Monitor I Administration and Analysis

(CAPS)
$ = CAFE

SHELL = SHIFT 1 # SH IN
CTRL "D" OUT

Course Introduction

Course Outline

COURSE INTRODUCTION

In this course, the student will learn to use Monitor I to set up traffic studies and to produce reports showing the traffic load and system performance of an AT&T Communications System.

With this data, the student can optimize traffic-sensitive equipment components, ensuring objective service levels at minimum cost.

COURSE OUTLINE

Course Introduction

Pre-Test

Pre-course review (ILP BC9033W - Traffic Management Overview)

Unit 1: Introduction to Monitor 1

Lesson 1A - Monitor I and Switch Interaction
Lesson 1B - Monitor I Features
Lesson 1C - Using Monitor I

Unit 2: Setting Up Traffic Studies

Lesson 2A - Initializing Traffic Studies
Lesson 2B - Setting Up Optional Studies
Lesson 2C - Making Changes

Lesson 2C - Making Changes (continued)

Unit 3: Monitor I Traffic Reports

Lesson 3A - Accessing and Scheduling Reports
Lesson 3B - Interpreting the Switch Summary Report
Lesson 3C - Interpreting Switch Performance Reports

Lesson 3C - Interpreting Switch Performance Reports (continued)
Lesson 3D - Graphics Reports

Course Outline

COURSE OUTLINE

Unit 4: System Administration

Lesson 4A - Alarm Administration
Lesson 4B - Manual Utilities
Lesson 4C - Monitor I Log
Lesson 4D - Audit Switch and Database

Unit 5: Database Maintenance

Lesson 5A - Back up and Restore

Unit 6: Custom Reports

Lesson 6A - Creating Custom Reports

Course Objectives

Upon successful completion of this course the student will be able to:

- **Administer traffic studies on Monitor I**
- **Access reports and perform basic analysis on the traffic studies to determine switch performance**
- **Create custom traffic reports using the INFORMIX®-SQL interface**
- **Perform Monitor I system administration routines**

OH I-1

COURSE OBJECTIVES

Upon successful completion of this course the student will be able to:

- Administer traffic studies on Monitor I
- Access reports and perform basic analysis on the traffic studies to determine switch performance
- Create custom traffic reports using the INFORMIX®-SQL interface
- Perform Monitor I system administration routines

Course Outline

UNIT 1

Introduction to Monitor I

Unit 1 Objectives

Upon successful completion of this unit the student will be able to:

- **Describe the polling and storage process of a switch and Monitor I connection**
- **Describe the features of Monitor I**
- **Use the Monitor I user interface**
- **Use the reference materials needed to operate Monitor I**

OH 1-1

UNIT INTRODUCTION

This unit contains an introduction to Monitor I, including:

- A description of the Monitor I polling and storage process
- A description of Monitor I features
- Hands-on experience with the Monitor I user interface
- A list of Monitor I reference materials

UNIT OBJECTIVES

Upon successful completion of this unit the student will be able to:

- Describe the polling and storage process of a switch and Monitor I connection
- Describe the features of Monitor I
- Use the Monitor I user interface
- Use the reference materials needed to operate Monitor I

LESSON 1A

Monitor I and Switch Interaction

Lesson 1A Objectives

Upon successful completion of this lesson the student will be able to:

- **Describe the differences among the Accumulative, Peak, and Time-Coincident Registers**
- **Use packet information from the Operations Manual**
- **Describe the terms:**
  - **Collection Buffer**
  - **Output Buffer**
  - **Offset Time**
  - **Poll Time**
  - **Packet**
- **Describe the polling and storage process of a switch and Monitor I connection**

OH 1A-1

LESSON INTRODUCTION

This lesson describes the interaction between Monitor I and the switch and how data is gathered and polled.

LESSON OBJECTIVES

Upon successful completion of this lesson the student will be able to:

- Describe the differences among the Accumulative, Peak, and Time-Coincident registers
- Use packet information from the Operations Manual
- Describe the terms:
  - Collection Buffer
  - Output Buffer
  - Offset Time
  - Poll Time
  - Packet
- Describe the polling and storage process of a switch and Monitor I connection

DISCUSSION

Switch Registers

Additional information can be found in the Operations Manual, Appendix B - Switch Traffic Data.

Three types of switch registers:

- Accumulative Registers
  - Are event-driven
  - Accumulate data until a poll occurs
  - Reset to zero once polled

- Peak Registers
  - Collect CCS (centum call seconds) or peg-count data
  - Collect highest hourly data over the polling interval
  - Collect hourly and compared to corresponding previous peak
  - Replaced with current hourly value if greater than the current peak stored
  - Have multiple time-coincident registers associated with it

- Time-coincident Registers
  - Collect CCS or peg-count data
  - Associated with one or more peak registers
  - Store traffic data for the same hour as the associated peak.

DISCUSSION

Operations Manual
Appendix B

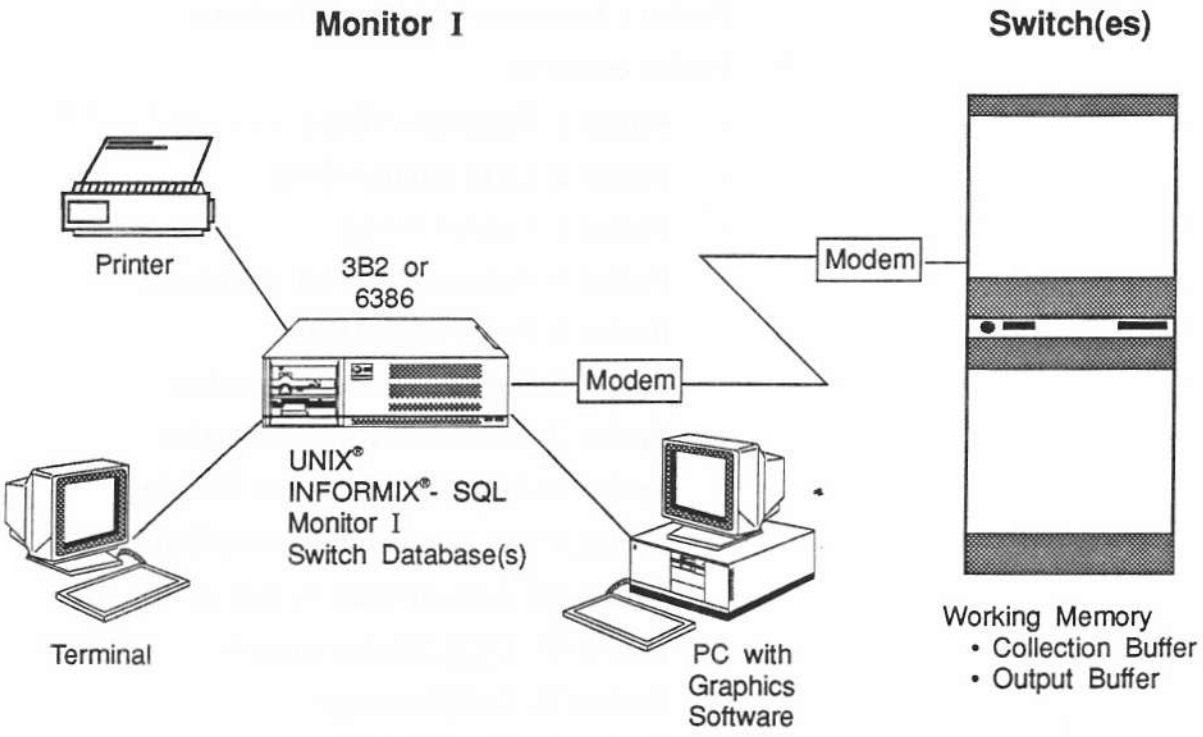
Monitor I Traffic Packets

Additional information can be found in the Operations Manual, Appendix B - Switch Traffic Data.

Data from the switch registers (Generic 2, System 85, and DIMENSION System) are organized into packets in the Monitor I database.

- Packets 4, 5, 6, and 10 are Monitor I *default* packets.
- Packet 1 is used to initialize a database.
- Packet contents:
  - Packet 1: Translation Data
  - Packet 2: Load Balance Data
  - Packet 3: Carrier Usage
  - Packet 4: Automatic Circuit Assurance
  - Packet 5: Performance Data
  - Packet 6: Peak and Time Coincident
  - Packet 7: Automatic Route Selection
  - Packet 8: Automatic Alternate Routing
  - Packet 9: 100-Second Occupancy Data
  - Packet 10: Accumulated Values
  - Packet 11: DCIU Measurements
  - Packet 12: Call Coverage
  - Packet 13: EUCD/ACD

Monitor I Polling and Storage Process



BC19A2.cdr

OH 1A-2

GRAPHICS FILE: BC19A2.CDR

DISCUSSION

Monitor I Polling and Storage Process

- Collection Buffer
  - Stores data as it is collected by the switch
- Output Buffer
  - Holds data to being retrieved by Monitor I polling
  - Resets to zero
- Offset Time
  - Transfer data each hour from collection to output buffers
  - Add accumulative register values to corresponding values in output buffer
  - Compare peak register values with corresponding values in output buffer
  - Replace peak value in the collection buffer with the value currently stored in the output buffer (associated TC (Time Coincident) values also replaced)
- Poll Time
  - Retrieves data stored in the output buffer
  - Reset the output buffer values to zero

SUMMARY

This lesson discussed the following:

- Three Register types
  - Accumulative Registers
  - Peak Registers
  - Time-coincident Registers
- 13 Monitor I Packets
- Monitor I Polling and Storage Process
  - Collection Buffer
  - Output Buffer
  - Offset Time
  - Poll Time

LESSON 1B

Monitor I Features

Lesson 1B Objectives

Upon successful completion of this lesson the student will be able to:

- **Identify the Monitor I features**
- **Identify the features of Monitor I reports**

