



555-006-517
Issue 1
August, 1995

CAS for Windows

Installation and User's Guide

Notice

Every effort was made to ensure that the information in this document was complete and accurate at the time of printing. However, information is subject to change

Your Responsibility for Your System's Security

Toll fraud is the unauthorized use of your telecommunications system by an unauthorized party, for example, persons other than your company's employees, agents, subcontractors, or persons working on your company's behalf. Note that there may be a risk associated with your telecommunications system, and if toll fraud occurs, it can result in substantial additional charges for your telecommunications services.

You and your System Manager are responsible for the security of your system, such as programming and configuring your equipment to prevent unauthorized use. The System Manager is also responsible for reading all installation, instruction, and system administration documents provided for this product in order to fully understand the features that can introduce risk of toll fraud and the steps that can be taken to reduce that risk. AT&T does not warrant that this product is immune from or will prevent unauthorized use of common-carrier telecommunication services or facilities accessed through or connected to it. AT&T will not be responsible for any charges that result from such unauthorized use.

Ordering Information

Call: AT&T GBCS Publications Fulfillment Center
Voice 1 800 457-1235 International Voice 317 361-5353
FAX 1 800 457-1764 International FAX 317 361-5355

Trademarks

Carbon Copy is a trademark of Microcom Systems, Inc.
Hayes is a registered trademark of Hayes Microcomputer Products, Inc.
HiCom/9 is a trademark of Cherry Hill Software
INFO Collector, INFO Monitor, INFO/MDR are trademarks of MOSCOM Corporation
MARK-IV is a trademark of Equinox Systems, Inc.
MCI is a registered service mark of MCI Communications Corporation
MS-DOS is a registered trademark, Windows is a trademark of Microsoft Corporation
US Sprint is a registered trademark of GTE Corporation
WinFax and WinFax PRO are trademarks of Delrina Technology, Inc.

This product incorporates portions of the Kermit file transfer protocol which was developed by the Columbia University Center for Computing Activities.

This product contains portions of software, © 1988 Faircom Corp.

Contents

| | |
|----------------------------|------|
| About This Document | vii |
| ■ How to Use This Document | vii |
| ■ Related Resources | viii |

| | |
|-------------------------------|------|
| 1 Overview | 1-1 |
| ■ Basics of Call Accounting | 1-2 |
| ■ Your Call Accounting System | 1-8 |
| ■ User Guide | 1-12 |

| | |
|-------------------------------------|-----|
| 2 Installation | 2-1 |
| ■ Task 1: Preparing the Equipment | 2-2 |
| ■ Task 2: Gathering Information | 2-3 |
| ■ Task 3: Setting Up the System | 2-4 |
| ■ Task 4: Verifying Call Processing | 2-9 |

| | |
|-------------------------|------|
| 3 Administration | 3-1 |
| ■ Organization Table | 3-2 |
| ■ General Privacy | 3-8 |
| ■ Immediate Output | 3-9 |
| ■ Alert Numbers | 3-10 |
| ■ Account Codes | 3-11 |
| ■ Password | 3-13 |
| ■ Site Selection | 3-14 |

| | | |
|----------|-----------------------------|------|
| 4 | Configuration | 4-1 |
| | ■ Call Rating Tables | 4-2 |
| | ■ Call Collection Functions | 4-19 |
| | ■ Accounting Period | 4-26 |
| | ■ System Users | 4-27 |

| | | |
|----------|--------------------------------|-----|
| 5 | Customization Functions | 5-1 |
| | ■ Organization Levels | 5-2 |
| | ■ Currency | 5-3 |
| | ■ Tax Names | 5-4 |
| | ■ Location Table | 5-5 |
| | ■ Work Week | 5-6 |
| | ■ Reporting Options | 5-7 |
| | ■ Languages | 5-8 |

| | | |
|----------|-----------------------------|------|
| 6 | Reports and Listings | 6-1 |
| | ■ Common Functions | 6-2 |
| | ■ Report-Specific Functions | 6-10 |
| | ■ Viewing Functions | 6-18 |

| | | |
|----------|--------------------------------|------|
| 7 | Utilities | 7-1 |
| | ■ Backup and Restore | 7-3 |
| | ■ Call Record Edit | 7-4 |
| | ■ File Import/Export | 7-5 |
| | ■ Call Record Deletion | 7-7 |
| | ■ Database File Maintenance | 7-8 |
| | ■ Site Maintenance | 7-9 |
| | ■ Rate Updates/System Upgrades | 7-12 |
| | ■ Call Processing Status | 7-13 |

| | | |
|----------|-------------------------------|------|
| 8 | AT&T HackerTracker | 8-1 |
| | ■ Setting Up | 8-2 |
| | ■ Alarm Status | 8-8 |
| | ■ Checking Alarms | 8-9 |
| | ■ Fraud-tracking Tips | 8-10 |

| | | |
|----------|-----------------------|------|
| A | Worksheets | A-1 |
| | ■ Customization | A-2 |
| | ■ Carrier Services | A-3 |
| | ■ Call Collection | A-7 |
| | ■ Trunks & Facilities | A-9 |
| | ■ Organization | A-10 |

| | | |
|----------|-----------------------|-----|
| B | Sample Reports | B-1 |
|----------|-----------------------|-----|

| | | |
|----------|-----------------------|-----|
| C | Specifications | C-1 |
| | ■ Processor | C-2 |
| | ■ Serial Port Pinouts | C-3 |
| | ■ Modems | C-3 |
| | ■ Switch Interface | C-4 |
| | ■ Capacities | C-5 |

| | | |
|----------|-------------------------|-----|
| D | PSU Installation | D-1 |
|----------|-------------------------|-----|

| | | |
|----------|-----------------------------------|-----|
| E | G3-MA Data Transfer Option | E-1 |
| | ■ Overview | E-2 |
| | ■ Network Requirements | E-3 |
| | ■ Synchronize Common Fields | E-5 |
| | ■ Installation and Setup | E-6 |
| | ■ Ready to Go | E-7 |

| | | |
|----------|---|-----|
| F | Remote Access - Carbon Copy Host | F-1 |
|----------|---|-----|

| | | |
|----------|--|-----|
| G | Getting Assistance for Problems | G-1 |
| | ■ How to Report a Problem | G-1 |
| | ■ Basic Troubleshooting | G-2 |

| | | |
|--|-----------------|------|
| | Glossary | GL-1 |
|--|-----------------|------|

| | | |
|--|--------------|------|
| | Index | IN-1 |
|--|--------------|------|

About This Document

This document is intended to guide those who want to understand how the Call Accounting System (CAS) for Windows works and how it is used for call accounting operations. The book is organized into chapters that follow the order of the menu system, preceded by a system overview and installation. Appendixes provide additional reference material, as well as installation guides for CAS options.

How to Use This Document

First-time users should read the following material:

- Chapter 1, *Overview*, introduces call accounting terms and provides a bird's eye view of your call accounting system. It also describes how to log in and use the menu system and data entry windows.

Installers should read the following material:

- Chapter 2, *Installation*, provides instructions to install CAS software, set it up, and verify call processing.
- Appendix A, *Worksheets*, provides blank worksheets to collect the information required to install your system and its sites.
- Appendixes D, E, and F, *PSU Installation*, *G3-MA Data Transfer Option*, and *Remote Access - Carbon Copy Host* (respectively), provide instructions to set up a PSU, G3-MA data transfers, and the capability to receive technical assistance by remote access (via *Carbon Copy Guest*).

Users who wish to run reports should read the following material:

- Chapter 6, *Reports and Listings*, describes all report-generating, viewing, and scheduling functions.
- Appendix B, *Sample Reports*, shows sample printouts of all call accounting reports.

System administrators should read the following material:

- Chapter 3, *Administration*, describes how to set up and maintain the company organization and account code tables and their attributes.
- Chapter 4, *Configuration*, describes the functions used in processing and rating call records.
- Chapter 5, *Customization*, describes the functions used in adapting the system to its operational environment.
- Chapter 7, *Utilities*, describes the functions used in maintaining the system files, as well as backup and install operations.
- Chapter 8, *AT&T HackerTracker*, describes the setup of this option and provides tips on using its features.
- Appendix C, *Specifications*, provides technical information about the system requirements and capacities.
- Appendix G, *Getting Assistance for Problems*, describes basic troubleshooting procedures and, if necessary, how to get help.

Related Resources

The following document may provide you with additional information:

Carbon Copy for Windows User Guide (Microcom 24-0000702-001) — manual to install and administer the Remote Access "Guest" package.

The AT&T Call Accounting System (CAS) for Windows is an important tool designed specifically to help you control and administer telecommunications costs in your business. Before describing it in detail, this chapter provides some basic background on call accounting in general.

This chapter is organized into three major sections:

- *Basics of Call Accounting* introduces such concepts as the public switched network, long distance carriers, trunks, and private telephone routing on premises.
- *Your Call Accounting System* introduces CAS, its features, how the system works, and what it can do for you.
- *User Guide* describes how to log into CAS and use the menu system and dialog boxes.

Basics of Call Accounting

Using telephones costs money. In small as well as large companies, telephone expense is a major budgetary item, and rising costs are a concern to every manager.

- Reducing costs and optimizing resources go hand in hand. ("Am I using my telephone services to the fullest?" "Do I have a problem with unauthorized use of services?" "What kind of facilities will serve me best?")
- Then, there is the problem of allocating expenses. ("Who gets charged for these calls?" "How do I bill back clients? ...company departments? ...extension users?")
- The total picture is not always clear. ("Can our calling patterns be handled better with special services? ...is the expense justified?" "Is there a trend in long distance calling? ...is it company-wide? ...what are our sales and services departments doing?")

CAS for Windows can help you answer these and similar questions.

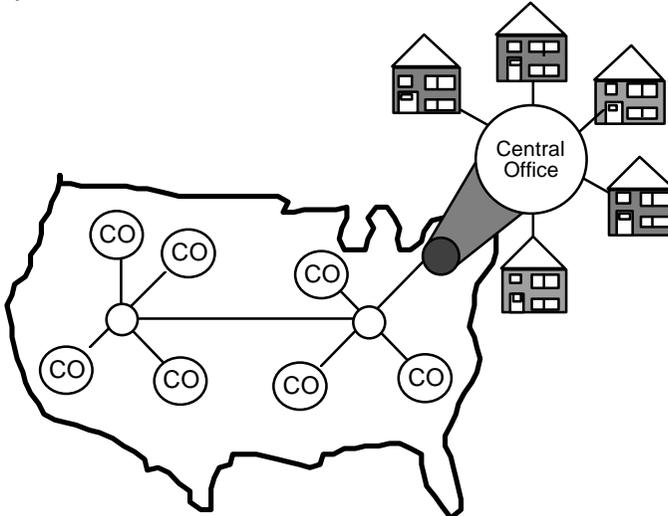
Doing so is not difficult; however, there are some concepts concerning telecommunications management — the national telephone network, your own telephone switch, and basic call accounting — that should be familiar before you use the system.

Let's begin by looking at how the public switched network functions, then at the carriers, trunks, and services in the network.

The Public Network

The traditional public telephone network is built upon the central office (CO) system. COs provide the equipment to route and connect calls originating from any point.

Each user is connected to a local CO. Local COs are connected to each other via tandem switching offices which provide the link to other COs. Calls are directed from the caller into the local CO and out to the number called. Depending on the call destination, several COs may be used to reach the called party — across the street or across the nation.



In North America, when you dial a local call, a 3-digit *exchange* identifies the CO serving the called number; the last four digits identify the called line or *station*. In a long-distance call, a 3-digit *area code* identifies the regional link to the group of local COs.

The international network follows a similar system of local switching offices, connected to a hierarchy of larger groups. This network also has a numbering plan to connect callers from different parts of the world. The calling pattern is a 1- to 3-digit *country code*, followed by the specific national network calling pattern (area or city code, local exchange, and user line number).

Carriers

Telephone companies are called “carriers.” They include your local telephone company and long-distance carriers like AT&T.

- Local telephone companies operate the COs that route calls via a local exchange. They lease the CO lines to a customer's premises and provide access to long distance and international services offered by other carriers for calls outside their Local Access Transport Area (LATA). A LATA covers many COs.
- Long-distance carriers — also called interexchange carriers (IXCs) — provide services between LATAs. For example, AT&T Communications provides direct distance dialing, international direct distance dialing, and operator assistance through CO lines. Some carriers also provide custom long-distance services such as SDN, FX, TIE, toll-free numbers, PROWATS, and ISDN services.

Equal Access

According to the agreement established with the breakup of the Bell System, local telephone companies have reprogrammed their larger electronic COs so that their customers can have the same type of connection — that is, “equal access” — to any long distance carrier's network.

For those carriers who have opted for full Equal Access, subscribers can dial 1 plus the area code and number to place the call serviced by their selected primary carrier. To access other carriers' services, subscribers dial a carrier's assigned 10xxx code — or 101xxxx if the 1995 North American Numbering Plan (NANP) has been implemented — then the area code and local number.

Trunks and Services

Today's technology makes it possible for carriers to offer a wide range of telephone lines and services in voice and data communications. Telephone lines are also called "trunks." The most widely used trunks are:

- *CO* trunks are point-to-point lines between the local CO and, for example, your premises.
- *FX* (foreign exchange) lines connect a private switch to a remotely located CO. This allows placing local calls to the remote exchange. FX services are charged a flat monthly fee for the leased line and not per call (toll charges, if any, are billed separately). This service is commonly used by businesses that place frequent calls to a specific location.
- A *TIE* line "ties" together two private switches; users at either end can dial extensions as if they were on premises and can also make local calls through the remote exchange. Because this service is also charged at a flat monthly fee, intracompany call costs can be dramatically reduced.
- *WATS* (wide area telecommunications service) lines provide inbound or outbound access from/to any point in a subscriber service area. Out-WATS is used to place calls by the subscriber; In-WATS, to receive calls toll-free for the caller. The base rate for WATS services is set by distance, with discounts based on bulk monthly usage. AT&T PROWATS discount services — which use regular CO lines — are quickly replacing WATS lines.
- *Software Defined Network (SDN)* lines connect subscribers' multi-site networks. A call over an SDN line first goes to a local service office that interprets, then forwards the call via the public network. "On-net" calls go to a local service office and on to the called site over an SDN line; "off-net" calls go to a local CO and out of the SDN.
- *Integrated Services Digital Network (ISDN)* lines, although not universally available, promise many benefits to its users — including *Automatic Number Identification (ANI)* and *Answer Supervision* (see next page). ANI allows users of services like AT&T Megacom 800 to capture the phone number of the calling party. CAS supports ANI for installations that can provide this feature.

Private Switching Systems

As in the telephone network, businesses face similar traffic problems — how to route calls in the most efficient and cost-effective manner. To do so, they install private switching systems or they subscribe to Centrex services.

- A private switch — a KTS (key telephone system) or PBX (private branch exchange) — is a processor that allows data and voice communications within and outside a business. Switches offer such features as hold, transfer, call forwarding, and least-cost routing. PBXs differ in that you dial “9” to place outside calls; with key systems you use push buttons.
- Centrex services, provided by some local telephone companies, allow subscribers to share public switching facilities, and thus acquire PBX-like capabilities.

Private switches and a few Centrex systems offer a feature essential to call accounting: Station Message Detail Recording (SMDR).

Station Message Detail Recording

SMDR-capable systems can output an electronic record of every call routed through the system. This record “details” information such as:

- Time and date of call
- Call duration
- Call origin (extension or incoming trunk)
- Call destination (extension or outgoing trunk)
- Trunk or carrier service used
- Account or authorization code (if used)
- Number called (outgoing call or calling number in an incoming call if the switch supports this feature)

Centrex subscribers may obtain SMDR via a separate “data line.” This line can access the CO computer or switch adjunct (such as a DNC50/500 or an INFO/MDR system) that stores a customer’s call record data and transmits these records on demand.

Answer Supervision

Answer Supervision is the capability to detect when a call is answered. Telephone charges start when your telephone company billing equipment detects that the called party has answered.

Some private switches, however, cannot tell when a call has completed its connection. To compensate, these switches reduce the "duration" reported in the call record by a fixed amount.

CAS for Windows can accommodate any duration adjustments — including setting up its own, if required.

Call Accounting Systems

Controlling telecommunication costs starts by finding a balance between services needed on premises, services that are available outside, and of course, whether their costs are justifiable.

To make informed decisions, managers must wait for the telephone bill or for monthly reports from an off-premise call accounting service, or use special-purpose systems that gather data directly from the switch on premises.

On-premise systems — such as CAS for Windows — offer the following advantages:

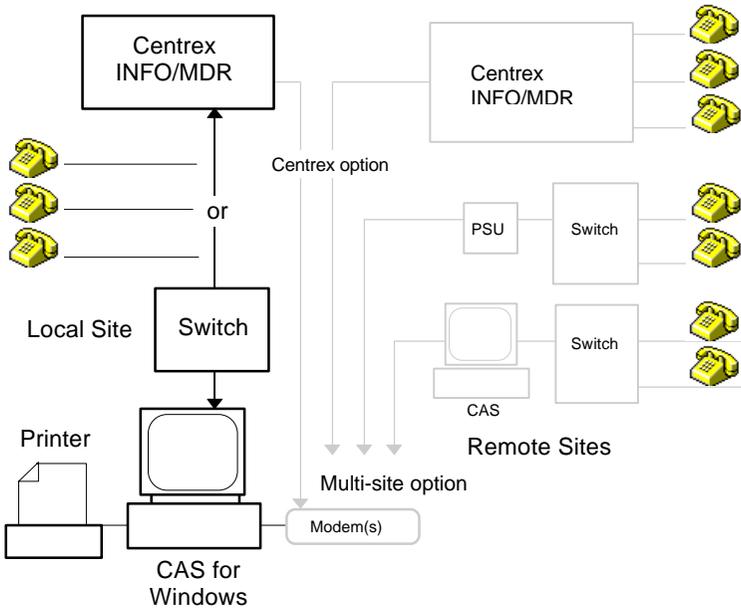
- Online access and ad hoc reports provide current and historical data, either as summaries of trends and traffic patterns or in detail to pinpoint problem areas.
- Organization reports consistent with your corporate structure and billing practices allow flexible cost allocation.
- Full coverage of your carrier services provides a wealth of information to reduce costs and assess current needs.
- Latest call pricing, optionally available as periodic rate updates, results in accurate call costing without the hassle of keeping up a complex database of telephone tariffs.

Your Call Accounting System

CAS for Windows is a comprehensive call accounting package that runs on your personal computer (PC) as a Windows application. It receives SMDR directly from a switch on premises and then processes the information into a wealth of management reports.

If you are a Centrex subscriber, the Centrex option enables collecting your SMDR by polling the Centrex system — computer, adjunct, or INFO/MDR system — via a data line.

If your company has remote sites, the multi-site option enables collection and processing of SMDR from each site. SMDR at each site is handled locally by any call collector system — switch, adjunct, or another PC running CAS — that can communicate with this application.



Features and Capabilities

The following highlights CAS major features:

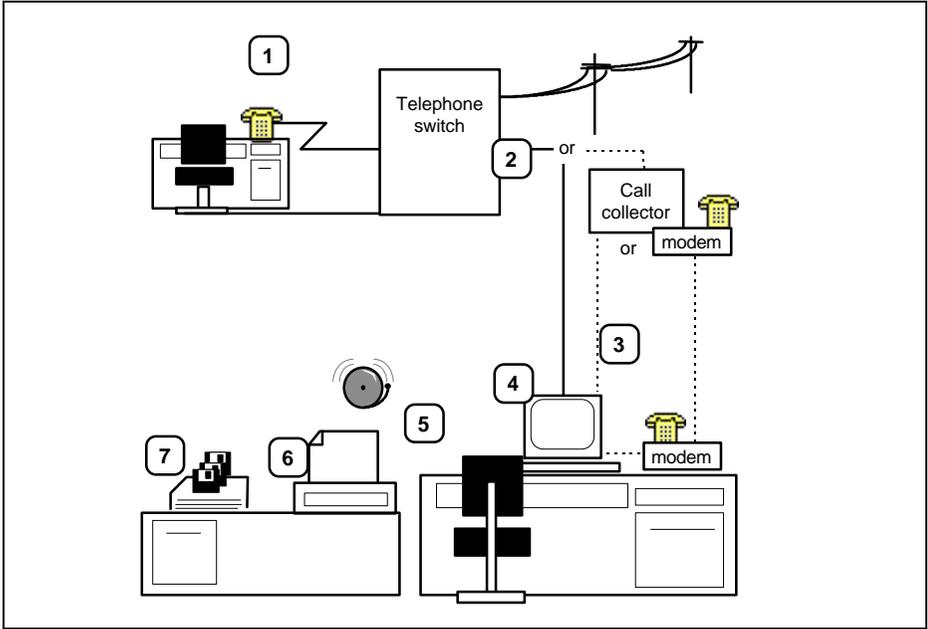
- Call Collection Interfaces — CAS can collect SMDR from most AT&T and non-AT&T telephone switches, either directly from the switch or indirectly from storage systems such as:
 - PC file transfer
 - Pollable Storage Units (PSUs)
 - Call Detail Recording Units (CDRUs)
 - another PC running CAS
 - any INFO/MDR Centrex product
- Call Rating — user-editable call rating provides accurate costs. Rating methods for carrier services include those most widely used:
 - fixed rate tables (V&H coordinates)
 - charge band (codebook)
 - by call duration or flat cost per call

In the U.S., where telephone tariffs form a complex database, the system offers periodic fixed rate updates as an installable option; codebook rates for other countries are also available as specially customized orders.

- Reports — CAS provides an extensive library of reports. These are suitable for telecom facilities usage, cost management, as well as for customer account billing. Reports can be scheduled to run automatically at user-defined intervals or generated on demand:
 - Organization Reports
 - Account Code Reports
 - Selection Reports
 - Traffic Reports
 - Exception Reports

Flow of a Working System

The figure below illustrates the flow of a working system:



1. As a phone call is placed or received at a CAS site, it is routed through the switch to its final destination.
2. The switch prepares an electronic record of the transaction. If the switch is on a remote site in your network, its "call collector" stores the output until your PC can retrieve it.
3. The CAS call collection interface regulates direct and remote transmissions to your PC, then interprets the call records.



See *Call Collection Functions* in chapter 4 for details.

4. The call rating functions screen and cost the calls, which are then stored in the file for the site's current accounting period. Privacy for dialed numbers is used, if applicable.

⇒ See *Call Rating Tables* in chapter 4 and *General Privacy* in chapter 3 for details.

5. Calls to alert numbers or calls flagged for immediate output are made available for viewing.

⇒ See *Immediate Output* in chapter 3 and *Viewing Functions* in chapter 6 for details.



If the *HackerTracker* option is set to monitor switch usage for possible "toll fraud" and an alarm event occurs, the message is sent to the enabled alarm reporting device(s) — printer, FAX, and/or pager. See chapter 8 for details.

6. At report time — by request or scheduled — the system sorts through the stored call records to charge all telephone extension and accounts used, and then generates the report.

⇒ See *Reports and Listings* (chapter 6) and *Organization Table* and *Account Codes* in chapter 3 for details.

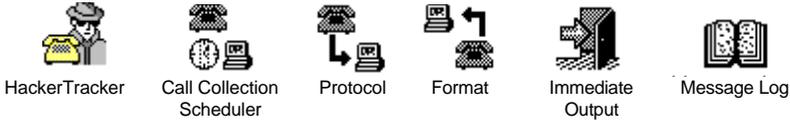
7. At the end of your accounting period, the system automatically generates scheduled reports, archives the period's call records (deleting the prior archive), resets summary statistics, and starts a new period.

⇒ Because an older period's archives are always written over by those from a recently closed period, archives should be backed up prior to the end of the accounting period. In fact, the closing of a period is a good time to back up the just archived data onto diskettes or tape. See *Backup/Restore* in chapter 7 for details.

User Guide

CAS for Windows is easy to use. It works with all basic elements in Windows — icons, menus, dialog boxes, and windows.

At installation, CAS automatically creates icons for various tasks...



... and opens the main menu:



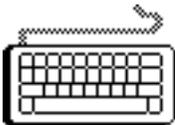
This menu displays the titles of pull-down menus. All operations are initiated through a system of sub-menus. Menu options ultimately open a dialog box used to exchange information with the system and complete the task.

Working with Menus



With the mouse:

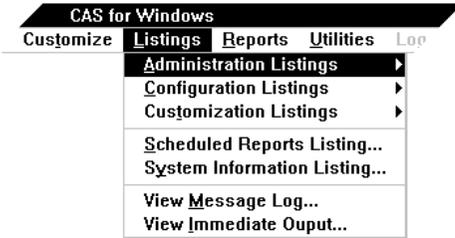
- To open a menu, click on the item's name.
- To close a menu, click elsewhere.



With the keyboard:

- To open a menu...
 - ... press **ALT** , move to the item's name with the arrow keys and press **ENTER** or ...
 - ... type the underlined letter in the item's name — for example, type **L** for **Listings**.
- To close a menu, press **ESC**.

On the resulting menu — for example...

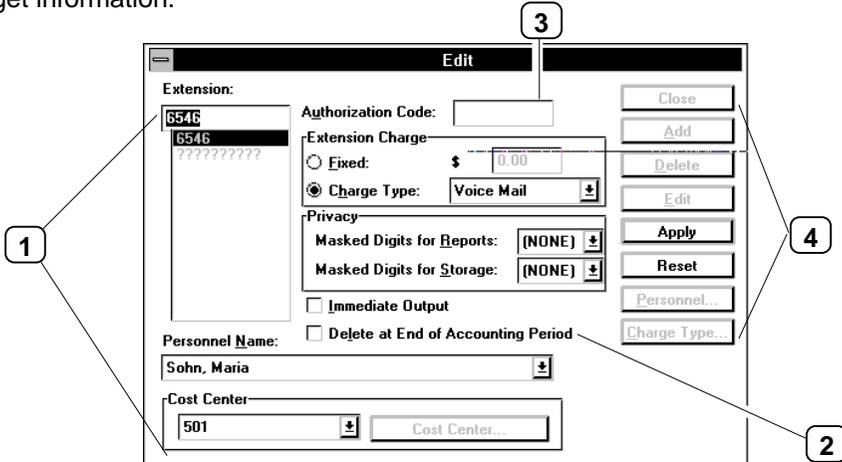


... the triangle (▶) next to an option leads to a “cascading” menu; an ellipsis (...) leads to a dialog box.

Dimmed options either are not applicable or you do not have user privileges to access them.

Working with Dialog Boxes

Dialog boxes are used to provide instructions to complete a task and/or to get information.



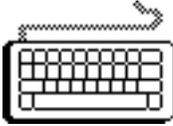
Completing a box means supplying all requested information in the list boxes (1), check boxes (2), or text boxes (3) and then using a command button (4) to carry out the operation.

Help is available by pressing **F1**.

To move, select or check a box or a button in a dialog box...



With the mouse, click on the item of interest.



With the keyboard:

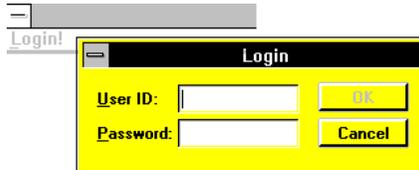
- move to the item of interest with the **TAB** (forward) or **SHIFT+TAB** (back) keys or type the underlined letter in the item's name — for example, type **L** for **L**istings.
- select from a list box with the arrow keys and press **ENTER**

See your Windows manuals for further details on these elements.

Logging in

After the system administrator has configured CAS for Windows for users, a startup menu contains only the **Login** entry.

To access the full menu, select it and complete the dialog box:



Ask your system administrator for your *User ID*, type it, then tab to the next entry and type your *Password* (asterisks mask your entries).

When complete, click on the **OK** button.

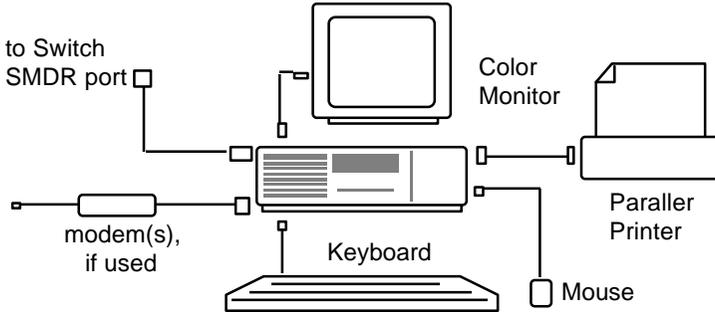
This chapter will help you install CAS for Windows and verify call processing. It includes a summary of custom setup procedures, with references to the appropriate detailed explanations in this manual.

The installation process is divided into the following tasks:

- *Task 1: Preparing the Equipment* — lists the equipment required for a successful installation.
- *Task 2: Gathering Information* — describes the worksheets used to collect information and who should complete them.
- *Task 3: Setting Up the System* — describes the procedures to install the application and options.
- *Task 4: Verifying Call Processing* — describes how to verify that calls are received and processed correctly.

Task 1: Preparing the Equipment

Verify that the following equipment is in place and properly set up, as documented in its installation manuals:



- A personal computer (PC) with the recommended class, speed, RAM, and storage configuration for your expected traffic (see Appendix C)
- A bus or PS2-type mouse, keyboard, graphics monitor, parallel printer and cable
- MS-DOS 5.0, 6.0, or 6.2 and Windows 3.1 or Windows for Workgroups 3.11 — use operating system defaults, installed as documented in their manuals; DO NOT use DoubleSpace, drivespace or any other disk compression utilities.
- Two serial ports (minimum); additional ports may be added with up to two Equinox Mark-IV boards (each board provides four RJ45 ports):
 - One port (minimally) for the source(s) of call records and one for the Remote Access modem
 - One port for each option: Call Sender, Callback Receiver, FAX/pager modem (for the AT&T HackerTracker)
- Hayes-compatible modems* for each port not directly connected to the source (or destination) of call records and/or alarm data
- Interface cables and adapters for direct switch and modem connections (see Appendix C for cabling to AT&T switches)

* Typically, modem default settings will work, as most interface parameters are controlled by CAS.

Task 2: Gathering Information

This task involves collecting information about your company and its telephone services and equipment. To do so, you should meet with your information contacts — telephone switch service representatives, your own personnel and accounting departments, and so forth — and complete the worksheets provided in Appendix A.

These worksheets contain the same information as in the dialog boxes used for data entry at installation. Make as many copies of the worksheets as necessary, then refer to the appropriate topic in this manual to complete them:

| Worksheet | Who should use it | Reference |
|---------------------|--|---|
| CUSTOMIZATION | All who do not wish to use system defaults (see instructions) | <i>Chapter 5: Organization Levels, Currency, and Tax Names</i> |
| CARRIER SERVICES | Part I, all; parts II to IV are optional (see instructions) | <i>Chapter 4: Call Rating Functions - Carrier Services</i> |
| CALL COLLECTION | Part I, all; part II, polled call collection only (see instructions) | <i>Chapter 4: Call Collection Functions - Call Collection Interface</i> |
| TRUNKS & FACILITIES | All except Centrex subscribers or those using the G3-MA data transfer option | <i>Chapter 4: Call Rating Functions - Trunks</i> |
| ORGANIZATION | All except those planning to create the Organization Table via File Import or those using the G3-MA data transfer option | <i>Chapter 3: Organization Table</i> |

Task 3: Setting Up the System

1. Retrieve the diskettes from the software package, including any other features and options you may have ordered:
 - *Remote Access* (Carbon Copy - Host and/or Guest)
 - *Setup, Program 1 and 2, Configuration*
 - *Call Collection 1 and 2*
 - *Fixed Rates* (one custom rates diskette per carrier service)
 - *AT&T HackerTracker, Multi-Site, G3-MA Data Transfer* (options)



We recommend installing the Remote Access software first. Load it as instructed in its own documentation. (Appendix F summarizes the installation and use of Carbon Copy™ - Host.)

2. Insert the *Setup* diskette in any disk drive, select **Run** from the Program Manager **File** menu, and enter the drive letter followed by “:setup” (for example, **a:setup** for the A drive).
3. When a dialog box similar to the one below appears, click on **OK**. (Follow screen instructions if you wish to use a different directory.)

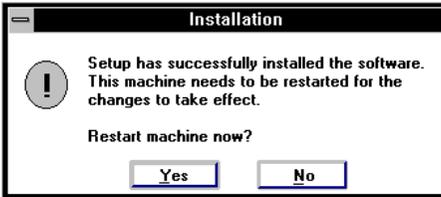


4. As the installation progresses, follow the screen prompts to load the *Program* and *Configuration* diskettes into the named drive.

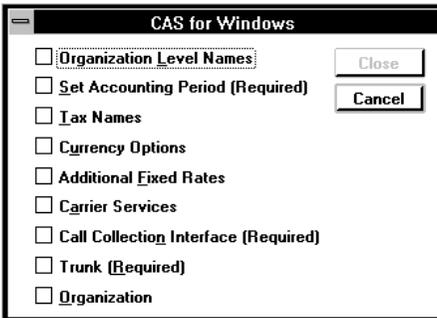
When a dialog box similar to the one below appears, click on **OK** (follow screen instructions if the start-up drive is other than “c:”).



- When a dialog box similar to the one below appears, remove the last diskette from the drive and then click on **Yes**.



- As the system re-starts, the AT&T logo appears, then the CAS setup dialog box:

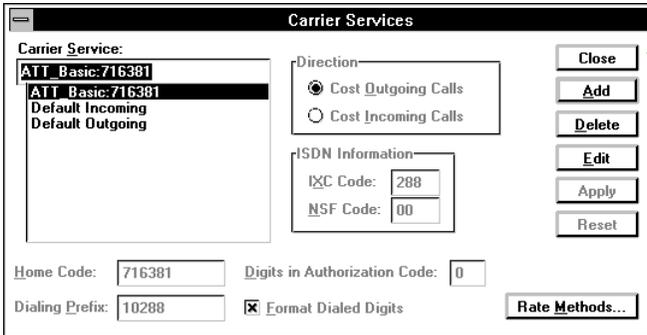


In this procedure, when you select [x] an item, its dialog box appears. When you close it, the above display reappears so that you may continue to the next item. For help, press **F1**.

- One at a time, select [x] the first four items to display the system defaults (and if necessary, enter information from the CUSTOMIZATION worksheet).
- Select [x] **Additional Fixed Rates** ONLY if you have custom *Fixed Rates* diskettes or *Fixed Rates Update* diskettes for this site.

For each diskette (order is not important), insert it in a drive and follow instructions to complete the operation.

c. Select [x] **Carrier Services**.

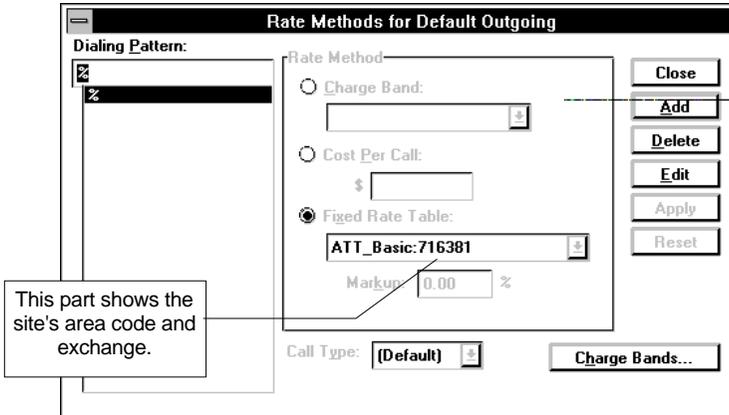


The "Carrier Services" dialog box contains the following elements:

- Carrier Service:** A list box with entries: "ATT_Basic:716381", "ATT_Basic:716381", "Default Incoming", and "Default Outgoing".
- Direction:** Radio buttons for "Cost Outgoing Calls" (selected) and "Cost Incoming Calls".
- ISDN Information:** Fields for "IXC Code: 288" and "NSF Code: 00".
- Home Code:** Field with value "716381".
- Digits in Authorization Code:** Field with value "0".
- Dialing Prefix:** Field with value "10288".
- Format Dialed Digits:** A checked checkbox.
- Buttons:** "Close", "Add", "Delete", "Edit", "Apply", "Reset", and "Rate Methods...".

- i. One at a time, select each carrier service whose fixed rates you installed in 6b and verify the information brought on display.
- ii. Next, select "**Default Outgoing**" and click on **Rate Methods**.

When a dialog box similar to the one below appears, select the "%" entry, click on **Edit**, select "**Fixed Rate Table**" and the site's primary carrier from the list box. Click on **Apply**, then **Close**.



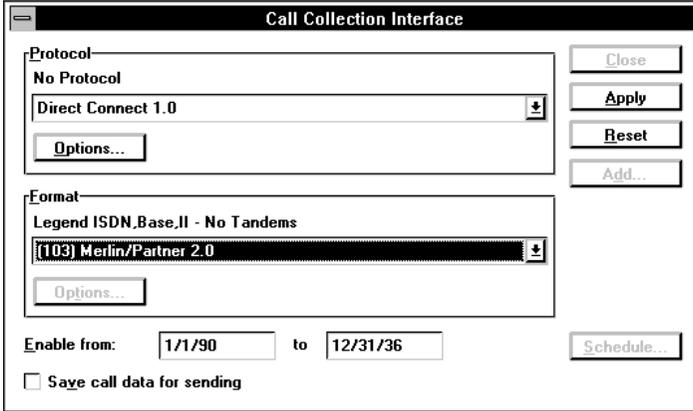
The "Rate Methods for Default Outgoing" dialog box contains the following elements:

- Dialing Pattern:** A list box with entries: "%", "%", and "%".
- Rate Method:** Radio buttons for "Charge Band:", "Cost Per Call:", and "Fixed Rate Table:" (selected).
- Fixed Rate Table:** A dropdown menu showing "ATT_Basic:716381".
- Markup:** Field with value "0.00 %".
- Call Type:** Field with value "(Default)".
- Buttons:** "Close", "Add", "Delete", "Edit", "Apply", "Reset", and "Charge Bands...".

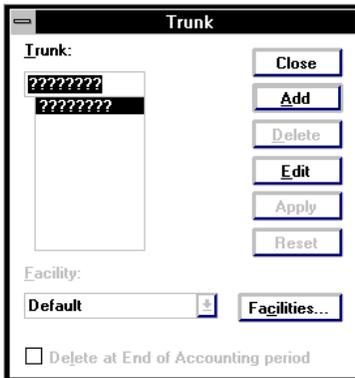
A callout box points to the first "%" entry in the Dialing Pattern list box with the text: "This part shows the site's area code and exchange."

- iii. You may add any other entries from your CARRIER SERVICES worksheets now or you may do so at a later date (see this topic in Chapter 4). Click on **Close** to continue.

- d. Select [x] **Call Collection Interfaces**.
 - i. Use the **Add** button to load each *Call Collection* diskette, one at a time. Follow screen instructions.
 - ii. Select the *protocol*, *format*, and *protocol options* from the CALL COLLECTION INTERFACE WORKSHEET - Part I.



- e. Select [x] **Trunk**. If you are planning to use the G3-MA data transfer option, you may close the dialog box. Otherwise, click on **Add** to enter information from the TRUNKS & FACILITIES WORKSHEET.



- f. Select [x] **Organization**. If you are planning to use the G3-MA data transfer option or to import this table from another system, you may close the dialog box. Otherwise, click on **Add** to enter information from the ORGANIZATION worksheet.

7. When the Setup dialog box reappears, use the **Close** button to conclude the basic installation.

The main menu, system icons, and the **Call Processing Status** window return to the screen.

8. For now, leave the Call Processing Status window in the background (do not enable call rating). You may skip to the last installation task or you may load the options in the software package:

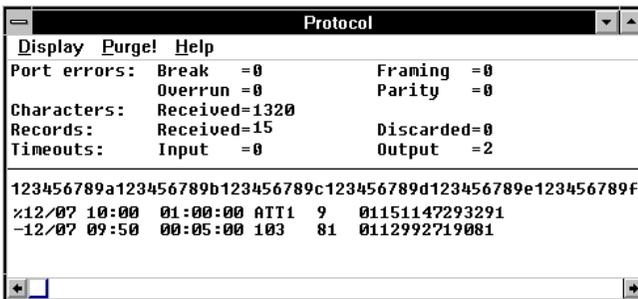
- **Multi-Site**. Install each site for which you have received *Fixed Rates* diskettes as documented in *Site Maintenance* in chapter 7.
- **AT&T HackerTracker**. Set up the alarm reporting features as documented in chapter 8.
- **G3-MA Data Transfer**. Set up the data transfer features as documented in Appendix E.

Task 4: Verifying Call Processing

1. Connect the SMDR interface cable from the selected call collection port in your PC to the source of call records for the site — switch, adjunct, or modem. Enable SMDR output at the source of call records for the site.

If the site's telephones are in use and the above has been completed, you should be able to verify that CAS is receiving call records (step 2) and that the calls are translated using the appropriate format (step 3).

2. At the PC, double-click on the Protocol icon:
A window similar to the one below appears.*



- a. Check for the presence of records on the bottom of the screen. If calls do not appear, locate and correct the problem.



Some possible causes: (1) the protocol options of baud rate and parity do not match the source, (2) switch is not sending calls, (3) bad cable, serial port, or modem problems. For help, call your service representative.

- b. Close the window with the minimize button.

* The Protocol window is a diagnostic tool used to monitor transmissions from the source of call records. Its menu options are:

Display toggles (on/off) information on display:

- ASCII or HEX call record representation
- COUNT of characters and records received and/or discarded
- Input/output TIMEOUTS
- Port ERRORS (breaks, overruns, framing, or parity errors)

Purge moves the contents of the input buffer into the task that interprets call records (normally, call processing waits for a full buffer).

3. At the PC, double-click on the Format icon: 

A window displaying a “**Records**” line similar to the one below appears:

Records: Read=*value* Write=*value* Reject=*value*

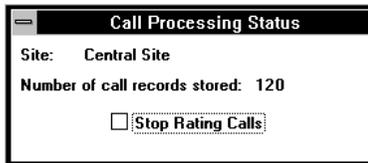
Check the read, write, and reject values. If calls are not processing properly, you selected the wrong *format* in the Call Collection Interface. Correct it and repeat this step.



If you did not install custom fixed rates, skip the next step and leave your system collecting calls without rating them.

When you install your rates update package, you may complete this step and start rating calls.

4. Activate the **Call Processing Status** window (in the background).
- a. De-select the Stop Rating Calls box [X] → []. You will see the number of call records stored increase as calls are rated and stored:



- b. To close the window, double-click on the top left corner.

This chapter describes the functions in the Administration menu. It is organized into the following sections:

- *Organization Table* — describes how to set up the site-specific table of telephone extensions, their attributes, and their place in the system-wide organizational hierarchy.
 - *General Privacy* — describes how to mask dialed numbers for reports only and/or permanently.
 - *Immediate Output / Alert Numbers* — describes how to specify conditions and/or dialed numbers that require attention. Flagged call details are accessible via the Immediate Output viewer.
 - *Account Codes* — describes how to set up the system-wide table of accounts (sorted by name or by number) and their attributes — account name and call charges (if any).
 - *Change Password* — describes how to change your login password.
 - *Site Selection* — (Multi-site systems only) describes how to identify the site (from a list of installed sites) prior to accessing site-specific tables.
- ⇒ HackerTracker options, under the Administration menu, are documented in detail in chapter 8.

Organization Table

Purpose To maintain the table of extensions and their attributes — including a directory of Personnel. This table is used by CAS to track extension activity for a site and to allocate telecom expenses.

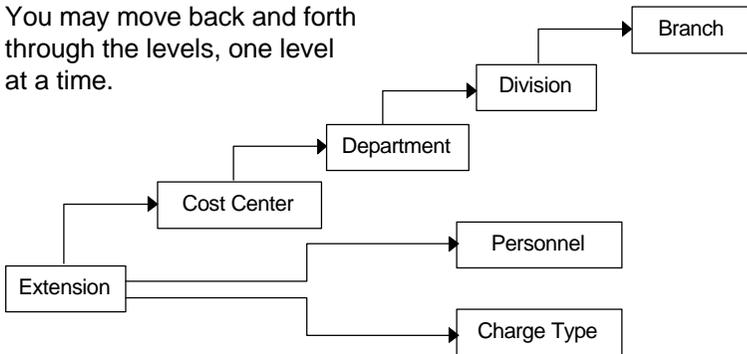
Related Functions

- Organization Levels (Customize menu) sets the organization structure. Default: level 1 = Extension, 2 = Cost Center (budget level), 3 = Department, 4 = Division, 5 = Branch.
- CAS allows data transfers of organization entries via:
 - (a) File Import/Export (Utility menu, see Chapter 7 for details)
 - (b) G3-MA data transfer — for installations using G3-MA switch administration (Utility menu, see Appendix E for details)
- Use Organization Directory Listings for printouts of this table; for call accounting, use Organization Reports (see Chapter 6).

Access Select **Organization** from the **Administration** menu. In a multi-site system, first perform a **Site Selection** (**Administration** menu).

This accesses the Extension level.

You may move back and forth through the levels, one level at a time.



Level 1

Extension. The number (1 to 10 digits) corresponding to a voice terminal or station reported as the source of an outgoing call or destination of an incoming call. Site-dependent, required.



Undefined extensions that appear in call records are added to the organization with default attributes. If the table overflows (that is, there are more extensions than your model size allows) additional extensions appear in call records as "?????????" the default extension. This may not be deleted; however, you may change its name (for example, to "Overflow") or its attributes (for example, to flag it for "Immediate Output").

Authorization Code. The code (up to 10 digits) set up in your switch to use limited-access facilities and/or to charge calls. This number will not be reported; however, calls placed using this code will be charged to this extension. Optional, unique for the system.

Extension Charges. An amount added to the extension's expenses for equipment or other billable items (this appears as an additional line item in an Organization Detail or Summary Report). Select either:

- **Fixed Charge.** Enter the specific amount in your currency.
- **Charge Type.** The name of a charge associated with a fixed cost, selected from the list box. You must define a new entry before you can select it (see the *Charge Type* dialog box, ahead).

Privacy for reports and/or for storage. Select the number of digits to hide on numbers dialed by this extension ("None" to 17 or "All"). The right-most digits will be masked with "?"s.

Immediate Output. The option to copy calls charged to this extension to the Immediate Output file (see *Viewer Functions* in Chapter 6 for details).

Delete at End of Accounting Period. The option to remove this extension after the period closes.

Personnel Name. The name of the extension user, selected from the list box. You must define a new entry before you can select it (see the Personnel dialog box, ahead).

Cost Center. The name of the level-2 organization that owns this extension, selected from the list box. You must define a new entry before you can select it (see the Level 2 dialog box, ahead).

Summary of Procedures (Organization Table)

First-time administration of this table is best accomplished by starting with the highest level, then proceeding to the lowest, one level at a time.

1. For a new extension, click on **Add**; otherwise, select the extension and click on **Edit** or **Delete**, as appropriate.

If **Delete** is disabled, it means that this entry is in use elsewhere in the database. Use **Edit** and select [x] Delete at End of Accounting Period.

2. Complete the dialog box.

If the desired Charge Type, Personnel, or Cost Center did not appear in the list box and you need to create the entry, click on its button. Complete its dialog box, then return here to select it from the list box.

3. Click on **Apply** (**Reset** cancels changes). You may work on another extension record or use **Close** to exit.

Charge Type

Charge Type - Central Site

Name:

Charge:

Type or select a *Name* (up to 15 characters) and click on **Add**, **Edit** or **Delete**. If necessary, enter a *Charge* in your currency. When complete, click on **Apply** (**Reset** cancels changes). You may work on another entry or use **Close** to exit.

Personnel

Personnel

Personnel Name:

Title:

First Name:

Last Name:

For a new entry, click on **Add**; for changes, select the *Name* and click on **Edit** or **Delete**. If necessary, change or enter the *Title* (**Miss**, **Mr.**, or **Mrs.** or up to 6 characters), *First Name* (up to 26 characters) and *Last Name* (up to 36 characters) of an extension user.

When complete, click on **Apply** (**Reset** cancels changes). You may work on another entry or use **Close** to exit.

⇒ The default "?????????" name may not be deleted; however, it may be changed to reflect its function (for example, to "Unassigned").

Level 2

Cost Center. The name (1 to 15 characters) of the level-2 organization that owns extensions, unique system-wide.

➤ The "Default" entry may not be deleted; however, you may change it to another name reflecting its function (for example, "Unassigned").

Call Rating. The *Markup* (-100.00 to 1000%), *Surcharge* and *Minimum Cost* (all defaults = 0) for every call charged to this cost center. Reports will show the largest of (a) minimum cost or (b) (call cost x markup %) + surcharge.

Budget (this field appears if "budget" was set for this level). The annual figure budgeted for this cost center; default = 0.

Delete at End of Accounting Period. The option to remove this entry AND ITS LOWER LEVELS after the period closes.

Department (if this level exists). The level-3 organization that owns this cost center, selected from the list box. You must create a new entry before you can select it (see the *Level 3* dialog box, ahead).

Summary of Procedures (Cost Center)

1. For a new entry, click on **Add**; for changes, select the desired cost center and click on **Edit**.
2. Complete the dialog box. If the desired department did not appear in the list box and you need to create the entry, click on its button. Complete its dialog box, then return here to select it from the list box.
3. Click on **Apply** (**Reset** cancels changes). You may work on another entry or use **Close** to exit to the prior level.

Level 3 (or higher)

Department, Division or Branch. The name (up to 15 characters) of a level-3, -4 or -5 organization, unique system-wide.

Budget (this field appears if "budget" was set for this level). The annual figure budgeted for this department; default = 0.

Delete at End of Accounting Period. The option to remove this entry AND ITS LOWER LEVELS after the period closes.

Division or Branch (if this next level exists). The organization that owns this entry at the next level, selected from the list box. You must create a new entry before you can select it.

Summary of Procedures (Department or higher levels)

1. For a new entry, click on **Add**; for changes, select a name and click on **Edit**.
2. Complete the dialog box. If the desired "owner" organization did not appear in the list box and you need to create the entry, click on its button. Complete its dialog box, then return here to select it from the list box.
3. Click on **Apply** (**Reset** cancels changes). You may work on another entry or use **Close** to exit to the prior level.

General Privacy

Purpose To mask all or part of the numbers dialed, either only at report time or permanently, as the call goes into storage.

If the telephone switch supports dialed access codes for "private calls" and/or Automatic Number Identification (ANI), CAS can provide privacy to calls marked "private" and/or to incoming calls.

Related Functions

- To set privacy for specific extensions, use the Organization-Extension function (see *Organization Table* in this chapter).
- To identify "private" access codes, use the Access Codes function (see *Access Codes* in chapter 4).

Access Select **General Privacy** from the **Administration** menu. In a multi-site system, first perform a **Site Selection** (**Administration** menu).

The screenshot shows a dialog box titled "General Privacy - Central Site". It contains three sections, each with two dropdown menus. The first section is "Outgoing Calls", with "Masked Digits for Storage" and "Masked Digits for Reports" both set to "(NONE)". The second section is "ANI Calls", with "Masked Digits for Storage" and "Masked Digits for Reports" both set to "(NONE)". The third section is "Private Calls", with "Masked Digits for Storage" and "Masked Digits for Reports" both set to "(NONE)". To the right of the dropdowns are "OK" and "Cancel" buttons.

Outgoing, ANI or Private Calls — Masked Digits for Storage or for Reports. Select how many digits to hide ("None" to 17 or "All").

The right-most digits on dialed numbers will be masked with "?"s either permanently (storage) or for reports only (stores complete numbers, but hides them on reports).

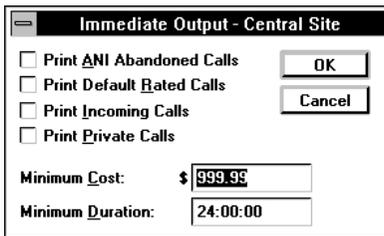
Immediate Output

Purpose To log calls that were ANI-abandoned, default-rated, incoming, private, costly, and/or lengthy. A copy of the call record is logged in the Immediate Output file (the log can hold up to 500 records).

Related Functions

- To log calls by dialed number, use **Alert Numbers**, or by extension, **Organization-Extension** (both, **Administration** menu).
- To identify "private" access codes used by the switch, use the **Access Codes** function (**Configuration** menu).
- To display the Immediate Output file, use **View Immediate Output** (**Listings** menu) or click on its icon: 

Access Select **Immediate Output** from the **Administration** menu. In a multi-site system, first perform a **Site Selection** (**Administration**).



Check [x] the option to log these type of calls:

- ANI Abandoned. Incoming calls terminated by the caller (if your switch provides it, the originating phone number is included).
- Default Rated. Calls whose rating could not be identified (for example, calls made to new area codes, not in the rate tables).
- Incoming or Private. Calls dialed in, and if supported by the switch, calls marked by a "private" access code.

Minimum Cost (in your currency, default \$999.99) / Duration (in hours:minutes:seconds, default 24:00:00). Enter values to log expensive or lengthy calls — for example, if you enter \$10.00 and 0:30:00, calls that either cost at least \$10.00 or lasted at least 30 minutes will be sent to the Immediate Output log.

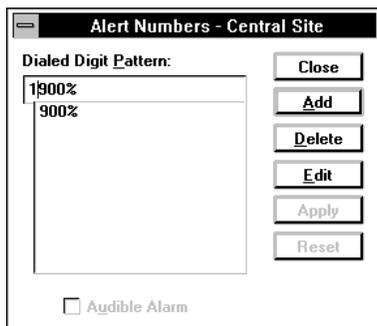
Alert Numbers

Purpose To flag calls placed to up to 250 number patterns, optionally sounding an alarm. A copy of the flagged call is placed in the Immediate Output file. If enabled, an alarm sounds at the PC until you view this file.

Related Functions

- To log calls by general criteria ("private" or by cost or length), use the Immediate Output function; to log calls by specific extensions, use the Organization-Extension function.
- To display the Immediate Output file, use **View Immediate Output (Listings menu)** or click on its icon: 

Access Select **Alert Numbers** from the **Administration** menu. In a multi-site system, first perform a **Site Selection (Administration menu)**.



Dialed Digit Pattern . A dialed number or a general pattern to match. Patterns are comprised by up to 18 digits and/or wild cards (? = single digit; % = any number of digits).

Audible Alarm. The option to sound an alarm at the PC when a call is placed to this alert number.

Summary of Procedures

For a new entry, click on **Add**; for changes, select a pattern and click on **Delete** or **Edit**, as appropriate. Complete the dialog box then, click on **Apply** (**Reset** cancels changes).

Account Codes

Purpose To administer the table of account codes reported by the switch, and to associate names and cost adjustments.

Related Functions

- Stored calls with accounts are reported via the Account Code Reports (see chapter 6 for details)
- Call records may be edited to correct dialed errors (see *Call Record Edit* in chapter 7).

Access Select **Accounts by Name** or **Accounts by Number** from the **Administration** menu.

Accounts by Number

Account Code Number: 1234567890

Account Name: Acme Toys

Call Cost Adjustments

Percent Markup: 0.00 %

Surcharge per Call: \$ 0.00

Minimum Cost per Call: \$ 0.00

Delete at end of Accounting Period

Close, Add, Delete, Edit, Apply, Reset

Accounts by Name

Account Name: Acme Toys

Account Code Number: 1234567890

Call Cost Adjustments

Percent Markup: 0.00 %

Surcharge per Call: \$ 0.00

Minimum Cost per Call: \$ 0.00

Delete at end of Accounting Period

Close, Add, Delete, Edit, Apply, Reset

Account Code Number. The dialed code reported by the switch (unique system-wide, up to 16 digits). CAS automatically adds any new codes that appear in call records.

⇒ Undefined accounts in call records are added to the database with the account number as its name and no cost adjustments. If the database overflows, additional codes will NOT appear in call records and an error message will be logged.

Account Name. The name (up to 20 characters) as it will appear in reports.

Call Cost Adjustments. The *Markup* (-100.00 to 1000%), *Surcharge* and *Minimum Cost* (all defaults = 0). Reports will show the largest of (a) minimum cost or (b) (call cost x markup %) + surcharge.

Delete at End of Accounting Period. The option to remove this entry when the period ends.

Summary of Procedures

1. For a new entry, choose **Add**; for changes, select the desired entry and choose **Delete** or **Edit**, as appropriate.

If **Delete** is disabled, it means that this entry is in use elsewhere in the database. Use **Edit** and select [x] Delete at End of Accounting Period.

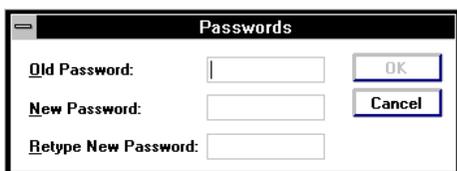
2. Complete the dialog box, then choose **Apply** (**Reset** cancels changes).

Password

Purpose To change the password of the currently logged user. (This dialog box is disabled on systems without restricted access.)

Related Functions To restrict access to the system and assign privileges, use **Users (Configuration)** menu). Look up this topic in chapter 4.

Access Select **Password** from the **Administration** menu.



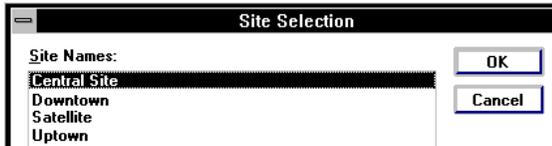
The image shows a dialog box titled "Passwords". It contains three text input fields: "Old Password:", "New Password:", and "Retype New Password:". To the right of the "Old Password:" field is an "OK" button, and to the right of the "New Password:" field is a "Cancel" button. The "Retype New Password:" field does not have a button next to it.

Enter your old password (asterisks mask your entries), then your new password.

Site Selection

Purpose To access a site's database in a multi-site system.

Access Select **Site Selection** from the **Administration** menu.



Select the name of the desired site from the list box.

This chapter describes the functions in the Configuration menu. It is organized into the following topics:

- *Call Rating Tables* —provides an overview of the rating functions and describes how to set up or change the Carrier Services, Dialed Digit Processing, Call Types, Facilities, Access Codes, Holidays, and ISDN BCC Markups.
- *Call Collection Functions* — provides an overview of the SMDR collection functions and describes the interface to call record source(s).
- *Accounting Period* — describes how to set up the system-wide values for the length of your accounting period and the start of your fiscal year.
- *System Users* — describes how to set up or change the login names and access privileges of all system users (including other processors that communicate with your PC).

⇒ HackerTracker options under the Configuration menu are documented in detail in chapter 8.

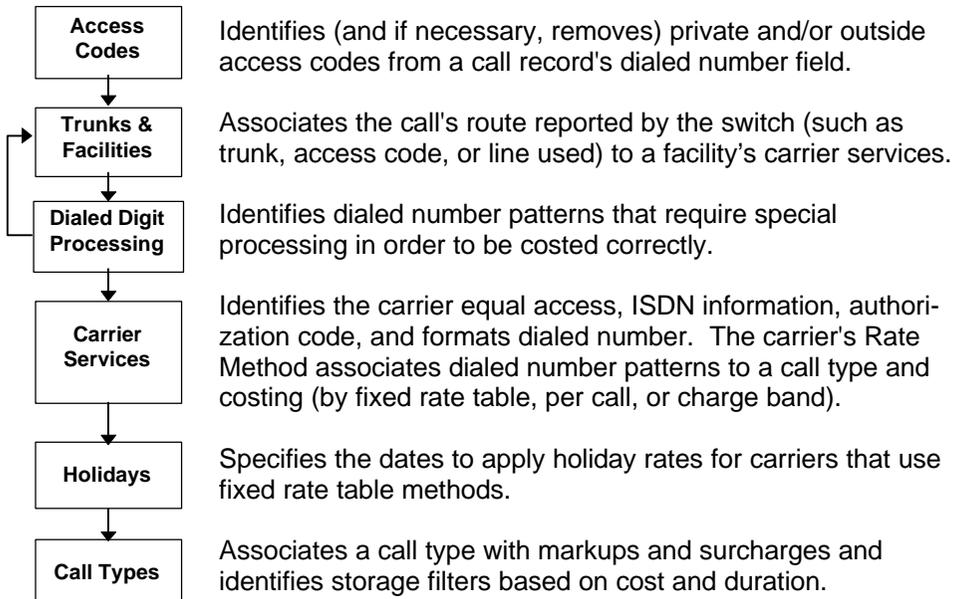
Call Rating Tables

Call rating is set up at installation by loading the site-specific Fixed Rates diskette, then entering the information in the *Carrier Services* and the *Trunks & Facilities* worksheets.

After installation, you may edit this, as well as other costing-related information that applies to the site. See the *Overview of Call Rating Tables* for an explanation of the relationship between rating tables and a typical setup.

Overview of Call Rating Tables

CAS uses the following tables* in its call rating algorithm:



Basic Setup of Call Rating Tables

* The diagram and detailed explanation in the next two pages show typical setups of these tables for costing basic calls on the public network (including calls to special numbers or those serviced by a secondary carrier), calls on dedicated or leased service lines, and internal calls (that is, calls from one extension to another).

| Call | Carrier Services - Rate Methods | Trunks - Facility |
|--|---|---|
| Basic call | Carrier Service 1 ; dialing prefix = none Dialing pattern = % (any) Rate method = fixed rate table Call type = default | CO lines Carrier svc out 1 |
| Call to special number (xxx...x) | Dialing pattern = xxx...x Rate method = fixed rate table Call type = SPCL or user-defined | |
| Call dialed via carrier 2 | Carrier Service 2 ; dialing prefix = 10xxx (or 101xxx, if using 1995 NANP) Dialing pattern = % (any) Rate method = fixed rate table* Call type = default ** | |
| Basic calls via leased service | Carrier Service 3 ; dialing prefix = none Dialing pattern = % (any) Rate method = cost/call (average) Call type = SPCL or user-defined | Leased lines Carrier svc out 3 |
| Incoming service calls | Carrier Service 4 ; dialing prefix = none Dialing pattern = % (any) Rate method = fixed rate table* Call type = default ** | Dedicated lines Carrier svc in 4 |
| Internal calls | Carrier Service 5 ; dialing prefix , IXC, NSF, home code, format dialed digits = none Dialing pattern = % (any) Rate method = cost/call (= 0.00) Call type = user-defined (eg. INTRN) | Special trunk = "-----" Carrier svc out 5 |
| * If a carrier's fixed rate table is not installed, mark up an installed one to approximate rates. ** Default call type names are derived from the number dialed. | | |

Detailed explanation of table:

- **Basic calls.** The cost of basic calls (i.e. using no dialing prefix) is based on the *Carrier Services* associated with the *Facility* used by the call:
 - If the trunks connect to the CO facility, the call rates and types are derived automatically from the fixed rate tables installed in your PC.
 - If the trunks are dedicated to a carrier facility (i.e. they connect directly to the carrier's network), the rates and call types are derived as above (if carrier's tariffs are not installed, you may approximate its rates by a markup on an installed tariff).
 - If the trunks connect to a leased service facility (for example, to a Foreign Exchange, SDN, or TIE line), you set the rates as a flat cost per call or per minute and you define the call types — for example, "T-NYC" (TIE to New York City) or "FX" (foreign exchange).
- **Calls dialed via a secondary carrier.** The cost of calls via a secondary carrier is based on the carrier identified by its dialing prefix. The rates and call types are derived from fixed rates or a markup on an installed tariff.
- **Calls to special numbers.** The rates and call type for special numbers are based on the dialing pattern you define, at a flat cost per call or per minute. CAS includes a default list (calls to emergency, information, 800 numbers, and 900 service numbers) and may not need further entries.
- **Internal calls.** If the switch is set up to report extension-to-extension call tracking, CAS interprets these calls as using a special trunk ("-----") with the *extension* called prefixed by two dashes (for example, "--6546").

CAS discards internal calls by default; to keep them, we recommend:

1. Create the call type (e.g. "INTRN") with no markups and a minimum duration of 5 seconds.
2. Create an internal carrier service as in 5 of the *Basic Setup of Call Rating Tables*.
3. From Dialed Digit Processing, select the *Search For* "---%" entry. Then:
 - a. Set the *Cost As* to the internal carrier service from step 2.
 - b. Disable "Discard matching calls."

Carrier Services

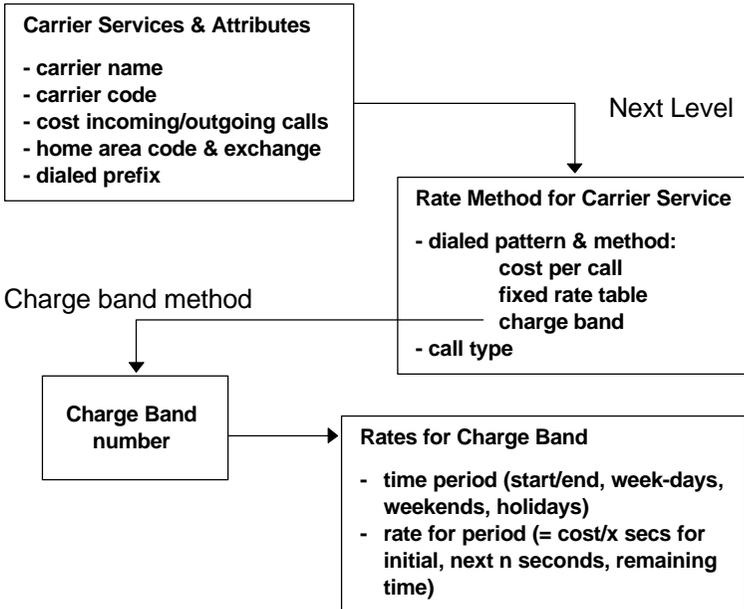
Purpose To set up or change the table of carrier services — in particular, to set up attributes of the carrier services supplied at installation and/or to set up additional carrier services and their rates.

Related Functions

- See *Overview of Call Rating Tables* in this section for the role of related tables in costing calls and setup examples.
- If you wish to name your own call types based on dialing patterns or specific carrier services, you must create the call types first. See *Call Types* later in this section for details.

Access Select **Carrier Services** from the **Configuration** menu. In a multi-site system, first perform a **Site Selection (Administration)** menu).

First level:



Carrier Services

Carrier Service. Descriptive name (up to 15 characters) for this costing group. Installed fixed rates for services appear in the format "carrier_srvc:NPANXX" — where NPA = site's area code and NXX = site's exchange.

Direction. Cost outgoing or incoming calls.

Home Code. The site's area code and exchange.

ISDN Information (if applicable). The IXC code (IntereXchange Carrier, for example, AT&T=288, MCI=222, Sprint=333) and NSF code (Network Service Field) as supplied by your phone company.

Dialing Prefix. The number dialed to access the carrier, if applicable. Typically, a local 950xxxx number (without dashes or other separators) or the 10xxx or 101xxxx Equal Access code.

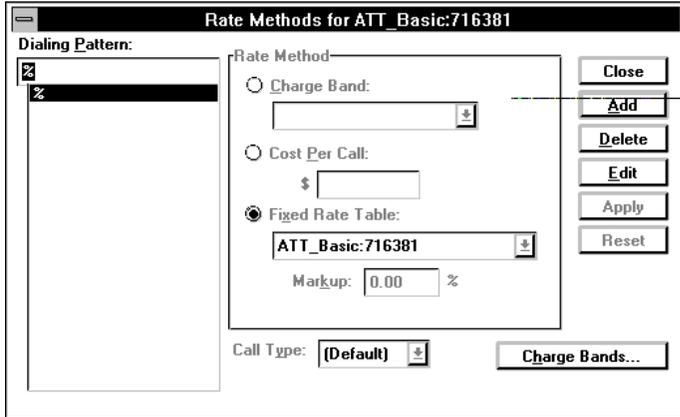
Digits in Authorization Code. In Equal Access areas = 0; elsewhere, the length of your account with the carrier (this value is used to strip off the authorization code digits prefixed to the dialed number).

Format Dialed Digits. The option to place dashes between area code, exchange, and station number in reports.

Summary of Procedures (Carrier Services)

1. For additions or edits: write or select an entry, click on **Add** or **Edit**, complete the dialog box, and click on **Apply** (**Reset** cancels changes). For deletions: select the entry and click on **Delete**.
2. To set up or change the call costing scheme associated with this carrier, use the **Rate Methods** button (see the next topic).
3. When complete, start another entry or click on **Close** to exit.

Rate Methods



Dialing pattern. The pattern to a calling area, represented by up to 18 digits and/or wild cards (? = single digit; % = any number of trailing digits).

Rate Method options:

- Charge Band. Select a charge band number. You may need to set it up via the **Charge Bands** button before selecting it.
- Cost Per Call in your currency.
- Fixed Rate Table. Select the name of the tariff. If necessary, enter the *Markup* (-100.00 to 1000.00%) that best approximates these rates.

Call Type. The name for this type of call, from the list box; use "(Default)" for an automatic association with the internal list:

| | |
|---------------------------|-----------------------------------|
| ????? = default-rated | IS-OL = In-state, Out-of-LATA |
| INCOM = Incoming | OS-IL = Out-of-state, in-LATA |
| LOCAL = local | OS-OL = Out-of-state, Out-of-LATA |
| IDDD = International | SPCL = Special numbers |
| IS-IL = In-state, in-LATA | OTHER = any other |

Summary of procedures (Rate Methods)

1. Use of the charge band method requires the creation of a "code-book" or rate schedule (see the next topic). To do so, click on **Charge Bands**, then return here to complete the function.
2. For additions or edits: write or select an entry, click on **Add** or **Edit**, complete the dialog box, and click on **Apply** (**Reset** cancels changes). For deletions: select the entry and click on **Delete**.
3. When complete, start another entry or click on **Close** to exit.

Charge Bands

Charge Band:

| |
|---|
| 0 |
| 1 |
| 2 |
| 3 |

Buttons: Close, Add, Delete, Edit, Apply, Reset, Rates...

1. Write or select an entry, click on **Add** or **Edit**, and click on **Apply** (**Reset** cancels changes).
2. To specify a rate schedule for this band, click on **Rates**.
3. For deletions: select the entry and click on **Delete**.
4. When complete, start another entry or click on **Close** to exit.

Rates

Rates for 3

| Start Time | End Time | Weekday | Weekend-1 | Weekend-2 | Holiday |
|------------|----------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| 0:00 | 24:00 | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| 0:00 | 24:00 | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |

Buttons: Close, Add, Delete, Edit, Apply, Reset

Time Period Rate Information:

| | | | | | | | |
|----------------|----|---------|--------|-----------|-----|----|---------|
| Initial | 60 | Seconds | - Cost | \$ 0.0000 | per | 60 | Seconds |
| Next | 60 | Seconds | - Cost | \$ 0.0000 | per | 60 | Seconds |
| Remaining Time | | | - Cost | \$ 0.0000 | per | 60 | Seconds |

Time Period. The start-to-end times during the week, weekends, and/or holidays, when rates apply.

Time Period Rate Information. The 3-tiered schedule for the period: initial, next, and remaining time intervals (0 - 999 seconds), and the cost per (0 - 999) seconds.

Summary of Procedures (Charge Band Rates)

1. To add a new time period, click on **Add** and enter its time and rate information.
2. For changes, simply select a time period and click on **Edit** and enter the changes or click on **Delete**.

⇒ When sectioning time slots, make certain that there are no wraps around a 24-hour clock nor gaps in days or times. It may help to use the worksheet "CARRIER SERVICES - Part III. Codebook" (see sample below).

Charge band number: call type**

| Time period | | Day* | | | | Rate Information | | |
|--------------------|------------------|------|---|---|---|------------------|------|-----------|
| Start time (hr:mm) | End time (hr:mm) | W | 1 | 2 | H | seconds | cost | / seconds |
| | | | | | | Initial | | |
| | | | | | | Next | | |
| | | | | | | Remaining | | |

* W = weekday; 1 and 2 = weekend-1 and weekend-2; H = holiday

3. When a period is complete, click on **Apply** (**Reset** cancels changes). You may work on another period.
4. When all periods are accounted for, click on **Close** to exit to the prior level.

Dialed Digit Processing

Purpose To set up or change the Dialed Digit Processing (DDP) table — in particular, to specify dialed patterns that require additional processing in order to cost the call correctly (such as removing invalid characters from the dialed number field).

⇒ DDP can also be used as a "quick fix" to add new area codes or exchanges (however, this should not replace the recommended maintenance by rate updates).

Related Functions See *Overview of Call Rating Tables* at the beginning of this section for the role of related tables in costing calls and setup examples.

Access Select **Dialed Digit Processing** from the **Configuration** menu. In a multi-site system, first perform a **Site Selection (Administration menu)**.

Search For Dialed Digit Pattern and Facility. The *dialed number pattern* (up to 18 digits) and *facility* (from the list box) targeted for additional processing.

Search patterns are represented by the numbers 0 - 9, star (*) and pound (#) signs, and/or wild cards (? = single character in the position it appears; % = any number of trailing characters).

Cost As Dialed Digits. The dialing pattern (up to 18 digits and/or the wild cards "?", "%", "-") conforming to the following replacement rules:

- Every digit found by a "?" in the search-for pattern is matched either to a "?" to keep the digit or to a "-" to discard it. For example, a search for **?381????** and cost as **-381????** finds **13811234** and costs it as **3811234**.
- Trailing digits found in a "%" in the search-for pattern are matched to a "%" in the cost-as pattern. For example, a search for **88%** and cost as **%** finds **8817165551212**, and costs it as **17165551212**.

Cost As Carrier Service. The applicable carrier service for costing.

Change Dialed Digits (stores the replaced number) and Discard Matching Calls. The disposition of calls matching the search criteria.

Summary of procedures (DDP)

1. For additions or edits: write or select an entry, click on **Add** or **Edit**, complete the dialog box, and click on **Apply** (**Reset** cancels changes).
2. For deletions: select the entry and click on **Delete**.
3. When complete, start another entry or click on **Close**.

For example, this entry adds area code 334 after it split from 205:

It searches for all outgoing calls to 1+ 334 over all facilities and costs them as dialed to 1+ 205, without changing the original dialed number.

 Changes to DDP will be applied to ensuing calls. They are not retroactive — that is, calls already stored will not be reprocessed.

Call Types

Purpose To set up call type names for identifying and reporting calls and to associate them with cost adjustments, taxes, and storage options.

Related Functions See *Overview of Call Rating Tables* at the beginning of this section for the role of related tables in costing calls and setup examples.

Access Select **Call Types** from the **Configuration** menu. In a multi-site system, first perform a **Site Selection (Administration menu)**.

The screenshot shows the 'Call Types - Central Site' configuration window. On the left is a list of call types: IDDD, ?????, IDDD, INCOM, IS-IL, IS-OL, LOCAL, OS-OL, Other, and SPCL. The main area is divided into several sections: 'Reporting Name' (IDDD), 'Call Cost Adjustments' (Percent Markup: 0.00%, Surcharge: \$ 0.00, Minimum Cost: \$ 0.00), 'Taxes' (Federal: 0.00%, State: 0.00%, Local: 0.00%), and 'Call Storage Options' (Network Correction Time: 15 Seconds, Minimum Duration: 0:00:30 hh:mm:ss, Minimum Cost: \$ 0.00). On the right side, there are buttons for Close, Add, Delete, Edit, Apply, and Reset.

Call Type. The system name (one to 5 characters) used on dialog boxes and listings. The following table lists system defaults:

| Call Type | Description | Attributes |
|-----------|---------------------------|--|
| IDDD | international | cost adjustments, taxes = 0 storage - network corr. = 15 sec minim. dur. = 30 sec minim. cost = 0 |
| IS-IL | in-state, in-LATA | |
| IS-OL | in-state, out-of-LATA | |
| OS-IL | out-of-state, in-LATA | |
| OS-OL | out-of-state, out-of-LATA | |
| LOCAL | local | |
| INCOM | incoming | all values = 0 |
| Other | other | |
| ????? | default-rated | |

Reporting Name. The name (one to 5 characters) that appears on reports. This option allows you to group call types under a more general name, for example, to report IS-IL and OS-IL as "LATA" calls.

Call Cost Adjustments for every call of this type:

- Percent Markup: -100.00 to 1000%; default = 0.
- Surcharge: in your currency; default = 0.
- Minimum Cost: in your currency; default = 0.

 The adjusted cost on reports = the largest of (a) Minimum Cost or (b) (Call Cost x Markup %) + Surcharge

Taxes. Enter values (-100.00 to 1000%; default = 0.00%) for active taxes on calls of the named type. Taxes are applied to basic call costs in addition to other cost adjustments.

Call Storage Options:

- Network Correction Time (0:00:00 to 9:59:59 in hours, minutes, seconds), used to correct switches without answer supervision.
- Minimum Duration (0:00:00 to 9:59:59 in hours, minutes, seconds) and Minimum Cost (in your currency) to filter short calls.

 The Rejected Call Summary Report provides statistics by call type on calls below the minimum cost and duration. Rejected calls will appear in detail in the Immediate Output log.

Summary of procedures (Call Types)

1. For additions or edits: write or select an entry, click on **Add** or **Edit**, complete the dialog box, and click on **Apply** (**Reset** cancels changes).
2. For deletions: select the entry and click on **Delete**.
3. When complete, start another entry or click on **Close**.

Trunks and Facilities

Purpose To administer the Trunk and Facilities table, which includes association to a Carrier Service for costing purposes. CAS automatically adds undefined trunks in call records to the "Default" facility.

Trunks are identifiers for the route of the call, programmed at the switch for use by a specific facility. The term "Trunk" is switch-dependent; CAS displays the one in use by the site's Call Collection Interface — for example, "line," "used access code," or "circuit ID."

Related Functions

- See *Overview of Call Rating Tables* earlier in this section for the role of related tables in costing calls and setup examples.
- For sites with G3-MA switches, a data transfer option from the G3-MA administration PC provides CAS with actual trunk and facility data (see appendix E).

Access Select **Trunk** from the **Configuration** menu. In a multi-site system, first perform a **Site Selection** (**Administration** menu).

1. For additions or edits: write or select the trunk, click on **Add** or **Edit**, select a facility, and click on **Apply** (**Reset** cancels changes).
2. To set up a facility and/or its attributes, use the **Facilities** button (see the next topic).
3. For deletions: select trunk and click on **Delete** (if disabled, use **Edit** and check [x] Delete at End of Accounting Period).

Trunk. The route identifier, exactly as it appears in a call record.

Facility. The billing service associated with this trunk. You must define a new entry before selecting it (see topic ahead).

Delete at End of Accounting Period. The option to remove this trunk after the period closes.

Facilities

Facility. The identifier (up to 15 characters) for a group of trunks that carry calls requiring similar services.

Outgoing / Incoming Carrier Service. The name of the carrier service for costing calls routed through this facility.

Target Grade of Service (GOS). The desired probability (0.0 to 20.0 %; default = 2.0 %) of receiving a busy signal during the facility busy hour. CAS uses actual traffic data to estimate the number of trunk/lines required to meet this value.

Number of Trunk Lines (if enabled). The number of physical lines in this facility.

Delete at end of Accounting Period. The option to remove this facility after the period closes.

Summary of Procedures (Facilities)

1. For additions or edits: write or select an entry, click on **Add** or **Edit**, complete the dialog box, and click on **Apply** (**Reset** cancels changes).
2. For deletions: select the entry and click on **Delete**. If the button is disabled, use **Edit** and check [x] Delete at End of Accounting Period.
3. When complete, start another entry or click on **Close** to exit.

Access Codes

Purpose To identify codes dialed to mark private calls.

If this site's call records include access codes in the dialed number field, this function is also used to identify all codes — private and/or outside access — so that they can be removed from the dialed number for proper processing.

Related Functions

- See *Overview of Call Rating Tables* earlier in this section for the role of related tables in costing calls and setup examples.
- Use **General Privacy (Administration menu)** to mask telephone numbers dialed through this access code.

Access Select **Access Codes** from the **Configuration** menu. In a multi-site system, first perform a **Site Selection (Administration menu)**.

The screenshot shows a window titled "Access Codes - Central Site". Inside the window, there is a label "Access Code:" followed by a text input field. Below the input field is a checkbox labeled "Private". To the right of the input field and checkbox is a vertical column of six buttons: "Close", "Add", "Delete", "Edit", "Apply", and "Reset".

Summary of Procedures (Access Codes)

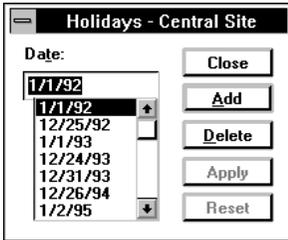
1. For additions or edits: write or select an entry, click on **Add** or **Edit**, check [x] Private if appropriate, and click on **Apply (Reset cancels changes)**.
2. For deletions: select the entry and click on **Delete**.
3. When complete, start another entry or click on **Close** to exit.

Holidays

Purpose To add or remove a date from the list of holidays that offer call rate discounts.

Related Functions See *Overview of Call Rating Tables* at the beginning of this section for the role of related tables in costing calls and setup examples.

Access Select **Holidays** from the **Configuration** menu. In a multi-site system, first perform a **Site Selection** (**Administration** menu).



Summary of Procedures (Holidays)

1. For additions: write the date, click on **Add**, and click on **Apply** (**Reset** cancels changes).
2. For deletions: select the entry and click on **Delete**.
3. You may work with another entry or click on **Close** to exit.

ISDN BCC Markups

Purpose To set up or change markups associated with Bearer Capability Class (BCC) services offered on ISDN calls.

The BCC is a field in an ISDN call record that identifies classes of service. Classes of services include Voice, Mode 0 (64Kbps clear), Mode 1 (56Kbps synchronous), Mode 2 (19.2 Kbps synchronous or asynchronous), and Mode 3 (LAPD protocol and circuit/packet switches data). BCC Mode 6 (wideband calls) is not currently supported.

Access Select **ISDN BCC Markups** from the **Configuration** menu. In a multi-site system, first perform a **Site Selection (Administration menu)**.

ISDN BCC Markups - Central Site

BCC Code:

Close

Add

Delete

Apply

Reset

Percent Markup: %

Summary of Procedures (Holidays)

1. For additions: click on **Add**, enter a class of service code and its markup (-100.00% to 1000.00%), then click on **Apply (Reset cancels changes)**.
2. For deletions: select a code and click on **Delete**.
3. You may work with another entry or click on **Close** to exit.

Call Collection Functions

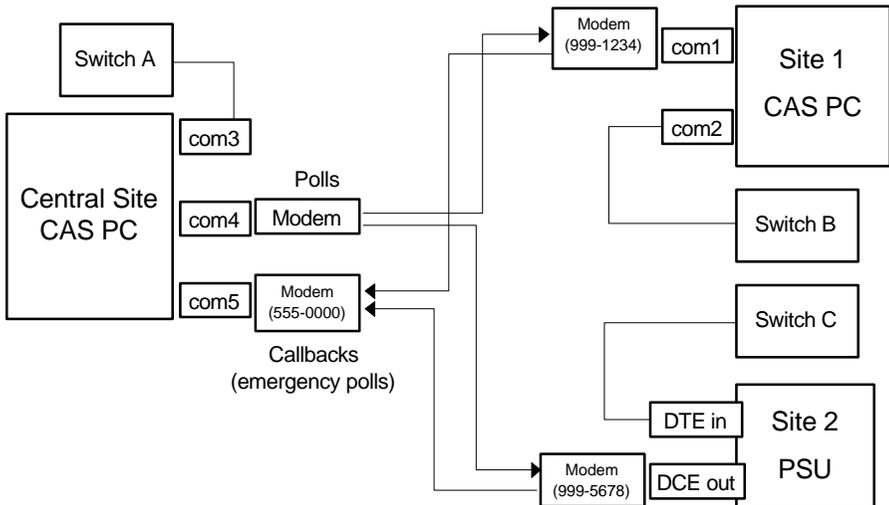
CAS can collect SMDR from most AT&T and non-AT&T telephone switches, either directly from the switch, or indirectly via file transfers or polls to storage systems such as PSUs, CDRUs, CAS PCs, or INFO/MDR Centrex products. In a multi-site system, CAS manages SMDR collection from the local (central) site, as well as remote sources.

Overview of Call Collection

CAS call collection functions include:

- Call Collection Interface. This is a site-specific function used to set the transmission protocol, SMDR format, and so forth. It provides the option of saving SMDR data to send to another PC (the "poller").
- Call Sender Interface. In systems that save SMDR data, this is used to set up callbacks to the poller and initiate an emergency poll.
- Callback Receiver. In poller systems, this is used to set up the port dedicated to callbacks and emergency polls.

The diagram below and table (next page) illustrate the interaction of the above functions.



Central Site

| |
|---|
| <p>Call Collection Interface - Central protocol = Direct Connect format = <i>switch-A</i></p> <p>Protocol Options (Direct Connect) Port = Com3 Baud rate, data bits, etc.</p> |
| <p>Call Collection Interface - Site 2 protocol = PSU format = <i>switch-C</i></p> <p>Protocol Options (PSU) Port = Com4 Remote phone # = 999-5678 Remote User ID = UserId Remote Password = UserPswd Local phone # = 555-0000 Local User ID = CallHome Local Password = HomePswd</p> |
| <p>Call Collection Interface - Site 1 protocol = CAS for Windows format = <i>switch-B</i></p> <p>Protocol Options (CAS for Windows) Port = Com4 Remote phone # = 999-1234 Remote User ID = Central Remote Password = Poller Local phone # = 555-0000 Local User ID = Site1 Local Password = Site1Pswd</p> |
| <p>Callback Receiver Port = Com5 Baud rate = <i>modem's</i></p> |
| <p>Users</p> <p>User ID = Site1 Password = Site1Pswd</p> <p>User ID = CallHome Password = UserPaswd</p> |

Remote Site #2

| |
|--|
| <p>PSU (default) access by poller: User ID = UserId Password = UserPswd</p> <p>PSU (downloaded) call home: Phone # = 555-0000 User ID = CallHome Password = HomePswd</p> |
|--|

Remote Site #1

| |
|--|
| <p>Call Collection Interface protocol = Direct Connect format = <i>switch-B</i> [x] save call data for sending</p> <p>Protocol Options (Direct connect) Port = Com2 Baud rate, data bits, etc.</p> |
| <p>Call Sender Interface Port = Com1 Baud rate = <i>modem's</i> Home phone # = 555-0000 Home User ID = Site1 Home Password = Site1Pswd</p> |
| <p>Users</p> <p>User ID = Central Password = Poller</p> |

Call Collection Interface

Purpose To set up interface details with the source of call records for a site. These details consist of:

- The transmission protocol
- The call record format (switch-dependent)
- The date range to enable call collection
- A polling schedule (if the connection is not direct)
- The option to save call data for polls by another system

Related Functions See *Call Collection Overview* earlier in this section for the role of related functions and setup examples.

- If you save call data for another system: (1) set up that system as a "user" (see *System Users* in this chapter for details) and (2) use the Call Sender Interface to request emergency polls.
- If you poll other systems' call data and wish to receive emergency poll requests: (1) identify the Callback Receiver port and (2) set up each of the "pollees" as "users" of your system.

Access Select **Call Collection Interface** from the **Configuration** menu. In a multi-site system, first perform a **Site Selection (Administration menu)**.

The screenshot shows the 'Call Collection Interface' dialog box. It features a title bar and several input fields and buttons. The 'Protocol' section includes a dropdown menu set to 'No Protocol' and a sub-menu showing 'Direct Connect 1.0'. The 'Format' section includes a dropdown menu set to 'Legend ISDN,Base,II - No Tandems' and a sub-menu showing '(103) Merlin/Partner 2.0'. On the right side, there are buttons for 'Close', 'Apply', 'Reset', and 'Add...'. At the bottom, there is an 'Enable from:' field with '1/1/90' and a 'to' field with '12/31/36', followed by a 'Schedule...' button. A checkbox labeled 'Save call data for sending' is located at the bottom left.

Summary of procedures (Call Collection Interface)

1. Select the *Protocol* and *Format* used to communicate with the source of call records for this site.

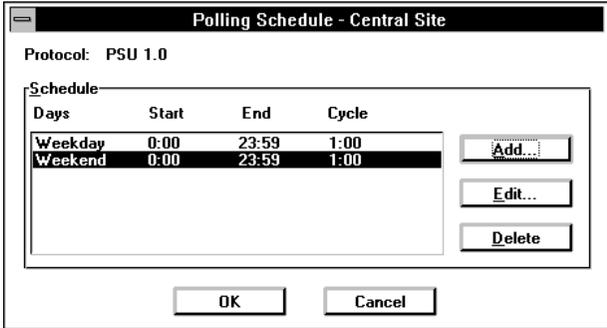
⇒ You may have to load a *Call Collection Interfaces* diskette before selecting protocols or formats. To do so, click on **Add**, follow instructions to name a drive and load the diskette.

Format selections typically list the name of the switch, call record format, and/or special features. *Protocol* selections are listed below:

| Protocol | Used to... |
|--------------------------------|--|
| Direct Connect | receive call records directly from the switch, without protocol (but with flow control set by Protocol Option) |
| Collect from File | copy call records from a file in your PC's hard disk (in which case, you must have another means to place call records from the switch into that file) |
| CAS for Windows | poll call records from another PC running CAS |
| PSU | poll call records from a Pollable Storage Unit |
| CDRU | poll call records from a CDRU system |
| DNC50/500* | poll call records from a Northern Telecom DNC50/500 |
| INFO Monitor - Kermit* | poll call records from an INFO Monitor using the Kermit protocol |
| INFO MP - PollComm* | poll call records from an INFO Monitor using the PollComm protocol |
| INFO Collector - PC* | poll call records from an INFO Collector using the PollComm protocol |
| ACDRS* | poll call records from a Centrex ACDRS connection |
| * Requires the Centrex option. | |

2. After choosing a protocol and format, click on the protocol **Option** button to set transmission details. Use the **F1** key in your PC keyboard for specific instructions.
3. Type the *Enable From* and *To* call collection dates; enable [x] Save call data for sending, if appropriate.
4. Click on **Schedule** if you need to set a timetable for collecting calls from this site.

Polling Schedule



Days. Weekday or weekend, as set in Workweek (Customize menu).

Start and End Times. The times (24-hour clock) in which a site has claim to that port. If a poll runs over its time-slot, it will be terminated (the remainder of the data will be downloaded on the next poll). Once a poll ends, the next site with a claim to that port will be polled.

Cycle. A *Single* poll or *Periodic* polls at (hour:minutes) *Intervals*.

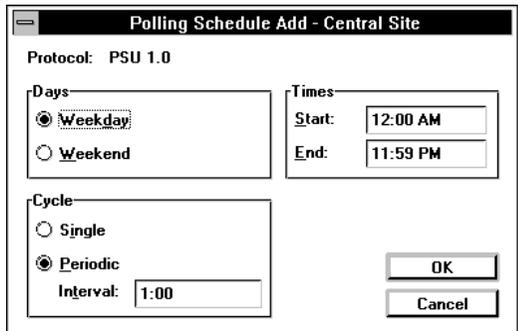
Summary of Procedures (Polling Schedule)

1. We recommend planning a complete schedule for the entire group of sites polled through a single port:

Use the worksheet in appendix A or a similar method, in which you divide the weekday/weekend into non-overlapping hour or half-hour slots and assign them to a site. Then select if this will be a single poll or polls at periodic intervals.

2. At the dialog box: to remove a schedule, select it and choose **Delete**. For a new schedule, choose **Add**; for changes, select a day-time slot and choose **Edit**.

3. Complete the dialog box as set up in your worksheet (step 1) and click **OK**.



Call Sender Interface

Purpose To specify when and how to initiate an emergency poll in systems that save their call data for an external poller system.

If the free disk space reaches the specified minimum, CAS calls "home" (the poller). As soon as the poller answers, CAS identifies itself and sends its call data.

Related Functions See *Overview of Call Collection* earlier in this section for the role of related functions and setup examples.

Access Select **Call Sender Interface** from the **Configuration** menu.

The screenshot shows a dialog box titled "Call Sender Interface". It has the following fields and controls:

- Port Name:** A dropdown menu showing "COM4".
- Baud Rate:** A dropdown menu showing "9600".
- Home System:** A group box containing:
 - Phone Number:** Text field with "T9,3816800".
 - User ID:** Text field with "central".
 - Password:** Text field with "central".
- Free Disk Space:** A group box containing:
 - Minimum:** Text field with "1024".
 - Check Time:** Text field with "0:01".
 - Drives:** Text field with "C".
- Direct Connection:** A checkbox that is unchecked.
- Enabled:** A checkbox that is checked.
- Buttons:** "OK" and "Cancel" buttons at the bottom right.

Port Name. Type or select the port used.

Baud Rate. Type or select the transmission speed — 300, 600, 1200, 2400, 4800, 9600 (or any supported by the port modem).

Home System. The *Phone Number*, *User ID*, and *Password* to access the poller in an emergency. Use the format expected by the modem: "T" or "P" (tone/pulse), digits, and commas (for pauses).

Free Disk Space. Storage conditions that trigger emergency calls:

- Minimum (available storage threshold in kilobytes)
- Check Time (frequency to check for space in hours:minutes)
- Drives (where calls are stored)

Direct Connection. Check [X] if directly connected to the poller.

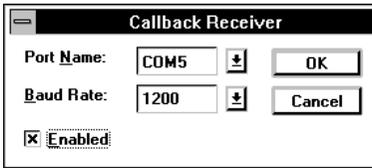
Enabled. Set [X] the ability to request emergency polls.

Callback Receiver

Purpose To dedicate a port on poller systems to receive emergency requests for polls from remote sites. Sites calling through this port can then transmit their call data.

Related Functions See *Overview of Call Collection* earlier in this section for the role of related functions and setup examples.

Access Select **Callback Receiver** from the **Configuration** menu.



Port Name. Type or select the port used to receive emergency poll requests from remote call collectors.

 This port must be different from others used for regular polls.

Baud Rate. Type or select the transmission speed for the port — 300, 600, 1200, 2400, 4800, 9600 (or any other supported by the modem used).

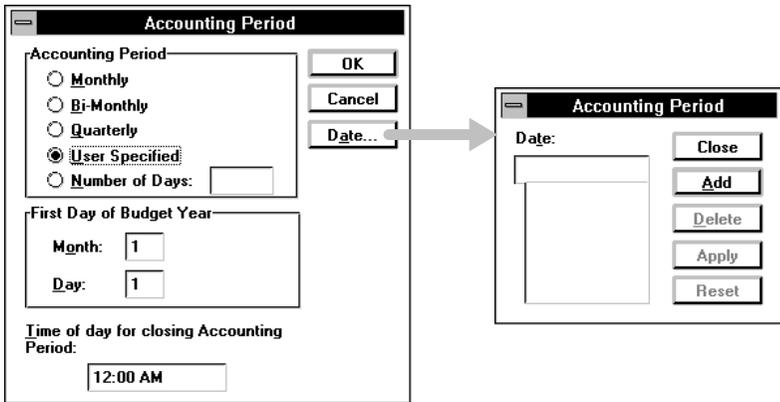
Enable [X] or disable the port for receiving emergency calls.

Accounting Period

Purpose To set up system-wide values based on your company's fiscal year and accounting practices.

CAS uses the concept of accounting period to create “current” and “archive” call record files automatically and to produce complete period statistics on closing dates and times.

Access Select **Accounting Period** from the **Configuration** menu.



Accounting Period : Monthly (default), Bi-monthly, Quarterly, User Specified (see note below) or Number of Days (3 to 365).

➤ If the period is user specified, click on **Date** to set up the starting dates of each period in the budget year. Passed dates are automatically deleted. If the system runs out of dates, a warning is sent to the Message Log.

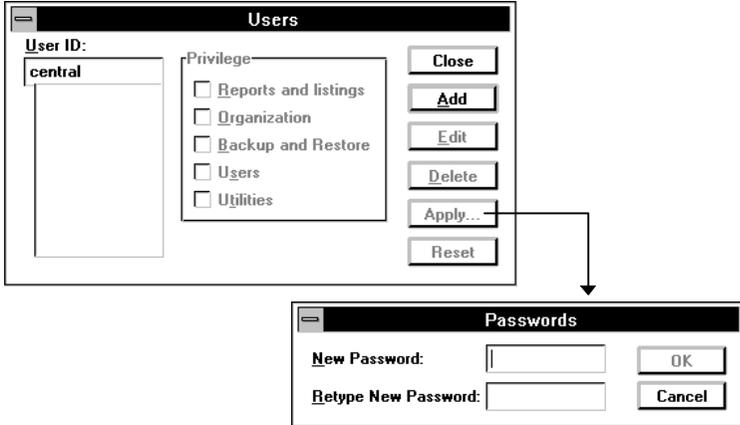
First Day of Budget Year: month and day (default = January 1st).

Time of day for closing Accounting Period. The time in a 24-hour format (0:00 to 23:59 — default = 0:00).

System Users

Purpose To set up or change the login names and access privileges of all system users — these include all PC operators, as well as other systems that require access to your PC (such as call senders and receivers in a multi-site system).

Access Select **Users** from the **Configuration** menu.



Summary of Procedures (Users)

1. For a new entry, click on **Add**; for changes, select the user ID and click on **Edit**. For deletions, select the user ID, click on **Delete**, and proceed directly to step 4.
2. Enter the *User ID* to log in and enable [x] the *Privileges* (the functions accessible to this user).
 - ⇒ Privileges are not required for call sender or receiver systems that access your PC.
3. When you click on **Apply**, set the *Password* and then, click on **OK** to return to the **Users** dialog box.
4. When the **Users** dialog box is complete, choose **Close** to exit.

This chapter describes the functions in the Customize menu. It is organized into the following topics:

- *Organization Levels* — describes how to identify system-wide information on your company name, the number and names of the hierarchical levels used in your organization, and the level at which to track budgets.
- *Currency* — describes how to specify currency attributes at a site. In Multi-site systems, this includes a conversion factor to the central site's currency.
- *Tax Names* —describes how to activate and name up to three taxes in your system-wide tax structure.
- *Location Table* — describes how to associate call destination names with specific dialing patterns, and thus customize detail reports.
- *Work Week* — describes how to identify the days when “weekdays,” “weekend-1,” and “weekend-2” call rates apply.
- *Reporting Options* — describes how to set system-wide detail report attributes (such as summarizing all local, incoming, zero-cost calls, and/or taxes as separate line-items and marking call costs derived by default due to faulty or insufficient costing information).
- *Languages* — describes how to change the language used on screen displays and reports.

Organization Levels

Purpose To enter the company name and customize the organization's corporate structure.

CAS is built with a system-wide organization structure composed of a five-level hierarchy and the following attributes:

- Level 1 = Extension — corresponds to the station source or destination in a call record. Required level.
- Level 2 = Cost Center — can set cost adjustments to calls charged to its extensions. Required level.
- Level 3 = Department — budget tracking level. Optional.
- Levels 4 and 5 = Division and Branch. Optional levels.

Related The **Organization Table (Administration menu)** contains the actual

Functions entries for the structure selected here.

Access From the **Customize** menu, select **Organization Levels**.

Organization Levels

Company Name:

Number of Levels:

Budget Level:

Level Names

Level-1:

Level-2:

Level-3:

Level-4:

Level-5:

Enter the Company Name (one to 25 characters), Number of Levels, Budget Level, and Level Names (one to 25 characters).

Currency

Purpose To set up how monetary values are displayed and reported for a site.

CAS creates a site whose currency is based on the fixed rate tables loaded at installation. This means that systems with actual carrier tariffs should not change the currency itself; however, the way values appear on display and reports may be customized.

Access From the **Customize** menu, select **Currency**. In a multi-site system, first perform a **Site Selection (Administration menu)**.

The *Currency Formats* box displays your choices:

Name (1 to 8 characters) and Symbol (1 to 5 characters) for the currency.

Symbol Placement and Negative. The representation of positive and negative monetary values.

Leading Zero. The usage of a leading zero on values less than 1.

Fixed Trailing Zeros and Decimal Digits. A combination that selects the precision of all costing entries. (Changing either of these fields after installation may alter prior costing entries and will require thorough checking.)

1000 Separator and Decimal Separator. The characters separating 3-digit groups and decimals, respectively.

Tax Names

Purpose To name and activate up to three system-wide taxes that can be charged to the basic cost of calls.

Related Functions Actual tax rates are site-specific, based on the **Call Type (Configuration menu)**. See *Call Rating Functions* in chapter 4 for details.

Access From the **Customize** menu, select **Taxes**. In a multi-site system, first perform a **Site Selection (Administration menu)**.

| Taxes - Central Site | | |
|----------------------|--------------------------------------|--|
| Tax-1: | <input type="text" value="Federal"/> | <input checked="" type="checkbox"/> Active <input type="button" value="OK"/> |
| Tax-2: | <input type="text" value="State"/> | <input checked="" type="checkbox"/> Active <input type="button" value="Cancel"/> |
| Tax-3: | <input type="text" value="Local"/> | <input checked="" type="checkbox"/> Active |

Enter the names (one to 20 characters) and enable [X] Active taxes in your system.

Location Table

Purpose To enhance the built-in table of location names.

Location Tables are used to identify the called area in detail reports. When you install actual tariffs for a site, a table of dialing patterns from that locality is also included.

Access From the **Customize** menu, select **Location Table**. In a multi-site system, first perform a **Site Selection (Administration menu)**.

Dialed Pattern. Up to 18 digits and/or wild cards (? = single digit; % = multiple digits). Up to 1000 entries are allowed.

Location name. Up to 18 characters for the name of this area.

International Dialing Pattern. Check [x] if this pattern is associated with international calls.

Summary of Procedures (Location Table)

1. Enter or select a dialed pattern and click on **Add** or **Edit**, as appropriate. Enter the location name and check x] if this is an international dialing pattern and click on **Apply** (**Reset** cancels changes).
2. For deletions, click on **Delete**.
3. You may work with another entry or click on **Close** to exit.

Work Week

Purpose To change the site-specific defaults for days in the work week (Mon. to Fri. = weekdays, Sat. = weekend-1, Sun. = weekend-2, business hours = 8 AM to 5 PM.).

Related Functions

- CAS uses the *Work Week Type of Day* assignments to cost calls by *fixed rate table* or by *charge band rate* methods.
- The **HackerTracker** option (**Administration** menu) uses the *Business Hours* to set up toll fraud criteria.

Access From the **Customize** menu, select **Work Week**. In a multi-site system, first perform a **Site Selection** (**Administration** menu).

The screenshot shows a dialog box titled "Work Week - Central Site". It is divided into two main sections: "Type of Day" and "Business Hours".

Type of Day: This section contains seven rows, one for each day of the week. Each row has a label (Monday through Sunday) and a dropdown menu. The current selections are: Monday: Weekday, Tuesday: Weekday, Wednesday: Weekday, Thursday: Weekday, Friday: Weekday, Saturday: Weekend-1, and Sunday: Weekend-2.

Business Hours: This section contains two rows. The first row is labeled "Start:" and has a text field containing "8:00 AM" followed by "hh:mm". The second row is labeled "End:" and has a text field containing "5:00 PM" followed by "hh:mm".

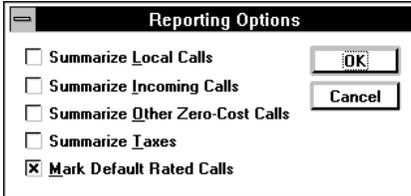
In the top right corner of the dialog box, there are two buttons: "OK" and "Cancel".

Select the Type of Day — *Weekday*, *Weekend-1*, or *Weekend-2* — for Monday through Sunday and the Start and End of your business hours.

Reporting Options

Purpose To set attributes for detail reports such as printing summaries of taxes, local calls, incoming calls, and zero-cost calls, as well as flag calls costed by default due to incomplete information.

Access From the **Customize** menu, select **Reporting Options**.



Enable [X] or disable options as you want them to appear on detail reports:

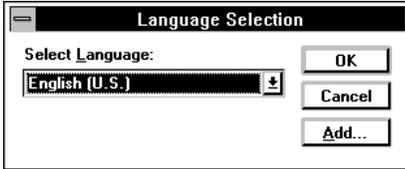
- Summarize Local (call type LOCAL), Incoming (call type INCOM), and Other Zero-Cost Calls. If enabled, these options print summary totals of calls of that type instead of detail records.
- Summarize taxes. If enabled, this option prints a summary total of tax costs.
- Mark default rated calls. If enabled, this option places an asterisk (*) next to calls costed by default due to incomplete information.

Languages

Purpose To select the language used in dialog boxes, messages, on-line help, and reports.

⇒ Changing languages does not affect the values of any database entries or user-defined parameters.

Access From the **Customize** menu, select **Language**.



Choose the desired language from the list box.

⇒ You may have to load its *Language Disk* before you can select a language. To do so, press **Add** and follow the screen instructions to name a drive and load the diskette in it.

This chapter describes how to generate reports and listings and how to use the report, immediate output and message viewer functions.

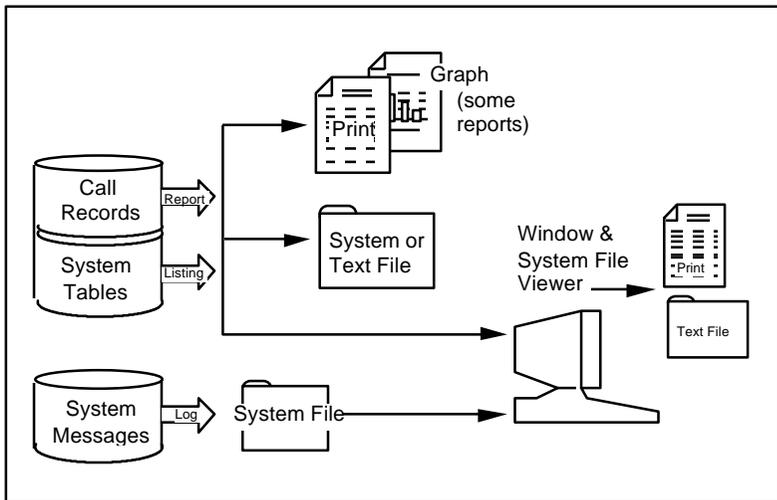
The chapter is organized into the following sections:

- *Common Functions* — describes the general procedures to run reports on a schedule or immediately, how to define their output and set up charts.
- *Report-specific Functions* — describes all call accounting reports:
 - Organization Reports
 - Selection Reports
 - Account Code Reports
 - Traffic Reports
 - Exception Reports
- *Viewing Functions* — describes how to display, print, save, or delete the message log and immediate output files, as well as any report sent to the screen or saved to a system file.

Common Functions

CAS for Windows offers a variety of reporting options to meet practically all your information needs.

- You can generate reports and listings on demand (via the individual report-generating functions) for the current accounting period or for an archived period.
- You can schedule up to 25 groups of reports for the current accounting period (for a maximum of 1000 scheduled reports).
- You can set very specific criteria in many reports, to pinpoint exceptions or see general trends.
- You can send all output to a printer, window display, system file (for later viewing or printing), or text and/or export file (for transfer to another application).
- You can represent most summary reports as a 2- or 3-dimensional pie or bar chart.



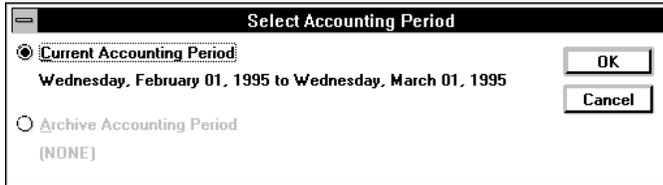
Running a Report or Listing on Demand

Purpose To generate any report or listing from the stored current or archived accounting period.

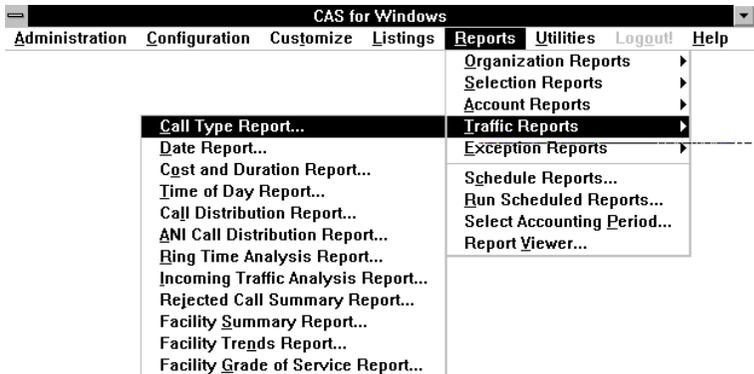
Summary of Procedures (Running a Report or Listing on Demand)

1. Open **Select Accounting Period** from the **Reports** menu and enable the accounting period of interest.

⇒ For an archived period residing on backup diskettes, restore it to your PC — see the Backup and Restore Utilities in chapter 7 for details.



2. Select the item of interest from the **Listings** or **Reports** menu or sub-menus. For example:



3. Complete the resulting dialog box. See the report-specific topic and the topics *Output* and *Chart* in this chapter for details.
4. Click on **OK** to run the report (**Cancel** exits without a report).

Scheduling Reports

Purpose To define up to 25 groups of up to 1000 reports (combined) to run on automatic schedules. Definitions include frequency to run the group and setup criteria for each report, including its output and graphic representation.

Access Open **Schedule Reports** from the **Reports** menu.

Report Group. A descriptive name (one to 20 characters) for the group of reports to be scheduled.

Frequency. Select from:

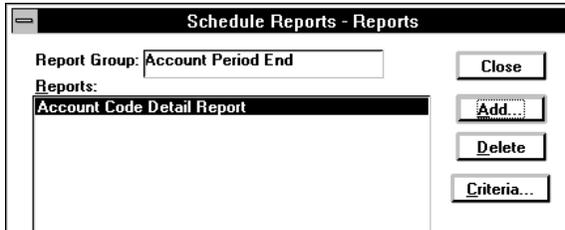
- *Once, Monthly, or a Number of Days (1 to 255), on the Next Run Date and Time.*
- *at the End of Accounting Period, at the Next Run Time.*
- *on demand only (via the **Run Scheduled Reports** option under the **Reports** menu).*

Next Run. Enter the *Date* and/or *Time*.

Summary of procedures (Scheduling Reports)

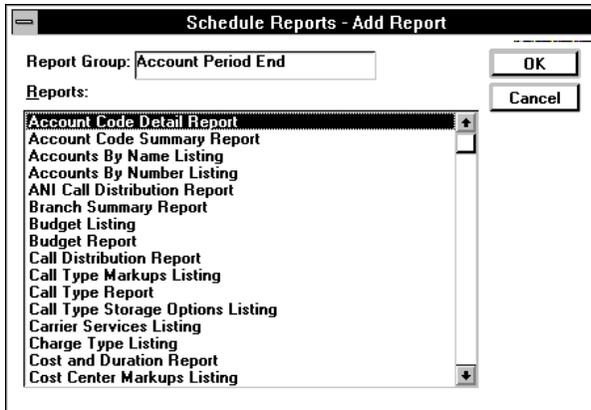
1. For additions or edits, enter or select a *Report Group* and click on **Add** or **Edit**, as appropriate.
2. For deletions, select a *Report Group*. To remove the entire group, click on **Delete**; remove specific reports via the **Reports** button.
3. Click on **Reports** to set up or delete specific reports in this group.

Reports dialog box



4. To remove a report from the list, select it and click on **Delete**; to add to the list, click on **Add**. When the list box (below) appears, select a report and click on **OK**. Repeat, as necessary.

Add Report dialog box

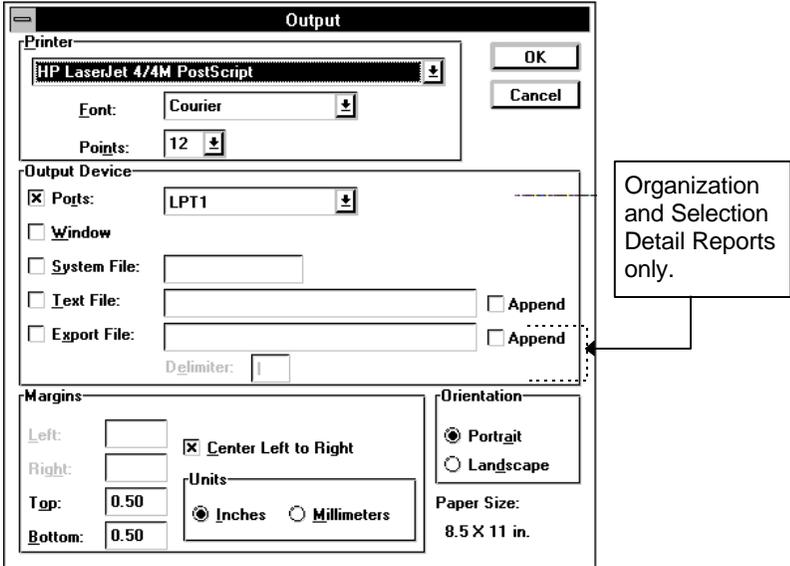


5. To define the output and other options on the selected report, choose **Criteria**. See the report specifics in this chapter and the topics *Output* and/or *Chart* for details.
6. Back at the **Schedule Reports** dialog box, choose **Apply** to save your schedules and report definitions (**Reset** cancels all).
7. When complete, choose **Close** to exit.

Output

Purpose To define where and how reports and listings are generated.

Access Click on the **Output** button on any report or listing dialog box.



Printer. For printed reports, select a *Printer*, *Font*, and *Point size* from the list boxes (these are Windows' system lists).

Output Device. To send the report to enabled [X] options:

- Port. The printer port from Windows' system list.
- Window. Immediate display on the Report Viewer.
- System File (binary format). Name of file, accessible via Report Viewer.
- Text File (ASCII format). The drive, path, and file name (*.txt) to save the report output for use by other applications. Check [x] Append to add this output to an existing file of the same name.
- Export File (ASCII format) (Organization and Selection Detail only). Enter the *Delimiter* (character to separate fields) and the drive, path, and file name (*.txt) to save the report for use by other applications. Check [x] Append to add this output to an existing file of the same name. See *Export File Format* for details.

Margins. Select:

- Center Left to Right. Enable automatic selection of left and right margins; this choice results in a report centered on the page.
- Left, Right, Top, Bottom. Enter size of margins in the measuring unit specified below (if "Center Left to Right" is enabled, the left and right margins are set by the system).
- Units. Choose between *Inches* or *Millimeters*.

Orientation. Select between *Portrait* or *Landscape* printing.

Export File Format

Export files are simple, flat ASCII files. Each record terminates in a carriage return, fields are of variable length, separated by a delimiter character selected by the user -- for example, a pipe (|), comma (,), semicolon (;), bang (!), etc. Empty fields are represented by consecutive delimiter characters.

The following tables display the file layout for Organization and Selection Detail Reports when they are output as "export files."

| Organization Detail Report - Export File Format | | |
|---|--------|---|
| Field Name | Length | Comments |
| 1. Branch | 15 | Empty, if level 5 does not exist |
| 2. Division | 15 | Empty, if level 4 does not exist |
| 3. Department | 15 | Empty, if level 3 does not exist |
| 4. Cost Center | 15 | |
| 5. Site | 25 | "Default" on single site systems |
| 6. Extension | 15 | |
| 7. Personnel Name | 72 | Last_name, title first_name |
| 8. Date | 8 | mm/dd/yy |
| 9. Time | 5 | hh:mm (24-hour clock) |
| 10. Duration | 8 | hh:mm:ss |
| 11. Dialed Number | 18 | Empty, if not provided |
| 12. Location | 10 | Empty, if not provided |
| 13. Call Type | 5 | |
| 14. Private Call Flag | 1 | Value = * (flag on) or empty (flag off) |
| 15. Cost | 10 | In the selected currency format |
| 16. Default-rated Flag | 1 | Value = * (flag on) or empty (flag off) |

**Export
File
Format**

| Selection Detail Report - Export File Format | | |
|--|--------|---|
| Field Name | Length | Comments |
| 1. Site | 25 | "Default" on single site systems |
| 2. Date | 8 | mm/dd/yy |
| 3. Time | 5 | hh:mm (24-hour clock) |
| 4. Duration | 8 | hh:mm:ss |
| 5. Extension | 15 | |
| 6. Transfer Flag | 1 | Value = * (flag on) or empty (flag off) |
| 7. Dialed Number | 18 | Empty, if not provided |
| 8. Location | 10 | Empty, if not provided |
| 9. Call Type | 5 | |
| 10. Private Call Flag | 1 | Value = * (flag on) or empty (flag off) |
| 11. Trunk | 8 | |
| 12. Account Code | 16 | Empty, if not provided |
| 13. Cost | 10 | In the selected currency format |
| 14. Default-rated Flag | 1 | Value = * (flag on) or empty (flag off) |

Chart

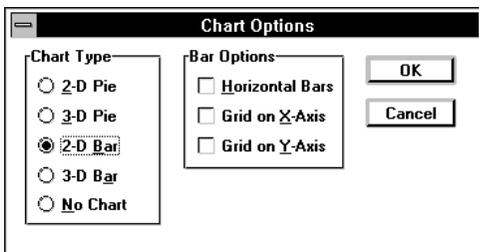
Purpose To choose from one of the following graphic representations for a call accounting summary report:

- The bar chart is used to display report parameters — for example, *dates* in a Date Report or *hours* in a Time of Day Report — as bars against a vertical or horizontal scale.

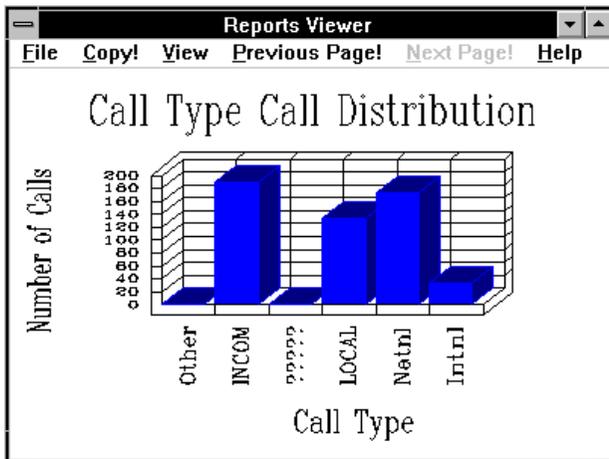
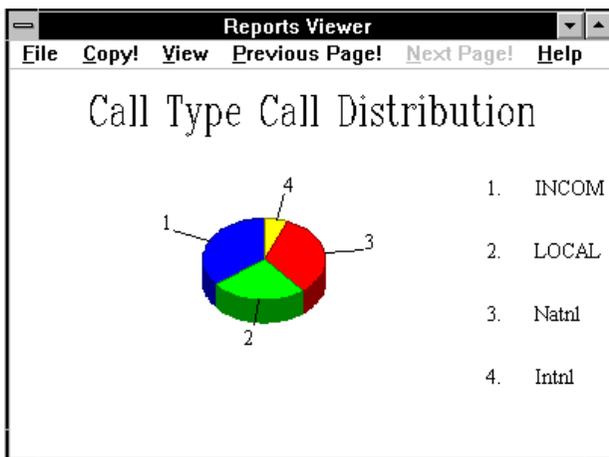
A vertical bar's height (or a horizontal bar's length) corresponds to a value on the scale — which may be either the cost, number of calls, or usage — depending on the report.
- A pie chart is used to display the report parameters as individual "slices" in a pie. The size of each slice represents the percent of the total cost, number of calls, or usage — depending on the report.

The figures on the next page show chart samples. CAS supports 2- or 3-dimensional graphics, as well as color.

Access Click on the **Chart** button in a **Reports** dialog box.



Sample Charts



Report-specific Functions

This section describes all call accounting reports and typical applications, as well as the selection criteria with which you can focus report information.

Organization Reports

Purpose Organization Reports show your company's telephone activity sorted by organization level. These reports are typically used in allocating costs, particularly when groups or individuals must be accountable and need to remain within their respective budgets.

Call costs include all active taxes and markups (except for Account Code markups). Summary statistics include total count, duration, cost, average duration and cost per call, and average cost per minute.

- Organization Detail Report — shows the record of each call within the selected criteria. Calls appear in chronological order (as received from the SMDR source), followed by the summaries set by Reporting Options (Customize menu).
- Organization Summary Report — provides summary statistics for calls matching the selected criteria.
- Cost Center, Department, Division, and Branch Summary Reports — provide summary statistics for the dates and named organizations. These reports may be generated as charts.
- Organization Trends and Budget Reports — provide information at the budget-tracking level. Trends show summary statistics for the last 12 accounting periods in the fiscal year; the Budget shows current period's and year-to-date's actual vs. budgeted costs. These reports may be generated as charts.

Access From the **Reports** menu, select **Organization Reports** and then, your choice of report:

Organization Detail / Summary
Cost Center / Department / Division / Branch Summary
Organization Trends / Budget

Organization Detail or Summary

Other Organization Summaries

Multi-site systems only: type or select a *site*.

All reports:

Type or select organization entries (fields change, depending on the report). You may use wild cards (? = single character; % = any number of characters) on the first field.

Enable [X] or disable page breaks.

Organization Summary only:

Enable [X] or disable internal summaries (if enabled, the report compiles using up-to-date summary statistics from the 1st day of the accounting period).

Detail reports and Summary reports that DO NOT use internal summaries, have additional selection criteria (see next page).

Range selections. Enter dates and times (values are inclusive).

Minimum selections. Enter a minimum cost and duration (calls meeting either criteria will be included).

Other selections. Select a call type and/or enter a dialed number. You may use wild cards (? = single character; % = any number of characters) on the dialed number.

Private calls. Select whether to *include* or *exclude* private calls or to generate a report consisting *only* of private calls.

Selection Reports

Purpose Selection Reports provide summary or detail information based on criteria such as organizations, date, time, cost, duration, account code, trunk, call type, and/or dialed number. Details are sorted in chronological order; summaries provide total number of calls, duration, and cost. Costs include all but Account Code markups.

The Selection Report is a versatile tool, used to pinpoint details or summarize trends in problem areas discovered by other reports.

Access From the **Reports** menu, select **Selection**, then your choice of **Summary** or **Detail Report**.

Selection Detail Report

Organization Selections:
 Site: [ALL] ▾
 Branch: [ALL] ▾
 Division: [ALL] ▾
 Department: [ALL] ▾
 Cost Center: [ALL] ▾
 Extension: % [] [] []

Range Selections:
 Date Range: [1/31/95] to [3/1/95]
 Time Range: [12:00 AM] to [11:59 PM]

Minimum Selections:
 Cost: \$ [0.00]
 --- OR ---
 Duration: [0:00:00]

Other Selections:
 Account Code: [ALL] ▾
 Trunk: [ALL] ▾
 Call Type: [ALL] ▾
 Dialed Number: [%]

Private Calls:
 Include
 Exclude
 Only

OK
 Cancel
 Output...

Organization selections. Type or select the *Site* (multi-site systems) and organization entries. You may use wild cards (? = single character; % = any number of characters) on all organization entries and on the first extension.

Range selections. Enter a *Date* and *Time Range* for the reporting period. Range values are inclusive.

Minimum selections. Enter a minimum *Cost* and *Duration* (calls meeting either criteria will be included).

Other selections. Type and/or select an *Account Code*, *Trunk*, *Call Type*, or *Dialed Number*. You may use wild cards (? = single character; % = any number of characters) on the *Account Code*, *Trunk*, and *Dialed Number*.

Private calls. Select whether to *Include* or *Exclude* private calls or to generate a report consisting *Only* of private calls.

Account Code Reports

Purpose To select criteria and generate an Account Code Report.

Account codes are typically dialed when placing or receiving a call to identify the call subject matter, client account, and so on. CAS offers two reports — the Account Code Summary and Account Code Detail — used to allocate telephone charges to the account associated with the call. Details are sorted for each account as received from the SMDR source; the Summary provides the number, duration, and cost for each account. Call costs include all markups and active taxes.

Access From the **Reports** menu, select **Account Code** and then, your choice of **Summary** or **Detail**.

The screenshot shows a dialog box titled "Account Code Detail Report". It contains the following fields and controls:

- Date Range:** Two date input fields with "1/31/95" and "3/1/95" entered, separated by "to".
- Account Codes:** A dropdown menu showing "(ALL)" and two empty dropdown menus.
- Buttons:** "OK", "Cancel", and "Output..."
- Checkbox:** "Page Break After Each Account Code" (unchecked).

Date Range. (Detail Report only) Range values are inclusive. Default = day before the start of the current accounting period to today's date (or end of period, if reached).

Account Codes. Type or select up to 6 entries. You may use wild cards on the first entry (? = single character; % = any number of characters).

(Detail Report only) Enable [X] or disable page breaks between accounts.

Traffic Reports

Purpose To generate a Traffic Report for the current or archived period.

CAS offers an extensive library of Traffic Reports used to summarize call activity for different categories. The list that follows describes each Traffic Report.

⇒ Summaries are based on the collected information for the selected accounting period (current or archived). Summary statistics include the count, total and average duration per call, total and average cost (per minute and per call). If duration > 9999:59:59 (hr:min: sec), only hours are reported. Costs include all active taxes, but no markups. Charts are available, except where noted.

- The Call Type Report summarizes activity by call type. This report helps spot facility misuse.
- The Date Report summarizes activity for each day in the reporting period.
- The Cost and Duration Report provide statistics by cost and duration ranges. This report, together with the Exception Reports, provides a basis to track expensive or lengthy calls.
- The Time of Day Report provides outgoing and/or incoming call summaries for each of the 24 hour-bands in a day. This report is used for busy and after-hours call analysis.

- The Call Distribution Report summarizes activity by dialed areas. This report is helpful in determining your calling patterns — for example, to plan for discount long distance services or to find out if there is abuse. There are no charts for this report.
- The Rejected Call Summary Report summarizes calls that were under the minimum duration and/or cost "storage option" set for that call type. There are no charts for this report.
- The Facility Summary Report summarizes activity by "trunk" (or the appropriate switch identifier for routing calls) under the named facilities.
- The Facility Trends Report summarizes activity by each named facility for the last 12 accounting periods.
- The Facility Grade of Service* Report analyzes facility busy hours: it lists the number of trunks in each facility, the average number of calls carried in its busy hour, their total and average duration, the actual and target GOS, and the number of trunks required to meet the target GOS. The chart shows trends for the last 12 accounting periods.

If a site's SMDR source supports such ISDN features as ANI and answer supervision and it provides "ring times" information, CAS offers these reports:

- The ANI Call Distribution Report summarizes incoming call activity by calling areas. There are no charts for this report.
- The Ring Time Analysis Report summarizes activity by ring time ranges. Summaries show totals and over-all percentages, as well as answered and unanswered call totals and range percentages.
- The Incoming Traffic Analysis Report provides hourly incoming call statistics: total number, answered and unanswered calls, percentages, and average ring times. The hour with the worst percentage of unanswered calls is flagged. This report reflects the view of this site from a caller's perspective and may be helpful in planning for staffing levels.

* Grade of Service (GOS) is a way to measure outgoing service on a worst case scenario: it represents the probability of a call attempt receiving a busy signal on any given day, during a facility's (average) busy hour.

Access From the **Reports** menu, select **Traffic Reports** and then, your choice of report.

Time of Day Report

The screenshot shows a dialog box titled "Time of Day Report". It features a "Site:" dropdown menu with "[ALL]" selected. Below this are two checked checkboxes: "Include Outgoing Call Records" and "Include Incoming Call Records". On the right side, there are four buttons: "OK", "Cancel", "Output...", and "Chart...".

Select a site (multi-site system) and whether to include outgoing and/or incoming call records.

All Facility Reports

The screenshot shows a dialog box titled "Facility Trends Report". It has a "Site:" dropdown menu with "[ALL]" selected. Below it is a "Facilities:" section with six input fields, each with a dropdown arrow. The first field contains "[ALL]". On the right side, there are four buttons: "OK", "Cancel", "Output...", and "Chart...".

Select a site (multi-site system) and then type or select 6 facility names. You may use wild cards (? = single character; % = multiple characters) on the first facility field.

All other Traffic Reports

The screenshot shows a dialog box titled "Call Type Report". It features a "Site:" dropdown menu with "[ALL]" selected. On the right side, there are four buttons: "OK", "Cancel", "Output...", and "Chart...".

Select a site (multi-site system).

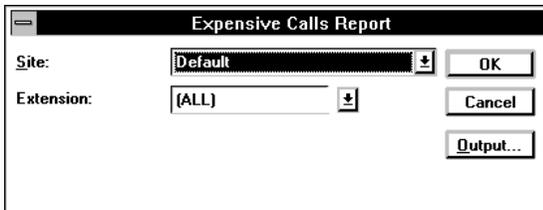
Exception Reports

Purpose To generate an Exception Report.

Exception Reports provide information on calls or conditions that may require investigation. Call costs include all except Account Codes markups and all active taxes.

- The Expensive Calls, Longest Calls, and Frequently Called Numbers show the top 25 entries for a named extension.
- The Telecom Managers Report shows the following information (based since the last time a report was run):
 - count, duration, and cost of valid and rejected calls
 - unanswered call count
 - details on the five most expensive and longest calls
 - call count in storage and available space
 - system messages, if any

Access From the **Reports** menu, select **Exception Reports** and then, your choice of report.



Site. In a multi-site system, select the name or "ALL."

Extension. Type or select an extension or "ALL." You may use wild cards (? = single character; % = multiple characters).

Viewing Functions

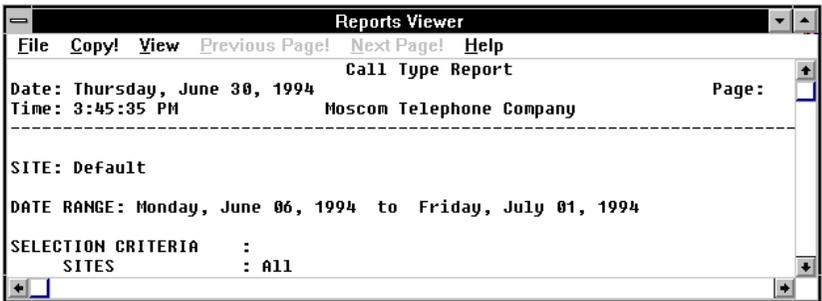
You can access CAS reports, calls flagged for immediate output, and system messages via window displays. This section describes these functions:

- *Report Viewer* — to display reports sent to the “window” or saved to a “system file.” The minimized Viewer icon: 
- *Immediate Output* — to display details of calls sent to the “immediate output file.” The Immediate Output icon: 
- *Message Log* — to display system messages. The “normal” icon changes to the “alert” icon whenever there are unviewed messages:  (normal)  (alert)

Report Viewer

Purpose To access reports output to the “window” or saved to a “system file.”

Access For reports saved to a file, select **Report Viewer** from the **Reports** menu; then use **Open** from the **File** menu and choose the report.



File options: **Save as** (enabled if report is not saved), **Delete** (removes report from system file), **Print**, and **Exit** (closes window).

Copy! — places a copy of the display into the Windows clipboard.

View options: **Page** (goes to specified page) and **Printer Font** (toggles between the font used on displays and the printer font).

PreviousPage! and **NextPage!** — paginate through the report.

Message Log

Purpose To view and/or print system messages.

Access Click on the Message Log icon or select **View Message Log** from the **Listings** menu.



File options: **Clear** (removes all messages from the file) and **Print**.

View options: selects (√) fatal, severe, information, and/or other types of messages, with or without a detail header.

Immediate Output

Purpose To view the records of rejected calls or those sent to the immediate output file via the Organization - Extension "immediate output" option, or the Immediate Output or Alert Numbers function (Administration).

Access Click on the Immediate Output icon or select **View Immediate Output** from the **Listings** menu.

The screenshot shows a window titled "Immediate Output" with a menu bar containing "File", "View", and "Help". The main area contains a table with the following data:

| DURATION | | | | | | |
|----------|----------|-------|----------|-----------|---------------|----------|
| TYPE | DATE | TIME | HH:MM:SS | Extension | DIALED NUMBER | LOCATION |
| ALARM | 05/01/95 | 14:00 | 02:33:25 | 6546 | 17188516146 | Brooklyn |
| * | 05/01/95 | 18:30 | 00:00:10 | 6546 | 17188516146 | Brooklyn |



Calls marked by an asterisk (*) denote a rejected call; calls to alert numbers have an "alert" or "alarm" call type.

File options: **Clear** (removes all messages from the file) and **Print**.

View options: selects (√) the display of alarm, alert, rejected, and/or normal call record details.

This chapter describes how to perform maintenance tasks using the system Utilities.

The chapter is organized into the following topics:

- *Backup and Restore* — describes how to copy data from the current or archived accounting period onto diskettes and vice-versa. Recommendations on tape backup/restore procedures are included.
 - *Call Record Edit* — describes how to correct information and/or add call records to the stored database.
 - *File Import/Export* — describes how to selectively copy text files into/from the Organization database.
 - *Call Record Deletion* — describes how to delete call records from storage.
 - *Database File Maintenance* — describes how to check and repair database files.
 - *Site Maintenance* — (multi-site systems) describes how to rename, add, or delete a site in multi-site systems.
 - *Rate Updates/System Upgrades* — describes how to load diskettes with fixed rates updates and system options upgrades.
 - *Call Processing Status* — describes how to display the stored call count and stop/start processing for a site.
- ⇒ HackerTracker Status is documented in chapter 8; the G3-MA data transfer option, in Appendix E.

Backup and Restore

Purpose Backup is used to copy the current or the archived period's data onto floppy diskettes; Restore, loads a prior backup — typically, to run reports on archived data or to rebuild CAS files after a system failure.

You should back up current data at least weekly and archived data once, after closing the accounting period. For large databases, tape backups are recommended (see next section for details).



You should perform backups/restores at times of low call collection activity, having stopped call rating for the duration of the procedure (see *Call Processing Status* in this chapter).

Access From the **Utility** menu, select **Backup** or **Restore**.

Summary of Procedures (Backup and Restore)

1. For a backup: With a supply of diskettes ready (CAS will format diskette automatically), select the drive, type of diskette used, and which period to backup. Load the first diskette, use **OK**, and follow prompts to continue. Label all diskettes with their sequence number and period's dates.
2. For a restore: With the desired set of backup diskettes ready, select the drive, the period to restore, and load the first diskette. To check the dates on the diskette in the named drive, use **Show Backup**. Use **OK** to start and follow prompts to continue.



Restore overwrites data. Do not proceed unless you have a recent backup of your current and archive databases.

Tape Backup/Restore Recommendations

Tape backups are recommended for installations with a large call record volume. Please consult the documentation associated with your systems's tape backup utility (software and hardware).

- Full vs. incremental (selective) backups:
 - Upon initial installation and any time you install an upgrade or update, you should perform a full system backup (in the event of data loss from such failures as a hard disk crash). Thereafter, full backups should be performed on occasion — weekly or monthly, depending on the volume and importance of your data.
 - Incremental backups of portions of the CAS database can be done weekly or daily (again, depending on your data) to minimize the need for full backups, which might interfere with call collection and polling schedules.

Remember that a full backup is current up to when it was made and that incremental ones contain partial data. Thus, for a full restore you need (1) a full backup plus the incremental tapes or (2) the operating system, CAS for Windows (from the original software), and then the incremental tapes.

- What to include in selective backups:
 - The **casw\archive.acv** directory contains all the data from the last archived period.
 - The **casw\cur** directory contains all current data.
 - The **casw** directory contains the entire CAS application and data.
- You should shut down CAS for tape backups. Failure to do so may result in some files remaining open (for example, all log files) and not backed up, which causes tape to disk "compare" errors. In most cases, backups take a relatively short time. CAS can then be restarted without losing calls or logging error messages (to restart CAS: open the **File** menu in Windows Program Manager, click on **Run**, type **emlog** and click **OK**).
- Backups should be performed during a time of low call collection activity. Scheduled or unattended backups where there is no user interaction with the tape backup are NOT recommended.

Call Record Edit

Purpose To correct information and/or to add call records to the current period's database and to change its summary statistics.

Access From the **Utilities** menu, select **Call Record Edit**. In a multi-site system, first perform a **Site Selection (Administration menu)**.

Summary of Procedures (Call Record Edit)

1. To search for existing call records, enter and/or select an *Extension*, *Date*, and/or *Account Code*, then click on **Search**.
2. Matching calls will be queued for display in the Call Record Information box. Use **Next** or **Previous** to move through the queue.
3. To change information on the display or to add a new record, use **Add** or **Edit**, then enter and/or select the appropriate field values.



To avoid unreliable data in your summary statistics, enter dates within the current accounting period.

4. When complete, click on **Apply** (**Reset** cancels changes); use **Close** to exit.

File Import/Export

Purpose To transfer Organization data from/to an external source — typically, another PC with the CAS application — to help maintain shared Organization files.

CAS can import and export files as text in the format described below — we show a pipe “|” as a separator, but you may use any character that does not appear as a field value. Use quotes (“”) where indicated. (See *Organization Table* in chapter 3 for field format and acceptable values.)

| File* | Format |
|--|--|
| Personnel | "last name" "first name" "title " Example: "Sohn" "Maria" "Ms" |
| Level-1 | extension "last name" "first name" "title" authorization code "cost center" "fixed charge 0-18 (masked digits for storage) 0-18 (masked digits for reports) yes/no (immediate output) "charge type" Example: 6546 "Sohn" "Maria" "Ms" 6546 "Publications" 0 0 0 no "voice mail" |
| Level-2 | "cost center" "markup surcharge minimum cost "department" budget (if applicable or 0) Example: "Publications" 0 0 0 "Marketing" 0 |
| Level-3 | "department name" budget (if applicable or 0) "division name" Example: "Marketing" 5000.00 "TELECOM" |
| Level-4 | "division name" budget (if applicable or 0) "branch name" Example: "TELECOM" 0 "USA BRANCH" |
| Level-5 | "branch name" budget (if applicable or 0) Example: "USA BRANCH" 0 |
| * To import files, higher level entries must exist in the database for lower levels to refer to them in an association. If an imported entry refers to an undefined higher level, the entry will be added with “Default” as the higher level owner. For example, to import extension 100 under cost center “Sales-1,” you must have imported or added “Sales-1” to the database first. | |

Access From the **Utility** menu, select **File Import** or **File Export**.

The image shows two screenshots of dialog boxes. The top one is titled 'File Import' and the bottom one is titled 'File Export'. Both dialog boxes have the following fields: 'Database File' with a dropdown menu showing 'Extension', 'Site' with a dropdown menu showing 'Central Site', 'Disk File Name' with an empty text box, and 'Delimiter' with an empty text box. The 'File Import' dialog also has a 'Duplicates' section with two radio buttons: 'Reject' (unselected) and 'Update' (selected). Both dialog boxes have 'OK' and 'Cancel' buttons.

Database File. Select the organization level for transfer.

Site. (Multi-site systems) Select the site — enabled only for level-1 file transfers.

Disk File Name. Enter the path name of the external file — the source of import data or destination of export data.

Delimiter. Enter the character used to separate fields in the imported or exported records.

Duplicates. (File import only) Select the action to take if an imported entry duplicates an existing entry: *reject* the new entry or *update* the existing entry.

Summary of Procedures (File Import or Export)

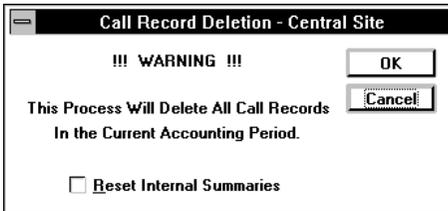
1. For an import, prepare the data and place it in a file.
2. Complete the dialog box.
3. If you specified a floppy disk drive in the *Disk File Name*, make certain to insert the appropriate diskette in the named drive.
4. Click on **OK** to start the data transfer and then exit (**Cancel** exits without transferring data).

Call Record Deletion

Purpose To purge all calls from the current period's file.

⇒ Calls should be purged only in extreme situations. Normally there is no need to do so as CAS automatically moves a closed period's file to the archive file (the old archive is written over and the current file is cleared for new calls).

Access Select **Call Record Deletion** from the **Utility** menu.



Enable [X] Reset Internal Summaries to remove the trend data and summary statistics accumulated to date. (If call records are deleted while internal summaries are not, there may be discrepancies in the Trend and Traffic reports.)



You should not attempt to purge call records from the database unless recommended by your CAS technical support organization.

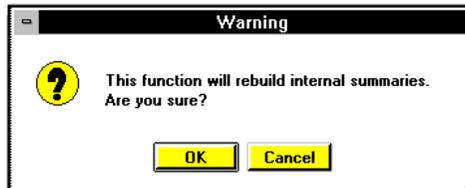
Database File Maintenance

Purpose To check the integrity of your files and repair them if possible:

- Rebuild Internal Summaries — processes all calls in the current period and recomputes summary statistics.
- Rebuild Indexes — repairs database files (use after a system error or a power interruption).
- Verify Database — checks file integrity.

Access Select **Database Maintenance** from the **Utility** menu, then the function of interest.

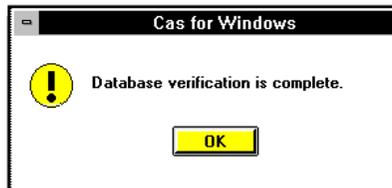
Rebuild Internal Summaries or Indexes



Click on **OK** to execute function and exit (**Cancel** exits without rebuilding database)

Verify Database

Selecting this option from the menu executes the function. When it completes, a dialog box similar to the one below appears:



Click on **OK** to exit.

Site Maintenance

Purpose (Multi-site Systems) To add new CAS sites, as well as rename, delete, or modify information on any installed sites. Multi-site systems support up to 4, 25, or 100 sites — depending on the option ordered. One site, typically, the operation center, is designated “central site.”

 To add a site, you must complete the following requirements:

| | |
|---|---|
| At the remote sites | <p>Enable SMDR collection.</p> <p>This involves setting up a call collector system (which may be another PC running CAS) to pass call records to the central site.</p> |
| | <p>Provide information for input at installation:</p> <ul style="list-style-type: none"> — The Call Collection and the Trunk & Facilities worksheets — The Organization worksheet (or provide Organization information via the File Import utility) — (Optional) the Customization and the Carrier Services worksheets |
| At the central site | <p>Provide a PC port and modem to poll the remote site (may share modem used to poll other sites).</p> |
| | <p>Obtain:</p> <ul style="list-style-type: none"> — Fixed rates diskettes for the new site (one diskette per carrier service used on site)* — The new site's worksheet information |
| | <p>Install in CAS:</p> <ul style="list-style-type: none"> — Multi-site option (via Upgrades function) — New site (via Site Maintenance function) |
| <p>* You may use any <i>Fixed Rates</i> diskette to install another site, provided you store their calls without rating them; however, we recommend installing a new site with their own <i>Fixed Rates</i> diskettes (custom rates).</p> | |

Access Select **Site Maintenance** from the **Utility** menu.

The screenshot shows a dialog box titled "Site". It has a "Site Name:" label and a text input field containing "Central Site". Below the input field is a list box with "Central Site" selected. To the right of the list box are six buttons: "Close", "Add", "Delete", "Edit", "Apply", and "Reset". At the bottom of the dialog, there is a checkbox labeled "Central Site" which is checked, and a "Site ID:" label followed by a text input field containing "Default".

Site name. Up to 25 characters used as report headings.

Site ID. Identification (1 to 8 characters) used for data transfers throughout a network of call senders and receivers. Systems integrated with a G3-MA administration PC, must use a site's G3-MA "switch ID."

Central site. Enable [x] only for the central site in your network.

Summary of Procedures (Site Maintenance)

1. For deletions, select the site, then click on **Delete** and confirm removal. Proceed directly to step 5.
2. For changes, select the site, then click on **Edit** and complete the dialog box; for additions, click on **Add**.
3. Click on **Apply** to set up the site's databases.

The screenshot shows a dialog box titled "Setup - Satellite". It contains a list of options with checkboxes: "Tax Names", "Currency Options", "Fixed Rates (Required)", "Carrier Services", "Call Collection Interface (Required)", "Trunk (Required)", and "Organization". All checkboxes are currently unchecked. To the right of the list are two buttons: "Close" and "Cancel".

4. Have the site's fixed rates diskette(s) and worksheets at hand. Then select an item and complete its dialog box. When you close the item's dialog box, the Setup dialog box reappears. Proceed to the next item:
 - [X] Tax Names — see *Tax Names* in Chapter 5 for details.
 - [X] Currency Options — see *Currency* in Chapter 5 for details.
 - [X] Fixed Rates — load the fixed rate diskette of the site's primary carrier services in the selected drive; when complete, reselect [x] Fixed Rates and repeat with any other diskettes (in any order).
 - [X] Carrier Services — see *Call Rating Tables - Carrier Services* in Chapter 4 for details.
 - [X] Call Collection Interface — see *Call Collection Functions - Call Collection Interface* in Chapter 4 for details.
 - [X] Trunk — see *Call Rating Tables - Trunks and Facilities* in Chapter 4 for details.
 - [X] Organization — see *Organization Table* in Chapter 3 for details.
5. When complete, click on **Close** to accept and save these entries (**Cancel** aborts the installation and closes the dialog box; if you confirm the cancel operation, all installed files will be deleted.)



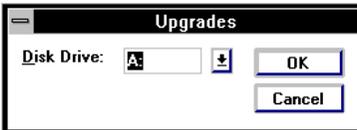
Call rating starts out disabled for new sites. If you did not load a custom *Fixed Rates* diskette for the site, leave the PC collecting calls without rating them. Then start call rating (via **Call Processing Status** documented in this chapter) after you install custom rates (see *Rate Updates/System Upgrades* later in this chapter for details).

Rate Updates/System Upgrades

Purpose To load a *Fixed Rate Update* diskette or to install a *System Upgrade* — a new system version, model size, or such options as Multi-site, HackerTracker, or G3-MA Data Transfer.

Access From the **Utility** menu, select the appropriate option:

- **Fixed Rates Update** (in a multi-site system, first perform a **Site Selection** from the **Administration** menu)
- **Upgrades**



Select the drive, insert the diskette, and click on **OK** to start. Follow the screen instructions to complete the procedure, and then remove the diskette from the drive.

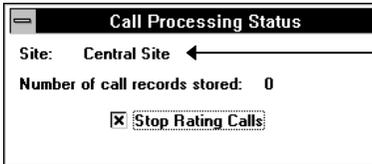
If you need to configure a new option, proceed to the appropriate topic where it is documented in this manual.

Call Processing Status

Purpose To view the number of stored call records in your PC and, optionally, to stop and then start call processing.

⇒ We recommend stopping call rating while you back up or restore databases (either using CAS Backup/Restore functions or by tape). Make certain to restore call rating after the procedure.

Access Select **Call Processing Status** from the **Utility** menu.



In a multi-site system, the window will display the name of the site whose calls are currently being processed.

To stop call record processing ON ALL SITES, select [x] Stop Rating Calls; to enable processing, deselect it.

⇒ This dialog box remains on display until you close it. To close the window, double-click on the minimize button: 

AT&T HackerTracker is an enhancement of your call accounting software, designed to help stop fraudulent use of telephone switches in your network.

How can the AT&T HackerTracker help?

- Detect intruders. You can monitor system usage and send alarms by FAX or pager that tell you of possible unauthorized users trying to break into your telephone system.
- Reduce liabilities. You can monitor calls by the hour and detect abuse early enough to change codes or shut down facilities and keep damages to a minimum.
- Give peace of mind. You can do quick status checks from your PC to keep informed on the security of your network.

This chapter helps you set up the system to perform the functions described above.

Setting Up

1. Start by installing the AT&T HackerTracker diskette, using the **Upgrades** function in the CAS **Utility** menu:



Select a drive, insert the diskette, and click **OK**. When complete, remember to remove the diskette from the drive.

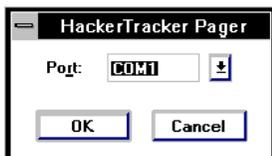
2. Next, we suggest that you become familiar with your calling patterns (the Call Distribution and Facility Reports will help you to do so) and determine if you need to monitor possible problem areas:
 - facilities dedicated to long-distance or remote access
 - authorization codes susceptible to abuse
 - dialed numbers to areas where you conduct little or no business, but have appeared on reports
3. Proceed to the setup topic — *FAX/Pager Equipment and/or Alarm Criteria*.

FAX/Pager Equipment

If you are planning to report alarms by FAX and/or pager, first install the devices and drivers:

1. For alarms by FAX, install a FAX modem (such as the AT&T DataPort Express) and WinFax™ PRO software as documented in their manuals. A quick guide to install WinFax PRO appears below:
 - a. Install the FAX modem first and turn it ON.
 - b. Insert disk #1 of the WinFax PRO software in a floppy disk drive, open the **File** menu in Windows Program Manager, select **Run**, and enter **a:setup** (for the A drive) or **b:setup** (for the B drive).
 - c. Follow screen instructions to continue, then enter your name and company (skip the registration number).

- d. Click on the **Custom Installation** button, then select Delrina WinFax Program Files and de-select all other options.
 - e. Click on **Yes** to test COM ports for a fax device.
 - f. Select the Fax/modem port, type (**Class 1**), and model (**AT&T Paradyne Corp - Dataport 14.4**).
 - g. Follow screen instructions to load the other diskettes in the package.
 - h. Click on **No** when prompted to set the Delrina WinFax PRO as default printer.
 - i. When the User Setup dialog box appears, enter your **area code** (you may skip all other fields).
 - j. Click on **No** when prompted to run the online registration.
 - k. The setup program informs you when installation is complete. At this point, remove the last diskette from the drive.
 - l. You will see a new WinFax PRO program group. You may close it.
2. For alarms by pager:
- a. You may use the FAX modem or any Hayes-compatible modem configured with the modem's default settings.
 - b. Then, select **HackerTracker Pager** from the **Configuration** menu to identify the port for the pager modem — for example:



Alarm Criteria

Purpose To set criteria for up to 20 alarm events for each site — hourly count and cost limits on facility usage, call types, authorization codes (if reported by your switch), dialed numbers, long or expensive calls — and how to report them by printed message, FAX, or pager.

Access Select **HackerTracker Criteria** from the **Administration** menu. In a multi-site system, first perform a Site Selection (Administration).

Criteria Name. The identifier (up to 7 characters) for these conditions.

Fraud Detection Criteria. Track all calls that use the named *Facility* AND match one of these conditions:

- *Every* (all calls)
- the selected *Call Type*
- the selected *Authorization Code* or pattern. Patterns are represented by digits and/or wild cards “?” = single digit or “%” = any number of digits.
- the selected *Dialed Digit Pattern* (include toll code, if any).
- under the selected *Short Duration* (hours:minutes:seconds)
- over the selected *Long Duration* (hours: minutes:seconds)
- *Expensive Call* (over the selected amount in your currency).

Fraud Maximums. The hourly *Count* and *Cost* limits during the *Business* and *Non-Business Hours*, and *Weekends* (set in the **Workweek, Customization** menu). Exceeding any one of these limits triggers an alarm.

Alarm Reporting. Enable [X] or disable reporting alarms via the *Printer, Pager, and/or FAX*.

 To report alarms by printer, pager or FAX, click on its setup button to set up the device (see each topic ahead).

Monitor every call. Enable [X] or disable writing to the alarm log every call that matches the criteria (normally, only the call that trips the alarm is logged). Monitoring every call is useful when analyzing fraud patterns after an alarm, particularly if the criteria is *Authorization Code* or *Short Duration*.

Summary of Procedures (Alarm Criteria)

1. To delete a criteria setting, select it and click on **Delete**.
2. For additions or edits:
 - a. Enter or select a criteria name, then click on **Add** or **Edit** and complete the dialog box.
 - b. If reporting alarms by printer, pager or FAX, click on the appropriate button to set up the device.
 - c. When complete, click on **Apply** (**Reset** cancels changes).
3. You may work on another entry or click on **Close** to exit.



Do not shutdown the application nor halt call rating after setup. HackerTracker can work ONLY while the application is rating calls.

Printer Setup

Printer and Output Device. Select the *Printer*, *Font*, *Point* size, and *Port* from their list boxes.

Margins. Set the spacing on the page:

- Center Left to Right enables automatic left-right margin setup, resulting in a report centered on the page.
- Left, Right, Top, Bottom sets *Margin size* (in the specified unit = *Inches* or *Millimeters*).

Orientation. Select *Portrait* or *Landscape* printing.

Pager Setup

Phone Number and Pause After ___ seconds. The dialed pattern to reach the pager or pager service, then the pause (in seconds) before dialing the *Authorization Code* (below).

- ⇒ For the *Phone Number*, use the letters "T" (tone) or "P" (pulse), digits, and commas "," (pause) as required. For example, **T9,5551212** uses touch tone to dial 9, wait, then 555-1212.

Authorization Code and Pause After ___ seconds. The *dialed code* you must provide to use the service, then the *pause* (in seconds) before dialing the identification code (below).

Identification Code. The identification or notification number of the pager you want to reach.

FAX Setup

Send To. The *Phone Number pattern* to reach the FAX of interest and the name of the *Recipient*.

➡ For the phone number, use the letters "T" (tone) or "P" (pulse), digits, and commas "," (pause) as required. For example, **T9,5551212** uses touch tone to dial 9, wait, then 555-1212.

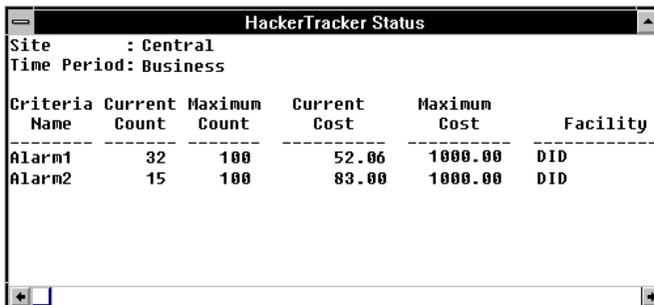
FAX and Output Device. Select the name of the FAX modem, *Font*, *Point* size, and the FAX modem's *Port* from each list box.

Margins and Orientation. Select options as in the Printer Setup.

Alarm Status

Purpose To check system status after setting up the alarm criteria.

Access Select **HackerTracker Status** from the **Utilities** menu:



| Criteria Name | Current Count | Maximum Count | Current Cost | Maximum Cost | Facility |
|---------------|---------------|---------------|--------------|--------------|----------|
| Alarm1 | 32 | 100 | 52.06 | 1000.00 | DID |
| Alarm2 | 15 | 100 | 83.00 | 1000.00 | DID |

Every alarm criteria defined for the named site will be listed (“Criteria Name” = “Alarm Type” in an alarm message).

- The Current (hourly) Count and Cost show statistics on calls matching the named Facility and Criteria.
- Maximum Count and Cost correspond to the *fraud maximums* for the time period currently in effect.

Checking Alarms

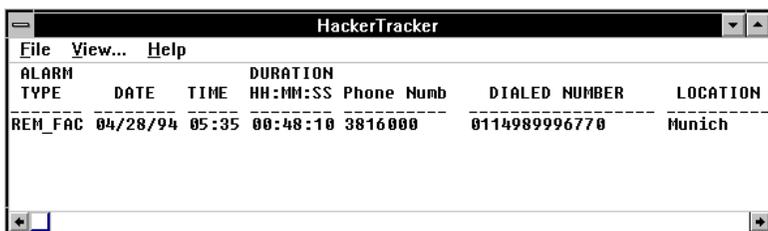
If one of the calls you are tracking trips the count or cost limit for its type, an alarm occurs:

- The AT&T HackerTracker "normal" icon changes into: 
- A detailed record of the call that tripped the alarm is logged.
- Copies of the call record are sent to the enabled alarm devices.

Alarm-tracking statistics are reset to zero and monitoring resumes.

The alarm log can keep up to 1000 records, listed from most recent to oldest. To investigate an alarm (or any time you wish to view the alarm log), proceed as follows:

1. At the PC, select the AT&T HackerTracker (alarm or normal) icon or **View HackerTracker** from the **Listings** menu.



| HackerTracker | | | | | | |
|-------------------|----------|-------|----------|------------|---------------|----------|
| File View... Help | | | | | | |
| ALARM | | | DURATION | Phone Numb | DIALED NUMBER | LOCATION |
| TYPE | DATE | TIME | HH:MM:SS | | | |
| REM_FAC | 04/28/94 | 05:35 | 00:48:10 | 3816000 | 0114989996770 | Munich |

- a. If "Monitor every call" is disabled for the alarm type of interest, note the date and *time* and close the window. Proceed directly to step 2.
- b. If "Monitor every call" is enabled, all calls matching its criteria appear — an asterisk (*) marks calls that contributed, but did not trip the alarm. Select **View**, then the *alarm type* of interest. To obtain a printout, use the **Print** option in the **File** menu. Close the window and proceed directly to step 3.

2. Examine the set of calls that contributed to the alarm:
 - a. Open the **HackerTracker Status** window (see *Alarm Status* earlier in this chapter). Note the specific criteria for the alarm type that you are investigating.
 - b. Run a Selection Detail Report. Use as selection criteria:
 - Time range of 1 hour, ending at the time of the alarm
 - *Trunks* belonging to the facility tracked
 - The other alarm criteria used (except for *authorization codes* or *short duration*)
3. When the report prints, check it carefully looking for patterns that would indicate possible fraud.
4. If necessary, administer the switch to change facility restriction levels or shut down compromised facilities.



Fraud-tracking Tip

Use your call accounting reports as passive switch security monitors. For example, use **Schedule Reports** to set up the following:

Report Group: HackerTracker #1 (Frequency = daily)

| Add report | Set criteria | |
|------------------|-------------------------|---------------------------|
| Selection Detail | Call type = IDDD | Date range = <i>today</i> |
| Selection Detail | Minimum cost = \$10.00 | Date range = <i>today</i> |
| Selection Detail | Min. duration = 0:30:00 | Date range = <i>today</i> |

Report Group: HackerTracker #2 (Frequency = weekly)

| Add report | Set criteria | |
|------------------|--|--|
| Selection Detail | Date range = <i>next Sat. & Sun.</i> (Weekend calls) | |

Worksheets

A

This appendix contains blank forms to collect the information required for installation:

- CUSTOMIZATION WORKSHEET
 - Part I. System Setup
 - Part II. Site Setup

- CARRIER SERVICES WORKSHEET
 - Part I. General Information
 - Part II. Special Numbers
 - Part III. Codebook (Charge Bands)
 - Part IV. Installed Rates

- CALL COLLECTION WORKSHEET
 - Part I. General Information
 - Part II. Polling Schedule

- TRUNKS & FACILITIES WORKSHEET

- ORGANIZATION WORKSHEET
 - Part I. Level-1 (Extensions)
 - Part II. Level-2 (Cost Centers)
 - Part III. Higher Levels

CUSTOMIZATION WORKSHEET

Part I. System Setup

| | | | | | | |
|----------------------------|--|------------------------|-------------------|--|------------------------------------|---------------|
| Organization Levels | Company Name | | | | | |
| | Number of Levels (Check one) | Level Names (defaults) | | | Budget Level (Check one) | |
| | | 1 | | | | (Extension) |
| | | 2 | | | | (Cost Center) |
| | | 3 | | | | (Department) |
| | | 4 | | | | (Division) |
| 5 | | | (Branch) | | | |
| Accounting Period | <input type="checkbox"/> Monthly <input type="checkbox"/> Bi-monthly <input type="checkbox"/> Quarterly <input type="checkbox"/> Number of Days: _____ | | | | | |
| | <input type="checkbox"/> User Specified (Enter dates) | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| First day of budget year | | Month (1-12): _____ | Day (1-31): _____ | Time of day for closing Acc. Period: ____ : ____ | | |

Part II. Site Setup

| | | | |
|---|---|---------------|---------------------------------------|
| <i>Reference (multi-site systems)</i> | Site Name | | |
| | Site ID | | <input type="checkbox"/> Central site |
| Tax Names | Tax-1 | | <input type="checkbox"/> Active |
| | Tax-2 | | <input type="checkbox"/> Active |
| | Tax-3 | | <input type="checkbox"/> Active |
| Currency Options | Currency Name | Symbol | Currency format |
| | Refer to the examples on the right and select the format that best represents the decimal precision and fixed trailing zeroes that you wish to use in costing a call. Enter the chosen format using your preferences for symbol placement, decimal separator, 1000-separator, etc. | | 12.3456 |
| | | | 123.456 |
| | | | 1,234.56 |
| | | | 12,345.60 |
| Positive value | Negative value | 123,456.00 | |
| If appropriate, select to use/not use leading 0's for values <1: <input type="checkbox"/> 0.9 <input type="checkbox"/> .9 | | 123,456 | |
| | | 1,234,560 | |
| | | 12,345,600 | |
| | | 123,456,000 | |
| | | 1,234,560,000 | |

Part I. General Information

| | | | |
|-----------------|-------------|--|--|
| Carrier service | Home code | Cost calls out <input type="checkbox"/> incom <input type="checkbox"/> | ISDN Information IXC code NSF code |
| | Dial prefix | | Digits in Auth. Code |
| Carrier service | Home code | Cost calls out <input type="checkbox"/> incom <input type="checkbox"/> | ISDN Information IXC code NSF code |
| | Dial prefix | | Digits in Auth. Code |
| Carrier service | Home code | Cost calls out <input type="checkbox"/> incom <input type="checkbox"/> | ISDN Information IXC code NSF code |
| | Dial prefix | | Digits in Auth. Code |
| Carrier service | Home code | Cost calls out <input type="checkbox"/> incom <input type="checkbox"/> | ISDN Information IXC code NSF code |
| | Dial prefix | | Digits in Auth. Code |
| Carrier service | Home code | Cost calls out <input type="checkbox"/> incom <input type="checkbox"/> | ISDN Information IXC code NSF code |
| | Dial prefix | | Digits in Auth. Code |
| Carrier service | Home code | Cost calls out <input type="checkbox"/> incom <input type="checkbox"/> | ISDN Information IXC code NSF code |
| | Dial prefix | | Digits in Auth. Code |
| Carrier service | Home code | Cost calls out <input type="checkbox"/> incom <input type="checkbox"/> | ISDN Information IXC code NSF code |
| | Dial prefix | | Digits in Auth. Code |
| Carrier service | Home code | Cost calls out <input type="checkbox"/> incom <input type="checkbox"/> | ISDN Information IXC code NSF code |
| | Dial prefix | | Digits in Auth. Code |

For each carrier service, complete all parts that apply:

- Part II. Special Numbers — to identify the cost-per-call number patterns
- Part III. Codebook — to build its rate tables based on call destination and duration
- Part IV. Installed Rates — to identify its rates as a % of factory-installed tables

CARRIER SERVICES WORKSHEETS

Part III. Codebook (Charge Bands) for Carrier Service:

Dialed Pattern List:

Enter digits (0-9) or wildcards (?= one digit, %=any number of trailing digits) include toll code, exclude carrier's dialed prefix.

| | | |
|--|--|--|
| | | |
| | | |
| | | |
| | | |

| | | | | | | | |
|---|------------------|---|---|------------------|---|-----------|----------------|
| Charge band number: <input style="width: 50px;" type="text"/> | | call type** <input style="width: 50px;" type="text"/> | | | | | |
| Time period | | Day* | | Rate Information | | | |
| Start time (hr:mm) | End time (hr:mm) | W | 1 | 2 | H | seconds | cost / seconds |
| | | | | | | Initial | |
| * W = weekday; 1 and 2 = weekend-1 and weekend-2; H = holiday | | | | | | Next | |
| | | | | | | Remaining | |
| | | | | | | | |

Dialed Pattern List:

Enter digits (0-9) or wildcards (?= one digit, %=any number of trailing digits) include toll code, exclude carrier's dialed prefix.

| | | |
|--|--|--|
| | | |
| | | |
| | | |
| | | |

| | | | | | | | |
|---|------------------|---|---|------------------|---|-----------|----------------|
| Charge band number: <input style="width: 50px;" type="text"/> | | call type** <input style="width: 50px;" type="text"/> | | | | | |
| Time period | | Day* | | Rate Information | | | |
| Start time (hr:mm) | End time (hr:mm) | W | 1 | 2 | H | seconds | cost / seconds |
| | | | | | | Initial | |
| * W = weekday; 1 and 2 = weekend-1 and weekend-2; H = holiday | | | | | | Next | |
| | | | | | | Remaining | |
| | | | | | | | |

** Default values: LOCAL, IS-IL (in-state, in-LATA), IS-OL (in-state, out-of-LATA), OS-IL (out-of-state, in-LATA), OS-OL (out-of-state, out-of-LATA), IDDD (international direct dial), SPCL (special).

CARRIER SERVICES — Part IV. Installed Rates

Part I. General Information

| | | | | | | | |
|---|---|---------------|---------------------------------------|------------------|---------------------------------|-----------|--------|
| Select protocol, then complete the "Options" section (in parens.) <input type="checkbox"/> Direct Connect (A) <input type="checkbox"/> Collect from File (B) <input type="checkbox"/> CAS for Windows, PSU, INFO Monitor/Collector - PollComm (C) <input type="checkbox"/> INFO Monitor Kermit (D) <input type="checkbox"/> DNC 50/500 (E) <input type="checkbox"/> ACDRS (F) | | | | | | | |
| Protocol Options | Port Name | | COM1, COM2, COM3, COM4 | Baud Rate | 1200, 2400, 4800, 9600 | | |
| | A | Parity | Even, Odd, None, Mark, or Space | Data Bits | 4, 5, 6, 7, or 8 | | |
| | | Stop Bits | 1 or 2 | Flow Control | Xon/Xoff, DTR, or RTS | | |
| | B | File Name | | Polling Interval | Seconds | | |
| | | Remote System | | | UCT Diff. | | |
| | C* | Phone Number | | | UCT Diff. | | |
| | | User ID | | Pass-word | | | |
| | | Local System | | | UCT Diff. | | |
| | | Phone Number | | Pass-word | | | |
| | D* | Remote System | | | | | |
| | | Phone Number | | Pass-word | | | |
| | E* | DNC 50/500 | | Phone Number | | Pass-word | |
| | | | | Customer | | Location | |
| | F* | Parity | Even, Odd, None, Mark, or Space | Data Bits | 7 or 8 | Stop Bits | 1 or 2 |
| | | Remote System | | | | | |
| Phone Number | | Pass-word | | | | | |
| Format | (Enter switch or MDR format name, model, features or s/w version used — to help select from built-in menu at installation) | | | | | | |
| | Save poll data for sending? <input type="checkbox"/> no <input type="checkbox"/> yes (If "yes" see <i>Call Sender Interface</i> in chapter 4 for further requirements.) | | | | | | |

* Complete Part II. Polling Schedule

Part II. Polling Schedule

| <i>For reference (multi-site systems)</i> | | Site ID | | (from CUSTOM- IZATION WORK- SHEET - Part II) |
|--|-------------------|-----------------|--|--|
| | | PORT USED | | (from CALL COLLECTION WORKSHEET - Part I) |
| Days (select one) | Start hour:min | End hour:min | Cycle (select one) | |
| <input type="checkbox"/> Weekday <input type="checkbox"/> Weekend | | | <input type="checkbox"/> Single poll <input type="checkbox"/> Periodic poll at ____:____ hour:min intervals | |
| <input type="checkbox"/> Weekday <input type="checkbox"/> Weekend | | | <input type="checkbox"/> Single poll <input type="checkbox"/> Periodic poll at ____:____ hour:min intervals | |
| <input type="checkbox"/> Weekday <input type="checkbox"/> Weekend | | | <input type="checkbox"/> Single poll <input type="checkbox"/> Periodic poll at ____:____ hour:min intervals | |
| <input type="checkbox"/> Weekday <input type="checkbox"/> Weekend | | | <input type="checkbox"/> Single poll <input type="checkbox"/> Periodic poll at ____:____ hour:min intervals | |
| <input type="checkbox"/> Weekday <input type="checkbox"/> Weekend | | | <input type="checkbox"/> Single poll <input type="checkbox"/> Periodic poll at ____:____ hour:min intervals | |
| <input type="checkbox"/> Weekday <input type="checkbox"/> Weekend | | | <input type="checkbox"/> Single poll <input type="checkbox"/> Periodic poll at ____:____ hour:min intervals | |
| <input type="checkbox"/> Weekday <input type="checkbox"/> Weekend | | | <input type="checkbox"/> Single poll <input type="checkbox"/> Periodic poll at ____:____ hour:min intervals | |
| <input type="checkbox"/> Weekday <input type="checkbox"/> Weekend | | | <input type="checkbox"/> Single poll <input type="checkbox"/> Periodic poll at ____:____ hour:min intervals | |
| <input type="checkbox"/> Weekday <input type="checkbox"/> Weekend | | | <input type="checkbox"/> Single poll <input type="checkbox"/> Periodic poll at ____:____ hour:min intervals | |

TRUNKS & FACILITIES WORKSHEETS

| Facility | Carrier Service (from CARRIER SERVICES worksheet) | | Grade of Service | Number of Trunks |
|--|--|----------|------------------|------------------|
| | Incoming | Outgoing | | |
| | | | | |
| Trunks (list as they appear in a call record from the switch): | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

| Facility | Carrier Service (from CARRIER SERVICES worksheet) | | Grade of Service | Number of Trunks |
|--|--|----------|------------------|------------------|
| | Incoming | Outgoing | | |
| | | | | |
| Trunks (list as they appear in a call record from the switch): | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

| Facility | Carrier Service (from CARRIER SERVICES worksheet) | | Grade of Service | Number of Trunks |
|--|--|----------|------------------|------------------|
| | Incoming | Outgoing | | |
| | | | | |
| Trunks (list as they appear in a call record from the switch): | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

ORGANIZATION WORKSHEETS

Part I. Level-1 (Extensions)

Under Cost Center: (from part II)

| | | |
|--|---|---|
| Extension: | Personnel Name (Title, first, last): | Auth. Code: |
| ¿Immediate Out? <input type="checkbox"/> | Fixed charge or charge type and amount: | Privacy : Reports (0-17 or ALL) <input type="text"/> Storage <input type="text"/> |

| | | |
|--|---|---|
| Extension: | Personnel Name (Title, first, last): | Auth. Code: |
| ¿Immediate Out? <input type="checkbox"/> | Fixed charge or charge type and amount: | Privacy : Reports (0-17 or ALL) <input type="text"/> Storage <input type="text"/> |

| | | |
|--|---|---|
| Extension: | Personnel Name (Title, first, last): | Auth. Code: |
| ¿Immediate Out? <input type="checkbox"/> | Fixed charge or charge type and amount: | Privacy : Reports (0-17 or ALL) <input type="text"/> Storage <input type="text"/> |

| | | |
|--|---|---|
| Extension: | Personnel Name (Title, first, last): | Auth. Code: |
| ¿Immediate Out? <input type="checkbox"/> | Fixed charge or charge type and amount: | Privacy : Reports (0-17 or ALL) <input type="text"/> Storage <input type="text"/> |

| | | |
|--|---|---|
| Extension: | Personnel Name (Title, first, last): | Auth. Code: |
| ¿Immediate Out? <input type="checkbox"/> | Fixed charge or charge type and amount: | Privacy : Reports (0-17 or ALL) <input type="text"/> Storage <input type="text"/> |

| | | |
|--|---|---|
| Extension: | Personnel Name (Title, first, last): | Auth. Code: |
| ¿Immediate Out? <input type="checkbox"/> | Fixed charge or charge type and amount: | Privacy : Reports (0-17 or ALL) <input type="text"/> Storage <input type="text"/> |

| | | |
|--|---|---|
| Extension: | Personnel Name (Title, first, last): | Auth. Code: |
| ¿Immediate Out? <input type="checkbox"/> | Fixed charge or charge type and amount: | Privacy : Reports (0-17 or ALL) <input type="text"/> Storage <input type="text"/> |

Level-2 (Cost Centers)

ORGANIZATION WORKSHEETS

| Cost Center | Call Rating | Level-3 (from part III) |
|-------------|--|-------------------------|
| | Markup % <input type="text"/> Surcharge <input type="text"/> Min. charge <input type="text"/> Budget (if used) <input type="text"/> | |
| | Markup % <input type="text"/> Surcharge <input type="text"/> Min. charge <input type="text"/> Budget (if used) <input type="text"/> | |
| | Markup % <input type="text"/> Surcharge <input type="text"/> Min. charge <input type="text"/> Budget (if used) <input type="text"/> | |
| | Markup % <input type="text"/> Surcharge <input type="text"/> Min. charge <input type="text"/> Budget (if used) <input type="text"/> | |
| | Markup % <input type="text"/> Surcharge <input type="text"/> Min. charge <input type="text"/> Budget (if used) <input type="text"/> | |

This appendix provides samples of the following reports:

- Organization Detail Report
- Organization Summary Report
- Cost Center Summary Report
- Department Summary Report
- Organization Trends Report
- Budget Report
- Selection Detail Report
- Selection Summary Report
- Account Code Detail Report
- Account Code Summary Report
- Call Type Report
- Date Report
- Cost and Duration Report
- Time of Day Report
- Call Distribution Report
- Incoming Traffic Analysis Report
- Rejected Call Summary Report
- Facility Report
- Facility Trends Report
- Facility Grade of Service Report
- Expensive Calls Report
- Longest Calls Report
- Frequently Called Numbers Report
- Telecom Manager's Report

Sample Reports

Organization Detail Report

Date: Friday, October 09, 1994

Page: 1

Time: 4:43:23 PM MOSLEY Corporation

SELECTION CRITERIA :

DATE RANGE : 9/01/94 to 9/30/94

TIME RANGE : 12:00:00 AM to 11:59:59 PM

MINIMUM COST : \$0.00

MINIMUM DURATION : 0:00:00

Department : Marketing

Cost Center : 503 - Doc

Extension : 1041

CALL TYPE : All

DIALED NUMBER : All

PAGE BREAK AFTER EACH Extension: Yes

Department : Marketing

Cost Center : 503 - Doc

Extension : 1041

PERSONNEL NAME : Sohn, Maria

| DATE | TIME | DURATION HH:MM:SS | DIALED NUMBER | LOCATION | CALL TYPE | COST (Dollars) |
|----------|-------|----------------------|----------------|------------|--------------|--------------------|
| 09/01/94 | 07:43 | 0:10:38 | | | INCOM | 0.00 |
| 09/01/94 | 10:27 | 0:12:18 | | | INCOM | 0.00 |
| 09/01/94 | 15:31 | 0:19:34 | | | INCOM | 0.00 |
| 09/01/94 | 17:18 | 0:25:42 | | | INCOM | 0.00 |
| 09/02/94 | 08:19 | 0:18:51 | 262-6547 | ROCHESTER | LOCAL | 0.43 |
| 09/03/94 | 07:04 | 0:17:51 | 1-415-903-5436 | MT VIEW CA | OS-OL | 2.59 |
| 09/03/94 | 08:17 | 0:03:41 | 01149899305593 | WEST-GERMA | INTNL | 3.69 |
| 09/03/94 | 09:01 | 0:19:26 | 1-374-5486 | NAPLES | IS-IL | 3.00 |
| 09/03/94 | 15:20 | 0:03:17 | 924-8695 | VICTOR | LOCAL | 0.10 |
| 09/04/94 | 08:50 | 0:00:57 | | | INCOM | 0.00 |
| 09/04/94 | 11:00 | 0:00:32 | 555-1212 | Local Info | SPCL | 0.60 |
| 09/04/94 | 11:01 | 0:09:56 | | | INCOM | 0.00 |
| 09/04/94 | 14:17 | 0:30:00 | 381-6000 | EROCHESTER | LOCAL | 0.67 |
| 09/04/94 | 16:20 | 0:15:38 | | | INCOM | 0.00 |
| 09/05/94 | 09:35 | 0:24:52 | 383-7382 | EROCHESTER | LOCAL | 0.36 |
| 09/06/94 | 10:43 | 0:27:58 | | | INCOM | 0.00 |
| 09/06/94 | 16:37 | 0:04:04 | 1-809-556-8342 | LA ROMA DR | OS-OL | 3.69 |
| 09/07/94 | 12:36 | 0:17:52 | 0113419874521 | SPAIN | INTNL | 16.20 |
| 09/07/94 | 13:14 | 0:20:57 | 1-309-555-1212 | DIR ASS IL | SPCL | 0.65 |
| 09/07/94 | 13:57 | 0:27:06 | | | INCOM | 0.00 |
| 09/07/94 | 16:34 | 0:27:03 | 911 | Emergency | SPCL | 0.00 |
| 09/08/94 | 11:20 | 0:06:24 | | | INCOM | 0.00 |
| 09/08/94 | 17:28 | 0:15:10 | 1-201-835-4432 | POMPTON NJ | OS-OL | 2.29 |
| 09/09/94 | 09:39 | 0:26:40 | | | INCOM | 0.00 |
| 09/09/94 | 11:19 | 0:25:27 | | | INCOM | 0.00 |
| 09/09/94 | 16:11 | 0:16:58 | 1-604-985-3232 | NOVANCO BC | OS-OL | 8.39 |
| 09/09/94 | 18:46 | 0:21:44 | | | INCOM | 0.00 |
| 09/10/94 | 07:57 | 0:22:34 | 383-7382 | EROCHESTER | LOCAL | 0.34 |
| 09/10/94 | 12:01 | 0:03:40 | 671-3345 | W WEBSTER | LOCAL | 0.10 |
| 09/10/94 | 13:17 | 0:07:27 | 1-401-454-6500 | PROVIDE RI | OS-OL | 1.44 |
| 09/10/94 | 14:36 | 0:11:09 | 383-7382 | EROCHESTER | LOCAL | 0.26 |
| 09/10/94 | 21:53 | 0:16:33 | 787-7534 | W WEBSTER | LOCAL | 0.25 |
| 09/11/94 | 12:45 | 0:10:38 | 01144713456714 | UNITED-KIN | INTNL | 8.29 |
| 09/11/94 | 15:45 | 0:11:47 | 1-315-654-7892 | CAPEVIN NY | IS-OL | 1.73 |
| 09/11/94 | 16:35 | 0:17:34 | | | INCOM | 0.00 |
| 09/12/94 | 14:23 | 0:23:07 | | | INCOM | 0.00 |
| 09/13/94 | 14:09 | 0:28:39 | | | INCOM | 0.00 |
| 09/13/94 | 14:43 | 0:30:00 | 1-395-6010 | BROCKPORT | IS-IL | 2.85 |
| 09/13/94 | 15:24 | 0:17:57 | 1-709-454-6600 | ST ANTH NF | OS-OL | 5.57 |
| 09/14/94 | 13:20 | 0:08:43 | 1-214-435-6565 | MAYPEAR TX | OS-OL | 1.78 |
| 09/15/94 | 08:43 | 0:14:55 | | | INCOM | 0.00 |
| 09/15/94 | 12:43 | 0:02:56 | | | INCOM | 0.00 |
| 09/15/94 | 13:27 | 0:19:33 | 425-3849 | FAIRPORT | LOCAL | 0.45 |
| 09/16/94 | 10:27 | 0:04:25 | 1-415-903-5436 | MT VIEW CA | OS-OL | 0.88 |

Sample Reports

Organization Detail Report

Date: Friday, October 09, 1994

Page: 2

Time: 4:43:23 PM

MOSLEY Corporation

 Department : Marketing
 Cost Center : 503 - Doc
 Extension : 1041
 PERSONNEL NAME : Sohn, Maria

| DATE | TIME | DURATION HHMM:MM:SS | DIALED NUMBER | LOCATION | CALL TYPE | COST (Dollars) |
|----------|-------|------------------------|---------------------|------------|--------------|--------------------|
| 09/17/94 | 14:28 | 0:25:18 | 1-315-332-4539 | NEWARK NY | IS-OL | 3.09 |
| 09/17/94 | 15:58 | 0:06:16 | 425-3849 | FAIRPORT | LOCAL | 0.17 |
| 09/18/94 | 08:09 | 0:26:41 | 1-415-903-5436 | MT VIEW CA | OS-OL | 5.54 |
| 09/18/94 | 08:45 | 0:26:12 | 1-416-568-9025 | COOKSVI ON | OS-OL | 6.89 |
| 09/18/94 | 10:48 | 0:05:40 | 1-604-985-3232 | NOVANCO BC | OS-OL | 2.78 |
| 09/18/94 | 13:09 | 0:25:39 | 1-201-835-4432 | POMPTON NJ | OS-OL | 4.81 |
| 09/18/94 | 17:40 | 0:20:38 | 381-6000 | EROCHESTER | LOCAL | 0.31 |
| 09/18/94 | 19:32 | 0:15:39 | | | INCOM | 0.00 |
| 09/18/94 | 20:13 | 0:22:40 | 1-374-5486 | NAPLES | IS-IL | 2.57 |
| 09/19/94 | 13:01 | 0:25:57 | | | INCOM | 0.00 |
| 09/19/94 | 13:37 | 0:20:12 | 1-212-875-4325 | NEW YOR NY | IS-OL | 2.26 |
| 09/19/94 | 17:17 | 0:27:48 | 924-8695 | VICTOR | LOCAL | 0.41 |
| 09/19/94 | 18:32 | 0:21:01 | 729-9054 | ROCHESTER | LOCAL | 0.31 |
| 09/20/94 | 10:10 | 0:24:39 | | | INCOM | 0.00 |
| 09/20/94 | 10:58 | 0:04:12 | | | INCOM | 0.00 |
| 09/20/94 | 13:02 | 0:29:22 | 1-303-924-3345 | BOULDER CO | OS-OL | 4.30 |
| 09/20/94 | 15:32 | 0:20:52 | | | INCOM | 0.00 |
| 09/21/94 | 10:01 | 0:12:34 | | | INCOM | 0.00 |
| 09/21/94 | 10:15 | 0:03:01 | 1-604-985-3232 | NOVANCO BC | OS-OL | 1.44 |
| 09/21/94 | 12:10 | 0:19:32 | 1-617-665-3448 | MELROSE MA | OS-OL | 3.86 |
| 09/21/94 | 12:48 | 0:24:19 | 1-293-4490 | CHURCHVL | IS-IL | 3.72 |
| 09/22/94 | 10:28 | 0:21:50 | 1-415-903-5436 | MT VIEW CA | OS-OL | 4.52 |
| 09/24/94 | 07:26 | 0:11:50 | 1-415-903-5436 | MT VIEW CA | OS-OL | 1.71 |
| 09/25/94 | 10:53 | 0:01:31 | 671-3345 | W WEBSTER | LOCAL | 0.08 |
| 09/25/94 | 13:32 | 0:05:04 | 1-212-773-2096 | NEW YOR NY | IS-OL | 0.82 |
| 09/26/94 | 09:27 | 0:22:59 | 1-416-568-9025 | COOKSVI ON | OS-OL | 4.28 |
| 09/26/94 | 13:47 | 0:10:14 | 01144713456714 | UNITED-KIN | INTNL | 6.09 |
| 09/26/94 | 14:58 | 0:13:06 | | | INCOM | 0.00 |
| 09/26/94 | 15:48 | 0:22:45 | 1-202-395-2309 | WASHING DC | OS-OL | 3.00 |
| 09/27/94 | 08:38 | 0:13:38 | 1-315-654-7892 | CAPEVIN NY | IS-OL | 1.52 |
| 09/27/94 | 11:14 | 0:03:44 | | | INCOM | 0.00 |
| 09/27/94 | 13:48 | 0:07:13 | 1-407-830-3424 | WINTERP FL | OS-OL | 1.03 |
| 09/28/94 | 08:05 | 0:03:29 | | | INCOM | 0.00 |
| 09/28/94 | 08:44 | 0:01:03 | 1-809-556-8342 | LA ROMA DR | OS-OL | 0.86 |
| 09/28/94 | 13:36 | 0:01:35 | 1-395-6010 | BROCKPORT | IS-IL | 0.40 |
| 09/28/94 | 17:32 | 0:07:21 | 0113315433345 | FRANCE | INTNL | 5.08 |
| 09/29/94 | 12:09 | 0:04:05 | 1-604-985-3232 | NOVANCO BC | OS-OL | 1.99 |
| 09/29/94 | 13:22 | 0:01:57 | | | INCOM | 0.00 |
| 09/30/94 | 08:45 | 0:14:32 | 1-604-985-3232 | NOVANCO BC | OS-OL | 7.15 |
| 09/30/94 | 09:08 | 0:03:29 | | | INCOM | 0.00 |
| 09/30/94 | 14:13 | 0:24:58 | 1-303-924-3345 | BOULDER CO | OS-OL | 5.19 |
| | 85 | 21:46:48 | DETAIL SUBTOTAL | | | 152.78 |
| | | | Federal | | | 6.04 |
| | | | State | | | 4.55 |
| | | | Local | | | 4.55 |
| | | | FIXED CHARGE | | | 0.00 |
| TOTALS: | | 21:46:48 | NUMBER OF CALLS: 85 | | | 167.92 |

End of Organization Detail Report

Sample Reports

Organization Summary Report

Date: Friday, October 09, 1994

Page: 1

Time: 4:45:31 PM

MOSLEY Corporation

DATE RANGE: Tuesday, September 01, 1994 to Tuesday, December 01, 1994

SELECTION CRITERIA :

Department : Marketing
 Cost Center : All
 Extension : All

PAGE BREAK AFTER EACH Cost Center: No

Cost Center TOTALS

Department : Marketing
 Cost Center : 501 - PM

| Extension | NAME | TOTAL CALLS | DURATION | | COST | |
|-----------|--------------------|----------------|---------------------|----------------------|--------------------|-----------------------|
| | | | TOTAL HHHH:MM:SS | PER CALL HH:MM:SS | TOTAL (Dollars) | PER CALL (Dollars) |
| 1016 | Greer, Thomas | 76 | 19:52:57 | 0:15:41 | 139.00 | 1.84 |
| 1017 | Montevecchio, Doug | 81 | 20:51:42 | 0:15:27 | 131.80 | 1.62 |
| 1018 | Robinson, Yves | 87 | 22:45:17 | 0:15:41 | 204.40 | 2.34 |
| 1019 | Herbert, James | 97 | 23:24:25 | 0:14:28 | 236.80 | 2.43 |
| 1020 | Claeys, Anne | 81 | 19:40:09 | 0:14:34 | 181.30 | 2.23 |
| 1021 | Centanni, James | 99 | 26:02:04 | 0:15:46 | 124.60 | 1.26 |
| 1022 | Ramage, Amy | 100 | 24:26:49 | 0:14:40 | 126.50 | 1.26 |
| 1023 | Rizzo, Dave | 94 | 22:01:50 | 0:14:03 | 127.40 | 1.35 |
| 1033 | Ross, Scott | 105 | 27:22:08 | 0:15:38 | 198.60 | 1.88 |
| 1043 | Galanti, Allison | 84 | 21:26:12 | 0:15:18 | 141.06 | 1.68 |
| TOTALS: | | 904 | 227:53:33 | 0:15:07 | 1,611.46 | 1.78 |

Cost Center TOTALS

Department : Marketing
 Cost Center : 503 - Doc

| Extension | NAME | TOTAL CALLS | DURATION | | COST | |
|-----------|-------------|----------------|---------------------|----------------------|--------------------|-----------------------|
| | | | TOTAL HHHH:MM:SS | PER CALL HH:MM:SS | TOTAL (Dollars) | PER CALL (Dollars) |
| 1041 | Sohn, Maria | 85 | 21:46:48 | 0:15:22 | 152.78 | 1.79 |
| 1042 | Heyl, Sue | 95 | 24:06:24 | 0:15:13 | 174.12 | 1.83 |
| TOTALS: | | 180 | 45:53:12 | 0:15:17 | 326.90 | 1.81 |

Department TOTALS

Department : Marketing

| Cost Center | TOTAL CALLS | TOTAL HHHH:MM:SS | PER CALL HH:MM:SS | COST | | |
|-------------|----------------|---------------------|----------------------|--------------------|-----------------------|-------------------------|
| | | | | TOTAL (Dollars) | PER CALL (Dollars) | PER MINUTE (Dollars) |
| 501 - PM | 904 | 227:53:33 | 0:15:07 | 1,611.46 | 1.78 | 0.11 |
| 503 - Doc | 180 | 45:53:12 | 0:15:17 | 326.90 | 1.81 | 0.11 |
| TOTALS: | | 1084 | 276:46:45 | 1,938.36 | 1.79 | 0.11 |

GRAND TOTALS

| Department | TOTAL CALLS | TOTAL HHHH:MM:SS | PER CALL HH:MM:SS | COST | | |
|------------|----------------|---------------------|----------------------|--------------------|-----------------------|-------------------------|
| | | | | TOTAL (Dollars) | PER CALL (Dollars) | PER MINUTE (Dollars) |
| Marketing | 1084 | 276:46:45 | 0:15:13 | 1,938.36 | 1.79 | 0.11 |
| TOTALS: | | 1084 | 276:46:45 | 1,938.36 | 1.79 | 0.11 |

End of Organization Summary Report

Sample Reports

Cost Center Summary Report

Date: Friday, October 09, 1994
 Time: 4:47:37 PM

Page: 1

MOSLEY Corporation

 DATE RANGE: Tuesday, September 01, 1994 to Wednesday, September 30, 1994

SELECTION CRITERIA :
 Department : All

PAGE BREAK AFTER EACH Department: No

Department: Accounting

| Cost Center | ----- DURATION ----- | | | ----- COST ----- | | |
|-------------|----------------------|------------------|-------------------|------------------|--------------------|----------------------|
| | TOTAL CALLS | TOTAL HHHH:MM:SS | PER CALL HH:MM:SS | TOTAL (Dollars) | PER CALL (Dollars) | PER MINUTE (Dollars) |
| 201 - Acct | 209 | 54:33:11 | 0:15:39 | 286.83 | 1.37 | 0.08 |
| TOTALS: | 209 | 54:33:11 | 0:15:39 | 286.83 | 1.37 | 0.08 |

Department: Customer Srvc

| Cost Center | ----- DURATION ----- | | | ----- COST ----- | | |
|-------------|----------------------|------------------|-------------------|------------------|--------------------|----------------------|
| | TOTAL CALLS | TOTAL HHHH:MM:SS | PER CALL HH:MM:SS | TOTAL (Dollars) | PER CALL (Dollars) | PER MINUTE (Dollars) |
| 701 - CS | 485 | 117:29:29 | 0:14:32 | 817.39 | 1.68 | 0.11 |
| TOTALS: | 485 | 117:29:29 | 0:14:32 | 817.39 | 1.68 | 0.11 |

Department: Engineering

| Cost Center | ----- DURATION ----- | | | ----- COST ----- | | |
|----------------|----------------------|------------------|-------------------|------------------|--------------------|----------------------|
| | TOTAL CALLS | TOTAL HHHH:MM:SS | PER CALL HH:MM:SS | TOTAL (Dollars) | PER CALL (Dollars) | PER MINUTE (Dollars) |
| 401 - Software | 572 | 142:53:50 | 0:14:59 | 1,099.73 | 1.92 | 0.12 |
| 402 - Hardware | 295 | 72:31:11 | 0:14:44 | 528.56 | 1.79 | 0.12 |
| TOTALS: | 867 | 215:25:01 | 0:14:54 | 1,628.29 | 1.87 | 0.12 |

Department: Executive

| Cost Center | ----- DURATION ----- | | | ----- COST ----- | | |
|-------------|----------------------|------------------|-------------------|------------------|--------------------|----------------------|
| | TOTAL CALLS | TOTAL HHHH:MM:SS | PER CALL HH:MM:SS | TOTAL (Dollars) | PER CALL (Dollars) | PER MINUTE (Dollars) |
| 101 - CEO | 89 | 24:15:40 | 0:16:21 | 182.94 | 2.05 | 0.12 |
| 102 - Other | 165 | 42:45:06 | 0:15:32 | 212.92 | 1.29 | 0.08 |
| TOTALS: | 254 | 67:00:46 | 0:15:49 | 395.86 | 1.55 | 0.09 |

Sample Reports

Cost Center Summary Report

Date: Friday, October 09, 1994

Page: 2

Time: 4:47:37 PM

MOSLEY Corporation

Department: Manufacturing

| Cost Center | TOTAL CALLS | ----- DURATION ----- | | ----- COST ----- | | |
|-------------|-------------|----------------------|-------------------|------------------|--------------------|----------------------|
| | | TOTAL HHHH:MM:SS | PER CALL HH:MM:SS | TOTAL (Dollars) | PER CALL (Dollars) | PER MINUTE (Dollars) |
| 301 - Manuf | 374 | 92:00:38 | 0:14:45 | 731.29 | 1.95 | 0.13 |
| TOTALS: | 374 | 92:00:38 | 0:14:45 | 731.29 | 1.95 | 0.13 |

Department: Marketing

| Cost Center | TOTAL CALLS | ----- DURATION ----- | | ----- COST ----- | | |
|-------------|-------------|----------------------|-------------------|------------------|--------------------|----------------------|
| | | TOTAL HHHH:MM:SS | PER CALL HH:MM:SS | TOTAL (Dollars) | PER CALL (Dollars) | PER MINUTE (Dollars) |
| 501 - PM | 904 | 227:53:33 | 0:15:07 | 1,611.46 | 1.78 | 0.11 |
| 502 - PAT | 460 | 117:52:09 | 0:15:22 | 922.72 | 2.00 | 0.13 |
| 503 - Doc | 180 | 45:53:12 | 0:15:17 | 326.90 | 1.81 | 0.11 |
| TOTALS: | 1544 | 391:38:54 | 0:15:13 | 2,861.08 | 1.85 | 0.12 |

Department: Sales

| Cost Center | TOTAL CALLS | ----- DURATION ----- | | ----- COST ----- | | |
|-------------|-------------|----------------------|-------------------|------------------|--------------------|----------------------|
| | | TOTAL HHHH:MM:SS | PER CALL HH:MM:SS | TOTAL (Dollars) | PER CALL (Dollars) | PER MINUTE (Dollars) |
| 601 - US | 545 | 135:23:39 | 0:14:54 | 957.21 | 1.75 | 0.11 |
| 602 - Intnl | 405 | 100:31:14 | 0:14:53 | 722.23 | 1.78 | 0.11 |
| TOTALS: | 950 | 235:54:53 | 0:14:53 | 1,679.44 | 1.76 | 0.11 |

COMPANY TOTALS: MOSLEY Corporation

| Cost Center | TOTAL CALLS | ----- DURATION ----- | | ----- COST ----- | | |
|---------------|-------------|----------------------|-------------------|------------------|--------------------|----------------------|
| | | TOTAL HHHH:MM:SS | PER CALL HH:MM:SS | TOTAL (Dollars) | PER CALL (Dollars) | PER MINUTE (Dollars) |
| Accounting | 209 | 54:33:11 | 0:15:39 | 286.83 | 1.37 | 0.08 |
| Customer Srvc | 485 | 117:29:29 | 0:14:32 | 817.39 | 1.68 | 0.11 |
| Engineering | 867 | 215:25:01 | 0:14:54 | 1,628.29 | 1.87 | 0.12 |
| Executive | 254 | 67:00:46 | 0:15:49 | 395.86 | 1.55 | 0.09 |
| Manufacturing | 374 | 92:00:38 | 0:14:45 | 731.29 | 1.95 | 0.13 |
| Marketing | 1544 | 391:38:54 | 0:15:13 | 2,861.08 | 1.85 | 0.12 |
| Sales | 950 | 235:54:53 | 0:14:53 | 1,679.44 | 1.76 | 0.11 |
| TOTALS: | 4683 | 1174:02:52 | 0:15:02 | 8,400.18 | 1.79 | 0.11 |

End of Cost Center Summary Report

Sample Reports

Department Summary Report

Date: Friday, October 09, 1994

Page: 1

Time: 5:19:19 PM

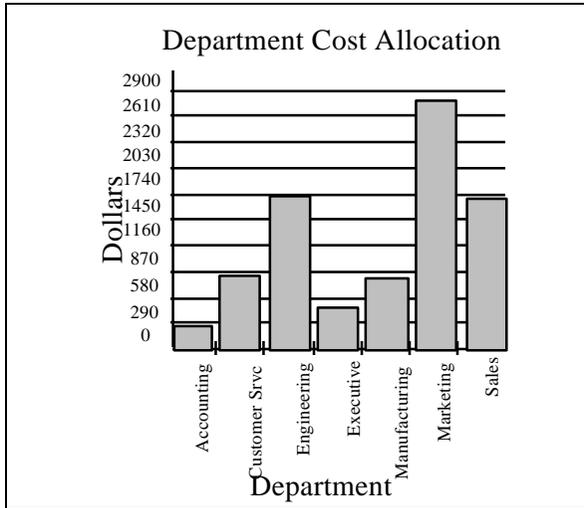
MOSLEY Corporation

DATE RANGE: Tuesday, September 01, 1994 to Wednesday, September 30, 1994

COMPANY TOTALS: MOSLEY Corporation

| Department | ----- DURATION ----- | | | ----- COST ----- | | |
|---------------|----------------------|------------------|-------------------|------------------|---------------------|----------------------|
| | TOTAL CALLS | TOTAL HHHH:MM:SS | PER CALL HH:MM:SS | TOTAL (Dollars) | PER CALL (Dollars) | PER MINUTE (Dollars) |
| Accounting | 209 | 54:33:11 | 0:15:39 | 286.83 | 1.37 | 0.08 |
| Customer Srvc | 485 | 117:29:29 | 0:14:32 | 817.39 | 1.68 | 0.11 |
| Engineering | 867 | 215:25:01 | 0:14:54 | 1,628.29 | 1.87 | 0.12 |
| Executive | 254 | 67:00:46 | 0:15:49 | 395.86 | 1.55 | 0.09 |
| Manufacturing | 374 | 92:00:38 | 0:14:45 | 731.29 | 1.95 | 0.13 |
| Marketing | 1544 | 391:38:54 | 0:15:13 | 2,861.08 | 1.85 | 0.12 |
| Sales | 950 | 235:54:53 | 0:14:53 | 1,679.44 | 1.76 | 0.11 |
| TOTALS: | 4683 | 1174:02:52 | 0:15:02 | 8,400.18 | 1.79 | 0.11 |

End of Department Summary Report



Sample Reports

Organization Trends Report

Date: Friday, October 09, 1994

Page: 1

Time: 5:30:40 PM MOSLEY Corporation

SELECTION CRITERIA :
Cost Center : 503 - Doc

Cost Center: 503 - Doc

| START OF PERIOD | TOTAL CALLS | ----- DURATION ----- | | ----- COST ----- | | |
|-----------------|-------------|----------------------|-------------------|------------------|--------------------|----------------------|
| | | TOTAL HHHH:MM:SS | PER CALL HH:MM:SS | TOTAL (Dollars) | PER CALL (Dollars) | PER MINUTE (Dollars) |
| 01/01/94 | 220 | 44:00:00 | 0:12:00 | 242.00 | 1.10 | 0.09 |
| 02/01/94 | 363 | 90:45:00 | 0:15:00 | 471.90 | 1.30 | 0.09 |
| 03/01/94 | 308 | 78:42:40 | 0:15:20 | 369.60 | 1.20 | 0.08 |
| 04/01/94 | 290 | 67:40:00 | 0:14:00 | 275.50 | 0.95 | 0.07 |
| 05/01/94 | 328 | 82:54:40 | 0:15:10 | 574.00 | 1.75 | 0.12 |
| 06/01/94 | 230 | 38:39:10 | 0:10:05 | 414.00 | 1.80 | 0.10 |
| 07/01/94 | 300 | 60:50:00 | 0:12:10 | 840.00 | 2.80 | 0.08 |
| 08/01/94 | 360 | 98:30:00 | 0:16:25 | 360.00 | 1.00 | 0.06 |
| 09/01/94 | 180 | 45:53:12 | 0:15:17 | 326.90 | 1.81 | 0.11 |
| *10/01/94 | 50 | 12:30:00 | 0:15:00 | 75.00 | 1.50 | 0.10 |
| TOTALS: | 2,629 | 620:24:42 | 0:14:11 | 3,948.90 | 1.50 | 0.11 |

* This period is not complete.

End of Organization Trends Report

Sample Reports

Budget Report

Date: Friday, October 09, 1994
 Time: 5:31:40 PM

Page: 1

MOSLEY Corporation

SELECTION CRITERIA :
 Cost Center : 503 - Doc

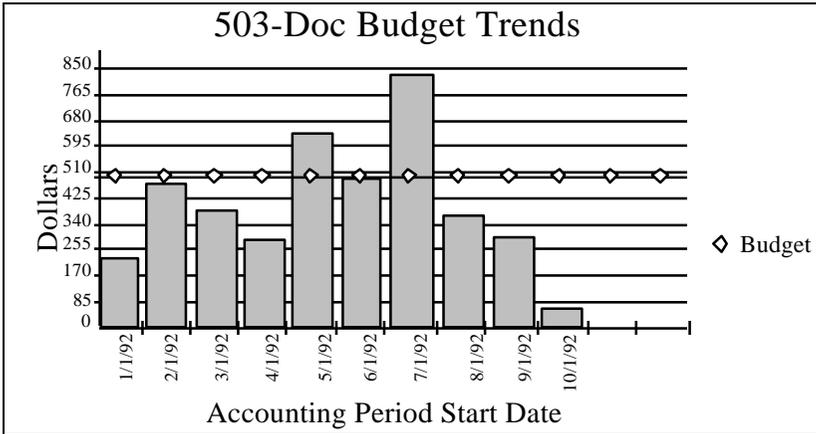
CURRENT ACCOUNTING PERIOD:
 Thursday, October 01, 1994 to Saturday, October 31, 1994

| COST CENTER | ACTUAL (Dollars) | BUDGET (Dollars) | VARIANCE (Dollars) |
|-------------|----------------------|----------------------|------------------------|
| 503 - Doc | 75.00 | 500.00 | (425.00) |
| TOTALS: | 75.00 | 500.00 | (425.00) |

YEAR TO DATE PERIOD:
 Wednesday, January 1, 1994 to Friday, September 30, 1994

| COST CENTER | ACTUAL (Dollars) | BUDGET (Dollars) | VARIANCE (Dollars) |
|-------------|----------------------|----------------------|------------------------|
| 503 - Doc | 3,948.90 | 4,500.00 | (551.10) |
| TOTALS: | 3,948.90 | 4,500.00 | (551.10) |

End of Budget Report



Sample Reports

Selection Detail Report

Date: Friday, October 09, 1994
Time: 5:38:43 PM

Page: 1

MOSLEY Corporation

```

SELECTION CRITERIA      :
DATE RANGE              : 8/31/94 to 9/30/94
TIME RANGE              : 12:00:00 AM to 11:59:59 PM
MINIMUM COST            : $ 0.00
MINIMUM DURATION        : 0:00:00
Department              : Marketing
Cost Center             : 503 - Doc
Extension               : 1041
ACCOUNT CODES          : All
Trunk                   : All
CALL TYPE               : IDDD
DIALED NUMBER          : All
    
```

SUMMARIZE NOTHING

| DATE | TIME | DURATION HHH:MM:SS | EXTENSION | DIALED NUMBER | LOCATION | CALL TYPE Trunk | ACCOUNT CODE | COST (Dollars) |
|----------------------------|-------|-----------------------|-----------|----------------|------------|--------------------|--------------|-------------------|
| 09/03/94 | 08:17 | 0:03:41 | 1041 | 01149899305593 | WEST-GERMA | INTNL 01 | | 3.69 |
| 09/07/94 | 12:36 | 0:17:52 | 1041 | 0113419874521 | SPAIN | INTNL 01 | 10018 | 16.20 |
| 09/11/94 | 12:45 | 0:10:38 | 1041 | 01144713456714 | UNITED-KIN | INTNL 01 | | 8.29 |
| 09/26/94 | 13:47 | 0:10:14 | 1041 | 01144713456714 | UNITED-KIN | INTNL 01 | 10019 | 6.09 |
| 09/28/94 | 17:32 | 0:07:21 | 1041 | 0113315433345 | FRANCE | INTNL 01 | | 5.08 |
| 5 0:49:46 DETAIL SUBTOTAL | | | | | | | | 39.35 |
| Federal | | | | | | | | 1.67 |
| State | | | | | | | | 1.18 |
| Local | | | | | | | | 1.18 |
| ----- | | | | | | | | ----- |
| 0:49:46 NUMBER OF CALLS: 5 | | | | | | | | 43.28 |

End of Selection Detail Report

Selection Summary Report

Date: Friday, October 09, 1994
Time: 5:38:43 PM

Page: 1

MOSLEY Corporation

```

SELECTION CRITERIA      :
DATE RANGE              : 8/31/94 to 9/30/94
TIME RANGE              : 12:00:00 AM to 11:59:59 PM
MINIMUM COST            : $ 0.00
MINIMUM DURATION        : 0:00:00
Department              : Marketing
Cost Center             : 503 - Doc
Extension               : 1041
ACCOUNT CODES          : All
Trunk                   : All
CALL TYPE               : IDDD
DIALED NUMBER          : All
    
```

| TOTAL NUMBER OF CALLS | DURATION TOTAL HHH:MM:SS | PER CALL HH:MM:SS | TOTAL (Dollars) | COST PER CALL (Dollars) | PER MINUTE (Dollars) |
|--------------------------|--------------------------------|----------------------|--------------------|-------------------------------|-------------------------|
| 5 | 0:49:46 | 0:09:57 | 43.28 | 8.65 | 0.86 |

End of Selection Summary Report

Sample Reports

Account Code Detail Report

Page: 1

Date: Friday, October 09, 1994
 Time: 5:38:43 PM

MOSLEY Corporation

SELECTION CRITERIA :
 DATE RANGE : 9/7/94 to 9/7/94
 ACCOUNT CODES : 10018

SUMMARIZE NOTHING

| DATE | TIME | DURATION HHH:MM:SS | EXTENSION | DIALED NUMBER | LOCATION | CALL TYPE | COST (Dollars) |
|----------|-------|-----------------------|--------------------|---------------|----------|--------------|-------------------|
| 09/07/94 | 12:36 | 0:17:52 | 1041 | 0113419874521 | SPAIN | INTNL | 16.20 |
| 09/07/94 | 13:26 | 0:05:15 | 1011 | | | INCOM | 0.00 |
| 09/07/94 | 18:05 | 0:06:58 | 1024 | | | INCOM | 0.00 |
| | 3 | 0:30:05 | DETAIL SUBTOTAL | | | | 16.20 |
| | | | Federal | | | | 0.65 |
| | | | State | | | | 0.49 |
| | | | Local | | | | 0.49 |
| | | 0:30:05 | NUMBER OF CALLS: 3 | | | | 17.83 |

End of Account Code Detail Report

Account Code Summary Report

Page: 1

Date: Friday, October 09, 1994
 Time: 5:19:19 PM

MOSLEY Corporation

DATE RANGE: Tuesday, September 01, 1994 to Wednesday, September 30, 1994

SELECTION CRITERIA :
 ACCOUNT CODES : All

| ACCOUNT CODE | TOTAL CALLS | DURATION HHH:MM:SS | PER CALL HH:MM:SS | TOTAL (Dollars) | COST PER CALL (Dollars) | PER MINUTE (Dollars) |
|--------------|----------------|-----------------------|----------------------|--------------------|-------------------------------|-------------------------|
| 10001 | 110 | 29:25:30 | 0:16:03 | 230.83 | 2.09 | 0.13 |
| 10002 | 118 | 29:46:29 | 0:15:08 | 222.88 | 1.88 | 0.12 |
| 10003 | 114 | 27:22:26 | 0:14:24 | 150.06 | 1.31 | 0.09 |
| 10004 | 103 | 27:41:25 | 0:16:07 | 139.18 | 1.35 | 0.08 |
| 10005 | 122 | 29:32:23 | 0:14:31 | 247.82 | 2.03 | 0.13 |
| 10006 | 118 | 27:52:02 | 0:14:10 | 176.63 | 1.49 | 0.10 |
| 10007 | 105 | 27:20:11 | 0:15:37 | 174.32 | 1.66 | 0.10 |
| 10008 | 116 | 27:59:04 | 0:14:28 | 194.61 | 1.67 | 0.11 |
| 10009 | 123 | 30:15:16 | 0:14:45 | 226.60 | 1.84 | 0.12 |
| 10010 | 110 | 29:15:02 | 0:15:57 | 247.00 | 2.24 | 0.14 |
| 10011 | 111 | 26:41:18 | 0:14:25 | 202.30 | 1.82 | 0.12 |
| 10012 | 106 | 26:33:44 | 0:15:02 | 265.49 | 2.50 | 0.16 |
| 10013 | 126 | 30:32:46 | 0:14:32 | 221.80 | 1.76 | 0.12 |
| 10014 | 115 | 29:03:07 | 0:15:09 | 191.64 | 1.66 | 0.10 |
| 10015 | 119 | 29:13:15 | 0:14:43 | 209.86 | 1.76 | 0.11 |
| 10016 | 108 | 28:58:40 | 0:16:05 | 217.74 | 2.01 | 0.12 |
| 10017 | 93 | 23:12:56 | 0:14:58 | 166.06 | 1.78 | 0.11 |
| 10018 | 124 | 27:09:32 | 0:13:08 | 189.93 | 1.53 | 0.11 |
| 10019 | 121 | 31:40:00 | 0:15:42 | 243.12 | 2.00 | 0.12 |
| 10020 | 136 | 33:48:13 | 0:14:54 | 272.22 | 2.00 | 0.13 |
| TOTALS: | 2298 | 573:23:19 | 0:14:58 | 4,190.09 | 1.82 | 0.12 |

End of Account Code Summary Report

Sample Reports

Call Type Report

Date: Friday, October 09, 1994

Page: 1

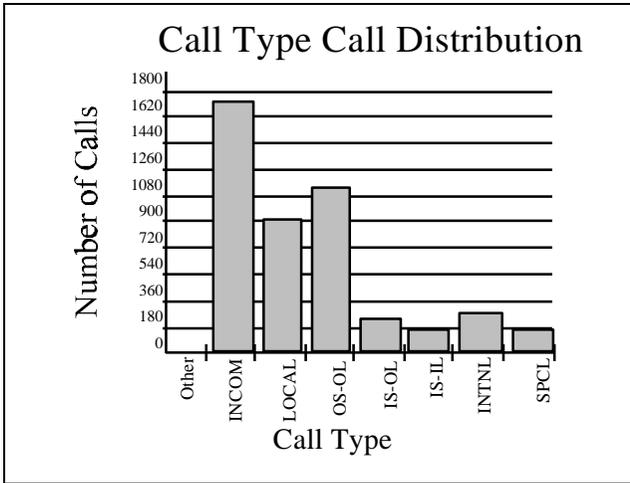
Time: 6:05:24 PM

MOSLEY Corporation

DATE RANGE: Tuesday, September 01, 1994 to Wednesday, September 30, 1994

| REPORTING CALL TYPE | DURATION | | | COST | | |
|------------------------|----------------|-------------------|----------------------|---------------------|-----------------------|--------------------------|
| | TOTAL CALLS | TOTAL HH:MM:SS | PER CALL HH:MM:SS | TOTAL (Dollars) | PER CALL (Dollars) | PER MINUTE (Dollars) |
| Other | 0 | 0:00:00 | 0:00:00 | 0.00 | 0.00 | 0.00 |
| INCOM | 1710 | 437:19:18 | 0:15:20 | 0.00 | 0.00 | 0.00 |
| LOCAL | 932 | 230:56:20 | 0:14:52 | 282.95 | 0.30 | 0.02 |
| OS-OL | 1185 | 293:33:32 | 0:14:51 | 3,945.65 | 3.32 | 0.22 |
| IS-OL | 219 | 52:52:40 | 0:14:29 | 411.63 | 1.87 | 0.12 |
| IS-IL | 173 | 41:40:05 | 0:14:27 | 336.09 | 1.94 | 0.13 |
| INTNL | 295 | 71:19:31 | 0:14:30 | 3,351.06 | 11.35 | 0.78 |
| SPCL | 169 | 46:21:26 | 0:16:27 | 72.80 | 0.43 | 0.02 |
| TOTALS: | 4683 | 1174:02:52 | 0:15:02 | 8,400.18 | 1.79 | 0.11 |

End of Call Type Report



Sample Reports

Date Report

Date: Thursday, November 12, 1994

Page: 1

Time: 12:34:10 PM

MOSLEY Corporation

```

-----
          TOTAL          DURATION          COST
          CALLS          PER CALL          PER CALL
          HHHH:MM:SS    HH:MM:SS          (Dollars)
          (Dollars)          (Dollars)
-----
09/01/94      141      32:59:52      0:14:02      291.71      2.06      0.14
09/02/94      161      42:26:23      0:15:48      243.96      1.51      0.09
09/03/94      171      42:38:32      0:14:57      294.75      1.72      0.11
09/04/94      142      36:23:37      0:15:22      250.02      1.76      0.11
09/05/94      153      36:38:32      0:14:22      282.87      1.84      0.12
09/06/94      149      39:34:59      0:15:56      296.85      1.99      0.12
09/07/94      170      44:42:42      0:15:46      311.04      1.82      0.11
09/08/94      184      45:48:23      0:14:56      299.50      1.62      0.10
09/09/94      152      38:06:52      0:15:02      287.56      1.89      0.12
09/10/94      167      41:23:42      0:14:52      268.95      1.61      0.10
09/11/94      172      41:20:51      0:14:25      290.40      1.68      0.11
09/12/94      134      34:47:40      0:15:34      204.07      1.52      0.09
09/13/94      147      35:26:50      0:14:28      228.93      1.55      0.10
09/14/94      146      33:54:08      0:13:55      236.49      1.61      0.11
09/15/94      122      32:08:47      0:15:48      334.49      2.74      0.17
09/16/94      156      39:41:43      0:15:16      240.76      1.54      0.10
09/17/94      139      33:41:08      0:14:32      247.99      1.78      0.12
09/18/94      153      38:40:15      0:15:09      287.33      1.87      0.12
09/19/94      183      45:39:31      0:14:58      300.56      1.64      0.10
09/20/94      149      39:01:57      0:15:43      284.08      1.90      0.12
09/21/94      160      42:01:49      0:15:45      342.46      2.14      0.13
09/22/94      146      35:23:51      0:14:32      226.05      1.54      0.10
  09/23/94      153      38:32:43      0:15:06      286.60      1.87      0.12
09/24/94      160      40:12:27      0:15:04      322.82      2.01      0.13
09/25/94      177      42:42:40      0:14:28      255.47      1.44      0.09
09/26/94      174      44:03:15      0:15:11      297.70      1.71      0.11
09/27/94      157      38:37:30      0:14:45      303.47      1.93      0.13
09/28/94      168      39:51:34      0:14:14      305.86      1.82      0.12
09/29/94      136      35:20:04      0:15:35      264.89      1.94      0.12
09/30/94      161      42:10:35      0:15:43      312.55      1.94      0.12
-----
TOTALS:      4683    1174:02:52    0:15:02      8,400.18      1.79      0.11
-----

```

End of Date Report

Sample Reports

Cost and Duration Report

Date: Friday October 9, 1994
Time: 5:19:19 PM

MOSLEY Corporation

Page: 1

DATE RANGE: Tuesday, September 01, 1994 to Wednesday, September 30, 1994

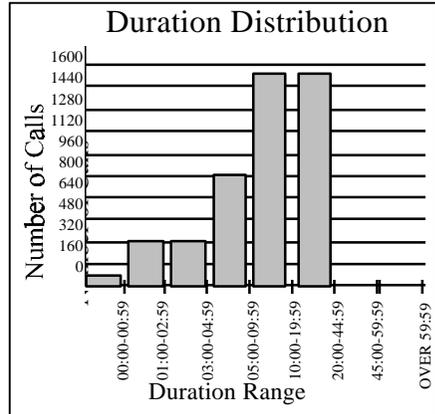
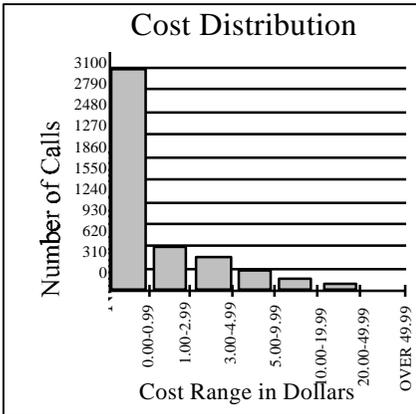
COST DISTRIBUTION

| COST RANGE (Dollars) | TOTAL CALLS | DURATION | | TOTAL (Dollars) | COST | |
|--------------------------|----------------|---------------------|----------------------|---------------------|------------------------|--------------------------|
| | | TOTAL HHHH:MM:SS | PER CALL HH:MM:SS | | PER CALL (Dollars) | PER MINUTE (Dollars) |
| 0.00 - 0.99 | 3111 | 731:29:53 | 0:14:06 | 523.57 | 0.16 | 0.01 |
| 1.00 - 2.99 | 688 | 141:23:44 | 0:12:19 | 1,374.00 | 1.99 | 0.16 |
| 3.00 - 4.99 | 431 | 145:53:50 | 0:20:18 | 1,653.77 | 3.83 | 0.18 |
| 5.00 - 9.99 | 252 | 82:56:01 | 0:19:44 | 1,659.70 | 6.58 | 0.33 |
| 10.00 - 19.99 | 164 | 56:31:09 | 0:20:40 | 2,321.31 | 14.15 | 0.68 |
| 20.00 - 49.99 | 37 | 15:48:15 | 0:25:37 | 867.83 | 23.45 | 0.91 |
| OVER 49.99 | 0 | 0:00:00 | 0:00:00 | 0.00 | 0.00 | 0.00 |
| TOTALS: | 4683 | 1174:02:52 | 0:15:02 | 8,400.18 | 1.79 | 0.11 |

DURATION DISTRIBUTION

| DURATION RANGE MM:SS | TOTAL CALLS | DURATION | | TOTAL (Dollars) | COST | |
|-------------------------|----------------|---------------------|----------------------|---------------------|------------------------|--------------------------|
| | | TOTAL HHHH:MM:SS | PER CALL HH:MM:SS | | PER CALL (Dollars) | PER MINUTE (Dollars) |
| 00:00 - 00:59 | 88 | 1:05:27 | 0:00:44 | 14.74 | 0.16 | 0.22 |
| 01:00 - 02:59 | 327 | 10:44:59 | 0:01:58 | 120.73 | 0.36 | 0.18 |
| 03:00 - 04:59 | 334 | 22:18:40 | 0:04:00 | 203.48 | 0.60 | 0.15 |
| 05:00 - 09:59 | 802 | 100:23:56 | 0:07:30 | 724.63 | 0.90 | 0.12 |
| 10:00 - 19:59 | 1569 | 389:10:31 | 0:14:52 | 2,882.13 | 1.83 | 0.12 |
| 20:00 - 44:59 | 1563 | 650:19:19 | 0:24:57 | 4,454.47 | 2.84 | 0.11 |
| 45:00 - 59:59 | 0 | 0:00:00 | 0:00:00 | 0.00 | 0.00 | 0.00 |
| OVER 59:59 | 0 | 0:00:00 | 0:00:00 | 0.00 | 0.00 | 0.00 |
| TOTALS: | 4683 | 1174:02:52 | 0:15:02 | 8,400.18 | 1.79 | 0.11 |

End of Cost and Duration Report



Sample Reports

Time of Day Report

Date: Friday, October 09, 1994
 Time: 5:19:19 PM

Page: 1

MOSLEY Corporation

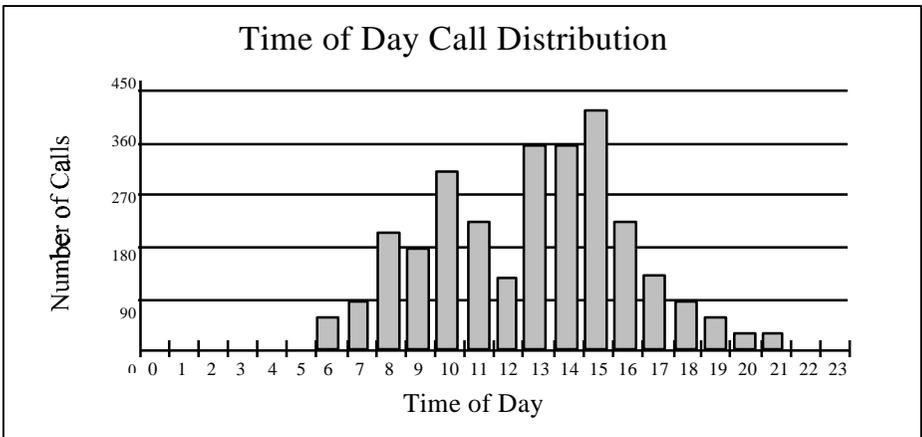
DATE RANGE: Tuesday, September 01, 1994 to Wednesday, September 30, 1994

SELECTION CRITERIA :

INCLUDE OUTGOING CALLS: Yes
 INCLUDE INCOMING CALLS: No

| TIME OF DAY | TOTAL CALLS | DURATION | | COST | | |
|---------------|-------------|-------------------|----------------------|--------------------|-----------------------|-------------------------|
| | | TOTAL HH:MM:SS | PER CALL HH:MM:SS | TOTAL (Dollars) | PER CALL (Dollars) | PER MINUTE (Dollars) |
| 00:00 - 00:59 | 0 | 0:00:00 | 0:00:00 | 0.00 | 0.00 | 0.00 |
| 01:00 - 01:59 | 0 | 0:00:00 | 0:00:00 | 0.00 | 0.00 | 0.00 |
| 02:00 - 02:59 | 0 | 0:00:00 | 0:00:00 | 0.00 | 0.00 | 0.00 |
| 03:00 - 03:59 | 0 | 0:00:00 | 0:00:00 | 0.00 | 0.00 | 0.00 |
| 04:00 - 04:59 | 0 | 0:00:00 | 0:00:00 | 0.00 | 0.00 | 0.00 |
| 05:00 - 05:59 | 0 | 0:00:00 | 0:00:00 | 0.00 | 0.00 | 0.00 |
| 06:00 - 06:59 | 60 | 14:08:56 | 0:14:08 | 200.53 | 3.34 | 0.23 |
| 07:00 - 07:59 | 87 | 23:28:24 | 0:16:11 | 252.02 | 2.89 | 0.17 |
| 08:00 - 08:59 | 207 | 48:39:12 | 0:14:06 | 539.60 | 2.60 | 0.18 |
| 09:00 - 09:59 | 174 | 42:09:11 | 0:14:32 | 469.51 | 2.69 | 0.18 |
| 10:00 - 10:59 | 322 | 86:09:52 | 0:16:03 | 1,214.40 | 3.77 | 0.23 |
| 11:00 - 11:59 | 233 | 59:51:30 | 0:15:24 | 685.26 | 2.94 | 0.19 |
| 12:00 - 12:59 | 130 | 30:20:02 | 0:14:00 | 311.50 | 2.39 | 0.17 |
| 13:00 - 13:59 | 369 | 94:54:58 | 0:15:26 | 1,004.33 | 2.72 | 0.17 |
| 14:00 - 14:59 | 369 | 91:55:42 | 0:14:56 | 1,049.74 | 2.84 | 0.19 |
| 15:00 - 15:59 | 420 | 102:45:56 | 0:14:40 | 1,113.20 | 2.65 | 0.18 |
| 16:00 - 16:59 | 246 | 60:13:55 | 0:14:41 | 678.34 | 2.75 | 0.18 |
| 17:00 - 17:59 | 148 | 33:11:24 | 0:13:27 | 353.14 | 2.38 | 0.17 |
| 18:00 - 18:59 | 87 | 19:29:56 | 0:13:26 | 188.85 | 2.17 | 0.16 |
| 19:00 - 19:59 | 55 | 13:18:49 | 0:14:31 | 162.97 | 2.96 | 0.20 |
| 20:00 - 20:59 | 30 | 7:51:45 | 0:15:43 | 76.06 | 2.53 | 0.16 |
| 21:00 - 21:59 | 36 | 8:14:02 | 0:13:43 | 100.73 | 2.79 | 0.20 |
| 22:00 - 22:59 | 0 | 0:00:00 | 0:00:00 | 0.00 | 0.00 | 0.00 |
| 23:00 - 23:59 | 0 | 0:00:00 | 0:00:00 | 0.00 | 0.00 | 0.00 |
| TOTALS: | 2973 | 736:43:34 | 0:14:52 | 8,400.18 | 2.82 | 0.19 |

The heaviest traffic based on duration is between 15:00 and 15:59.
 This time period accounts for 13% of the total traffic.
 End of Time of Day Report



Sample Reports

Call Distribution Report

Date: Wednesday, November 11, 1994
 Time: 6:12:44 PM

Page: 1

MOSLEY Corporation

DATE RANGE: Tuesday, September 01, 1994 to Wednesday, September 30, 1994

| LOCATION CODE | LOCATION | TOTAL CALLS | DURATION | | COST | | |
|---------------|----------|-------------|------------------|-------------------|-----------------|--------------------|----------------------|
| | | | TOTAL HHHH:MM:SS | PER CALL HH:MM:SS | TOTAL (Dollars) | PER CALL (Dollars) | PER MINUTE (Dollars) |
| 201 | NJ | 125 | 29:56:04 | 0:14:22 | 295.72 | 2.36 | 0.16 |
| 202 | DC | 48 | 12:34:05 | 0:15:42 | 126.21 | 2.62 | 0.16 |
| 203 | CT | 56 | 14:23:26 | 0:15:25 | 141.27 | 2.52 | 0.16 |
| 204 | MB | 0 | 0:00:00 | 0:00:00 | 0.00 | 0.00 | 0.00 |
| 205 | AL | 0 | 0:00:00 | 0:00:00 | 0.00 | 0.00 | 0.00 |
| 206 | WA | 0 | 0:00:00 | 0:00:00 | 0.00 | 0.00 | 0.00 |
| 207 | ME | 0 | 0:00:00 | 0:00:00 | 0.00 | 0.00 | 0.00 |
| 208 | ID | 0 | 0:00:00 | 0:00:00 | 0.00 | 0.00 | 0.00 |
| 209 | CA | 0 | 0:00:00 | 0:00:00 | 0.00 | 0.00 | 0.00 |
| 212 | NY | 97 | 20:45:35 | 0:12:50 | 175.38 | 1.80 | 0.14 |
| 213 | CA | 0 | 0:00:00 | 0:00:00 | 0.00 | 0.00 | 0.00 |
| 214 | TX | 62 | 16:30:03 | 0:15:58 | 183.93 | 2.96 | 0.18 |
| . | | | | | | | |
| 914 | NY | 0 | 0:00:00 | 0:00:00 | 0.00 | 0.00 | 0.00 |
| 915 | TX | 0 | 0:00:00 | 0:00:00 | 0.00 | 0.00 | 0.00 |
| 916 | CA | 63 | 15:06:31 | 0:14:23 | 163.94 | 2.60 | 0.18 |
| 918 | OK | 0 | 0:00:00 | 0:00:00 | 0.00 | 0.00 | 0.00 |
| 919 | NC | 59 | 15:27:19 | 0:15:43 | 159.17 | 2.69 | 0.17 |
| LOCAL | | 932 | 230:56:20 | 0:14:52 | 282.95 | 0.30 | 0.02 |
| INTERNATIONAL | | 295 | 71:19:31 | 0:14:30 | 3,351.06 | 11.35 | 0.78 |
| OTHER | | 278 | 69:04:02 | 0:14:54 | 367.29 | 1.32 | 0.08 |
| TOTALS: | | 2973 | 736:43:34 | 0:14:52 | 8,400.18 | 2.82 | 0.19 |

End of Call Distribution Report

ANI Call Distribution Report

Date: Monday, November 09, 1994
 Time: 6:16:28 PM

Page: 1

MOSLEY Corporation

DATE RANGE: Tuesday, September 01, 1994 to Wednesday, September 30, 1994

| LOCATION CODE | LOCATION | TOTAL CALLS | DURATION | | COST | | |
|---------------|----------|-------------|------------------|-------------------|-----------------|--------------------|----------------------|
| | | | TOTAL HHHH:MM:SS | PER CALL HH:MM:SS | TOTAL (Dollars) | PER CALL (Dollars) | PER MINUTE (Dollars) |
| 201 | NJ | 0 | 0:00:00 | 0:00:00 | 0.00 | 0.00 | 0.00 |
| 202 | DC | 0 | 0:00:00 | 0:00:00 | 0.00 | 0.00 | 0.00 |
| 203 | CT | 0 | 0:00:00 | 0:00:00 | 0.00 | 0.00 | 0.00 |
| 204 | MB | 0 | 0:00:00 | 0:00:00 | 0.00 | 0.00 | 0.00 |
| 205 | AL | 0 | 0:00:00 | 0:00:00 | 0.00 | 0.00 | 0.00 |
| 206 | WA | 0 | 0:00:00 | 0:00:00 | 0.00 | 0.00 | 0.00 |
| 207 | ME | 0 | 0:00:00 | 0:00:00 | 0.00 | 0.00 | 0.00 |
| . | | | | | | | |
| LOCAL | | 0 | 0:00:00 | 0:00:00 | 0.00 | 0.00 | 0.00 |
| INTERNATIONAL | | 0 | 0:00:00 | 0:00:00 | 0.00 | 0.00 | 0.00 |
| OTHER | | 1710 | 437:19:18 | 0:15:20 | 0.00 | 0.00 | 0.00 |
| TOTALS: | | 1710 | 437:19:18 | 0:15:20 | 0.00 | 0.00 | 0.00 |

End of ANI Call Distribution Report

Sample Reports

Ring Time Analysis Report

Date: Monday, November 09, 1994
 Time: 6:17:36 PM

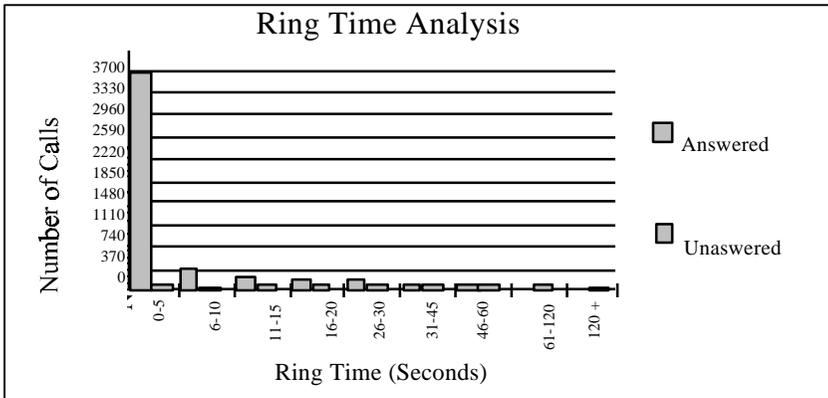
Page: 1

MOSLEY Corporation

DATE RANGE: Tuesday, September 01, 1994 to Wednesday, September 30, 1994

| RING TIME (SECONDS) | -- ALL CALLS -- | | --- ANSWERED --- | | -- UNANSWERED -- | |
|------------------------|-----------------|---------------------|------------------|----------------------|------------------|----------------------|
| | NUMBER | PERCENT OF TOTAL | NUMBER | PERCENT OF NUMBER | NUMBER | PERCENT OF NUMBER |
| 0 - 5 | 3705 | 74.7 | 3678 | 99.3 | 27 | 0.7 |
| 6 - 10 | 408 | 8.2 | 392 | 96.1 | 16 | 3.9 |
| 11 - 15 | 319 | 6.4 | 279 | 87.5 | 40 | 12.5 |
| 16 - 20 | 200 | 4.0 | 166 | 83.0 | 34 | 17.0 |
| 21 - 25 | 129 | 2.6 | 97 | 75.2 | 32 | 24.8 |
| 26 - 30 | 72 | 1.5 | 40 | 55.6 | 32 | 44.4 |
| 31 - 45 | 34 | 0.7 | 17 | 50.0 | 17 | 50.0 |
| 46 - 60 | 35 | 0.7 | 10 | 28.6 | 25 | 71.4 |
| 61 - 120 | 37 | 0.7 | 3 | 8.1 | 34 | 91.9 |
| 120 + | 18 | 0.4 | 1 | 5.6 | 17 | 94.4 |
| TOTALS: | 4957 | 100. | 4683 | 94.5 | 274 | 5.5 |

End of Ring Time Analysis Report



Sample Reports

Incoming Traffic Analysis Report

Date: Monday, November 09, 1994

Page: 1

Time: 6:20:06 PM

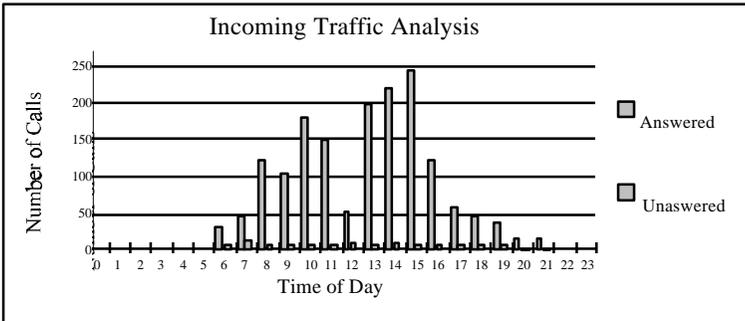
MOSLEY Corporation

DATE RANGE: Tuesday, September 01, 1994 to Wednesday, September 30, 1994

| TIME OF DAY | TOTAL CALLS | ----- ANSWERED ----- | | | ----- UNANSWERED ----- | | |
|---------------|-------------|----------------------|------|---------------------|------------------------|------|---------------------|
| | | NUMBER | % | RING TIME (SECONDS) | NUMBER | % | RING TIME (SECONDS) |
| 00:00 - 00:59 | 0 | 0 | 0.0 | 0 | 0 | 0.0 | 0 |
| 01:00 - 01:59 | 0 | 0 | 0.0 | 0 | 0 | 0.0 | 0 |
| 02:00 - 02:59 | 0 | 0 | 0.0 | 0 | 0 | 0.0 | 0 |
| 03:00 - 03:59 | 0 | 0 | 0.0 | 0 | 0 | 0.0 | 0 |
| 04:00 - 04:59 | 0 | 0 | 0.0 | 0 | 0 | 0.0 | 0 |
| 05:00 - 05:59 | 0 | 0 | 0.0 | 0 | 0 | 0.0 | 0 |
| 06:00 - 06:59 | 31 | 28 | 90.3 | 4 | 3 | 9.7 | 87 |
| 07:00 - 07:59 | 60 | 49 | 81.7 | 9 | 11 | 18.3 | 31 |
| 08:00 - 08:59 | 146 | 129 | 88.4 | 4 | 17 | 11.6 | 81 |
| 09:00 - 09:59 | 126 | 107 | 84.9 | 6 | 19 | 15.1 | 53 |
| 10:00 - 10:59 | 213 | 183 | 85.9 | 4 | 30 | 14.1 | 53 |
| 11:00 - 11:59 | 185 | 156 | 84.3 | 5 | 29 | 15.7 | 56 |
| 12:00 - 12:59 | 75 | 67 | 89.3 | 6 | 8 | 10.7 | 59 |
| 13:00 - 13:59 | 240 | 200 | 83.3 | 7 | 40 | 16.7 | 51 |
| 14:00 - 14:59 | 259 | 227 | 87.6 | 6 | 32 | 12.4 | 62 |
| 15:00 - 15:59 | 282 | 245 | 86.9 | 6 | 37 | 13.1 | 60 |
| 16:00 - 16:59 | 142 | 126 | 88.7 | 5 | 16 | 11.3 | 79 |
| 17:00 - 17:59 | 80 | 67 | 83.8 | 6 | 13 | 16.3 | 48 |
| 18:00 - 18:59 | 61 | 51 | 83.6 | 8 | 10 | 16.4 | 39 |
| 19:00 - 19:59 | 46 | 41 | 89.1 | 3 | 5 | 10.9 | 74 |
| 20:00 - 20:59 | 20 | 18 | 90.0 | 1 | 2 | 10.0 | 137 |
| 21:00 - 21:59 | 18 | 16 | 88.9 | 1 | 2 | 11.1 | 52 |
| 22:00 - 22:59 | 0 | 0 | 0.0 | 0 | 0 | 0.0 | 0 |
| 23:00 - 23:59 | 0 | 0 | 0.0 | 0 | 0 | 0.0 | 0 |
| TOTALS: | 1984 | 1710 | 86.2 | 5 | 274 | 13.8 | 58 |

NOTE: 18.3% of the total number of incoming calls were unanswered between 07:00 - 07:59.

End of Incoming Traffic Analysis Report



Sample Reports

Rejected Call Summary Report

Date: Monday, November 09, 1994

Page: 1

Time: 6:21:59 PM MOSLEY Corporation

DATE RANGE: Tuesday, September 01, 1994 to Wednesday, September 30, 1994

| REPORTING CALL TYPE | TOTAL CALLS | ----- DURATION ----- | | ----- COST ----- | | |
|------------------------|----------------|----------------------|----------------------|--------------------|-----------------------|-------------------------|
| | | TOTAL HHHH:MM:SS | PER CALL HH:MM:SS | TOTAL (Dollars) | PER CALL (Dollars) | PER MINUTE (Dollars) |
| Other | 0 | 0:00:00 | 0:00:00 | 0.00 | 0.00 | 0.00 |
| INCOM | 15 | 0:05:31 | 0:00:22 | 0.00 | 0.00 | 0.00 |
| LOCAL | 9 | 0:03:27 | 0:00:23 | 0.66 | 0.07 | 0.19 |
| OS-OL | 11 | 0:04:06 | 0:00:22 | 1.62 | 0.14 | 0.39 |
| IS-OL | 0 | 0:00:00 | 0:00:00 | 0.00 | 0.00 | 0.00 |
| IS-IL | 2 | 0:00:38 | 0:00:19 | 0.16 | 0.08 | 0.25 |
| INTNL | 2 | 0:00:53 | 0:00:26 | 1.81 | 0.90 | 2.04 |
| SPCL | 1 | 0:00:23 | 0:00:23 | 0.00 | 0.00 | 0.00 |
| TOTALS: | 40 | 0:14:58 | 0:00:22 | 4.25 | 0.10 | 0.28 |

End of Rejected Call Summary Report

Facility Report

Date: Monday, November 09, 1994

Page: 1

Time: 6:23:05 PM MOSLEY Corporation

DATE RANGE: Tuesday, September 01, 1994 to Wednesday, September 30, 1994

SELECTION CRITERIA :
FACILITIES : Facility-1

FACILITY: Facility-1

| Trunk NUMBER | TOTAL CALLS | ----- DURATION ----- | | ----- COST ----- | | |
|-----------------|----------------|----------------------|----------------------|--------------------|-----------------------|-------------------------|
| | | TOTAL HHHH:MM:SS | PER CALL HH:MM:SS | TOTAL (Dollars) | PER CALL (Dollars) | PER MINUTE (Dollars) |
| 80 | 873 | 221:33:08 | 0:15:13 | 1,871.97 | 2.14 | 0.14 |
| 81 | 976 | 245:52:38 | 0:15:06 | 2,256.89 | 2.31 | 0.15 |
| 82 | 992 | 239:41:21 | 0:14:29 | 1,893.15 | 1.90 | 0.13 |
| TOTALS: | 2841 | 707:07:07 | 0:14:56 | 6,022.01 | 2.11 | 0.14 |

GRAND TOTALS:

| TOTAL CALLS | ----- DURATION ----- TOTAL HHHH:MM:SS | PER CALL HH:MM:SS | ----- COST ----- TOTAL (Dollars) | PER CALL (Dollars) | PER MINUTE (Dollars) |
|----------------|---|----------------------|--|-----------------------|-------------------------|
| 2841 | 707:07:07 | 0:14:56 | 6,022.01 | 2.11 | 0.14 |

End of Facility Report

Sample Reports

Facility Trends Report

Date: Monday, November 09, 1994

Page: 1

Time: 6:24:19 PM MOSLEY Corporation

SELECTION CRITERIA :

FACILITIES : Facility-3

FACILITY: Facility-3

| START OF PERIOD | TOTAL CALLS | NUMBER OF Trunk | TOTAL DURATION HHHH:MM:SS | PER CALL HH:MM:SS | TOTAL (Dollars) | PER CALL (Dollars) | PER MINUTE (Dollars) |
|-----------------|-------------|-----------------|---------------------------|-------------------|-----------------|--------------------|----------------------|
| 01/01/94 | 220 | 1 | 44:00:00 | 0:12:00 | 242.00 | 1.10 | 0.09 |
| 02/01/94 | 363 | 1 | 90:45:00 | 0:15:00 | 471.90 | 1.30 | 0.09 |
| 03/01/94 | 308 | 1 | 78:42:40 | 0:15:20 | 369.60 | 1.20 | 0.08 |
| 04/01/94 | 290 | 1 | 67:40:00 | 0:14:00 | 275.50 | 0.95 | 0.07 |
| 05/01/94 | 328 | 1 | 82:54:40 | 0:15:10 | 574.00 | 1.75 | 0.12 |
| 06/01/94 | 230 | 1 | 38:39:10 | 0:10:05 | 414.00 | 1.80 | 0.10 |
| 07/01/94 | 300 | 1 | 60:50:00 | 0:12:10 | 840.00 | 2.80 | 0.08 |
| 08/01/94 | 360 | 1 | 98:30:00 | 0:16:25 | 360.00 | 1.00 | 0.06 |
| 09/01/94 | 180 | 1 | 45:53:12 | 0:15:17 | 326.90 | 1.81 | 0.11 |
| *10/01/94 | 50 | 1 | 12:30:00 | 0:15:00 | 75.00 | 1.50 | 0.10 |
| TOTALS: | 2,629 | | 620:24:42 | 0:14:11 | 3,948.90 | 1.50 | 0.11 |

* This period is not complete.

End of Facility Trends Report

Facility Grade of Service Report

Date: Monday, November 09, 1994

Page: 1

Time: 6:25:45 PM

MOSLEY Corporation

DATE RANGE: Tuesday, September 01, 1994 to Wednesday, September 30, 1994

SELECTION CRITERIA :

FACILITIES : All

| FACILITY | NUMBER OF Trunk | AVERAGE BUSY HOUR | AVERAGE CALLS | AVERAGE DURATION HHHH:MM:SS | PER CALL HH:MM:SS | ACTUAL % | GOS TARGET % | Trunk REQUIRED |
|------------|-----------------|-------------------|---------------|-----------------------------|-------------------|----------|--------------|----------------|
| Facility-1 | 2 | 10:00 - 10:59 | 12 | 1:06:32 | 0:05:33 | 3.0 | 2.0 | 3 |
| Facility-2 | 4 | 11:00 - 11:59 | 23 | 2:14:49 | 0:05:52 | 3.5 | 5.0 | 3 |
| Facility-3 | 1 | 13:00 - 13:59 | 7 | 0:43:08 | 0:43:08 | 2.2 | 2.0 | 1 |

Sample Reports

Expensive Calls Report

Date: Monday, November 09, 1994
Time: 6:41:21 PM

Page: 1

MOSLEY Corporation

DATE RANGE: Tuesday, September 01, 1994 to Wednesday, September 30, 1994

SELECTION CRITERIA :
Extension : All

| COST (Dollars) | DURATION HHMM:MM:SS | DATE | TIME | DIALED NUMBER | LOCATION | EXTENSION | PERSONNEL NAME |
|--------------------|------------------------|----------|-------|-----------------|------------|-----------|------------------|
| 31.39 | 0:27:25 | 09/15/94 | 16:02 | 01181355439209 | JAPAN | 1044 | Pugliese, Kathy |
| 28.89 | 0:25:06 | 09/27/94 | 17:41 | 01181355439209 | JAPAN | 1018 | Robinson, Yves |
| 28.67 | 0:29:24 | 09/19/94 | 11:12 | 01149899305593 | WEST-GERMA | 1006 | Paratore, James |
| 28.55 | 0:29:06 | 09/16/94 | 10:18 | 0113419874521 | SPAIN | 1012 | Elder, Steve |
| 28.29 | 0:28:58 | 09/21/94 | 10:17 | 01149899305593 | WEST-GERMA | 1035 | Tucker, Ron |
| 27.85 | 0:28:28 | 09/08/94 | 10:19 | 01181355439209 | JAPAN | 1019 | Herbert, James |
| 27.82 | 0:28:29 | 09/07/94 | 10:18 | 011492302667995 | WEST-GERMA | 1025 | Jordon, Jad |
| 27.80 | 0:24:06 | 09/28/94 | 14:58 | 01181355439209 | JAPAN | 1007 | Fox, Neil |
| 27.75 | 0:29:45 | 09/29/94 | 06:54 | 0113419874521 | SPAIN | 1012 | Elder, Steve |
| 27.59 | 0:29:07 | 09/27/94 | 10:24 | 0113315433345 | FRANCE | 1043 | Galanti, Allison |
| 27.47 | 0:23:49 | 09/13/94 | 14:08 | 01181355439209 | JAPAN | 1011 | James, Louis |
| 27.04 | 0:28:29 | 09/06/94 | 10:44 | 0113315433345 | FRANCE | 1005 | Osborne, Jeff |
| 26.74 | 0:27:16 | 09/15/94 | 07:04 | 01181355439209 | JAPAN | 1024 | Fordon, Robert |
| 26.67 | 0:27:19 | 09/01/94 | 11:08 | 01149899305693 | MOSCOW3mbH | 1042 | Heyl, Sue |
| 26.28 | 0:22:42 | 09/02/94 | 15:54 | 01181355439209 | JAPAN | 1040 | McGowan, Paula |
| 26.15 | 0:22:34 | 09/30/94 | 15:17 | 01181355439209 | JAPAN | 1014 | Myers, Mike |
| 25.92 | 0:26:27 | 09/21/94 | 12:59 | 01181355439209 | JAPAN | 1012 | Elder, Steve |
| 25.81 | 0:26:17 | 09/19/94 | 11:42 | 01181355439209 | JAPAN | 1026 | Carbone, Mark |
| 25.70 | 0:26:17 | 09/07/94 | 10:23 | 01149899305593 | WEST-GERMA | 1019 | Herbert, James |
| 25.54 | 0:27:11 | 09/04/94 | 09:27 | 01139554238903 | ITALY | 1026 | Carbone, Mark |
| 25.41 | 0:26:01 | 09/03/94 | 09:48 | 011492302667995 | WEST-GERMA | 1009 | Derleth, Michael |
| 25.32 | 0:25:55 | 09/21/94 | 08:28 | 011492302667995 | WEST-GERMA | 1034 | Karr, James |
| 25.18 | 0:25:37 | 09/28/94 | 13:00 | 01181355439209 | JAPAN | 1049 | Albert, Steve |
| 25.14 | 0:25:43 | 09/29/94 | 08:20 | 0114983169533 | WEST-GERMA | 1009 | Derleth, Michael |
| 25.14 | 0:25:43 | 09/05/94 | 08:53 | 0114983169533 | WEST-GERMA | 1042 | Heyl, Sue |

End of Expensive Calls Report

Longest Calls Report

Date: Monday, November 09, 1994
Time: 7:04:45 PM

Page: 1

MOSLEY Corporation

DATE RANGE: Tuesday, September 01, 1994 to Wednesday, September 30, 1994

SELECTION CRITERIA :
Extension : All

| DURATION HHMM:MM:SS | COST (Dollars) | DATE | TIME | DIALED NUMBER | LOCATION | EXTENSION | PERSONNEL NAME |
|------------------------|--------------------|----------|-------|----------------|------------|-----------|--------------------|
| 0:30:00 | 0.74 | 09/04/94 | 14:17 | 381-6000 | EROCHESTER | 1041 | Sohn, Maria |
| 0:30:00 | 0.00 | 09/19/94 | 14:49 | | | 1021 | Centanni, James |
| 0:30:00 | 0.00 | 09/25/94 | 09:49 | | | 1023 | Rizzo, Dave |
| 0:30:00 | 3.14 | 09/13/94 | 14:33 | 1-395-6010 | BROCKPORT | 1041 | Sohn, Maria |
| 0:29:59 | 0.47 | 09/05/94 | 15:57 | 872-3837 | WEBSTER | 1037 | Brennan, Vincent |
| 0:29:58 | 0.00 | 09/08/94 | 13:51 | | | 1026 | Carbone, Mark |
| 0:29:58 | 3.91 | 09/07/94 | 09:34 | 1-315-332-4539 | NEWARK NY | 1024 | Fordon, Robert |
| 0:29:58 | 0.00 | 09/01/94 | 10:10 | | | 1030 | Babarik, Paul |
| 0:29:58 | 8.69 | 09/29/94 | 13:00 | 1-416-568-9025 | COOKSVI ON | 1006 | Paratore, James |
| 0:29:57 | 0.00 | 09/06/94 | 08:58 | | | 1021 | Centanni, James |
| 0:29:57 | 6.84 | 09/24/94 | 13:49 | 1-916-486-0900 | SACRAME CA | 1020 | Claeys, Anne |
| 0:29:57 | 6.84 | 09/07/94 | 10:51 | 1-916-486-0900 | SACRAME CA | 1043 | Galanti, Allison |
| 0:29:55 | 0.74 | 09/10/94 | 11:15 | 425-3849 | FAIRPORT | 1042 | Heyl, Sue |
| 0:29:55 | 21.49 | 09/05/94 | 13:44 | 0113315433345 | FRANCE | 1017 | Montevecchio, Doug |
| 0:29:53 | 0.00 | 09/02/94 | 13:53 | | | 1032 | Chapman, John |
| 0:29:52 | 0.00 | 09/10/94 | 08:10 | | | 1011 | James, Louis |
| 0:29:51 | 6.16 | 09/02/94 | 12:54 | 1-201-646-7800 | HACKENS NJ | 1038 | Sherry, Brian |
| 0:29:50 | 0.00 | 09/25/94 | 14:57 | | | 1037 | Brennan, Vincent |
| 0:29:50 | 0.74 | 09/24/94 | 08:25 | 377-9269 | FAIRPORT | 1010 | DiTommaso, Gene |
| 0:29:48 | 0.00 | 09/26/94 | 10:37 | | | 1006 | Paratore, James |
| 0:29:48 | 6.52 | 09/08/94 | 10:39 | 1-617-665-3448 | MELROSE MA | 1022 | Ramage, Amy |
| 0:29:48 | 0.74 | 09/10/94 | 10:02 | 377-9269 | FAIRPORT | 1042 | Heyl, Sue |
| 0:29:48 | 4.79 | 09/06/94 | 15:29 | 1-303-924-3345 | BOULDER CO | 1047 | Byers, Mary |
| 0:29:47 | 0.47 | 09/27/94 | 15:52 | 924-0214 | VICTOR | 1031 | Ross, Jill |
| 0:29:46 | 0.00 | 09/12/94 | 15:45 | | | 1039 | Leene, Elizabeth |

End of Longest Calls Report

Sample Reports

Frequently Called Numbers Report

Date: Monday, November 09, 1994
Time: 7:07:43 PM

MOSLEY Corporation

Page: 1

DATE RANGE: Tuesday, September 01, 1994 to Wednesday, September 30, 1994

SELECTION CRITERIA

Extension : All

| DIALED NUMBER | LOCATION | TOTAL CALLS | DURATION | | COST | | PER MINUTE (Dollars) |
|----------------|------------|-------------|------------------|-------------------|-----------------|--------------------|----------------------|
| | | | TOTAL HHHH:MM:SS | PER CALL HH:MM:SS | TOTAL (Dollars) | PER CALL (Dollars) | |
| 924-0214 | VICTOR | 101 | 26:58:29 | 0:16:01 | 37.75 | 0.37 | 0.02 |
| 383-7382 | EROCHESTER | 88 | 21:26:47 | 0:14:37 | 28.91 | 0.32 | 0.02 |
| 1-416-568-9025 | COOKSVI ON | 73 | 18:00:06 | 0:14:47 | 285.05 | 3.90 | 0.26 |
| 1-401-454-6500 | PROVIDE RI | 70 | 17:01:16 | 0:14:35 | 202.96 | 2.89 | 0.19 |
| 1-303-924-3345 | BOULDER CO | 69 | 18:24:47 | 0:16:00 | 214.87 | 3.11 | 0.19 |
| 1-201-835-4432 | POMPTON NJ | 67 | 15:50:24 | 0:14:11 | 170.79 | 2.54 | 0.17 |
| 1-309-555-1212 | DIR ASS IL | 64 | 18:57:29 | 0:17:46 | 41.60 | 0.65 | 0.03 |
| 1-617-665-3448 | MELROSE MA | 63 | 15:58:58 | 0:15:13 | 184.85 | 2.93 | 0.19 |
| 1-916-486-0900 | SACRAME CA | 63 | 15:06:31 | 0:14:23 | 180.36 | 2.86 | 0.19 |
| 1-315-654-7892 | CAPEVIN NY | 62 | 15:45:13 | 0:15:14 | 140.28 | 2.26 | 0.14 |
| 1-604-985-3232 | NOVANCO BC | 62 | 16:11:43 | 0:15:40 | 472.81 | 7.62 | 0.48 |
| 1-214-435-6565 | MAYPEAR TX | 62 | 16:30:03 | 0:15:58 | 202.30 | 3.26 | 0.20 |
| 1-616-454-6389 | GRAND R MI | 61 | 15:13:20 | 0:14:58 | 176.98 | 2.90 | 0.19 |
| 1-293-4490 | CHURCHVL | 61 | 15:24:20 | 0:15:09 | 135.68 | 2.22 | 0.14 |
| 1-315-332-4539 | NEWARK NY | 60 | 16:21:52 | 0:16:21 | 119.69 | 1.99 | 0.12 |
| 671-3345 | W WEBSTER | 60 | 12:44:35 | 0:12:44 | 17.79 | 0.29 | 0.02 |
| 1-395-6010 | BROCKPORT | 60 | 15:11:38 | 0:15:11 | 134.56 | 2.24 | 0.14 |
| 1-809-556-8342 | LA ROMA DR | 60 | 10:39:00 | 0:10:39 | 490.66 | 8.17 | 0.76 |
| 1-919-870-8834 | RALEIGH NC | 59 | 15:27:19 | 0:15:43 | 175.07 | 2.96 | 0.18 |
| 1-201-646-7800 | HACKENS NJ | 58 | 14:05:40 | 0:14:34 | 154.60 | 2.66 | 0.18 |
| 1-907-586-2100 | JUNEAU AK | 57 | 15:02:52 | 0:15:50 | 186.27 | 3.26 | 0.20 |
| 1-415-903-5436 | MT VIEW CA | 57 | 14:16:13 | 0:15:01 | 171.03 | 3.00 | 0.19 |
| 1-203-577-9856 | WATERBU CT | 56 | 14:23:26 | 0:15:25 | 155.46 | 2.77 | 0.18 |
| 872-3837 | WEBSTER | 56 | 13:40:05 | 0:14:38 | 17.65 | 0.31 | 0.02 |
| 787-7534 | W WEBSTER | 56 | 14:00:01 | 0:15:00 | 18.89 | 0.33 | 0.02 |

End of Frequently Called Numbers Report

Telecom Managers Report

Date: Thursday, October 1, 1994
Time: 0:00:05 AM

MOSLEY Corporation

Page: 1

This Report Was Last Run: Tuesday, September 1, 1994 at 0:00:05 PM

| TOTAL VALID CALLS | TOTAL DURATION HHHH:MM:SS | TOTAL COST (Dollars) |
|----------------------|---------------------------|----------------------|
| 4683 | 1174:02:52 | 8,400.18 |
| TOTAL REJECTED CALLS | TOTAL DURATION HHHH:MM:SS | TOTAL COST (Dollars) |
| 40 | 0:14:58 | 4.25 |

TOTAL UNANSWERED CALLS

274

MOST EXPENSIVE CALL

| COST (Dollars) | DURATION HHHH:MM:SS | DIALED NUMBER | LOCATION | EXTENSION | PERSONNEL NAME |
|----------------|---------------------|----------------|----------|-----------|-----------------|
| 31.39 | 0:27:25 | 01181355439209 | JAPAN | 1044 | Pugliese, Kathy |

LONGEST CALL

| DURATION HHHH:MM:SS | COST (Dollars) | DIALED NUMBER | LOCATION | EXTENSION | PERSONNEL NAME |
|---------------------|----------------|---------------|------------|-----------|----------------|
| 0:30:00 | 0.74 | 381-6000 | EROCHESTER | 1041 | Sohn, Maria |

TRUNK THAT HAD NO ACTIVITY

MESSAGES:

- The end of the accounting period will be reached on 10/31/94.
- The call record database contains 4683 calls.
- The hard disk has 12703744 bytes free for call record storage.

End of Telecom Managers Report

This appendix provides some technical information about the hardware and software requirements for running CAS for Windows on your PC.

The information is organized into the following topics:

- Processor
- Serial Port Pinouts
- Modems
- Switch Interface
- Capacities

Processor

CAS for Windows recommends the following PC configuration:

| | Class/Speed | RAM | Hard Disk (2 months data) | Monthly Call Record Volume |
|----------------------|--|------------|--------------------------------------|---------------------------------------|
| Processor* | 386/25 | 4 Mb | 80 Mb | 250,000 |
| | 486/25 | 4 Mb | 120 Mb | 400,000 |
| | 486/33 | 8 Mb | 170 Mb | 600,000 |
| | 486/50 | 8 Mb | 200 Mb | 750,000 |
| | 486/66 | 8 Mb | 340 Mb | 1,250,000 |
| | 486/66 | 16 Mb | 500 Mb | 2,000,000 |
| | 486/66 | 16 Mb | 1.2 Gb | 5,000,000 |
| Software | MS-DOS 5.0, 6.1 or 6.2 | | | |
| | Windows 3.1 or Windows for Workgroups 3.11 | | | |
| Devices | Bus or PS2-type mouse, VGA color monitor, Parallel printer | | | |
| | (up to 2) Equinox MARK-IV board(s) and HiCom/9 driver, if more than two serial ports are needed | | | |
| | Tape drive — 120 Mb, 525 Mb, or 700 Mb | | | |
| Serial Ports* | Single-site: COM1 - COM2 = for Remote Access and SMDR input (Callback Receiver and HackerTracker FAX/pager modem options require the additional ports of a MARK-IV board) | | | |
| | Multi-site: COM1 = Remote Access (PC port); COM2 - COM5 (ports in a MARK-IV board) or COM2 - COM9 (if using 2 boards): <ul style="list-style-type: none"> — 1 port per direct SMDR input — 1 port per polling modem (1 modem per up to 10 sites) — 1 port for each option: Call Sender, Callback Receiver and HackerTracker FAX/pager modem | | | |

* See *Serial Port Pinouts*

Serial Port Pinouts

The following table shows port pinouts:

| Signal* | DB9 | DB25 | RJ45 | Signal* | DB9 | DB25 | RJ45 |
|---------|-----|------|------|---------|-----|------|------|
| TD | #3 | #2 | #6 | DSR | #6 | #6 | #10 |
| RD | #2 | #3 | #4 | Gnd | #5 | #7 | #5,7 |
| RTS | #7 | #4 | #2 | DCD | #1 | #8 | #8 |
| CTS | #8 | #5 | #9 | RI | #9 | #22 | #1 |
| DTR | #4 | #20 | #3 | | | | |

* CAS sends TD, RTS, and DTR signals; it expects RD. CAS will act on DCD, if supplied.

Modems

CAS for Windows requires Hayes-compatible modems (error-correcting, 9600/14,400-baud modems are recommended).

Typically, default switch settings will work. Although switch settings may vary, you can emulate the following standards:

| | |
|------------------|-------------------------|
| Baud rate | any — controlled by CAS |
| DTR | on — controlled by CAS |
| DCD and DSR | on |
| “AT” command set | on |
| Echo commands | off — set by CAS |
| Result codes | on — set by CAS |
| Autoanswer | off — set by CAS |

Switch Interface

CAS for Windows requires additional components, cables, and connectors for interfacing with a directly connected switch. The table below lists cabling items in the order they are connected, starting at the switch.



If you are using the 9-pin port on the PC for your direct switch connection, it requires a DB9-to-modular adapter.

| Switch | Item |
|---|---|
| System 75 R1V1, V2 or V3, DEFINITY G3r | From: digital line circuit pack TN754 port* <ul style="list-style-type: none"> • 103A connecting block • 7400A, cable & power supply • DB25-to-modular adapter • RJ45 modular cable |
| * A DEFINITY G3 also uses the data line pack TN726B and packet data board TN553 ports | |
| System 75XE, DEFINITY G1, G3i or G3s | From: DCE port on PPN cabinet <ul style="list-style-type: none"> • DB25-to-modular adapter • RJ45 modular cable |
| System 85 R2V4 DEFINITY G2 | From: PCC pack TN474B <ul style="list-style-type: none"> • 103A connecting block • D8W-87 cable • ADU w/EIA and aux power kit • DB25-to-modular adapter • RJ45 modular cable |
| System 85 R2V1, V2, V3, Dimension PBX | From: SMDR-DO (15-word formatted ASCII) or LSU-DO (18-word formatted ASCII) <ul style="list-style-type: none"> • DB25-to-modular adapter • RJ45 modular cable |
| System 25, MERLIN LEGEND, or Spirit 2448 | From: SMDR port <ul style="list-style-type: none"> • RJ45 modular cable |

Capacities

| | | | | | |
|------------------------|---|-------------------------------|---------------------------|-----------------------------|-----------------------|
| Call Records | To disk capacity. Each call record = 75 bytes | | | | |
| Sites | Single-site system = 1 site Multi-site system options = 4, 25, and 100 sites | | | | |
| Organization | 2 to 5 levels. Level-1 ("extensions") ≤ 10 digits; other level entries ≤ 15 characters. See table below. | | | | |
| Model | Level-1 Ext. | Level-2 Cost Ctr. | Level-3 Dept. | Level-4 Div. | Level-5 Branch |
| 50 | 50 | 50 | 25 | 20 | 15 |
| 100 | 100 | 75 | 35 | 25 | 20 |
| 200 | 200 | 150 | 75 | 50 | 30 |
| 500 | 500 | 250 | 150 | 75 | 50 |
| 2000 | 2000 | 1000 | 500 | 250 | 150 |
| 5000 | 5000 | 1000 | 1000 | 500 | 250 |
| 10000 | 10000 | 1500 | 1500 | 750 | 350 |
| 20000 | 20000 | 1500 | 1500 | 1000 | 500 |
| 30000 | 30000 | 1500 | 1500 | 1000 | 500 |
| Personnel Names | last name (≤ 36 chars), first name (≤ 26 chars) | | | | |
| Auth. Codes | one per extension (≤ 10 digits) | | | | |
| Other | See table: | | | | |
| | Model | Facilities¹ | Trunks² | Accounts³ | |
| | 50 | 25 | 50 | 1000 | |
| | 100 | 25 | 100 | 1000 | |
| | 200 | 50 | 200 | 3000 | |
| | 500 | 75 | 500 | 5000 | |
| | 2000 | 100 | 1000 | 10000 | |
| | 5000 | 200 | 2000 | 20000 | |
| | 10000 | 200 | 2000 | 30000 | |
| | 20000 | 200 | 2000 | 30000 | |
| | 30000 | 200 | 3000 | 30000 | |
| | ¹ Facility names ≤ 15 characters ² Trunks ≤ 8 digits ³ Account codes ≤ 16 characters ; names ≤ 20 characters | | | | |

| | | | | |
|---|---|------------------------------------|---|--|
| Call Types | 50 (names ≤ 5 characters). System defaults are: | | | |
| | IDDD | International Direct Distance Dial | | |
| | INCOM | Incoming | | |
| | IS-IL | In-State, In-LATA | | |
| | IS-OL | In-State, Out-of-LATA | | |
| | LOCAL | Local | | |
| | OS-IL | Out-of-State, In-LATA | | |
| | OS-OL | Out-of-State, Out-of-LATA | | |
| | OTHER | Undefined, default-rated calls | | |
| | SPCL | Special number | | |
| Carrier Services | 256 (names ≤ 15 characters) | | | |
| Rate Methods | 1000 definitions from among these choices: <ul style="list-style-type: none"> • Custom (fixed) rates* • User-defined markup of installed fixed rates • User-defined flat cost per call • User-defined charge band | | | |
| * Custom rates for most carriers are readily available, including: <table border="0" style="width: 100%;"> <tr> <td style="width: 50%; vertical-align: top;"> AT&T Basic service Megacom SDN switched off-off SDN switched off-on Pro WATS SDN dedicated on-off SDN dedicated on-on Plan D service type 1 Megacom Plus ded UNIPLAN Megacom Plus switch.UNIPLAN </td> <td style="width: 50%; vertical-align: top;"> MCI Basic service Prism 1 Prism Plus Vision switched Vision dedicated Sprint Basic service Clarity Custom switched Clarity Custome select Advanced WATS 1 </td> </tr> </table> | | | AT&T Basic service Megacom SDN switched off-off SDN switched off-on Pro WATS SDN dedicated on-off SDN dedicated on-on Plan D service type 1 Megacom Plus ded UNIPLAN Megacom Plus switch.UNIPLAN | MCI Basic service Prism 1 Prism Plus Vision switched Vision dedicated Sprint Basic service Clarity Custom switched Clarity Custome select Advanced WATS 1 |
| AT&T Basic service Megacom SDN switched off-off SDN switched off-on Pro WATS SDN dedicated on-off SDN dedicated on-on Plan D service type 1 Megacom Plus ded UNIPLAN Megacom Plus switch.UNIPLAN | MCI Basic service Prism 1 Prism Plus Vision switched Vision dedicated Sprint Basic service Clarity Custom switched Clarity Custome select Advanced WATS 1 | | | |
| Location Table | 5000 entries (each entry ≤ 10 characters) | | | |
| Holidays | 100 entries | | | |
| Alert Numbers | 250 entries | | | |
| Scheduled Reports | 1000 individual reports; 25 groups | | | |
| Dialed Digit Processing Table | 100 dialed number patterns | | | |

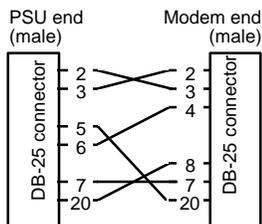
PSU Installation

D

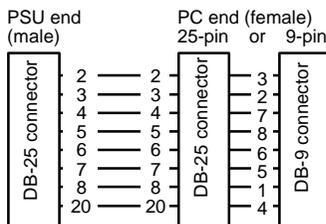
This appendix will help you install a Pollable Storage Unit (PSU) and connect it to the source of call records for a CAS site. Have all components at hand, at their final location:

- PSU and power cord
- (Remote connection) Modem, PSU-to-modem cable (special cable, provided), and phone cord or...

(Direct connection) PSU-to-PC cable (straight cable), terminated on the PSU end in a 25-pin male connector for an RS232 DCE interface



PSU-to-Modem Cable



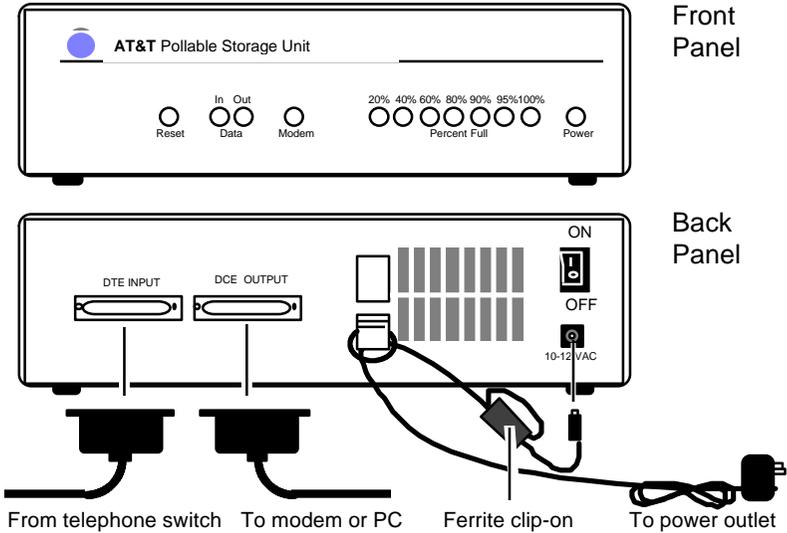
PSU-to-PC Cable

- Shielded* switch-to-PSU cable, terminated at the PSU end in a 25-pin male connector for an RS232 DTE interface (pin: #2 TXD, #3 RXD, #5 CTS, #7 GND, and #20 DTR)

* This requires that the telephone switch SMDR port be electrically grounded.

Connecting the Unit

Refer to the illustrations below as you install the unit.

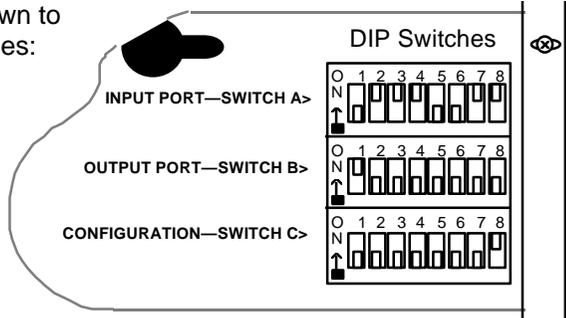


➤ The ferrite clip-on is mounted on the power cord next to the input jack ONLY on units to be installed outside the U.S.A. and which must comply with CISPR-22 Emissions Requirements.

1. Connect the Switch-to-PSU cable from the telephone switch SMDR port to the PSU "DTE INPUT" port.
2. For a remote connection:
 - a. Connect the PSU-to-modem cable from the PSU "DCE OUTPUT" port to the RS232 port on the modem.
 - b. Plug the modem phone cord into the wall jack for the telephone line used in polling this site.
 - c. Power up the modem.
3. For a direct connection, connect the PSU-to-PC cable from the PSU "DCE OUTPUT" port to the serial port on the PC used for collecting SMDR from this site.

Configuring the Unit

1. Turn the PSU upside down to configure the DIP switches:



2. Match telephone switch SMDR port values on SWITCH A:

| | | |
|-------------------------------------|-------------------|-------------------|
| Baud Rate (A-1, A-2, A-3) | OFF-OFF-OFF = 150 | ON-OFF-OFF = 2400 |
| | OFF-OFF-ON = 300 | ON-OFF-ON = 4800 |
| | OFF-ON-OFF = 600 | ON-ON-OFF = 9600 |
| | OFF-ON-ON = 1200 | ON-ON-ON = 19200 |
| | | |
| Word Length (A-4) | OFF = 7 bits | ON = 8 bits |
| Parity (A-5, A-6) | OFF-OFF = none | ON-OFF = space |
| | OFF-ON = odd | ON-ON = even |
| Flow control (A-7, A-8) | OFF-OFF = none | ON-OFF = DTR |
| | OFF-ON = Xon/Xoff | ON-ON = DTR & Xon |

3. Set output values to match modem or PC on SWITCH B:

| | | |
|--------------------------------------|---------------------------------|--------------------------------|
| Baud Rate* (B-1, B-2, B-3) | OFF-OFF-OFF = 150 | ON-OFF-OFF = 2400 |
| | OFF-OFF-ON = 300 | ON-OFF-ON = 4800 |
| | OFF-ON-OFF = 600 | ON-ON-OFF = 9600 |
| | OFF-ON-ON = 1200 | ON-ON-ON = 19200 |
| | | |
| Direct/Modem Connection (B-8) | OFF = connected to CAS by modem | ON = directly connected to CAS |

* If your modem's highest baud rate is not represented above, use the closest lower value (for example, on a 14400-baud modem, set the baud rate to 9600).

4. Set these configuration values on SWITCH C:

| | |
|---|---|
| PSU power loss mode (C-1) | OFF = Sleep (keeps data for 10 to 40 days) ON = Run (collects calls ≤ 2 hours, then goes to sleep) |
| Use/ignore Switch A settings (C-8) * | OFF = Ignore Switch A, use CAS settings ON = Use Switch A, ignore CAS settings |
| * Press RESET if you change C-8 | |



If you set Dip Switch C 8 = OFF, a poll from CAS may change the SMDR input port values, stopping call collection.

CAS defaults for this port are 1200 baud, 8 data, 1 stop bit, no parity, DTR, RTS, and Xon/Xoff flow control. These defaults can only be changed by service personnel.

Power Up the Unit

1. Plug the PSU power cord into the “10-12VAC” jack and into the primary power mains. To secure the cord, wind it one or two turns through the wire clip on the PSU back panel.
2. Turn the PSU “ON/OFF” switch to “ON”.



You should see the front panel “Power” light flash, then turn solid green. If your telephone switch is passing SMDR, you should see the “Data In” light flash as the PSU receives it.

Contact your support organization if you are experiencing difficulties.

Set Up Site

Contact your CAS processing center to add this site to its database, as follows:

1. Set its Call Collection Interface protocol = **PSU** and the protocol options EXACTLY as follows:

| Option | Remote System | Local System |
|--|--------------------|-----------------------------|
| Phone number | <i>PSU modem's</i> | <i>Callback modem's (*)</i> |
| User ID | UserId | CallHome (*) |
| Password | UserPswd | HomePswd (*) |
| UCT Difference | <i>PSU site's</i> | <i>Central site's</i> |
| (*) Not required in a direct connection. | | |

2. Set up the Callback Receiver and add the PSU as a "user" with User ID = **CallHome** and Password = **HomePswd** (one PSU login suffices for the entire system).
3. Poll this site and verify that call records are received and processed properly at the CAS end.

This concludes the installation of the PSU as the source of call records for a CAS site.

G3-MA Data Transfer Option



G3-MA is a Windows application used to administer up to 100 DEFINITY G3 switches. It has a transfer option called "G3-MA Call Accounting Transfer" designed to provide full daily downloads of switch information for use by CAS.

This appendix describes the CAS - G3-MA interface and provides detailed instructions to help you set it up. The material is organized as follows:

- *Overview* — describes the data transfer option in general terms.
- *Network Requirements* — summarizes the network setup for establishing the interface.
- *Synchronize Common Fields* — describes how to prepare CAS for receiving G3-MA data transfers.
- *Installation and Setup* — describes the loading and configuration of the data transfer option on the CAS side.
- *Ready to Go* — describes how to prepare newly downloaded information for proper costing and reporting on CAS.

Overview

The G3-MA application, without a database of its own, uses commands to write and read the DEFINITY G3 switch database. Its data transfer option is designed to automate data entry of CAS trunk and organization information.

G3-MA data files are placed in a user-specified directory under the name(s) *switch_ID.g3m* and contain the following information:

| Each G3-MA file provides this information... | | CAS translates it to... |
|--|---|----------------------------|
| Header Record | switch ID | site ID (reference) |
| Station Record | extension | extension |
| | user last name + separator + first name | user last name |
| | | user first name |
| | room (option) | cost center (option) |
| Trunk Group Line Record | group name (TAC ref.) | facility name (trunk ref.) |
| Trunk Circuit Line Record | TAC + port number | trunk |

Upon enabling G3-MA processing on the CAS side, a "search" schedule for these files is initiated as soon as the interface is enabled, then every 60 minutes thereafter. If the files exist, CAS checks for matches in the Organization and Trunk databases for the named site.

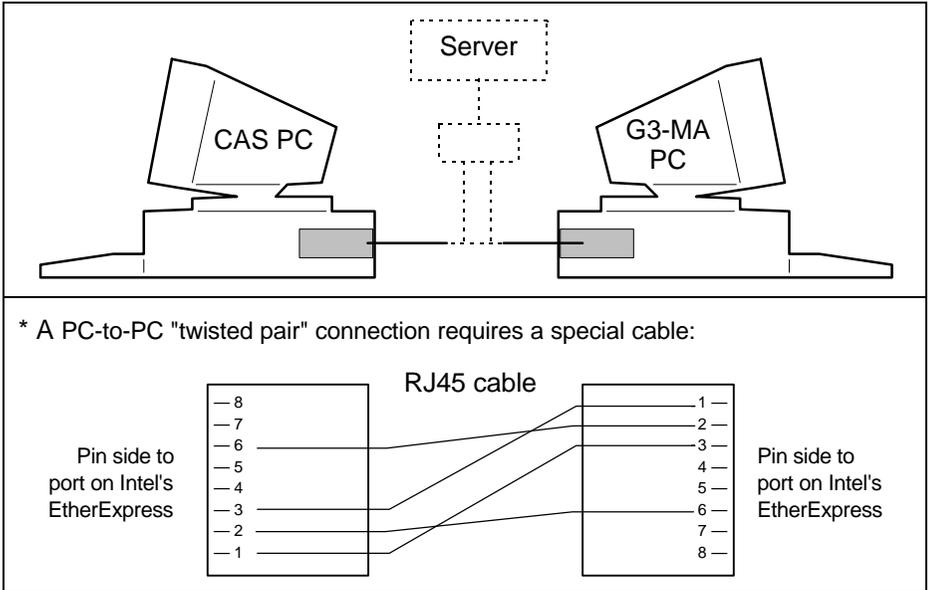
- Existing records are left untouched.
- New records and/or associations are added or updated:
 - New facilities are associated with default Carrier Services.
 - Organization entries without association to higher levels, are associated to the default parent organization.
- Records omitted in the download, are marked for deletion at the end of the accounting period.
- If a site does not exist in CAS or there are other problems reading the data transfer files, an error message will appear on the Message Log.

Network Requirements

The G3-MA to CAS for Windows data transfers require linking both the CAS and the G3-MA PCs by user-supplied LAN hardware and software:

- NIC card (such as Intel's EtherExpress TP)
- Network cabling — twisted pair or coaxial connection
- Windows for Workgroups 3.11 or Novell Netware 3.xx or higher

Configurations may range from a simple PC-to-PC* arrangement (illustrated below) to a complex network of workstations and server.

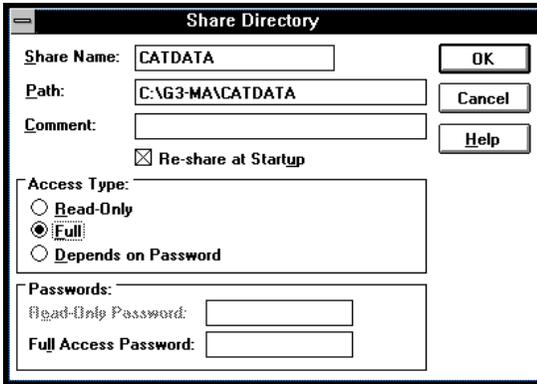


The first task after installing the equipment, network, and the G3-MA and CAS applications, is to configure shared file systems. The following pages provide examples using Windows for Workgroups and Novell Netware.

Windows for Workgroups Setup

At the G3-MA PC:

- Consult the G3-MA Call Accounting Transfer manual to set up the data transfer directory — for example, "**CATDATA**" under **C:\G3-MA**.
- Make it fully accessible to CAS — for example, using **File Manager**, find and select **CATDATA**, then click on the SHARE icon .



When the dialog box appears, select [x] **Re-share at Startup** and **Full** access without passwords:

Novell Netware Setup

Novell networks have a more complicated setup, which should be performed by installers following the product's documentation. Specifically, the G3-MA data transfers to CAS require the following functionality:

- Mount the data transfer directory on the "Server" PC — for example, as "**F:\CATDATA**".
- Make this directory fully accessible to both the CAS and G3-MA applications, without the use of passwords

To verify that shared access is enabled, check that the data transfer directory — in our example, "**F:\CATDATA**" — appears in the **File Manager** of both the CAS and G3-MA PCs.

Synchronize Common Fields

After sharing of G3-MA data files in your network is enabled, you must synchronize common fields for the proper integration of these products.



For each DG3 switch enabled in the G3-MA Call Accounting Transfer application, there must exist a corresponding site in CAS. That is, if you are planning to enable multiple DG3 switches, the CAS MULTI-SITE OPTION AND ALL SITES MUST BE INSTALLED BEFORE ENABLING THE G3-MA INTERFACE.

1. At the G3-MA PC:
 - a. Note the character used as separator of an extension user's last and first name (to be entered later in CAS as "name delimiter").
 - b. In a multi-site system (that is, there are multiple switches as sources of call records for CAS), obtain a listing of the different switch ID's (to be entered under their CAS "site ID" names in step 2).
2. At the CAS PC:
 - a. In a single-site system, no further preparation is required. You may proceed to *Installation and Setup*, next.
 - b. In a multi-site system, access **Site Maintenance** under the **Utilities** menu and make certain to rename each **Site ID** as the corresponding "switch ID" from the G3-MA listing.



In new CAS installations do NOT enable call rating until the data transfer setup is complete. Keep the check on this box.

| Call Processing Status | |
|-------------------------------------|-------------------|
| Number of call records stored: | 0 |
| <input checked="" type="checkbox"/> | Stop Rating Calls |

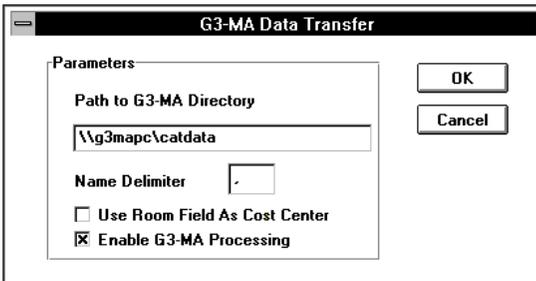
Installation and Setup

1. From the CAS **Utility** menu, select **Upgrades**.



Select a drive, insert the G3-MA data transfer option diskette, and click **OK**. When complete, remember to remove the diskette from the drive.

2. Select **Data Transfer** from the **Utility** menu and complete the dialog box.



Path to G3-MA Directory. Enter the *full network path* to the data transfer directory (we show "**\\G3MAPC\ CATDATA**" from our Windows for Workgroup example; if we had used the Novell Network example, it would be "**F:\CATDATA**").

Name Delimiter. Enter the character set by the G3-MA application to separate an extension user's last name from the first name.

Use Room Field as Cost Center. Check [x] only if the G3-MA designation for "room" is to be used as "cost center" in CAS.

Enable G3-MA Processing. Check [x] to enable this interface.

3. If you enabled the interface, CAS will look for these files as soon as you click **OK**. If the files exist, CAS will process the switch information.

➤ At this time, and every time G3-MA files are downloaded, a "progress bar" window for the download appears on your screen.

Please proceed to the last section *Ready to Go*.

Ready to Go

From the moment CAS incorporates G3-MA data, administration of the Trunk and Facility table — as well as of the Organization table — will be minimal. However, you should pay particular attention to the following issues:

- Trunk and Facility table. For proper costing, associate newly-downloaded facilities with the appropriate Carrier Services. For example:

- Organization table. For proper reporting of newly-downloaded extensions and/or cost centers, associate them to the appropriate parent organization. For example:

⚠ For new CAS installations: after costing edits are in place, access **Call Processing Status** and enable call rating. That is, remove the check off this box.

Remote Access - Carbon Copy Host

F

This appendix will help you install the Remote Access option for CAS for Windows. You will need:

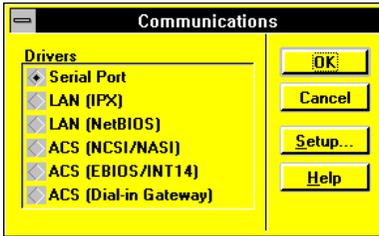
- The *Carbon Copy Host* software (2 diskettes)
- A PC serial port (typically, "Com1") dedicated to this function
- An AT-compatible modem (minimum, 9600 bps)



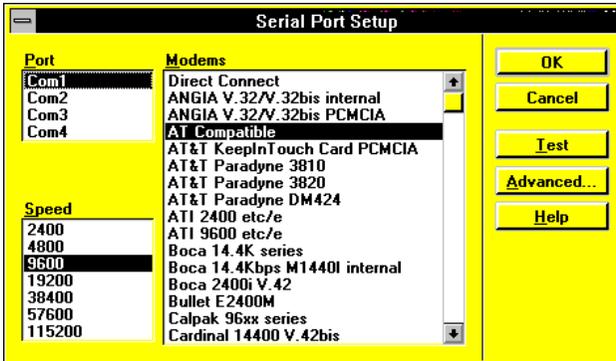
This procedure requires a momentary shutdown of CAS for Windows. To avoid losing calls, install this option at a time of low telephone activity.

1. Connect the modem to the selected serial port on the PC, plug the modem's phone cord into a telephone outlet, and turn the modem ON. (Typically, you may use the modem's default settings.)
2. Close CAS for Windows (as well as any other open application), then close the Program Manager. Confirm ending this Windows session.
3. Insert the *Carbon Copy Setup* diskette in a disk drive. Then at the DOS prompt, enter the drive letter followed by ":\setup" (i.e., "a:\setup" for the A drive).
4. Follow the screen instructions to:
 - a. Register your name (required) and your company.
 - b. Skip viewing the `README.TXT` with the **No** button.
 - c. Accept the default directory (`c:\microcom`) for installation.
 - d. Select to install the **Carbon Copy Host** application.
5. Screen instructions will prompt you to install *Disk #2*.

6. As configuration checks are carried out, you may be prompted to replace existing drivers with those required by Carbon Copy. Choose **Yes** to accept them.
7. After all files are installed, the Communications dialog box appears:



- a. Select **Serial Port** then click on the **Setup** button.



- b. Select the *Port*, *Modem*, and *Speed* used. If you do not see your modem listed, select "**AT Compatible**" (or "**AT&T Paradyne 3810**" if you have the AT&T modem) at "**9600**" speed.
- c. Click on the **Test** button to check the modem connection. If the test failed, verify (and, if necessary, change) your port settings and/or modem selection and repeat the test. For assistance, call your support organization.
- d. When the test succeeds, click **OK** to continue.

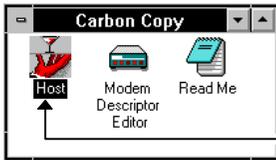
8. Respond with **No** to the next set of prompts to convert password tables and to add the TSR to your `AUTOEXEC.BAT` file.
9. Setup informs you that Carbon Copy and new drivers have been installed and prompts you to re-start Windows. Click on **No**.
10. Close CAS and any other open application, then close Windows.
11. At the DOS prompt, enter the following commands (highlighted):

```
c:\> cd microcom [Enter]
c:\microcom> ccwcopy.ba [Enter]
```

(if you did not install Carbon Copy in "microcom" change to the appropriate directory)

12. Re-start the PC. CAS will re-start soon after Windows re-starts.

Notice the newly-created Carbon Copy group in the Program Manager:



From here you start the Host program to enable Remote Access or change its configuration.

This completes the installation. See the *Quick Reference* on the next page.

➤ If you make changes in your PC configuration — such as installing a new video board, mouse, or sound driver — that require running the Windows Setup program again, or if you manually change these entries in the `SYSTEM.INI` file, you must also run the Carbon Copy Setup program again, for Carbon Copy to recognize the new drivers.

Quick Reference Tips

Enable Remote Access

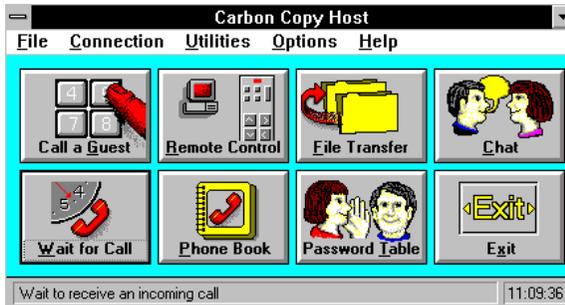
Open the Carbon Copy program group, and double-click on the **Host** icon.

The **Waiting for Call** icon appears at the bottom of your screen. This indicates that your PC is ready for access by another PC running *Carbon Copy Guest*.



Disable Remote Access

Click on the Waiting for Call icon at the bottom of your screen. Carbon Copy Host main menu appears:



Minimize the window or click on **Exit**.

Subsequent callers will not be able to connect with your PC until you re-start Carbon Copy Host or select **Waiting for Call** from Carbon Copy main menu.

Change Options

Access the Carbon Copy main menu by re-starting the Host program and clicking on the Waiting for Call icon.

Select **Communications** under the **Options** menu.

The dialog box in step 6 of the installation procedure appears. Click on the **Setup** button and follow instructions in steps 6b through 6d.

Getting Assistance for Problems

G

This appendix describes basic troubleshooting procedures to identify and correct problems and how to get assistance for problems that you cannot correct.

How to Report a Problem

If a problem arises when you are using your system, first attempt to solve it using the troubleshooting flowchart in the following pages. If the problem is caused by a peripheral system or device, consult the system or device documentation.

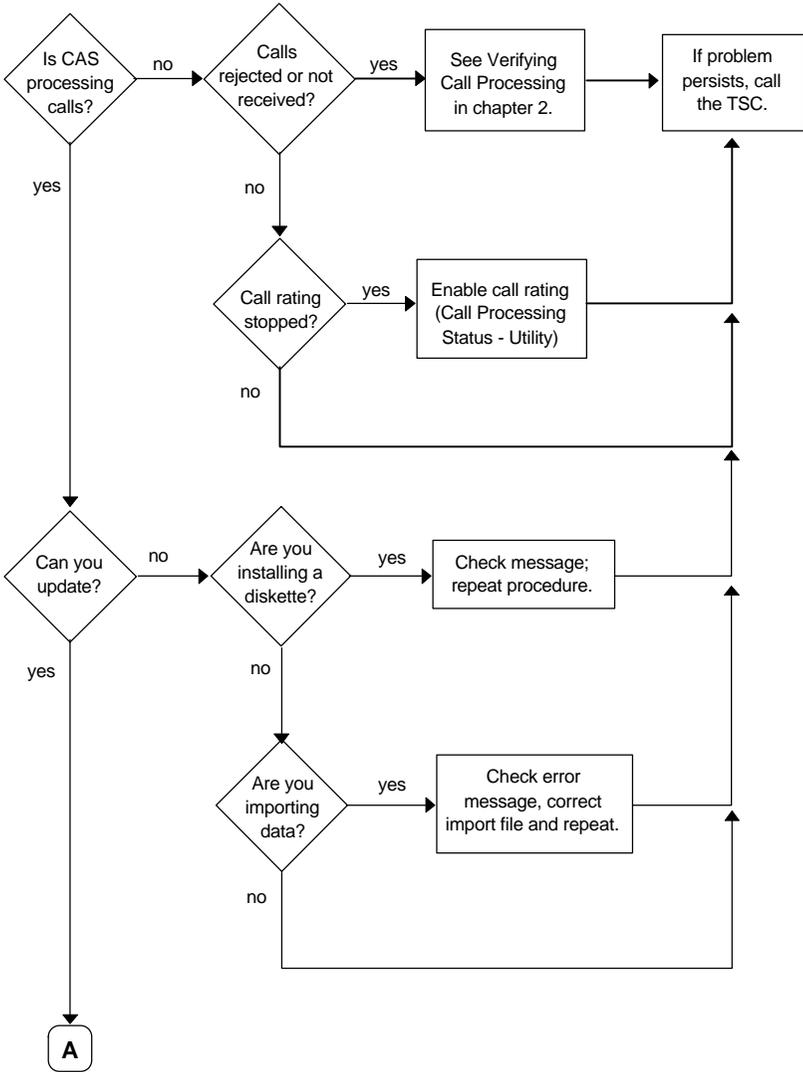
If you cannot correct the problem, call the Technical Support Center (TSC) at 1-800-422-6622. The TSC will assist you by performing remote diagnostics.

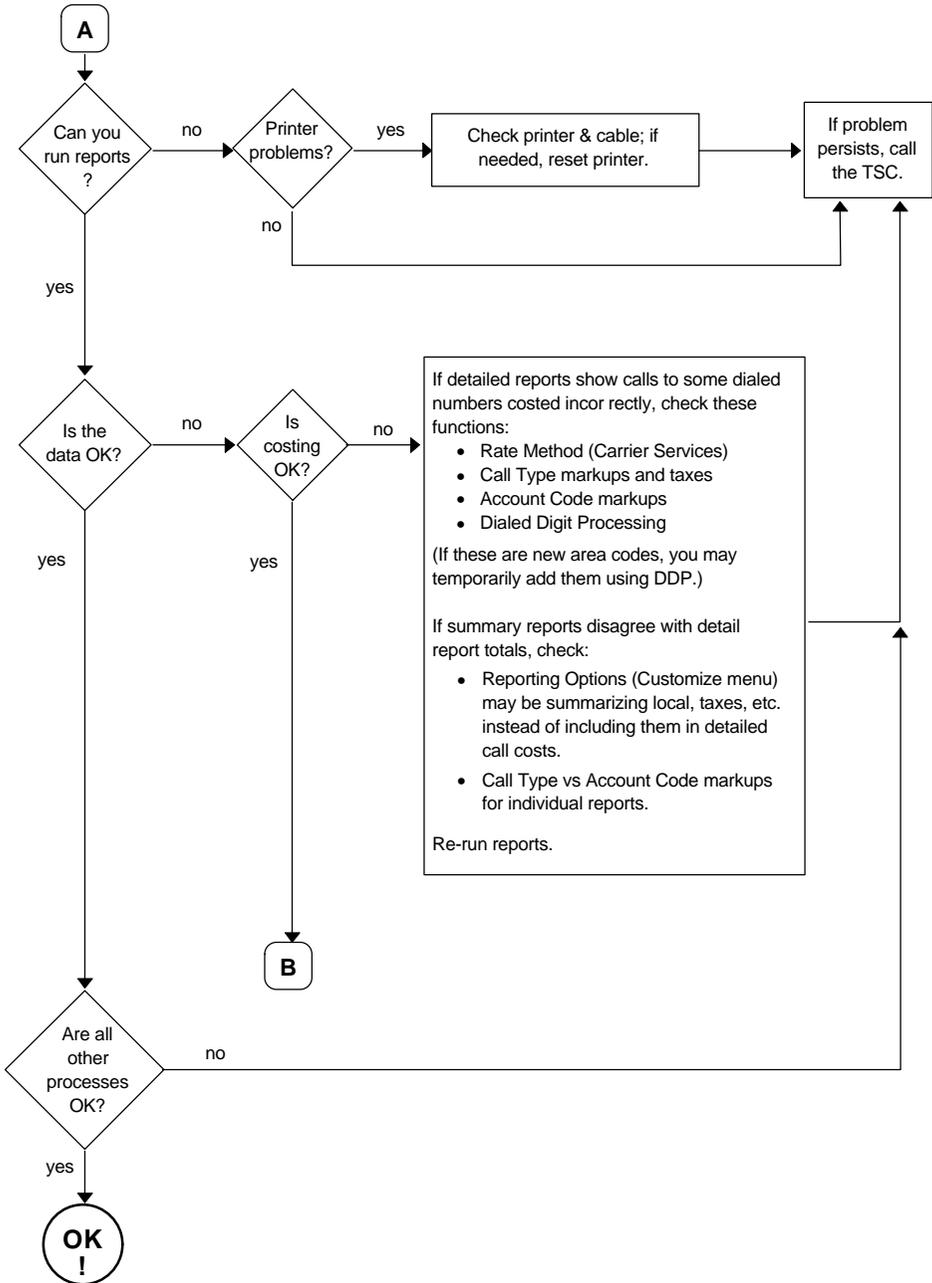
When you call, please be at your computer, if possible. Be prepared to provide the following information:

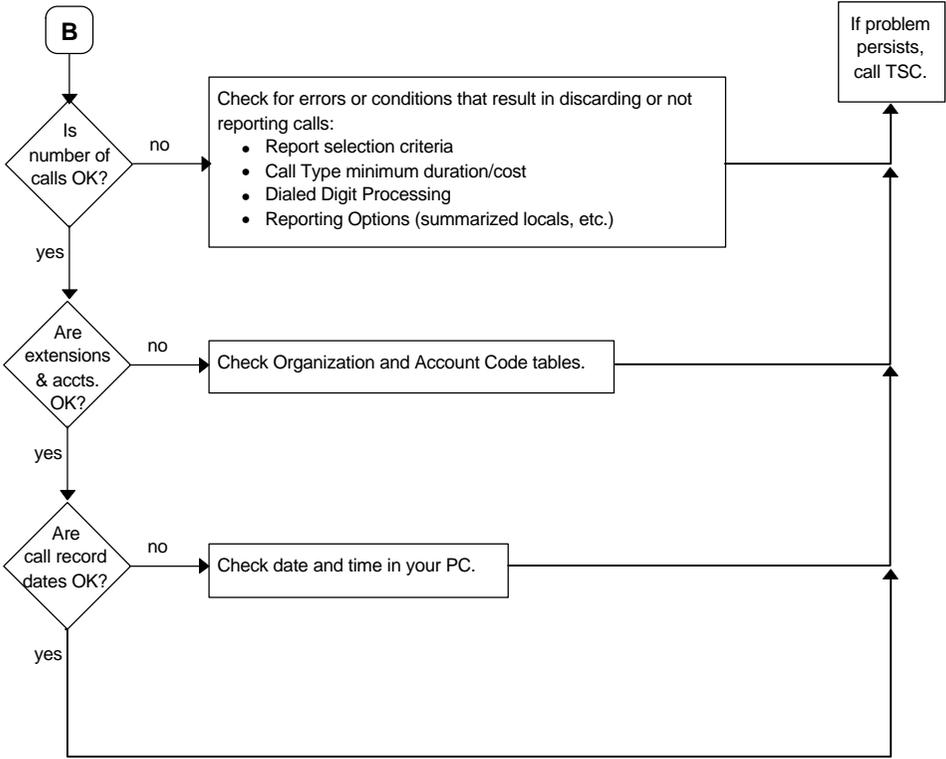
- your IL number or main telephone number
- detailed description of the problem, including any messages given and your actions and keystrokes leading up to the message
- any relevant steps you have taken
- telephone number used by the remote access (Carbon Copy) modem attached to the PC where CAS for Windows resides

Basic Troubleshooting

The flowchart below displays the path to take when a problem manifests itself.







Glossary

A

access code

A field in a call detail record that contains the numbers dialed to get an outside line and/or to mark a private call; the numbers dialed to do so.

account code

A field in a call detail record that contains a user-defined identifier. