Table Type	Prefix	Example
Current Study Tables	tc	tcmodule
Pending/Future Study Tables	tf	tftrkgrp
Miscellaneous Tables	tm	tminclude
Poll Tables	tp	tpattend

Most of your customized reports are drawn from the TP (poll) tables since they contain the data gathered directly from the switch. The field labels in these tables should match the measurement labels found in the *AT&T System Traffic Data Analysis Guide* for your switch version, a document recommended for Monitor I users, especially those designing their own reports. The guide provides field definitions by packet number. That is, if you want to find a definition for a field pertaining to DCIU occupancy, you would look under Packet 5 in the Data Analysis guide

* INFORMIX-SQL uses the term ***table*** in describing what UNIX calls ***file***.

since Packet 5 stores information on system-wide performance. The Monitor I schema tables also list the tables by packet number, so you can consult the tables and then the guide in your search for information. Listed below are procedures to access the Monitor I schema.

Accessing the Monitor I Schema

Prerequisite: The next procedures assume the following:

- You have logged onto the system
- Accessed **MTM**
- Selected a target switch
- Broken into a shell

  (type: *!sh*)

Note: The Monitor I schema is a read-only file, that is, you will not be able to make changes to it using UNIX **vi** or **ed**.

Viewing the Entire Schema

1 At the system prompt, type:

pg $MTMDIR/prog/<release> /mtm <release>.sql

Where <*release*> is one of the release codes listed in Table 7-2 and *MTMDIR* is the environment variable for the directory under which Monitor I is installed.

TABLE 7-2
Monitor I Release Codes

For this Release:	Use this Code:
Generic 2.2	R2V6
Generic 2	R2V5
System 85 R2V4	R2V4
System 85 R2V3	R2V3
System 85 R2V2	R2V2
DIMENSION 1.16	1.16
DIMENSION 3.8	3.8
G3i	R1V5
G3r	R3V1
Generic 1.1	R1V4
System 75 R1V3	R1V3
System 75 R1V2	R1V2
System 75 R1V1	R1V1

Example:

pg $MTMDIR/prog/R2V5/mtmR2V5.sql

System Response:

The first page of the schema for the target switch and release (R2V5) appears on your terminal screen.

2 Press RETURN each time the : prompt appears to move to the next page of the schema.

3 If you wish to return to the shell without viewing the entire schema, press DEL or *q*.

End of procedure

Viewing a Single Schema Table

To view one particular table within the schema, use the following procedure:

1 At the system prompt, type:

isql $TMTARGET <<!

2 At the > prompt, type:

info columns for <table>

3 Press RETURN then type *!*.

(Where <**table**>is the schema file you wish to view.)

System Response:

The table for the selected file appears in column format.

Example:

The following shows the top portion of the **TPtrkgp** table as it would appear on your terminal screen:

```
Column Name             Type            Nulls
tg_pdate                date            yes
tg_ptime                integer         yes
tg_trkgp                integer         yes
tg_qty                  integer         yes
tg_qqty                 integer         yes
tg_fac                  char (8)        yes
  .                        .             .
  .                        .             .
```

End of procedure

Searching for a Single Schema Table

If you are not sure which table in the schema you wish to view (for example, you may not recollect the spelling of a table), use this procedure.

1 At the system prompt, type *ISQL*

System Response:

The **INFORMIX-SQL** screen appears.

2 Select *Table*

3 Next, select *database*

4 Select *INFO*

System Response:

A list of schema tables appear that correspond to the target switch and release you selected when you accessed **MTM**.

5 Select the table from this list that you want to view.

6 Select *Columns*

System Response:

The contents of the table you selected is displayed in a column format on your terminal screen.

End of procedure

Note: All of the examples used in this section show traffic data for DCIU ports. In setting up a report, look for tables relating to DCIU in the chart contained in Schema Assignment files. There are four tables for DCIU: **TPdciuglb, TPdciulog, TPdciunet** and **TPdciuprt**. Look at the detailed schema for each table to find the measurements you want in your report. Some tips on how to interpret the schema are given below.

Header Information

Each table has a header and database fields. The header provides the following information:

Code Identification	The first two fields identify the table for Monitor I developers
Table Name	Name of the table, such as **TPdciuprt**
Description	Brief description of data in the table
Switch Release	Valid switch releases for the table
Packet numbers	Packets from which the data is retrieved
Proc	Procs, or switch procedures, if any, associated with the data
Prefix	Common prefix for each field in the table
Number of Fields	Number of fields in the table
User	Additional information may be included here about the table

Database Fields

The first two fields in TP tables are always **pdate** and **ptime**. These field names are preceded by two variable characters identifying the table, such as in **dp_pdate**, which indicates this is a **D**CIU port table. The **pdate** field contains the date on which the data was polled, and the **ptime** shows the hour that the poll was conducted. The **ptime** field can range from 1 to 25. The first hour is from midnight to 1 a.m.; the 24th hour is from 11 p.m. to midnight. Hour 25 indicates that data is from a daily poll or was created by the daily concatenation utility. (Tables on daily concatenation are in Appendix E, "Daily Concatenation Tables.") Change the value of the **ptime** field when you want to produce a customized report for a specific time period. Here is an example of the TPdciuprt database table:

```
{
TPdciuprt 1.3 for 12/5/91
@(#)TPdciuprt 1.3
**File: TPdciuprt
**Desc: DCIU port traffic
**Swch: R2V3,R2V4,R2V5
**Pack: 11
**Pref: dp
**Flds: 6
**User: None
}
create table TPdciuprt(
dp_pdate  date,
dp_ptime  integer,
dp_rport  integer,  { Port under study - range 1 to 64 }
dp_portblk          integer,  { Port blocked counters }
dp_msgblk integer,  { Message blocked }
dp_msgqusg          integer,  { Message queued usage }
):
create index dp_ipdate on TPdciuprt(dp_pdate);
```

Customized Data Dump Reports

Overview

Why? To pull data from the database to use to create a ***new*** report, that is, a report that is not already a standard Monitor I report.

Notes

- Additional information can be found in the *INFORMIX-SQL User Guide* in the chapter entitled "Creating and Printing Reports."
- In generating a Data Dump Report, two UNIX files are created in your present directory: a source file, which is the report name with the suffix **.ace**, and an executable file, which is the report name with the suffix **.arc**. These report files should be removed from your directory after they have been executed to conserve disk space.
- Data Dump Reports can be displayed on your terminal screen or sent to a printer.

Procedure

To dump data from an INFORMIX-SQL table:

1 Find the name of the database table you want to dump by looking through the Monitor I schema.

2 Type *!isql* at any Monitor I menu to access INFORMIX-SQL.

- The INFORMIX-SQL main menu appears, after some INFORMIX-SQL release information.

3 Enter *r* for report.

4 Enter *g* for generate.

5 At the **Select Database** prompt, enter the target switch id or follow the screen prompt.

6 At the **Generate Report** prompt, enter the name of report.

- Example: *dciuport*
- The name of the example source file is *dciuport.ace*; the name of the executable file is **dciuport.arc**.
- The **Choose Table** prompt appears and a list of INFORMIX-SQL table names is displayed.

7 Enter the name of the INFORMIX-SQL table you selected in Step 1 of this procedure.

- Example: *tpdciuprt*
- Note that the tp prefix ***must*** be lowercase.

8 Press RETURN.

- The INFORMIX-SQL report submenu appears.

9 Enter *r* to run the report.

10 At the **Run Report** prompt, enter the name of report or follow the prompt.

- Example: *dciuport*

11 Press RETURN.

- System messages appear, telling you which steps have been started and the ones that have been completed.

12 When the entire report has been displayed, press RETURN.

- To stop displaying the report, press BREAK.

13 After viewing the report on your terminal screen, exit INFORMIX-SQL by typing *e* twice.

14 Press RETURN to return to the DEFINITY Monitor I Menu.

End of procedure

Printing a Data Dump Report

For a hard copy of a Data Dump Report:

1 Access the UNIX System shell by typing the command *!sh* if within the Monitor I program.

2 At the system shell prompt, enter

sacego -q -d <switch_target_id> <report_name> | lp

- Example: *sacego -q -d target1 dciuport | lp*

Where **<target1>** is the target switch id and **<dciuport>** is the report name.

End of procedure

Removing a Data Dump Report

To remove a Data Dump Report from your directory, enter the following at the UNIX shell prompt:

rm report_name.arc report_name.ace

Sample Data Dump Report

Screen 7-1 shows a portion of a Data Dump Report named **dciuport**:

```
dp_pdate     dp_ptime   dp_rport  dp_portblk  dp_msgblk  dp_msgqusg

01/21/1992         15       21         0           0           0
01/21/1992         15       22         0           0           2
01/21/1992         15       29         0           0           0
01/21/1992         15       52         0           0           0
01/21/1992         15       58         0           0           0
01/21/1992         15       59         0           0           6
01/21/1992         16       21         0           0           0
01/21/1992         16       22         0           0           2
01/21/1992         16       29         0           0           0
01/21/1992         16       52         0           0           0
01/21/1992         16       58         0           0           0
01/21/1992         16       59         0           0           4
01/21/1992         17       21         0           0           0
01/21/1992         17       22         0           0           1
01/21/1992         17       29         0           0           0
```

SCREEN 7-1
Data Dump Report

Formatted Customized Reports

Overview

Why?

- To create reports that are easier to read and understand than Data Dump reports, since they can be designed with simple, understandable words for field titles and logical ways of expressing the data.

  For example, instead of a header such as, **dp_ptime** and a reading of **15**, you can create the header **Time** and under it the more familiar **15:00** for 3 p.m.

Who?

- Any user familiar with a UNIX text editor such as **vi** (Visual Editor) or **ed** (line editor) can format reports. These editors are described briefly in the *UNIX System V User's Reference Manual* under Commands.

Notes

- You can write explanatory comments, as programmers do, when you construct a formatted report. Then, when you or another user looks at the file at a later date, these comments will jog your memory.
- The example used here builds on the Data Dump default report. The comments used in this example explain what each section contains and how it performs.

Example

- The syntax conventions shown in the following procedure are recommended.
- The best way to begin writing a formatted report is to use the steps outlined in this chapter for creating a data dump default report.

Here is a sample of the default report created for the DCIU port example used in the data dump example:

```
database test123 end

select
        dp_pdate,
        dp_ptime,
        dp_rport,
        dp_portblk,
        dp_msgblk,
        dp_msgqusg
from tpdciuprt end

format every row end
```

After the default report is created, you can modify it using the UNIX vi or ed text editors. As described in the Data Dump procedure, a file called **report_name.ace** is placed in your present working directory when you create a default report. Make sure you modify only the file with the prefix **.ace**, the source file. After you have done this, you have a choice: you can use the INFORMIX-SQL **isql** to compile and execute it* or you can compile and execute at the UNIX shell.

Procedure

If you choose to use INFORMIX-SQL, see your *INFORMIX-SQL User's Guide*.

If you choose to use the UNIX shell, follow these steps:

1 Compile the report by typing: *saceprep report_name*

- If errors occur during compilation, the error numbers are contained in a file called **report_name.err**.
- You can print the file at your terminal using the UNIX **cat** command or you can edit it to find the error numbers.
- Locate the error message number in the INFORMIX-SQL manual and correct it.

2 Execute the report by typing:

sacego -q -d database_name report_name

An example of a formatted report for the DCIU port example is shown in Screens 7-2 and 7-3.

* This method is described in the INFORMIX-SQL documentation.

```
{
            DCIU PORT FORMATTED REPORT EXAMPLE
}

{************************************************************************}
{ The database name is the target switch id that you use to access MTM. }
{************************************************************************}
DATABASE mtown END


{************************************************************************}
{This section moves the left margin over to the left side of the page.  }
{************************************************************************}
OUTPUT
        left margin 0
END

{************************************************************************}
{This is the query section of the report.  This query selects data     }
{that is within a certain time period.  You can replace the            }
{dates and times with your own values.                                 }
{                                                                      }
{The query also orders the data by the port number, date, and time so  }
{that the data is printed a logical sorted order. These two            }
{modifications may be the only ones you want to make to the data dump. }
{                                                                      }
{There are samples of other select statements in the query section of  }
{this chapter.                                                         }
{************************************************************************}
SELECT
        dp_pdate,
        dp_ptime,
        dp_rport,
        dp_portblk,
        dp_msgblk,
        dp_msgqusg

        FROM     tpdciuprt
        WHERE    dp_pdate between "1/21/92" and "1/21/92" and
                 dp_ptime between 15 and 17
        ORDER BY dp_rport, dp_pdate, dp_ptime
END
```

SCREEN 7-2
Formatted Report, Page One

```
FORMAT
PAGE HEADER

        {************************************************************}
        {This section prints outs the heading and the formatted labels  }
        {for each field on the report.                                  }
        {************************************************************}

        {Prints the page number}
        print column 24+5,"- ",PAGENO using "<<<<"," -"

        {Prints the report title with today's date below it}
        skip 2 lines
        print column   24, "DCIU PORT REPORT"
        print column 24+4, today using "mm/dd/yy"

        {Prints the formatted field labels}
        skip 1 line
        print column 21+2, "Port",          column 33+1, "Message",
              column 45+2, "Message"
        print column    1, "Port",          column    7, "Date",
              column   14, "Time",          column   21, "Blockages",
              column   33, "Blockages",     column   45, "Queue Usage"
        print column    1, "-----",         column    7, "-----",
              column   14, "-----",         column   21, "---------",
              column   33, "---------",     column   45, "-----------"

ON EVERY ROW

        {************************************************************}
        {This section prints actual data from the database.            }
        {The using part of the statement is used to format the data;   }
        {a # sign will print 0-9 but will strip off leading zeros and  }
        {an & sign will print 0-9 but will not strip off leading zeros }
        {************************************************************}
        print column  1+1, dp_rport   using "#&",
              column    7, dp_pdate   using "mm/dd",
              column   14, dp_ptime   using "#&:00",
              column 21+2, dp_portblk using "####&",
              column 33+2, dp_msgblk  using "####&",
              column 45+2, dp_msgqusg using "####&"

ON LAST ROW

        {************************************************************}
        {This section prints report completed on the last line.        }
        {************************************************************}
        skip 2 line
        print column 24, "Report Completed"
END
```

SCREEN 7-3
Formatted Report, Page Two

Screen 7-4 shows a sample of the output of a formatted report. Compare it to the output of the sample data dump report shown earlier.

```
                                    - 1 -

                                DCIU PORT REPORT
                                    1/13/92


                          Port       Message      Message
Port   Date   Time   Blockages   Blockages   Queue Usage
----   -----  -----  ---------   ---------   -----------
 21    09/21   15:00         0           0             0
 21    09/21   16:00         0           0             0
 21    09/21   17:00         0           0             0
 22    09/21   15:00         0           0             2
 22    09/21   16:00         0           0             2
 22    09/21   17:00         0           0             1
 29    09/21   15:00         0           0             0
 29    09/21   16:00         0           0             0
 29    09/21   17:00         0           0             0
 52    09/21   15:00         0           0             0
 52    09/21   16:00         0           0             0
 52    09/21   17:00         0           0             0
 58    09/21   15:00         0           0             0
 58    09/21   16:00         0           0             0
 58    09/21   17:00         0           0             1
 59    09/21   15:00         0           0             6
 59    09/21   16:00         0           0             4
 59    09/21   17:00         0           0             4

                                Report Completed
```

SCREEN 7-4
Output for a Formatted Report

On-Line Queries

Why?

- To save time when you are tracking down a particular traffic problem and you know just where to find the information you need. It is the quickest and easiest way to get a small amount of specific data. For example, if you are concerned about security during a particular period, you can query the Monitor I database concerning incoming calls from persons trying to access outgoing trunk groups.
- Query data can be displayed on your workstation screen, stored as a UNIX file, sent to a printer, or displayed as a graph on a spreadsheet software package by moving the file to a personal computer.

Notes

- A query is composed of several parts or clauses. Typically you will be interested in the following:
  - SELECT clause. It lists the database fields to retrieve from the database.

    The sample select statements shown in the following Query examples can also be embedded in customized ACE reports. When these queries are embedded in an ACE report, replace the terminating semicolon (;) with the word *END*.
  - FROM clause. It identifies the database tables containing the data you need.
  - WHERE clause. It sets parameters for the selection of data. For example, you can ask for records stored during a particular range of dates.
  - ORDER BY clause. It sets the sequence to be used in sorting records for your query.
- Queries can be typed into a flat ASCII file with a text editor such as **vi**.

References

On-Line queries are described in Chapter 2 of the *INFORMIX-SQL Reference Manual*. Information on the Query language is presented in the same manual in the section entitled **The SELECT Statement**.

The name of the file must end in **.sql**. For example, the file name might be **query1.sql**. You can display the results of the query on your terminal screen, send them to a printer, or send them to a file by typing the commands listed in Table 7-3 at the UNIX shell prompt.

TABLE 7-3
Displaying Query Results

To send results to:	Type:
Screen	isql - query1.sql
Printer	(isql - query1.sql) | lp
File (any valid UNIX file name)	isql - query1.sql > filename

Some examples of On-Line Queries follow.

QUERY 1

Print the date, time and number of invalid attempts to access a remote access trunk group.

```
SELECT

        av_pdate,
        av_ptime,
        av_badcode

        FROM tpaccval
;
```

QUERY 2

Print the total number of invalid attempts to access a remote access trunk group.

```
SELECT

        sum(av_badcode)

        FROM tpaccval
;
```

QUERY 3

Print all of the modules that have experienced more than 3 TSI blockages.

```
SELECT  unique

        rb_mod

        FROM   tpblgintra
        WHERE   rb_blkg > 3
;
```

QUERY 4

Print the date and time of hourly polls that have had major and minor translation changes during the month of January.

```
SELECT
        pm_pdate,
        pm_ptime,
        pm_majortrans,
        pm_minortrans

        FROM  tppollsum
    WHERE pm_pdate between "1/1/92" and "1/31/92" and
            pm_ptime between 1 and 24 and
            (pm_minortrans = 1 or pm_majortrans = 1)
;
```

QUERY 5

Print out the usage and date for a particular trunk group from the long-term trending data. Trending data is collected once a week and stored for two years. You could export this data to a PC spreadsheet package and graph it.

```
SELECT
        tt_date,
        tt_ccs

        FROM  tmtrendtrk
        WHERE tt_trkgp = 100
;
```

QUERY 6

Print out the ARS patterns pending download to the switch.

```
SELECT
        fs_arspn

        FROM tfars
;
```

QUERY 7

Print out the direction, trunk type, usage, and queue usage for all trunk groups. Sort the database records by trunk group. To get this query to work, the data from two files has to be joined via a common field. The common field between the two files is the trunk number.

```
SELECT
        ct_dir,
        ct_ttype,
        tg_trkgp,
        tg_usg,
        tg_qusg

        FROM    tptrkgp, outer tctrkgp
        WHERE   tg_trkgp = ct_trkgp
        ORDER BY tg_trkgp
;
```

Administering Customized Studies

Overview

You can produce customized reports with any of the traffic data contained in the Monitor I database. For example, you can execute a Data Dump Report on DCIU ports, as shown previously in this section. This report is drawn from Packet 11, which you can specify on the Poll Schedule Record, since it is not a Monitor I default study packet. (See Chapter 3, "Implementing Monitor I" and Chapter 6, "Setting Up Special Studies" for more information on the Poll Schedule Record.)

There are four basic steps you will follow to set up the studies necessary for customizing reports:

1 Access the appropriate menu and study.

2 Add the pending studies.

3 Download the studies to the switch.

4 Change the Poll Schedule Record to poll the appropriate packet(s).

The remainder of this section contains procedures for setting up the studies on the **Customized Studies Menu**.

Administer Main Satellite Study

Overview

Why? To study the traffic on the main satellite systems.

Who? System Administrator

Notes

- The Main Satellite Study does on-line validation, that is, if you enter incorrect data for certain fields, the system will prompt you and allow you to correct the field. Monitor I checks that the trunk group you name is actually in the database and that it is one of the satellite trunk groups listed in Table 7-4.

TABLE 7-4
Satellite Trunk Groups

Type Number	Description
70	1-W in immediate start
71	1-W out immediate start
72	2-W immediate start both ways
73	1-W wink start
74	1-W out wink start
75	2-W start both ways
76	1-W in delay dial
77	1-W out delay dial
78	2-W delay dial both ways

- You can enter up to 10 trunk groups for a Main Satellite Study, depending on your switch release. When entering data on this screen, make sure that:
  - There are no gaps between the fields
  - Trunk groups are not duplicated
  - At least one trunk group is entered on the screen.

  If the above conditions are not met, the system displays an error message.

Procedure

1 Enter the following menu selections from Monitor I's **Main Menu**:

Traffic Studies Menu
└→ *Customized Studies Menu*

2 Select *a* from the menu to add the pending study.

3 Enter *a* in the **Action** field.

4 Enter the main satellites you wish to study, using the correct type number for the trunk group from the table listed above.

5 Press ESC to store the data.

6 Remember to download the pending studies to the switch, using the procedure for "Download Studies" at the end of this section.

End of procedure

Administer Trunk Group Combination Study

Overview

Why? To study particular trunk groups with given combinations

Who? System Administrator

Notes

- The system will prompt you and allow you to correct the field if:
  - You enter a trunk group that does not exist in the database
  - You enter an invalid trunk group type
  - You leave gaps between fields
  - You duplicate trunk groups.
- You can enter up to twenty trunk groups for a Trunk Group Combination Study, depending on your switch release.

Procedure

To set up studies of trunk group combinations:

1 Enter the following menu selections from Monitor I's **Main Menu**:

Traffic Studies Menu
└→ *Access Customized Studies Menu*
└→ *Administer Trunk Group Combination Study*

2 Select *a* from the menu to add the pending study.

3 Enter *a* in the **Action** field.

4 Enter the trunk group identification numbers you wish to combine within the fields provided.

- For each identification number entered, the system displays a trunk type number.

5 Press ESC when all the trunk groups for one trunk group combination have been entered.

6 Remember to download the pending studies to the switch, using the procedure for "Download Studies" at the end of this section.

End of procedure

Download Studies

Overview

Why?	So that study information is transferred from Monitor I to the switch.
When?	Studies can be downloaded one at a time, or in a group. Once a pending study is downloaded to the switch, it becomes ***current***.
Who?	System Administrator
Notes	Do not update or add pending transactions until mail has arrived informing you that the study download is completed.

Procedure

1 Enter the following menu selections from Monitor I's **Main Menu**:

Traffic Studies Menu
→ *Access Customized Studies Menu*
→ *Download Studies*

Note: **Download Studies** can also be selected from the **Traffic Studies Menu**.

You will receive mail when the download is complete.

End of procedure

System Administration

Overview

The Monitor I System Administrator is responsible for maintaining the Monitor I system. System administrative tasks and Monitor I utilities are described in this chapter.

- Administration tasks may vary according to your system's configuration.
- The *DEFINITY Monitor I Planning Manual* and the *DEFINITY Monitor I Installation Manual* provide information about the Monitor I configurations and storage capacity options.
- Some administrative tasks must be performed from the System Administration login.

Table 8-1 lists Monitor I administrative tasks as well as the Monitor I utilities. This table also provides a brief description of when and why you should perform each task and where to go in this manual for further information.

TABLE 8-1
Administrative Tasks

Task:	Why:	When:	See:
Activate Alarm Manager	To have Monitor I notify either Trouble Tracker, INADS, or you (through e-mail) immediately if something goes wrong with your switch or Monitor I operations	This must be activated once for alarming to begin **or** in the event of a system reboot	"Administer Alarm Characteristics" and "Administer Alarm Destinations" in this chapter
Activate polling mechanism	To initiate polling of the switches	This must be activated once for any polls to be brought up **or** in the event of a system reboot	"Step 3. Activate the Polling Control Mechanism," in Chapter 3, "Implementing Monitor I"

TABLE 8-1 (Continued)
Administrative Tasks

Task:	Why:	When:	See:
Administer trunk group include lists	To pool trunk groups together	To study trunk groups in user-defined sets on the Trunk Group Summary and Trunk Group Detail Reports	"Administer Trunk Group Include Lists" in this chapter
Administer Packet Five mail flags	To filter mail for trunk group violations, Packet 5 System, and Packet 5 Flags.	When you want to filter mail messages so that your mail file does not get overly large.	"Administer Packet Five Mail Flags" and "Administer Alarm Characteristics" in this chapter
Audit switch and database	To compare hardware configuration and study assignments in the switch with those in Monitor I	If you suspect that information from Monitor I is incorrect or you know that major changes have been made to the switch	"Audit Switch and Database" in this chapter
Back Up Monitor I	To make a complete backup copy of Monitor I software, databases, and other file systems in your system	Weekly	"Back Up Monitor I" in this chapter
Check **mtmlog**	To check for errors in system operation	Daily	"Reading System Logs" and "Display Monitor I Log" in this chapter
Create switch database	To create an empty database file for traffic data	When a new switch is added	"Step 1. Create the Switch Database," in Chapter 3, "Implementing Monitor I"

TABLE 8-1 (Continued)
Administrative Tasks

Task:	Why:	When:	See:
Cut-through to the switch	To communicate with the switch for G3r, G3i, Generic 1, and System 75	When you need to access the switch without exiting Monitor I	"Access System 75 Cut-Through" on the Monitor I **Utilities Menu** (G3r, G3i, Generic 1, and System 75)
Daily concatenation	To combine hourly totals to produce daily totals if automatic concatenation fails (for example, if an unexpected change was made to the poll schedule)	If the Poll Type field on the Poll Status Report does ***not*** say **DCT**	"Initiate Daily Concatenation" in this chapter
Deactivate polling mechanism	To stop polling before the computer system is to be brought down	As necessary	"Deactivate the Polling Control Mechanism" in this chapter
Display ARS Measurement Selection	To view which ARS patterns have been selected for polling traffic data.	As necessary	"Display ARS Pattern Selections" in this chapter
Initialize switch	To populate the switch database with information from Packet 1 (for Generic 2, System 85, and DIMENSION) and to generate default study values and download them to the switch	When a new switch is added **or** if extensive changes have been made to an existing switch	"Step 2. Initialize the Switch Database," in Chapter 3, "Implementing Monitor I"
Purge database	To purge the database of polling and trending data	When scheduled automatic purge fails **or** when the database grows beyond expected limits	"Initiate Database Purge" in this chapter
Set permissions for scheduling reports	To add logins to the at.allow and cron.allow files so that Monitor I users can access the UNIX **cron** and **at** commands to schedule reports.	Whenever there are new Monitor I users	"Report Scheduling" in this chapter

TABLE 8-1 (Continued)
Administrative Tasks

Task:	Why:	When:	See:
Purge log file	To purge stored messages from the switch to Monitor I	When the log file contents approach 1 megabyte	"Initiate Log File Purge" in this chapter
Monitor poller processes	To get a summary of which switches are being polled	Before you begin a new series of traffic studies	"Monitor Poller Processes" in this chapter
Read mail	To check messages sent by the switch that inform Monitor I users of errors or of changes that affect traffic polling	Daily	"Reading Mail" in this chapter
Read System Logs	To check **mtmlog** for messages pertaining to system operations	Daily	"Reading System Logs" and "Display Monitor I Log" in this chapter
Recover software and files	To recover backup copies of files in case of system failure	System failure, hardware problems	"Recovering Software and Files" in this chapter
Rotate Monitor I switches	To poll an alternate set of switches for networks that have more switches than can be supported by Monitor I	When you want to poll switches not currently polled by Monitor I	"Rotate Monitor I Switches" in this chapter
Schedule polling	To schedule your traffic studies	When a new switch is added	"Step 4. Schedule Monitor I Polling," in Chapter 3, "Implementing Monitor I"

TABLE 8-1 (Continued)
Administrative Tasks

Task:	Why:	When:	See:
Synchronize switch time	To restore synchronization of switch clock and Monitor I clock	Following initialization or reinitialization, ***or*** whenever the switch clock and Monitor I clock are not in agreement	"Synchronize Switch Time" in this chapter
Update trending	To update the trending information used in the Trending Reports (Long Term)	If trending update is not automatically executed at noon on Sunday	"Initiate Trending Update" in this chapter

The Administrator´s Training

If your System Administrator has not attended the following training, contact your AT&T Sales Representative for more information.

- DEFINITY Monitor I
- UNIX System Administration
- INFORMIX-SQL

Alarm Administration

Activating the Alarm Manager

Why?	To begin the alarming mechanism.
When?	Whenever the system is brought up.
Who?	The person responsible for bringing up the Monitor I system.
Notes	Refer to the "Defining Alarm Characteristics" and "Specifying Alarm Destinations" procedures in this chapter for related information.

Procedure

1 Log in as *mtmadm* .

2 At the UNIX shell prompt, enter *alarmstart* .

End of procedure

Deactivating the Alarm Manager

Why? To stop the alarming mechanism.

When? When necessary.

Who? System Administrator.

Procedure

1 Log in as *mtmadm* .

2 At the UNIX shell prompt, enter *alarmend* . The following message appears:

```
Alarm Manager is being brought down. Please wait . . .
```

End of procedure

Defining Alarm Characteristics

Why?	To determine the severity level for each alarm condition and which destinations should be notified when a particular alarm condition is received.
When?	Whenever the alarm characteristics change.
Who?	System Administrator.
Notes	For further details on administering alarm characteristics, see the "Administering Alarm Parameters" and "Choosing Alarm Destinations" sections in Appendix F, "Information About Alarming."

Procedure

1 Enter the following menu selections from the **Main Menu**:

Administrative Menu
└→ *Access Alarm Administration Menu*
└→ *Administer Alarm Characteristics*

System Response:

The **Administer Alarm Characteristics** screen is displayed. Screen 8-1 shows this screen updated with the Monitor I defaults.

```
PERFORM: [Query]  Next  Previous  Add  Update  Remove  Table Screen  ...
Searches the active database table.            ** 1:  tmalrminfo table**

--------------------------------------------------------------------------------
                      ADMINISTER ALARM CHARACTERISTICS          Screen  1 of 1
--------------------------------------------------------------------------------
                                                  Destination
                                                  Trouble
Alarm Condition                    Severity  INADS  Tracker     E-mail
Monitor I Polling System Failure   [MAJ]     [YES]  [NO]        [YES]
Purge Failure                      [MAJ]     NO     [NO]        [YES]
Trunk Group Threshold Violation              NO     [NO]        [NO]
PBX CPU Congestion                           NO     [NO]        [YES]
Packet Five System Flags                                        [YES]
Packet Five Packet Flags                                        [YES]

CPU Congestion Threshold           [75]
```

SCREEN 8-1
Administer Alarm Characteristics Screen

2 Type *q* to display the default values.

3 Type *u* to update the current values.

- **Severity** — enter *MAJ* for major alarms, *MIN* for minor alarms, or *WRN* for warnings.
- **INADS, Trouble Tracker, or E-mail** — enter *YES* to send the alarm information to the destination or *NO* if the alarm information is not to be sent to the destination.

4 Press [ESC] to save the new values, and type *e* to exit this screen and return to the **Access Alarm Administrative Menu**.

End of procedure

Specifying Alarm Destinations

Why?	To specify the destination names and phone numbers for Trouble Tracker so that alarms can be sent automatically.
When?	Whenever the alarm destination information changes.
Who?	System Administrator.
Notes	Refer to the "Defining Alarm Characteristics" and "Activating the Alarm Manager" sections in this chapter for related information.

Procedure

1 Enter the following menu selections from the **Main Menu**:

Administrative Menu
→ *Access Alarm Administration Menu*
→ *Administer Alarm Destinations*

System Response:

The **Administer Alarms Destinations** screen is displayed.

2 Type *q* to display the default values.

3 Type *u* update the current values.

- Monitor I Alarm ID — the ID of this Monitor I system used by Trouble Tracker and INADS. Contact your Trouble Tracker System Administrator for details. The ID consists of 10 digits, beginning with the number 8.
- Switch Target Alarm ID — the 10-digit serial number of the PBX.
- Destination Type — TT (Trouble Tracker).
- Destination Name — up to 20 characters that describe the destination.
- Destination Phone Number — the phone number or access number of the Trouble Tracker system that the alarms are to be sent to.

4 When all the fields have a valid entry, press ESC to save the new values, and type *e* to exit to the Alarm Administration menu.

End of procedure

ARS Measurements (G3i and G3r)

Displaying ARS Measurement Selections

Why? To view which patterns have been selected for polling traffic data.

Who? System Administrator or any Monitor I user.

Notes This screen is for display only.

Procedure

1 Enter the following selections from the Main menu:

Administrative Menu
└→ *Display ARS Measurement Selection*

System Response:

The **Display ARS Measurement Selection** screen appears as shown in the following sample screen:

```
                    DISPLAY ARS MEASUREMENT SELECTION

Pattern Numbers:

                1    8   25
                2    9   26
                3   10   27
                4   11   28
                5   13   29
                6   14   30
                7   15
```

2 Press RETURN to go back to the **Administrative Menu**.

End of procedure

Backups

Backing Up Monitor I (3B2/600, 6386E/33, 6386SX/EL)

Why?

To make a complete backup copy of the Monitor I software and the databases and any other file systems you have in your system. Files can then be restored in the event of a system failure.

When?

- At least once a week for the database(s) and once a month for the entire system.
- Suggested backup time: Saturday between 9:00 a.m. and 12:00 noon. Do not perform a backup between 12:00 midnight and 6:00 a.m., when the **mtmadm1** is running **cron** jobs.

Who?

System Administrator.

Prerequisites

- At least one standard DC6320 data cartridge tape, with a capacity of 60 megabytes, or 117,300 blocks, of data. Keep a few tapes on hand so you can change them as requested by the system.
- All Monitor I users must log off and all Monitor I processes, including polling, must be stopped.

Notes

- It takes approximately 20 minutes to fill each tape.
- System prompts allow you to make decisions regarding the extent of the backup.
- To back up all the Monitor I databases, print the file under **<directory>/mtm/tools/dbmap**, where **<directory>** is the directory under which you installed Monitor I. Keep this printout in a safe place for your reference.
- If you are backing up only one <**dbname**>.dbs directory, back up the corresponding <**dbname**>.frm directory also. For example, **/usr/mtm/db1/earth.dbs** and **/usr/mtm/db1/earth.frm**.
- For further information:
  - **3B2/600 Processor**:
    for UNIX **sysadm** procedures, see the *AT&T UNIX System Administrator's Guide*, Chapter 5, "File System Administration."
  - **6386E/33 and 6386SX/EL Processors**:
    for UNIX backup procedures, see the *AT&T UNIX System V/386 Release 3.2.3 FACE User´s/Administrator´s Guide*.

Procedure: 3B2/600 Backup

1 Log in as *root* on the system console.

2 Enter *<directory>/mtm/tools/monitor I stop* to bring down the Monitor I pollers and alarm processes.

Where: <**directory**> is the directory under which Monitor I is installed.

3 Enter *sysadm backup* (or *sysadm store* to back up a single directory). The system displays all the file systems on your machine.

4 Answer the remaining questions and follow the instructions.

Note: If you are using a high capacity tape you will see an additional prompt for **xtape** .

5 At the UNIX prompt, enter *<directory>/mtm/tools/monitor I start* to bring up the Monitor I pollers and alarm processes.

Where: <**directory**> is the directory under which Monitor I is installed.

End of procedure

Procedure: 6386E/33 and 6386SX/EL Backup

1 Log in as *root* on the system console.

2 Enter *<directory>/mtm/tools/monitor I stop* to bring down the Monitor I pollers and alarm processes.

Where: <**directory**> is the directory under which Monitor I is installed.

3 Enter *face*.

4 Make the following choices at the **FACE** menus:

- Select *System Administration*.
- Select *Backup to Removable Media*.
- Select *System Backup*.
- Select *Selective System Backup*.
- Select *Cartridge Tape*.

  Note: If there is an x-Tape™ (in other words, a high capacity tape drive) in the system, do the following:
  - Select the x-Tape cartridge.
  - Press **Choices** (F2 key) for the tape drive.
  - Press **Save** (F3 key) for the Selected tape device.

- For a complete system backup, enter name of all the file systems you have in your machine ***except*** **/tmp**. Separate the names of the file systems with spaces, for example, **/ /usr /usr2**. For database backup only, enter all the directories listed in the **dbmap** file.
- Press F3 to save the information you entered above.
- The system calculates the number of tapes needed to do the backup. Be ready with the required number of tapes. Insert the tape(s) as instructed by the system. Press RETURN when prompted by the system. Wait for the backup to complete.
- Use the appropriate function keys to exit from **FACE** and return to the UNIX prompt.

5 At the UNIX prompt, enter *<directory>/mtm/tools/monitor I start* to bring up the Monitor I pollers and alarm processes.

Where: <**directory**> is the directory under which Monitor I is installed.

End of procedure

Concatenation

Initiating Daily Concatenation

Why? To begin daily concatenation of data.

When? No more than once daily and only when automatic daily concatenation did not concatenate hourly data into daily totals for the previous day's data. For example, in cases where the system was down during the polling time range (12:00 midnight to 4:00 a.m.).

Who? System Administrator.

Notes

- Refer to the **Poll Status Report** for related information.
- Running this utility when daily concatenation is already running during the current day produces duplicate data and might cause reports and long-term trending to be adversely affected.
- This utility runs in the ***background*** and does not affect other activities. Check the **mtmlog** to determine when the task is complete for each switch.
- The data created by the manual daily concatenation utility ***approximates*** data for System 75 because of that system's unique way of getting information using a ***yesterday*** poll.
- See Appendix E, "Daily Concatenation Tables" for a chart showing where daily concatenation data is stored in the DEFINITY Monitor I database.

Procedure

1 Enter the following menu selections from the **Main Menu**:

Utilities Menu
└→ *Access Manual Utilities Menu*
└→ *Initiate Daily Concatenation*

- The system displays a warning that this utility executes in the background and prompts you to press *y* to continue.

2 Enter the **Concatenation Date** and **Target Switch** as prompted.

- If daily concatenation is already running for the selected switch, this utility will be blocked and a message is displayed in the **mtmlog**.

3 Remember to check the **mtmlog** to see if daily concatenation has completed for each target switch.

End of procedure

Dial-up Ports

Assigning Access to Dial-up Ports

Why?

- To assign users access to dial-up ports.*
- Users can be given access to all ports or restricted to specified ports.

Who?

- System Administrator.

Notes

- Monitor I allows the System Administrator to specify up to six dial-up (remote) ports on the computer for traffic purposes. It is ***not*** a recommended practice for most installations, but it can be useful for some.
- Free access to all available ports works well in most installations. However, some companies with coresident applications may choose to restrict use to specified ports.
- In setting aside ports for Monitor I use, you are restricting system access to the switch. That is, Monitor I will be unable to make a connection if all specified ports are busy, even if other, unspecified ports are free. Moreover, other network applications residing on the computer with Monitor I may not follow the same standards; they may, for example, be able to use Monitor I-specified ports.

Procedure

1 Enter the following menu selections from the **Main Menu**:

Administrative Menu
└→ *Administer Polling Schedule*

System Response:

The **Administer Polling Schedule** screen appears.

2 Enter *s* to access the second screen of the polling schedule.

3 Enter the name of the port, for example, *tty31* . It is very important to enter the ***correct*** name for each device to be used. If a name differs by a character or a digit, polling cannot take place because Monitor I will not be able to find the port.

End of procedure

* One dial-up port can support two Generic 2 System 85 switches or three System 75 switches.

File Recovery

Recovering Software and Files (3B2/600)

Why? To restore Monitor I data that was previously saved on your backup cartridge tapes.

When? In case of a system failure.

Who? System Administrator.

Prerequisites To bring the system down to single-user state, all users must log off and all processes, including **cron** processes, must be stopped. Make sure that no user **cron** files are currently running.

Notes

- It takes 15 minutes for the system to read a single tape and copy the information during a recovery.
- Insert the tapes in the same order used during your system backup.

Procedure

1. Log in as *root* on the system console.
2. Enter *<directory>/mtm/tools/monitorI stop* to bring down the Monitor I poller and alarm processes.

   Where: <**directory**> is the directory under which you installed Monitor I.
3. Enter *sh /etc/init.d/cron stop* .
4. Enter *ps -fumtmadm,mtmadm1* to determine if any other Monitor I process is running. If any processes are displayed, wait until they have completed before you continue with this procedure.
5. Enter *shutdown -is* at the prompt to bring the system down to single-user state.
6. Enter *ulimit 99999* to change the ulimit.
7. Enter *sysadm restore* at the prompt.
8. Enter the appropriate information in response to each of the prompts.
9. **Note:** If you are using a high capacity tape drive (in other words, x-Tape), an additional prompt is displayed for the x-Tape.

   When recovery is completed, enter *q* to quit and return to the shell.
10. Enter *init 2* at the prompt to bring the system back to multiuser state.
11. The missing mtmadm1 **cron** jobs, if any, have to be run manually for the day.
12. Inform all users that they can now resubmit their **cron** files.

End of procedure

Recovering Software and Files (6386E/33 Model S, 6386SX/EL)

Why?	To restore Monitor I data that was previously saved on your backup cartridge tapes.
When?	In case of a system failure.
Who?	System Administrator.
Prerequisites	To bring the system down to single-user state, all users must log off and all processes, including **cron** processes, must be stopped. Make sure that no user **cron** files are currently running.
Notes	▪ It takes 15 minutes for the system to read a single tape and copy the information during a recovery. ▪ Insert the tapes in the same order used during your system backup.

Procedure

1 Log in as *root* on the system console.

2 Enter */<directory>/mtm/tools/monitor I stop* to bring down the Monitor I poller and alarm processes:

Where: <**directory**> is the directory under which you installed Monitor I.

3 Enter *sh /etc/init.d/cron stop* .

- The system displays a message telling you that the cron has been aborted.

4 Press RETURN .

5 Enter *ps -fumtmadm,mtmadm1* and press RETURN to determine if any other Monitor I process is running. If any processes are displayed, wait until they have completed before you continue with this procedure.

6 Enter *shutdown -is* at the prompt to bring the system down to single-user state.

- Enter the root password to get into single-user mode.

7 Enter *PATH=:/etc:/bin:/usr/bin:/usr/vmsys/bin:$PATH; export PATH*

8 Enter *HOME=/; export HOME*

9 Enter *LOGNAME=root; export LOGNAME*

10 Enter *TERM=AT386-M; export TERM*

11 Enter */etc/mountall* to mount all the file systems.

12 Enter *ulimit 99999* to change the ulimit.

13 Enter *face* at the prompt.

14 Make the following choices at the **FACE** menus:

- Select *System Administration*
- Select *Restore from Removable Media*
- Select *System Restore*
  - To restore all files from the tape, select *Restore System*
  - To restore ***selected*** files and directories from the tape, choose *Selective System Restore*
- Select *Cartridge Tape*

  Note: If there is an x-Tape (in other words, a high capacity tape drive) in the system, do the following:
  - Select the x-Tape cartridge.
  - Press *Choices* (F2 key) for the tape drive.
  - Press *Save* (F3 key) for the Selected tape device.

  - The system displays the following message:

```
Overwrite files that have been modified since last backup?
```

- Answer *no* and press Save.
- Press RETURN when prompted by the system.
- Wait for the restore to complete. Press RETURN when prompted by the system.
- Use the appropriate function keys to exit from **FACE** and return to the UNIX prompt.

15 Enter *init 2* at the prompt to bring the system back to multiuser state.

16 The missing mtmadm1 **cron** jobs, if any, have to be run manually for the day.

17 Inform all users that they can now resubmit their **cron** files.

End of procedure

Logs

Displaying the Monitor I Log

Why? To view Monitor I log data for specific targets, processes and dates.

When? When you are searching for specific information from the Monitor I log and do not want to search through the entire file.

Who? System Administrator or any Monitor I user.

Notes Refer to the "Reading System Logs" section in this chapter for more information on the Monitor I log.

Procedure

1 Enter the following menu selections from the **Main Menu**:

Utilities Menu
└→ *Display Monitor I Log*

- The system displays a start date and end date from the log files.

  You can either choose to view a single day's data or you can press RETURN to view data for all the dates shown.

2 If you choose to view data for all the dates shown, you are then asked to choose a **Search Option** from the following list:

- **t(arget): Search by target name**
- **p(rocess): Search by process name**
- **b(oth): Search by both target and process name**

Enter the appropriate letter and press RETURN.

Note: If you choose a single date, you can then select all targets, or all processes, or all targets ***and*** all processes for that single date.

3 Enter the target switch name and/or the process name.

Press l (lowercase, letter l) to list the available target names or the Monitor I process names if you are unsure of what to enter.

4 Specify whether data should be sent to the terminal, a file, or a printer. Use the same conventions for files and printers as you do when ordering Monitor I reports.

5 Press RETURN to return to the **Utilities Menu**.

End of procedure

Purging Log Files

Why? To clean out the log files.

When? When necessary.

Who? System Administrator.

Notes

- The **mtmlog** file is created to collect the new data and normally collects data for 14 days before it is moved to the ***old file***, named **omtmlog**. **omtmlog** is created to hold the **mtmlog** information for 14 days. When **mtmlog** is moved to **omtmlog**, the original contents of **omtmlog** are purged from the system.
- The automatic purge occurs on the 14th and 28th day of the month at 3:00 a.m.

Procedure

1 Enter the following menu selections from the **Main Menu**:

Utilities
→ *Manual Utilities Menu*
→ *Initiate Log File Purge*

System Response: The system informs you when the task is completed.

2 Press RETURN to return to the **Manual Utilities Menu**.

End of procedure

Reading System Logs

Why? To check **mtmlog** for messages pertaining to system operations.

When? Daily.

Notes

- Messages on **mtmlog*** are stored for up to 28 days before they are automatically purged by the system. A manual purge can be requested by running **Initiate Log File Purge** from the **Manual Utilities Menu**.
- You can read this file using the UNIX command **pg** to page through it, or you can **vi** the file if it is not too large.
- Monitor I features a utility that enables you to read system logs with specified targets and date ranges. Refer to the "Displaying Monitor I Log" procedure in this chapter.

Procedure

1 If you are at the UNIX shell prompt, type *tail $MTMDIR/log/mtmlog* to read the last few lines of the file.

2 If you are at a Monitor I menu or screen, type *!tail $TMLOG/mtmlog* to read the last few lines of the file.

End of procedure

* The contents of this file are actually divided into two files; half of which is purged every 14 days. The purge occurs on the 14th and 28th of each month at 3 a.m. Monitor I also purges its database automatically; the schedule for this depends in part on the amount of storage space your company has selected for Monitor I data.

Mail

Reading Mail Messages

Why?

- To check messages sent by the switch informing you of errors or changes that affect traffic polling.
- To read mail from users.

When?

- At the beginning of each day.
- If the **Mail** prompt appears when you log on to the system, indicating that there are messages waiting.
- Periodically throughout the day or whenever the **Mail** prompt appears.

Who? The System Administrator or any Monitor I user.

Notes If a Monitor I error occurs, the "mailbox" contains a formatted mail message advising the user or administrator of the problem. The message lists the target switch, the transaction where the problem occurred, a description of the problem, and the action necessary to correct the problem. See Appendix D, "Mail and Error Messages" for sample mail messages.

Procedure

1 Enter *mail* at the UNIX shell prompt.

2 At the mail prompt type *?* to see a list of options.

End of procedure

Non-Traffic Data

Retrieving Trunk Group Data

Why?

To retrieve trunk group information stored by the switch that is needed for studies of World Class Routing (WCR) patterns. The information also includes the full names of your trunk groups, which may make your Monitor I trunk group reports easier to understand and analyze.

When?

- When WCR patterns are to be studied for the first time.
- Before running reports, so that the trunk group name fields are populated.
- After that, when trunk groups are added or removed or when routing preferences are changed.

Who?

System Administrator.

Notes

- WCR is a new switch feature that replaces AAR and ARS in Generic 2.2. AAR and ARS features still provide routing information for the following switches: Generic 2.1, G3r, G3i, System 85, and DIMENSION.
- This command requires switch connection and prevents you from working on other tasks at your station. Use it when the switch is not busy, if possible.
- The procedure takes five to 10 minutes after the connection to the switch has been made.
- For G3r and G3i switches the following options are available:
  - the trunk group names and trunk access codes (tac)
  - the route patterns under study
  - information if the ISDN trunk group is a call-by-call (cbc) type trunk and the allocation plan in effect
  - both route patterns under study and if the ISDN trunk is a cbc type
  - all the above options.

Caution

This command ***overwrites*** existing non-traffic data in the Monitor I database. That is, it replaces earlier information and, more importantly, it overwrites data you have entered through the Trunk Group Editor. If no name is stored in the switch, however, nothing is in danger of being overwritten. If you have stored trunk group names in Monitor I that are more complete than the names stored in the switch, you will lose that information when this command is executed. To prevent this problem, make sure the Facilities Manager enters the same trunk information in the switch that you have entered in Monitor I. Refer to Chapter 6, "Setting Up Traffic Studies" for more information on the Trunk Group Editor.

Procedure

1 Enter the following menu selections from the **Main Menu**:

Utilities Menu
└→ *Retrieve Non-Traffic Data*

System Response: The system informs you that you have selected the non-traffic data option, and prompts you to either continue or exit.

2 Press *y* to continue.

Note: The **Retrieve Non-Traffic Data** utility for System 75, Generic 1.1, and G3i can only retrieve trunk group names.

End of procedure

Packet Five Mail Flags (Generic 2, System 85, DIMENSION)

Filtering Packet Five Mail Flags

Why? To filter Packet 5 system and packet flag mail.

When? When you want to filter your mail.

Who? System Administrator.

Notes Refer to the "Defining Alarm Characteristics" section in this chapter for related information.

Procedure

1 Enter the following menu selections from the **Main Menu**:

Administrative Menu
→ *Administer Packet Five Mail Flags*

System Response: The **Administer Packet Five Mail Flags** Screen appears. Screen 8-2 shows this screen with default values displayed.

```
PERFORM: [Query]  Next  Previous  Add  Update  Remove  Table Screen  ...
Searches the active database table.          ** 1:  tmmlflg table**

------------------------------------------------------------------------------
                   ADMINISTER PACKET FIVE MAIL FLAGS          Screen 1 of 2
------------------------------------------------------------------------------
SYSTEM FLAGS

        CaM  Warn  SH  DR  Zero  MinA  MajA  MinX  MajX  Rel
        ---  ----  --  --  ----  ----  ----  ----  ----  ---
         [n]  [n]  [y] [n]  [y]   [n]   [y]   [n]   [y]   [n]
PACKET FLAGS

        Pkt  PP  NoDP  No563  Over  Under  SH  Zero MinX  MajX
        ---  --  ----  -----  ----  -----  --  ---- ----  ----
         1   [n] [n]    [n]   [n]   [n]   [n] [n]  [n]   [y]
         2   [n] [n]    [n]   [n]   [n]   [n] [n]  [n]   [y]
         3   [n] [n]    [n]   [n]   [n]   [n] [n]  [n]   [y]
         4   [n] [n]    [n]   [n]   [n]   [n] [n]  [n]   [y]
         5   [n] [n]    [n]   [n]   [n]   [n] [n]  [n]   [y]
```

SCREEN 8-2
Administer Packet Five Mail Flags Screen

2 Type *q* and press ESC to display the default values.

3 Type *u* update the current values.

- **System Flags**
  - **CaM** — Cache Memory. The cache memory flag is set if the common control has a cache memory that is active at the time of an hourly update since the last poll. This information is important because cache memory causes the 501CC processor to perform more operations in less time.
  - **Warn** — Warning Flag.
  - **SH** — Short Hour. This flag indicates that a discrepancy of more than 100 seconds was encountered in synchronization of traffic with the system clock. To regain synchronization, a short hour was included in the data.
  - **DR** — Data Reinitialization. This flag is used to indicate that traffic data was reinitialized (zeroed) since the last poll because of a reload or through an administration procedure. Only data since the time of reinitialization is present.
  - **Zero** — Zero flag is set to indicate that administrative procedure has been used to zero some of the data in Packet 5 since the last poll.
  - **MinA** — Minor Alarm. This alarm corresponds to the state at poll time of the alarm lamps on the 501CC processor panel.
  - **MajA** — Major Alarm. This alarm corresponds to the state at poll time of the alarm lamps on the 501CC processor panel.
  - **MinX** — Minor Translation Change. A minor translation change results from use of a procedure other than a traffic procedure, such as those adding or deleting facilities from the system, which may affect the values obtained for measurements.
  - **MajX** — Major Translation Change. A major translation change refers to a change made by one of the administration or traffic procedures affecting the administrable items being studied, for example, a change such as the ARS patterns being measured, the Peak and TC items measured, the trunks used in load balance measurements, etc. This major translation change rearranges the entries in the tables passed in Packet 1, which makes the data erroneous.
  - **Rel** — System Reload. This flag is set if there was a system reload since the last time the traffic data was polled. Data collected before the reload occurred is lost.
- **Packet Flags**
  - **PP** — Packet Polled.
  - **NoDP** — The No DP (Diagnostic Procedure) data flag applies to traffic Packet 10, indicating that during the previous hourly update traffic software was unable to collect traffic data from the Diagnostic Procedure. This means that data for the number of valid and invalid remote port access time-outs is not complete.
  - **No563** — No TN563 Data.
  - **Over** — D-Channel Data Over.
  - **Under** —D-Channel Data Under.

- **SH** — Short Hour. This flag indicates that a discrepancy of more than 100 seconds was encountered in synchronization of traffic with the system clock. To regain synchronization, a short hour was included in the data.
- **Zero** — Zero flag is set to indicate that an administrative procedure has been used to zero some of the data in Packet 5 since the last poll.
- **MinX** — Minor Translation Change. A minor translation change results from use of a procedure other than a traffic procedure, such as those adding or deleting facilities from the system, which may affect the values obtained for measurements.
- **MajX** — Major Translation Change. A major translation change refers to a change made by one of the administration or traffic procedures affecting the administrable items being studied, for example, a change such as the ARS patterns being measured, the Peak and TC items measured, the trunks used in load balance measurements, etc. This major translation change rearranges the entries in the tables passed in Packet 1, which makes the data erroneous.

4 Press *s* to access the second screen.

5 Make your changes and press ESC to store them.

End of procedure

Poller Administration

Deactivating the Polling Control Mechanism

Why? To stop the polling process (known internally as the **mtmguard**) for ***all*** switches.

When? Before the system or Monitor I is brought down.

Who? System Administrator.

Notes

- When **mtmguard** has been deactivated, scheduled polling on all switches stops, and no requests for polling additional switches are accepted.
- If a shutdown procedure is executed during the transfer of traffic data between a switch and the Monitor I database, the shutdown is delayed until the transfer is complete. This prevents database corruption.
- Under normal conditions, polling of a specific switch will not be stopped unless a user requests it through the Administer Polling Schedule screen, as described in Chapter 3, "Implementing Monitor I." When polling is halted in this way, the Polling Control Mechanism attempts to update the Poll Schedule Record to indicate that polling is no longer taking place at that switch.
- If polling stops due to system failure, the Polling Control Mechanism sends an e-mail message to the System Administrator's login. Further information on the problem can also be found in the error log, **mtmlog**.

Procedure

To deactivate the Monitor I Polling Control Mechanism:

1 Log in as *mtmadm* .

2 From the UNIX shell prompt, enter *pollend.*

- The procedure takes one to 10 minutes depending on the delay caused by the possible transfer of traffic data from a polled switch to Monitor I.
- The system displays a message when the pollers have successfully been brought down.

End of procedure

Deleting Selective Polls

Why? To delete polls between specified dates.

When? When you want to delete polls that may distort your trending data. For example, you may not want polls included in your trending reports for days when the load is exceptionally light, such as snow days.

Who? System Administrator.

Notes

- This utility runs in the ***background*** and does not affect other activities. You will receive mail when the specified polls have been deleted.
- Because this utility can slow down your system, it should be run when the system load is light.
- Run this utility ***before*** weekly trending takes place on Sundays so that distorted polls do not have any impact on trending.
- You can recover the polls you delete ***only*** by performing a backup.
- You must be the owner of the database or **mtmadm** to perform this utility.

Procedure

1 Enter the following menu selections from the **Main Menu**:

Utilities Menu
└→ *Delete Selective Polls*

2 Enter the **Start Date** and **End Date** , as prompted.

3 Enter the **Poll Type:**

- Enter *d* to delete only daily records.
- Enter *h* to delete an hourly range. The default is 1 through 24.
- Enter *b* to delete both daily records and the hourly range of 1 through 24.

Note: The system asks you for the name of a specific table to be purged. It also gives you the option of purging all **tp** tables.

4 When you have answered all the prompts, press RETURN to return to the **Utilities Menu**.

End of procedure

Stop Polling of a Specific Switch

Why? To change a polling schedule immediately.

When? Whenever necessary.

Who? System Administrator.

Notes If a poll is in progress when this command is entered, polling of the switch will not cease until that particular poll has been completed. This may take up to 10 minutes. The system will not complete the entire previously entered schedule.

Procedure

1 Enter the following menu selections from the **Main Menu**:

Administrative Menu
↳ *Administer Polling Schedule*

System Response:

The **Administer Polling Schedule** screen appears.

2 Change the **y** in the Polling Activated field to *n*.

3 Press RETURN.

4 Press ESC to store the change.

End of procedure

Monitor Poller Processes

Why? To see at a glance which switches are being polled.

When?
- Before you begin a series of traffic studies. It is important that you do not initiate a new polling schedule when it can affect previously ordered reports.*
- Any time you want to check on polling during its scheduled time.

Who? System Administrator.

Procedure

1 Enter the following menu selections from the **Main Menu**:

Utilities Menu
└→ *Monitor Poller Processes*

- A message is displayed on your screen telling you whether Monitor I is polling and for which targets it is currently active if polling is taking place.

End of procedure

* For example, you should not change from hourly to daily polling while hourly polling is scheduled. If you make the change in midweek, Friday's reports may lack hourly data for the latter part of the week.

Report Scheduling

Setting Up Permissions

Why? To set permissions so that Monitor I users can schedule long-term and short-term reports using the UNIX **cron** and **at** commands.

Who? The system administrator sets the permissions for users to access these UNIX commands.

How? By adding user logins to the **cron.allow** and **at.allow** files.

When? Whenever there is a new Monitor I user who needs to schedule reports. The system administrator may also need to edit these files to delete users who no longer work on Monitor I.

Procedure

1. Login as root.
2. Change directories by entering the following at the root prompt:

   cd /usr/lib/cron
3. At the prompt, enter:

   vi cron.allow
4. Add your new login IDs to the end of this file.
5. Save this file and exit **vi** by entering either *ZZ* or *:wq* at the prompt.
6. Next, access the **at.allow** file by entering:

   vi at.allow
7. Again, add the new login IDs to the end of this file.
8. Save this file and exit **vi** by entering either *ZZ* or *:wq*

End of procedure

Switch and Database Administration

Auditing the Switch and Database

Why? To be sure that the hardware information and study assignments stored by Monitor I about a particular switch are correct and that there are no discrepancies between the switch data and the data stored by Monitor I.

When? If you suspect that there are differences between the data contained in the database and the data on the switch.

Who? System Administrator.

Notes

- During initialization, the system polls Packet 1 on the switch in order to populate its database, and the Monitor I default study values are generated. If Monitor I does not have accurate information, your traffic studies will have major discrepancies and may be useless.
- The study administration parameters you provide tell Monitor I when to generate some switch performance, trending, and customized reports. If Monitor I and the switch don't agree on what is being studied, the data in your reports will be unreliable.
- The report procedure prompts you to select any or all of six reports (and two optional subsections) that show the switch information, the database information, or a list of differences between the two. The report sections are:
  - Switch Configuration Report
  - Database Configuration Report
  - Configuration Differences Report
  - Switch Study Assignments Report
    - Optional: Peak and TC Measurements
  - Database Study Assignments Report
    - Optional: Peak and TC Measurements
  - Study Assignments Differences Report

Procedure

1 Enter the following menu selections from the **Main Menu**:

Utilities Menu
└→ *Audit Switch and Database*

2 Follow the instructions on the screen to select the reports you want to see and where to send them.

End of procedure

Purging the Database

Why? When automatic cleanups fail or when the size of the database exceeds the expected limits.

When? Whenever necessary.

Who? System Administrator.

Notes

- This utility runs in the ***background*** and does not affect other activities. Check the **tmlog** to determine when the task is complete for each switch.
- Connection to the switch is not required to perform this utility.
- Automatic purging of poll data is every 24 hours at 6:00 p.m. and cleanup of trending data is every Sunday at 2:30 a.m.

Procedure

1 Enter the following menu selections from the **Main Menu**:

Utilities
└→ *Manual Utilities Menu*
└→ *Initiate Database Purge*

System Response: The system displays a warning that this utility executes in the background, and prompts you to press *y* to continue.

2 Remember to check the **mtmlog** to determine when the task is completed for each switch.

End of procedure

Removing the Switch Database

Why? To remove the entire switch database.

When?
- If an error is made while creating the switch database.
- When a switch is physically being removed from an already functioning system.
- When a switch is being upgraded and the TSC has instructed the user to run the procedure.

Who? System Administrator.

Cautions
- Only the owner of the switch or the System Administrator (**mtmadm** login) should perform this procedure.
- Make sure no one is accessing the switch that is being removed at the time you begin this procedure.

Procedure

1 From the UNIX System shell, enter: *switch_rmv* .

2 Enter the name of the target switch you want to remove. Press *l* if you want to see a list of target switches.

Note: If you are using the switch rotation feature, Monitor I displays both active ***and*** inactive switches.

3 Check the screen to see that the name you entered is correct. If it is, type *y* to continue the remove operation; if not, type *n* to abort and start over.

4 Press RETURN .

- If you abort this procedure you are immediately returned to the UNIX System shell.
- Otherwise, system messages will be displayed as the target you requested is removed, and then you will be returned to the UNIX System shell.

End of procedure

Rotating Monitor I Switches

Why? Some Monitor I customers have more switches in their network than the Monitor I system can actively poll at one time. At installation time you can create databases for all the switches in your network and at the same time, specify the maximum number of switch types that can be polled simultaneously. You can then select those switch databases from your entire set of databases that you wish to poll.

What? Switch rotation activates polling by "rotating in" the inactive switches you wish to poll. The total number of switches for each switch type that can be polled simultaneously is defined by you at installation time. If you have reached polling capacity, you can deactivate one of the activated switches and then activate an inactive switch of the same type for polling.

Who? System Administrator.

Notes Procedures to activate and deactivate switches are given below. A switch can be activated or deactivated only by the **mtmadm** login.

Procedure: Deactivating Switches

1 Log in as *mtmadm*

2 At the UNIX prompt, enter *switch_dct*

System Response:

The system prompts you to name the active target switch that you want to deactivate.

Note: ***If*** the poller is still running, the system prompts you to deactivate it first.

3 Enter the name of the target switch.

- To view a list of active switches, press *l* (lowercase letter l).

4 Enter the name of the switch you wish to deactivate.

System Response:

The system may inform you that there is no trending record for the target switch, or the date of the last trending record may be displayed. You may be prompted to run trending manually before you deactivate the switch. Exit from **switch_dct**" and run the trending utility by selecting *Initiate Trending Update* from the **Manual Utilities Menu** before you continue with this procedure.

Note: If trending for the last week has completed, you may ignore the prompt to run trending manually before deactivating the switch.

5 Press *d* to deactivate the switch.

- The deactivation can take over one half hour, so use this procedure when the switch is not busy. When the deactivation is complete, a message appears telling you your target switch has been deactivated. The system creates a database placeholder for the deactivated switch.

  The procedure is complete when the UNIX prompt appears.

End of procedure

Procedure: Activating Switches

1 Log in as *mtmadm*

2 At the UNIX prompt, enter *switch_act*

System Response: The system prompts you for the inactive target switch that you want to activate.

3 Press *l* (lowercase letter l) if you want to see a list of switches that are currently inactive.

4 Enter the name of the target switch.

- You might want to verify that the switch you have chosen is actually the one you want to activate.
- At this point, you can view the **Switch Characteristics Screen** for the selected switch by typing *v*. Query the screen to see the current data for the switch, and press *e* to exit.

  You are again prompted to activate the switch.

5 Enter *a* to activate the switch.

- The system displays the current polling option and asks if you want to change it. Valid options are **E** for Extended, **S** for Standard, or **L** for Daily and Limited polling.

  If no placeholders are currently available for the switch you want to activate, an error message is displayed followed by the UNIX prompt. At this point you can deactivate or remove a switch with the same polling option and the same switch type * as the one you want to activate, and then repeat this procedure. If you want to activate a G3r, G3i, Generic I, or System 75 switch, and there are no placeholders, you must first ***remove*** or deactivate a corresponding G3r, G3i, Generic I, or System 75 switch.

  If a placeholder is available for this switch, the system tells you that your switch has been activated and you can now access it through Monitor I.

End of procedure

---

*
- G2, System 85, or FP8 extended
- G2, System 85, or FP8 standard
- G2, System 85, or FP8 limited or daily
- G3r, G3i extended
- G3r, G3i standard
- G3r, G3i, limited or daily, Generic 1.1 and System 75

Switch Time

Displaying Switch Time

Why? To see if the switch clock and the Monitor I clock are synchronized. This is important information, since lack of time synchronization affects traffic studies and subsequent reports.

When? When you suspect that time data in a report is not valid.

Who? System Administrator.

Notes

- This procedure does ***not*** affect traffic studies in progress.
- To display the switch and Monitor I times, Monitor I must connect to the switch and maintain the connection for three to five minutes. You will not be able to run other procedures during this period. For these reasons, it is a good idea to invoke this command at a time when the switch is not busy, and you are not trying to do other things with the system.
- If Monitor I cannot connect to the switch, the following error message appears: **Unable to connect** . Try the procedure later.

Procedure

1 Enter the following menu selections from the **Main Menu**:

Utilities Menu
└→ *Display Switch Time*

- The system tells you that the transaction takes approximately three minutes and prompts you to continue.

2 Press *y* to continue or *e* to exit.

End of procedure

Synchronizing Switch Time

Why? To bring the switch clock and the Monitor I clock into synchronization. This is important because lack of time synchronization affects traffic studies and subsequent reports.

When? Following initialization or reinitialization ***or*** if you run the **Display Switch Time** option and see that the clocks are out of synch.

Who? System Administrator.

Caution Do not run the **Synchronize Switch Time** procedure when you have traffic studies in progress, since changing the time on the switch clock, even by a few minutes, can affect the polling of packets for previously scheduled studies.

Notes

- This command takes three to five minutes to complete and it requires a connection to the switch. During this period, you cannot run other tasks at your work terminal. If other users are working with Monitor I or if you move to another terminal, switch connection should not be sought while the procedure is taking place.
- Perform this procedure when the switch is not busy and when you are not performing other traffic tasks.
- If Monitor I cannot make connection to the switch, the following error message appears: **Unable to connect** .
- If Monitor I is coresident, other applications can also see the newly synchronized time from the switch.

Procedure

1 Enter the following menu selections from the **Main Menu**:

Utilities Menu
└→ *Synchronize Switch Time*

2 When prompted, press *y* to continue, or exit by pressing *e.*

End of procedure

Trending Update

Initiating the Trending Update Utility

Why? To save peak trunk group and processor occupancy polling data in the Monitor I database. This utility saves a single peak record for processor occupancy data and a singe peak record for each trunk group for the switch(es) and time frame selected.

When? When necessary.

Who? System Administrator.

Notes

- Refer to Long Term Trending Report for related information.
- This utility is run automatically on Sunday at 12:00 noon.
- When this utility is run, it collects data from the previous Sunday (00:00 a.m.) through Saturday (12:00 midnight). When you initiate this utility manually, however, you can specify a different time frame.
- Check the **mtmlog**. If the time frame in question is listed with a **Trending Completed** status, ***do not*** run this utility.
- This utility runs in the ***background*** and does not affect other activities. Check the **mtmlog** to determine when the task is complete for each switch.

Prerequisite If the time frame in question is listed with a **Trending Completed** status, ***do not*** run this utility.

Procedure

1 Enter the following menu selections from the **Main Menu**:

Utilities Menu
→ *Manual Utilities Menu*
→ *Initiate Trending Update*

- The system displays a warning that this utility executes in the background and prompts you to press *y* to continue.

2 Enter a start date or press RETURN if you want data for the previous week (Sunday through Saturday, as described in the Overview for this utility).

If you enter a start date, the system also prompts for an end date.

3 Enter a target switch or press RETURN for all targets.

4 Remember to check the **mtmlog** to determine when this utility is complete for each switch.

End of procedure

Trunk Group Include Lists

Administering Trunk Group Include Lists

Why? To group trunk groups together in user-defined combinations so they can be studied in the Trunk Group Summary and Trunk Group Detail Reports and the System 75 Lightly Used Trunk Report and Outage Trunk Report.

When? Whenever you want to order the reports specified above in a particular trunk group list.

Who? The System Administrator or any Monitor I user.

Notes

- Monitor I does an internal check to ensure that each trunk group you add to an include list actually exists.
- The Trunk Group Include List Report, accessible from the **Switch Performance Reports Menu**, shows you all the include lists created and their associated trunk groups.

Procedure

1 Enter the following menu selections from the **Main Menu**:

Administrative Menu
└→ *Administer Trunk Group Include Lists*

System Response:

The **Administer Trunk Group Include Lists** screen is displayed.

2 Select *Add*.
3 Enter the name you want to give the include list at the **Listname** prompt.
4 Enter the number of the trunk group to be included in the list at the **Trunk Group** prompt.
5 Press ESC to save this information in the database.

Note: To add another trunk group to the trunk group include list you just specified, select *Add* and press Ctrl p. This returns the list name you previously typed at the **Listname** prompt. Then, just enter the next trunk group number you want included and press ESC. Repeat the steps listed in this **Note** until all trunk groups have been added to the include list.

End of procedure

Users

Adding Users to Monitor I

Why? To allow a new user to log in to the DEFINITY Monitor I system.

When? When necessary.

Who? System Administrator.

Procedure

1. See the *AT&T 3B2 Computer UNIX System B Release 3.2.3 Administrator´s Guide*, Part I, in the section titled "Procedure 2.1: Add Users or Groups."
2. Log in as *root*.
3. Using **vi** or **ed**, edit the file called **/usr/lib/cron/at.allow**. Add the login id for the new user to the ***end*** of the file.
4. Save your changes and exit the file.

End of procedure

Interpreting Monitor I Reports

Overview

All of the reports provided by Monitor I are included in this section. They are given in alphabetical order. Sample report pages are included to give you an idea of what each report looks like. Each sample report is followed by a table showing the report's fields, the field definitions, and the switch type and release for which the fields are valid. Some report descriptions include a list of other reports where you can find related data.

If a report is available on the Generic 2 as well as other switches, then the sample report shown will be the one for the Generic 2 switch. If, however, a report is available on only one switch, for example, DIMENSION, then the report will be shown and labeled **DIMENSION**. In some cases, the report format may vary greatly from one switch to another or from one release to another. In these cases, a report may be included for each switch type or for more than one release of the same switch.

The tables on the next two pages show the Switch Performance Reports and the Graphable Reports available for each switch. This should help you identify at-a-glance what reports you might want to look at.

Switch Performance Reports Listed By Switch Type

TABLE A-1
Switch Performance Reports

Reports	Switch Type							
	G2.2	G2.1	Sys85 R2V4	Sys85 R2V3	Sys85 R2V2	DIM	G3r G3i	G1.1 & Sys75
AAR		●	●	●	●	●		
ACD	●	●	●	●				
ARS		●	●	●	●	●	●	
Attendant Measurement	●	●	●	●	●	●	●	
Call Coverage	●	●	●	●	●			
Carrier Usage Detail	●	●	●	●	●	●		
Carrier Usage Summary	●	●	●	●	●	●		
Data Storage	●	●	●	●	●	●	●	
Hunt Group							●	
Include List	●	●	●	●	●	●	●	●
ISDN PRI Call-by-Call							●	
ISDN PRI D-Channel	●	●						
ISDN PRI Trunk Group Association	●	●						
Lightly Used Trunk							●†	●*
Load Balance	●	●	●	●	●	●		
Long Term Trending	●	●	●	●	●	●	●	●
Module	●	●	●	●	●			
Outage Trunk								●*
Poll Status	●	●	●	●	●	●	●	●
Processor Occupancy	●	●	●	●	●	●	●	
Recent ACA Referrals	●	●	●	●	●	●		
Security Violation							●	
Switch Summary	●	●	●	●	●	●	●	
System Security	●	●	●	●	●	●		
Trunk Group Detail	●	●	●	●	●	●	●	●
Trunk Group Summary	●	●	●	●	●	●	●	●
Trunk Group Violation							●	●
UCD					●			
WCR	●							

† Available for G3i only.

* Not available for System 75 R1V1.

Graphable Reports Listed By Switch Type

For more specific information about the trending reports, refer to Chapter 5, "Overview of the Monitor I Reports."

TABLE A-2
Graphable Reports

Reports	Switch Type						
	G2.1 G2.2	Sys85 R2V4	Sys85 R2V3	Sys85 R2V2	DIM	G3r G3i	G1.1 & Sys 75
Attendant Attended Usage	●	●	●	●	●		
Attendant Worked Peg Count	●	●	●	●	●		
Attendant Worked Usage	●	●	●	●	●		
Long Term Processor Occupancy	●	●	●	●	●	●	
Long Term Trunk Group Usage	●	●	●	●	●	●	●
Long Term Trunk Group Peg Count	●	●	●	●	●	●	●
Processor Occupancy	●	●	●	●	●	●	
TMS Blockages Module	●	●	●	●			
TMS Peg Count Module	●	●	●	●			
TMS Usage Module	●	●	●	●			
TSI Blockages Module	●	●	●	●			
TSI Peg Count Module	●	●	●	●			
TSI Usage Module	●	●	●	●			
Total Attendant Attended Usage	●	●	●	●	●		
Total Attendant Incoming Abandoned	●	●	●	●	●	●	
Total Attendant Worked Peg Count	●	●	●	●	●	●	
Total Attendant Worked Usage	●	●	●	●	●	●	
Trunk Group Peg Count	●	●	●	●	●	●	●
Trunk Group Recommended Size*	●	●	●	●			
Trunk Group Usage	●	●	●	●	●	●	●

* To get the recommended trunk size, the **Table** and **GOS** fields on the Trunk Group Editor ***cannot*** be set to Null or N/A. Also, the report will not print a recommended size if the average trunk usage is over the maximum allowable usage per trunk. You will see **NR **** and a message on the report instead.

Peak Fields for Monitor I Reports

TABLE A-3
Monitor I Peak Fields for Reports

Report	Section	Peaks Off This Field:
AAR	N/A	**Offer Peg** — Total calls offered to the pattern. (G2.1, Sys 85)
ARS	N/A	**Offer Peg** — Total calls offered to the pattern. (G2.1, Sys 85) **Calls Offered** (peak format) (G3i)
ACD/UCD	ACD Group Usage	**Total Usage** — For all calls connected to an ACD group.
	Group Call Redirection Summary	(Internal Call Cov + External Call Cov) to regular ACD (G2 & Sys 85 R2V4).
	Group Call Redirection Summary	(Internal Call Cov + External Call Cov) to message center ACD (G2 & Sys 85 R2V4).
	Group Call Redirection Summary	(Internal Call Cov + External Call Cov) to AUDIX (G2 & Sys 85 R2V4).
	Call Vectoring Information	**Total Calls** — Number of calls using vector (G2 & Sys 85 R2V4).
	Vector Direction	**Total Calls** — Total calls sent to VDN (G2).
	ACD Agent	**Total Usage** — For all calls connected to an ACD group.
Attendant Measurement	N/A	**Worked Usage** — Attendant console(s) worked usage (G2, Sys 85). **Time Talk** (G3i)
Call Coverage	N/A	**Total Offer Group** — Total calls offered to the group.
Carrier Usage Detail	N/A	**Total Port Usage** — for the line carrier (DIM) **Total Port Usage** — for the trunk carrier (DIM) **Port Usage** — for the quarter carrier (G2 and Sys 85)

TABLE A-3 (Continued)
Monitor I Peak Fields for Reports

Report	Section	Peaks Off This Field:
Carrier Usage Summary	N/A	**Total Usage** — for the line carrier (DIM) **Total Usage** — for the trunk carrier (DIM) **Total Usage** — for the carrier (G2 and Sys 85)
Hunt Group Usage	N/A	**Total Usage** — if a peak report (G3i)
ISDN Association	N/A	**Total Usage** — Carried by the association (G3i)
ISDN Call-by-Call	N/A	**Total Usage** — if a peak report (G3i)
ISDN D-Channel	N/A	**I-field Bytes** — Handled by the D-channel (G2)
Load Balance	Intramodule Intermodule	**PEAK Total Usage** **PEAK Inter Mod Usage**
Module Blockage	Traditional Modules Universal Modules XE Modules Intermodule Exceptions	**TSI Block** — TSI blockage by module number **TDM Block** — TDM blockage by universal module (G2) **XE Block** — Blockage by XE module **TMS Block** — TMS mismatch blockage by module pair
Processor Occupancy	N/A	**Peak Call/Connection Count** and **Peak Processor Occupancy** (G2, Sys 85) **Call Processing Occupancy** (if peak report (G3i)
Security Violation	N/A	**Total Invalid Login Attempts** (G3i)

TABLE A-3 (Continued)
Monitor I Peak Fields for Reports

Report	Section	Peaks Off This Field:
System Security	Port Contentions/ Mode Changes	**Mode Block** — Time(s) of blocked mode change attempt (G2 and Sys 85 R2V4)
	Remote Access SN492	**Invalid Access** — Remote port (SN492) invalid access attempt (G2, Sys 85 V4 and V2)
	Remote Access TN563	**Invalid Access** — OSS port 0 (TN563) invalid access attempt (G2)
	Remote Access TN563	**Invalid Access** — OSS port 1 (TN563) invalid access attempt (G2)
	Remote Access on Trunk Groups	**Invalid Access** — Unsuccessful Remote Access Attempt on Trunk Groups
	Remote Access on Trunk Groups	**Valid Auth Code Blocked by Invalid Speaker Verification** (G2)
Trunk Group Detail	N/A	**Usage (Total Voice + Data)** — Carried by the trunk group
Trunk Group Summary	N/A	**Total Usage** — Carried by the trunk group
World Class Routing	N/A	**Offer Peg** — Total calls offered to the pattern (G2.2)

AAR (Automatic Alternate Routing) Report (Generic 2.1, System 85, DIMENSION)

```
       Today:  Fri Sep 22 1990  10:05:31                                Page   1
 Switch Name:  test123                                 Start:  05/09/1990 11:00
Output Units:  peg count/peak                            End:  05/09/1990 13:00


                     AUTOMATIC ALTERNATE ROUTING REPORT



PATTERN: 4

     Trunk                                                 Offer  Carry Ovfl
Pref Group       Trunk Group Name          Date  Hour   Peg    Peg   Peg
---- ----- ------------------------------  ----- ----- -----  ----- -----
 1     301 SDN 1                           05/09 11:00    97     63     0
 7     129 Megacom                         05/09 11:00    34     32     0
 8     118 Band 5 Wats                     05/09 11:00     2      2     0

PATTERN: 5

     Trunk                                                 Offer  Carry Ovfl
Pref Group       Trunk Group Name          Date  Hour   Peg    Peg   Peg
---- ----- ------------------------------  ----- ----- -----  ----- -----
 1     301 SDN 1                           05/09 11:00     3      3     0

PATTERN: 6

     Trunk                                                 Offer  Carry Ovfl
Pref Group       Trunk Group Name          Date  Hour   Peg    Peg   Peg
---- ----- ------------------------------  ----- ----- -----  ----- -----
 1     301 SDN 1                           05/09 12:00    28     26     0
 7     118 Band 5 Wats                     05/09 12:00     2      2     0

PATTERN: 7

     Trunk                                                 Offer  Carry Ovfl
Pref Group       Trunk Group Name          Date  Hour   Peg    Peg   Peg
---- ----- ------------------------------  ----- ----- -----  ----- -----
           No calls offered.


                         Report Completed
```

Field Definitions for the AAR Report

Field	Definitions	Switch
Pattern	Number of the pattern under study. Can study up to 16 patterns at one time.	Generic 2.1, R2V2-V4, DIMENSION
Pref	Number indicating the place of this trunk group in the pattern.	Generic 2.1, R2V2-V4, DIMENSION
Trunk Group	Indicates the trunk group number assigned by the customer to the associated preference pattern.	Generic 2.1, R2V2-V4, DIMENSION
Trunk Group Name	Name given to the trunk group by the customer or obtained from the switch with the Non-Traffic Data Retrieve.	Generic 2.1, R2V2-V4, DIMENSION
Date	Date of the poll.	Generic 2.1, R2V2-V4, DIMENSION
Hour	Time at switch when poll occurred if peak value; time of peak given if time-coincident value.	Generic 2.1, R2V2-V4, DIMENSION
Offer Peg	Total number of calls offered to a particular AAR pattern. DEFINITY Monitor I computes this figure by adding the Carried Peg to the Overflow Peg count for all preferences.	Generic 2.1, R2V2-V4, DIMENSION
Carry Peg	Each time a route is used, its peg count is incremented by one. This occurs after all digits have been dialed and the trunks found, but not yet seized.	Generic 2.1, R2V2-V4, DIMENSION
Ovfl Peg	Number of calls queued because there are no available trunks. The overflow peg is incremented after all digits have been dialed, and after the trunks have been searched, but no trunk group has been found to carry the call. The count for the last trunk group tied in a particular pattern is incremented when no trunks are available. The count does not include calls that were blocked due to an insufficient Facility Restriction Level (FRL).	Generic 2.1, R2V2-V4, DIMENSION

ACD (Automatic Call Distribution) Report

```
      Today:  Fri Mar 22 1991  10:11:43                              Page   1
 Switch Name:  test123                                 Start:  01/09/1991 11:00
Output Units:  erlangs/peak                              End:  01/09/1991 13:00


                         ACD GROUP USAGE REPORT


ACD Group:  1        Type: AUDIX          Queuing TGN:   98
               Machine #:      1           Hunt Type: Most Idle

                        Avg                              Avg          Max   %Time
                        Serv        Ext                  Queue  Max   Time  Queue
           Total Total Time  Abdn  Abdn  Queue Queue Time   Calls Queue (secs) Thresh
Date  Time   Peg  Usage (secs) Peg  Peg   Peg   Usage (secs) Queue                Excd
----- ----- ----- ----- ----- ----- ----- ----- ----- ------ ----- ----- ------
05/09 11:00   761 11.86    56    38    17   798  0.06     0      2     0  0.00%

 .
 .
 .
```

```
      Today:  Fri Mar 22 1991  10:12:09                              Page   2
 Switch Name:  test123                                 Start:  01/09/1991 11:00
Output Units:  erlangs/peak                              End:  01/09/1991 13:00


                         ACD GROUP CALL FLOW REPORT

                             Intra   Intra
 ACD                         Flow    Flow    Flow to  Flow to  Forced  Forced
Group  Date  Time      Calls  to Grp  fm Grp  Non-ACD    VDN    Discon   Busy
-----  ----- -----  --------  ------  ------  -------  -------  ------  ------
    1  05/09 13:00     Total:      0       0        0        0       0       0
                     External:      0       0        0        0       0       0

  .
  .
  .
```

ACD (Automatic Call Distribution) Report (continued)

```
       Today:  Fri Mar 22 1991  10:12:13                                Page   3
 Switch Name:  test123                                  Start:  01/09/1991 11:00
Output Units:  erlangs/peak                               End:  01/09/1991 13:00


                     ACD GROUP CALL REDIRECTION SUMMARY

                                 Internal                        External
                       ---------------------------   ---------------------------
Answering                                  UCD Hunt                       UCD Hunt
Service    Date  Time  Call Cov Call Frwd (Direct)   Call Cov Call Frwd (Direct)
---------  ----- ----- -------- --------- --------   -------- --------- --------
Reg ACD    05/09 13:00        0         0       12          0         0        9
MSC        05/09 12:00        5         0        3         21         0        0
AUDIX      05/09 11:00      534         1      617        417         0       26
```

```
       Today:  Fri Mar 22 1991  10:12:17                                Page   4
 Switch Name:  test123                                  Start:  01/09/1991 11:00
Output Units:  erlangs/peak                               End:  01/09/1991 13:00


                          ACD CALL VECTORING REPORT

CALL VECTORING INFORMATION

Vector                Total
Number    Date  Time  Calls    Usage   Abandoned
------    ----- ----- -----    -----   ---------
     1    05/09 13:00     0     0.00           0
     2    05/09 13:00     0     0.00           0
     3    05/09 13:00     0     0.00           0
     4    05/09 11:00   775     0.00           1
     5    05/09 12:00    27     0.03           1
     6    05/09 13:00     0     0.00           0
     7    05/09 13:00     0     0.00           0
     8    05/09 11:00   791     0.00           0
     9    05/09 12:00    29     0.03           2
     .
     .
     .
```

ACD (Automatic Call Distribution) Report (continued)

```
       Today:  Fri Mar 22 1991  10:12:36                                Page 5
 Switch Name:  test123                                  Start:  01/09/1991 11:00
Output Units:  erlangs/peak                               End:  01/09/1991 13:00


                          ACD CALL VECTORING REPORT

VECTOR DIRECTION NUMBER INFORMATION

                      Total     Internal  External
 VDN      Date  Time  Calls      Calls     Calls
------    ----- ----- -----     --------  --------
81616     05/09 13:00   203          203         0
81940     05/09 13:00     0            0         0
83722     05/09 13:00     2            2         0
84260     05/09 13:00    19           19         0
86000     05/09 13:00     0            0         0
```

```
       Today:  Fri Mar 22 1991  10:12:38                                Page   6
 Switch Name:  test123                                  Start:  01/09/1991 11:00
Output Units:  erlangs/peak                               End:  01/09/1991 13:00


                               ACD AGENT REPORT


ACD Group:   1                                                  Avg

               ACD                      Total    Total         Serv
              Agent               Total Internal External Total Time
              Extn  Date  Time    Peg    Peg      Peg    Usage (secs)
              ----- ----- ----- ----- -------- -------- ----- ------
              43226 05/09 11:00    24    18        6     0.47    70
              43445 05/09 11:00    23    15        8     0.53    82



   .
   .

                          Report Completed
```

Field Definitions for the ACD Report

ACD Group Usage

This section appears on reports for Generic 2 and System 85 R2V2 through R2V4 switches.

Field	Definition	Switch
ACD Group	Number of the ACD agent group under study.	Generic 2, R2V2-V4
Type	Indicates if the group is a Regular ACD group, MCS (Message Center Service) or AUDIX.	Generic 2, R2V2-V4
Queuing TGN	Trunk Group Number (TGN) of the queuing trunk group assigned to the ACD.	Generic 2, R2V2-V4
Machine #	Number of the adjunct machine supporting the service type.	Generic 2, R2V2-V4
Hunt Type	Type of hunting assigned to the group: Most Idle Agent, Uniform or Direct.	Generic 2, R2V2-V4
Date	Date of poll.	Generic 2, R2V2-V4
Time	Time of poll.	Generic 2, R2V2-V4
Total Peg	Number of calls (peg count) handled by the ACD group.	Generic 2, R2V2-V4
Total Usage	Length of time, expressed in CCS or Erlangs, spent on calls by ACD group.	Generic 2, R2V2-V4
Avg Serv Time (secs)	Average number of seconds spent by group on each call. The formula used to calculate this is in Appendix C, "Monitor I Equations."	Generic 2, R2V2-V4
Abdn Peg	Number of calls (peg count) abandoned by callers while waiting in ACD queue.	Generic 2, R2V2-V4
Ext Abdn Peg	Number of external calls (peg count) abandoned by callers while waiting in ACD queue.	Generic 2, R2V4

ACD Group Usage (continued)

Field	Definition	Switch
Queue Peg	Number of ACD calls (peg count) sent to ACD group queue.	Generic 2, R2V2-V4
Queue Usage	Total usage, in CCS or Erlangs, of all calls in ACD group queue.	Generic 2, R2V2-V4
Avg Queue Time (secs)	Average time in seconds that each call spends in ACD queue.	Generic 2, R2V2-V4
Max Calls Queue	Maximum number of calls in the ACD group queue simultaneously, by group.	Generic 2
Max Time Queue (secs)	Maximum waiting time in seconds of calls in ACD group queue.	Generic 2
% Time Queue Thresh Excd	Percentage of time that ACD group queue contained more than the number of calls set as a threshold.	Generic 2, R2V2-V4

ACD Group Call Flow

This section appears on reports for Generic 2. On the actual report, data is shown for total internal and total external calls, and for external calls only. However, only a general definition is given below.

Field	Definition	Switch
ACD Group	Number of the ACD agent group under study.	Generic 2
Date	Date of poll.	Generic 2
Time	Time of poll.	Generic 2
Calls	Number of calls handled by ACD group.	Generic 2
Intra Flow to Grp	Number of calls reaching group from other ACD groups due to intraflow.	Generic 2
Intra Flow fm Grp	Number of calls which intraflow from the group to another ACD group.	Generic 2
Flow to Non-ACD	Number of calls that intraflow or interflow from the group to a destination that is not another ACD group or vector.	Generic 2
Flow to VDN	Number of calls which intraflow from the group to a VDN.	Generic 2
Forced Discon	Number of calls queued for the group that receive forced disconnect.	Generic 2
Forced Busy	Number of calls queued for the group that receive forced busy.	Generic 2

ACD Group Call Redirection Summary

This section of the report provides information on three types of calls from both internal and external callers. Data on calls handled by Regular ACD, Message Center, and AUDIX is shown. This information is available for Generic 2 and System 85 R2V4 switches.

Field	Definition	Switch
Answering Service	Lists service that answered the calls such as ACD, Message Center or AUDIX.	Generic 2, R2V4
Date	Date of poll.	Generic 2, R2V4
Time	Time of poll.	Generic 2, R2V4
Call Cov Internal	Number of internal calls redirected through Call Coverage.	Generic 2, R2V4
Call Frwd Internal	Number of internal calls redirected through Call Forwarding.	Generic 2, R2V4
UCD Hunt (Direct) Internal	Number of direct internal calls redirected through Uniform Call Distribution (UCD).	Generic 2, R2V4
Call Cov External	Number of external calls redirected through Call Coverage.	Generic 2, R2V4
Call Frwd External	Number of external calls redirected through Call Forwarding.	Generic 2, R2V4
UCD Hunt (Direct) External	Number of direct external calls redirected through Uniform Call Distribution (UCD).	Generic 2, R2V4

ACD Call Vectoring - Call Vectoring Information

This information is available for Generic 2 and R2V4 switches.

Field	Definition	Switch
Vector Number	Number of the vector under study.	Generic 2, R2V4
Date	Date of poll.	Generic 2, R2V4
Time	Time of poll.	Generic 2, R2V4
Total Calls	Number of calls handled by vector.	Generic 2, R2V4
Usage	Length of time, expressed in CCS or Erlangs, spent on calls by vector.	Generic 2, R2V4
Abandoned	Number of calls abandoned by callers for each vector.	Generic 2, R2V4

ACD Call Vectoring - Vector Direction Number Information

This information is available for Generic 2 switches only.

Field	Definition	Switch
VDN	The call vector number (1 through 128).	Generic 2
Date	Date of poll.	Generic 2
Time	Time of poll.	Generic 2
Total Calls	Total calls directed to VDN.	Generic 2
Internal Calls	Internal calls directed to VDN.	Generic 2
External Calls	External calls directed to VDN.	Generic 2

ACD Agent Report

The ACD Agent section of the report is available for Generic 2 and System 85 R2V2 through R2V4 switches.

Field	Definition	Switch
ACD Group	Number of the ACD agent group under study.	Generic 2, R2V2-V4
ACD Agent Extn	The agent's assigned extension number (from Packet 13). If an agent extension number is set to 0, then no extension has been assigned.	Generic 2.2
ACD Agent	The group's assigned position, from Packet 13.	Generic 2.1, R2V2-V4
Date	Date of poll.	Generic 2, R2V2-V4
Time	Time of poll.	Generic 2, R2V2-V4
Total Peg	Number of calls connected to an answering position.	Generic 2, R2V2-V4
Total Internal Peg	Number of internal calls connected to an answering position.	Generic 2, R2V4
Total External Peg	Number of external calls connected to an answering position.	Generic 2, R2V4
Total Usage	The usage in CCS for connected calls for each answering position.	Generic 2, R2V2-V4
Avg Serv Time (secs)	The average time of service in seconds for each answering position. This calculation is contained in Appendix C, "Monitor I Equations."	Generic 2, R2V2-V4

ARS (Automatic Route Selection) Report (Generic 2.1, System 85, DIMENSION)

```
      Today:  Fri Mar 22 1991  10:14:23                              Page   1
 Switch Name:  test123                                  Start:  01/09/1991 11:00
Output Units:  peg count/peak                             End:  01/09/1991 13:00

                        AUTOMATIC ROUTE SELECTION REPORT


PATTERN: 2

          Trunk                                                  Offer  Carry Ovfl
Plan Pref Group        Trunk Group Name         Date   Hour     Peg    Peg   Peg
---- ---- -----  ------------------------------ ------ -----  ------ -----  -----
   1       No calls offered.
   2  1   116    DDD                            05/09  11:00   1337  1337     0
   3       No calls offered.


PATTERN: 3

          Trunk                                                  Offer  Carry Ovfl
Plan Pref Group        Trunk Group Name         Date   Hour     Peg    Peg   Peg
---- ---- -----  ------------------------------ ------ -----  ------ -----  -----
   1       No calls offered.
   2  1   305    MEGACOM                        05/09  13:00    366     5     0
      2   302    MEGACOM,SDN                    05/09  13:00    361    93     0
      3   308    MEG/MEG 800                    05/09  13:00    268    19     0
      4   129    Megacom                        05/09  13:00    249   171     0
      5   118    Band 5 Wats                    05/09  13:00     78    23     0
      7   307    MEGACOM,SDN,AS56               05/09  13:00     55    55     0
   3       No calls offered.


PATTERN: 4

          Trunk                                                  Offer  Carry Ovfl
Plan Pref Group        Trunk Group Name         Date   Hour     Peg    Peg   Peg
---- ---- -----  ------------------------------ ------ -----  ------ -----  -----
   1       No calls offered.
   2  1   119    Band 0 Wats                    05/09  13:00     35    35     0
   3       No calls offered.


                                  Report Completed
```

Field Definitions for the ARS Report

Field	Definitions	Switch
Pattern	Pattern number indicates the pattern under study. As many as 16 patterns can be studied at one time.	Generic 2.1, R2V2-V4, DIMENSION
Plan	Plan number indicates first, second, or third 8-hour segment of 24-hour day.	Generic 2.1, R2V2-V4, DIMENSION
Pref	Preference number indicates the order in which the trunk group is assigned calls.	Generic 2.1, R2V2-V4, DIMENSION
Trunk Group	Identifies the trunk group number assigned to this routing preference by the customer.	Generic 2.1, R2V2-V4, DIMENSION
Trunk Group Name	Name assigned by customer and stored in the Monitor I database; it can be updated from the switch.	Generic 2.1, R2V2-V4, DIMENSION
Date	Date of the poll.	Generic 2.1, R2V2-V4, DIMENSION
Hour	Hour of the poll as provided by the Monitor I poller-parser software.	Generic 2.1, R2V2-V4, DIMENSION
Offer Peg	Number of calls offered to this trunk group in this route. Refer to Appendix C, "Monitor I Equations" for this calculation.	Generic 2.1, R2V2-V4, DIMENSION
Carry Peg	The switch's total for the number of times a route was selected. Each time a preference within a pattern is used, its peg count is incremented by one. This occurs after all digits have been dialed, the trunks located but not yet seized.	Generic 2.1, R2V2-V4, DIMENSION
Ovfl Peg	The number of calls queued due to no available trunks. The overflow peg is incremented after all digits have been dialed, and after the trunks have been searched, but no trunk group has been found to carry the call. The count for the last trunk group tied in a particular pattern is incremented when no trunks are available. The count does not include calls that were blocked due to an insufficient Facility Restriction Level (FRL).	Generic 2.1, R2V2-V4, DIMENSION

ARS (Automatic Route Selection) Report (G3r, G3i)

```
      Today:  Mon Apr  8 1991  13:43:11                              Page   1
 Switch Name:  G3itest                                 Start:  03/28/1991  1:00
Output Units:  call count/peak                            End:  03/29/1991 24:00
  Peak Field:  Calls Offrd


                        AUTOMATIC ROUTE SELECTION REPORT



Pattern Number: 1

            ------ Pattern Information ------  --- Trunk Group Measurements ---
      Begin Que Calls Calls Call  %  Call Que  Grp  Grp   Grp   Grp   %   Calls
Date  Time  Siz Offrd Carrd Blk  Blk Que  Ovf  No   Type  Size  Dir Calls Carrd
----- ----- --- ----- ----- ---- --- ---- ---  ---  ----  ----  --- ----- -----
03/28 10:00   0   223   223    0   0    0   0
                                               3  co       6  two    52   116
                                               2  co       8  two    46   103
                                               1  co      10  two     2     4
                                              33  isdn    23  two     0     0

Pattern Number: 2

            ------ Pattern Information ------  --- Trunk Group Measurements ---
      Begin Que Calls Calls Call  %  Call Que  Grp  Grp   Grp   Grp   %   Calls
Date  Time  Siz Offrd Carrd Blk  Blk Que  Ovf  No   Type  Size  Dir Calls Carrd
----- ----- --- ----- ----- ---- --- ---- ---  ---  ----  ----  --- ----- -----
03/29 14:00   0    15    15    0   0    0   0
                                              33  isdn    23  two   100    15
                                              32  isdn    23  two     0     0
                                               3  co       6  two     0     0
                                               2  co       8  two     0     0
                                               1  co      10  two     0     0

Pattern Number: 3

            ------ Pattern Information ------  --- Trunk Group Measurements ---
      Begin Que Calls Calls Call  %  Call Que  Grp  Grp   Grp   Grp   %   Calls
Date  Time  Siz Offrd Carrd Blk  Blk Que  Ovf  No   Type  Size  Dir Calls Carrd
----- ----- --- ----- ----- ---- --- ---- ---  ---  ----  ----  --- ----- -----
03/28 10:00   0    59    59    0   0    0   0
                                              33  isdn    23  two   100    59
                                              32  isdn    23  two     0     0
                                               3  co       6  two     0     0
                                               2  co       8  two     0     0
                                               1  co      10  two     0     0

                                  Report Completed
```

Field Definitions for the ARS Report (G3r, G3i)

Field	Definitions	Switch
Pattern	Pattern number indicates the pattern under study. As many as 20 patterns can be studied at one time.	G3r, G3i
Date	Date of the poll	G3r, G3i
Begin Time	The time when the measurement starts. For the daily poll and data options, this field shows "dly" (daily); for peak options, this field shows the hour when the peak occurred.	G3r, G3i
Queue Size	Queue size of the first trunk group in the ARS pattern.	G3r, G3i
Calls Offered	The total calls offered to the ARS pattern.	G3r, G3i
Calls Carried	The total calls carried on the ARS pattern.	G3r, G3i
Calls Blocked	The number of calls that cannot be handled because all the trunk groups in the pattern were busy.	G3r, G3i
Percent Blocked	The percentage of blocked calls. Calculation: (Calls Blocked/Calls Offered)*100	G3r, G3i
Calls Queued	The number of calls entered into the ARS pattern queue because all the trunk groups in the pattern were busy.	G3r, G3i
Queue Overflow	The number of calls that cannot be handled by the first trunk group in the ARS queue because the trunk group is operating at full capacity.	G3r, G3i
Trunk Group Number	The identification number of the trunk group that is handling the carried calls for the pattern.	G3r, G3i
Trunk Group Type	The trunk group type	G3i
Trunk Group Size	The number of trunks in the trunk group.	G3r, G3i
Trunk Group Direction	The direction of the trunk group.	G3r, G3i

Attendant Measurement Report (Generic 2, System 85, DIMENSION)

```
       Today:  Tue Oct 20 1992  09:03:49                              Page   1
 Switch Name:  test123                                 Start:  06/24/1991 1:00
Output Units:  ccs/peak                                  End:  06/24/1991 13:00


                        ATTENDANT MEASUREMENT REPORT


Total Attendants:  3
Available Attendants:  2

SUMMARY


                                  Average          Incoming Queue
              Worked              Holding  -------------------------------
            ------------- Attended  Time                         Avg Queue
Date  Time  Peg    Usage   Usage   (secs)    Peg  Usage Abandon Time (secs)
----- ----- ------ ------ -------- -------  ----- ----- ------- -----------
06/24 08:00     16      6       52      37     13     0       4           0
```

```
       Today:  Tue Oct 20 1992  09:03:54                              Page   2
 Switch Name:  test123                                 Start:  06/24/1991 1:00
Output Units:  ccs/peak                                  End:  06/24/1991 24:00


                        ATTENDANT MEASUREMENT REPORT


FORCE MANAGEMENT ALTERNATIVES


Alternative   Average      Average Delay of     Percent
Staff Levels  Delay (sec)  Delayed Calls (sec)  Delayed
------------  -----------  -------------------  --------
     1             7.40            44.40          16.67
     2             0.26            20.18           1.28
     3             0.01            13.06           0.07
     4             0.00             9.65           0.00
```

Attendant Measurement Report (continued)

```
       Today:  Tue Oct 20 1992  09:03:59                              Page   3
 Switch Name:  test123                                 Start:  06/24/1991 11:00
Output Units:  ccs/peak                                  End:  06/24/1991 13:00


                         ATTENDANT MEASUREMENT REPORT


ATTENDANT STATISTICS


Attendant   Attended   Worked   Worked   Average Hold
Position     Usage      Usage     Peg     Time (sec)
---------   --------   ------   ------   ------------
       1          34        6       11         54
       2          18        1        4         25
       3           0        0        1          0
```

```
       Today:  Tue Oct 20 1992  09:04:03                              Page   4
 Switch Name:  test123                                 Start:  06/24/1991 1:00
Output Units:  ccs/peak                                  End:  06/24/1991 24:00


                         ATTENDANT MEASUREMENT REPORT


CENTRALIZED ATTENDANT SERVICE MEASUREMENTS


                Satellite
----------------------------------------
                             Avg Queue    Main RLT
 Peg     Usage   Abandon     Time (secs)  Answered
-----    -----   -------     ------------ ---------

              No data available

                           Report Completed
```

Attendant Measurement Report (continued)

```
      Today:  Tue Oct 20 1992  09:05:47                              Page   1
 Switch Name:  test123                                 Start:  06/24/1991 8:00
Output Units:  ccs/all                                  End:  06/24/1991 10:00


                        ATTENDANT MEASUREMENT REPORT


Total Attendants:  3


SUMMARY


                                  Average          Incoming Queue
               Worked             Holding  -------------------------------
            ------------- Attended  Time                          Avg Queue
Date  Time  Peg    Usage   Usage   (secs)    Peg  Usage Abandon Time (secs)
----- ----- ------ ------ -------- -------  ----- ----- ------- -----------
06/24 08:00     16      6       52      37     13     0       4           0
06/24 09:00      9      3       65      33     11     0       2           0
06/24 10:00     16      4       62      25     18     0       2           0
```

```
      Today:  Tue Oct 20 1992  09:05:52                              Page   2
 Switch Name:  test123                                 Start:  06/24/1991  8:00
Output Units:  ccs/all                                   End:  06/24/1991 10:00


                        ATTENDANT MEASUREMENT REPORT


DELAY STATISTICS


             Average      Average Delay of     Percent    Available
Date  Time   Delay (sec)  Delayed Calls (sec)  Delayed    Attendants
----- -----  ----------  -------------------  -------    ----------
06/24 08:00         0.26                20.18     1.28             2
06/24 09:00         0.06                17.22     0.33             2
06/24 10:00         0.08                13.24     0.58             2
```

Attendant Measurement Report (continued)

```
       Today:  Tue Oct 20 1992  09:05:56                              Page   3
 Switch Name:  test123                                 Start:  06/24/1991  8:00
Output Units:  ccs/all                                  End:  06/24/1991  10:00

                         ATTENDANT MEASUREMENT REPORT


ATTENDANT STATISTICS


               Attendant   Attended   Worked   Worked   Average Hold
Date    Time   Position     Usage      Usage     Peg     Time (sec)
----    ----    ---------   --------   ------   ------   ------------
06/24   08:00          1          34        6       11         54
06/24   09:00          1          31        1        3         33
06/24   10:00          1          26        2        6         33
06/24   08:00          2          18        1        4         25
06/24   09:00          2          34        2        6         33
06/24   10:00          2          36        2       10         20
06/24   08:00          3           0        0        1          0
06/24   09:00          3           0        0        0          -
06/24   10:00          3           0        0        0          -
```

```
       Today:  Tue Oct 20 1992  09:05:59                              Page   4
 Switch Name:  test123                                 Start:  06/24/1991 8:00
Output Units:  ccs/all                                  End:  06/24/1991 10:00

                         ATTENDANT MEASUREMENT REPORT


CENTRALIZED ATTENDANT SERVICE MEASUREMENTS


                                  Satellite
               ----------------------------------------
                                      Avg Queue    Main RLT
Date   Time    Peg     Usage   Abandon     Time (secs)  Answered
----   ----    -----    -----   -------     ------------ ---------

              No data available


                           Report Completed
```

Field Definitions for the Attendant Measurement Report (Generic 2, System 85, DIMENSION)

Peak Hour Summary - Peak Format
Hourly Summaries - All Format

Field	Definition	Switch
Total Attendants	Number of attendants on duty at time of poll.	Generic 2, R2V2-V4, DIMENSION
Date	Date of poll.	Generic 2, R2V2-V4, DIMENSION
Time	Time of poll.	Generic 2, R2V2-V4, DIMENSION
Worked Peg	Number of times attendants at all consoles depress loop key.	Generic 2, R2V2-V4, DIMENSION
Worked Usage	CCS or Erlang measurement for active attendant consoles.	Generic 2, R2V2-V4, DIMENSION
Attended Usage	CCS or Erlang measurement of the time a console attendant is available, that is, plugged in and not busied out.	Generic 2, R2V2-V4, DIMENSION
Average Holding Time (secs)	Average time in seconds that each attendant spent on a call.	Generic 2, R2V2-V4, DIMENSION
Incoming Queue Peg	Number of calls for the attendant group that are placed in queue.	Generic 2, R2V2-V4, DIMENSION
Incoming Queue Usage	Usage in CCS or Erlangs of all calls entering attendants' group queue.	Generic 2, R2V2-V4, DIMENSION
Incoming Queue Abandoned	Number of calls in the attendant group's queue that were abandoned by callers before being answered by an attendant.	Generic 2, R2V2-V4, DIMENSION
Average Queue Time (secs)	Average time in seconds a call waits in queue for an attendant to answer. The equation used to determine this value is provided in Appendix C, "Monitor I Equations."	Generic 2, R2V2-V4, DIMENSION

Peak Hour Force Management Alternatives - Peak Format

Monitor I uses the Erlang C Infinite Queue traffic model to calculate delays in answering calls. This calculation is based on the total number of attendants and the worked usage.

Field	Definition	Switch
Date (All Format Only)	Date of poll.	Generic 2, R2V2-V4, DIMENSION
Time (All Format Only)	Time of poll.	Generic 2, R2V2-V4, DIMENSION
Alternative Staff Levels (Peak Format Only)	Number of attendants required for up to five alternatives in staffing. If the staff level is 0, no data is available.	Generic 2, R2V2-V4, DIMENSION
Average Delay (sec)	Average delay of calls directed to the attendant group during the time covered by this report.	Generic 2, R2V2-V4, DIMENSION
Average Delay of Delayed Calls (sec)	Average delay of calls placed in the attendant group's queue.	Generic 2, R2V2-V4, DIMENSION
Percent Delayed	Percentage of calls directed to the attendant group that are delayed.	Generic 2, R2V2-V4, DIMENSION

Peak Hour Attendant Statistics - Peak Format
Hourly Attendant Statistics - All Format

Field	Definition	Switch
Date	Date of poll.	Generic 2, R2V2-V4, DIMENSION All format only
Time	Time of poll.	Generic 2, R2V2-V4, DIMENSION All format only
Attendant Position	Identifies the individual attendant console position associated with the measurements displayed on that line.	Generic 2, R2V2-V4, DIMENSION
Attended Usage	CCS or Erlang usage for the period the console was available.	Generic 2, R2V2-V4, DIMENSION
Worked Usage	CCS or Erlang usage during the time console was active.	Generic 2, R2V2-V4, DIMENSION
Worked Peg	Number of calls handled at console. This is measured in depressions of the loop key.	Generic 2, R2V2-V4, DIMENSION
Average Hold Time (sec)	Average time in seconds each console spent on handling each call.	Generic 2, R2V2-V4, DIMENSION

Peak Hour Centralized Attendant Service Measurements - Peak Format
Hourly Centralized Attendant Service Measurements - All Format

Field	Definition	Switch
Date	Date of poll.	Generic 2, R2V2-V4, DIMENSION All format only
Time	Time of poll.	Generic 2, R2V2-V4, DIMENSION All format only
Satellite Peg (TC)	Number of times a call is directed to the CAS attendant from the branch.	Generic 2, R2V2-V4, DIMENSION
Satellite Usage (Peak)	CCS usage for calls in the branch queue of a Centralized Attendant Service (CAS).	Generic 2, R2V2-V4, DIMENSION
Satellite Abandon	Number of times a call in the CAS queue for the branch is abandoned before a Release Link Trunk (RLT) is available.	Generic 2, R2V2-V4, DIMENSION
Avg Queue Time (TC) (secs)	Average time in queue, in seconds, for calls in the CAS branch queue.	Generic 2, R2V2-V4, DIMENSION
Main RLT Answered (TC)	Number of calls received over a link trunk and answered by the attendant at the main location.	Generic 2, R2V2-V4, DIMENSION

Attendant Measurement Report (G3i)

```
      Today:  Tue Oct 20 1992  17:08:37                              Page   1
 Switch Name:  g3itest                                 Start:  09/10/1992  1:00
Output Units:  ccs/peak                                   End: 09/10/1992 24:00
  Peak Field:  Time Talk


                        ATTENDANT GROUP REPORT


SUMMARY

                                          Avg
                                          Hold                      Time  Speed
     Begin Grp  --------- Calls ---------  Time   ----- Time ---- Abdn  Ans
Date  Time  Size Ans  Abnd Qued H-Abd Held  (sec)  Avail Talk Held (sec) (sec)
----- ----- ---- ---- ---- ---- ----- ----  -----  ----- ---- ---- ----- -----
09/10 12:00    4   10    1    0     0    0     60     66    6   1      1     5
```

```
      Today:  Tue Oct 20 1992  17:08:39                              Page   2
 Switch Name:  g3itest                                 Start:  09/10/1992  1:00
Output Units:  ccs/peak                                   End: 09/10/1992 24:00
  Peak Field:  Time Talk


                      ATTENDANT MEASUREMENT REPORT


FORCE MANAGEMENT ALTERNATIVES


Alternative   Average      Average Delay of     Percent
Staff Levels  Delay (sec)  Delayed Calls (sec)  Delayed
------------  -----------  -------------------  -------
     2            0.42            32.73           1.28
     3            0.01            21.18           0.07
     4            0.00            15.65           0.00
     5            0.00            12.41           0.00
     6            0.00            10.29           0.00


                          Report Completed
```

Attendant Measurement Report (G3i) (continued)

```
       Today:  Tue Oct 20 1992  17:09:30                              Page   3
 Switch Name:  g3itest                                 Start:  09/10/1992  1:00
Output Units:  ccs/all                                   End: 09/10/1992 24:00
  Peak Field:  Time Talk


                         ATTENDANT GROUP REPORT


SUMMARY

                                                Avg
                                                Hold                    Time  Speed
      Begin Grp  --------- Calls ---------      Time   ----- Time ---- Abdn  Ans
Date  Time  Size Ans  Abnd Qued H-Abd Held      (sec)  Avail Talk Held (sec) (sec)
----- ----- ---- ---- ---- ---- ----- ----      -----  ----- ---- ---- ----- -----
09/10 09:00    4   17   50    0     0    0        11     67    2    0     1     5
09/10 10:00    4   18    4    0     0    0        22     68    4    0     1     4
09/10 11:00    4   16    2    1     0    1        25     66    4    1     1     5
09/10 12:00    4   10    1    0     0    0        60     66    6    1     1     5
09/10 13:00    4   13    7    0     0    0        15     69    2    0     1     6
09/10 14:00    4   10    4    0     0    0        10     69    1    0     1     4
```

```
       Today:  Tue Oct 20 1992  17:09:31                              Page   4
 Switch Name:  g3itest                                 Start:  09/10/1992  1:00
Output Units:  ccs/all                                   End: 09/10/1992 24:00
  Peak Field:  Time Talk


                          ATTENDANT MEASUREMENT REPORT


DELAY STATISTICS

        Begin   Average       Average Delay of      Percent
Date    Time    Delay (sec)   Delayed Calls (sec)   Delayed
-----   -----   -----------  -------------------    -------
09/10   09:00          0.00                  2.79     0.00
09/10   10:00          0.00                  5.66     0.00
09/10   11:00          0.00                  6.43     0.00
09/10   12:00          0.00                 15.65     0.00
09/10   13:00          0.00                  3.80     0.00
09/10   14:00          0.00                  2.52     0.00

                            Report Completed
```

Attendant Measurement Report (G3r)

```
      Today:  Mon Oct  19 1992  17:07:37                              Page   1
 Switch Name:  g3rtest                                 Start:  09/09/19921:00
Output Units:  ccs/peak                                   End:  09/12/1992 24:00
  Peak Field:  Time Talk


                        ATTENDANT GROUP REPORT

Available Attendants:  2

SUMMARY

                                          Avg
                                          Hold                      Time  Speed
      Begin Grp  --------- Calls ---------  Time   ----- Time ---- Abdn  Ans
Date  Time  Size Ans  Abnd Qued H-Abd Held  (sec)  Avail Talk Held (sec) (sec)
----- ----- ---- ---- ---- ---- ----- ----  -----  ----- ---- ---- ----- -----
09/10 12:00    4   10    1    0     0    0     60     66    6    1     1     5
```

```
      Today:  Mon Oct  19 1992  17:07:49                              Page   2
 Switch Name:  g3rtest                                 Start:  09/09/19921:00
Output Units:  ccs/peak                                   End:  09/12/1992 24:00
  Peak Field:  Time Talk


                     ATTENDANT MEASUREMENT REPORT

FORCE MANAGEMENT ALTERNATIVES


Alternative   Average      Average Delay of     Percent
Staff Levels  Delay (sec)  Delayed Calls (sec)  Delayed
------------  -----------  -------------------  -------
     1           12.00           72.00           16.67
     2            0.42           32.73            1.28
     3            0.01           21.18            0.07
     4            0.00           15.65            0.00
```

Attendant Measurement Report (G3r) (continued)

```
      Today:  Mon Oct  19 1992  17:07:59                              Page   3
 Switch Name:  g3rtest                                  Start:  09/09/19921:00
Output Units:  ccs/peak                                    End:  09/12/1992 24:00
  Peak Field:  Time Talk


                        ATTENDANT MEASUREMENT REPORT

ATTENDANT STATISTICS

                                                                    Avg
                                                                   Hold
       Begin   Attd   Calls    ------Time------                   Time
Date    Time   ID     Ans     Avail   Talk   Held                 (sec)
09/10  11:00    1      5       32      4      1                    80
09/10  11:00    2      5       34      2      1                    40
09/10  11:00    3      0        0      0      0                     -
09/10  11:00    4      0        0      0      0                     -

                             Report Completed
```

Attendant Measurement Report (G3r) (continued)

```
       Today:  Mon Oct 19 1992  17:13:01                                Page   4
 Switch Name:  g3rtest                                   Start:  09/10/1992 11:00
Output Units:  ccs/all                                     End:  09/10/1992 13:00
  Peak Field:  Time Talk


                         ATTENDANT GROUP REPORT


SUMMARY

                                                Avg
                                                Hold                     Time  Speed
      Begin Grp  --------- Calls ---------      Time   ----- Time ---- Abdn  Ans
Date  Time  Size Ans  Abnd Qued H-Abd Held      (sec)  Avail Talk Held (sec) (sec)
----- ----- ---- ---- ---- ---- ----- ----      -----  ----- ---- ---- ----- -----
09/10 11:00    4   16    2    1     0    1        25     66    4    1     1     5
09/10 12:00    4   10    1    0     0    0        60     66    6    1     1     5
09/10 13:00    4   13    7    0     0    0        15     69    2    0     1     6
```

```
       Today:  Mon Oct 19 1992  17:13:11                                Page   5
 Switch Name:  g3rtest                                   Start:  09/10/1992 11:00
Output Units:  ccs/all                                     End:  09/10/1992 13:00
  Peak Field:  Time Talk


                         ATTENDANT MEASUREMENT REPORT



DELAY STATISTICS

        Begin   Average       Average Delay of      Percent Available
Date    Time    Delay (sec)   Delayed Calls (sec)   Delayed Attendants
-----   -----   -----------  -------------------    ------- ----------
09/10   11:00          0.08                 13.24     0.58           2
09/10   12:00          0.42                 32.73     1.28           2
09/10   13:00          0.01                  7.71     0.15           2
```

Attendant Measurement Report (G3r) (continued)

```
      Today:  Mon Oct 19 1992  17:13:14                          Page   6
 Switch Name:  g3rtest                                 Start:  09/10/1992 11:00
Output Units:  ccs/all                                   End:  09/10/1992 13:00
  Peak Field:  Time Talk


                         ATTENDANT MEASUREMENT REPORT


ATTENDANT STATISTICS

                                                                    Avg
                                                                   Hold
       Begin   Attd   Calls    ------Time------                   Time
Date    Time   ID     Ans     Avail   Talk   Held                 (sec)
09/10  11:00    1      8       32      2      3                    0
09/10  11:00    2      8       34      1      1                   12
09/10  11:00    3      0        0      0      0                    -
09/10  11:00    4      0        0      0      0                    -
09/10  12:00    1      5       32      4      1                   80
09/10  12:00    2      5       34      2      0                   40
09/10  12:00    3      0        0      0      0                    -
09/10  12:00    4      0        0      0      0                    -

                              Report Completed
```

Field Definitions for the Attendant Measurement Report (G3i, G3r)

Peak Hour Summary - Peak Format
Hourly Summaries - All Format

Field	Definition	Switch
Date	Date of poll	G3i, G3r
Begin Time	Beginning of the poll hour which is generated by the time of day clock in the switch.	G3i, G3r
Group Size	The number of attendant consoles administered in the group. (The range is 1 to 7).	G3i, G3r
Calls Answered	The total calls answered by all attendants during the polling interval.	G3i, G3r
Calls Abandoned	Number of calls in the attendant group's queue that were abandoned by callers before being answered by an attendant.	G3i, G3r
Calls Queued	Number of calls that are directed to an attendant group, find all attendants busy, are then placed in the attendant group queue.	G3i, G3r
Calls Held Abandoned	Number of calls in the attendant group's queue that were abandoned by callers before being answered by an attendant.	G3i, G3r
Calls Held	Number of calls that were put on hold by all attendants.	G3i, G3r
Average Holding Time (secs)	Average time in seconds that each attendant spent on a call AHT=(Time talk/Calls answered)*100	G3i, G3r
Time Available	The time (in CCS) that the attendants are available to handle calls during the measurement hour.	G3i, G3r
Time Talk	The active time (in CCS) that all attendants in the attendant group spent on active calls.	G3i, G3r
Time Held	The active time (in CCS) that the attendants have calls on hold.	G3i, G3r
Time Abandoned	The average time (in seconds) that a caller waited in the attendant queue and/or was ringing at the attendant console before hanging up.	G3i, G3r
Speed of Answer	The average interval (in seconds) between the time a call terminates at the attendant group and the time the call is answered by an attendant.	G3i, G3r

Peak Hour Force Management Alternatives - Peak Format

Monitor I uses the Erlang C Infinite Queue traffic model to calculate delays in answering calls. This calculation is based on the total number of attendants with attended usage greater than zero and the worked usage.

Field	Definition	Switch
Date (All format only)	Date of Poll	G3i, G3r
Begin Time (All format only)	Beginning of the poll hour which is generated by the time of day clock.	G3i, G3r
Alternative Staff Levels	Number of attendants required for up to five alternatives in staffing. If the staff level is zero, no data is available.	G3i, G3r
Average Delay (sec)	Average delay of calls directed to the attendant group during the time covered by this report.	G3i, G3r
Average Delay of Delayed Calls (sec)	Average delay of calls placed in the attendant group's queue.	G3i, G3r
Percent Delayed	Percentage of calls directed to the attendant group that are delayed.	G3i, G3r
Available Attendants	Attendants with attended usage greater than zero.	G3r only

Hourly Delay Statistics - All Format

Monitor I uses the Erlang C Infinite Queue traffic model to calculate delays in answering calls. This calculation is based on the total number of attendants with attended usage greater than zero and the worked usage.

Field	Definition	Switch
Date (All format only)	Date of Poll.	G3i, G3r
Begin Time (All format only)	Beginning of the poll hour which is generated by the time of day clock.	G3i, G3r
Average Delay (sec)	Average delay of calls directed to the attendant group during the time covered by this report.	G3i, G3r
Average Delay of Delayed Calls (sec)	Average delay of calls placed in the attendant group's queue.	G3i, G3r
Percent Delayed	Percentage of calls directed to the attendant group that are delayed.	G3i, G3r
Available Attendants	Attendants with attended usage greater than zero.	G3r only

Call Coverage Report

```
       Today:  Fri Mar 22 1991  17:12:53                              Page   1
 Switch Name:  test123                                 Start:  01/09/1991 11:00
Output Units:  peg count/peak                            End:  01/09/1991 13:00


                           CALL COVERAGE REPORT



COVERAGE BY ANSWERING POINT


                             Total
                     ----------------------- Call Cov Call Cov Call Cov Percent
Coverage             Offer  Answered         Point 1  Point 2  Point 3  Answered
 Group   Date  Time  Group  by Group  Abdn   Answered Answered Answered By Group
-------- ----- ----- ------ -------- ------- -------- -------- -------- --------
      12 05/09 13:00      0        0       0        0        0        0     -
      14 05/09 12:00      1        0       1        0        0        0    0%
      45 05/09 13:00      6        6       0        6        0        0  100%
      50 05/09 13:00      0        0       0        0        0        0     -
      55 05/09 13:00      2        2       0        0        0        2  100%
      60 05/09 13:00      1        1       0        0        1        0  100%
    2033 05/09 12:00      2        2       0        2        0        0  100%
```

Call Coverage Report (continued)

```
       Today:  Fri Mar 22 1991  17:12:56                              Page   2
 Switch Name:  test123                                  Start:  01/09/1991 11:00
Output Units:  peg count/peak                             End:  01/09/1991 13:00


                           CALL COVERAGE REPORT



COVERAGE BY CALL ORIGINATION


                     Total Total      Internal            External      Percent
Coverage             Offer Offer ------------------  ------------------ Offered
 Group   Date  Time  Prin  Group Offer Answer Abdn   Offer Answer Abdn  To Group
-------- ----- ----- ----- ----- ----- ------ -----  ----- ------ ----- --------
      12 05/09 13:00     0     0     0      0     0      0      0     0     -
      14 05/09 12:00     1     1     1      0     1      0      0     0   100%
      45 05/09 13:00    10     6     5      5     0      1      1     0    60%
      50 05/09 13:00     0     0     0      0     0      0      0     0     -
      55 05/09 13:00     2     2     1      1     0      1      1     0   100%
      60 05/09 13:00     1     1     0      0     0      1      1     0   100%
    2033 05/09 12:00     2     2     0      0     0      2      2     0   100%


                              Report Completed
```

Field Definitions for the Call Coverage Report

Coverage by Answering Point

Field	Definition	Switch
Coverage Group	Number that identifies the Call Coverage Group under study.	Generic 2, R2V2-V4
Date	For the **All Option**, this is the date of the poll; for the **Peak Option**, this is the date the peak calls were offered to the group. If the **Total Option** is chosen, the field is not printed.	Generic 2, R2V2-V4
Time	For the **All Option**, this is the polling hour; for the **Peak Option**, it is the peak hour, and for the **Total Option**, the field is not printed.	Generic 2, R2V2-V4
Total Offer Group	Number of calls offered to coverage group principals. With dual-path coverage, offered calls increment the register of the first coverage group.	Generic 2, R2V2-V4
Total Answered by Group	The sum of peg counts for calls answered by the three coverage points.	Generic 2, R2V2-V4
Total Abdn	The difference between calls offered and total calls answered.	Generic 2, R2V2-V4
Call Cov Point 1 Answered	Number of calls answered at a specified call coverage point (calls offered minus calls abandoned).	Generic 2, R2V2-V4
Call Cov Point 2 Answered	Number of calls answered at a specified call coverage point (calls offered minus calls abandoned).	Generic 2, R2V2-V4
Call Cov Point 3 Answered	Number of calls answered at a specified call coverage point (calls offered minus calls abandoned).	Generic 2, R2V2-V4
Percent Answered By Group	Percent of calls answered by the coverage groups.	Generic 2, R2V2-V4

Coverage by Call Origination

Field	Definition	Switch
Coverage Group	Number identifying coverage group under study.	Generic 2, R2V4
Date	For the **All Option**, this is the date of the poll, for the **Peak Option**, this is the date of peak calls, and for the **Total Option**, this field is not printed.	Generic 2, R2V4
Time	For the **All Option**, this is the hour of the poll; for the **Peak Option**, it is the peak hour for calls going to attendants, and for the **Total Option**, this field is not printed.	Generic 2, R2V4
Total Offer Prin	Total number of calls offered to the principal call coverage station.	Generic 2, R2V4
Total Offer Group	Total number of calls offered to the coverage group because the principal did not answer the call.	Generic 2, R2V4
Internal Offer	Number of internal calls offered to the coverage group from within the switch. Calculated by subtracting external calls offered from total calls offered to the group.	Generic 2, R2V4
Internal Answer	Number of internal calls answered by the coverage group. Calculated by subtracting external calls answered from total calls answered by the group.	Generic 2, R2V4
Internal Abdn	Number of calls abandoned by callers when coverage group did not answer. Calculated by subtracting external calls abandoned from total calls abandoned.	Generic 2, R2V4
External Offer	Number of external calls offered to the coverage group.	Generic 2, R2V4
External Answer	Number of external calls answered by coverage group. Calculated by subtracting external calls abandoned from each coverage point from total number of external calls offered.	Generic 2, R2V4

Coverage by Call Origination (continued)

Field	Definition	Switch
External Abdn	Number of external calls abandoned by callers before being answered by the coverage group. This is the sum of external abandoned calls at each point in the group.	Generic 2, R2V4
Percent Offered to Group	Percentage of calls to the principal that were offered to the call coverage group because the principal did not answer.	Generic 2, R2V4

Carrier Usage Detail Report (Generic 2 and System 85)

```
       Today:  Thu Apr  9 1991  09:30:46                              Page   1
 Switch Name:  test123                                  Start:  03/05/1991  1:00
Output Units:  ccs/peak                                   End:  03/17/1991 24:00

                     CARRIER USAGE DETAIL REPORT

PORT USAGE FOR THE MODULE UNDER STUDY

Date  Time  Mod Type Cab Car Slot  Port Usage 1-32 for Trad and 1-24 for Univ
----- ----- --- ---- --- --- ----  ----------------------------------------
03/12 19:00  12 TRAD  1   3    0    0   0   0   0   0  36   0   0
                                    0   0   0   0   0  36   0   0
                                    0   0   0   0   0   0   0   0
                                    0   0   0   0   0   0   0   0

03/12 20:00  1  TRAD  0   2    1    0   0   0   0   0   0   0   0
                                    0   0   0   0   0   0   0   0
                                    0   0   0   0   0   0   0   0
                                    0   0   0   0   0   0   2   0

03/12 20:00  1  TRAD  1   1    3    0   0   2   0   0   0   0   0
                                    0   0   0   0   0   0   0   0
                                    0   0   0   0   0   0   0   0
                                    0   0   0   0   0   0   0   0

03/23 16:00  24 UNIV      C    1    0   0   0  16   0   0   0   0
                                    0   0   0   0   0   0   0   0
                                    0   0   0   0   0   0   0   0

                      Report Completed
```

Field Definitions for the Carrier Usage Detail Report (Generic 2and System 85)

Field	Definition	Switch
Date	Date of polls.	Generic 2, R2V2-R2V4
Time	Time at which peak usage was achieved.	Generic 2, R2V2-R2V4
Mod	The module that the associated to which information refers.	Generic 2, R2V2-R2V4
Type	The type of module. For Generic 2: TRAD, UNIV, XE. For R2V2-R2V4: TRAD.	Generic 2, R2V2-R2V4
Cab	The cabinet number within the specified module.	Generic 2, R2V2-R2V4
Car	The carrier number within the specified cabinet.	Generic 2, R2V2-R2V4
Slot	A circuit pack. Begin slot for TRAD. **Slot** on traditional carriers correspond to the following four physical slots: Slot encode 0 = Quarter carrier 1 (slots 0-3) Slot encode 1 = Quarter carrier 2 (slots 5-8) Slot encode 2 = Quarter carrier 3 (slots 13-16) Slot encode 3 = Quarter carrier 4 (slots 18-21) If the specified module is a universal or XE module, the traffic studies are made on a slot basis (0-20 for universal, 0-18 for XE).	Generic 2, R2V2-R2V4
Port Usage	The total time, in CCS or Erlangs, that the port is in use. TRAD modules contain 32 ports per slot versus 24 for UNIV and XE.	Generic 2, R2V2-R2V4

Carrier Usage Detail Report (DIMENSION)

```
      Today:  Mon May 16 1991  16:00:12                              Page   1
 Switch Name:  test456                                  Start:  03/05/1991  1:00
Output Units:  ccs/peak                                   End:  03/15/1991 24:00


                     CARRIER USAGE DETAIL REPORT


LINE CARRIER USAGE PER CIRCUIT FOR FIRST QUARTER CARRIER


                                        Circuits
                        ---------------------------------------------
Date  Time  Mod Cab Car  0  1  2  3  4  5  6  7  8  9 10 11 12 13 14 15
----- ----- --- --- --- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- --
06/07 15:00   0   1   1  3 12  6 35  1  4  3  2  1  0  0  0  0  0  0  4
```

```
      Today:  Mon May 16 1991  16:00:15                              Page   2
 Switch Name:  test456                                  Start:  03/05/1991  1:00
Output Units:  ccs/peak                                   End:  03/15/1991 24:00


                     CARRIER USAGE DETAIL REPORT


LINE CARRIER USAGE PER CIRCUIT FOR SECOND QUARTER CARRIER


                                        Circuits
                        ---------------------------------------------
Date  Time  Mod Cab Car 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
----- ----- --- --- --- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- --
06/07 15:00   0   1   1  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
```

Carrier Usage Detail Report (DIMENSION) (continued)

```
       Today:  Mon Oct 16 1991  16:00:17                              Page   3
 Switch Name:  test456                                 Start:  01/01/1991  1:00
Output Units:  ccs/peak                                  End:  10/15/1991 24:00


                      CARRIER USAGE DETAIL REPORT


LINE CARRIER USAGE PER CIRCUIT FOR THIRD QUARTER CARRIER


                                          Circuits
                        -----------------------------------------------
Date  Time  Mod Cab Car 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47
----- ----- --- --- --- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- --
06/07 15:00   0   1   1  0  0  0  0  0  0  0  0 10  0  7  8 29  0  0  0
```

```
       Today:  Mon Oct 16 1991  16:00:20                              Page   4
 Switch Name:  test456                                 Start:  01/01/1991  1:00
Output Units:  ccs/peak                                  End:  10/15/1991 24:00


                      CARRIER USAGE DETAIL REPORT


LINE CARRIER USAGE PER CIRCUIT FOR FOURTH QUARTER CARRIER


                                          Circuits
                        -----------------------------------------------
Date  Time  Mod Cab Car 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63
----- ----- --- --- --- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- --
06/07 15:00   0   1   1  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
```

Carrier Usage Detail Report (DIMENSION) (continued)

```
      Today:  Mon Oct 16 1991  16:00:22                              Page   5
 Switch Name:  test456                                  Start:  01/01/1991  1:00
Output Units:  ccs/peak                                   End:  10/15/1991 24:00


                     CARRIER USAGE DETAIL REPORT


TRUNK CARRIER USAGE PER CIRCUIT FOR FIRST HALF CARRIER


                                        Circuits
                          ---------------------------------------------
Date  Time  Mod Cab Car  0  1  2  3  4  5  6  7  8  9 10 11 12 13 14 15
----- ----- --- --- --- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- --
06/07 15:00   0   0   0  0  0 19 22  0 19  7  9  0 24 24 19 26 24  3  9
```

```
      Today:  Mon Oct 16 1991  16:00:24                              Page   6
 Switch Name:  test456                                  Start:  01/01/1991  1:00
Output Units:  ccs/peak                                   End:  10/15/1991 24:00


                     CARRIER USAGE DETAIL REPORT


TRUNK CARRIER USAGE PER CIRCUIT FOR SECOND HALF CARRIER


                                        Circuits
                          ---------------------------------------------
Date  Time  Mod Cab Car 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
----- ----- --- --- --- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- --
06/07 15:00   0   0   0  0  0  0 24 25 29  0  0  0  0  0  0  0  0  0  0


                           Report Completed
```

Field Definitions for the Carrier Usage Detail Report (DIMENSION)

Line Carrier Usage Per Circuit for First through Fourth Quarter Carrier

Field	Definitions	Switch
Date	Date of polls.	DIMENSION
Time	Time at which peak usage was achieved.	DIMENSION
Mod	The module to which the associated information refers.	DIMENSION
Cab	The cabinet number within the specified module.	DIMENSION
Car	The carrier number within the specified cabinet.	DIMENSION
Circuits	The CCS or Erlang usage per circuit within the quarter carrier.	DIMENSION

Trunk Carrier Usage Per Circuit for First and Second Half Carrier

Field	Definitions	Switch
Date	Date of polls.	DIMENSION
Time	Time at which peak usage was achieved.	DIMENSION
Mod	The module to which the associated information refers.	DIMENSION
Cab	The cabinet number within the specified module.	DIMENSION
Car	The carrier number within the specified cabinet.	DIMENSION
Circuits	The CCS or Erlang usage per circuit within the half carrier.	DIMENSION

Carrier Usage Summary Report (Generic 2 and System 85)

```
       Today:  Thu May  9 1991  09:30:10                              Page   1
 Switch Name:  test123                                  Start:  03/05/19910 Daily
Output Units:  ccs/peak                                   End:  03/29/1991 Daily

                     CARRIER USAGE SUMMARY REPORT

QUARTER CARRIER USAGE FOR THE MODULE UNDER STUDY


             Quarter
Date  Time   Carrier Module Type Cabinet Carrier Slot Usage
----- -----  ------- ------ ---- ------- ------- ---- -----
03/19 13:00        3     01 TRAD      0       2    13   123
03/19 13:00        1     12 TRAD      0       2    00   201
03/19 14:00       18     01 TRAD      1       2    05   108
03/19 14:00        1     12 TRAD      0       2    00   232
03/19 15:00       20     01 TRAD      1       2    18   141
03/19 15:00        1     12 TRAD      0       2    00   253
03/19 16:00       20     01 TRAD      1       2    18   138
03/23 16:00        1     12 TRAD      0       2    00   247
03/23 17:00       19     01 TRAD      1       2    13   137
03/23 17:00       47     24 UNIV      -       E    4    402

                       Report Completed
```

Field Definitions for the Carrier Usage Summary Report (Generic 2 and System 85)

Field	Definition	Switch
Date	Date of polls.	Generic 2, R2V2-R2V4
Time	Time at which peak usage was achieved.	Generic 2, R2V2-R2V4
Quarter Carrier	One fourth of a whole carrier in System 85. Each quarter carrier contains four circuit packs.	Generic 2, R2V2-R2V4
Module	The module to which the associated information refers.	Generic 2, R2V2-R2V4
Type	The type of module. For Generic 2: TRAD, UNIV, XE. For R2V2-R2V4: TRAD.	Generic 2, R2V2-R2V4
Cabinet	The cabinet number within the specified module.	Generic 2, R2V2-R2V4
Carrier	The carrier number within the specified cabinet.	Generic 2, R2V2-R2V4
Slot	A circuit pack. Begin slot for TRAD.	Generic 2, R2V2-R2V4
Usage	The total time, in CCS or Erlangs, that the port is in use.	Generic 2, R2V2-R2V4

Carrier Usage Summary Report (DIMENSION)

```
      Today:  Mon May 16 1991  15:58:25                              Page   1
 Switch Name:  test456                                 Start:  03/05/1991  1:00
Output Units:  ccs/peak                                  End:  03/15/1991 24:00


                     CARRIER USAGE SUMMARY REPORT


LINE CARRIER USAGE PER HALF CARRIER


                                       Usage Per
                                       Half Carrier
                                       ------------ Total
      Date  Time  Module Cabinet Carrier First Second usage
      ----- ----- ------ ------- ------- ----- ------ -----
      06/07 15:00      0       1       1    71     54   125
```

```
      Today:  Mon May 16 1991  15:58:27                              Page   2
 Switch Name:  test456                                 Start:  03/01/1991  1:00
Output Units:  ccs/peak                                  End:  03/29/1991 24:00


                     CARRIER USAGE SUMMARY REPORT


TRUNK CARRIER USAGE PER HALF CARRIER


                                       Usage Per
                                       Half Carrier
                                       ------------ Total
      Date  Time  Module Cabinet Carrier First Second usage
      ----- ----- ------ ------- ------- ----- ------ -----
      06/07 15:00      0       0       0   205     78   283


                           Report Completed
```

Field Definitions for the Carrier Usage Summary Report (DIMENSION)

Line Carrier Usage Per Half Carrier

Field	Definitions	Switch
Date	Date of polls.	DIMENSION
Time	The hours in which the measurements were polled.	DIMENSION
Module	The module to which the associated information refers.	DIMENSION
Cabinet	The cabinet number within the specified module.	DIMENSION
Carrier	The carrier number within the specified cabinet.	DIMENSION
Usage Per First Half Carrier	The CCS or Erlang usage of the first half of the carrier within the specified cabinet.	DIMENSION
Usage Per Second Half Carrier	The CCS or Erlang usage of the second half of the carrier within the specified cabinet.	DIMENSION
Total Usage	Total usage of first plus second half carrier.	DIMENSION

Trunk Carrier Usage Per Half Carrier

Field	Definitions	Switch
Date	Date of polls.	DIMENSION
Time	The hours in which the measurements were polled.	DIMENSION
Module	The module to which the associated information refers.	DIMENSION
Cabinet	The cabinet number within the specified module.	DIMENSION
Carrier	The carrier number within the specified cabinet.	DIMENSION
Usage Per First Half Carrier	The CCS or Erlang usage of the first half of the carrier within the specified cabinet.	DIMENSION
Usage Per Second Half Carrier	The CCS or Erlang usage of the second half of the carrier within the specified cabinet.	DIMENSION
Total Usage	Total usage of first plus second half carrier.	DIMENSION

Data Storage Report (Generic 2, System 85 R2V2-V4, DIMENSION)

```
       Today:  Fri June 22 1991  10:19:31                              Page   1
 Switch Name:  test123                                  Start:  05/09/1991 11:00
                                                          End:  05/09/1991 13:00


                            DATA STORAGE REPORT


             Load Carr         Perf  Peak       Proc  Acc           Call
Date  Time   Bal  Usage  ACA  Data  & TC  WCR  Occ   Value  DCIU  Covg  ACD
----- ----- ---- -----  ---  ----  ----  ---  ----  -----  ----  ----  ---
06/29  8:00 -    -      x    x     x     x    -     x      -     x     x
06/29  9:00 -    -      x    x     x     x    -     x      -     x     x
06/29 10:00 -    -      x    x     x     x    -     x      -     x     x
06/29 11:00 -    -      x    x     x     x    -     x      -     x     x


                            Report Completed
```

Field Definitions for the Data Storage Report (Generic 2, System 85, DIMENSION)

Field	Definition	Switch
Date	Each day of the study is listed separately.	Generic 2, R2V2-V4, DIMENSION
Time	This field shows **dly** if daily polling is in effect and the hour if hourly polling has been ordered.	Generic 2, R2V2-V4, DIMENSION
Load Bal	Load Balance - Packet 2	Generic 2, R2V2-V4, DIMENSION
Carr Usage	Carrier Usage - Packet 3	Generic 2, R2V2-V4, DIMENSION
ACA	Automatic Circuit Assurance - Packet 4	Generic 2, R2V2-V4, DIMENSION
Perf Data	Performance Data - Packet 5	Generic 2, R2V2-V4, DIMENSION
Peak & TC	Peak and Time Coincident for trunk data, attendant data, module blockages and processor occupancy data - Packet 6	Generic 2, R2V2-V4, DIMENSION
WCR	World Class Routing - Packet 7	Generic 2.2
ARS	Automatic Route Selection - Packet 7	Generic 2.1, R2V2-V4, DIMENSION
AAR	Automatic Alternate Routing - Packet 8	Generic 2.1, R2V2-V4, DIMENSION
Proc Occ	Occupancy Profile Data - Packet 9	Generic 2, R2V2-V4, DIMENSION
Acc Value	Accumulated Values - Packet 10	Generic 2, R2V2-V4
DCIU	Data Communications Interface Unit - Packet 11	Generic 2, R2V2-V4
Call Covg	Call Coverage Data - Packet 12	Generic 2, R2V2-V4
ACD	Automatic Call Distribution - Packet 13	Generic 2, R2V3-V4
UCD	Uniform Call Distribution/Enhanced Uniform Call Distribution (EUCD) - Packet 13	R2V2

Data Storage Report (G3i)

```
      Today:  Mon Apr  8 1991  13:46:41                              Page   1
 Switch Name:  g3itest                                  Start:  03/28/1991  1:00
                                                           End:  03/29/1991 24:00

                            DATA STORAGE REPORT


      Begin  Trk   Trk   Trk   Attn  Hunt  ARS   ISDN  Sec   Occ  Occ
Date  Time   Grp   Lite  Out   Grp   Grp   Ptrn  CBC   Viol  Sum  Dtl
----- -----  ----  ----  ----  ----  ----  ----  ----  ----  ---- ----
03/28 11:00   x    -     -     x     -     x     x     x     -    x
03/28 15:00   x    -     -     x     -     x     x     x     -    x
03/28 17:00   x    -     -     x     -     x     x     x     -    x
03/28 18:00   x    -     -     x     -     x     x     x     -    x
03/28 19:00   x    -     -     x     -     x     x     x     -    x


                            Report Completed
```

Field Definitions for the Data Storage Report (G3i)

Field	Definition	Switch
Date	Date of poll.	G3i
Time	This field shows **dly** if daily polling is in effect and the hour if hourly polling has been ordered.	G3i
Trunk Group	Indicates whether Monitor I has stored data from Trunk Group Measurement reports for Trunk Group Summary, Trunk Group Detail, Trunk Group Violations, and Long Term Trending Reports.	G3i
Trk Lite	Indicates whether the Lightly Used Trunk Report data has been stored.	G3i, Generic 1, System 75
Trk Out	Indicates if the switch report, Trunk Outage Measurements Report data has been stored.	G3i, Generic 1, System 75
Attn Grp	Indicates whether the switch report, Attendant Group Measurement Report data has been stored.	G3i, Generic 1, System 75
Hunt Grp	Indicates whether the switch report, Hunt Group Measurement Report data has been stored.	G3i
ARS Ptrn	Indicates whether the switch report, Automatic Route Selection Pattern Measurement Report data has been stored.	G3i
ISDN CBC	Indicates whether the switch report, ISDN-PRI Call-by-Call Measurement Report data has been stored.	G3i
Sec Viol	Indicates whether the switch report, Security Violation Measurement Report data has been stored.	G3i
Occ Sum	Indicates whether the switch report, Occupancy Summary Report data has been stored.	G3i
Occ Dtl	Indicates whether the switch report, Last Hour Occupancy Report data has been stored (20 time intervals).	G3i

Data Storage Report (G3r)

```
      Today:  Thu Oct  15 1992  14:01:33                              Page   1
 Switch Name:  g3rtest                                 Start:  08/28/1992   8:00
                                                          End:  08/30/1992 17:00

                            DATA STORAGE REPORT


                  Trk   Trk   Attn  Attn  Hunt  ARS   ISDN  Sec   Occ  Occ
Date  Time   Grp   Out   Grp   Pos   Grp   Ptrn  CBC   Viol  Sum  Dtl
----- -----  ----  ----  ----  ----  ----  ----  ----  ----  ---- ----
08/28  8:00  x     -     x     x     x     -     -     x     x    x
08/28  9:00  x     -     x     x     x     -     -     x     x    x
08/28 10:00  x     -     x     x     x     -     -     x     x    x
08/28 11:00  x     -     x     x     x     -     -     x     x    x


                            Report Completed
```

Field Definitions for the Data Storage Report (G3r)

Field	Definition	Switch
Date	Date of poll.	G3r
Time	This field shows **dly** if daily polling is in effect and the hour if hourly polling has been ordered.	G3r
Trunk Group	Indicates whether Monitor I has stored data from Trunk Group Measurement reports for Trunk Group Summary, Trunk Group Detail, Trunk Group Violations, and Long Term Trending Reports.	G3r
Trk Out	Indicates if the switch report, Trunk Outage Measurements Report data has been stored.	G3r
Attn Grp	Indicates whether the switch report, Attendant Group Measurement Report data has been stored.	G3r
Attn Pos	Indicates whether attendant position data has been stored.	G3r
Hunt Grp	Indicates whether the switch report, Hunt Group Measurement Report data has been stored.	G3r
ARS Ptrn	Indicates whether the switch report, Automatic Route Selection Pattern Measurement Report data has been stored.	G3r
ISDN CBC	Indicates whether the switch report, ISDN-PRI Call-by-Call Measurement Report data has been stored.	G3r
Sec Viol	Indicates whether the switch report, Security Violation Measurement Report data has been stored.	G3r
Occ Sum	Indicates whether the switch report, Occupancy Summary Report data has been stored.	G3r
Occ Dtl	Indicates whether the switch report, Last Hour Occupancy Report data has been stored (20 time intervals).	G3r

Graphable Reports

A sample trending report is shown below. (This is a sample of the report with the .CSV extension, before it is downloaded to the PC. For more information, refer to Chapter 5, "Overview of the Monitor I Reports.") The numbers enclosed in boxes are for identification purposes and will not appear on your report.

Some of the report fields vary, according to the report ordered and whether it is a daily or hourly report. These are noted below the sample.

```
[1] Trunk Group 70 Usage
[2] test123 (03/01/91-04/01/91)
[3] 03/01/91
[4] 04/01/91
[5] 9
[6] 17
[7] TYPE
[8] KEY
[9] Time
[10] Usage
[11] Date
[12] Incoming
[13] Outgoing
```

```
[14] 9, [15] 6, [16] 03/05/1991, [17] 4, [18] 2
[19] 11,10,01/23/1991,4,6
```

Field Definitions for the Graphable Reports

The boxed numbers below correspond to those in the sample report shown on the previous page.

1 Title of the report. If the report is to measure a particular attendant, module, or trunk group, its number is printed in the title, for example, **Trunk Group 70 Usage**

2 Switch name and requested time frame for polling

3 Report start date

4 Report end date

5 Start hour (this field may be blank if the report is a **trending** report)

6 End hour (this field may be blank if the report is **Daily** or if the report is a **trending** report)

7 Reserved

8 Reserved

9 Legend for X-Axis. This field can vary according to the report ordered and whether the report is hourly or daily. For the Long Term Trending Report and all Daily reports, this field shows the **date**. For Hourly reports, this field shows the **time**.

10 Legend for Y-Axis. This field can vary depending on the report you run. The data for this field will either be usage, peg count, or blockage information.

11 Reference field. This field can vary according to the report ordered and whether the report is hourly or daily. For the Long Term Trending Report, this field is blank. Daily reports show the **time** in this field. Hourly reports show the **date** in this field.

12 Additional legend for Y-Axis (incoming usage is only given for two-way or incoming trunk groups)

13 Additional legend for Y-Axis (outgoing usage is only given for two-way or outgoing trunk groups)

14 Time of the poll

15 This is the total usage *

16 Date of the poll

17 Incoming usage

---

* The actual report data will always begin on line 20 of the report.

18 Outgoing usage. The incoming usage added to the outgoing usage is equal to the total usage shown in the first column of the report.

19 This line is shown here to depict how the information will actually look on your report. Items 17 and 18 will appear only on those trunk group reports that give incoming usage or peg and outgoing usage or peg data.

Hunt Group Usage Report (G3r, G3i)

```
      Today:  Wed Oct 21 1992  10:02:48                              Page   1
 Switch Name:  g3rtest                                 Start:  08/30/1992  1:00
Output Units:  ccs/peak                                   End: 08/30/1992 24:00
  Peak Field:  Total Usage


               HUNT GROUP USAGE REPORT


Hunt Group:   1     Type:  ucd  Group Name:  SAP


                                                  Avg
                                                  Hold
      Begin  Grp   Total  Que   Que  ----  Calls  ----   Time    Time  Speed
Date  Time   Size  Usage  Size  Ovf  Ans   Aband  Qued   (secs) Avail  Ans
----- -----  ----  -----  ----  ---  ----  -----  ----   ------ -----  -----
08/30 05:00     8     38     0    0     7      0     0      542   250      0

                          Report Completed
```

```
      Today:  Mon Apr  8 1991  13:42:42                                Page   2
 Switch Name:  g3itest                                 Start:  03/28/1991  1:00
Output Units:  ccs/all                                   End:  03/29/1991 24:00
  Peak Field:  Total Usage


               HUNT GROUP USAGE REPORT [peak & all formats]

Hunt Group: 1            Type: ucd         Group Name: Hunt1


                                                 Avg
                                                 Hold          Speed
      Begin  Grp   Total  Que   ----  Calls  ----   Time    Time  Ans
Date  Time   Size  Usage  Size  Ans   Aband  Qued   (secs) Avail  (secs)
----- -----  ----  -----  ----  ----  -----  ----   ------ -----  -----
03/28  1:00     3     40     8   120      5     7       33    68     12
03/28  2:00     3     30     8   100      2     2       30    70     10
03/28  9:00     2     20     8    45      3     3       44    40      9

                          Report Completed
```

Field Definitions for the Hunt Group Report (G3r, G3i)

Field	Definition	Switch
Hunt Group Number	Identifies each hunt group (1 through 99).	G3r, G3i
Type	The type of hunt group, for example, direct depart dialing (ddc), or uniform call distribution (ucd).	G3r, G3i
Group Name	Name assigned to the hunt group.	G3r, G3i
Date	Date of poll	G3r, G3i
Begin Time	For the hourly poll and the "all" data option, this field is for the hour the poll measurement began. This field shows **dly** if daily polling is in effect. For the "all" peak option, this column shows the hour when the peak occurred.	G3r, G3i
Group Size	The size of the trunk group which can range from 1 to 500.	G3r, G3i
Total Usage	The total time (in CCS) that all members of the hunt group are talking.	G3r, G3i
Queue Size	The length of the queue assigned to the hunt group.	G3r, G3i
Queue Ovf	Queue overflow	G3r only
Call Answered	The number of the calls answered by the hunt group as hunt group calls, and calls answered at coverage points (including call pick-up).	G3r, G3i
Calls Abandoned	The total calls that ring at the hunt group and are abandoned before being answered plus the calls that abandon the hunt group queue before being answered.	G3r, G3i
Calls Queued	The number of calls that are placed in the hunt group queue because all members of the hunt group are busy.	G3r, G3i
Average Holding Time (sec)	The average length of time it takes to answer a call by the group.	G3r, G3i
Time Available	The total time that hunt group members are available to receive calls during the polling interval.	G3r, G3i
Speed of Answer	The average interval (in seconds) between the time a call reaches the hunt group and the call is answered.	G3r, G3i

Include List Report

```
      Today:  Fri Mar 10 1991  11:10:14                              Page   1
 Switch Name:  test123


                TRUNK GROUP INCLUDE LIST REPORT


List Name                        Trunk Group Number
----------   ------------------------------------------------------------------
trunklist          15      16      17      18      19      20      21      22
                   26      27      29      30      32

                         Report Completed
```

Field Definitions for the Include List Report

Field	Definition Switch	
List Name	Name of the Trunk Group Include List as defined by the user. Refer to the procedure to Administer Trunk Group Include Lists in Chapter 8, "System Administration."	All
Trunk Group Number	Number identification of trunk group(s) linked with the List Name.	All

ISDN-PRI Call by Call Report (G3r, G3i)

```
       Today:  Mon Apr  8 1991  13:44:10                              Page   1
 Switch Name:  g3itest                                  Start:  03/28/1991  1:00
Output Units:  ccs/all                                   End:  03/29/1991 24:00


                         ISDN-PRI CALL BY CALL REPORT


TRUNK GROUP INFORMATION


      Begin Trunk Queue Calls  Queue Queue Out  ----  UAP  ----
Date  Time  Group Size  Queued Ovfl  Aband Serv Number Duration
----- ----- ----- ----- ------ ----- ----- ---- ------ --------
04/20 10:00   60     0      0     0     0    0      1       10
04/20 10:00   60     0      0     0     0    0      2       13
04/20 10:00   60     0      0     0     0    0      4       20
04/20 11:00   60     0      0     0     0    0      2       15
```

```
       Today:  Mon Apr  8 1991  13:44:15                              Page   2
 Switch Name:  g3itest                                Start:  03/28/1991  1:00
Output Units:  ccs/all                                 End:  03/29/1991 24:00
  Peak Field:  Total Usage


                         ISDN-PRI CALL BY CALL REPORT


SERVICE/FEATURE MEASUREMENTS


       Begin  Trk  Service  Min  Max  Total  Total   Inc   Ovf  Ovf  Ovf   %    %    %
Date   Time   Grp  Feature  Ch   Ch   Usage  Seize  Seize  TG   S/F  Max  TBM  ATB  BLK
-----------------------------------------------------------------------------------------
05/15  10:00  23   mega800  5    10    0      0      0     0    0    0    100  0    0
                   sdn      8    16    0      0      0     0    0    0    100  0    0
                   other    7    10    0      0      0     0    0    0    100  0    0
05/15  10:00  23   mega800  5    10    0      0      0     0    0    0    100  0    0
                   sdn      8    16    17     19     8     0    0    0    100  0    0
                   other    7    10    32     24     0     0    0    0    100  0    0

                            Report Completed
```

Field Definitions for the ISDN-PRI Call-by-Call Report (G3r, G3i)

Field Definitions for ISDN-PRI CBC Report Trunk Group Information Measurements

Field	Definition	Switch
Date	Date of poll.	G3r, G3i
Begin Time	Beginning of the poll hour based on the time of day clock.	G3r, G3i
Trunk Group	The ISDN call-by-call trunk group number under study.	G3r, G3i
Queue Size	Size of the ISDN-PRI CBC trunk group queue.	G3r, G3i
Calls Queued	Number of calls entered into the ISDN CBC trunk group queue.	G3r, G3i
Queue Overflow	The number of calls that cannot be accommodated by the queue because all trunk group queue slots are occupied.	G3r, G3i
Queue Abandoned	The number of calls that are removed from the queue by either the system or the user.	G3r, G3i
Out of Service	The number of trunks in the ISDN-PRI CBC trunk group that are out of service at polling time.	G3r, G3i
Usage Allocation Plan Number	The most recent UAP numbers that were in effect. (Maximum of six UAP numbers.)	G3r, G3i
Usage Allocation Plan Duration	The list of the most recent UAP numbers that were in effect during the measurement interval as well as the amount of time (in minutes) each UAP was in effect. The corresponding amount of times of each effective UAP.	G3r, G3i

Field Definitions for ISDN-PRI CBC Report Service/Feature Measurements

Field	Definition	Switch
Date	Date of poll.	G3r, G3i
Begin Time	Beginning of the poll hour based on the time of day clock.	G3r, G3i
Trunk Group	ISDN-PRI call-by-call trunk group under study.	G3r, G3i
Service/Feature	The names of the service or feature being measured. (Up to 10 services and/or features can be measured by this report.) In addition, the special identifier "other" for which measurements are being reported.	G3r, G3i
Minimum number of channels	The minimum number of channels in the ISDN-PRI CBC trunk group assigned to the specified service or feature at polling time.	G3r, G3i
Maximum number of channels	The maximum number of channels in the ISDN-PRI CBC trunk group assigned to the specified service or feature at polling time.	G3r, G3i
Total Usage	The sum of time (collected in CCS) for all channels that were used by the specified feature or service during the polling interval.	G3r, G3i
Calls Seized	The total amount of calls that requested the specified feature or service through the ISDN-PRI CBC trunk group.	G3r, G3i
Incoming Seize	The total amount of incoming calls that requested the specified feature or service through the ISDN-PRI CBC trunk group.	G3r, G3i
Overflow Trunk Group	The number of outgoing calls that requested the specified feature or service and were not carried on ISDN-PRI CBC trunk group because the call arrived when: ▪ All trunks in the trunk group were busy, or ▪ No physical trunks in the group were available for service	G3r, G3i

Field Definitions for ISDN-PRI CBC Report Service/Feature Measurements (continued)

Field	Definition	Switch
Overflow Services/Features	The number of outgoing calls that requested the specified feature or service and were not carried on ISDN-PRI CBC trunk group because the calls arrived when: ▪ The specified service or feature was at or above its minimum channel allocation, and ▪ There were idle channels available in the trunk group, but they had been reserved to meet the minimum channel allocation for other features or services.	G3r, G3i
Overflow Maximum	The number of outgoing calls that requested the specified feature or service and were not carried on the ISDN-PRI CBC trunk group because the calls arrived when the maximum number of channels for the requested feature or service were busy.	G3r, G3i
Date	Date of poll.	G3r, G3i
Percentage of Trunks below Minimum (TBM)	The percentage of time during the polling interval that the number of channels in use by the specified feature or service is below the specified minimum.	G3r, G3i
Percentage all Channels Busy (ATB)	The percentage of time during the polling interval that the specified feature or service could not access a channel.	G3r, G3i
Percentage Outgoing Blocking	The ratio of outgoing calls not carried for a specified feature or service to the outgoing calls offered by the service or feature.	G3r, G3i

ISDN-PRI Trunk Group Association Report (Generic 2)

```
       Today:  Fri Mar 22 1991  10:21:07                              Page   1
 Switch Name:  test123                                 Start:  01/09/1991 11:00
Output Units:  ccs/peak                                  End:  01/09/1991 13:00


                 ISDN PRI TRUNK GROUP ASSOCIATION REPORT


ISDN Trk    IXC &                Total Inc   Out   Total Inc   Out   Assc
Assc Grp    Service   Date  Time  Usage Usage Usage Calls Calls Calls Ovfl
---- ---    -------   ----- ----- ----- ----- ----- ----- ----- ----- -----
   1 301    288-354   05/09 13:00     0     0     0     0     0     0     0
   2 302    288-354   05/09 13:00   376     0   376    91     0    91   174
   3 303    288-354   05/09 13:00     0     0     0     0     0     0     0
   4 304    288-357   05/09 13:00     0     0     0     5     0     5     0
   5 305    288-354   05/09 13:00    72     0    72     5     0     5   267
   6 306    288-354   05/09 13:00     0     0     0     0     0     0     0
   7 307    288-357   05/09 13:00     0     0     0     0     0     0     0
   8 308    288-354   05/09 13:00    64     0    64    21     0    21   155


                          Report Completed
```

Field Definitions for the ISDN-PRI Trunk Group Association Report (Generic 2)

Field	Definition	Switch
ISDN Assc	Number indicating trunk group association. This information is stored in Packet 1 after your company has assigned the number.	Generic 2
Trunk Group	Number identification of trunk group linked with the ISDN association number.	Generic 2
IXC & Service	Identifies the IXC and network service type.	Generic 2
Date	Date of poll.	Generic 2
Time	Hour of poll.	Generic 2
Total Usage	Length of time, in CCS or Erlangs, required to carry association traffic.	Generic 2
Inc Usage	Usage, in CCS or Erlangs, for incoming traffic over the association.	Generic 2
Out Usage	Usage, in CCS or Erlangs, for outgoing traffic over the association. DEFINITY Monitor I subtracts incoming usage from total usage to provide this measurement.	Generic 2
Total Calls	Peg count for calls carried by association.	Generic 2
Inc Calls	Peg count of incoming calls carried by association.	Generic 2
Out Calls	Peg count of outgoing calls carried by association. DEFINITY Monitor I subtracting the number of incoming calls from the total peg count.	Generic 2
Assc Ovfl	Peg count of overflow traffic from the association .	Generic 2

ISDN PRI-D-Channel Measurement Report (Generic 2)

```
      Today:  Fri Mar 22 1991  17:14:58                              Page   1
 Switch Name:  test123                                  Start:  01/09/1991 11:00
                                                          End:  01/09/1991 13:00


                ISDN PRI D-CHANNEL MEASUREMENT REPORT


Traffic                       Equip          No. of    I-field   I-field
Encode#  Date     Time       Location       B-chans     Bytes    Frames
-------  -----    -----     -----------     -------    -------   -------
      7  05/09    13:00    20/  /D /19          23        802      1627
     11  05/09    11:00    02/2 /2 /18          23        884      1775


                           Report Completed
```

Field Definitions for the ISDN-PRI D-Channel Measurement Report (Generic 2)

Field	Definition	Switch
Traffic Encode #	Number that indexes the equipment location in Packet 1.	Generic 2
Date	Date of poll.	Generic 2
Time	Hour of poll.	Generic 2
Equip Location	Digits specify the module, cabinet, carrier and slot for the D-Channel.	Generic 2
No. of B-chans	Number of B-Channels specified for each D-Channel.	Generic 2
I-field Bytes (peak)	Number of I-field bytes handled by the D-Channel.	Generic 2
I-field frames (tc)	Number of I-field frames handled by the D-Channel.	Generic 2

Lightly Used Trunk Report (G3i, Generic 1 and System 75)

```
      Today:  Fri May 10 1991 09:48:12                          Page   1
 Switch Name:  test789                                 Start:  01/01/91 Daily
Output Units:  peg/total                                 End:  03/05/91 Daily


                        LIGHTLY USED TRUNK REPORT

Trunk Group Include List Name: trunklist

                                                 Total Calls  Total Calls  % Calls
   Trunk                              Total      Carried      Carried By   Carried
   Group  Type  Dir  Size Member Occur  By Member    Trunk Group  By Member
   -----  ----  ---  ---- ------ -----  ---------    -----------  ---------
      1  co    two    10      2     1         24          1128       2.13
    Name:DS1 CO test

      1  co    two    10      3     1          4           248       1.61
    Name:DS1 CO test

      1  co    two    10      4     2         28          1376       2.03
    Name:DS1 CO test

      1  co    two    10      5     2         29          1381       2.10
    Name:DS1 CO test

      1  co    two    10      6     1          4           248       1.61
    Name:DS1 CO test

      1  co    two    10      7     1         24          1128       2.13
    Name:DS1 CO test

      1  co    two    10      8     1          4           248       1.61
    Name:DS1 CO test

      1  co    two    10     10     1         27          1143       2.36
    Name:DS1 CO test


                           Report Completed
```

Field Definitions for the Lightly Used Trunk Report (G3i, Generic 1 and System 75)

Field	Definitions	Switch
Trunk Group Include List Name (Optional)	Name of the Trunk Group Include List as defined by the user. Refer to the procedure to Administer Trunk Group Include Lists in Chapter 8, "System Administration".	G3i, Generic 1, R1V2-V3
Trunk Group	Number identifying the trunk group	G3i, Generic 1, R1V2-V3
Type	Type of trunk associated with the accumulated data (for example, CO, FX, WATS, TIE, APLT, DID)	G3i, Generic 1, R1V2-V3
Dir	Identifies whether the trunk groups are incoming, outgoing, or 2-way	G3i, Generic 1, R1V2-V3
Size	The number of trunks in the trunk group	G3i, Generic 1, R1V2-V3
Member	The number of the trunk that was lightly used	G3i, Generic 1, R1V2-V3
Total Occur	Total number of times the specified trunk was lightly used for the report period	G3i, Generic 1, R1V2-V3
Total Calls Carried By Member	Total number of calls carried by the specified trunk in the trunk group when that trunk was lightly used for the report period	G3i, Generic 1, R1V2-V3
Total Calls Carried By Trunk Group	Total number of calls carried by the trunk group when the specified trunk was lightly used for the report period. Refer to Appendix C, "Monitor I Equations" for this calculation..	G3i, Generic 1, R1V2-V3
% Calls Carried By Member	Total calls carried by the member divided by the total calls carried by the trunk group	G3i, Generic 1, R1V2-V3
Name (Optional)	Name of the trunk group. This field is displayed only when selected by the user.	G3i, Generic 1, R1V2-V3

Load Balance Report (Generic 2 and System 85)

```
       Today:  Fri Mar 16 1991  16:10:50                              Page   1
 Switch Name:  test123                                  Start:  04/09/1991 Daily
Output Units:  ccs/all                                    End:  04/15/1991 Daily


                              LOAD BALANCE REPORT


INTRAMODULE MEASUREMENTS


                 PEAK  |     TCs-------------------------------------
                       |      Line    IC TG   Line    IC TG   Any TG
                 Total |      to      to      to      to      to
Mod Date  Time   Usage | TG   Line    Line    OG TG   Any TG  OG TG
--- ----- ----- ------- ---- ------- ------- ------- ------- -------
  0 04/13   dly     294  All       9      27     128     130       0
  0 04/14   dly     268  All       3      29     130     106       0
    ------------------------------------------------------------------
    ABBH USAGE:     281            6      28     129     118       0

  1 04/13   dly     233  All       5      16      55     157       0
  1 04/14   dly     312  All       6       9      77     220       0
    ------------------------------------------------------------------
    ABBH USAGE:     273            6      13      66     189       0

  2 04/13   dly     209  All       9      30      13     157       0
  2 04/14   dly     220  All       1      27      21     171       0
    ------------------------------------------------------------------
    ABBH USAGE:     215            5      29      17     164       0

  3 04/13   dly     175  All       0      10      24     141       0
  3 04/14   dly     167  All       0      17      22     128       0
    ------------------------------------------------------------------
    ABBH USAGE:     171            0      14      23     135       0
```

Load Balance Report (Generic 2 and System 85) (continued)

```
      Today:  Fri Mar 16 1991  16:11:05                              Page   2
 Switch Name:  test123                                 Start:  04/09/1991 Daily
Output Units:  ccs/all                                   End:  04/15/1991 Daily


                              LOAD BALANCE REPORT


INTERMODULE MEASUREMENTS


                  PEAK |     TCs-----------------------------------------------
Module            Inter|      Line to |  IC TG  | Line to |  IC TG  |  Any TG
Pair              Mod  |       Line   | to Line |  OG TG  |to Any TG| to OG TG
(A-B) Date  Time  Usage| TG  (A-B B-A)|(A-B B-A)|(A-B B-A)|(A-B B-A)|(A-B B-A)
----- ----- ----- ----- ---- ---- ---- ---- ---- ---- ---- ---- ---- ---- ----
 0- 1 04/13   dly    24  All    3    9    4    7    0    1    0    0    0    0
 0- 1 04/14   dly    33  All    6    7   11    8    0    1    0    0    0    0
      ------------------------------------------------------------------------
      ABBH USAGE:    29         5    8    8    8    0    1    0    0    0    0

 0- 2 04/13   dly    45  All   12   14    5    8    0    6    0    0    0    0
 0- 2 04/14   dly    37  All   12    5    2   16    0    2    0    0    0    0
      ------------------------------------------------------------------------
      ABBH USAGE:    41        12   10    4   12    0    4    0    0    0    0

 0- 3 04/13   dly    38  All   12    0    7   18    0    1    0    0    0    0
 0- 3 04/14   dly    56  All    1    1   24   19    1   10    0    0    0    0
      ------------------------------------------------------------------------
      ABBH USAGE:    47         7    1   16   19    1    6    0    0    0    0


                              Report Completed
```

Field Definitions for the Load Balance Report (Generic 2 and System 85)

Intramodule Measurements for the Load Balance Report

Field	Definitions	Switch
Mod	The module number for which the associated information refers.	Generic 2, R2V2-V4
Date	Date of poll.	Generic 2, R2V2-V4
Time	Time of poll.	Generic 2, R2V2-V4
PEAK Total Usage	CCS usage due to connections between two extensions within a module.	Generic 2, R2V2-V4
TG	The number corresponding to the trunk group being studied. If all trunk groups are under study, this field will show ***All***.	Generic 2, R2V2-V4
Line to Line	The CCS usage due to connections between two extensions within a module.	Generic 2, R2V2-V4
IC TG to Line	The CCS usage due to connections from a trunk in the study group within the module to extensions within the module.	Generic 2, R2V2-V4
Line to OG TG	The CCS usage due to connections from extensions within the module to trunks in the study group within the module.	Generic 2, R2V2-V4
IC TG to Any TG	The incoming CCS usage due to connections between any trunk in the study group within the module and any other trunk within the modules.	Generic 2, R2V2-V4
Any TG to OG TG	The outgoing CCS usage due to connections between any trunk group in the study group within the module to any other trunk within the module.	Generic 2, R2V2-V4
ABBH Usage (Daily Report only)	Average Busy Bouncing Hour Usage for the modules being studied.	Generic 2, R2V2-V4

Intermodule Measurements for the Load Balance Report

Field	Definitions	Switch
Module Pair (A-B)	The module pair number to which the associated information refers.	Generic 2, R2V2-V4
Date	Date of poll.	Generic 2, R2V2-V4
Time	Time of poll.	Generic 2, R2V2-V4
PEAK Inter Mod Usage	The total CCS of the module pairs for the peak hour.	Generic 2, R2V2-V4
TG	The number corresponding to the trunk group being studied. If all trunk groups are under study, this field will show ***All***.	Generic 2, R2V2-V4
Line to Line (A-B)	The CCS usage due to connections between extensions in the first studied module to extensions in the second studied module.	Generic 2, R2V2-V4
Line to Line (B-A)	The CCS usage due to connections between extensions in the second studied module to extensions in the first studied module.	Generic 2, R2V2-V4
IC TG to Line (A-B)	The CCS usage due to connections from trunks in the study group in the first studied module to extensions in the second studied module.	Generic 2, R2V2-V4
IC TG to Line (B-A)	The CCS usage due to connections from trunks in the study group in the second studied module to extensions in the first studied module.	Generic 2, R2V2-V4
Line to OG TG (A-B)	The CCS usage due to connections from extensions in the first studied module to outgoing study trunks in the second studied module.	Generic 2, R2V2-V4
Line to OG TG (B-A)	The CCS usage due to connections from extensions in the second studied module to outgoing study trunks in the first studied module.	Generic 2, R2V2-V4
IC TG to Any TG (A-B)	The CCS usage due to connections from trunks in the study group of the first studied module to any trunk in the second studied module.	Generic 2, R2V2-V4

Intermodule Measurements for the Load Balance Report (continued)

Field	Definitions	Switch
IC TG to Any TG (B-A)	The CCS usage due to connections from trunks in the study group of the second studied module to any trunk in the first studied module.	Generic 2, R2V2-V4
Any TG to OG TG (A-B)	The CCS usage due to connections from any trunk in the first studied module to trunks in the study group of the second studied module.	Generic 2, R2V2-V4
Any TG to OG TG (B-A)	The CCS usage due to connections from any trunk in the second studied module to trunks in the study group of the first studied module.	Generic 2, R2V2-V4
ABBH Usage (Daily Report Only)	Average Busy Bouncing Hour Usage for the module pairs being studied.	Generic 2, R2V2-V4

Load Balance Report (DIMENSION)

```
      Today:  Mon May 16 1991  16:02:39                              Page   1
 Switch Name:  test456                                 Start:  01/01/1991  1:00
Output Units:  ccs/peak                                  End:  03/15/1991 24:00

                              LOAD BALANCE REPORT


INTRAMODULE TRUNK TO TRUNK MEASUREMENTS


                        PEAK  |          TCs--------------------
                        Time  |             Trunk To Trunk Usage
                        Slot  |           ----------------------
Mod    Date     Time     Usage | TG1  TG2  TG2 To TG1  TG1 to TG2
---    -----    -----    -----   ---  ---  ----------  ----------
  0    06/07    15:00     1760   All  All          68           0
  1    06/07    15:00     1661   All  All          30           0
  2    06/07    16:00     1760   All  All          10           0
  3    06/07    15:00     1566   All  All          60           0
  4    06/07    15:00     1825   All  All          11           0
  5    06/07    15:00     1547   All  All          10           0
```

```
      Today:  Mon Oct 16 1991  16:02:42                               Page   2
 Switch Name:  test456                                 Start:  03/01/1991  1:00
Output Units:  ccs/peak                                  End:  03/15/1991 24:00

                              LOAD BALANCE REPORT


INTRAMODULE LINE TO LINE, LINE TO TRUNK, AND TRUNK TO LINE MEASUREMENTS

               PEAK   |TCs-----------------------------------------
               Line To|    Line To Trunk Usage     Trunk To Line Usage
               Line   |----------------------- ----------------------
Mod Date  Time Usage  |Line To TG1 Line To TG2 TG1 To Line TG2 To Line
--- ----  ----- ------- ---------- ---------- ---------- ----------
  0 06/07 15:00      12          0        493          0         44
  1 06/07 15:00      20          0        498          0         52
  2 06/07 16:00      39          0        559          0         31
  3 06/07 15:00      16          0        366          0         36
  4 06/07 15:00      21          0        493          0         37
  5 06/07 15:00       6          0        340          0         17
```

Load Balance Report (DIMENSION) (continued)

```
       Today:  Mon Oct 16 1991  16:02:45                              Page   3
 Switch Name:  test456                                  Start:  01/01/1991  1:00
Output Units:  ccs/peak                                   End:  03/15/1991 24:00


                              LOAD BALANCE REPORT


INTERMODULE TRUNK TO TRUNK MEASUREMENTS


                         PEAK  |           TCs-------------------
                         Link  |             Trunk To Trunk Usage
Module                   Group |           ----------------------
Pair     Date     Time   Usage | TG1  TG2  TG2 To TG1  TG1 to TG2
-------  -----    -----  -----   ---  ---  ----------  ----------
 0 -  1  06/07    12:00    174   All  All           2           0
 0 -  2  06/07    12:00    223   All  All           3           0
 0 -  3  06/07    15:00    180   All  All           0           0
 0 -  4  06/07    16:00    253   All  All           0           0
 0 -  5  06/07    15:00    176   All  All           3           0
 1 -  2  06/07    16:00    219   All  All           1           0
 1 -  3  06/07    12:00    198   All  All           0           0
 1 -  4  06/07    15:00    196   All  All           0           0
 1 -  5  06/07    15:00    202   All  All           3           0
 2 -  3  06/07    15:00    232   All  All           0           0
 2 -  4  06/07    15:00    177   All  All           0           0
 2 -  5  06/07    16:00    166   All  All           0           0
 3 -  4  06/07    15:00    177   All  All           3           0
 3 -  5  06/07    15:00    190   All  All           0           0
 4 -  5  06/07    12:00    233   All  All           3           0
```

Load Balance Report (DIMENSION) (continued)

```
      Today:  Mon Oct 16 1991  16:02:50                              Page   4
 Switch Name:  test456                                 Start:  01/01/1991  1:00
Output Units:  ccs/peak                                  End:  10/15/1991 24:00


                              LOAD BALANCE REPORT


INTERMODULE LINE TO LINE, LINE TO TRUNK, AND TRUNK TO LINE MEASUREMENTS


                    PEAK    |TCs-----------------------------------------
                    Line to |   Line To Trunk Usage     Trunk To Line Usage
Module              Line    |---------------------- ----------------------
Pair     Date  Time Usage   |Line To TG1 Line To TG2 TG1 To Line TG2 To Line
-------  ----- ----- -------  ---------- ---------- ---------- ----------
 0 -  1  06/07 12:00      28          0         30          0         114
 0 -  2  06/07 12:00      32          0         38          0         150
 0 -  3  06/07 15:00      36          0         27          0         117
 0 -  4  06/07 16:00      58          0         15          0         180
 0 -  5  06/07 15:00      26          0         47          0         100
 1 -  2  06/07 16:00      62          0         49          0         107
 1 -  3  06/07 12:00      33          0         63          0         102
 1 -  4  06/07 15:00      40          0         45          0         111
 1 -  5  06/07 15:00      36          0         39          0         124
 2 -  3  06/07 15:00      48          0         50          0         134
 2 -  4  06/07 15:00      39          0         31          0         107
 2 -  5  06/07 16:00      36          0         34          0          96
 3 -  4  06/07 15:00      27          0         25          0         122
 3 -  5  06/07 15:00      30          0         85          0          75
 4 -  5  06/07 12:00      34          0         61          0         135


                           Report Completed
```

Field Definitions for the Load Balance Report (DIMENSION)

Intramodule Trunk To Trunk Measurements

Field	Definitions	Switch
Mod	The module number to which the associated information refers.	DIMENSION
Date	Date of poll.	DIMENSION
Time	Time of poll.	DIMENSION
PEAK Time Slot Usage	This is the peak value for all module measurements.	DIMENSION
TG1	The total usage measurement for all connections within the first trunk group being studied.	DIMENSION
TG2	The total usage measurement for all connections within the second trunk group being studied.	DIMENSION
TG2 To TG1	The total connection usage from any trunk in the second studied trunk group within the module to any trunk in the first studied trunk group within the module.	DIMENSION
TG1 To TG2	The total connection usage from any trunk in the first studied trunk group within the module to any trunk in the second studied trunk group within the module.	DIMENSION

Intramodule Line To Line, Line To Trunk, And Trunk To Line Measurements

Field	Definitions	Switch
Mod	The module number to which the associated information refers.	DIMENSION
Date	Date of poll.	DIMENSION
Time	Time of poll.	DIMENSION
PEAK Line To Line Usage	The usage due to connections (intercom traffic) between two extensions (lines) within the module.	DIMENSION
Line To TG1	The total connection usage from any line within the module to any trunk in the first studied trunk group within the module.	DIMENSION
Line To TG2	The total connection usage from any line within the module to any trunk in the second studied trunk group within the module.	DIMENSION
TG1 To Line	The total connection usage from any trunk in the first studied group within the module and any line within the same module.	DIMENSION
TG2 To Line	The total connection usage from any trunk in the second studied group within the module and any line within the same module.	DIMENSION

Intermodule Trunk To Trunk Measurements

Field	Definitions	Switch
Module Pair	The module pair number to which the associated information refers.	DIMENSION
Date	Date of poll.	DIMENSION
Time	Time of poll.	DIMENSION
PEAK Link Group Usage.	The total connection usage due to all connections between two modules. This is the peak value for all intermodule measurements.	DIMENSION
TG1	First trunk group being studied.	DIMENSION
TG2	Second trunk group being studied.	DIMENSION
TG2 To TG1	The CCS usage due to connections from a trunk in the second studied trunk group of the second module to any trunk in the first studied trunk group of the first studied module.	DIMENSION
TG1 To TG2	The CCS usage due to connections from a trunk in the first studied trunk group of the first module to any trunk in the second studied trunk group of the second studied module.	DIMENSION

Intermodule Line To Line, Line To Trunk, And Trunk To Line Measurements

Field	Definitions	Switch
Module Pair	The module pair number to which the associated information refers.	DIMENSION
Date	Date of poll.	DIMENSION
Time	Time of poll.	DIMENSION
PEAK Line To Line Usage	The CCS usage due to connections from extensions in the first module to extensions in the second studied module.	DIMENSION
Line To TG1	The CCS usage due to connections from extensions in the first module to any trunk in the first studied trunk group in the second module.	DIMENSION
Line To TG2	The CCS usage due to connections from extensions in the first studied module to any trunk in the second studied trunk group in the second module.	DIMENSION
TG1 To Line	The CCS usage due to connections from trunks in the study group in the first studied module to extensions in the second studied module.	DIMENSION
TG2 To Line	The CCS usage due to connections from trunks in the study group in the first studied module to extensions in the second studied module.	DIMENSION

Long Term Trending Report

```
       Today:  Fri Mar 20 1991  10:38:39                                Page   1
 Switch Name:  test123                                 Start:  01/01/1991
Output Units:  ccs/peak                                  End:  03/15/1991

                         LONG TERM TRENDING REPORT

SWITCH SUMMARY

                                  Time Slot Marginal
                           Peak        Capacity       Time Slot Usage (TC)
          Num  Peak Time  Proc   ------------------- ---------------------
Week of  Polls Slot Peg   Occ %  Max    Avg    Min     Min    Avg    Max
-------- ----- ---------  ------ -----  -----  -----   -----  -----  -----
05/07/89     4     11424   49.21   55%    51%    47%   76112  83286  88640
```

```
       Today:  Fri Mar 20 1991  10:38:41                                Page   2
 Switch Name:  test123                                       Start:  01/01/1991
Output Units:  ccs/peak                                        End:  03/15/1991

                         LONG TERM TRENDING REPORT

TRUNK DETAIL

                                       Maint Avg              Num    Num   Num
Trunk                Num        Peak  Busy  Usg/             Trk At Trk   Trk
Group   Date   Time  Poll Model Usage Usage Trunk ABBH  GOS  Poll   Today Rec
----- -------- ----- ---- ----- ----- ----- ----- ----- ---- ------ ----- ----
 15   05/09/89 11:00   4   RET  14660     0  8.14 14660 P01   1800   1800  434
 16   05/09/89 10:00   4   ERC    252     0  2.47   252 D1S    102    102   11
 17   05/09/89 11:00   4   ERC    316   518  2.44   316 D1S    144    144   13
 18   05/09/89 11:00   4   ERC     56     0  0.80    56 D1S     70     70    4
 43   05/09/89 10:00   4   NA       1     0  0.50     1 NA       2      2    -
 .
 .
 .
999   05/09/89 11:00   4   NA       1     0  0.04     1 NA      23     23    -

* Based on the peak usage for the trunk group, the number of trunks
in the trunk group could be increased.

                             Report Completed
```

Field Definitions for the Long Term Trending Report

Switch Summary Information

Field	Definition	Switch
Week of	This is the date of the Sunday for the week that the trending data was captured.	Generic 2, R2V2-V4, DIMENSION, G3i
Num Polls	Number of successful polls, including hourly and daily polls if both types occurred for the week.	Generic 2, R2V2-V4, DIMENSION, G3i
Num Trkgp	Number of trunk groups polls, including including hourly and daily polls if both types of polling occurred for the week.	G3i
Peak Time Slot Peg	Peak call count	Generic 2, R2V2-V4, DIMENSION
Peak Call Count	Total number of calls completed.	G3i
Peak Proc Occ %	Peak processor occupancy due to call processing.	Generic 2, R2V2-V4, DIMENSION, G3i
Time Slot Marginal Capacity - Max	Maximum marginal capacity is based on the minimum call usage value	Generic 2, R2V2-V4, DIMENSION
Time Slot Marginal Capacity - Avg	Average marginal capacity is based on the average call usage value	Generic 2, R2V2-V4, DIMENSION
Time Slot Marginal Capacity - Min	Minimum marginal capacity is based on the maximum call usage value	Generic 2, R2V2-V4, DIMENSION
Time Slot Usage (TC) - min	Minimum call usage value	Generic 2, R2V2-V4, DIMENSION
Time Slot Usage (TC) - Avg	Average call usage value	Generic 2, R2V2-V4, DIMENSION
Time Slot Usage (TC) - Max	Maximum call usage value	Generic 2, R2V2-V4, DIMENSION

Trunk Detail

Field	Definition	Switch
Trunk Group	Number of the trunk group under study.	All
Date	Date of peak usage.	All
Time	Time of peak usage.	All
Begin Time	Time of peak usage	G3i, Generic 1, R1V1-V3
Num Poll	Number of successful polls during week. If this number is low, data may be distorted because there are not enough samples to make a valid conclusion.	All
Model	Traffic model used currently for trunk group analysis.	All
Peak Usage	Peak usage, in CCS or Erlangs, found for the date range.	All
Maint Busy Usage	The total usage in CCS for trunks that were not available during the time of peak usage because they were maintenance busy. You can approximate the number of trunks busied out during the hour by dividing the maintenance busy usage by 36.	Generic 2, R2V4
Maint Busy Peg	Number of trunks out of service in the group.	G3i, Generic 1, R1V1-V3
Average Usg/Trunk	Average usage of each trunk in the trunk group.	All
ABBH	Average Bouncing Busy Hour is determined by adding peak usage for each successful day of polling and dividing by the number of days that had successful polling during the week.	All
GOS	Grade of service currently used to analyze the trunk group.	All
Num Trk At Poll	Number of trunks in the trunk group for the peak poll over all days and all hours of the week.	All

Trunk Detail (continued)

Field	Definition	Switch
Num Trk Today	Number of trunks in the trunk group now.	All
Num Trk Rec	Number of trunks recommended by Monitor I for this trunk group. An asterisk (*****) will be printed after this number if the trunk group violates its GOS. No recommendation will be given and **NR **** will print with a footnote saying that the traffic model used to study the trunk group may not apply when average trunk usage is over 98.5 percent. If there is usage overflow, **UO ##** will print with a footnote recommending that you audit the switch and database.	All

Module Report (Generic 2 and System 85)

```
       Today:  Fri Mar 22 1991  10:24:29                              Page   1
 Switch Name:  test123                                  Start:  01/09/1991 11:00
Output Units:  ccs/peak                                   End:  03/09/1991 13:00


                                  MODULE REPORT


MEASUREMENTS FOR TRADITIONAL MODULES

                                                TSI
                     ------------------------------------------------------
Module  Date   Time  Usage   Peg  Block   % Mod Occ   Marg Cap  % Utilization
------  -----  ----- -----  ----- -----  -----------  --------  -------------
   0    05/09  13:00  3891   1773     0       53.2        3849      50.27
   1    05/09  13:00  3413   1322     0       52.7        4327      44.10
   2    05/09  13:00  4606   1759     0       50.6        3134      59.51
   3    05/09  13:00  3801   1568     0       54.1        3939      49.11
   4    05/09  13:00  4623   1383     0       55.0        3117      59.73
   5    05/09  13:00  3953   2443     0       55.4        3787      51.07
   6    05/09  13:00  4763   1096     0       58.4        2977      61.54
   7    05/09  13:00  5422   1082     0       54.2        2318      70.05
   .
   .
   .
```

```
       Today:  Fri Sep 22 1991  10:24:37                              Page   2
 Switch Name:  test123                                  Start:  05/09/1991 11:00
Output Units:  ccs/peak                                   End:  05/09/1991 13:00


                                  MODULE REPORT


MEASUREMENTS FOR UNIVERSAL MODULES

                              TDM (TIME DIVISION MULTIPLEXER)
                     ------------------------------------------------------
Module  Date   Time  Usage   Peg  Block   % Mod Occ   Marg Cap  % Utilization
------  -----  ----- -----  ----- -----  -----------  --------  -------------
  19    05/09  13:00  4180   1255     0       18.0        2984      58.35
  20    05/09  13:00  4355   2590     0       18.6        2809      60.79
  21    05/09  13:00  4543   3022     0       10.1        2621      63.41
```

Module Report (Generic 2 and System 85) (continued)

```
       Today:  Fri Sep 22 1991  10:24:37                              Page   3
 Switch Name:  test123                                 Start:  05/09/1991 11:00
Output Units:  ccs/peak                                  End:  05/09/1991 13:00


                                 MODULE REPORT


MEASUREMENTS FOR XE MODULES

                                                XE
                      ------------------------------------------------------
Module  Date   Time  Usage   Peg  Block   % Mod Occ   Marg Cap  % Utilization
------  -----  ----- -----  ----- -----  -----------  --------  -------------
  22    05/09  14:00  4180   1255     0       18.0        2984       58.35
  23    05/09  14:00  4355   2590     0       18.6        2809       60.79
  24    05/09  14:00  4543   3022     0       10.1        2621       63.41
```

```
       Today:  Fri Sep 22 1991  10:24:42                              Page   4
 Switch Name:  test123                                 Start:  05/09/1991 11:00
Output Units:  ccs/peak                                  End:  05/09/1991 13:00


                                 MODULE REPORT


INTERMODULE EXCEPTIONS

                            TMS
                          ------------
Module Pair Date  Time    Peg   Block
---------- ----- -----  -----  -----

       No module exceptions found


                                 Report Completed
```

Field Definitions for the Module Report (Generic 2 and System 85)

Measurements for Traditional Modules

The TSI (Time Slot Interchanger) peak value is blockage; usage and peg count data are time coincident.

TSI (TIME SLOT INTERCHANGER) INFORMATION

Field	Definition	Switch
Module	ID number of each module under study.	Generic 2, R2V2-V4
Date	Date of poll.	Generic 2, R2V2-V4
Time	Hour of poll.	Generic 2, R2V2-V4
TSI Usage	CCS or Erlangs measurement of the memory word pair for a particular module.	Generic 2, R2V2-V4
TSI Peg	Number of times a memory word pair in a given module was seized.	Generic 2, R2V2-V4
TSI Block	Number of TSI memory word pair blockages that failed because no memory words were available.	Generic 2, R2V2-V4
% Mod Occ	Module processor occupancy.	Generic 2, R2V2-R2V4
TSI Marg Cap	The difference between capacity and the usage data. The equation used here is in Appendix C, "Monitor I Equations."	Generic 2, R2V2-V4
TSI % Utilization	Result of dividing usage by capacity. The equation used here is in Appendix C, "Monitor I Equations."	Generic 2, R2V2-V4

Measurements for Universal Modules

This section of the report appears only for Generic 2 switches. TDM data pertains only to G2 universal modules.

TDM (TIME DIVISION MULTIPLEXER) INFORMATION (GENERIC 2)

Field	Definition	Switch
Module	ID number of module associated with the information on this line of the report.	Generic 2
Date	Date of poll.	Generic 2
Time	Hour of poll.	Generic 2
TDM Usage	CCS or Erlangs for TDM usage on Generic 2 universal modules.	Generic 2
TDM Peg	TDM peg count for Generic 2 universal modules.	Generic 2
TDM Block	TDM blockage for Generic 2 universal modules.	Generic 2
% Mod Occ	Module processor occupancy.	Generic 2
TDM Marg Cap	The difference between TDM capacity and TDM Usage. Equation used here is in Appendix C, "Monitor I Equations."	Generic 2
TDM % Utilization	Result of dividing usage by capacity. Equation is in Appendix C, "Monitor I Equations."	Generic 2

Measurements for XE Modules

This section of the report appears only for Generic 2 switches. XE data pertains only to Generic 2 XE modules.

XE INFORMATION (GENERIC 2)

Field	Definition	Switch
Module	ID number of module associated with the information on this line of the report.	Generic 2
Date	Date of poll.	Generic 2
Time	Hour of poll.	Generic 2
XE Usage	CCS or Erlangs for XE usage on Generic 2 XE modules.	Generic 2
XE Peg	XE peg count for Generic 2 XE modules.	Generic 2
XE Block	XE blockage for Generic 2 XE modules.	Generic 2
% Mod Occ	Module processor occupancy.	Generic 2
XE Marg Cap	The difference between XE capacity and XE Usage. Equation used here is in Appendix C, "Monitor I Equations."	Generic 2
XE % Utilization	Result of dividing usage by capacity. Equation is in Appendix C, "Monitor I Equations."	Generic 2

Intermodule Exceptions

This section deals with pairs of working modules. If blocking has occurred, the following information is provided:

TMS (TIME MULTIPLEXED SWITCH) INFORMATION

Field	Definition	Switch
Module Pair	The pair of modules associated with the data on this report line.	Generic 2, R2V2-V4
Date	Date of poll.	Generic 2, R2V2-V4
Time	Hour of poll.	Generic 2, R2V2-V4
TMS Peg (TC)	Number of connections made between a particular module pair.	Generic 2, R2V2-V4
TMS Block (Peak)	Number of calls blocked between a given pair of modules due to unavailability of a common time slot.	Generic 2, R2V2-V4

If no module exceptions are found when the system is polled, this portion of the report will state:

```
No module exceptions found  .
```

Outage Trunk Report (G3r, G3i, Generic 1 and System 75)

```
       Today:  Fri Jul  7 1991 12:01:48                                Page   1
 Switch Name:  test789                                   Start:  03/19/91  1:00
Output Units:  all                                         End:  03/25/91 24:00


                            OUTAGE TRUNK REPORT

Trunk Group Include List Name: trunklist
                                                                   Number of
   Trunk                                          Begin             Sampled
   Group    Type     Dir      Size     Date     Time     Member   Outages
   -----    ----     ---      ----     ----     ----     ------   -------
       1    co       two        10     03/21    15:00         3         1
       1    co       two        10     03/21    15:00         3         1
       1    co       two        10     03/22    15:00         3         1
       1    co       two        10     03/24    15:00         3         1
       1    co       two        10     03/25    15:00         3         1
       1    co       two        10     03/25    15:00         3         1
      22    tie      two         5     03/20    10:00         1         1
      22    tie      two         5     03/20    10:00         2         1
      22    tie      two         5     03/20    10:00         3         1
      22    tie      two         5     03/20    10:00         4         1
      22    tie      two         5     03/20    10:00         5         1
      22    tie      two         5     03/20    14:00         1         1

                            Report Completed
```

There is a report for totals as well. The difference is that the **Date** and **Begin Time** fields will not appear on the total report. Also, the last field will read **Total Number of Sampled Outages** .

Field Definitions for the Outage Trunk Report (G3r, G3i, Generic 1 and System 75)

Field	Definitions	Switch
Trunk Group Include List Name (Optional)	Name of the Trunk Group Include List as defined by the user. Refer to the procedure to Administer Trunk Group Include Lists in Chapter 8, "System Administration."	G3r, G3i, Generic 1, R1V2-V3
Trunk Group	Number identifying the trunk group.	G3r, G3i, Generic 1, R1V2-V3
Type	Type of trunk associated with the accumulated data (for example, CO, FX, WATS, TIE, APLT, DID).	G3r, G3i, Generic 1, R1V2-V3
Dir	Identifies whether the trunk groups are incoming, outgoing, or 2-way.	G3r, G3i, Generic 1, R1V2-V3
Size	The number of trunks in the trunk group.	G3r, G3i, Generic 1, R1V2-V3
Date	Date of the poll. This field does not print in the Total format.	G3r, G3i, Generic 1, R1V2-V3
Begin Time	Time of the poll. This field does not print in the Total format.	G3r, G3i, Generic 1, R1V2-V3
Member	The number of the trunk in the trunk group that was out of service when sampled.	G3r, G3i, Generic 1, R1V2-V3
Number of Sampled Outages	Number of times the trunk was out of service when sampled. For Total format this field prints **Total Number of Sampled Outages** .	G3r, G3i, Generic 1, R1V2-V3

Poll Status Report

```
      Today:  Fri Mar 22 1991  10:25:53                              Page   1
Switch Name:  test123                                 Start:  03/05/1991 11:00
                                                        End:  03/19/1991 13:00


                       POLL STATUS REPORT


       Poll             System  Data Short Major Minor      Poll
Date   Type Time  Alarm Reload  Init Hour  Trans Trans Zero Status
-----  ---- ----- ----- ------  ---- ----  ----- ----- ---- ------
05/09  HLY  11:00 m     -       -    -     -     x     -    SUCCESS
05/09  HLY  12:00 m     -       -    -     -     x     -    SUCCESS
05/09  HLY  13:00 m     -       -    -     -     -     -    SUCCESS


                       Report Completed
```

Field Definitions for the Poll Status Report

The presence of data is indicated by an **x** in six of the Poll Status Report fields; the remainder of the fields use characters or digits. Absence of data is shown by a dash. If all the fields contain dashes and the poll was successful, then the switch collected the data without encountering any difficulty. If the poll was a failure it implies that Monitor I was unable to collect the data from the switch.

Field	Definition	Switch
Date	Date of poll.	All
Poll Type	Indicates if it was an hourly or daily poll. DCT means daily concatenation; CLR means clear poll.	All
Time	Time of poll. If this is a daily poll, a dash (-) appears.	All
Alarm	This field contains either an **M** for a major alarm or an **m** for minor alarm.	Generic 2, R2V2-V4, DIMENSION
System Reload	Indicates the system has been reloaded since the last poll. Data collected before the reload is lost. The system clock may need to be reset.	Generic 2, R2V2-V4, DIMENSION
Data Init	Indicates that data has been reinitialized since the last poll because of a reload or through an administrative procedure. Only data collected since the reinitialization is retained.	Generic 2, R2V2-V4, DIMENSION
Short Hour	Indicates a discrepancy exceeding 100 seconds between traffic and the system clock. To regain synchronization, a short hour of data is being provided.	Generic 2, R2V2-V4, DIMENSION

Field Definitions for the Poll Status Report (continued)

Field	Definition	Switch
Major Trans	Major switch translation changes are reflected in Packet 1. The flag shows that this change in Packet 1 has been "noticed" by the system. Traffic data is affected by a major translation.	Generic 2, R2V2-V4, DIMENSION
Minor Trans	Minor switch translation changes indicate the addition or deletion of facilities such as terminals or trunks, from the system. They may affect the traffic measurements, but do not affect Packet 1 data.	Generic 2, R2V2-V4, DIMENSION
Zero	Indicates an administrative procedure has been used to zero some Packet 5 data since the last poll.	Generic 2, R2V2-V4, DIMENSION
Poll Status	Indicates that the poll succeeded, failed or will be reattempted. If the poll does not succeed on the first attempt, the system tries twice more during the hour.	All

Processor Occupancy Report (Generic 2, System 85, DIMENSION)

```
      Today:  Fri May 22 1991  10:26:53                              Page   1
 Switch Name:  test123                                  Start:  05/09/1991 11:00
Output Units:  ccs/peak                                   End:  05/09/1991 13:00


                      PROCESSOR OCCUPANCY REPORT


                                    Peak      Peak Call Proc
                                 Call Count*    Occupancy**
                                 ----------   --------------
                     Date (tc):      05/09          05/09
                     Time (tc):      13:00          11:00
                   Call Count:       11424          11008
       Total Processor Occupancy:    54.78%         57.31%
        Call Processor Occupancy:    47.84%         49.21%
  System Mgmt. Processor Occ (tc):    6.94%          8.11%
  Marginal Capacity For Processor:   37.16%         35.79%

           Connection Usage (tc):      50624          54128
             Outgoing Usage (tc):      34080          36720
               Tandem Usage (tc):          3              2
             Intercom Usage (tc):      13884          14660
                  CDR Usage (tc):      10384          17024
          Intermodule Usage (tc):      36166          38648
                  TDM Usage (tc):      13072              -
                 Port Usage (tc):     101296              -
           Connection Count (tc):      12752          12384
   Total WCR Calls Network 1 (tc):        144            144
   Total WCR Calls Network 2 (tc):         43             42
   Total WCR Calls Network 3 (tc):          0              0
   Total WCR Calls Network 4 (tc):          0              0
   Total WCR Calls Network 5 (tc):          0              0
   Total WCR Calls Network 6 (tc):          0              0
   Total WCR Calls Network 7 (tc):          0              0
            Total WCR Calls (tc):       1515           1714
               Intercom Peg (tc):       2951           3583
                    CDR Peg (tc):       3247           3635
          Intermodule Count (tc):       6688              -
                    TDM Peg (tc):       6864              -

      Average Holding Time (sec):        397            437
  % Dial Tone Delays > 3 sec (tc):          0              0
              DCIU Occupancy (tc):       9.33%              -


                              Report Completed
```

* For Generic 2 and R2V4 this column is labeled **Peak Call Count**; for R2V3 and R2V2, however, this column is called **Peak Connection Count**.

** This column is called Peak Processor Occupancy for all other switch releases.

Field Definitions for the Processor Occupancy Report (Generic 2 and System 85)

Peak Processor Information is provided from two points of view: data gathered during the time of heaviest **call count** (Generic 2 And R2V4) or **connection count** (R2V3 and R2V2), and data gathered during the time of heaviest **processor occupancy**. The **connection count** refers to the number of connections made by the switch during the peak hour. Certain types of calls produce multiple connection counts. These include calls using senderized service and the Abbreviated Dialing feature. The **call count** is an estimate of the number of calls made by the switch during the peak hour, calculated by using the total connection count minus the compensation count (that is, the number of extra connections resulting from certain types of calls that use multiple connections). For more information on this, refer to the *AT&T System 85 Traffic Data Analysis Guide (R2V1 - R2V4)*, listed in Chapter 1, "About this Guide."

In the following chart, data associated with peak call/connection count is in the second column, and data associated with peak processor activity is in the third column. Since the report for DIMENSION has an extra column of data, the field definitions for the Processor Occupancy Report on the DIMENSION switch are listed separately.

Field Definitions for the Processor Occupancy Report (Generic 2 and System 85) (continued)

Field	Definitions		Switch
	Peak Call/ Connection* Count	**Peak Call Proc Occupancy****	
Date (tc)	Date of peak call/connection count.	Date of peak processor occupancy.	Generic 2, R2V2-V4
Time (tc)	Hour of peak call/connection count.	Hour of peak processor occupancy.	Generic 2, R2V2-V4
Call Count	Peg count of calls during peak hour for calls.	Peg count of calls during peak hour for processor occupancy.	Generic 2, R2V4
Connection Count	Peg count of connections during peak hour for connections.	Peg count of connections during peak hour for processor occupancy.	R2V2-V3
Total Processor Occupancy	Occupancy rate at the time of peak call count. For Generic 2, this figure is derived by adding the Call Processor Occupancy to the System Mgmt. Processor Occupancy. For all other switch releases, this field is labeled Processor Occupancy.	Highest occupancy rate during the period studied. For Generic 2, this figure is derived by adding the Call Processor Occupancy to the System Mgmt. Processor Occupancy. For all other switch releases, this field is labeled Processor Occupancy.	Generic 2
Call Processor Occupancy	Percentage of time the switch spent on call processing at the time of the peak call/connection count.	Percentage of time the switch spent on call processing during the time of peak processor occupancy.	Generic 2, R2V2-V4

* For Generic 2 and R2V4 this column is labeled **Peak Call Count**; for R2V3 and R2V2, however, this column is called **Peak Connection Count**.

** This column is called Peak Processor Occupancy for all other switch releases.

Field Definitions for the Processor Occupancy Report (Generic 2 and System 85) (continued)

Field	Definitions		Switch
	Peak Call/ Connection* Count	**Peak Call Proc Occupancy****	
System Mgmt. Processor Occ (tc)	Percentage of time the switch spent on system management at the time of peak call count.	Percentage of time the switch spent on system management at the time of peak processor occupancy.	Generic 2
Marginal Capacity For Processor	At the time of peak call/connection count, the percentage remaining after processor occupancy is subtracted from the recommended maximum processor occupancy rate. This rate is 85 percent for Generic 2 and R2V3-V4, and 75 percent for R2V2. For Generic 2, the marginal capacity rate is calculated by subtracting Call Processor Occupancy from the maximum average processor occupancy rate of 85 percent.	At the time of peak processor occupancy, the percentage remaining after processor occupancy is subtracted from the recommended maximum processor occupancy rate. This rate is 85 percent for Generic 2 and R2V3-V4, and 75 percent for R2V2. For Generic 2, the marginal capacity rate is calculated by subtracting Call Processor Occupancy from the maximum average processor occupancy rate of 85 percent.	Generic 2, R2V2-V4
Connection Usage (tc)	The total usage for the connections counted in the peak. This number, divided by the number of calls, gives the holding time per connection.	The total usage for the connections counted during the time of peak processor occupancy.	Generic 2, R2V2-V4
Outgoing Usage (tc)	Port usage measurement for calls that will be carried on outgoing trunks at the time of peak call/connection count.	Port usage measurement for calls that will be carried on outgoing trunks at the time of peak processor occupancy.	Generic 2, R2V2-V4

Field Definitions for the Processor Occupancy Report (Generic 2 and System 85) (continued)

Field	Definitions		Switch
	Peak Call/ Connection* Count	Peak Call Proc Occupancy**	
Tandem Usage (tc)	The usage measurement of all trunk-to-trunk connections on a system basis during the time of peak call/connection count.	The usage measurement of all trunk-to-trunk connections on a system basis during the time of peak processor occupancy.	Generic 2, R2V2-V4
Intercom Usage (tc)	The usage measurement of all station-to-station connections on a system basis during the time of peak call/connection count.	The usage measurement of all station-to-station connections on a system basis during the time of peak processor occupancy.	Generic 2, R2V2-V4
CDR Usage	The usage of the Call Detail Recording records at the time of peak call count.	The usage of the Call Detail Recording records at the time of peak processor occupancy.	Generic 2, R2V4
Intermodule Usage (tc)	The total usage for intermodule connections at the time of peak call/connection count.	The total usage for intermodule connections at the time of peak processor occupancy.	Generic 2, R2V2-V4
TDM Usage (tc)	Time Division Multiplexer usage during the time of peak call count.	Prints a dash (-) since this information is not available in Packet 6.	Generic 2
Port Usage (tc)	Total usage for busy ports at the time of peak call/connection count.	Prints a dash (-) since this information is not available in Packet 6.	Generic 2, R2V2-V4

* For Generic 2 and R2V4 this column is labeled **Peak Call Count**; for R2V3 and R2V2, however, this column is called **Peak Connection Count**.

** This column is called Peak Processor Occupancy for all other switch releases.

* For Generic 2 and R2V4 this column is labeled **Peak Call Count**; for R2V3 and R2V2, however, this column is called **Peak Connection Count**.

** This column is called Peak Processor Occupancy for all other switch releases.

Field Definitions for the Processor Occupancy Report (Generic 2 and System 85) (continued)

Field	Definitions		Switch
	Peak Call/ Connection* Count	Peak Call Proc Occupancy**	
Connection Count (tc)	Number of connections made by the system at the time of peak call count.	Number of connections made by the system at the time of peak processor occupancy.	Generic 2, R2V4
Total WCR Calls (tc) Network 1	Number of World Class Routing calls at the time of peak call count.	Number of World Class Routing calls at the time of peak processor occupancy.	Generic 2.2
Total WCR Calls (tc) Network 2	Number of World Class Routing calls at the time of peak call count.	Number of World Class Routing calls at the time of peak processor occupancy.	Generic 2.2
Total WCR Calls (tc) Network 3	Number of World Class Routing calls at the time of peak call count.	Number of World Class Routing calls at the time of peak processor occupancy.	Generic 2.2
Total WCR Calls (tc) Network 4	Number of World Class Routing calls at the time of peak call count.	Number of World Class Routing calls at the time of peak processor occupancy.	Generic 2.2
Total WCR Calls (tc) Network 5	Number of World Class Routing calls at the time of peak call count.	Number of World Class Routing calls at the time of peak processor occupancy.	Generic 2.2
Total WCR Calls (tc) Network 6	Number of World Class Routing calls at the time of peak call count.	Number of World Class Routing calls at the time of peak processor occupancy.	Generic 2.2
Total WCR Calls (tc) Network 7	Number of World Class Routing calls at the time of peak call count.	Number of World Class Routing calls at the time of peak processor occupancy.	Generic 2.2

Field Definitions for the Processor Occupancy Report (Generic 2 and System 85) (continued)

Field	Definitions		Switch
	Peak Call/ Connection* Count	Peak Call Proc Occupancy**	
Total AAR Calls (tc)	Number of Automatic Alternate Routing calls at the time of peak call count.	Number of Automatic Alternate Routing calls at the time of peak processor occupancy.	Generic 2.1, R2V4
Total ARS Calls (tc)	Number of Automatic Route Selection calls at the time of peak call count.	Number of Automatic Route Selection calls at the time of peak processor occupancy.	Generic 2.1, R2V4
Intercom Peg (tc)	Number of all station-to-station connections on a system basis at the time of peak call/connection count.	Number of all station-to-station connections on a system basis at the time of peak processor occupancy.	Generic 2, R2V2-V4
CDR Peg (tc)	The number of CDR records generated by the switch during the time of peak call count. Generation of a record occurs when a record enters the particular call processing state that indicates the record is ready to be output.	The number of CDR records generated by the switch during the time of peak processor occupancy. Generation of a record occurs when a record enters the particular call processing state that indicates the record is ready to be output.	Generic 2, R2V4

* For Generic 2 and R2V4 this column is labeled **Peak Call Count**; for R2V3 and R2V2, however, this column is called **Peak Connection Count**.

** This column is called Peak Processor Occupancy for all other switch releases.

Field Definitions for the Processor Occupancy Report (Generic 2 and System 85) (continued)

Field	Definitions		Switch
	Peak Call/ Connection* Count	**Peak Call Proc Occupancy****	
Intermodule Count (tc)	Peg count of intermodule connections made during the time of peak call/connection count.	Prints a dash (-) since this information is not available in Packet 6.	Generic 2, R2V2-V4
TDM Peg (tc)	Time Division Multiplexer peg count during the time of peak call count.	Prints a dash (-) since this information is not available in Packet 6.	Generic 2
Average Holding Time (sec)	Average length in seconds of each call at the time of peak call/connection count.	Average length in seconds of each call at the time of peak processor occupancy.	Generic 2, R2V2-V4
% Dial Tone Delays > 3 sec	Percent of dial tone delays greater than three seconds in relationship to the requests for dial tone at the time of the peak call/connection count.	Percent of dial tone delays greater than three seconds in relationship to the requests for dial tone at the time of the peak processor occupancy.	Generic 2, R2V2-V4
DCIU Occupancy (tc)	The percent of occupancy of the DCIU processor during the time of peak call/connection count.	Prints a dash (-) since this information is not available in Packet 6.	Generic 2, R2V2-V4

* For Generic 2 and R2V4 this column is labeled **Peak Call Count**; for R2V3 and R2V2, however, this column is called **Peak Connection Count**.

** This column is called Peak Processor Occupancy for all other switch releases.

Field Definitions for the Processor Occupancy Report (DIMENSION)

Field	Definitions			Switch
	Peak Time Slot Usage	**Peak Time Slot Peg**	**Peak Processor Occupancy**	
Date (tc)	Date of the occurrence of peak processor occupancy during time of peak time slot usage.	Date of the occurrence of peak processor occupancy during time of peak time slot peg.	Date of the occurrence of peak processor occupancy during time of peak processor occupancy.	DIMENSION
Time (tc)	Time of the occurrence of peak processor occupancy during time of peak time slot usage.	Time of the occurrence of peak processor occupancy during time of peak time slot peg.	Time of the occurrence of peak processor occupancy during time of peak processor occupancy.	DIMENSION
Time Slot Usage	The hourly number of time slot used during time of peak time slot usage.	The hourly number of time slot used during time of peak time slot peg.	The hourly number of time slot used during time of peak processor occupancy.	DIMENSION
Time Slot Peg	The number of times a slot was selected during time of peak time slot usage.	The number of times a slot was selected during time of peak time slot peg.	The number of times a slot was selected during time of peak processor occupancy.	DIMENSION

Field Definitions for the Processor Occupancy Report (DIMENSION) (continued)

Field	Definitions			Switch
	Peak Time Slot Usage	**Peak Time Slot Peg**	**Peak Processor Occupancy**	
Processor Occupancy	The percentage of time used by the switch processor doing call processing work as opposed to maintenance tasks during time of peak time slot usage.	The percentage of time used by the switch processor doing call processing work as opposed to maintenance tasks during time of peak time slot peg.	The percentage of time used by the switch processor doing call processing work as opposed to maintenance tasks during time of peak processor occupancy.	DIMENSION
Marginal Capacity for Processor	Thirty-five percent of the processor is reserved for maintenance and system management processing, leaving 65 percent available for call processing during time of peak time slot usage.	Thirty-five percent of the processor is reserved for maintenance and system management processing, leaving 65 percent available for call processing during time of peak time slot peg.	Thirty-five percent of the processor is reserved for maintenance and system management processing, leaving 65% available for call processing during time of peak processor occupancy.	DIMENSION
Tandem Traffic Usage (tc)	The CCS usage measurement of all trunk-to-trunk connections on a system basis during time of peak time slot usage.	The CCS usage measurement of all trunk-to-trunk connections on a system basis during time of peak time slot peg.	The CCS usage measurement of all trunk-to-trunk connections on a system basis during time of peak processor occupancy.	DIMENSION

Field Definitions for the Processor Occupancy Report (DIMENSION) (continued)

Field	Definitions			Switch
	Peak Time Slot Usage	Peak Time Slot Peg	Peak Processor Occupancy	
Intercom Usage (tc)	The station-to-station trunk usage during time of peak time slot usage.	The station-to-station trunk usage during time of peak time slot peg.	The station-to-station trunk usage during time of peak processor occupancy.	DIMENSION
Processor Overflow Peg (tc)	The number of times call processing work was not completed (by the switch processor) at the end of a 10-ms scheduling interval during time of peak time slot usage.	The number of times call processing work was not completed (by the switch processor) at the end of a 10-ms scheduling interval during time of peak time slot peg.	The number of times call processing work was not completed (by the switch processor) at the end of a 10-ms scheduling interval during time of peak processor occupancy.	DIMENSION
ECTS Controller Peg (tc)	The number of stimuli associated with handling call processing during time of peak time slot usage.	The number of stimuli associated with handling call processing during time of peak time slot peg.	The number of stimuli associated with handling call processing during time of peak processor occupancy.	DIMENSION
Call Proc Stimulus Peg (tc)	The number of software stimuli associated with the progressive handling of call sequences during time of peak time slot usage.	The number of software stimuli associated with the progressive handling of call sequences during time of peak time slot peg.	The number of software stimuli associated with the progressive handling of call sequences during time of peak processor occupancy.	DIMENSION

Field Definitions for the Processor Occupancy Report (DIMENSION) (continued)

Field	Definitions			Switch
	Peak Time Slot Usage	Peak Time Slot Peg	Peak Processor Occupancy	
Intercom Peg (tc)	The station-to-station trunk peg during time of peak time slot usage.	The station-to-station trunk peg during time of peak time slot peg.	The station-to-station trunk peg during time of peak processor occupancy.	DIMENSION
% Dial Tone Delays > 3 sec (tc)	Percent of dial tone delays greater than three seconds in relationship to the requests for dial tone at the time of peak time slot usage.	Percent of dial tone delays greater than three seconds in relationship to the requests for dial tone at the time of peak time slot peg.	Percent of dial tone delays greater than three seconds in relationship to the requests for dial tone during time of peak processor occupancy.	DIMENSION
Dial Tone Measured (tc)	The number of sampled dial tone requests during time of peak time slot usage.	The number of sampled dial tone requests during time of peak time slot peg.	The number of sampled dial tone requests during time of peak processor occupancy.	DIMENSION

Processor Occupancy Report (G3r, G3i)

```
       Today:  Mon Apr  8 1991  13:45:47                              Page   1
 Switch Name:  testg3i                                 Start:  03/28/1991 Daily
Output Units:  counts                                    End:  03/29/1991 Daily
  Peak Field:  CP Occ

                        PROCESSOR OCCUPANCY REPORT


      Begin  Stat  CP  SM  Idle Mgnl   Total Total   Int   Inc   Out  Pnet    %
Date  Time    Occ Occ Occ   Occ Cpcty  Calls Atmpt Atmpt Atmpt Atmpt Atmpt Aban
----- -----  ---- --- --- ----- -----  ----- ----- ----- ----- ----- ----- ----
03/28 10:00     9  43  15    33    18    350   500    100   200  200   0  30
03/28 11:00     9  55  15    21     6    500   600    100   200  300   0  17


                             Report Completed
```

Field Definitions for the Processor Occupancy Report (G3r, G3i)

Field	Definition	Switch
Date	Date of poll. For the peak report, the date of the occurrence of peak processor occupancy.	G3r, G3i
Begin Time	Beginning of the poll hour based on the time of day clock. For the peak report, the time of the occurrence of peak call processor occupancy.	G3r, G3i
Stat Occ	Static occupancy is the percentage of time needed to handle high priority background processes in support of call processing, maintenance, and administration functions.	G3r, G3i
CP Occ	Call processing occupancy is the percentage of time taken by high priority background processes. The majority of time is call related, but a fractional amount of time is due to the running of administrative commands and background maintenance tests.	G3r, G3i
SM Occ	System Management occupancy is the percentage of time taken by lower priority activities such as administration and maintenance command processing, maintenance activity, error logging and LED audits.	G3r, G3i
Idle Occ	Idle occupancy is the amount of time that the processor is idle.	G3r, G3i
Mgnl cpcty	Marginal capacity is the amount of processor capacity that remains after subtracting static occupancy and call processing occupancy from the recommended maximum average processor occupancy rate *. 70 percent is considered the maximum level rate for the processor to handle call processing and static occupancy and still insure that other system functions are adequately performed. The following formula is used to calculate marginal capacity: Marg. Cap. = Max. Occ Rate – (Call Proc. Occ. + Static Occ.)	G3r, G3i

* Based on extensive testing and studies, AT&T recommends a maximum average processor occupancy rate. This rate varies for different switches. (For example, for System 85 R2V4 and Generic 2, the permissible occupancy rate is 85 percent The recommended 70 percent rate for the G3i switch and the Marginal Capacity reported by Monitor I should be used as a general guideline while analyzing the switch performance. One must exercise caution before reconfiguring the switch to add more complex features such as ISDN Gateways, ASAI, Audix used as auto attendants, etc., that require more CPU. It is suggested that the customers contact their AT&T account representative before reconfiguring the switch or adding major features.

Field Definitions for the Processor Occupancy Report (G3i) (continued)

Field	Definition	Switch
Total Calls	The total number of calls completed during the measurement interval. (A completed call is one that is answered at the destination and a voice path is cut-through.)	**G3r, G3i**
Total Attempt	The number of calls attempts made during the measurement interval. This amount also includes maintenance activities and attempts that did not complete because the caller ended the call prematurely (and not because of inadequate switch resources).	**G3r, G3i**
Int Attempt	Intercom attempts. This category represents the sum of two types of calls. The first is a station-to-station call on the same switch. The second is a partial call where a local station goes offhook and then hangs up before the call is completed.	**G3r, G3i**
Inc Attempt	Incoming attempts is a count of the incoming trunk seizures on the public network. It does not include incoming seizures from other switches in a private network.	**G3r, G3i**
Out atmpt	Outgoing attempts is a count of outgoing trunk seizures made over the public network. It does not include outgoing seizures made to other switches in a private network.	**G3r, G3i**
Pnet atmpt	Private network calls are a count of the number of incoming and outgoing trunk seizures made on trunks connecting the switch with other switches in a private network.	**G3r, G3i**
% Aban	The percentage of calls abandonded using the calculation: **% aband = ((total attempts-total calls)/total attempts))*100**	**G3r, G3i**

Recent ACA (Automatic Circuit Assurance) Referrals Report

```
       Today:  Wed Jan 1 1992 15:19:22                                  Page    1
 Switch Name:  test123                                 Start:  10/21/1991  1:00
Output Units:  peg count/all                             End:  10/21/1991 23:00

                            RECENT ACA REFERRALS REPORT
                          32 Most Recent Referrals per Poll


SUMMARY

                    Number of Referrals Generated: 2
                Number of Attendant Trunks Verified: 1



DETAIL

    Trunk Trunk                          Poll  Poll   Refer Refer Refer Verify
DAC Group Member    Trunk Group Name      Date  Time   Date  Time  Type  by Attd
--- ----- ------ ---------------------- ----- -----  ----- ----- ----- --------
370    18     25  ACD GROUP ONE         10/21 14:00  10/21 13:56 Short  No
 29   255     55  MESSAGE CTR SERV      10/21 16:00  10/21 15:42 Long   Yes



                                   Report Completed
```

Field Definitions for the Recent ACA Referrals Report

Field	Definitions	Switch
Number of Referrals Generated	Total number of referrals generated during the specified period.	Generic 2, R2V2-V4, DIMENSION
Number of Attendant Trunks Verified	Total number of Attendant Trunk Verifications (ATVs), that is, the total number of referrals that were tested by the customer.	Generic 2, R2V2-V4, DIMENSION
DAC	The Dial Access Code (DAC) assigned to the trunk group.	Generic 2, R2V2-V4, DIMENSION
Trunk Group	Trunk group number, assigned by the customer.	Generic 2, R2V2-V4, DIMENSION
Trunk Member	Number that identifies the specific trunk referred to within this group.	Generic 2, R2V2-V4, DIMENSION
Trunk Group Name	Name given to the trunk group by the customer or obtained from the switch with the Non-Traffic Data Retrieve. For example, the name could be **DDD Chicago** .	Generic 2, R2V2-V4, DIMENSION
Poll Date	Date of poll for this report.	Generic 2, R2V2-V4, DIMENSION
Poll Time	Hour of the poll.	Generic 2, R2V2-V4, DIMENSION
Refer Date	The date the ACA referral is stored in Packet 4.	Generic 2, R2V2-V4, DIMENSION
Refer Time	The time the ACA referral is stored in Packet 4.	Generic 2, R2V2-V4, DIMENSION
Refer Type	Indicates the reason for generating the referral. Value will be **short** for short calls or **long** for long calls.	Generic 2, R2V2-V4, DIMENSION
Verified by Attd	Data in this field indicates if the attendant has tested the trunk identified in a referral. Possible values are **Y** , **N** or **NS** . Not sent, or **NS** , means the measurement has not been sent.	Generic 2, R2V2-V4, DIMENSION

Security Violation Report (G3i)

```
       Today:  Thu Oct 15 1992  14:02:42                          Page   1
 Switch Name:  testg3i                                 Start:  08/28/1992  8:00
Output Units:  counts                                    End:  08/30/1992 17:00


SECURITY VIOLATIONS REPORT




                                          --Invalid Login Attempt--    Invalid
       Begin                              EIA    Dial   Netcon         Barrier
Date   Time   Counted Since                Port   Up     Dialup  Total  Codes
10/20  10:00  5:00 pm Tues Aug 15, 1992      2     0       2       3        3
11/02  11:00  1:00 am Mon Sep 15, 1992       3     0       2       5        3



11/20  07:00  17:00 pm Thur Sep 30, 1992     0     0       1       1        2

This report only lists those hours when new violations
occurred.

                                  Report Completed
```

Field Definitions for the Security Violation Report (G3i)

Field	Definitions	Switch
Date	Date of poll.	G3i
Time	The time of the poll.	G3i
Counted Since	Indicates when the security violation was cleared prior to the polling time.	G3i
EIA Port	The number of invalid attempts recorded on the maintenance board EIA port.	G3i
Dial Up	Number of invalid attempts on the maintenance dial-up port.	G3i
Network Control Dial Up	The number of invalid attempts recorded on the network control dial-up ports.	G3i
Total	The total number of invalid login attempts.	G3i
Invalid Barrier Codes	Identifies the number of invalid barrier codes dialed when the Remote Access system feature is being used.	G3i

Security Violation Report (G3r)

```
       Today:  Thu Oct 15 1992  14:02:42                              Page   1
 Switch Name:  testg3r                                  Start:  08/28/1992  8:00
Output Units:  counts                                     End:  08/30/1992 17:00

                    SECURITY VIOLATIONS REPORT


BARRIER AND AUTHORIZATION CODES


       Begin  ----- Barrier Codes -----    ----Authorization Codes ----
Date   Time   Valid   Invalid   Sec Viol   Originator   Valid   Invalid
-----  -----  ------- -------   --------   ----------   ------- -------
08/28  7:00         0       0          0   Station            0       0
                                           Trunk              0       0
                                           Remote Acc         0       0
                                           Attendant          0       0
                                           Total              0       0
   Counted Since:  4:33 pm  THU AUG 20, 1992

08/30 10:00         0       0          0   Station            0       0
                                           Trunk              0       0
                                           Remote Acc         0       0
                                           Attendant          0       0
                                           Total              0       0
   Counted Since: 12:49 pm  SUN AUG 30, 1992
```

Security Violation Report (G3r) (continued)

```
      Today:  Thu Oct 15 1992  14:02:42                          Page   1
 Switch Name:  testg3r                                Start:  08/28/1992  8:00
Output Units:  counts                                   End:  08/30/1992 17:00


                    SECURITY VIOLATIONS REPORT


LOGIN MEASUREMENTS


       Begin                Success   Invalid   Invalid   Forced   Sec    Trivial
Date    Time   Port Type     Logins   Attempts     IDs     Discon   Viol   Attempts
08/28   0:00   SYSAM-LCL          6          0         0        0      0          0
               SYSAM-RMT         93          0         0        0      0          1
               MAINT              0          0         0        0      0          0
               SYS-PORT         475         10         1        1      0         52
               Total            574         10         1        1      0         53


     Counted Since: 4:33 PM  THU AUG 20, 1992
```

Field Definitions for the Security Violation Report (G3r)

Barrier and Authorization Codes

Field	Definitions	Switch
Date	Date of poll.	G3r
Begin Time	The time of the poll.	G3r
Valid Barrier Codes	The total number of times a user submitted a valid remote access barrier code.	G3r
Invalid Barrier Codes	The total number of times a user submitted an invalid remote access barrier code.	G3r
Barrier Security Violations	The total count of remote access attempts that have produced a security violation because too many invalid barrier codes were submitted within a given period of time.	G3r
Authorization codes: • Originator	The type of resource originating the calls that generates measurements of valid or invalid authorization codes. These types are: — Station — Trunk (except remote access trunks) — Remote Access Trunks — Attendant — Total (for all originators)	G3r
• Station Valid/Invalid:	total counts of valid and invalid authorization codes originating from all stations.	
• Trunk Valid/Invalid:	total count of valid and invalid authorization codes originating from trunks, other that remote access trunks.	
• Remote Acc Valid/Invalid:	total count of valid and invalid authorization codes originating from remote access trunks.	
• Attendant Valid/Invalid:	total count of valid and invalid authorization codes originating from attendants.	
• Total Valid/Invalid:	total count of valid and/or invalid authorization codes originating from all resources. (This field is calculated by adding the the valid and/or invalid authorization codes for stations, trunks, remote access trunks and attendants.)	
Counted Since	The time when the report counters were last cleared and new measurements began accumulating. **Note:** At system initialization time, the counters are cleared automatically and new measurement counting begins.	

Login Measurements Fields for Security Violations Report

Field	Definitions	Switch
Date	Date of poll.	G3r
Begin Time	The time of the poll.	G3r
Port Type	The type of port used by the measured login process. Types are: • SYSAM-LCL: SYSAM local port. This port on the SYSAM board is typically used as a local connection to the SAT. • SYSAM-RMT: SYSAM remote port. The dial-up port on the SYSAM board is typically used by services for remote maintenance and is also used by the switch to elicit alarm information. • MAINT: These ports on the Expansion Port Networks maintenance boards are typically used as local connections for on-site maintenance performed by services. • SYS-PORT: System Ports are accessed by dialing up through a traffic data module (TDM) bus. • Total: The measurements totaled for all the above port types.	G3r
Successful logins	The total count of successful logins into SM (i.e. the submitted login and password are valid) for the given port type.	G3r
Invalid Attempts	Total count of login attempts where the attempting party submitted an invalid login ID or password while accessing a given port type.	G3r
Invalid IDs	Total count of unsuccessful login attempts where the attempting party submitted an invalid login ID while accessing the given port type.	G3r
Forced Disconnects	Total count of login processes that were disconnected automatically by the switch because the threshold for consecutive invalid login attempts had been exceeded for the given port type.	G3r
Login Security Violations	Total login security violations for the given port type.	G3r
Trivial Attempts	Total number of times a data connection is made by a user but no login input is attempted before the system disconnects.	G3r
Counted Since	The time when the report counters were last cleared and new measurements began accumulating. **Note:** At system initialization time, the counters are cleared automatically and new measurement counting begins.	G3r

Switch Summary Report (Generic 2, System 85)

```
       Today:  Tue June  7 1991  11:24:46                          Page   1
 Switch Name:  test123                                Start:  06/01/1991 Daily
Output Units:  ccs/peak                                 End:  06/07/1991 Daily

                          SWITCH SUMMARY REPORT

PEAK PROCESSOR INFORMATION
                                     Peak      Peak Call Proc
                                  Call Count*    Occupancy**
                                  ----------   --------------
                       Date (tc):      03/12          03/12
                       Time (tc):      11:01          11:01
                      Call Count:       6080           6080
       Total Processor Occupancy:      46.05%         46.05%
           Call & Scan Occupancy:      40.14%         40.14%
          System Management (tc):       5.92%          5.92%
  Marginal Capacity For Processor:      44.87%         44.87%
       Average Holding Time (sec):        347            347
       % Dial Tone Delays > 3 sec:       0.00%          0.00%

PEAK MODULE INFORMATION
  Module With The Highest Blocking: None
 TSI/TDM Blocking Highest Mod (pk):      -
Percent Blocking For High Mod (tc):      -
                        Date (tc):       -
                        Time (tc):       -
       Total TSI/TDM Blocking (tc):      -
           Total TMS Blocking (tc):      -
         Percent TMS Blocking (tc):      -
   Modules Exceeding 75% Occupancy: None

PEAK ATTENDANT INFORMATION
                             Date:    03/12
                             Time:    11:01
                    Average Delay:     0.05
    Average Delay Of Delayed Calls:    19.10
        Percent Of Calls Abandoned:    50.00%
        Available Attendants:   2
TOTAL SECURITY VIOLATIONS
                                          Number of          Percent
                                       Invalid Attempts  Invalid Attempts
                                       ----------------  ----------------
              Remote Access On Trunk Groups:          0             0.00%
 Remote Access On Systems Mngt. Port (SN492):         0             0.00%
 Remote Access On Systems Mngt. Port (TN563):         0             0.00%
```

* This column is called *Peak Connection Count* for R2V2 and R2V3.

** This column is called *Peak Processor Occupancy* for all other switch releases.

Switch Summary Report (continued)

```
      Today:  Tue June  7 1991  11:25:11                              Page   2
 Switch Name:  test123                                Start:  06/01/1991 Daily
Output Units:  ccs/peak                                 End:  06/07/1991 Daily


                         SWITCH SUMMARY REPORT

STUDIES CURRENTLY SET UP

  Packets Currently Polled: Load Balance, Carrier Usage,
                            Performance Summary, Peak And Time Coincident,
                            WCR, Processor Occupancy,
                            Accumulated Values,
                            DCIU, Call Coverage,
                            ACD
    ACD Agent Measurements: All

  Vector Directory Numbers: 81616, 81940, 83722, 84260, 86000

              WCR Patterns:    4,   5,   6,   7,   8

      Call Coverage Groups:   12,   14,   45,   50,   55,   60, 2033

         ISDN Associations:    1,   2,   3,   4,   5,   6,   7,   8

  Trunk Group Combinations: None

                Satellites: None

 Load Balance Study Active? Yes

Carrier Usage Study Active? No

TOTAL POLL INFORMATION

                             Poll Days: Monday Thru Friday
                            Poll Hours: 07:00 To 17:00
            Number Of Successful Polls:     2
                Number Of Major Alarms:     1
                Number Of Minor Alarms:     2
   Number Of Major Translations Changes:    2
   Number Of Minor Translations Changes:    2
             Number Of System Reloads:      0
         Number Of Data Initializations:    0
                  Number Of Short Hours:    0
           Number Of Times Data Zeroed:     0
```

Switch Summary Report (continued)

```
       Today:  Tue June  7 1991  11:25:20                              Page   3
 Switch Name:  test123                                  Start:  06/01/1991 Daily
Output Units:  ccs/peak                                   End:  06/07/1991 Daily


                          SWITCH SUMMARY REPORT



PEAK TRUNK GROUP THRESHOLD VIOLATIONS

   Trunk                              Design   Table          Current   Recommended
   Group  Type  Dir  Date   Time     GOS      Used    Usage  # Trunks   # Trunks
   -----  ----  ---  -----  -----  -------  -------  -----  --------  -----------
     15   ICM        03/08  12:01   P01     RETRIAL  63828    1800         NR**
     64   EIA   2W   03/09  15:01   P03     RETRIAL    231       7          15
    116   CO    OG   03/12  15:01   P02     RETRIAL   3601     100          UO##
    200   EIA   2W   03/12  12:01   P03     RETRIAL   2402      71          82
    205   EIA   2W   03/12  12:01   P03     RETRIAL    159       8           9
    223   EIA   2W   03/12  12:01   P03     RETRIAL    144       5          10
    260   APLT  2W   03/09  12:01   P03     RETRIAL    848      24          49
    261   APLT  2W   03/09  16:01   P03     RETRIAL    823      24          37

**  No Recommendation.  The traffic model used to study this trunk group may not
    apply when average trunk usage is over 98.5%.

##  Usage Overflow. The average trunk usage is over the maximum usage per trunk.
    Database and switch may not agree; performing an audit is recommended.

TOTAL RECENT ACA REFERRALS FOR TRUNK GROUPS

          Trk  # Short Holding   # Long Holding
   DAC    Grp  Time Referrals    Time Referrals
  -----   ---  --------------    --------------


                No Referrals Generated


                           Report Completed
```

Field Definitions for the Switch Summary Report

Peak Processor Information (Generic 2 and R2V2-V4)

Peak Processor Information is provided from two points of view:

- Data gathered during the time of heaviest (peak) call count. (For R2V2-V3, data is gathered during the time of peak connection count. Refer to the Processor Occupancy Report for more information.)
- Data gathered during the time of heaviest (peak) processor occupancy

Field	Definitions		Switch
	Peak Call/ Connection Count*	**Peak Call Proc Occupancy****	
Date (tc)	Date of peak call count.	Date of peak processor occupancy.	Generic 2, R2V2-V4
Time (tc)	Hour of peak call count.	Hour of peak processor occupancy.	Generic 2, R2V2-V4
Call Count	Peg count of calls during peak hour for calls.	Peg count of calls during peak hour for processor occupancy.	Generic 2, R2V4
Total Processor Occupancy	Occupancy rate at the time of peak call count. For Generic 2, this figure is derived by adding the Call & Scan Occupancy to the System Mngt. Processor Occupancy. For all other switch releases, this field is labeled Processor Occupancy.	Highest occupancy rate during the period studied. For Generic 2, this figure is derived by adding the Call & Scan Occupancy to the System Mngt. Processor Occupancy. For all other switch releases, this field is labeled Processor Occupancy.	Generic 2, R2V2-V4
Call & Scan Occupancy	Percentage of time the switch spent on call processing and scanning at the time of the peak call count.	Percentage of time the switch spent on call processing and scanning during the time of peak processor occupancy.	Generic 2

* This column is headed *Peak Connection Count* for R2V2 and R2V3.

** This column is called *Peak Processor Occupancy* for all other switch releases.

Peak Processor Information (Generic 2 and R2V2-V4) (continued)

Field	Definitions		Switch
	Peak Call/ Connection Count	**Peak Call Proc Occupancy**	**Switch**
System Management (tc)	Percentage of time the switch spent on system management at the time of peak call count.	Percentage of time the switch spent on system management at the time of peak processor occupancy.	Generic 2
Marginal Capacity For Processor	At the time of peak call/connection count, the percentage remaining after processor occupancy is subtracted from 85 percent for Generic 2; for R2V3-V4, the percentage remaining after Call & Scan Occupancy is subtracted from 85 percent and for R2V2, the percentage remaining after Call & Scan Occupancy is subtracted from 75 percent.	At the time of peak processor occupancy, the percentage remaining after processor occupancy is subtracted from 85 percent for Generic 2; for R2V3-V4, the percentage remaining after Call & Scan Occupancy is subtracted from 85 percent and for R2V2, the percentage remaining after Call & Scan Occupancy is subtracted from 75 percent.	Generic 2, R2V2-V4
Average Holding Time (sec)	Average length in seconds of each call at the time of peak call count.	Average length in seconds of each call at the time of peak processor occupancy.	Generic 2, R2V2-V4
% Dial Tone Delays > 3 sec (tc)	Percent of dial tone delays greater than three seconds in relationship to the requests for dial tone at the time of peak call or connection count.	Percent of dial tone delays greater than three seconds in relationship to the requests for dial tone at the time of peak processor occupancy.	Generic 2, R2V2-V4

Peak Processor Information (DIMENSION)

Field	Definitions			Switch
	Peak Time Slot Usage	**Peak Time Slot Peg**	**Peak Processor Occupancy**	
Date (tc)	Date of the occurrence of peak processor occupancy.	Date of the occurrence of peak processor occupancy.	Date of the occurrence of peak processor occupancy.	DIMENSION
Time (tc)	Time of the occurrence of peak processor occupancy.	Time of the occurrence of peak processor occupancy.	Time of the occurrence of peak processor occupancy.	DIMENSION
Time Slot Usage	The hourly number of time slot used.	Prints a dash (-) since the measurement is not available in Packet 6.	Prints a dash (-) since the measurement is not available in Packet 6.	DIMENSION
Time Slot Peg	The number of times a slot was selected.	The number of times a slot was selected.	The number of times a slot was selected.	DIMENSION
Processor Occupancy	The percentage of time used by the switch processor doing call processing work as opposed to maintenance tasks.	Prints a dash (-) since the measurement is not available in Packet 6.	Prints a dash (-) since the measurement is not available in Packet 6.	DIMENSION
Marginal Capacity for Processor	Thirty-five percent of the processor is reserved for maintenance and system management processing, leaving 65 percent available for call processing.	Prints a dash (-) since the measurement is not available in Packet 6.	Thirty-five percent of the processor is reserved for maintenance and system management processing, leaving 65 percent available for call processing.	DIMENSION

Peak Processor Information (DIMENSION) (continued)

Field	Definitions			Switch
	Peak Time Slot Usage	**Peak Time Slot Peg**	**Peak Processor Occupancy**	
% Dial Tone Delays > 3 sec (tc)	Percent of dial tone delays greater than 3 seconds in relationship to the requests for dial tone at the time of peak time slot usage.	Percent of dial tone delays greater than 3 seconds in relationship to the requests for dial tone at the time of peak time slot peg.	Percent of dial tone delays greater than 3 seconds in relationship to the requests for dial tone at the time of peak processor occupancy.	DIMENSION
Dial Tone Measured (tc)	The number of sampled dial tone requests.	The number of sampled dial tone requests.	The number of sampled dial tone requests.	DIMENSION

Additional Sources of Information:

Processor Occupancy Trending Reports
Processor Occupancy Report
Trunk Group Summary Report
Trunk Group Detail Report
Module Report
ACA Referral Report

Three types of information found in this section of the Switch Summary Report prompt most traffic managers to further investigation:

- High Processor Occupancy
- Average Holding Time (AHT) measurements that are longer than expected
- Dial tone delays exceeding three seconds

HIGH PROCESSOR OCCUPANCY

TABLE A-4
Processor Occupancy Problems

If Peak Occupancy Is:	Then:
Approaching 85% (G2,R2V2-V3) 75% (R2V2) 65% (DIMENSION)	Further investigation is required since these percentages of processor time must be reserved for switch maintenance
Consistently high over a period of 6 to 13 weeks	The problem is probably due to high traffic volume.
Generally low and there is a sudden surge	The high occupancy rate may be due to a maintenance problem or some extraordinary event that triggers heavy telephone traffic.

High processor occupancy can also occur:

- If there is a maintenance problem
- If trunks have been removed from service or *busied out*
- If the work load is not balanced between the switch modules, causing module blockages

Remember that telecommunications management systems can add to processor occupancy if tasks are scheduled during busy business hours when call volume is high. Lengthy administrative procedures for applications like DEFINITY Manager III or Manager IV can keep your processor busy, depriving it of the time needed to process calls or perform maintenance tasks. Call counts and/or other measurements that are much higher than your system normally experiences can be an indication of a problem with the processor.

HIGH AHT (AVERAGE HOLDING TIME) The national Average Holding Time for voice calls is 180 seconds or three minutes. Run the Switch Summary Report a few times to get a feel for the AHT for your switch. If you begin to see AHTs that exceed expectations, look at the report section labeled Total Recent ACA Referrals for Trunk Groups. This shows the most recent referrals on calls of both short and long duration. Perhaps a lot of trunks are experiencing long holding times. You can execute the ACA Referral Report for more details.

DIAL TONE DELAYS If users are experiencing dial tone delays greater than three seconds when trying to place a call, you may need additional trunks for this purpose. Run the Trunk Group Detail Report on trunk group types that send and receive touch tone signals for your switch to see if you need to increase the trunk groups to accommodate your Grade of Service (GOS).

Peak Module Information (Generic 2 and System 85)

A dash in a field in this section indicates that there was no module blocking. The formulas used in the calculations are provided in Appendix C, "Monitor I Equations."

Field	Definition	Switch
Module With The Highest Blocking	ID number of module, standard or universal with the highest blocking.	Generic 2, R2V2-V4
TSI/TDM Blocking Highest Mod (pk)	Peak blocking for the module having highest blocking rate.	Generic 2
Percent Blocking For High Mod (tc)	Percentage of blocking for module with highest blocking rate.	Generic 2, R2V2-V4
Date (tc)	Date on which highest blocking occurred.	Generic 2, R2V2-V4
Time (tc)	Hour when highest blocking occurred.	Generic 2, R2V2-V4
Total TSI/TDM Blocking (tc)	Number of blocked calls for modules during the date and hour of highest blocking.	Generic 2
Total TMS Blocking (tc)	Number of blocked calls on modules during the date and hour of highest blocking.	Generic 2, R2V2-V4
Percent TMS Blocking (tc)	Percentage of blocked calls between a given pair of modules because of unavailability of a common time slot.	Generic 2, R2V2-V4
Modules Exceeding 75% Occupancy	ID number of modules with occupancy rates exceeding 75 percent.	Generic 2, R2V2-V4

Additional Sources of Information:

Module Report
TSI Blockages Module Trending Report
TMS Blockages Module Trending Report

TABLE A-5
Module Blockage Problems

If:	Then:
Module blockages appear*	Check the Module Report and Trending Reports to determine which modules are affected
Blockages appear consistently over a period of time	Contact AT&T Marketing to have the load balancing restored.
Modules have an occupancy rate exceeding 75%	Check with your System Administrator to ensure that equipment is functioning properly.

* If two modules have the same number of blockages during the peak hour, the larger module is identified. For example, if both Module 0 and Module 30 have peaked at 3 blockages, then module 30 would be displayed on the report.

Peak Attendant Information

DEFINITY Monitor I provides three values related to call delays based on the number of attendants on duty and the peak worked usage. They are taken from the Erlang C Infinite Queue table.

Field	Definition	Switch
Date	Date of peak worked usage.	Generic 2, R2V2-V4, DIMENSION
Time	Hour of peak worked usage.	Generic 2, R2V2-V4, DIMENSION
Average Delay	Average delay for incoming calls received during the peak date and hour.	Generic 2, R2V2-V4, DIMENSION
Average Delay Of Delayed Calls	Average delay for all delayed calls received during the peak date and hour.	Generic 2, R2V2-V4, DIMENSION
Percent Of Calls Abandoned	Percentage of incoming calls where caller hangs up before attendant answers.	Generic 2, R2V2-V4, DIMENSION
Available Attendants	Number of attendants with attended usage greater than zero.	Generic 2, R2V2-V4, DIMENSION

Additional Sources of Information:

Attendant Usage Trending Report
Attendant Measurement Report

The acceptable maximum average wait for a call in an attendant's queue, according to AT&T guidelines, is a 15-second delay. However, acceptable average delays can depend on such factors as:

- Company policy
- The type of service your company provides
- The type of goods your firm manufactures

If the average delay shown in your Switch Summary Report exceeds your company standard, graph the Total Attendant Usage Trending Report for the past 6 to 13 weeks to determine if the peak average delay printed on the current report is a one-day surge or part of a pattern. If it is a one-day surge, it could mean that an attendant was ill or on vacation.

TABLE A-6
Average Delay Problems

If:	Then:
The average delay has been consistently high or steadily increasing over time	Examine the attendant usage* on the Attendant Measurement Report for the same date range

* If a console is plugged in for an entire hour, it would have an attended usage of 33.12 CCS. Occupancy levels greater than 92 percent are not recommended for attendant positions, based on Human Factors considerations. (The theoretical maximum is 36 CCS so 92 percent of 36 CCS is 33.12.)

Total Security Violations

Field	Definitions		Switch
	Number of Invalid Attempts	Percent of Invalid Attempts	
Remote Access On Trunk Groups	Number of invalid attempts to access trunks by callers outside your system.	Percentage of remote attempts to access trunks that were invalid.	Generic 2, R2V2-V4, DIMENSION
Remote Access On Systems Mngt. Port (SN492)	Number of invalid attempts to access this system management port by callers outside your system.	Percentage of remote attempts to access this port that were invalid.	Generic 2, R2V4
Remote Access On Systems Mngt. Port (TN563)	Number of invalid attempts to access these ports by callers outside your system.	Percentage of remote attempts to access this port that were invalid.	Generic 2

Source of Additional Information:
System Security Report

The system security section of the Switch Summary Report provides data on invalid attempts made to:

- A remote access trunk group
- System management ports.

If one authorization code is frequently on the list, contact its owner to find out how often it is used legitimately. If the owner is not using it frequently and you suspect unauthorized persons are trying to access the system, give the owner new authorization and speaker verification codes. If you feel that the Operating Support Systems (OSS) port is being compromised, contact AT&T so that the port phone number and/or security code can be changed.

Studies Currently Set Up

Field	Definition	Switch
Packets Currently Polled	Rather than list packets by number, their study functions are listed here.	Generic 2, R2V2-V4, DIMENSION
ACD Agent Measurements	All ACD (Automatic Call Distribution) agent groups are studied. If Monitor I has no file on them, this field reads **none** .	Generic 2, R2V3-V4
UCD Agent Measurements	All UCD (Uniform Call Distribution) agent groups are studied. If Monitor I has no file on them, this field reads **none** .	R2V2
Vector Directory Numbers	Lists Vector Directory Numbers. Information retrieved from Packet 13.	Generic 2
WCR Patterns	WCR (World Class Routing) patterns currently being studied are listed.	Generic 2.2
AAR Patterns	AAR (Automatic Alternate Routing) patterns currently being studied are listed.	Generic 2.1, R2V2-V4, DIMENSION
ARS Patterns	ARS (Alternate Route Selection) patterns currently under study are listed.	Generic 2.1, R2V2-V4, DIMENSION
Call Coverage Groups	All Call Coverage groups are studied. If there are none, the field reads **none** .	Generic 2, R2V2-V4
ISDN Associations	This field serves as a reminder to the user on the numbers of the ISDN (Integrated Services Digital Network) associations under study.	Generic 2
Trunk Group Combinations	All trunk group combinations under study are listed. If there are none, the field reads **none** .	Generic 2, R2V2-V4
Satellites	Satellite information retrieved from Packet 6.	Generic 2, R2V2-V4, DIMENSION

Studies Currently Set Up (continued)

Field	Definition	Switch
Load Balance Study Active?	Prints **y** for yes or **n** for no. Information retrieved from Packet 2.	Generic 2, R2V2-V4, DIMENSION
Carrier Usage Study Active?	Prints **y** for yes or **n** for no. Information retrieved from Packet 3.	Generic 2, R2V2-V4, DIMENSION

This section of the report lists special studies previously set up using the Traffic Studies and/or the Customized Studies Menus. These lists are included to remind you that data is being collected and reports are available.

The Packets Currently Polled field on the report lists the names of packets that the poller is currently retrieving from the switch, rather than identifying them by number.

Table A-7 lists the study, the report available for printing the data,* and the packet that has to be polled in order to retrieve the data from the switch.

TABLE A-7
Monitor I Studies and Packets

Study	Switch Performance Report	Packet Name	Packet Number
ACD Agent Measurements	ACD Report/UCD Report	EUCD/ACD	13
WCR Patterns **	WCR Report	WCR	7
Call Coverage	Call Coverage Report	Call Coverage	12
Trunk Group Combinations	Customized Report	Peak and Time Coincident	6
ISDN Associations	ISDN PRI Trnk Grp Assoc. Report ISDN PRI D-Channel Meas. Report	Peak and Time Coincident	6
Modules	Module Report	Peak and Time Coincident	6
Vectors	ACD Report/UCD Report	EUCD/ACD	13

* WCR only applies to Generic 2.2. AAR (Packet 8) and ARS (Packet 7) reports apply to Generic 2.1, System 85 and DIMENSION.

** If you notice you are not receiving data on an AAR study, access the polling schedule and make sure that Packet 8 is selected.

Total Poll Information

Field	Definition	Switch
Poll Days	Days being polled, such as Monday through Friday.	Generic 2, R2V2-V4, DIMENSION
Poll Hours	Polling hours, such as 8 a.m. to 5 p.m.	Generic 2, R2V2-V4, DIMENSION
Number Of Successful Polls.	Number of stored records for the time and date range specified.	Generic 2, R2V2-V4, DIMENSION
Number Of Major Alarms	Number of poll records with a major alarm flag.	Generic 2, R2V2-V4, DIMENSION
Number Of Minor Alarms	Number of poll records with a minor alarm flag.	Generic 2, R2V2-V4, DIMENSION
Number Of Major Translations Changes	Number of poll records with major translations flag.	Generic 2, R2V2-V4, DIMENSION
Number Of Minor Translations Changes	Number of poll records with minor translations flag.	Generic 2, R2V2-V4, DIMENSION
Number Of System Reloads	Number of polls that occurred during system reloads.	Generic 2, R2V2-V4, DIMENSION
Number Of Data Initializations	Number of polls that occurred during data initializations.	Generic 2, R2V2-V4, DIMENSION
Number Of Short Hours	Number of polls with data representing less than an hour of activity.	Generic 2, R2V2-V4, DIMENSION
Number Of Times Data Zeroed	Number of times data has been zeroed by an administrative procedure.	Generic 2, R2V2-V4, DIMENSION

Source of Additional Information:
Poll Status Report

An accurate picture of switch performance is possible ***only*** after analyzing many successful polls over a period of time. This section of the Switch Summary Report provides some of the data you need to paint this picture. Traffic engineers differ on the extent of time and the number of polls required, but here are some general guidelines:

- Take traffic measurements for the 30 busiest days in the year for your business. Exclude recurring exceptional days from these measurements. For example, telephone companies count Christmas and Mother's Day as their busiest times, so they exclude these measurements from their busy-time studies, and analyze them separately.

  - Data must come from a period of successful polling. For example, if you run the report daily for a month and you have only a few successful polls during that period, you do not have a large enough sample space to make intelligent traffic management decisions. For a successful poll, Monitor I must connect to the switch and retrieve the packet data. Problems that may affect validity of the data gathered are discussed below.
- Identify the busiest hour in each day's measurements.
- Total the measurements for the busy hours and divide each measurement by 30.
  - This provides a picture of the load carried by your switch during busy times. You can use it to compare to similar data gathered in slow and average periods.

Clues to Invalid Data

The information in this section on major or minor translation changes, short hours, missing data, system reloads, and data initialization indicates if the measurements reported are good. If you see data in these fields, execute the Poll Status Report to determine the polls affected. Be careful not to base decisions on polls where these events occurred, since the data may not be dependable.

When a major translation has occurred, reinitialize your switch or run an audit and correct the problem manually through the Administer Studies screen. When minor translations have occurred, contact the Facilities Management (FM) administrator for your switch to determine what traffic sensitive equipment has changed. For example, a trunk may have been added to a trunk group or a new WCR pattern may have been added to the switch.

The number of trunks in a trunk group needs to be maintained so that accurate threshold violations can be done.

Peak Trunk Group Threshold Violations

The fields are horizontal in this section of the report.

Field	Definition	Switch
Trunk Group	ID Number of trunk group that has violated its design Grade of Service (GOS).	Generic 2, R2V2-V4, DIMENSION
Type	Type of trunks in this group.	Generic 2, R2V2-V4 DIMENSION
Dir	Direction of trunk group: incoming, outgoing, or 2-way.	Generic 2, R2V2-V4, DIMENSION
Date	Date of the peak usage.	Generic 2, R2V2-V4, DIMENSION
Time	Hour of the peak usage.	Generic 2, R2V2-V4, DIMENSION
Table Used	Table used to make calculations: Retrial, Erlang B, Erlang C or blank.	Generic 2, R2V2-V4, DIMENSION
Design GOS	This measurement indicates the level of blockage chosen when the system was designed.	Generic 2, R2V2-V4, DIMENSION
Usage	Usage for this trunk group at time of the peak, expressed in CCS or Erlangs.	Generic 2, R2V2-V4, DIMENSION
Current # Trunks	Number of trunks in this trunk group at time of study.	Generic 2, R2V2-V4, DIMENSION
Recommended # Trunks	Recommended number of trunks for this trunk group to meet the designed GOS. No recommendation will be given and **NR **** will print with a footnote saying that the traffic model used to study the trunk group may not apply when average trunk usage is over 98.5 percent. If there is usage overflow, **UO ##** will print with a footnote recommending that you audit the switch and database.	Generic 2, R2V2-V4, DIMENSION

Additional Sources of Information:

Trunk Group Detail Report
Trunk Group Usage Trending Report
WCR Report*

* See AAR and ARS Report for Generic 2.1, System 85 and DIMENSION.

This section reports on trunks violating their designed Grade of Service (GOS). That is, trunks in these groups have blocked more than the acceptable percentage of calls. As stated in previous discussions on traffic analysis, you must determine if apparent problems stem from maintenance causes or heavy traffic. One source of maintenance problems is reflected in the Automatic Circuit Assurance (ACA) section of this report, described later. If there are no ACA referrals shown and you see a threshold violation, there are several avenues you can take:

- Determine if trunks are busied out for maintenance purposes.
- Consider changing the default traffic model used by Monitor I to evaluate threshold violations.
- Graph the trunk group's usage to see if it surges suddenly or is consistently high.

The Trunk Group Detail Report also reveals if any trunks in this group were busied out for maintenance purposes. If there are maintenance busy trunks, work on getting them back into service.

Check the designed GOS and the traffic model normally used for the trunk group type. Monitor I sets the default Grade of Service with the assumption that each trunk group stands alone. However, if the trunk group is the first choice in an WCR pattern, you may want to change the model in the DEFINITY Monitor I database to Erlang B through the Trunk Group Editor. You may also find the default grade of service on some trunk groups is not right for your company's needs. If so, adjust it.

Confirm that the number of trunks in the trunk group is correct because trunks may have been added by an Operating Support Systems (OSS) since you last initialized your switch.

The Trunk Group Usage Trending Report will reveal if high usage data indicates a one-time surge or if usage is consistently high. If the CCS or Erlangs readings are high over a period of time, study WCR patterns associated with this trunk group. Routing patterns may be linked to such threshold-related problems as:

- A system of network calling privileges, called Facilities Restriction Levels (FRLs), can shunt most users' calls to a limited number of trunk groups, while reserving other trunk groups for use by executives and sales personnel.
- Trunks in a certain preference order may be busied out, throwing still more calls into trunks with higher FRL ratings.
- Still other trunks may be experiencing excessively long or short holding times.

If WCR patterns are functioning properly, if the designed GOS is correct, and the traffic is consistently heavy on the trunk group, then you may want to add more trunks to the trunk group, or you may consider having AT&T redesign your network.

Total Recent ACA Referrals for Trunk Groups

This section has four horizontal fields for providing data on the 32 most recent referrals per poll. ACA referrals can indicate hardware problems or merely a telephone left off-hook.

Field	Definition	Switch
DAC	Dial Access Code associated with the trunk group number.	Generic 2, R2V2-V4, DIMENSION
Trk Grp	ID Number of the trunk group with referrals.	Generic 2, R2V2-V4, DIMENSION
# Short Holding Time Referrals	Number of times a referral was sent to an attendant concerning an extremely short call.	Generic 2, R2V2-V4, DIMENSION
# Long Holding Time Referrals	Number of times a referral was sent to an attendant concerning a very long call.	Generic 2, R2V2-V4, DIMENSION

Source of Additional Information
Recent ACA Referrals Report

Automatic Circuit Assurance (ACA) is a Generic 2 feature that lets you define short and long time boundaries for calls carried on each trunk group. When these boundaries are exceeded, notice is sent to an attendant console. This section of the Switch Summary Report lists trunk groups with recent ACA referrals. That is, you can obtain information on the 32 most recent incidents in which the switch reported excessively short or long holding periods for calls. A short holding time usually indicates a maintenance problem. A long holding time could imply that the threshold is set incorrectly or that there is a maintenance problem. For example, if a trunk can be used for voice and data, the threshold might be incorrectly set for voice only. An ACA referral might also indicate that a voice terminal is off-hook accidentally.

Switch Summary Report (G3i)

```
       Today:  Mon Apr  8 1991  13:29:31                              Page   1
 Switch Name:  testg3i                                 Start:  03/28/1991  1:00
Output Units:  ccs/peak                                   End:  03/29/1991 24:00

                          SWITCH SUMMARY REPORT

PEAK PROCESSOR INFORMATION
                                      Peak      Peak Call Proc
                                   Call Count     Occupancy
                                   ----------   --------------
                        Date (tc):     03/29          03/29
                        Time (tc):     10:00          11:00
                      Call Count:        745            712
       Total Processor Occupancy:     50.00%         52.00%
                 Static Occupancy:      7.00%          8.00%
       Call Processing Occupancy:      7.00%          7.00%
                System Management:     36.00%         37.00%
                   Idle Occupancy:     50.00%         48.00%
  Marginal Capacity For Processor:     56.00%         55.00%
                   Total Attempts:      1144           1075
                Intercom Attempts:       246            248
                Incoming Attempts:       213            146
                Outgoing Attempts:       207            235
        Private Network Attempts:        478            446
                % Calls Abandoned:     35.00%         34.00%

PEAK ATTENDANT INFORMATION
                             Date:    03/29
                             Time:    14:00
                     Average Delay:    -
    Average Delay Of Delayed Calls:    -
                   Calls Answered:    -
                     Calls Queued:    -
                   Calls Abandoned:    -
             Available Attendants:    -

SECURITY VIOLATIONS
Counted Since:system initialization
                                        Number of
                                   Invalid Login Attempts
                                   ----------------------

         Maintenance Board EIA Port:            24
           Maintenance Dial-up Port:             0
      Network Control Dial-up Ports:            16

    Number of Invalid Barrier Codes:             0

ARS PATTERNS CURRENTLY SET UP:    1,   2,   3,   4,   5,   6,   7,   8,   9
                                 10,  11,  12,  13,  14,  25,  26,  27,  28
                                 29,  30
```

Switch Summary Report (G3r)

```
       Today:  Mon Apr  8 1991  13:29:31                              Page   1
 Switch Name:  testg3r                                 Start:  03/28/1991  1:00
Output Units:  ccs/peak                                   End:  03/29/1991 24:00

                          SWITCH SUMMARY REPORT

PEAK PROCESSOR INFORMATION
                                      Peak      Peak Call Proc
                                   Call Count     Occupancy
                                   ----------   --------------
                        Date (tc):      03/29          03/29
                        Time (tc):      10:00          11:00
                      Call Count:         745            712
       Total Processor Occupancy:      50.00%         52.00%
                 Static Occupancy:       7.00%          8.00%
       Call Processing Occupancy:       7.00%          7.00%
               System Management:      36.00%         37.00%
                  Idle Occupancy:      50.00%         48.00%
  Marginal Capacity For Processor:      56.00%         55.00%
                  Total Attempts:        1144           1075
               Intercom Attempts:         246            248
               Incoming Attempts:         213            146
               Outgoing Attempts:         207            235
        Private Network Attempts:         478            446
               % Calls Abandoned:      35.00%         34.00%

PEAK ATTENDANT INFORMATION
                             Date:    03/29
                             Time:    14:00
                    Average Delay:    -
   Average Delay Of Delayed Calls:    -
                  Calls Answered:    -
                    Calls Queued:    -
                 Calls Abandoned:    -
            *Available Attendants:    -

SECURITY VIOLATIONS

                        Security Violation Changes Detected


ARS PATTERNS CURRENTLY SET UP:   None
```

Switch Summary Report (G3r, G3i) (continued)

Note: The fields in this portion of the Switch Summary Report are exactly the same for both the G3i and G3r versions.

```
       Today:  Mon Apr  8 1991  13:29:43                              Page   2
 Switch Name:  fg_r1v5                                  Start:  03/28/1991  1:00
Output Units:  ccs/peak                                   End:  03/29/1991 24:00

                          SWITCH SUMMARY REPORT


TOTAL POLL INFORMATION

                             Poll Days: Sunday Thru Saturday
                            Poll Hours: 09:00 To 24:00
            Number Of Successful Polls:    17



PEAK TRUNK GROUP THRESHOLD VIOLATIONS

   Trunk                              Design   Table          Current   Recommended
   Group  Type  Dir  Date   Time     GOS      Used    Usage  # Trunks   # Trunks
   -----  ----  ---  -----  -----  ------  -------  -----  --------  -----------
      2   co    two  03/28  10:00   P01    RETRIAL    130       8          9
      3   co    two  03/29  10:00   P01    RETRIAL    199       6         16
     10   wats  two  03/28  16:00   P01    RETRIAL      1       1          2
     12   wats  two  03/29  11:00   P01    RETRIAL      2       1          2
     14   wats  two  03/29  13:00   P01    RETRIAL      1       1          2
     21   isdn  two  03/28  10:00   P03    RETRIAL    193       8         11
     22   isdn  two  03/28  06:00   P03    RETRIAL    106       4          8
     42   tie   two  03/29  14:00   P03    RETRIAL     36       1          NR*
```

* No recommendation. The traffic model used to study this trunk group may not apply when average trunk usage is over 98.5 percent.

Field Definitions for the Switch Summary Report (G3r, G3i)

The Switch Summary Report for the G3r or G3i switch is a management report that provides a snapshot of the overall health of the system and also alerts you to any potential problems within the switch. This report summary is composed of the following seven sections:

- Peak Processor Information
- Peak Attendant Information
- Security Violations
- ARS Patterns
- Total Poll Information
- Peak Trunk Group Threshold Violations

Peak Processor Information (G3r, G3i)

Peak Processor Information is provided from two points of view:

- Data gathered during the time of heaviest (peak) call count
- Data gathered during the time of heaviest (peak) processor occupancy.

	Definitions		
Field	**Peak Call/ Connection Count**	**Peak Call Proc Occupancy**	**Switch**
Date (tc)	Date of peak call count	Date of peak processor occupancy.	G3r, G3i
Time (tc)	Hour of peak call count	Hour of peak processor occupancy.	G3r, G3i
Call Count	Peg count of completed calls during the peak call count time. (A call is considered as completed when the destination party answers and a voice path is cut through.)	Peg count of completed calls during peak processor occupancy.	G3r, G3i
Total Processor Occupancy	The total Occupancy rate at the time of peak call count. This rate is derived by adding the Total of Static Occupancy, Call Processor Occupancy and System Management Occupancy.	The total occupancy rate during peak processor occupancy. This rate is derived by adding the Total of Static Occupancy, Call Processor Occupancy and System Management Occupancy.	G3r, G3i
Static Occupancy*	This is the amount of time used for high priority background processes to support call processing, maintenance and administrative functions during the peak call count. (This also includes some call processing occupancy as a result of ISDN-PRI and DCS traffic.)	This is the amount of time used for high priority background processes to support call processing, maintenance and administrative functions during the time of peak processor occupancy. (This also included some call processing occupancy as a result of ISDN-PRI and DCS traffic.)	G3r, G3i

* Static Occupancy, Call Processing Occupancy, System Management Occupancy and Idle Occupancy are percentages that must add up to 100.

	Definitions		
Field	**Peak Call/ Connection Count***	**Peak Call Proc Occupancy****	**Switch**
Call Processor Occupancy*	The percentage of CPU time used for priority level processes during the peak call count. These processes are mainly call processing events but may include CPU time used for maintenance and administration.	The percentage of CPU time used for priority level processes during peak processor occupancy. These processes are mainly call processing events but may include CPU time used for maintenance and administration.	G3r, G3i
System Management*	Percentage of time used by lower priority activities such as administration and maintenance command processing, maintenance activity, error logging and LED audits at the time of peak call count.	Percentage of time used by lower priority activities such as administration and maintenance command processing, maintenance activity, error logging and LED audits during peak processor occupancy.	G3r, G3i
Idle Occupancy*	The percentage of time the processor is idle during the peak call count.	The percentage of time the processor is idle during peak processor occupancy.	G3r, G3i
Marginal Capacity	The maximum percentage of processor occupancy that can support Call Processing and Static Occupancy and also insure that other system functions can be performed during the peak call count. 70 percent is considered the maximum rate for the G3i and G3r switch.**	The maximum percentage of processor occupancy that can support Call Processing and Static Occupancy and also insure that other system functions can be performed during peak processor occupancy. 70 percent is considered the maximum rate for the G3i and G3r switch.**	G3r, G3i

* Static Occupancy, Call Processing Occupancy, System Management Occupancy and Idle Occupancy are percentages that must add up to 100.

** Marginal capacity is calculated using the following formula:
Marginal Capacity=Occupancy Rate -(Call Processor Occupancy+Static Occupancy)

	Definitions		
Field	**Peak Call/ Connection Count**	**Peak Call Proc Occupancy**	**Switch**
Intercom Attempts	The sum of two call types during the peak call count: station-to-station calls on the same switch and partial calls where a local station goes offhook and then hangs up before the call is answered.	The sum of two call types during the peak processor occupancy: station-to-station calls on the same switch and partial calls where a local station goes offhook and then hangs up before the call is answered.	G3r, G3i
Incoming Attempts	A count of the incoming trunk seizures on the public network during the peak call count. This count does ***not*** include incoming trunk seizures from other switches in a private network.	A count of the incoming trunk seizures on the public network during peak processor occupancy. This count does ***not*** include incoming trunk seizures from other switches in a private network.	G3r, G3i
Outgoing Attempts	A count of the outgoing trunk seizures made on the public network during the peak call count. This count does ***not*** include outgoing trunk seizures made to other switches in a private network.	A count of the outgoing trunk seizures made on the public network during peak processor occupancy. This count does ***not*** include outgoing trunk seizures made to other switches in a private network.	G3r, G3i
Private Network Attempts	A count of the number of incoming and outgoing trunk seizures made on the trunks connecting the switch with other switches in a private network during the peak peg count.	A count of the number of incoming and outgoing trunk seizures made on the trunks connecting the switch with other switches in a private network during the peak processor occupancy.	G3r, G3i
% blkd	The percentage of calls blocked* during the peak call count.	The percentage of calls blocked* during peak processor occupancy.	G3r, G3i

* % blkd is calculated using the following formula:
%blkd=((total attempts -total calls)/total attempts))*100

Peak Attendant Information

Field	Definition	Switch
Date	Date of poll	G3r, G3i
Begin Time	Hour of poll	G3r, G3i
Average Delay (sec)	Based on the number of attendants and the peak worked usage, use Erlang C Infinite Table A to find D Bar. Multiply D Bar by the average holding time to get the average delay.	G3r, G3i
Average Delay of Delayed Calls (sec)	Based on the number of attendants and the peak worked usage, use Erlang C Infinite Table A to find D Bar. Multiply D Bar by the average holding time to get the average delay of delayed calls.	G3r, G3i
Calls Answered	The total calls answered by all attendants during the polling interval.	G3r, G3i
Calls Queued	Number of calls that are directed to an attendant group, find all attendants busy, are then placed in the attendant group queue.	G3r, G3i
Calls Abandoned	Number of calls in the attendant group's queue that were abandoned by callers before being answered by an attendant.	G3r, G3i
Available Attendants	Attendants with attended usage greater than zero.	G3r only

Security Violations (G3i)

Field	Definition	Switch
Date	Date of poll	G3i
Time	Hour of poll	G3i
Counted Since	Indicates when the security violation measurement was cleared prior to polling time.	G3i
Maintenance Board EIA Port	The number of invalid attempts recorded on the maintenance board EIA port.	G3i
Maintenance Dial-Up Port	The number of invalid attempts recorded on the maintenance dial-up port.	G3i
Network Control Dial-Up Ports	The number of invalid attempts recorded on the network control dial-up port.	G3i
Invalid Barrier Codes	The number of invalid barrier codes dialed when the Remote Access feature of the system is being used.	G3i

Security Violations (G3r)

If any violations were detected, a statement will appear in the G3r version of the report.

ARS Patterns Currently Set Up

This section of the Switch Summary Report for G3i lists all the ARS patterns currently being studied.

Total Poll Information

This section of the Switch Summary Report for G3i provides the total number of records for the date range and hours specified by the user.

Field	Definition	Switch
Poll Days	Days being polled (for example, Monday through Friday).	G3i
Poll Hours	Monitor I allows two types of polling: Daily and Hourly. "Daily Polling" appears on the report if Daily polling is selected; the hourly polling option prints the beginning and end hours on the report.	G3i
Number of Successful Polls	The amount of completed polls.	G3i

Peak Trunk Group Threshold Violations

This report provides information on all trunk groups that have violated their Grade Of Service, GOS.

Field	Definition	Switch
Trunk Group	The trunk group number that has violated the designed GOS.	G3i
Type	Trunk group type. This field is assigned during initialization.	G3i
Dir	Trunk Group Direction. This field is assigned during initialization.	G3i
Date	Date the peak usage occurred.	G3i
Begin Time	The hour the peak usage occurred.	G3i
Design GOS	The designed GOS for the trunk group. (In other words, Monitor I's recommended values for the trunk group.)	G3i
Table Used	Traffic Model table used for this trunk group.	G3i
Usage	Peak usage stored in CCS	G3i
Current # of Trunks	Current number of trunks in the trunk group.	G3i
Recommended # of Trunks	The recommended number of trunks.*	G3i

* The Recommended number of trunks is calculated using the designed GOS, the peak hour carried usage, and the appropriate traffic formula.

System Security Report

```
      Today:  Fri Mar 22 1991  10:28:58                              Page   1
 Switch Name:  test123                                  Start:  01/09/1991 11:00
Output Units:  peg/peak                                   End:  03/05/1991 13:00


                          SYSTEM SECURITY REPORT


PORT CONTENTION/MODE CHANGES

            Success   Mode   TR Mode   Invalid
Date  Time   Mode     Block  Blocked    Agent
----- ----- -------   -----  -------   -------
05/09 13:00       2       1        1         0


REMOTE ACCESS ON SYSTEM MANAGEMENT PORT (SN492)

            Valid    Invalid   Percent
Date  Time  Access   Access    Invalid
----- ----- ------   -------   -------
05/09 13:00      3         0     0.00%


REMOTE ACCESS ON SYSTEM MANAGEMENT PORT (TN563)

            Port   Valid    Invalid   Percent     Port
Date  Time   No.   Access   Access    Invalid   Timeouts
----- ----- ----   ------   -------   -------   --------
05/09 13:00    0        0         0         -          0
05/09 13:00    1        0         0         -          0


REMOTE ACCESS ON TRUNK GROUPS

                                          Invalid     Invalid
            Valid    Invalid   Percent    Auth       Speaker
Date  Time  Access   Access    Invalid    Code     Verification
----- ----- ------   -------   -------   -------   ------------
05/09 13:00      0         0         -         0              0
```

System Security Report (continued)

```
      Today:  Fri Mar 22 1991  10:29:00                          Page   2
 Switch Name:  test123                                Start:  01/09/1991 11:00
Output Units:  peg/peak                                 End:  03/05/1991 13:00

                          SYSTEM SECURITY REPORT


        Valid Auth Codes
        Blocked by
        Invalid Speaker
        Verification
        ----------------
             700
             700
             77*#
             77*#
             77*#
             700
             700
             700
             7654321
             9999999

                          Report Completed
```

Field Definitions for the System Security Report

Port Contention/Mode Changes

Field	Definition	Switch
Success Mode	Number of times a user succeeds in changing to or from the administrative, maintenance or tapes modes used in administering the switch.	Generic 2, R2V4
Mode Block	Number of times a user attempts to change modes, but is blocked.	Generic 2, R2V4
TR Mode Blocked	Number of times a user is denied access to a traffic mode.	Generic 2, R2V4
Invalid Agent	Number of times a user is denied access because of an invalid agent code.	Generic 2, R2V4

Remote Access On System Management Port (SN492)

Field	Definition	Switch
Valid Access	Number of times a user attempts to access the switch through the remote System Management SN492 port and specifies a valid security code.	Generic 2, R2V2, R2V4, DIMENSION
Invalid Access	Number of times a user attempts to access the switch through the SN492 port and specifies an invalid security code.	Generic 2, R2V2, R2V4, DIMENSION
Percent Invalid	Percentage of switch access attempts via the SN492 port that failed.	Generic 2, R2V2, R2V4, DIMENSION

Remote Access On System Management Port (TN563) (Generic 2)

Field	Definition	Switch
Port Number	TN563 has two ports numbered 0 and 1. This field identifies the port number.	Generic 2
Valid Access	Number of times a user attempts to access the switch through the TN563 port with a valid security code.	Generic 2
Invalid Access	Number of times a user attempts to access the switch through the TN563 and specifies an invalid security code.	Generic 2
Percent Invalid	Percentage of attempts to access TN563 that failed.	Generic 2
Port Timeouts	Number of times a user attempts access without providing a security code, or by using an invalid security code.	Generic 2

Remote Access on Trunk Groups

Field	Definition	Switch
Valid Access	Number of successful attempts to connect to the switch through remote access.	Generic 2, R2V2-V4, DIMENSION
Invalid Access	Number of unsuccessful attempts to connect to the switch through remote access.	Generic 2, R2V2-V4, DIMENSION
Percent Invalid	Percentage of unsuccessful attempts.	Generic 2, R2V2-V4, DIMENSION
Invalid Auth Code	Number of times a user gives an invalid authorization code on a remote access trunk.	Generic 2, R2V2-V4, DIMENSION
Invalid Speaker Verification	Number of times a user correctly provided the authorization code, but failed on speaker verification.	Generic 2
Valid Auth Codes Blocked by Invalid Speaker Verification	In the Total Format, this field lists all valid authorization codes used during unsuccessful attempts. In the Peak Format, the last 10 valid authorization codes used are listed.	Generic 2
Number of Times Blocked (Total Format Only)	Number of times each valid authorization code was blocked because caller failed Speaker Verification code. In the Peak Format, this field does not appear.	Generic 2

Trunk Group Detail Report

```
       Today:  Fri Mar 22 1991  10:02:08                              Page   1
 Switch Name:  test123                                 Start:  01/09/1991 11:00
Output Units:  ccs/peak                                  End:  03/05/1991 13:00

                          TRUNK GROUP DETAIL REPORT

Trunk Group Include List Name:  trunklist


TRUNK GROUP INFORMATION

             Number: 65
               Name: CORNET
               Size: 28
               Type: APLT
          Direction: 2W
               Date: 05/09
         Begin Time: 13:00


USAGE AND PEG INFORMATION

                      Usage      Peg       Avg Holding Time (Secs)
                      -----     -----      ----------------------
 Total Voice + Data:    421       251               168
        Total Voice:    421       248               170
         Total Data:      0         3                 0

   Inc Voice + Data:    212       121               175
          Inc Voice:    212       118               180
           Inc Data:      0         3                 0

   Out Voice + Data:    209       130               161
          Out Voice:    209       130               161
           Out Data:      0         0                 -


DELUXE QUEUING INFORMATION

                      Priority   Non-Priority
                      --------   ------------
               Size:        -            -
 Calls Queued Usage:        -            -
   Calls Queued Peg:        -            -
           Overflow:        -            -
            Abandon:        -            -
            Timeout:        -            -
```

Trunk Group Detail Report (continued)

```
       Today:  Fri Mar 22 1991  10:02:08                          Page   2
 Switch Name:  test123                                 Start:  01/09/1991 11:00
Output Units:  ccs/peak                                  End:  03/05/1991 13:00


                          TRUNK GROUP DETAIL REPORT


BLOCKAGE INFORMATION

      Maintenance Busy Usage:     0
             Avg Trunk Usage: 15.04
           % All Trunks Busy:  0.36%
              Group Overflow:     3
                   Glare Peg:     0
              Retry Attempts:     0
              Retry Failures:     0


GRADE OF SERVICE REQUIREMENTS

               Traffic Model: RETRIAL
            Designed For GOS: P03
     Trunks Required For P03:    18
    Trunks Required For P003:    22
     Trunks Required For P01:    20
     Trunks Required For P10:    15


                              Report Completed
```

Field Definitions for the Trunk Group Detail Report

All of the information in the Trunk Group Detail Report concerns a single trunk group. After identifying the trunk group and polling schedule for the study, the report is divided into five sections.

Trunk Group Information

Field	Definitions	Switch
Trunk Group Include List Name (Optional)	Name of the Trunk Group Include List as defined by the user. Refer to the procedure to Administer Trunk Group Include Lists in Chapter 8, "System Administration."	All
Number	Number that identifies trunk group.	All
Name	Name of trunk group as entered in the Monitor I database by user or retrieved from the switch the Non-Traffic Data Retrieve command on the Utilities Menu.	All
TAC	The trunk access code used by the Trunk Group Editor.	G3i only
Size	Number of trunks in group.	All
Type	Type of trunks, such as CO or WATS.	All
Direction	Direction of trunks in this group, either incoming, outgoing or two-way.	All
Date	Date of poll.	All
Time	This is the period of heaviest traffic for this trunk group.	All
Begin Time	This is the beginning of the polling hour for System 75.	Generic 1.1, G3i, System 75 R1V1-V3

Usage and Peg Information

Each field in this section provides three kinds of data: usage, peg counts, and Average Holding Time (AHT) in seconds. The formula used to calculate AHT is in Appendix C, "Monitor I Equations."

Field	Definitions			Switch
	Usage	Peg	Average Holding Time	
Total Voice + Data	Total volume of traffic, expressed in CCS or Erlangs, carried by this trunk group. For systems with DCIU, Intercom Record Usage will always appear at all times of the day (even night, when there are few or no calls) because the DCIU will always have 64 intercom records (2304 CCS).	Total number of voice and data calls handled.	AHT in seconds for voice and data calls handled.	Generic 2, R2V2-V4, G3i, Generic 1, R1V1-V3
Total Voice	Total volume of voice traffic, expressed in CCS or Erlangs, carried by this trunk group.	Number of voice calls handled	AHT for voice calls handled, in seconds.	Generic 2, R2V2-V4, DIMENSION
Total Data	Total volume of data traffic, expressed in CCS or Erlangs, carried by this trunk group.	Number of data calls handled.	AHT for data calls, in seconds.	Generic 2, R2V2-V4

Usage and Peg Information (continued)

Field	Definitions			Switch
	Usage	Peg	Average Holding Time	
Inc. Voice + Data	Incoming usage, in CCS or Erlangs, for data and voice on a 2-way or incoming trunk group.	Number of incoming calls on a 2-way or incoming trunk group.	AHT of incoming calls, in seconds.	Generic 2, R2V2-V4, G3i, Generic 1, R1V1-V3
Inc. Voice	Incoming usage, in CCS or Erlangs, for voice on a 2-way or incoming trunk group.	Number of incoming voice calls on a 2-way or incoming trunk group.	AHT for incoming voice calls, in seconds.	Generic 2, R2V2-V4, DIMENSION
Inc. Data	Incoming usage, in CCS or Erlangs, for data on a 2-way or incoming trunk group.	Number of incoming data calls on a 2-way or incoming trunk group.	AHT for incoming data calls, in seconds.	Generic 2, R2V2-V4
Out Voice + Data	Total outgoing usage, in CCS or Erlangs, for outgoing or 2-way trunk groups.	Total number of outgoing voice and data calls.	AHT for all outgoing calls, in seconds.	Generic 2, R2V2-V4, G3i, Generic 1, R1V1-V3
Out Voice	Outgoing usage, in CCS or Erlangs, for voice calls on outgoing or 2-way trunk groups.	Number of outgoing voice calls on a 2-way or outgoing trunk group.	AHT for outgoing voice calls, in seconds.	Generic 2, R2V2-V4, DIMENSION
Out Data	Outgoing usage, in CCS or Erlangs, for data calls on outgoing and 2-way trunk groups.	Number of outgoing data calls on a 2-way or outgoing trunk group.	AHT for outgoing data calls, in seconds.	Generic 2, R2V2-V4

Deluxe Queuing Information

Field	Definitions		Switch
	Priority	Non-priority	
Size	Number of slots in priority queue.	Number of slots in non-priority queue.	All
Calls Queued Usage	Usage, in CCS or Erlangs, of calls waiting in priority queue.	Usage of calls waiting in non-priority queue.	Generic 2, R2V2-V4, DIMENSION
Calls Queued Peg	Number of calls waiting in priority queue.	Number of calls waiting in non-priority queue.	All
Overflow	Number of calls blocked because priority queue was full.	Number of calls blocked because non-priority queue was full.	All
Abandon	Number of calls abandoned in priority queue.	Number of calls abandoned in non-priority queue.	All
Timeout	Number of times a call remains in priority queue longer than specified wait.	Number of times a call remains in non-priority queue longer than specified wait.	Generic 2, R2V2-V4, DIMENSION

Blockage Information

Field	Definition	Switch
Maintenance Busy Usage	Usage in CCS or Erlangs on trunks busied out due to maintenance condition in this group.	Generic 2, R2V4
Avg. Trunk Usage	Average usage for the trunk in the group. This figure excludes usage on trunks that were busied out.	All
% All Trunks Busy	Percentage of time the trunks were busy handling calls.	Generic 2, G3i, Generic 1, R1V1-V3
% Outgoing Blockage	The ratio of outgoing calls not carried on a trunk group to the outgoing calls offered. For trunk groups with no queue, the calls not carried are those calls that find all trunks busy. For trunk groups with queues, the calls not carried are those calls that find all trunks busy and cannot be queued because the queue is full.	G3i only
Group Overflow	Number of calls blocked because there were no available trunks in the group. If trunk group has outgoing queuing, calls in queue are counted in this measurement. Data calls are not included in this measurement.	All
Glare Peg	Number of times glare occurred in group. Glare is simultaneous seizure of a two-way trunk from both ends.	Generic 2, R2V4
Retry Attempts	Number of times a retry is attempted when initial seizure fails.	Generic 2, R2V4
Retry Failures	Number of times a retry failed.	Generic 2, R2V4
Maintenance Busied Trunks	Indicates whether or not (**y** or **n**) trunks in the trunk group have been placed in a maintenance busy state since the last poll. For G3i, Generic 1 and System 75, this field will give the peg count of maintenance busied trunks.	R2V2-V3, G3i, Generic 1, R1V1-V3 (peg)

Grade of Service Requirements

Field	Definition	Switch
Traffic Model	Traffic model used; can be Retrial, Erlang B or Erlang C.	All
Designed For GOS	The grade of service for which the switch is designed.	All
Trunks Required For GOS	Number of trunks required for designed GOS. Refer to the **Note**, below.	All
Trunks Required For P03	Number of trunks required for blockage of 3 out of 100 calls. This is an extra choice for Erlang B and Retrial and is not available for Erlang C. Refer to the **Note**, below.	All
Trunks Required For P003	Number of trunks required for blockage of 3 out of 1,000 calls. This is an extra choice for Erlang B and Retrial and is not available for Erlang C. Refer to the **Note**, below.	All
Trunks Required For P01	Number of trunks required for blockage of 1 out of 100 calls. This is an extra choice for Erlang B and Retrial and is not available for Erlang C. Refer to the **Note**, below.	All
Trunks Required For P10	Number of trunks required for blockage of 1 out of 10 calls. This is an extra choice for Erlang B and Retrial and is not available for Erlang C. Refer to the **Note**, below.	All

Note: The **Table** and **GOS** fields of the Trunk Group Editor ***cannot*** be set to Null or N/A for GOS recommendations to be available for this report.

No recommendation will be given and **NR **** will print with a footnote saying that the traffic model used to study the trunk group may not apply when average trunk usage is over 98.5 percent If there is usage overflow, **UO ##** will print with a footnote recommending that you audit the switch and database.

Trunk Group Summary Report

```
       Today:  Fri May 22 1991  09:56:22                                Page   1
 Switch Name:  test123                                  Start:  05/09/1991 11:00
Output Units:  ccs/peak                                   End:  05/09/1991 13:00

                         TRUNK GROUP SUMMARY REPORT

Trunk Group Include List Name: trunklist
                                                                        %     Avg.
     Trunk Group                                  Total Maint Group  All    Hold
----------------------              Total Inc.  Calls Busy  Over- Trunks  Time
No. Size Type Dir DAC  Date  Hour  Usage Usage (peg) Usage Flow   Busy   (sec)
--- ---- ---- --- ---- ----- ----- ----- ----- ----- ----- ----- ------- -----
 15 1200 ICM           03/09 15:01  3885     -  1471     0     -   0.00%   264
    Name:

 16  142 DPR           03/09 15:01    94     -  1852     0     -   0.00%     5
    Name:

 17  104 TTR           03/12 11:01   227     -  4812    44     -   0.00%     5
    Name:

 18   50 CO   OG  #39  03/12 11:01  1325     -   847     0     7   1.83%   156
    Name:dod

 19   52 CO   OG  #99  03/12 12:01    10     -     1     0     0   0.00%  1000
    Name:dod

 20   75 DID  IC       03/12 12:01   583     -   219    36     -   0.00%   266
    Name:MT INCOMING

 21  150 DID  IC       03/09 15:01  1222     -   689   108     -   0.00%   177
    Name:MT INCOMING CALL

 22   19 WATS OG  #97  03/12 12:01     0     -     0     0     0   0.00%     -
    Name:band 0

 26   12 EIA  2W  *99  03/09 17:01     1     0     3     0     0   0.00%    33
    Name:MTTAC

 27    2 MISC OG       03/09 11:01    15     -    76     0     0   3.03%    20
    Name:

 29   24 TTS           03/09 11:01    57     -  1910   136     -   0.00%     3
    Name:

 30    2 MISC          03/09 12:01     3     -    14     0     -   0.00%    21
    Name:

 32   23 TIE  2W  #90  03/09 15:01   231    20   150     0     0   0.00%   154
    Name:
                              Report Completed
```

Field Definitions for the Trunk Group Summary Report

Field	Definition	Switch
Trunk Group Include List Name (Optional)	Name of the Trunk Group Include List as defined by the user. Refer to the procedure to Administer Trunk Group Include Lists in Chapter 8, "System Administration."	All
Trunk Group No	Identification number assigned to this trunk group by the customer when the switch is installed. Information in the first four fields (number, size, type and direction) is stored in the database when Packet 1 is used to initialize DEFINITY Monitor I. Some of these parameters can be changed through the trunk group editor if, for example, the size of the trunk group changes.	All
Trunk Group Size	The number of trunks in the group identified in the first column.	All
Trunk Group Type	The trunk group type describes the way(s) it is used. For example, this field may read **WATS** or **CO** .	All
Trunk Group Dir	**2W** indicates that both incoming and outgoing calls are handled by this group. The direction of calls handled by 1W(ay) trunks is indicated by their type. Incoming calls are designated by **IC** ; outgoing calls are represented by **OG** .	All
Trunk Group DAC	Trunk Group Dial Access Code	Generic 2, R2V2-R2V4, DIMENSION
Date	Date of the poll(s) summarized in the report.	All
Hour	Hour(s) of the poll(s) summarized in the report.	Generic 2, R2V2-V4
Begin Time	Beginning of the poll hour.	G3i, Generic 1, R1V1-V3

Field Definitions for Trunk Group Summary Report (continued)

Field	Definition	Switch
Total Usage	Total time, expressed in CCS or Erlangs, spent by the trunk group in carrying calls. For systems with DCIU, Intercom Record Usage will always appear at all times of the day (including night, when there are few or no calls) because the DCIU will always have 64 intercom records (2304 CCS).	All
Avg. Trunk Usage	Average traffic activity in CCS or Erlangs for each trunk in the group, excluding Maintenance Busy trunks. If the total usage is zero the report will print **0** in this field. The equation used to determine this can be found in Appendix B, "Monitor I Equations."	All
Inc. Usage	Incoming usage	Generic 2, R2V2-R2V4, DIMENSION
Total Calls (peg)	The number of calls carried by the trunk group during the period of the study. This information is stored in Packet 6.	All
% Out Bloc	The ratio of outgoing calls not carried on a trunk group to the outgoing calls offered. For trunk groups with no queue, the calls not carried are those calls that find all trunks busy. For trunk groups with queues, the calls not carried are those calls that find all trunks busy and cannot be queued because the queue is full.	G3i, Generic 1, R1V1-V3
Maint Busy Usage	Measurement that can be used to estimate the number of trunks in the group that have been busied out for maintenance purposes. Divide the CCS or Erlang figure in this field by 36 to get the equivalent number of maintenance busy trunks in this group.	Generic 2, R2V4

Field Definitions for Trunk Group Summary Report (continued)

Field	Definition	Switch
Group Overflow	Number of calls blocked because there were no available trunks in the group. If the trunk group has outgoing queuing, queued calls are measured. However, blocked data calls are not counted in this register.	All
% All Trunks Busy	The percentage of trunks in the group that were busy handling calls during the period of the study.	Generic 2, G3i, Generic 1, R1V1-V3
Avg. Hold Time (secs)	The number of seconds spent on the average call in this group. If both total usage and peg are zero a dash (-) will print in this field. The equation used by DEFINITY Monitor I to determine this can be found in Appendix A. The national average for a voice call is 180 seconds.	All

Trunk Group Violation Report (G3r, G3i, Generic 1 and System 75)

```
       Today:  Thu Aug  9 1991  17:05:33                          Page   1
 Switch Name:  test789                                  Start:  01/01/91 Daily
Output Units:  ccs/all                                    End:  08/09/91 Daily


                       TRUNK GROUP VIOLATION REPORT


                                                                 Current   Recommended
   Trunk                      Begin  Design  Table              Number of Number of
   Group  Type  Dir  Date     Time   GOS     Used     Usage     Trunks    Trunks
   -----  ----  ---  ----     ----   ---     ----     -----     ------    ------
       2  co    two  06/04    10:00  P01     RETRIAL    248        8        16
       2  co    two  06/05    10:00  P01     RETRIAL    163        8        11
       3  co    two  06/04    10:00  P01     RETRIAL    207        6        21
       3  co    two  06/05    09:00  P01     RETRIAL    201        6        17
      10  wats  two  06/04    11:00  P01     RETRIAL      1        1         2
      10  wats  two  06/05    10:00  P01     RETRIAL      2        1         2
      12  wats  two  06/04    15:00  P01     RETRIAL     11        1         3
      12  wats  two  06/05    15:00  P01     RETRIAL      1        1         2
      14  wats  two  06/04    16:00  P01     RETRIAL      1        1         2
      15  wats  two  06/04    09:00  P01     RETRIAL      1        1         2
      15  wats  two  06/05    15:00  P01     RETRIAL      1        1         2
      25  isdn  two  06/04    11:00  P03     RETRIAL     70        2        19
      25  isdn  two  06/05    15:00  P03     RETRIAL     60        2         7
      26  isdn  two  06/04    16:00  P03     RETRIAL    112        4         8
      26  isdn  two  06/05    15:00  P03     RETRIAL    102        4         8
      27  isdn  two  06/04    16:00  P03     RETRIAL     67        5         6
      29  isdn  two  06/04    16:00  P03     RETRIAL    136        7         8
      29  isdn  two  06/05    15:00  P03     RETRIAL    116        7         8


                             Report Completed
```

Field Definitions for the Trunk Group Violation Report (G3r, G3i, Generic 1 and System 75)

Field	Definitions	Switch
Trunk Group	Number identifying the trunk group that has violated its grade of service (GOS).	G3r, G3i, Generic 1, R1V1-V3
Type	Type of trunk associated with the accumulated data (for example, CO, FX, WATS, TIE, APLT, DID).	G3r, G3i, Generic 1, R1V1-V3
Dir	Identifies whether the trunk groups are incoming, outgoing, or 2-way.	G3r, G3i, Generic 1, R1V1-V3
Date	Date of the poll.	G3r, G3i, Generic 1, R1V1-V3
Begin Time	Time of the poll.	G3r, G3i, Generic 1, R1V1-V3
Design GOS	Designed Grade of Service or service objective for the trunk group.	G3r, G3i, Generic 1, R1V1-V3
Table Used	Table used to make calculations: Retrial, Erlang B, Erlang C or blank.	G3r, G3i, Generic 1, R1V1-V3
Usage	Usage for this trunk group at the time of the peak for the study period, expressed in CCS or Erlangs.	G3r, G3i, Generic 1, R1V1-V3
Current Number of Trunks	Number of trunks in the trunk group at the time of the study.	G3r, G3i, Generic 1, R1V1-V3
Recommended Number of Trunks	Number of trunks needed in this trunk group to meet the designed GOS. Refer to the **Note** below.	G3r, G3i, Generic 1, R1V1-V3

Note: The **Table** and **GOS** fields of the Trunk Group Editor *cannot* be set to Null or N/A for GOS recommendations to be available for this report.

No recommendation will be given and **NR **** will print with a footnote saying that the traffic model used to study the trunk group may not apply when average trunk usage is over 98.5 percent. If there is usage overflow, **UO ##** will print with a footnote recommending that you audit the switch and database.

UCD (Uniform Call Distribution) Report System 85 (R2V2)

Refer to the ACD (Automatic Call Distribution) Report at the beginning of this section for field definitions.

WCR (World Class Routing) Report (Generic 2.2)

```
       Today:  Fri Apr 22 1991  10:14:23                              Page   1
 Switch Name:  test123                                 Start:  04/09/1991 11:00
Output Units:  peg count/peak                            End:  04/09/1991 13:00


                         WORLD CLASS ROUTING REPORT


PATTERN: 1

     Trunk                                          Offer  Carry Ovfl
Pref Group  Trunk Group Name      Date   Hour   Peg   Peg   Peg
---- ----- ---------------------- ------ ----- ------ ----- -----
  1   301     SDN 1                04/01  11:00    97   63    0
  7   129     Megacom              04/01  12:00    34   32    0
  8   118     Band 5 Wats          04/01  12:45     2    2    0


PATTERN: 5

     Trunk                                          Offer  Carry Ovfl
Pref Group  Trunk Group Name      Date   Hour   Peg   Peg   Peg
---- ----- ---------------------- ------ ----- ------ ----- -----
  1   301     SDN 1                04/01  12:00    28   26    0
  8   118     Band 5 Wats          04/01  01:00     2    2    0


                                  Report Completed
```

Field Definitions for the WCR Report (Generic 2.2)

Field	Definitions	Switch
Pattern	Pattern number indicates the pattern under study. As many as 63 patterns can be studied at one time.	Generic 2.2
Pref	Preference number indicates the order in which the trunk group is assigned calls.	Generic 2.2
Trunk Group	Identifies the trunk group number assigned to this routing preference by the customer.	Generic 2.2
Trunk Group Name	Name assigned by customer and stored in the Monitor I database; it can be updated from the switch.	Generic 2.2
Date	Date of the poll.	Generic 2.2
Hour	Hour of the poll as provided by the Monitor I poller-parser software.	Generic 2.2
Offer Peg	The total number of calls offered to a particular WCR pattern. Monitor I computes this figure by adding the Carried Peg to the Overflow Peg for all preferences. Refer to Appendix C. "Monitor I Equations" for this calculation.	Generic 2.2
Carry Peg	The switch's total for the number of times a route was selected. Each time a preference within a pattern is used, its peg count is incremented by one. This occurs after all digits have been dialed, the trunks located but not yet seized.	Generic 2.2
Ovfl Peg	The number of calls queued due to no available trunks. The overflow peg is incremented after all digits have been dialed, and after the trunks have been searched, but no trunk group has been found to carry the call. The count for the last trunk group tied in a particular pattern is incremented when no trunks are available. The count does not include calls that were blocked due to an insufficient Facility Restriction Level (FRL).	Generic 2.2

Switch Traffic Data

Three Types of Switch Registers

Accumulative Registers

- Produce pegs, or peg counts, of activities or occurrences since the last poll.

  Note: Pegs are similar to devices used to count people entering a large room or area. Each click of the device counts another person. Daily peg counts in a register can reflect the day's total. However, Monitor I and the switch frequently add, or concatenate, hourly peg counts to provide daily totals for reports. If a poll is missed, the accumulative values will reflect the total hours for which polls occurred. Once polled, the register is reset to 0.

- Accumulated values can include the counts of such traffic activities as: feature activations by attendants; exceptional load conditions (such as ring group blocking); and the use of automated features by users.

Peak Registers

- Give you the highest hourly data over the polling interval.

  For example, the peak register may tell you that the hour between 3 p.m. and 4 p.m. last Thursday was the busiest time for your trunks.

- Count high points in one of two ways: the amount of time an activity consumed or the number of occurrences of an activity.

  Note: The measurement for time is known as **Centum Call Seconds**, or CCS; each CCS represents 100 seconds and there are 36 CCS in an hour. The switch checks every 100 seconds to determine if a facility, such as a trunk group, is in use. If it is being used, the register is incremented.

- Peak values can include the high count of activities such as processor occupancy, call count, and intercom usage.

- Can have multiple ***time coincident registers*** (see below) associated with it.

Once an hour the collected data is compared to corresponding previous peaks. If the current hourly value is greater than the most recent peak hour stored, then the stored peak is replaced by the current hourly value. If a poll is missed, the data from the previous poll is carried over to the hour of the missed poll, and the peak data would subsequently be that found during the missed poll(s).

Time Coincident Registers

- Store traffic data for the same hour as the associated peak hour measurements.
- Provide data on such things as call usage, time of day, and call routing patterns.

Note: TC figures are not always the highest values for the polling period. Instead, they are the values present when the peak peg count is reached. Monitor I peak and TC values are set up when you initialize the database.

Monitor I Traffic Packets

Overview

- The data from the registers is organized into as many as 13 packets for Generic 2 and the System 85 switches and 9 packets for DIMENSION.*
- Monitor I uses Packet 1 information to initialize your database.
- Monitor I uses four default packets — Packets 4, 5, 6 and 10 — to produce the basic set of reports.
- You can also add packets to your study assignments when you want data for other kinds of reports using the procedure "How to Change the Polling Schedule" described in Chapter 6, "Running Special Reports."

Note: For Generic 2.1, System 85, and DIMENSION, Packet 7 contains ARS data and Packet 8 contains AAR data. For the Generic 2.2 release, Packet 7 has been modified and now contains World Class Routing (WCR) data and Packet 8 functionality has been deleted.

Descriptions of the traffic data contained in each packet follow.

Packet 1: Translation Data

- Contains translation data necessary for interpreting data in other packets.
- Automatically retrieved when you initialize or reinitialize a switch database.
- Translation data in Packet 1 includes:
  - Peak and time coincident register assignments
  - Load balance and carrier usage translation
  - Call Coverage traffic study assignments
  - Priority or non-priority queues for each trunk group
  - Trunk types and trunk group size
  - Summary of currently administered ports
  - Inter Exchange Carriers (IXC) values.
  - World Class Routing (WCR) traffic study assignments

* Packets are not available for G3i, Generic 1, or System 75. The G3i, Generic I, and System 75 traffic measurements reports are the source of traffic data for Monitor I. See the *DEFINITY Communications System, Generic I and System 75 and System 75 XE Administration and Measurements Reports* for details.

Packet 2: Load Balance Data

- Useful only for multimodule systems.
- Primary tool used by AT&T traffic engineers to balance a system.
- Load balance data is used to balance traffic volume across the modules and to minimize call volume between modules. When the difference between the modules' traffic load is less than or equal to 10 percent, the system is considered balanced.

  A multimodule system is initially balanced by assigning lines and trunks equally and (usually) randomly across all modules. However, the system can become unbalanced as lines and trunks are added, and service may deteriorate if adjustments are not made.
- Used for customized reports.

Packet 3: Carrier Usage

- Generally used in conjunction with a load balance study in order to pinpoint heavily used trunks within a module.
- It can also be helpful when ring group blockage is suspected, that is, when the caller hears the call ringing at its destination, but the called person does not hear it.
- Used for customized reports.

Packet 4: Automatic Circuit Assurance (default)

- Data related to the switch's Automatic Circuit Assurance (ACA) feature, which is used to identify potential trunk maintenance problems.
- ACA sends two types of referrals to attendants on calls that are less than the assigned short-holding-time threshold or greater than the long-holding-time threshold, both of which you set.
- Packet 4 provides a count of the 32 most recent referrals.
  - Trunk Verification Consoles (TVCs) are checks on calls going to consoles,
  - Trunk Verification Stations (TVSs) are checks on calls going to stations.

Packet 5: Performance Data (default)

- Provides a snapshot of system performance including blockage counts on: ring groups, Time Slot Interchangers (TSIs), Time Multiplexed Switches (TMSs), and module processors.
- Measures dial tone delays and network module usage.
- Translation change flags alert you when translation changes have occurred in the switch which affect traffic data accuracy.
- Although Packet 5 information is reflected in many reports, its input can be seen directly in the Switch Summary Report.

Packet 6: Peak and Time Coincident (default)

- Contains two types of registers: peak and time coincident.
- The total number of registers assigned depends on the switch release you have.
- Packet 6 can be programmed and to spare the user from having to enter multiple transactions, Monitor I automatically assigns its peak and time-coincident relationships during initialization.

  Monitor I's peak and TC values provide measurements on:

  - Trunk groups, expressed in usage, peg count, and overflow registers. Data usage may be isolated from voice.
  - Trunk group combinations that may be defined so simultaneous measurements are gathered for trunks handling common traffic loads (such as a three-way split and WCR group members).

    Note: Trunk group combinations would require you to run a customized report. This limits the number of trunk groups you can study and takes up switch resources. As an alternative, you might want to use the trunk include lists, which are accessible from the Administration Menu, instead of customizing a report. Data usage may be isolated from voice.

  - Network module usage and dial tone delays.
  - Attendant consoles, expressed in peg count, usage, and queue load, with measures of peg count and usage per console and peg counts for Listed Directory Number (LDN) answer, attendant recall, and attendant-originated calls.
  - Main/satellite, with Direct Inward Dial (DID) and attendant recall peg counts.
  - Centralized Attendant Service (CAS), offering CAS queue usage, peg count, abandoned call count, and Release Link Trunk (RLT) answered peg count.
  - Queuing trunk groups (for both priority and non-priority queues), with queue usage, peg count, abandoned call count, and timeout.
  - UCD/ACD, giving peg count of times the queue threshold is exceeded.
  - Call vectors, giving peg count of times the queue threshold is exceeded.*
  - Message Center Service, with peg counts of directed and redirected calls.
  - TMS, noting mismatch blockage and connection per module pair.
  - Module processor, with usage, peg count, and blockage.
  - Miscellaneous facilities, monitoring time of day that peak occurs and the WCR plan in effect.

* Generic 2 only.

Packet 7: World Class Routing (WCR) (Generic 2.2)

- Contains WCR measurements that allow you to study usage for selected WCR patterns. Up to 63 patterns can be studied at one time for the Generic 2.2 switch.
- Peg counts are included in the data for each trunk seizure and pattern overflow.

Packet 7: Automatic Route Selection (ARS) (Generic 2.1, System 85, DIMENSION)

- Contains ARS measurements that allow you to study usage for selected ARS patterns. The number of patterns that can be studied at one time varies according to the switch release.
- Studies are available for each of three ARS patterns.
- Peg counts are included in the data for each trunk seizure and pattern overflow.

Packet 8: Automatic Alternate Routing (AAR) (Generic 2.1, System 85, DIMENSION)

Note: For the Generic 2.2 switch, all routing has been incorporated into the World Class Routing feature accessed through Packet 7. Packet 8 is no longer functional for Generic 2.2.

- Automatic Alternate Routing (AAR) patterns route calls within your network.
- Contains information required for an AAR Report.
- Before a report can be run, you must first enter data about your patterns into the Monitor I database. See Chapter 6, Setting Up Traffic Studies" in this manual for instructions. The total number of patterns allowed varies according to the switch and switch release.

Packet 9: 100-Second Occupancy Data

Note: Be aware that Packet 9 has a ***single, shared output buffer*** unlike other packets that have an output buffer for **customer (cust)** data and another for **telecommunications (telco)** data. For example, if **cust** data is polled before **telco** data, then buffer contents are sent to the customer and the buffer is then cleared of data. If and when AT&T subsequently polls, no data will be contained in the buffer. Conversely, if AT&T polls before the customer, the Packet 9 data is sent to AT&T, the buffer is cleared, and any subsequent poll by the customer will be lacking Packet 9 poll results.

- Provides a profile of processor occupancy for the peak occupancy hour.
- Allows you to monitor processor work load.
- During peak hour, measurements of processor occupancy are taken at 100-second intervals, yielding a total of 36 measurements per hour.
- Can be used to generate custom reports. Suggested procedures for customizing reports are contained in Chapter 7, "Designing Custom Reports."

Packet 10: Accumulated Values

- Contains measurements related to specified features, including Auto Call Back, Call Hold, Call Pickup, Call Waiting, and Verification of Authorization Codes.
- Accumulates counts over **all** hours since the last poll took place.
- Register assignments in this packet are fixed—you do not have the option of selecting the data you want.
- The part of Packet 10 that is related to Security Violations is contained in the Switch Summary Report.

Packet 11: DCIU Measurements

- Contains data for traffic through the Data Communications Interface Unit (DCIU) processor and the outgoing messages from the switch through the DCIU.
- Helps you to detect deterioration of channels and see if the number of bytes allowed needs to be raised. Packet 11 data can be used in a customized report.

Packet 12: Call Coverage

- Contains measurements required for monitoring the performance and loading of the Call Coverage feature. There are 10 measurements available for each group studied, including:
  - Overall peg measurements
  - Total peg measurements by Call Coverage point
  - Abandoned peg measurements by coverage point
  - Overflow peg count.
- Packet 12 data can be found in the Call Coverage Report.

Packet 13: EUCD/ACD

- Contains measurements on agent activity, allowing traffic engineers to monitor and manage Enhanced Uniform Call Distribution (EUCD)/Automatic Call Distribution (ACD) measurements.
- EUCD/ACD measurements provided by Packet 13 include:
  - Calls handled by the group
  - Calls queued
  - Calls abandoned
  - Average Work Time (AWT) per call
  - Average time of calls in queue.
- Packet 13 data is contained on the ACD Report, and it can be included in customized reports.

Storage Buffers

A switch uses three buffers to store data. You do not need to know about these buffers in order to use Monitor I.

Collection (or Working) Buffer

- Takes data as collected by the switch.

  At a specific time each hour, the data is transferred from the working buffer to the Customer Output and the AT&T Output Buffers.

  Note: The transfer period is known as **offset time**. During offset time, accumulative register values are added to corresponding values in the output buffers. Peak registers are compared with corresponding values in the output buffers at this time, as well, and replaced if the more recent value is larger. When peak values are replaced, associated time-coincident values are replaced as well.

Customer Output Buffer

- Holds the transferred data until it is retrieved by Monitor I polling.
- Reset to zero after each poll by the switch.

AT&T Output Buffer

- Used by AT&T to complete the process of adding a new switch database.
- Holds the transferred data until it is retrieved by Monitor I polling.
- Reset to zero after each poll by the switch.

Usage Measurements

Overview

Many reports offer you a choice of output units. That is, you can decide if you want your traffic usage expressed in CCS (Centum Call Seconds) or in Erlangs. Where one CCS unit is equal to 100 seconds of usage, one Erlang is equal to 3600 seconds or an hour. Thus, one Erlang equals 36 CCS. To convert from CCS to Erlangs, divide the CCS by 36.

The reports generally use Erlangs in the form of xxx.x (rounded to the nearest tenth decimal place). If there is less than 1 CCS on a facility, the Erlangs are output as zero (0), since 1 divided by 36 equals 0.02777, which rounded to the nearest tenth decimal place is zero.

In addition to these measurements, some usage in the Attendant Measurement Report can be expressed in seconds.

Monitor I Equations

The equations listed below are used by DEFINITY Monitor I to calculate data for the Switch Performance Reports. They are listed by the report for which they are used.

AAR (Automatic Alternate Routing) Report Generic 2.1, System 85, DIMENSION

Offered Peg Count: Offered peg count is the sum of the carried peg count for the current preference and for each succeeding preference, plus the queued peg count.

The calculation is:
Sum of the Carried Peg (Current Pref + Next Pref + . . . + Last Pref) + Queued Peg (Current Pref + Next Pref + . . . + Last Pref)

ACD (Automatic Call Distribution) Report

ACD Group Usage

Average Service Time (sec) = (Total Usage in CCS / Total Peg) * 100

Average Queue Time (secs) = (Queue Usage in CCS / Queue Peg) * 100

Percentage Time Queue Threshold Exceeded = (ACD Queue Threshold Peg Count) / 18,000) * 100 percent

Average Service Time (secs) = ((Total Usage in CCS) / (Total Peg)) * 100

ARS (Automatic Route Selection) Report Generic 2.1, System 85, DIMENSION

Offered Peg Count: Offered peg count is the sum of the carried peg count for the current preference and each succeeding preference, plus the queued peg count.

The calculation is: Sum of the Carried Peg (Current Pref + Next Pref + . . . + Last Pref) + Queued Peg (Current Pref + Next Pref + . . . + Last Pref)

Attendant Measurement Report (All and Peak Format)

Peak Hour Summary Information (Peak)

Average Holding Time (sec) = (Worked Usage in CCS / Worked Peg Count) * 100

Average Queue Time (secs) = (Incoming Queue Usage in CCS / (Queue Peg - Queue Abandon Peg)) * 100

Hourly Delay Statistics (All)
Peak Hour Force Management Alternatives (Peak)

Given the current -2, current -1, current, current +1, current +2 number of attendants and the worked usage, use the Erlang C Infinite Tables to determine:

- Average Delay (sec) - Based on the number of attendants with attended usage and the peak worked usage, use Erlang C Infinite Table A to find D Bar/AHT Factor. Multiply D Bar by the average holding time to get the average delay.
- Average Delay of Delayed Calls (sec) - Based on the number of attendants with attended usage and D Bar/AHT Factor, use the Erlang C Infinite Table C to find D Double Bar/AHT. Multiply D Double Bar by the average holding time to calculate the average delay of delayed calls.
- Percent Delayed - Percent of calls that will experience any delay greater than 0 seconds. Based on the number of attendants with attended usage and D Bar/AHT Factor, use the Erlang C Infinite Table B to find percent of calls delayed.

Monitor I, however, performs internal calculations for these fields, and the difference between these calculations and the tables may be as much as 10 percent.

Hourly Attendant Statistics (All)
Peak Hour Attendant Position Information (Peak)

Average Holding Time (sec) = (Worked Usage in CCS by Position / Worked Peg by Position) * 100

Hourly Centralized Attendant Service Measurements (All)
Peak Hour Centralized Attendant Measurements (Peak)

Average Time Queue = CAS CCS Usage / CAS Peg * 100

Call Coverage Report

Coverage by Answering Point

Total Answered by Group = Total Calls Offered - (Abandoned Point 1 + Abandoned Point 2 + Abandoned Point 3)

Total Abandoned by Group = Abandoned Point 1 + Abandoned Point 2 + Abandoned Point 3

Call Coverage Point 1 Answered = Calls offered to Point 1 - (Calls Overflowed from Point 1 + Abandoned from Point 1)

Call Coverage Point 2 Answered = Calls offered to Point 2 - (Calls Overflowed from Point 2 + Calls Abandoned from Point 2)

Call Coverage Point 3 Answered = Calls offered to Point 3 - Calls Abandoned Point 3

Note: The offered numbers for Coverage Point 3 may not add up. This may be due to the fact that the switch always increments the offered peg to the principal point. For subsequent points (meaning 1, 2 and 3), the offered peg is incremented only if the coverage point is available (not busy) to receive call. If the coverage point is busy, the call overflows to the next coverage point without incrementing the offered peg belonging to the busy coverage point.

Percent Answered by Group = (Total Calls Answered / Total Calls Offered) * 100

Coverage by Call Origination

Internal Offered = Calls Offered - External Offered

Internal Answered = Total Calls Answered by Group - External Answered

Internal Abandoned = Total Calls Abandoned - External Abandoned

External Answered = External Offered - (External Abandoned Point 1 + External Abandoned Point 2 + External Abandoned Point 3)

External Abandoned = External Abandoned Point 1 + External Abandoned Point 2 + External Abandoned Point 3

Percent Offered to Group = (Total Calls Offered to Group / Offered to Principal) * 100

Hunt Group Report

Average Holding Time = (Total Usage/Calls answered) * 100

ISDN PRI Trunk Group Association Report

Outgoing Usage = Total Usage - Incoming Usage

Outgoing Calls = Total Calls - Incoming Calls

Lightly Used Trunk Report

Total Calls Carried By Trunk Group = (Calls Carried by Trunk Group + Total Calls Carried by Member / 24 * Server Size) / 2 * 24

The **Total Calls Carried by Member** field is accumulated for the daily poll. **Total Calls Carried by Trunk Group** is not available. To calculate (approximate) the total calls carried by the trunk group for the day, take the average peg of the day for the member, multiply it by the trunk group (server) size. Divide this number by the mean of the Peak and Lightly Used peg count. Multiply that total by 24 (24 hours in the day).

Long Term Trending Report

Long Term Trending Summary

Percent Marginal Capacity = (((7740 CCS * Number of Mods) - TSI usage) * 100) / (7740 * Number of Mods)

Average Usage per Trunk = Peak Usage / (Size - (Maintenance Busy Usage / 36))

Recommended Number of Trunks - Given the measured carried load, Monitor I estimates the offered load for the Erlang B and Retrial models. It then calculates the recommended number of trunks using the offered load and the designed Grade of Service (GOS). These calculations are not used when the average trunk usage is over 98.5 percent.

Partial tables for Erlang C (both Infinite and Finite) are built into the Monitor I database. Monitor I uses the carried load and the designed GOS to calculate the number of trunks based on these internal tables. Overflow conditions may result when CCS usage exceeds the limitations of Monitor I's Erlang C tables.

Module Report

Time Slot Interchanger (TSI) Information

Marginal Capacity = 215 Erlangs - TSI Usage (Erlangs)

Marginal Capacity = 7740 CCS - TSI Usage (CCS)

TSI Percent Utilization = [TSI Usage (Erlangs) / 215 Erlangs] * 100 percent

TSI Percent Utilization = [TSI Usage (CCS) / 7740 CCS] * 100 percent

Time Division Multiplexer (TDM) Information

Marginal Capacity = 199 Erlangs - TDM Usage (Erlangs)

Marginal Capacity = 7164 CCS - TDM Usage (CCS)

TDM Percent Utilization = [TDM Usage (Erlangs) / 199 Erlangs] * 100 percent

TDM Percent Utilization = [TDM Usage (CCS) / 7164 CCS] * 100 percent

XE Information

Marginal Capacity = 199 Erlangs - XE Usage (Erlangs)

Marginal Capacity = 7164 CCS - XE Usage (CCS)

XE Percent Utilization = [XE Usage (Erlangs) / 199 Erlangs] * 100 percent

XE Percent Utilization = [XE Usage (CCS) / 7164 CCS] * 100 percent

Processor Occupancy Report

Processor Occupancy = Call & Scan Percent Occupancy + System Management Percent Occupancy

Marginal Capacity = Processor Occupancy Rate - (Call & Scan Percent Occupancy + System Management Percent Occupancy)

Average Holding Time = (Connection Usage / Connection Count) * 100

---

* The maximum occupancy rate varies for different switches. AT&T recommends the following rates: 85 percent for Generic 2, and System 85 R2V3-V4, 75 percent for System 85 R2V2, 70 percent for G3i, and 65 percent for DIMENSION.

Security Violation Report

Total = EIA port + Dial port + Control Dial Up ports

Switch Summary Report

Peak Processor Information

Processor Occupancy = Call & Scan Processing Percent Occupancy + System Management Percent Occupancy

Marginal Capacity for Processor = 85 - (Processor Occupancy) for Generic 2, and System 85 R2V4 and R2V3.

Marginal Capacity for Processor = 75 - (Processor Occupancy) for System 85 R2V2

Marginal Capacity for Processor = 70 - (Processor Occupancy) for G3i

Marginal Capacity for Processor = 65 - (Processor Occupancy) for DIMENSION

Average Holding Time = (Connection Usage / Connection Count) * 100

Peak Module Information

Percent Blocking = (Blocking Count / (Peg Count + Blocking Count)) * 100 for High Module

(This is also used for both TDM and TMS.)

Attendant Information

Average Delay of Delayed Calls - To do this calculation you need to have some detailed traffic background and, more specifically, to have attended an AT&T Traffic Analysis course. Based on the number of attendants and D Bar, use the Erlang C Infinite Table C to find D Double Bar. Multiply D Double Bar by the average holding time to calculate the average delay of delayed calls.

Percent of Calls Abandoned = Inc Call Queue Attd Abandoned / Inc Call Queue Peg Count

Security Violations

Percent Invalid Attempts = (Invalid / (Invalid + Valid)) * 100

Peak Trunk Group Threshold Violations

Recommended Number of Trunks - Given the measured carried load, Monitor I estimates the offered load for the Erlang B and Retrial models. It then calculates the recommended number of trunks using the offered load and the designed Grade of Service (GOS). These calculations are not used when the average trunk usage is over 98.5 percent.

Partial tables for Erlang C (both Infinite and Finite) are built into the Monitor I database. Monitor I uses the carried load and the designed GOS to calculate the number of trunks based on these internal tables. Overflow conditions may result when CCS usage exceeds the limitations of Monitor I's Erlang C tables.

System Security Report

Percent Invalid Attempts = Invalid Access / (Valid Access + Invalid Access) * 100 percent

Trunk Group Detail Report

Usage and Peg Information

Average Holding Time for Category X, where Category X is the following:

- Total
- Voice
- Data
- Incoming Voice + Data
- Incoming Voice
- Incoming Data
- Outgoing Voice + Data
- Outgoing Voice
- Outgoing Data

Average Holding Time (Category X) = Total Usage (Category X) / Peg Count (Category X) * 100

Average Trunk Usage: Average carried traffic per trunk in the group excluding the opportunities to carry traffic that were lost due to maintenance busy trunks. This is calculated as: Total Carried Usage (CCS) divided by the result of the Total Number of Trunks minus the Number of Maintenance Busy Trunks. The calculation is:

Average Trunk Usage = (Total Usage) / (Size - (Maintenance Busy Usage / 36))

(Sys 75):
Average Trunk Usage = (Total usage/size - number of busy trunks)

Blockage Information

Percent All Trunks Busy = Number of Seconds All Trunks Busy / 3600 Seconds (1 Hour)

Grade of Service Requirements

NUMBER OF TRUNKS REQUIRED FOR GOS Given the measured carried load, Monitor I estimates the offered load for the Erlang B and Retrial models. It then calculates the recommended number of trunks using the offered load and the designed Grade of Service (GOS). These calculations are not used when the average trunk usage is over 98.5 percent

For Erlang C (both Infinite and Finite), Monitor I uses the carried load and the designed GOS to calculate the number of trunks based on the internal tables. Overflow conditions may result when CCS usage exceeds the limitations of Monitor I's Erlang C tables.

Trunk Group Summary Report

Average Active Trunk Usage = Total Carried Usage (CCS) / (Trunk Group Size - (Maintenance Busy Usage (CCS) / 36))

Average Trunk Usage should never exceed 36 CCS, since this would exceed the possible ceiling of 36 CCS in an hour.

Percent All Trunks Busy: Total percentage of time that all trunks in the trunk group were busy, either due to usage or maintenance busy conditions, stored in Packet 6. The equation is:

(Number of seconds all trunks busy / 3600) * 100 Average Holding Time (sec) = (Total Usage / Total Calls) * 100

WCR (World Class Routing) Report Generic 2.2

Offered Peg Count: Offered peg count is the sum of the carried peg count for the current preference and each succeeding preference, plus the queued peg count.

The calculation is: Sum of the Carried Peg (Current Pref + Next Pref + . . . + Last Pref) + Queued Peg (Current Pref + Next Pref + . . . + Last Pref)

Mail and Error Messages

Mail Messages

Mail is generated for the following DEFINITY Monitor I processes:

- Poller
- Initialization
- Clock Transactions
- Audit
- Polling System Failure
- Purge Failure
- Trunk Group Threshold Violations
- Downloading Studies

Some of these transactions also generate **mtmlog** error messages. These are discussed in the latter part of this section.

Listed on the following pages are some examples of the mail messages you might receive for system problems. The format for these messages lists the target switch, the transaction where the problem occurred, the severity of the problem, what actually happened, and the steps you need to take to try and correct the situation.

```
     Target: gotham
Transaction: POLLER
  Poll Date: 01/10/1992
  Poll Time: 17:00
   Severity: See below.
    Message: Trunk groups have violated their thresholds.
     Action: Monitor the threshold mail looking for any trends in violations.
             Determine the causes of the violations. More trunks may be
             required to meet the desired grade of service or the grade
             of service should be changed.

THE FOLLOWING TRUNK GROUPS HAVE VIOLATED THEIR THRESHOLDS.
THE RECOMMENDED QUANTITY IS THE NUMBER OF TRUNKS REQUIRED
TO MEET THE GRADE OF SERVICE FOR THE CARRIED LOAD(CCS).

TRUNK  GRADE OF   TABLE           CURRENT   RECOM.
GROUP  SERVICE    USED    USAGE   NO. TRKS  NO. TRKS  SEVERITY
-----  --------  -------  ------  --------  --------  --------
  148    P05     RETRIAL    3382        96       101    WRN
  150    P03     RETRIAL     896        28        33    WRN
  171    P05     RETRIAL    2693        78        82    WRN
  175    P03     RETRIAL    1486        44        50    WRN
  179    P05     RETRIAL     268         8        12    WRN
```

SCREEN D-1
Sample Mail Message 1

```
     Target: gotham
Transaction: POLLER
  Poll Date: 01/10/1992
  Poll Time: 17:00
   Severity: See the Operations Guide.
    Message: System alarm flags are set.
     Action: See the Operations Guide.

        SYSTEM TRAFFIC FLAGS SET:
        Minor Translation Change.
        Major Alarm On 501cc Processor.
        Minor Alarm On 501cc Processor.
        Warning Alarm On 501cc Processor.
        Data Zeroed Out By Proc. 421/461.
        Data Reinitialized Due To Reload Or Admin. Proc.
        Cache Memory Active.
```

SCREEN D-2
Sample Mail Message 2

```
     Target: gotham
Transaction: POLLER
  Poll Date: 01/10/1992
  Poll Time: 17:00
   Severity: See the Operations Guide.
    Message: Packet alarm flags are set.
     Action: See the Operations Guide.

        LOAD BALANCE:
               Minor Translation Change.

        CARRIER USAGE:
               Major Translation Change.
               Data Zeroed Out By Proc. 421/461.
               Unable To Obtain Data From Diagnostic Processor.

        ACA:
               Major Translation Change.
               Major Translation Change.
               Minor Translation Change.

         PEAK AND TC:
                Minor Translation Change.

        ARS:
               Short Hour Occurred.
               Unable To Obtain Data From Diagnostic Processor.

        AAR:
               Major Translation Change.
               Minor Translation Change.

        ACCUMULATED VALUES:
               Major Translation Change.
               Unable To Obtain Data From Diagnostic Processor.

        DCIU:
               Major Translation Change.
               Short Hour Occurred.

        ACD:
               Major Translation Change.
               Minor Translation Change.
               Short Hour Occurred.
```

SCREEN D-3
Sample Mail Message 3

Monitor I Error Messages

The error messages in the following table are for these Monitor I processes:

- Alarm System
- Daily Concatenation
- Initialization
- Parser
- Polling System
- Switch Communication
- Trending

You can find these messages in the **mtmlog**. Since a fairly high level of expertise is needed to decipher these messages, you will probably want your System Administrator to check them. The System Administrator should also be contacted to correct the problem where necessary.

The messages are listed below alphabetically so that you can easily locate them. The table lists the error message, a description of what it means, and the action you need to take. It also identifies the type of process with which the message is associated. The actual error message includes the date, time, process name, ID, and switch name.

TABLE D-1
Error Messages

Error Message	Description	Action	Type
Abnormal death of Poller [exit status: No.]	Poller was brought down abnormally	Contact System Administrator	Polling System
Admin Mode held by agent ID xx on port yy	Some other process is administering the switch	Wait and try again when the switch or dial-out ports are available or contact the Switch Administrator	Switch Communication
Admin Mode held by the MAAP panel	The MAAP panel is plugged in	Wait and try again when the switch or dial-out ports are available or contact the Switch Administrator	Switch Communication
Alarm No.: x,Dialing to INADS Failed	Check the Modems or INADS telephone number	Alarm System	
Alarm No.: x, Error reading from INADS	Possible Transmission errors	Check INADS	Alarm System
Alarm No.: x, Error reading from Trouble Tracker	Possible Transmission errors	Check Trouble Tracker	Alarm System
Alarm No.: x, Error writing to INADS	Possible Transmission errors	Check INADS	Alarm System
Alarm No.: x, Error writing to Trouble Tracker	Possible Transmission errors	Check Trouble Tracker	Alarm System

TABLE D-1 (Continued)
Error Messages

Error Message	Description	Action	Type
Alarm No.: x, NAK received from INADS	INADS is not acknowledging	Check INADS	Alarm System
Alarm No.: x, NAK received from Trouble Tracker	Trouble Tracker is not responding	Check Trouble Tracker	Alarm System
Alarm No.: x Unable to free port		Check the modems	Alarm System
Alarm No.: x, Unexpected response from INADS		Check INADS	Alarm System
Alarm No.: x, Unexpected response from Trouble Tracker		Check Trouble Tracker	Alarm System
Bad fastmaap ACK ignored	Error during transmission/ communication with the switch	No action required	Switch Communication
Bad fastmaap NAK	Error during transmission/ communication with the switch	No action required	Switch Communication
Bad switch security code	Security code in product record is incorrect	Check with Administrator about correct security code for the switch and readminister with new code	Switch Communication
bad terminator: [xxx] [xxx]	Data set not terminated by expected terminator	If the problem persists, contact the Monitor I Administrator	Parser
Call failed XXXXXXXXXXX (yyyy baud)	Indicate switch port busy or no dial-out ports available	Wait and try again when the switch or dial-out ports are available	Switch Communication
cannot malloc space for thresmap	Out of memory	Contact the System Administrator	Parser
Cannot open clktmp file	Possible problem in /tmp	Rerun the transaction. If the problem recurs contact System Administrator	Clock transaction
cannot open *fname*	Cannot open a flat file	Contact the System Administrator	Parser
Can't open port for dialing Trouble Tracker	Either all ports are busy or Trouble Tracker is not responding	Check modems or Trouble Tracker	Alarm System
Cannot open proctab	The proc table is missing or unreadable	Investigate under $MTMDIR/tables	Initialization/transaction
cannot realloc space for thresmap	Out of memory	Contact the System Administrator	Parser
Carried load is beyond table limits	Table cannot handle such a high number	No action	Parser

TABLE D-1 (Continued)
Error Messages

Error Message	Description	Action	Type
check tables	Parsing tables are missing	Contact the Monitor I Administrator	Parser
Comm Ctrl Access Denied: check MAAP	Problem with the Communication Controller	Contact the Switch Administrator	Switch Communication
Comm Ctrl DEAD	No response from the Communication Controller	Contact the Switch Administrator	Switch Communication
cvttrad() failed	Conversion of universal ELL to traditional ELL failed	Investigate the failing ELL	Initialization/audit
cvtuniv() failed	Error converting traditional to universal ELL	Contact switch administrator or Field Support	Initialization/audit
DAILY CONCATENATION COMPLETED	For an initialized system, the daily concatenation program successfully completed	Information Message, No Action	Daily Concatenation
DAILY PURGE - successfully completed	Daily purge done	No action required	Purge
DAILY PURGE - nothing to purge	Data not enough for purge	No action required	Purge
Daily Record Already Exists	Either Daily Concatenation has already run or daily polling has produced a daily poll record	Information Message, No Action	Daily Concatenation
Date mm/dd/yy to mm/dd/yy No Data Available for trending	For Information Purpose only	No Action Required	Trending
Date mm/dd/yy to mm/dd/yy Trending Completed	For Information Purpose only	No Action Required	Trending
Dialing failed	Indicates switch port busy or no dial-out ports available	Wait and try again when the switch or dialout ports are available	Switch Communication
Download failed on proc X word X with Error X at field X	This proc failed to download	Consult Proc Manual, correct the data and download again	Initialization/transaction
Error from pbxio()	Error indicating failure during switch administration	Rerun the transaction. If the problem recurs check the hardware (modems, lines, the switch, etc.)	Switch Communication
Error in setting up signal handling	Error return from signal()	Investigate and report to System administrator	Initialization
error on data [xxx] [xxx] [xxx]	Abnormal data sequence found	If the problem persists, contact the Monitor I Administrator	Parser

TABLE D-1 (Continued)
Error Messages

Error Message	Description	Action	Type
error on input data [xxx]	Request for data not assigned in the switch	Run non-traffic data transaction. If the problem persists, contact the Monitor I Administrator	Parser
Exceeds pktc register limit	Assignment of pktc has exceeded the max number allowed	Manually remove some facilities and rerun	Initialization
Failed to get admin mode but don't know why	Could not get Administration Mode - reason unknown	Contact the Switch Administrator	Switch Communication
Fastmaap Protocol Error - No DBLEND in response from switch	Fatal error indicating switch transmission/communication failure	Rerun the transaction. If the problem recurs check the hardware (modems, lines, the switch, etc.)	Switch Communication
Fatal error in setlimits() - purge not attempted	Unable to set purge boundaries	Correct product information and rerun command	Purge
fetch of route patterns failed	The fetch of route patterns failed	Try again, or contact the Monitor I Administrator	Non-traffic data or initialization
fetch of trunk group cbc attributes failed	The fetch of the trunk cbc attributes failed	Try again, or contact the Monitor I Administrator	Non-traffic data or initialization
fetch of trunk group names and tac failed	The fetch of the trunk group names and tac failed.	Try again, or contact the Monitor I Administrator	Non-traffic data or initialization
Fid [xxx] not possible	Parsing fid not found	Contact the Monitor I Administrator	Parser
Getting non-traffic data did not complete successfully	Failed retrieving one or more trunk groups or aar/ars patterns	Check logs, rerun command, contact Switch administrator if problem persists	Non-switch Data
Got connection using ttyxx phone XXXXXXXXXXX	For information purpose only	No action required	Switch Communication
Got xxxxxxxxx response to transparent mode request	For diagnostic purposes only	No action required	Switch Communication
Initialization in progress Unable to initiate polling Try later	Database is being Initialized	Try polling later	Polling System

TABLE D-1 (Continued)
Error Messages

Error Message	Description	Action	Type
initialization of the trunk groups failed	The fetch of trunk group information failed	Try again, or contact the Monitor I System Administrator	Parser
Initialization or non-traffic data error	Corrupted data found in data	Try again	Non-traffic data or initialization
Invalid Service Objective/ Table Pair	Service Objective and Table are not compatible	Change with the trunk group editor	Parser
Monitor I Alarming System exiting now - exit status No.	For diagnostics purpose only	If status is 1,contact System Administrator	Alarm System
Monitor I Alarming System has been brought up	For information purpose only	No action required	Alarm System
Monitor I Polling System exiting now - exit status: No.	For information purpose only	If status is 1,contact System Administrator	Polling System
Monitor I Polling System has been brought up	For information purpose only	No action required	Polling System
MTM admin login undefined - no mail sent	Administrator field in the Switch Characteristics screen is undefined	Check the Switch Characteristics Screen	Polling System
Negative Acknowledge from DP	Fatal error indicating Diagnostic Processor on switch not responding	Rerun the transaction. If the problem recurs check the hardware (modems, lines, the switch, etc.)	Switch Communication
No Data Stored From The Concatenation.	No new data was stored	Information message, no action	Daily Concatenation
No Concatenation Took Place	Daily Concatenation was already in progress	Try again later	Daily Concatenation
No more Peak numbers available	Assignment of pktc has exceeded the max number allowed	Manually remove some facilities and rerun	Initialization
No Successful Polls	No successful polls for that day	Information message, no action	Daily Concatenation
Number of tkgp>10 for msat [X] default to 10	Can only handle 10 trunk groups in main-satellite study	No action required	Audit
Other messages	Caused by a code bug or by corruption from a curious/malicious user	Contact the Monitor I Administrator	Daily Concatenation

TABLE D-1 (Continued)
Error Messages

Error Message	Description	Action	Type
Other messages	Caused by a code bug or by corruption from a curious/malicious user	Contact the Monitor I Administrator	Parser
Outstanding message retransmitted after fastmaap reset	Error during transmission/ communication with the switch	No action required	Switch Communication
PBX Hung up on us	Fatal error during transmission/ communication with the switch	Rerun the transaction. If the problem recurs check the hardware (modems, lines, the switch, etc.)	Switch Communication
PBX read error errno = xx	Fatal error during transmission/ communication with the switch	Rerun the transaction. If the problem recurs check the hardware (modems, lines, the switch, etc.)	Switch Communication
Pkt not polled because feature not administered [pkt:No.]	Packet Selection is not administered	Check Polling Schedule Options	Polling System
Polling error, pkt1 size=XXX bytes polled=YYY	Bad packet size for this switch release	Possible software mixup Contact Field Support	Initialization
Poll failure: pkt undefined [pkt:No.]	Undefined Packet Number	Check Polling Schedule Options	Polling System
Poll failure: protocol failure [pkt:No.]	Error during Transmission of data	Check the Modems and Switch	Polling System
Poll failure: switch buffer being updated [pkt:No.]	Poll should not occur while switch buffer being updated	Contact System Administrator	Polling System
Poll failure: switch undefined [pkt:No.]	Undefined PBX	Check the tape release, and/or contact System Administrator	Polling System
Poll failure: transmission seq error [pkt:No.]	Error during transmission of data	Check the Modems and Switch	Polling System
Poller exiting now exit status: No.	For information purpose only	If status is 1, contact System Administrator	Polling System
processing couldn't find: [xxx] [xxx] [xxx]	Can't find expected data file	Contact the Monitor I Administrator	Parser
Receiver buffer overflow: message lost	Error during transmission/ communication with the switch	No action required	Switch Communication

TABLE D-1 (Continued)
Error Messages

Error Message	Description	Action	Type
Response to xxxxxxxxx of incorrect length from DP	Fatal error during transmission/ communication with the Diagnostic Processor	Rerun the transaction. If the problem recurs check the hardware (modems, lines, the switch, etc.)	Switch Communication
settypes() failed	wrong product or feature package	Rectify product information and rerun command	Initialization
short data: [xxx]	Complete data set not found	If the problem persists, contact the Monitor I Administrator	parser
sql errno xxx	Schema out of synch with code or system out of file space	See *INFORMIX-SQL Reference Manual*, contact the Monitor I Administrator	Parser
[sqlerr: XXX]	error code from INFORMIX SQL	Consult *INFORMIX-SQL Reference Manual*	Initialization
sqlerr: xxx	Schema out of synch with code or system out of file space	See *INFORMIX-SQL Reference Manual*, contact the Monitor I Administrator	Parser
[sqlerr: XXX]	error code from INFORMIX SQL	Consult *INFORMIX-SQL Reference Manual*	Daily Concatenation
Table=XXX SQLCODE = NNN	DB : SQLERRM = YYY BYE!	fatal error from INFORMIX SQL. Consult *INFORMIX-SQL Reference Manual*	Initialization
Tbl: tpqtrcar; Module XX is in tclbcar but not in tccarell	Configuration data not uploaded into tccarell	Run *Retrieve Configuration Data* for carrier usage	Parser
Tbl: tpqtrcar; The 2nd module under study is not assigned in tclbcar but two modules are assigned in tccarell	Configuration data not uploaded into tccarell	Run *Retrieve Configuration Data* for carrier usage	Parser
Tbl: tpqtrcar; The 1st module under study is not assigned in tclbcar	Configuration data not uploaded into tccarell	Run *Retrieve Configuration Data* for carrier usage	Parser
Timed out during transmission with the Switch	Switch does not respond	Check the Switch	Polling System
Timeout received while waiting for response	Trouble Tracker System or INADS not responding	Check Trouble Tracker or INADS	Alarm System

TABLE D-1 (Continued)
Error Messages

Error Message	Description	Action	Type
too few SCCS header lines in proctab	Bad format in proc table	Contact Field Support	Initialization
Too many parity errors	Fatal error during transmission/ communication with the switch	Rerun the transaction. If the problem recurs check the hardware (modems, line, the switch, etc.)	Switch Communication
Transmission error detected	Error during transmission/ communication with the switch	No action required	Switch Communication
TZ not set	Unable to determine time zone	UNIX environment variable not found	Initialization
Unable to Close the Database	Possible INFORMIX error	Contact System Administrator	Polling System
Unable to invoke poller process	Polling cannot be activated	Contact System Administrator	Polling System
Unable to connect in three tries	Connect to switch failed	Wait and try again when the switch or dial-out ports are available	Initialization
Unable to disconnect from the switch	Cannot disconnect from switch	Check the Modems. Contact System Administrator	Polling System
Unable to Open the Database	Possible INFORMIX error	Contact System Administrator	Polling System
Unable to send alarms to INADS	Possible transmission errors	check INADS	Alarm System
Unable to send alarms to Trouble Tracker	Possible transmission errors	Check Trouble Tracker	Alarm System
Unexpected fastmaap NAK ignored	Error during transmission/ communication with the switch	No action required	Switch Communication
Unknown fastmaap byte xx	Error during transmission/ communication with the switch	No action required	Switch Communication
Unknown feature package	Feature Package not supported	Consult logs and enter correct feature package in product record	Initialization
Unknown or unexpected response byte from PBX:xx	Fatal error during transmission/ communication with the switch	Rerun the transaction. If the problem recurs check the hardware (modem, lines, the switch, etc.)	Switch Communication

TABLE D-1 (Continued)
Error Messages

Error Message	Description	Action	Type
Unknown polldet type	Incorrect data storage option	Correct product information and rerun command	Initialization
Unknown product type	Product type is not supported	Consult logs and enter correct product type in product record	Initialization
WEEKLY PURGE - successfully completed	Weekly purge done	No action required	Purge
You didn't retrieve configuration data after the carrier usage assignment	Configuration data not uploaded into tccarell	Run *Retrieve Configuration Data* for carrier usage	Parser
You have exceeded pktc limit	Initialization only partially completes because the registers (peak and time coincident) assigned to collect traffic data have exceeded the default limits.	1. Remove the less important modules and/or trunk groups from study using the "Module Blockage Study" (Module Editor) and "Trunk Group Study (Trunk Group Editor) procedures. 2. Restart Initialization using the **r** option. If initialization is still incomplete, repeat Steps 1 and 2.	Initialization

Daily Concatenation Tables

The following tables list daily concatenation by switch type and release.

Note: There are no packets offered on G3i, Generic 1, and System 75 switches.

Daily Concatenation of Packet Data for Generic 2.2

TABLE E-1
Generic 2.2 Concatenation Table

Table	Packet	Comment
tpdatastor	0	marked if data is stored for files corresponding to the pkt
tplbinter	2	peak/tc's group by mod1, mod2 and trkgp*
tplbintra	2	peak/tc's group by mod, and trkgp*
tpportusg	3	no concatenation
tpqtrcar	3	no concatenation
tpacadtl	4	no concatenation
tpacasum	4	no concatenation
tpringgrp	5	sum on blkg group by mod, cab, car, and begslot
tptsi	5	max on fifoflg; sum on ififocnt through gppqblkg; tsimodocc peak is determined by the ptime of the peak pkcallcnt in tpperfsum
tpperfsum	5	sum on numhrlywk; polltime and lasthrwk get 2500; sum on memblkg through baseinrupt except fifoblkgflg; max on fifoblkgflg; pk on pkcallcnt, tc's: all the rest*
tppolldtl	5	max on all flags
tppollsum	5	max on all flags
tptrkgp	6	peak/tc's group by trkgp, usg is the peak*
tpacdmsg	6	peak/tc's group by ucd, peg is the peak*
tpmisc	6	peak/tc's; peaks: prococc, ccallcount, mconnusg, toutusg, aworkusg, rcasusg *

* If the same data is collected from two different polls during the day, the data used for peak will be from the latest poll.

TABLE E-1 (Continued)
Generic 2.2 Concatenation Table

Table	Packet	Comment
tpblginter	6	peak/tc's group by mod1 and mod2, misblkg is the peak*
tpeblginter	6	peak/tc's group by mod1 and mod2, misblkg is the peak*
tpblgintra	6	peak/tc's group by mod, blkg is the peak*
tpblgxe	6	peak/tc's group by mod, blkg is the peak*
tpcomb	6	peak/tc's group by comb, usg is the peak*
tpmsat	6	peak/tc; peak: didmain*
tptrkvio	6	peak/tc's group by trkgrp, usg is the peak*
tpattend	6	peak/tc's group by console, workusg is the peak*
tpisdnassc	6	peak/tc's group by accoc, usg is the peak*
tpisdncall	6	peak/tc's, totsez is the peak*
tpisdnchan	6	peak/tc's group by encode, bytes is the peak*
tpblghybrd	6	peak/tc's group by mod, blkg is the peak*
tpwcr	7	sum on all groups by patrn.
tpswocc	9	peak/tc's where peakocc is the peak
tpaccval	10	sum on all columns
tpisdn	10	sum on all columns
tpauth	10	most recent auth code
tpdciuglb	11	no concatenation
tpdciulog	11	no concatenation
tpdciunet	11	no concatenation

* If the same data is collected from two different polls during the day, the data used for peak will be that from the latest poll.

TABLE E-1 (Continued)
Generic 2.2 Concatenation Table

Table	Packet	Comment
tpdciuprt	11	no concatenation
tpcallcovg	12	sum on all group by ccg
tpcallvect	13	sum on all group by vector
tpacdgrp	13	sum on all except max on maxqtime and maxqcall group by ucd and trkgrp
tpacdpos	13	sum on all group by ucd and extn
tpacdsum	13	sum on all group by ucdtype
tpvnd	13	sum on all group by vdn

Daily Concatenation of Packet Data for Generic 2.1

TABLE E-2
Generic 2.1 Concatenation Table

Table	Packet	Comment
tpdatastor	0	marked if data is stored for files corresponding to the pkt
tplbinter	2	peak/tc's group by mod1, mod2 and trkgp*
tplbintra	2	peak/tc's group by mod, and trkgp*
tpportusg	3	no concatenation
tpqtrcar	3	no concatenation
tpacadtl	4	no concatenation
tpacasum	4	no concatenation
tpringgrp	5	sum on blkg group by mod, cab, car, and begslot
tptsi	5	max on fifoflg; sum on ififocnt thru gppqblkg; tsimodocc peak is determined by the ptime of the peak pkcallcnt in tpperfsum
tpperfsum	5	sum on numhrlywk; polltime and lasthrwk get 2500; sum on memblkg thru baseinrupt except fifoblkgflg; max on fifoblkgflg; pk on pkcallcnt, tc's: all the rest*
tppolldtl	5	max on all flags
tppollsum	5	max on all flags
tptrkgp	6	peak/tc's group by trkgp, usg is the peak*
tpacdmsg	6	peak/tc's group by ucd, peg is the peak*
tpmisc	6	peak/tc's; peaks: prococc, ccallcount, mconnusg, toutusg, aworkusg, rcasusg *

* If the same data is collected from two different polls during the day, the data used for peak will be from the latest poll.

TABLE E-2 (Continued)
Generic 2.1 Concatenation Table

Table	Packet	Comment
tpblginter	6	peak/tc's group by mod1 and mod2, misblkg is the peak*
tpeblginter	6	peak/tc's group by mod1 and mod2, misblkg is the peak*
tpblgintra	6	peak/tc's group by mod, blkg is the peak*
tpblgxe	6	peak/tc's group by mod, blkg is the peak*
tpcomb	6	peak/tc's group by comb, usg is the peak*
tpmsat	6	peak/tc; peak: didmain*
tptrkvio	6	peak/tc's group by trkgrp, usg is the peak*
tpattend	6	peak/tc's group by console, workusg is the peak*
tpisdnassc	6	peak/tc's group by accoc, usg is the peak*
tpisdncall	6	peak/tc's, totsez is the peak*
tpisdnchan	6	peak/tc's group by encode, bytes is the peak*
tpblghybrd	6	peak/tc's group by mod, blkg is the peak*
tpars	7	sum group by arspn and plan with routeplan being the last plan in effect at the last poll
tpaar	8	sum on all group by patrn
tpswocc	9	peak/tc's where peakocc is the peak
tpaccval	10	sum on all columns
tpisdn	10	sum on all columns
tpauth	10	most recent auth code
tpdciuglb	11	no concatenation
tpdciulog	11	no concatenation
tpdciunet	11	no concatenation

* If the same data is collected from two different polls during the day, the data used for peak will be from the latest poll.

TABLE E-2 (Continued)
Generic 2.1 Concatenation Table

Table	Packet	Comment
tpdciuprt	11	no concatenation
tpcallcovg	12	sum on all group by ccg
tpcallvect	13	sum on all group by vector
tpacdgrp	13	sum on all except max on maxqtime and maxqcall group by ucd and trkgrp
tpacdpos	13	sum on all group by ucd and position
tpacdsum	13	sum on all group by ucdtype
tpvnd	13	sum on all group by vdn

Daily Concatenation of Packet Data for System 85 R2V4

TABLE E-3
R2V4 Concatenation Table

Table	Packet	Comment
tpdatastor	0	marked if data is stored for files corresponding to the pkt
tplbinter	2	peak/tc's group by mod1, mod2 and trkgp*
tplbintra	2	peak/tc's group by mod, and trkgp*
tpportusg	3	no concatenation
tpqtrcar	3	no concatenation
tpacadtl	4	no concatenation
tpacasum	4	no concatenation
Tpringgrp	5	sum on blkg group by mod, cab, car, and begslot
tptsi	5	max on fifoflg; sum on ififocnt thru gppsendq; the ptime of pkcallcnt peak in tpperfsum determines the tc set: tsimodocc, tsiject and tsimodocc
tpperfsum	5	sum on numhrlywk; polltime and lasthrwk get 2500; sum on memblkg thru netfifodiff except fifoblkgflg; max on fifoblkgflg; pk on pkcallcnt, tc's: all the rest, including tmsmodocc, tmsrupt and tmsject;
tppolldtl	5	max on all flags
tppollsum	5	max on all flags
tptrkgp	6	peak/tc's group by trkgp, usg is the peak*
tpacdmsg	6	peak/tc's group by ucd, peg is the peak*
tpmisc	6	peak/tc's; peaks: prococc, ccallcount, mconnusg, toutusg, aworkusg, rcasusg
tpblginter	6	peak/tc's group by mod1 and mod2, misblkg is the peak*

* If the same data is collected from two different polls during the day, the data used for peak will be from the latest poll.

TABLE E-3 (Continued)
R2V4 Concatenation Table

Table	Packet	Comment
tpeblginter	6	peak/tc's group by mod1 and mod2, misblkg is the peak*
tpblgintra	6	peak/tc's group by mod, blkg is the peak*
tpcomb	6	peak/tc's group by comb, usg is the peak*
tpmsat	6	peak/tc's; peak: didmain*
tptrkvio	6	peak/tc's group by trkgrp, usg is the peak
tpattend	6	peak/tc's group by console, workusg is the peak*
tpars	7	sum group by arspn and plan with routeplan being the last plan in effect at the last poll
tpaar	8	sum on all group by patrn
tpswocc	9	peak/tc's where peakocc is the peak
tpaccval	10	sum on all columns
tpisdn	10	sum on all columns
tpdciuglb	11	no concatenation
tpdciulog	11	no concatenation
tpdciunet	11	no concatenation
tpdciuprt	11	no concatenation
tpcallcovg	12	sum on all group by ccg
tpcallvect	13	sum on all group by vector
tpacdgrp	13	sum on all group by ucd and trkgp
tpacdpos	13	sum on all group by ucd and position
tpacdsum	13	sum on all group by ucdtype

* If the same data is collected from two different polls during the day, the data used for peak will be from the latest poll.

Daily Concatenation of Packet Data for System 85 R2V2-V3

TABLE E-4
R2V2 and R2V3 Concatenation Table

Table	Packet	Comment
tpdatastor	0	marked if data is stored for files corresponding to the pkt
tplbinter	2	peak/tc's group by mod1, mod2 and trkgp*
tplbintra	2	peak/tc's group by mod, and trkgp*
tpportusg	3	no concatenation
tpqtrcar	3	no concatenation
tpacadtl	4	no concatenation
tpacasum	4	no concatenation
Tpringgrp	5	sum on blkg group by mod, cab, car, and begslot
tptsi	5	max on fifoflg; sum on ififocnt thru gppsendq; pk on tsimodocc *, tc's: tsiject and tsimodocc
tpperfsum	5	sum on numhrlywk; polltime and lasthrwk get 2500; sum on memblkg thru netfifodiff except fifoblkgflg; max on fifoblkgflg; pk on tmsmodocc, tc's: tmsrupt and tmsject; pk on pkconncnt, tc's: all the rest
tppolldtl	5	max on all flags
tppollsum	5	max on all flags
tptrkgp	6	peak/tc's group by trkgp, usg is the peak*
tptrkvio	6	peak/tc's group by trkgp, usg is the peak
tpacdmsg	6	peak/tc's group by ucd, peg is the peak*
tpmisc	6	peak/tc's; peaks: prococc, mconnusg, cconncnt, aworkusg, sdidmain, rcasusg

* If the same data is collected from two different polls during the day, the data used for peak will be from the latest poll.

TABLE E-4 (Continued)
R2V2 and R2V3 Concatenation Table

Table	Packet	Comment
tpblginter	6	peak/tc's group by mod1 and mod2, misblkg is the peak*
tpeblginter	6	peak/tc's group by mod1 and mod2, misblkg is the peak*
tpblgintra	6	peak/tc's group by mod, blkg is the peak*
tpcomb	6	peak/tc's group by comb, usg is the peak*
tpattend	6	peak/tc's group by console, workusg is the peak*
tpars	7	sum group by arspn and plan with routeplan being the last plan in effect at the last poll
tpaar	8	sum on all group by patrn
tpswocc	9	peak/tc's where peakocc is the peak
tpaccval	10	sum on all columns
tpdciuglb	11	no concatenation
tpdciulog	11	no concatenation
tpdciunet	11	no concatenation
tpdciuprt	11	no concatenation
tpcallcovg	12	sum on all group by ccg
tpacdgrp	13	sum on all group by ucd and trkgp
tpacdpos	13	sum on all group by ucd and position

* If the same data is collected from two different polls during the day, the data used for peak will be from the latest poll.

Daily Concatenation of Packet Data for DIMENSION

TABLE E-5
DIMENSION Concatenation Table

Table	Packet	Comment
tpdatastor	0	marked if data is stored for files corresponding to the pkt
tplbinter	2	peak/tc's group by mod1, mod2, trkgp1 and trkgp2*
tplbintra	2	peak/tc's group by mod, trkgp1 and trkgp2*
tpportusg	3	no concatenation
tpacadtl	4	no concatenation
tpacasum	4	no concatenation
tpaccval	5	sum on all columns
tpringgrp	5	sum on blkg group by mod, cab, car, and halfcar
tptsi	5	sum on tsiblkg
tpperfsum	5	sum on numhrlywk; polltime and lasthrwk get 2500
tppolldtl	5	max on all flags
tppollsum	5	max on all flags
tptrkgp	6	peak/tc's group by trkgp, usg is the peak*
tpmisc	6	peak/tc's; peaks: prococc, ctsusg, mtspeg, aworkusg, rcasusg
tpcomb	6	peak/tc's group by comb, usg is the peak*
tpmsat	6	peak/tc's; peak: didmain*
tptrkvio	6	peak/tc's group by trkgp, usg is the peak*
tptrkbusy	6	exist a busy trkgp group by trkgp
tpattend	6	peak/tc's group by console, workusg is the peak*
tpars	7	sum group by arspn and plan with routeplan being the last plan in effect at the last poll
tpaar	8	sum on all group by patrn
tpswocc	9	peak/tc's where peakocc is the peak

* If the same data is collected from two different polls during the day, the data used for peak will be from the latest poll.

Daily Concatenation of Packet Data for G3r, G3i, Generic 1 and System 75

TABLE E-6
G3r, G3i, Generic 1 and System 75 Concatenation Table

Table	Screens	Comment
tpdatastor	no screen	Pkt 1 marked if data is stored for any of the data tables
tptrkgp	measurements trunk-group	peak on usage
tpsecvio *	measurements security-violations	last (most recent) hourly poll
tpattgrp	measurements attendant-group	peak on calls answered
tphuntgrp	measurements hunt-group	peak on usage
tprtpsum	measurements route-pattern	select first trunk group in pattern with largest size, total the offered, carried, blocked, queued, and overflow calls
tprtpdtl	measurements route-pattern	select all hourly polls and the total calls carried by the trunk group, calculate percentages of call carried by the group based on total calls for the day (note: due to floating point truncation the percentages may not total exactly 100 percent)
tpswoccsum	measurements occupancy-summary	peak on call processing occupancy

TABLE E-6 (Continued)
G3r, G3i, Generic 1 and System 75 Concatenation Table

Table	Screens	Comment
tptrklite **	measurements light-used-trunk	Five members of each trunk group with the most appearances during the day; if a tie exists among members, then pick the member with the least peg
tptrkout **	measurements outage-trunk	Eight members of each trunk group with the most appearances during the day; if a tie exists among members, then pick the member with the most sampling count
tpattpos	list measurement attendant position	select all hourly polls that correspond to the group record that has the highest time talked (if more than one hour exists with the same maximum time talked, the most recent hour will be selected)
tpsecsum	list measurement security-violations summary	last (most recent) hourly poll
tpsecdtl	list measurement security-violations summary	select all hourly polls that correspond to the poll selected above (most recent polls)

* This table is not applicable for R3V1.

** This table is not applicable to System 75 R1V1.

Information About Alarming

Administering Alarm Parameters

Monitor I's alarm feature notifies you immediately when something goes wrong with your Monitor I system, such as your switch database filling up beyond its capacity. This feature, accessed by choosing Access Alarm Administration Menu from the Administrative Menu, sends alarms to e-mail or other specified destinations for the conditions discussed below.

Reference: See the heading, "Administer Alarm Characteristics" in Chapter 8, "System Administration" for details on accessing this feature screen.

Monitor I Polling System Failure

The Monitor I Polling System (also called the **guardian** or **mtmguard**) is the system responsible for bringing up the pollers and monitoring them to ensure that they are working. It ***wakes up*** every hour and checks to see that polling is taking place. There are four conditions for which an alarm would be generated in connection with the polling system:

- If the polling system crashes
- If the polling system cannot bring up one of the pollers
- If the poller dies abnormally
- If the poller fails to connect to the PBX

Failure of the polling system to perform these functions is the most serious alarm condition and is also the most improbable. In the unlikely event of a polling system failure, check the **mtmlog** for more specific information, and then contact your System Administrator immediately.

Purge Failure

If Monitor I fails to purge data as scheduled, the database could run out of space, causing the pollers to fail. When this alarm occurs, look at the **mtmlog** for more specific information about the cause of the problem.

Trunk Group Threshold Violations

A trunk group threshold violation occurs when the amount of usage on a trunk group exceeds the maximum usage specified for the desired GOS. The maximum usage is specified by the service objective entered for each trunk group on the Administer Trunk Group Study screen (Trunk Group Editor). Refer to Chapter 6, "Setting Up Traffic Studies" for more details.

PBX CPU Congestion

When Monitor I detects that CPU occupancy usage is greater than or equal to (≥) a predefined CPU congestion threshold, an alarm is generated that can be transmitted to Trouble Tracker, e-mail, or both. The congestion threshold varies with each switch release/CPU type and the maximum threshold value is reflected in the system default. If you wish, you can change the processor congestion threshold (using the "Administer Alarm Characteristics" procedure in Chapter 8, "System Administration") and this change will be reflected at the time of the next poll.

Packet Five System Flags and Packet Flags

These flags allow you to filter mail for Packet 5. For more information, refer to Chapter 8, "System Administration."

If you are receiving alarms for a trunk group violation, there are several things you can do:

- Determine if there is a maintenance problem. If so, correct it. (See the description of the trunk group violation section in the Switch Summary Report.) Also, determine if Facilities Management (FM) needed to add more trunks to the trunk group.
- If you are satisfied with the trunk group's performance and you want to stop the alarms, you can do the following:
  - Change the default GOS on the Administer Trunk Group Study screen to a higher GOS. This causes the trunk group to alarm less, that is, it only alarms when the the new **higher** GOS is exceeded.
  - Set the **Check** flag on the Trunk Group Editor to **off**. This causes the alarms to stop, but the violations will still be printed on the Switch Summary Report.
- If more trunk groups are ordered but not yet installed, do the following:
  - Change the GOS or set the **Check** flag to **off** as explained in the last paragraph.
  - Change the existing number of trunks on the Trunk Group Editor to include the trunks not yet installed. This causes Monitor I to analyze the data as if the new trunk groups have been added.

Choosing Alarm Destinations

When you set up your alarm feature you can specify that alarms be sent to three locations:

1. The first location is the e-mail address specified on the Administer Switch Characteristics Screen, which is described in Chapter 4, "Producing Reports." To more efficiently monitor your system, you might want to send an alarm to e-mail for all the alarm conditions.
2. A second destination is Trouble Tracker. Trouble Tracker is an element management system that enables users to monitor the performance of premises switch-based networks from a central location. It manages alarm flow from a broad range of network equipment including switches and external equipment. If you don't already have Trouble Tracker, you might want to speak to one of your account executives about purchasing it.
3. The third alarm destination is INADS, or the Initialization and Administration System, which is maintained by the AT&T Network Operations Group (NOG)/Services organization. AT&T technicians from this organization are responsible for the on-site support of Monitor I, and alarms for guardian failure are sent there since the guardian is responsible for monitoring the pollers. You do not need to notify INADS of purge failure or trunk group threshold violations, which are problems that can be handled by your System Administrator and should not require AT&T services.

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