OH 1B-1

LESSON INTRODUCTION

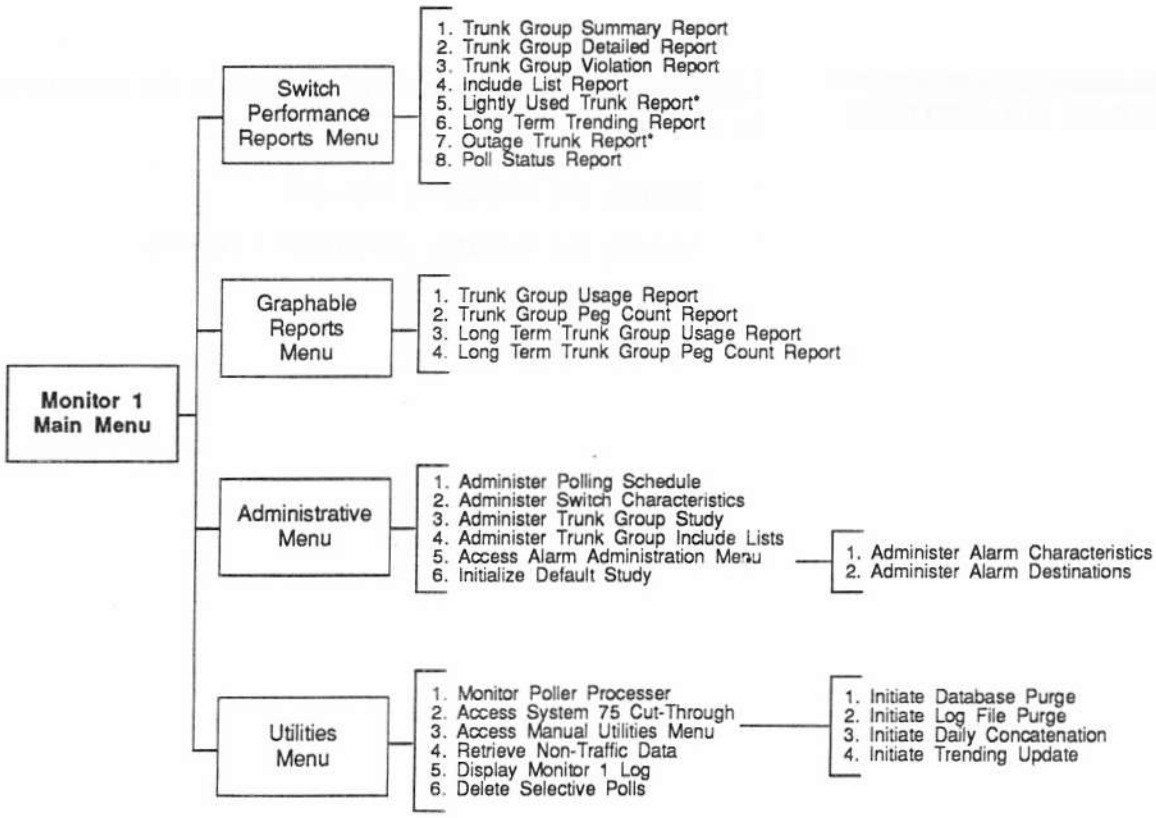
This lesson includes a description of Monitor I features.

LESSON OBJECTIVES

Upon successful completion of this lesson the student will be able to:

- Identify the Monitor I features
- Identify the features of Monitor I reports

Generic 1/System 75 R1V1-V3 Menu Structure



*Not available on System 75 R1V1

BC19A4.cdr

OH 1B-2

GRAPHICS FILE: BC19A4.CDR

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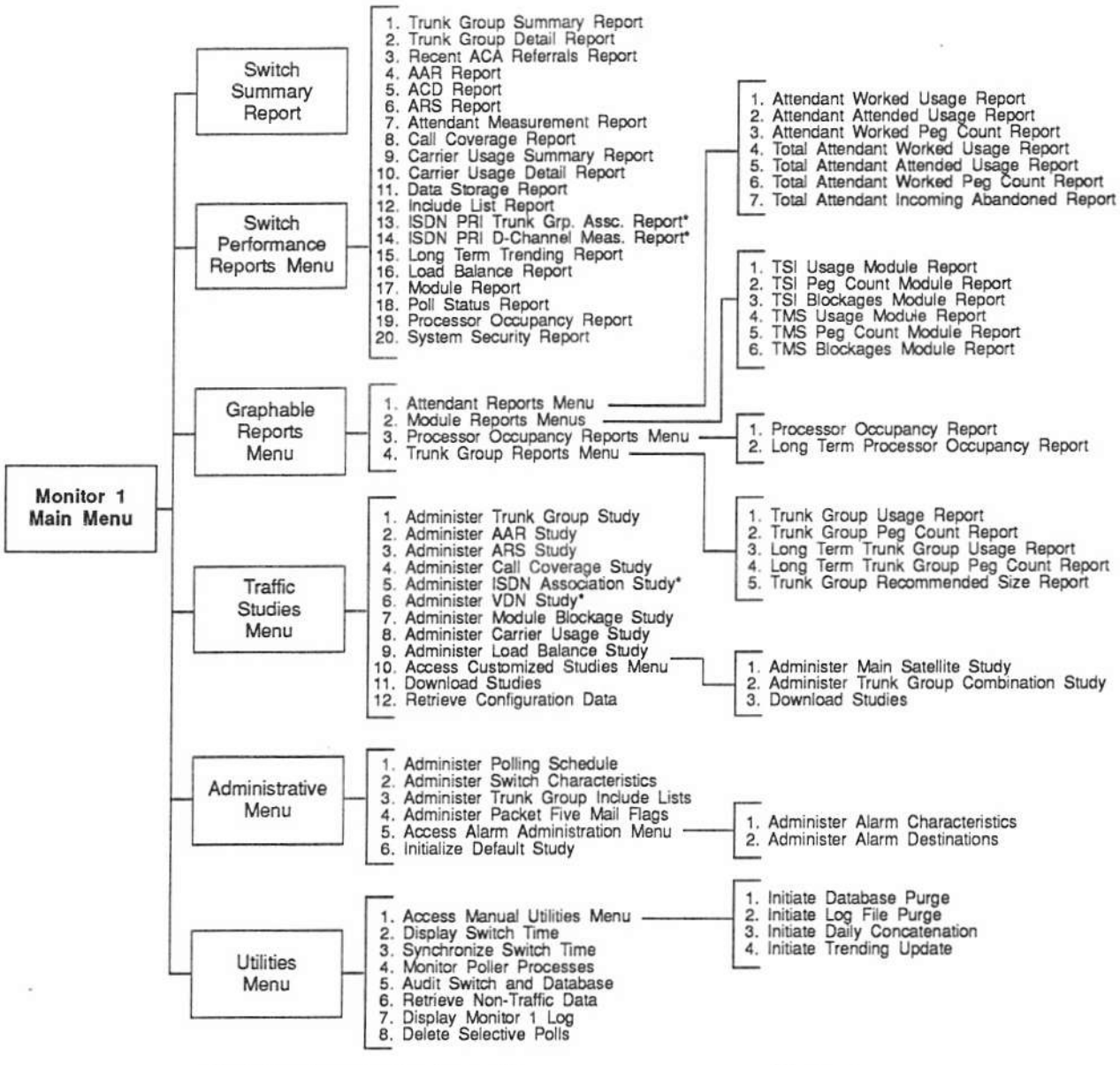
Generic 2/System 85 R2V4 Menu Structure



*Available only on the Generic 2 switch

BC19A3.cdr

OH 1B-3

GRAPHICS FILE: BC19A3.CDR

DISCUSSION

Overview

The menu structure diagrams are also in Section 2, Introduction to Monitor I of the Operations Manual.

DEFINITY® Monitor I is a system for gathering, analyzing and reporting voice and data traffic information about a telecommunications network.

Features

- Switch Summary Report
  - Snapshot of switch performance
- Switch Performance Reports
  - Detailed information about switch performance
- Graphable Reports
  - Data file can be downloaded to PC for Lotus-compatible graphs
- Traffic Studies
  - Optional and default studies
  - Polling schedule
- Administration
  - Polling schedule
  - Database setup
  - Alarms setup

DISCUSSION

Features (continued)

- Utilities
  - Database audit
  - Database and log purge
  - Synchronize clocks

Reports

The following is a list of available Monitor I reports:

- Daily or weekly
- Hourly or daily
- All or peak value retrieval
- CCS or Erlang measurement unit
- Measurements needed frequently
- Optional measurements
- Terminal, printer, or file
- Trends over time
- Custom reports
- PC Graphics
- Multiple switches

SUMMARY

This lesson discusses the following:

- Features
- Report Features

LESSON 1C

The Monitor I User Interface

Lesson 1C Objectives

Upon successful completion of this lesson the student will be able to:

- **Log in and out of Monitor I**
- **Access the main menu and sub-menus as needed**
- **Perform the commonly used escape commands to:**
  - **Access the UNIX® shell**
  - **Read UNIX mail**
  - **Access INFORMIX®-SQL**
  - **Display the switch name**
- **Use the reference materials needed to operate Monitor I**

OH 1C-1

LESSON INTRODUCTION

This lesson provides hands-on experience using the Monitor I user interface.

LESSON OBJECTIVES

Upon successful completion of this lesson the student will be able to:

- Log in and out of Monitor I
- Access the main menu and sub-menus as needed
- Perform the commonly used escape commands to:
  - Access the UNIX® shell
  - Read UNIX mail
  - Access INFORMIX®-SQL
  - Display the switch name
- Use the reference materials needed to operate Monitor I

DISCUSSION

Monitor I Interface

Escape (Shell) Commands

UNIX® functions from within Monitor I.

INFORMIX® PERFORM Screens

- Input and return data through menu
- Enter, review, change, and delete Monitor I data about traffic studies

Documentation

The following are useful references in the Operations Manual:

- Appendix A - Interpreting Monitor I Reports
  - Provides a copy of reports and field definitions.
- Appendix B - Switch Traffic Data
  - Provides descriptions of the traffic data contained in each packet.
- Appendix C - Monitor I Equations
  - Lists data calculations used in reports.
- Appendix D - Mail and Error Messages
  - Provides definitions of error messages encountered either by UNIX® mail or in the *mtmlog*

DISCUSSION

Documentation (continued)

- Appendix E - Daily Concatenation Tables
  - Lists daily concatenation by switch type and release
- Appendix F - Schema Assignment Files
  - Provides TP (poll) table names for measurements
- Appendix G - Information About Alarming
  - Provides information about administering alarm parameters and about choosing alarm destinations
- INFORMIX®-SQL Commands
  - Operations Manual, Section 2 Introduction to Monitor I - *INFORMIX-SQL Commands*

These documents are also listed in Section 1 of the Operations Manual.

Other useful documentation:

- *UNIX System Administration Guide and Reference Manual*
- *Traffic Data Analysis Guide*
- *INFORMIX-SQL Users Guide and Reference Manual*

SUMMARY

This lesson discussed the following:

- Log in and out
- Get to the menus
- Perform escape (shell) commands
- Access INFORMIX® PERFORM screens

UNIT TEST **Introduction to Monitor I**

TEST REVIEW **Introduction to Monitor I**

UNIT 2

Setting Up Traffic Studies

Unit 2 Objectives

Upon successful completion of this unit the student will be able to:

- **Initialize traffic studies for a switch**
- **Set up optional traffic studies**
- **Change current traffic polling schedules and studies**

OH 2-1

CH-6

UNIT INTRODUCTION

This unit provides hands-on experience in:

- Initializing Monitor I for traffic studies
- Setting up traffic studies
- Changing polling schedules and studies

UNIT OBJECTIVES

Upon successful completion of this unit the student will be able to:

- Initialize traffic studies for a switch
- Set up optional traffic studies
- Change current traffic polling schedules and studies

LESSON 2A

Initializing Traffic Studies

Lesson 2A Objectives

Upon successful completion of this lesson the student will be able to:

- **Create a switch database for each switch Monitor I will support**
- **Initialize the switch databases**
- **Activate the polling control mechanism**
- **Schedule Monitor I polling for each switch**

OH 2A-1

LESSON INTRODUCTION

This lesson provides hands-on experience initializing Monitor I to collect traffic data from a switch.

LESSON OBJECTIVES

Upon successful completion of this lesson the student will be able to:

- Create a switch database for each switch Monitor I will support
- Initialize the switch databases
- Activate the polling control mechanism
- Schedule Monitor I polling for each switch

DISCUSSION

Implementing Monitor I

A separate INFORMIX® database is created on Monitor I for each switch Monitor I will support.

Monitor I connects to the switch, retrieves information, and sets up traffic studies.

Create Switch Database for Each Switch

- Enter database name at `Enter target switch` prompt
- Access to switch is authorized by AT&T during installation (all switches, G2 also requires agent IDs)
- Empty database is created
- Number of switches Monitor I can support depends on:
  - Hardware configuration
  - Database storage option chosen

See the *Planning and Configuration Guide* for details.

  - Procedure must be performed again if another switch is added later

Polling Options

AT&T DEFINITY® Monitor I Polling Options				
Option	Storage	Hours	#Polls	Disk Usage
LIMITED				
Hourly	1 Week	10	50	
Daily	6 Weeks		30	20Mb
STANDARD				
Hourly	2 Weeks	10	140	
Daily	13 Weeks		30	40Mb
EXTENDED				
Hourly	2 Weeks	24	336	
Daily	13 Weeks		91	80Mb
ROTATING SWITCH POLLING	Maximum Polling capacity for Monitor I is : **3B2/600** 15 switches for G2, 85 and DIMENSION® Communication System 30 switches for G1 and System 75 **6386E/33 and 6386SX/EL** 20 switches for G2, 85 and DIM 40 switches for G1 and 75			

M1000A06.chp

OH 2A-2

GRAPHICS FILE: M1000A06.CHP

DISCUSSION

Initialize Switch Databases

- `Initialize Default Studies` menu
- Database must be initialized before polling can be scheduled
- Monitor I connects to switch and populates TC tables with System Translations from Packet 1
- Data is gathered from `List Measurement Trunk-Group` screen (Generic 1 and System 75)
- Default studies set up for existing switch facilities
- Switch connected again to sequentially download default studies to switch in proc form (performed as a background activity)
- Re-initialization is not necessary however, initialization must be performed before the switch can be polled
- If extensive changes are made to telecommunications facilities, must reinitialize
- If audit reports show discrepancies, must reinitialize
- Failures and completion are indicated by UNIX® mail
- *mtmlog* tells the time and type of failure
- Types of failures include: connection failures, communication failures, or database related errors (unlikely)
- Do NOT attempt next step until initialization complete.

DISCUSSION

Activate Polling Control Mechanism

Use *pollstart* command (only used at time of switch initialization unless Monitor I is turned off) to activate polling control mechanism

- Controls poller on all the switches supported by Monitor I
- Enables polling of all switches supported by Monitor I
- Known internally as *mtmguard*

Schedule Monitor I Polling for Each Switch

- Use `Administer Polling Schedule`
- Define how often to poll switches, which packets to poll, and which ports to use to gain access to switch data
- Default packets polled are 4, 5, 6, and 10
- Check that initialization is complete and polling control mechanism is activated (*ps -ef | grep mtmguard*)

PRACTICE EXERCISE

1. Which switch database(s) is/are on this Monitor I machine? BLUE, g31225, JUDY ORANGE, STEVE DAVE, GREEN, NCSC, R201D LESLIE JECIL

2. How do you add a new switch database?
SWITCH

3. Is polling activated for the **Orange** switch?
ND

4. Which packets are being polled?
3, 4, 5, 6, 7, 8, 9, 11, 12, 13

5. Which switch release is the **Orange** switch?
SYS 8 5 R2V5

EXERCISE REVIEW

1. Which switch database(s) is/are on this Monitor I machine?

At the enter switch command type an L (list), this will list the switches (orange, blue, green, and NCSC and any other that have been added locally)

2. How do you add a new switch database?

At the enter swictch command, type in the new switch name and complete the screens that come up, TSC must complete the process.

3. Is polling activated for the **Orange** switch?

Access the administration menu. Administer the polling schedule, (tells which packets are being polled). Check the polling activated field, (polling will have yes or no).

4. Which packets are being polled?

Check the same screen as above, look at the packet selection field.

5. Which switch release is the **Orange** switch?

Access the administration menu, check the switch release data field in the administration switch characteristics

SUMMARY

Initializing traffic studies requires:

1. Creating a switch database for each switch
2. Initializing the switch database
3. Activating the polling control mechanism
4. Scheduling Monitor I polling

LESSON 2B

Setting Up Optional Studies

Lesson 2B Objectives

Upon successful completion of this lesson the student will be able to:

- **Describe what information is provided by each study**
- **Designate different or additional packets to be polled**
- **Set up traffic studies for reports that cannot be produced using the Monitor I defaults**
- **Download a traffic study to the switch**

OH 2B-1

LESSON INTRODUCTION

This lesson provides hands-on experience setting up traffic studies for reports that are not default studies.

LESSON OBJECTIVES

Upon successful completion of this lesson the student will be able to:

- Describe what information is provided by each study
- Designate different or additional packets to be polled
- Set up traffic studies for reports that cannot be produced using the Monitor I defaults
- Download a traffic study to the switch

DISCUSSION

Default Studies

Default studies consist of the following:

- Defaults vs. optional
- Packets 4, 5, 6, and 10
- Switch Summary Reports uses all default packets
- Optional reports have default data set up

Optional Traffic Studies

Operations Manual Page _____

Optional traffic studies consist of the following:

- AAR, ARS, Call Coverage
  - Determine if system is routing calls efficiently and cost-effectively
  - Access `Retrieve Non-Traffic Data` - obtain trunk group information
- Carrier Usage
  - Study busy patterns within single module
  - `Access Retrieve Configuration Data` - prevent mismatching data
- ISDN
  - Study trunk groups with ISDN associations (Generic 2 switch)
- Load Balance
  - Balance traffic volume across all modules
  - Minimize intermodule, least efficient call volume

DISCUSSION

Optional Traffic Studies (continued)

- Module Blockage
  - Provide traffic data on modules that make up switch
- VDN (Vector Directory Number)
  - Study the VDN within the network (Generic 2)

Download Studies

- After a study is administered, the Download Studies transaction is run to transfer the study information to the switch.
- A mail message indicates when the download is complete.

Designate Different or Additional Packets

- Locate packet(s) in Appendix B - Switch Traffic Data.
- Change Administer Poll Schedule to designate different or additional packets.
- Should check 'Studies Currently Set Up' on the Switch Summary Report first. (It also lists packets currently polled.)

PRACTICE EXERCISE

1. Set up an AAR Study.
2. Change the polling schedule to include the AAR packet. Also change: Polling Days = 7 days a week, and Poll Start Hour = 8:00 a.m.
3. List the steps to download a study.

EXERCISE REVIEW

1. Set up an AAR Study.
2. Change the polling schedule to include the AAR packet. Also change: Polling Days = 7 days a week, and Poll Start Hour = 8:00 a.m.
3. List the steps to download a study.

1. Access traffic studies menu, administer AAR

2. Access the administration menu, administer the polling schedule

3. Access the studies menu, download the studies

SUMMARY

This lesson discussed the following:

- Default Studies
- Set Up Optional Traffic Study
- Designate Packets
- Download the Study

LESSON 2C

Making Changes

Lesson 2C Objectives

Upon successful completion of this lesson the student will be able to:

- **Change the default polling schedule**
- **Change trunk group information**
- **Remove a pending or current study**
- **Remove a switch database**
- **Rotate Monitor I switches**
- **Deactivate the polling control mechanism**
- **Stop polling of specific switches**
- **Delete selective polls**
- **Display and synchronize the switch and Monitor I clocks**
- **Display switches presently being polled**

OH 2C-1

LESSON INTRODUCTION

This lesson provides hands-on experience changing the system initialization.

LESSON OBJECTIVES

Upon successful completion of this lesson the student will be able to:

- Change the default polling schedule
- Change trunk group information
- Remove a pending or current study
- Remove a switch database
- Rotate Monitor I switches
- Deactivate the polling control mechanism
- Stop polling of specific switches
- Delete selective polls
- Display and synchronize the switch and Monitor I clocks
- Display switches presently being polled

DISCUSSION

Making Changes

Change Default Polling Schedule

- Change any information about the schedule including frequency and packet selection
- Remove the study to save disk space
- Select `Administer Polling Schedule` from `Administrative Menu`

Change Trunk Group Information

- Add or remove a trunk group from the Monitor I database
- Select `Administer Trunk Group Study` from `Traffic Studies Menu`

Remove Pending Study

- Remove studies mistakenly entered; study not downloaded
- Use `Traffic Studies Menu` screens

Remove Current Study

- Delete a study; study downloaded
- Use `Traffic Studies Menu` screens

DISCUSSION

Making Changes (continued)

Remove Switch Database

- Remove if new or different switch
- Removes everything
- Use *switch_rmv* command

Rotate Switches

- Rotate polling among switches that were configured into Monitor I but are not currently being polled.
- Use *switch_dct* command to deactivate and *switch_act* command to activate.

Deactivate Polling Control Mechanism

Certain Monitor I maintenance routines, such as backups and upgrades, may require that polling be stopped for all switches.

- Stops polling completely
- Use *pollend* command

Stop Polling of Specific Switch

Stop polling of a specific switch will:

- Change a polling schedule immediately
- Does not stop a poll in progress.

To stop polling:

- Access `Administer Polling Schedule` and change **y** in the field labeled `Polling Activated` to an **n**.

DISCUSSION

Making Changes (continued)

Delete Selective Polls

- Delete polls that may distort trending data.
- Access `Delete Selective Polls` from `Utilities Menu`

Display and Synchronize Clocks

- Bring the switch clock and the Monitor I clock into synchronization
- Synchronize if greater than 5 minutes difference
- Access `Synchronize Switch Time` and `Display Switch Time` from `Utilities Menu`

Monitor Polling Processes

- Ensure that all desired switches are being polled.
- Access `Monitor Polling Processes` from `Utilities Menu`

Making Changes - Summary

- Change the default polling schedule.
- Change trunk group information.
- Remove a pending study.
- Remove a current study.
- Remove a switch database.
- Rotate switches.
- Deactivate the Polling Control Mechanism.
- Stop polling of a specific switch.
- Delete selective polls.
- Monitor poller processes.
- Display and synchronize clocks.
- Delete a polling of a selective switch.

OH 2C-2

SUMMARY

This lesson discussed the following:

- Change the default polling schedule
- Change trunk group information
- Remove a pending study
- Remove a current study
- Remove a switch database
- Rotate switches
- Deactivate the Polling Control Mechanism
- Stop polling of a specific switch
- Delete selective polls
- Monitor poller processes
- Display and synchronize clocks
- Delete a polling of a selective switch

UNIT TEST **Setting Up Traffic Studies**

TEST REVIEW **Setting Up Traffic Studies**

UNIT 3

Monitor I Traffic Reports

Unit 3 Objectives

Upon successful completion of this unit the student will be able to:

- **Access Monitor I reports**
- **Schedule Monitor I reports**
- **Locate needed information in the reports**
- **Interpret the report results**
- **Prepare a graphics file for downloading to a PC**

OH 3-1

UNIT INTRODUCTION

This unit contains lessons covering Monitor I reports.

UNIT OBJECTIVES

Upon successful completion of this unit the student will be able to:

- Access Monitor I reports
- Schedule Monitor I reports
- Locate needed information in the reports
- Interpret the report results
- Prepare a graphics file for downloading to a PC

LESSON 3A

Accessing and Scheduling Reports

Lesson 3A Objectives

Upon successful completion of this lesson the student will be able to:

- **Access Monitor I reports**
- **Provide user access (permission) to schedule reports**
- **Schedule reports to run once or periodically**

OH 3A-1

LESSON INTRODUCTION

This lesson provides hands-on experience accessing the reports and scheduling them to run once or periodically.

LESSON OBJECTIVES

Upon successful completion of this lesson the student will be able to:

- Access Monitor I reports
- Provide user access (permission) to schedule reports
- Schedule reports to run once or periodically

DISCUSSION

Overview of Reports

Accessing and scheduling reports consist of the following:

- Three types of report formats:
  - *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* - A sum for the specified date range.
- Traffic usage on the reports can be expressed in two types of measurements:
  - *CCS* = 100 seconds of usage.
  - *Erlangs* = 3600 seconds or an hour of usage. 1 Erlang equals 36 CCS.
- Hourly or Daily
  - Most reports ask for hourly or daily figures.
  - If polling for the switch took place daily and user asks for an hourly report, the message "No data available" will be received.
  - If polling was daily and report requested for daily/all, the report will print the highest hour's values for each day polled.
    - If report requested for daily peak, report will print the highest hour for the highest day during the specified study period.
  - If polling was hourly and daily results are requested, report will be daily concatenated figure Monitor I has selected each night.
    - For peak registers, this figure represents the highest hourly value for each day.
    - Available only on reports that are concatenated.

DISCUSSION

Overview of Reports (continued)

- Some reports contain values which accumulate during poll periods
  - If daily report requested, total of all hours within the requested peak polling period are reported (all options)

° Scheduling

- `Long term queue` - must set up a schedule in the UNIX® *cron* utility.
- `Short term queue` - must use the UNIX *at* command.
- Access to scheduling: `cron` file

° Standard traffic reports:

- Switch Summary Reports - overview of switch.
- Switch Performance Reports - more specific switch information.
- Graphable Reports - produce a report that can be downloaded and graphed.

DISCUSSION

Report Times

- DEFINITY® Generic 2/System 85/DIMENSION®
  - Start Hour - End Hour
  - Show the end of the poll hour on the report
  - Start Hour of 9 means the hour between 8:00 and 9:00 a.m.
- DEFINITY Generic 1/System 75
  - Begin Time - End Time
  - Show the beginning of the poll hour on the report
  - Begin Time of 9 means the hour between 9:00 and 10:00 a.m.

PRACTICE EXERCISE

Your Instructor has added your student logins to the at.allow and cron.allow files.

1. Schedule a short-term report of your choice. Schedule it to print in 30 minutes.

2. Schedule a long-term report to print every week on what ever day today is. Schedule it in 30 minutes.

EXERCISE REVIEW

Your Instructor has added your student logins to the at.allow and cron.allow files.

1. Schedule a short-term report of your choice. Schedule it to print in 30 minutes.

2. Schedule a long-term report to print every week on what ever day today is. Schedule it in 30 minutes.

SUMMARY

This lesson discussed the following:

- Three types of report formats:
  - All
  - Peak
  - Total
- Traffic usage on the reports can be expressed in two types of measurement:
  - CCS
  - Erlangs
- Hourly vs. Daily
- Scheduling
  - Long term queue - *cron*
  - Short term queue - *at*
  - User access to schedule reports
- Standard traffic reports
  - Switch Summary Reports
  - Switch Performance Reports
  - Graphable Reports

LESSON 3B

Interpreting the Switch Summary Report

Lesson 3B Objectives

Upon successful completion of this lesson the student will be able to:

- **Interpret the Switch Summary Report**

OH 3B-1

LESSON INTRODUCTION

This lesson provides experience interpreting the Switch Summary Report which provides an overview of switches polled by Monitor I.

LESSON OBJECTIVES

Upon successful completion of this lesson the student will be able to:

- Interpret the Switch Summary Report

DISCUSSION

Operations Manual
Page _____

Switch Summary Report Overview

Interpreting the Switch Summary report consists of the following:

- Available automatically upon switch initialization; no special administration required
- Provides a quick look at the performance of one switch
- Summarizes the state of the major traffic components of a switch
- Points to potential trouble spots
- Provides peak data (format) in CCS and Erlangs (output units) from packets 4, 5, 6, and 10 (the default packets)
- Contains information divided into eight sections:

1. Peak Processor Information
   - Gathers data during the time of heaviest call count or processor occupancy
2. Peak Module Information
   - Alerts to possible blockages inside and between network modules
3. Peak Attendant Information
   - Gives the date and time attendants measured highest worked group use

DISCUSSION

Switch Summary Report Overview (continued)

4. Total Security Violations
   - Provides data on invalid attempts made to a remote access trunk group or system management ports
5. Studies Currently Set Up
   - Lists special studies previously set up using Traffic Studies and/or the Customized Studies Menus
   - Reminds about data collected and reports available
6. Total Poll Information
   - Displays when and how Monitor I is calling the switch and retrieving traffic data
7. Peak Trunk Group Threshold Violations
   - Reports on trunks violating their designed GOS (Grade of Service)
8. Total Recent ACA Referrals for Trunk Groups
   - Provides data on the 32 most recent referrals per poll

DISCUSSION

Switch Summary Report Overview (continued)

Switch Summary Report on a DEFINITY® Communications System Generic G3i

The switch summary report for the G3i switch is a management report that provides a snapshot of the overall health of the system and also alerts the user to any potential problems within the switch.

- Peak processor information
- Peak attendant information
- Security violations
- ARS patterns
- Total poll information
- Peak trunk group threshold violations

For more information on the above refer to the DEFINITY® Monitor I Operations Guide Appendix A.

SUMMARY

This lesson discussed the following:

- The switch summary report is divided into eight sections
- Appendix A helps analize information in the report

LESSON 3C

Interpreting Switch Performance Reports

Lesson 3C Objectives

Upon successful completion of this lesson the student will be able to:

- **Interpret the Switch Performance Reports**

OH 3C-1

LESSON INTRODUCTION

This lesson provides experience interpreting Switch Performance Reports which provides specific information on switches polled by Monitor I.

LESSON OBJECTIVES

Upon successful completion of this lesson the student will be able to:

- Interpret the Switch Performance Reports

DISCUSSION

Overview

Switch performance reports provide data on:

- Provide data on the following:
  - Trunk group activity
  - Attendants
  - Call coverage
  - Processor occupancy
  - Facilities
- Switch performance reports:

Refer to the Operations Manual, Section 5 for a list of reports by switch type or refer to the Menu Structure picture.

DISCUSSION

Overview (continued)

To reference the following reports to specific switches refer to the Monitor I Operations Guide section 5.

- AAR (Automatic Alternate Routing)
- ACD (Automatic Call Distribution)
- ARS (Automatic Route Selection)
- Attendant Measurement
- Call Coverage
- Carrier Usage Detail
- Carrier Usage Summary
- Data Storage
- Data Storage report for a DEFINITY® Communications System Generic 3
- Hunt Group
- Include List
- ISDN-PRI Call by Call report for a DEFINITY® Communications System Generic 3
- ISDN PRI Trunk Group Association
- ISDN PRI D-Channel Measurement
- Lightly Used Trunk
- Load Balance
- Long Term Trending
- Module
- Outage Trunk
- Poll Status
- Processor Occupancy
- Recent ACA (Automatic Circuit Assurance) Referrals
- Security Violation
- Switch Summary

DISCUSSION

Overview (continued)

- System Security
- Trunk Group Detail
- Trunk Group Summary
- Trunk Group Violation
- UCD
- World Class Routing

DEFINITY® Communications System Generic 3i processor occupancy reports

These reports are different than the DEFINITY® Communications System Generic 2 reports. Total processor occupancy is not spelled out on DEFINITY® Communications System Generic 2.1 reports.

For more information on the above, refer to the DEFINITY® Monitor I Operations Guide, Appendix A.

- World Class Routing Reports are produced on a DEFINITY® Communications System Generic 2.2 switch
  - WCR (World Class Routing) patterns ensure that calls from both the public and private networks are routed through the public and private network in the most cost-efficient way
  - WCR (World Class Routing) replaces both AAR and ARS measurements in Generic 2.1, System 85 and DIMENSION. Packet seven now contains the WCR data which formally included data for ARS. Packet eight which contained AAR data is no longer functional for Generic 2.2

For more information on packets seven and eight refer to the DEFINITY® Monitor I Operations Guide Appendix B.

DISCUSSION

Switch Performance Report Overview (continued)

- A maximum of 63 patterns are available for WCR
- A WCR report cannot be generated with the Monitor I default study packets
- WCR uses eight networks. Networks one through seven are used for routing. Network zero provides an interface for the Internal Dialing Plan

For more information on the above refer to the DEFINITY® Monitor I Operations Guide section five.

For a sample of a WCR report refer to the DEFINITY® Monitor I Operations Guide Appendix A

° WCR call coverage studies how well the system is routing calls in most cost-effecient way

For more information on the above refer to the DEFINITY® Monitor I Operations Guide, section six.

PRACTICE EXERCISE

Interpreting Switch Performance Reports

1. Pull an ARS Report from the Orange database for April 26, 1990. During the 11:00 a.m. hour, how many calls went to Preference 2 for Pattern 5?

Did Preference 2 for Pattern 5 have overflow?

What does overflow mean?

Numerous employees try to make calls they are not authorized to make. Are these calls counted in overflow?

Do you ever see overflow on Preference 1?

PRACTICE EXERCISE

Interpreting Switch Performance Reports (continued)

If yes, what does it indicate? If no, why not?

_____
_____
_____

What time of day routing plan was in effect?

_____
_____
_____

From glancing at the report, do you think we are using two time of day plans?

_____
_____
_____

2. Pull a Poll Status Report from the Green database from April 17, 1990 to May 6, 1990. Also pull a Poll Status Report from the Orange database for April 24, 1990 to April 25, 1990. Are there any differences? Why or why not?

_____
_____
_____

3. Pull a Data Storage Report for the Green database from April 17, 1990 to May 6, 1990. What is it showing you?

_____
_____
_____

PRACTICE EXERCISE

Interpreting Switch Performance Reports (continued)

Pull the Data Storage Report for the Orange database from April 24, 1990 to May 1, 1990. What is the difference?

4. Pull a Call Coverage Report for the Orange database for April 27, 1990. How many calls were abandoned during the 8:00 a.m.. hour in Coverage Group 1?

Were most of the abandoned calls internal or external?

Would you worry about internal abandoned calls?

Which coverage path being studied was offered the most calls?

How many calls were offered?

PRACTICE EXERCISE

Interpreting Switch Performance Reports (continued)

How many calls did the coverage group answer?

_____
_____
_____

What percent of the principal's calls were offered to coverage path 1?

_____
_____
_____

5. Pull a Switch Summary Report for the Orange database for April 24, 1990 to April 30, 1990. Notice that Trunk Group 40 was not meeting the desired GOS. What two reports give you more information on this Trunk Group?

_____
_____
_____

Pull a Trunk Group Summary report for the same time frame. What was the Total Peg Count and Average Holding Time for the peak busy hour?

_____
_____
_____

What percent of the time during the busy hour were all trunks busy?

_____
_____
_____

PRACTICE EXERCISE

Interpreting Switch Performance Reports (continued)

Pull a Trunk Group Detail report for the same time frame. Were the calls at the peak hour voice or data?

What was the average trunk usage?

The trunk group has 12 trunks and needs 15 for P.03 GOS. What is the actual GOS?

6. Using the Switch Summary Report pulled in #5 above, peak busy hour for the attendants indicates more than 10% calls abandoned. You need more information to try to correct the problem. What report will you request?

Pull an Attendant Report for the same time frame. How many calls did all attendants answer during the peak hour?

PRACTICE EXERCISE

Interpreting Switch Performance Reports (continued)

How many abandoned?

_____
_____
_____

What consoles were manned at the peak hour and for how long?

_____
_____
_____

Can this report be pulled in seconds?

_____
_____
_____

Is there any reason you might want this report to be pulled in seconds?

_____
_____
_____

Which hour had the highest number of calls answered?

_____
_____
_____

What was the average time it took the attendants to process a call?

_____
_____
_____

PRACTICE EXERCISE

Interpreting Switch Performance Reports (continued)

OPTIONAL EXERCISES

7. Pull an ISDN-PRI Call by Call report on a DEFINITY® Communications System Generic 3i

Refer to the DEFINITY® Monitor I Operations Guide, Appendix A.

8. Pull an ACD Report from the Orange database for 4/24/90 to 4/30/90, for the 8:00 - 16:00 hours. What was the total peg for ACD Group 1 for the peak hour?

What was the average service time for group 2 at the peak hour?

How many calls which were directed to split 2 disconnected?

How many calls did agent 33 take during the peak hour?

PRACTICE EXERCISE

Interpreting Switch Performance Reports (continued)

9. Pull a System Security Report from the Orange database using the same dates and time as question 7. Were there any invalid attempts to use remote access?

10. Using the same date and times, pull a Load Balance Report. What module had the highest intramodule usage?

    Module 0-1 had peak intermodule usage of 323 CCS. What type calls had the highest usage?

    Which module appears to receive the highest number of incoming calls?

11. Pull a Processor Occupancy Report from the Orange database for 4/24/90 to 4/30/90 for 8:00 to 16:00. What was the total processor occupancy at peak?

    What was the average holding time at peak call count?

EXERCISE REVIEW

1. Pull an ARS Report from the Orange database for April 26, 1990. During the 11:00 a.m.. hour, how many calls went to Preference 2 for Pattern 5?

Did Preference 2 for Pattern 5 have overflow?

What does overflow mean?

Numerous employees try to make calls they are not authorized to make. Are these calls counted in overflow?

Do you ever see overflow on Preference 1?

If yes, what does it indicate? If no, why not?

What time of day routing plan was in effect?

From glancing at the report, do you think we are using two time of day plans?

2. Pull a Poll Status Report from the Green database from April 17, 1990 to May 6, 1990. Also pull a Poll Status Report from the Orange database for April 24, 1990 to April 25, 1990. Are there any differences? Why or why not?

EXERCISE REVIEW

Interpreting Switch Performance Reports (continued)

3. Pull a Data Storage Report for the Green database from April 17, 1990 to May 6, 1990. What is it showing you?

Pull the Data Storage Report for the Orange database from April 24, 1990 to May 1, 1990. What is the difference?

4. Pull a Call Coverage Report for the Orange database for April 27, 1990. How many calls were abandoned during the 8:00 a.m.. hour in Coverage Group 1?

Were most of the abandoned calls internal or external?

Would you worry about internal abandoned calls?

Which coverage path being studied was offered the most calls?

How many calls were offered?

How many calls did the coverage group answer?

What percent of the principal's calls were offered to coverage path 1?

EXERCISE REVIEW

Interpreting Switch Performance Reports (continued)

5. Pull a Switch Summary Report for the Orange database for April 24, 1990 to April 30, 1990. Notice that Trunk Group 40 was not meeting the desired GOS. What two reports give you more information on this Trunk Group?

Pull a Trunk Group Summary report for the same time frame. What was the Total Peg Count and Average Holding Time for the peak busy hour?

What percent of the time during the busy hour were all trunks busy?

Pull a Trunk Group Detail report for the same time frame. Were the calls at the peak hour voice or data?

What was the average trunk usage?

The trunk group has 12 trunks and needs 15 for P.03 GOS. What is the actual GOS?

6. Using the Switch Summary Report pulled in #5 above, peak busy hour for the attendants indicates more than 10% calls abandoned. You need more information to try to correct the problem. What report will you request?

Pull an Attendant Report for the same time frame. How many calls did all attendants answer during the peak hour?

How many abandoned?

What consoles were manned at the peak hour and for how long?

Can this report be pulled in seconds?

EXERCISE REVIEW

Interpreting Switch Performance Reports (continued)

Is there any reason you might want this report to be pulled in seconds?

Which hour had the highest number of calls answered?

What was the average time it took the attendants to process a call?

OPTIONAL EXERCISES

7. Pull an ISDN-PRI Call by Call report on a DEFINITY® Communications System Generic 3i

Refer to the DEFINITY® Monitor I Operations Guide Appendix A.

8. Pull an ACD Report from the Orange database for 4/24/90 to 4/30/90, for the 8:00 - 16:00 hours. What was the total peg for ACD Group 1 for the peak hour?

What was the average service time for group 2 at the peak hour?

How many calls which were directed to split 2 disconnected?

How many calls did agent 33 take during the peak hour?

9. Pull a System Security Report from the Orange database using the same dates and time as question 7. Were there any invalid attempts to use remote access?

EXERCISE REVIEW

Interpreting Switch Performance Reports (continued)

10. Using the same date and times, pull a Load Balance Report. What module had the highest intramodule usage?

Module 0-1 had peak intermodule usage of 323 CCS. What type calls had the highest usage?

Which module appears to receive the highest number of incoming calls?

11. Pull a Processor Occupancy Report from the Orange database for 4/24/90 to 4/30/90 for 8:00 to 16:00. What was the total processor occupancy at peak?

What was the average holding time at peak call count?

SUMMARY

This lesson discussed the following:

- Information on Switch Performance Reports:
  - Trunk group activity
  - Attendants
  - Call coverage
  - Processor occupancy
  - Facilities
- Interpret reports
  - Appendix A

LESSON 3D

Graphics Reports

Lesson 3D Objectives

Upon successful completion of this lesson the student will be able to:

- **Send a traffic report to a file for graphics**
- **Display a graphics file format**

OH 3D-1

LESSON INTRODUCTION

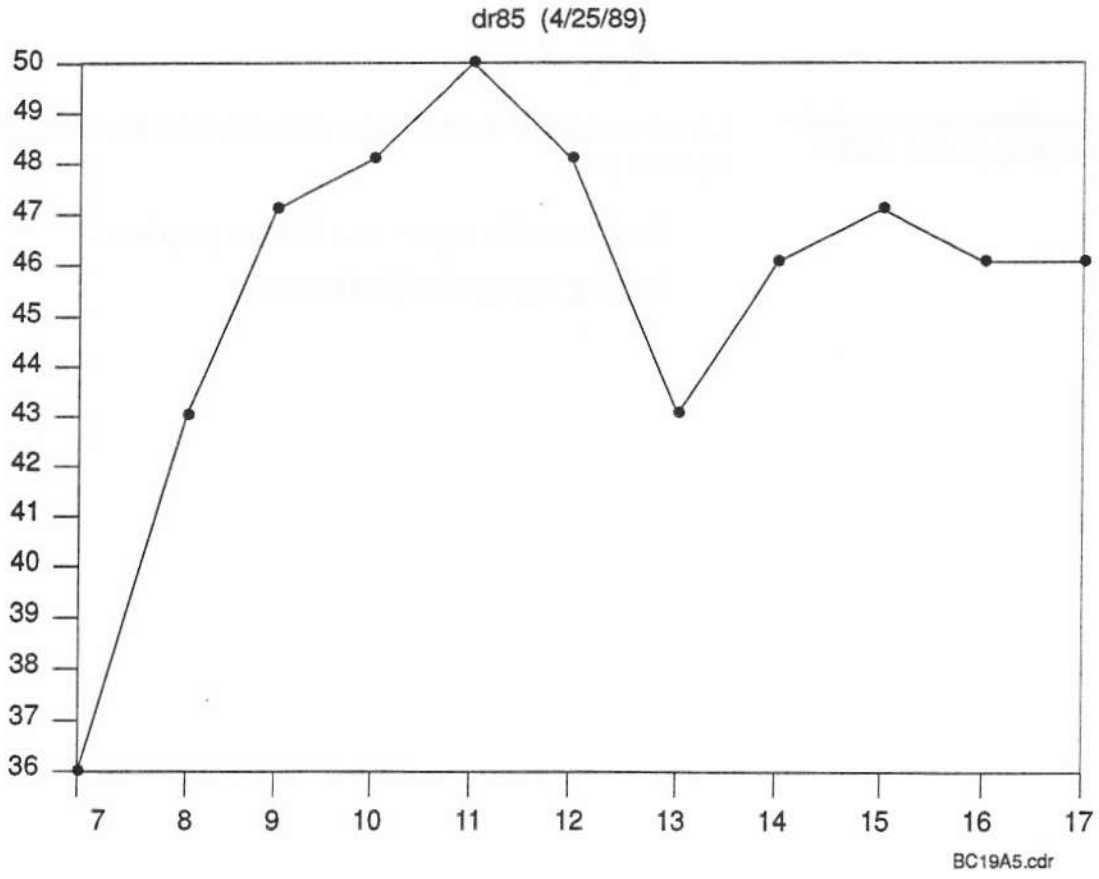
This lesson provides hands-on experience producing graphable reports.

LESSON OBJECTIVES

Upon successful completion of this lesson the student will be able to:

- Send a traffic report to a file for graphics
- Display a graphics file format

Processor Occupancy Graph - Sample



OH 3D-2

GRAPHICS FILE: BC19A5.CDR

DISCUSSION

Overview of Reports

- Four Submenus:

  1. Processor Occupancy Reports

- Measures average percentage of total possible time the main processor was used during the hour.
- Processor Occupancy - Gives hourly figure for the days of the study.
- Long Term - Gives peak processor occupancy per day for up to two weeks.

2. Attendant Reports

- Individual attendant - Number of calls handled, worked usage, and attended usage
- Total attendant - Calls handled, worked and attended usage, and incoming abandons
- 3. Module Reports
- TSI (Time Slot Interchanger) - Plot TSI peg counts, blockages, and usage against the specified time frame.
- (Generic 2 switch only) Can plot peg counts, usage, and blockages against time for the TMS (Time Multiplexed Switch)

DISCUSSION

Overview of Reports (continued)

4. Trunk Group Reports

- Graph usage and peg count data
- Long Term - Give data for up to two years.
- Trunk Group Recommended Size - Tells number of trunks needed to meet desired GOS (Grade of Service).

Graphics Data Files

- <filename>.WK1 extension
  - Compatible with LOTUS® 1-2-3 spreadsheet
  - Formatted in Monitor I so that each field of data adjusts to an individual cell in the spreadsheet program
  - Automatically generated in a spreadsheet format
- <filename>.CSV extension
  - Used with any LOTUS-compatible or noncompatible spreadsheet program
  - Must be imported into the spreadsheet program

Sample Graphics Report (.CSV Format)

Titles are not given for the fields in the report. They can be added later using the spreadsheet editor.

The numbers enclosed in < > are for field identification purposes and will not appear on the report.

<1> title of the report

<2> switch_name (01/01/89--02/01/89)

<3> 01/01/89

<4> 01/01/89

<5> 9

<6> 17

<7> type

<8> key

<9> time

<10> Usage

<11> Total

<12> Incoming

<13> Outgoing

<14> 6, <15>01/01/1989, <16> 9, <17> 4, <18> 2,
<19> 10,01/23/1989,11,4,6

OH 3D-3

DISCUSSION

Operations Manual
Page _____
and Appendix A

Field Definitions for Graphics Reports

<1> Title of the report

On reports measuring a particular attendant, module or trunk group, the assigned number is printed in the title (i.e., "Trunk Group 70 Peg").

<2> Switch name and requested timeframe for polling

<3> Report start date

<4> Report end date

<5> Start hour

<6> Ind hour

<7> Reserved

<8> Reserved

<9> Label for X-Axis

<10> What the report is measuring (i.e. Usage, Peg, Blockage)

<11> Legend for Y-Axis

<12> Additional legend for Y-Axis (incoming usage is not give for all reports)

<13> Additional legend for Y-Axis (outgoing usage is not given for all reports)

<14> This is the total usage

<15> Date of the poll

<16> Time of the poll

DISCUSSION

Field Definitions for Graphics Reports

<17> Incoming usage

<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> Report format

This line depicts how the information will actually look on the report. The last two items will appear only on those reports that give incoming and outgoing data.

PRACTICE EXERCISE

1. Create a file for any of the Graphable reports.
2. List the file using *ls -l*.
3. *Cat* the file.

EXERCISE REVIEW

1. Create a file for any of the Graphable reports.
2. List the file using *ls -l*.
3. *Cat* the file.

SUMMARY

This lesson dicussed the following:

- Four Submenus:
  1. Processor Occupancy Reports
  2. Attendant Reports
  3. Module Reports
  4. Trunk Group Reports
- Graphics Data Files
  - <filename>.WK1 extension
  - <filename>.CSV extension
- Sample graphed report
- Sample .CSV file and field definitions
- Create a graphics report file

UNIT TEST **Monitor I Traffic Reports**

TEST REVIEW **Monitor I Traffic Reports**

UNIT 4

System Administration and Utilities

Unit 4 Objectives

Upon successful completion of this unit the student will be able to:

- **Administer alarm features**
- **Perform manual utilities on demand**
- **Access and read the system error log**
- **Audit the switch and database**

OH 4-1

UNIT INTRODUCTION

This unit contains lessons covering System Administration features and utilities.

UNIT OBJECTIVES

Upon successful completion of this unit the student will be able to:

- Administer alarm features
- Perform manual utilities on demand
- Access and read the system error log
- Audit the switch and database

LESSON 4A

Alarm Administration

Lesson 4A Objectives

Upon successful completion of this lesson the student will be able to:

- **Describe the purpose of alarm administration**
- **List three standard alarm conditions**
- **Activate and deactivate the alarm manager**

OH 4A-1

LESSON INTRODUCTION

This lesson provides hands-on experience administering alarms.

LESSON OBJECTIVES

Upon successful completion of this lesson the student will be able to:

- Describe the purpose of alarm administration
- List three standard alarm conditions
- Activate and deactivate the alarm manager

DISCUSSION

Alarm Administration

- Necessary when the system is brought up and whenever alarm characteristics change

Alarm Characteristics

- Determine the severity level for each alarm condition
- Determine which destinations should be notified when a particular alarm condition is received

Alarm Destinations

- Specify destination names and phone numbers for Trouble Tracker so that alarms can be sent automatically

Appendix G: Page _____

Alarm Manager

- To begin alarming mechanism for each database
- Use *alarmstart* and *alarmend*

DISCUSSION

Administer Alarm Parameters

- PBX CPU Congestion

When predetermined CPU occupancy usage is greater than or equal to a predefined threshold an alarm can be generated to Trouble Tracker, E-Mail, or both. Maximum threshold varies per system, and this value is the Monitor I system default. This default can be changed.

For more information on the above refer to the DEFINITY® Monitor I Operations Guide section eight and Appendix F.

SUMMARY

- Alarm Administration
  - Administer Alarm Characteristics
  - Administer Alarm Destinations
  - Start Alarm Manager

LESSON 4B

Manual Utilities

Lesson 4B Objectives

Upon successful completion of this lesson the student will be able to:

- **Initiate Monitor I database purge**
- **Initiate logfile purge**
- **Initiate daily concatenation**
- **Initiate trending update**

OH 4B-1

LESSON INTRODUCTION

This lesson provides hands-on experience performing manual utilities.

LESSON OBJECTIVES

Upon successful completion of this lesson the student will be able to:

- Initiate Monitor I database purge
- Initiate logfile purge
- Initiate daily concatenation
- Initiate trending update

DISCUSSION

Initiate Database Purge

- Necessary when automatic cleanup fails (received mail)
- Automatic purging of poll data is every 24 hours at 1:30 a.m., and cleanup of trending data is every Sunday at 2:30 a.m.

Initiate Log File Purge

- Every 14 days, the *mtmlog* file automatically overwrites the *omtmlog* file
- Automatic purge occurs on the 14th and 28th day of the month at 3:00 a.m.

crontab

- Automatic purges are scheduled

Initiate Daily Concatenation

- Necessary when hourly data is not concatenated into daily totals
- If daily concatenation is designated on the specific study for a switch, concatenation must be initiated for data to be totaled.
- If re-activated when it was already activated, data for the day will be invalid.

Initiate Trending Update

- To save peak trunk group and processor occupancy polling data in the Monitor I database.
- Run automatically on Sunday at 12:00 noon.

SUMMARY

- Database Purge
- Logfile Purge
- Daily Concatenation
- Trending Update

LESSON 4C

Monitor I Log

Lesson 4C Objectives

Upon successful completion of this lesson the student will be able to:

- **Display and read the Monitor I log**
- **Locate the Monitor I log on UNIX**

OH 4C-1

LESSON INTRODUCTION

This lesson provides hands-on experience accessing and reading the system error log.

LESSON OBJECTIVES

Upon successful completion of this lesson the student will be able to:

- Display and read the Monitor I log
- Locate the Monitor I log on UNIX

DISCUSSION

Overview

- Displays specific targets, processes, and dates
- Prompts for a start date to view
- Can display from *omtmlog*
- Can search by:
  - Target name
  - Process name
  - Both target and process names
- Can also display the log from UNIX®

SUMMARY

- Monitor I Log
  - Display from Monitor I or UNIX
  - Select date(s) to display
  - Searches

LESSON 4D

Audit Switch and Database

Lesson 4D Objectives

Upon successful completion of this lesson the student will be able to:

- **Describe reasons for auditing a switch and Monitor I database**
- **Perform a switch and Monitor I audit**

OH 4D-1

LESSON INTRODUCTION

This lesson provides hands-on experience auditing the switch and database.

LESSON OBJECTIVES

Upon successful completion of this lesson the student will be able to:

- Describe reasons for auditing a switch and Monitor I database
- Perform a switch and Monitor I audit

DISCUSSION

Purpose for Auditing

- Ensure that Monitor I has stored correct information about hardware and study assignments of a switch and that there are no discrepancies between switch data and Monitor I data
- If you suspect that there are differences between the data contained in the database and the data on the switch

Options

- Switch Configuration Report
- Database Configuration Report
- Configuration Differences Report
- Switch Study Assignments Report
- Database Study Assignments Report
- Study Assignments Differences Report

Audit Report for vaughn85

```
SWITCH IDENTIFICATION

Customer Name:          AT&T_VAUGHN
Switch Type:            System 85
Release:                2
Official Issue:         1
Lab Issue:              5
Dot Issue:              0


SWITCH SYSTEM TRANSLATION

     2      Modules
     1      Consoles
   110      Digital Lines
    47      Analog Lines
     0      PDMs - Processor Data Modules
     0      TDMs - Trunk Data Modules
     1      DTDMs - Digital Terminal Data Modules
    18      7400 Series Sets
     4      7200 Series Sets
     3      ACD Groups
     1      Dial Intercom Groups
     1      Non-dial Intercom Groups
     8      Call Coverage Groups
    98      Admin Ports
     0      Personal CO Trunks
    10      Display Modules
     1      Coverage Modules
     0      Remote Modules
     0      FAD Modules
     0      7300 Series Sets
     0      BRI Terminals
  5999      Message Space For LWC

Modules Currently Assigned:
0 1

Hybrid Modules Currently Assigned:
1
```

OH 4D-2

GRAPHICS FILE:

Audit Report for vaughn85 (continued)

```
DATABASE SYSTEM TRANSLATION

     2      Modules
     1      Consoles
    92      Digital Lines
    47      Analog Lines
     0      PDMs - Processor Data Modules
     0      TDMs - Trunk Data Modules
     1      DTDMs - Digital Terminal Data Modules
    14      7400 Series Sets
     2      7200 Series Sets
     2      ACD Groups
     1      Dial Intercom Groups
     1      Non-dial Intercom Groups
     8      Call Coverage Groups
    83      Admin Ports
     0      Personal CO Trunks
    10      Display Modules
     1      Coverage Modules
     0      Remote Modules
     0      FAD Modules
     0      7300 Series Sets
     0      BRI Terminals
  5999      Message Space For LWC

Modules Currently Assigned:
0 1

Hybrid Modules Currently Assigned:
1
```

DIFFERENCES IN CONFIGURATIONS

	SWITCH	DATABASE
Digital Lines	110	92
7400 Sets	18	14
7200 Sets	4	2
ACD groups	3	2
Admin Ports	98	83

OH 4D-3

GRAPHICS FILE:

Audit Report for vaughn85 (continued)

STUDY ASSIGNMENT INFORMATION FROM THE SWITCH

TRUNK GROUP TRANSLATION:

TGP	DAC	TYPE	ENCODE	DIR	QTY	DESCRIPTION
15		ICM	0		500	INTERCOM
16		DPR	1		102	DIAL PULSE DIGIT REGISTER
17		TTR	2		6	TOUCH-TONE RECEIVER
18	9	CO	19	2W	9	2-WAY ATTENDANT COMPLETING IN/DOD
21		CO	16	IC	1	1-WAY INCOMING ATTENDANT COMPLETING
22		TTS	55		6	TOUCH-TONE SENDER
28	128	MISC	54	OG	2	LOUDSPEAKER PAGING INTERFACE
29	129	MISC	5	IC	13	ATTENDANT CONFERENCE
50	100	CO	50	2W	1	REMOTE BCS ACCESS TRUNK
169	179	TIE	37	2W	7	2-WAY DIAL REPEATING IN/AUTO OUT

AUTOMATIC ALTERNATE ROUTING (AAR) PATTERNS STUDIED:
<<< No AAR Patterns Assigned >>>

AUTOMATIC ROUTE SELECTION (ARS) PATTERNS STUDIED:
2 52 63

CALL COVERAGE GROUPS (CCG) UNDER STUDY:
<<< No CCG Assignment >>>

TRUNK GROUP COMBINATIONS:
<<< No Combination Assignment >>>

LOAD BALANCE:

Study is : Inactive Trunk Group : ALL

CARRIER USAGE:

Study is : Inactive

OH 4D-4

GRAPHICS FILE:

Audit Report for vaughn85 (continued)

```
                              First Module : -
Quarter Carrier 1   Quarter Carrier 2   Quarter Carrier 3   Quarter Carrier 4

Cabinet:            Cabinet:            Cabinet:            Cabinet:
Carrier:            Carrier:            Carrier:            Carrier:
Slot:               Slot:               Slot:               Slot:
                              Second Module : -

MAIN/SATELLITE:
    <<< No Satellites Assigned >>>

  PEAK & TIME-COINCIDENT MEASUREMENTS:

   Peak     1   Occupancy
     TC     1   Outgoing usage
     TC     2   Tandem traffic CCS
     TC     3   Overflow peg count
     TC     4   Stimulus peg count
     TC     5   ECTS ctl peg count
     TC     6   Dial tone delay
     TC     7   Dial tone measured
     TC     8   Connection count
     TC     9   Intermodule usage
     TC    10   Audit cycle
     TC    11   Connection usage
     TC    12   Tone detec timeout
     TC    13   Call count
     TC    14   Total AAR calls
     TC    15   Total ARS calls
     TC    16   Total CDR recs out
     TC    17   Total CDR usage
     TC    18   System mngmnt occupancy
     TC    19   SNC non-sw ISDN calls
     TC    20   SNC total remote CCS
     TC    21   SNC outgoing remote CCS
     TC    22   TG:15 CCS
     TC    23   TG:15 peg count
     TC    24   Time of day clock                    Etc. Peaks ...
```

OH 4D-5

GRAPHICS FILE:

Audit Report for vaughn85 (continued)

```
Peak    18   ACD:1 peg count
  TC     1   MCS directed
  TC     2   MCS redirected
  TC     3   Time of day clock

Peak    19   ACD:2 peg count
  TC     1   MCS directed
  TC     2   MCS redirected
  TC     3   Time of day clock

ISDN PRI D_CHANNEL EQUIPMENT LOCATIONS:

              TRAFFIC_ENCODE MODULE CABINET CARRIER SLOT B_CHANNELS
              ---------------------------------------------------
              <<< None Assigned >>>

ISDN PRI TRUNK GROUP STUDY ASSOCIATION:

             ISDN_ASSOC  NSN  TGN  IXC
             ----------------------------
             <<< None Assigned >>>

VECTOR DIRECTORY NUMBER (VDN) STUDY:
    <<< None Assigned >>>
```

OH 4D-6

GRAPHICS FILE:

Audit Report for vaughn85 (continued)

STUDY ASSIGNMENT INFORMATION FROM THE DATABASE

TRUNK GROUP TRANSLATIONS:

TGP	DAC	TYPE	ENCODE	DIR	QTY	DESCRIPTION
15		ICM	0		500	INTERCOM
16		DPR	1		102	DIAL PULSE DIGIT REGISTER
17		TTR	2		6	TOUCH-TONE RECEIVER
18	9	CO	19	2W	9	2-WAY ATTENDANT COMPLETING IN/D
21		CO	16	IC	1	1-WAY INCOMING ATTENDANT COMPLE
22		TTS	55		6	TOUCH-TONE SENDER
50	100	CO	50	2W	1	REMOTE BCS ACCESS TRUNK
169	179	TIE	37	2W	1	2-WAY DIAL REPEATING IN/AUTO OU

AUTOMATIC ALTERNATE ROUTING (AAR) PATTERNS STUDIED:
<<< No AAR Patterns Assigned >>>

AUTOMATIC ROUTE SELECTION (ARS) PATTERNS STUDIED:
2 52 . 63

CALL COVERAGE GROUPS (CCG) UNDER STUDY:
<<< No CCG Assignment >>>

TRUNK GROUP COMBINATIONS:
<<< No Combination Assignment >>>

LOAD BALANCE:

Study is : Inactive Trunk Group : ALL

CARRIER USAGE:

Study is : Inactive

OH 4D-7

GRAPHICS FILE:

Audit Report for vaughn85 (continued)

```
                                First Module : -
Quarter Carrier 1   Quarter Carrier 2   Quarter Carrier 3   Quarter Carrier 4

Cabinet:            Cabinet:            Cabinet:            Cabinet:
Carrier:            Carrier:            Carrier:            Carrier:
Slot:               Slot:               Slot:               Slot:

                               Second Module : -

MAIN/SATELLITE:
    <<< No Satellites Assigned >>>


  PEAK & TIME-COINCIDENT MEASUREMENTS

  Peak     1   Occupancy
    TC     1   Outgoing usage
    TC     2   Tandem traffic CCS
    TC     3   Overflow peg count
    TC     4   Stimulus peg count
    TC     5   ECTS ctl peg count
    TC     6   Dial tone delay
    TC     7   Dial tone measured
    TC     8   Connection count
    TC     9   Intermodule usage
    TC    10   Audit cycle
    TC    11   Connection usage
    TC    12   Tone detec timeout
    TC    13   Call count
    TC    14   Total AAR calls
    TC    15   Total ARS calls
    TC    16   Total CDR recs out
    TC    17   Total CDR usage
    TC    18   System mngmnt occupancy
    TC    19   SNC non-sw ISDN calls
    TC    20   SNC total remote CCS
    TC    21   SNC outgoing remote CCS
    TC    22   TG:15 CCS
    TC    23   TG:15 peg count
    TC    24   Time of day clock

                                        Etc. Peaks ...
```

OH 4D-8

GRAPHICS FILE:

Audit Report for vaughn85 (continued)

```
Peak   18   ACD:1 peg count
  TC    1   MCS directed
  TC    2   MCS redirected
  TC    3   Time of day clock

Peak   19   ACD:2 peg count
  TC    1   MCS directed
  TC    2   MCS redirected
  TC    3   Time of day clock
```

ISDN CHANNEL EQUIP LOCATIONS:

```
TRAFFIC_ENCODE MODULE CABINET CARRIER SLOT B_CHANNELS
<<< None Assigned >>>
```

ISDN PRI TRUNK GROUP STUDY ASSOCIATION:

```
ISDN_ASSOC  NSN  TGN  IXC
<<< None Assigned >>>
```

VECTOR DIRECTORY NUMBER (VDN) STUDY:

```
<<< None Assigned >>>
```

	TRUNK GROUP DIFFERENCES	
	SWITCH	DATABASE
Trunk grp	28	-
Trunk grp	29	-
Trunk grp 169:		
QTY	7	1

OH 4D-9

GRAPHICS FILE:

Audit Report for vaughn85 (continued)

DIFFERENCES IN TRUNK GROUP COMBINATIONS

SWITCH	DATABASE
<<< No Differences >>>	

DIFFERENCES IN AAR, ARS, CCG

SWITCH	DATABASE
AAR PATTERNS	<<< No Differences >>>
ARS PATTERN	<<< No Differences >>>
CALL COVG GROUPS	<<< No Differences >>>

DIFFERENCES IN LOAD BALANCE

SWITCH	DATABASE
<<< No Differences >>>	

DIFFERENCES IN CARRIER USAGE

SWITCH	DATABASE
<<< No Differences >>>	

DIFFERENCES IN MAIN SATELLITE

SWITCH	DATABASE
<<< No Differences >>>	

DIFFERENCES IN PEAK & TIME-COINCIDENT MEASUREMENTS

SWITCH	DATABASE
<<< No Differences >>>	

OH 4D-10

GRAPHICS FILE:

SUMMARY

- Purpose for Auditing
- Audit Switch and Database

UNIT TEST — **System Administration**

TEST REVIEW — **System Administration**

UNIT 5

Database Maintenance

Unit 5 Objectives

Upon successful completion of this unit the student will be able to:

- **Perform a Monitor I database backup**
- **Perform a Monitor I database restore**

OH 5-1

UNIT INTRODUCTION

This unit contains lessons covering database backup and restore.

UNIT OBJECTIVES

Upon successful completion of this unit the student will be able to:

- Perform a Monitor I database backup
- Perform a Monitor I database restore

LESSON 5A

Backup and Restore

Lesson 5A Objectives

Upon successful completion of this lesson the student will be able to:

- **Perform a Monitor I database backup**
- **Perform a Monitor I database restore**

OH 5A-1

LESSON INTRODUCTION

This lesson provides hands-on experience performing database maintenance routines.

LESSON OBJECTIVES

Upon successful completion of this lesson the student will be able to:

- Perform a Monitor I database backup
- Perform a Monitor I database restore

DISCUSSION

Database Backups

- Files can be restored in the event of a system failure
- Recommend back up database(s) once a week
- Recommend back up the entire system once a month
- Must stop Monitor I (*monitorI stop*)
- Must stop Monitor I polling (*pollend*)
- Recommend backup in single-user mode
- Recommend keeping two backup copies
- Need approximately eight tapes
- Return to multi-user after backup
- Reboot after backup
- Restart Monitor I and polling

Database Restore

- Restore data that was previously saved on backup cartridge tapes

SUMMARY

- Database Backup
- Database Restore

UNIT TEST

Database Maintenance

TEST REVIEW

Database Maintenance

UNIT 6

Custom Reports

Unit 6 Objectives

Upon successful completion of this unit the student will be able to:

- **Create custom traffic reports**

OH 6-1

UNIT INTRODUCTION

This unit contains hands-on experience creating custom reports.

UNIT OBJECTIVES

Upon successful completion of this unit the student will be able to:

- Create custom traffic reports

LESSON 6A

Creating Custom Reports

Lesson 6A Objectives

Upon successful completion of this lesson the student will be able to:

- **List the four database table types and prefixes**
- **Describe the advantages of the three methods of creating customized reports:**
  - **Data Dump**
  - **Formatted**
  - **On-line Queries**
- **Create a custom report using each of the three methods**

OH 6A-1

LESSON INTRODUCTION

This lesson provides hands-on experience designing custom reports.

LESSON OBJECTIVES

Upon successful completion of this lesson the student will be able to:

- List the four database table types and prefixes
- Describe the advantages of the three methods of creating customized reports:
  - Data Dump
  - Formatted
  - On-line Queries
- Create a custom report using each of the three methods

Generic 2 Future/Current Assignment Files

Traffic Data	File Name*	Prefix*	Packet	Proc	Related	Expected Poll File
AAR Pattern	TCaar	cr	1	413w2	TPaar	30
ACD	TCacd	cd	-	1	TPacdmsg	60
ARS Pattern	TCars	cs	1	413w2	TPars	48
Attendants	TCattend	cz	1		TPattend	1
Call Coverage	TCcallcovg	ca	1	413w2	TPcallcov	25
Carriage Usage	TClbcar	cg	1	411w2	**	
Counts from pkt 1	TCcounts	cx	-	1		
DCIU Logical Chan	TCdciulog	cl	1		TPdciulog	8
DCIU Network Chan	TCdciunet	ch	1		TPdciunet	128
DCIU Port	TCdciuprt	cr	1		TPdciuprt	68
ISDN Associations	TCisdnassc	cn	1		TPisdnassc	255
ISDN Channels	TCisdnchan	cx	1	413w4	TPisdnchan	511
Load Balance Trunk	TClbtrkgp	cb	-	411w1	**	1
Main/Satellite	TCmsat	cm	-	415w1	TPmisc	1
Modules Assigned	TCassgnmod	ce	1			31
Modules Under Study	TCmodule	cm	1		**	31
Peak & TC Map	TCpeaktc	cp	1	414w1,2	**	4000
Trunk Group Comb	TCcomb	co	1	413w1,2	TPcomb	3
Trunk Groups	TCtrkgrp	ct	1		TPtrkgp	100
Vector Directory Num	TCvdn	cn	1	413w2		255
XE Module	TPblgxe	xe	6	31	7	

* The tables that have procs associated with them are duplicated for the "future database". The future file names will have the prefix "TF", and the "c" prefix on the field names will be changed to "f".

** The TCmodule file is related to TPlbintra, TPlbinter, TPblginter, TPblgintra and TPtsi.
The TCpeaktc file is related to TPmodule, TPtst, TPmisc, TPatten, TPtrkgrp, and TPcomb.
The TClbcxr is related to TPqtrcar and TPportusg.
The TClbtrkgp is related to TPlbintra and TPlbinter.

OH 6A-2

GRAPHICS FILE:

DISCUSSION

Appendix F: Page _____

Database Tables

Monitor I gives a unique set of tables (or schema) for each switch release. The tables and their prefixes are:

- Current Study Tables
  - TC prefix
- Pending/Future Study Tables
  - TF prefix
- Miscellaneous Tables
  - TM prefix
- Poll Tables
  - TP prefix

Schema Description

- The files with TC, TF, and TM prefixes are used for Monitor I operations and administration.
- The TP or poll files contain actual data from the switch. You will use these files to create custom reports.

DISCUSSION

Schema Description (continued)

The field labels in the tables should match the measurement labels found in the *AT&T System Traffic Data Analysis Guide*. This guide provides field definitions by packet number.

Custom Report Methods

Three methods for creating customized reports:

- *Data Dump*
  - Pull data from the database to use to create a new report
- *Formatted*
  - Easier to read and understand than Data Dump reports
- *On-line Queries*
  - Save time when tracking down a particular traffic problem

PRACTICE EXERCISE

1. Create a data dump of Accumulated Values used in the demonstration. Give the report any name. Look up the table name.
2. Customize the report to include only: date, time, didbusy, didnotbusy, and incaban. Run the report.
3. Specify specific dates using the command: *where av_pdate between "xx/xx/xxxx" and "xx/xx/xxxx".* (Get these dates from the Instructor.) Compile and run the report.
4. Print the report.
5. Remove the report.
6. Create an on-line query, selecting av_pdate, av_ptime, and av_badcode from the tpaccval table.
7. Create a custom report of your own choosing. If you don't have one to create, ask your instructor for suggestions.

EXERCISE REVIEW

1. Create a data dump of Accumulated Values used in the demonstration. Give the report any name. Look up the table name.

2. Customize the report to include only: date, time, didbusy, didnotbusy, and incaban. Run the report.

3. Specify specific dates using the command: *where av_pdate between "xx/xx/xxxx" and "xx/xx/xxxx".* (Get these dates from the Instructor.) Compile and run the report.

4. Print the report.

5. Remove the report.

6. Create an on-line query, selecting av_pdate, av_ptime, and av_badcode from the tpaccval table.

7. Create a custom report of your own choosing. If you don't have one to create, ask your instructor for suggestions.

SUMMARY

- Database tables
- Custom report methods
  - Data Dump
  - Formatted
  - On-line Queries

UNIT TEST — **Designing Custom Reports**

TEST REVIEW — **Designing Custom Reports**

APPENDIX A

Traffic Management Glossary

TRAFFIC MANAGEMENT GLOSSARY

ABBH

See *Average Bouncing Busy Hour.*

Accumulative Register

Counts the number of occurrences of particular events, and monitors call activities.

Arrival Pattern

The way traffic arrives at a server group. Over an observation period (usually an hour), traffic arrives at a server group in one of three ways: smooth, random, or peaked.

Average Bouncing Busy Hour (ABBH)

One method of measuring average busy hour load of a system. ABBH is the average of the peak readings from each DAY of the study. It is used for a single server group.

Blocking

The percentage of service requests not immediately satisfied because of busy servers.

Buffer

A place in switch memory where data is stored. For traffic, a switch uses two types of buffers: collection and output.

Busy Hour

The period when there is the most traffic (calls in CCS - not the number of calls). The number of servers required is based on the average busy hour load.

CCS

100 seconds of server usage. Servers are scanned every 100 seconds. If the scan reveals the server is busy, it assumes the server was busy the entire 100 seconds and measures one CCS. Maximum carried CCS load on a server group is equal to the number of servers times 36 (36 = 3600 seconds per hour/100).

Carried Load

A measure of how well the demand placed on the system was actually satisfied.

Collection Buffer

A place in switch memory where data is stored as it is collected by the traffic measurements program.

Data

Communication between data processing equipment connected to a system.

Delay

The average amount of time a caller must wait before a server becomes available.

Disposition of Blocked Calls

The most important variable influencing traffic model selection. It determines the number of servers required for a given traffic load and required service level.

Erlang

The international measure of usage for servers busy one hour.

Erlang B Model

A traffic model that is used for systems with random arrival pattern,variable or constant holding time, and blocked calls that are routed elsewhere. Common application includes first-choice trunk group with alternate routing configurations.

TRAFFIC MANAGEMENT GLOSSARY

TRAFFIC MANAGEMENT GLOSSARY

Erlang C Finite Queue Model

A traffic model that is used on systems with random arrival pattern, variable holding time, and blocked calls that are delayed or lost. Common application includes outgoing trunking with queuing.

Erlang C Infinite Queue Model

A traffic model that is used for systems with random arrival pattern, variable holding time, and delayed blocked calls. Common application includes attendant consoles and ACD agent positions.

Holding Time

The length of time a server is used to handle a call. When some calls have a relatively short and others have a longer holding, the holding time is variable. When every call lasts the same amount of time, the holding time is constant.

Neal-Wilkinson Model

A traffic model that is used on systems with random or peaked arrival patterns, variable or constant holding time, and blocked calls that are cleared. Common application includes last-choice trunk group in alternate routing configurations.

Offered Load

A measure of the demand placed on the system.

Output Buffer

A place in switch memory where data is transferred to from the collection buffer and held until it is retrieved by the polling device.

Packet

A block of related traffic measurements. This method of organizing traffic data makes it easier to set up traffic studies and poll for desired data. At poll time, you can select which packets to retrieve.

Peaked Traffic

Incorporates large fluctuation in the number of busy servers at any given time. The more peaked the traffic, the more servers are required for a given traffic load and desired service level.

Peak Register

Stores the highest hourly data over a polling interval.

Peg Count

A record of the number of times events (usually calls) occur on a server group.

Polling

The process of retrieving traffic data from the switch. The measurements can then be analyzed.

Random Traffic

Traffic that arrives with moderate fluctuation in the number of busy servers at any given time. Random arrival pattern is the most common of the three arrival pattern types.

Register

A method of assignment for storing data. In traffic, there are three types of registers: accumulative, peak, and time coincident.

Retrial Model

A traffic model that is used for systems with random arrival patterns, variable holding times, and blocked calls that

TRAFFIC MANAGEMENT GLOSSARY

require the user to try again. Common application includes stand-alone trunk groups.

Server

A facility that carries traffic load. Some examples include: trunks, attendant consoles ports, and lines.

Server Group

Servers are pooled so that server resources can be shared by users. A system can have many more users than it has servers to handle the traffic load.

Service Level

Describes how well the servers are performing.

Signaling

Information that gets a dial tone when setting up a call.

Smooth Traffic

Traffic that enters a server at a fairly steady rate. There is little fluctuation in the number of busy servers at a given time. Fewer servers are required with smooth traffic.

TCBH

See *Time Consistent Busy Hour.*

Time Coincident Register

Stores measurements associated with peak hour measurements. These registers capture more information about the traffic contributing to the peak hour.

Time Consistent Busy Hour (TCBH)

One method of measuring the average busy hour load of a system. TCBH is the average of the readings for the HOUR across the entire study that was busiest. It is used for determining the trunking requirements of alternate routing systems.

Traffic

The flow of information (or calls) through a communications system.

Traffic Measurement Program

Part of the switch system software that continually monitors the usage of traffic sensitive components in the system and stores the results.

Traffic Model

A mathematical representation of how a server group reacts under varying traffic loads and server quantities. Use of the appropriate model is necessary to predict service level given a traffic load and number of servers. Traffic models determine the server quantity required in order to handle a certain traffic load at a defined service level. The five models are: Erlang B, Erlang C Finite Queue, Erlang C Infinite Queue, Retrial, and Neal-Wilkinson Equivalent Random.

Usage

An indicator of the amount of time servers are busy. Two traditional units of traffic time measurement are CCS and Erlang.

Voice

Oral communication between users of a communications system.

TRAFFIC MANAGEMENT GLOSSARY

APPENDIX B

vi JOB AID

vi JOB AID

Edit and Quit a File

Enter a new file or edit an existing:

vi <filename>

To quit edit session:

ZZ	- write and quit
:wq	- write and quit
:q!	- quit (but don't write changes)
:w	- write (but don't exit)
:q	- quit (when no changes were made)

Positioning the Cursor

Command	Action
<Control>-D	Scroll down
<Control>-U	Scroll up
l	Move to the right one character
h	Move to the left one character
j	Move down one character
k	Move up one character
$	Move to end of current line
^	Move to beginning of current line
w	Move forward one word
G	Move to end of file

Text Input

The following commands place you in insert mode. Press <Esc> to exit insert mode.

Command	Action
a	Append to the right of the cursor
i	Insert to the left of the cursor
o	Open a new line below the current line
O	Open a new line above the current line
<Esc>	Exit insert mode

APPENDIX C

Scheduling Reports JOB AID

This Job Aid assumes you are logged in as *mtmadm*.

at Jobs - JOB AID

For a short-term (one-time) execution of a report.

1. Access the UNIX shell. *su* to *root* login.
2. Insure that the *mtmadm* login is included in the */usr/lib/cron/at.allow* file.
   a. At the UNIX prompt, type: *cd /usr/lib/cron*
   b. At the UNIX prompt, type: *cat at.allow*
   c. If the login is not listed in the file, using the UNIX editor (vi), add the login to the file, OR

      At the UNIX prompt, type: *echo "mtmadm" >> at.allow*
3. Return to Monitor I.
4. Access your report. Select *s* (short-term queue) for the Destination.
5. After answering the remaining questions, access the UNIX shell again.
6. At the UNIX prompt, type: (for example)

   at 2:00
   /usr/mtmadm/<Schedule File Name>

   (Ctrl D to return to the UNIX prompt)

Explanation:
- In this example the report will run at 2:00 a.m.

Note: The *<Schedule File Name>* will automatically be removed when the job is complete.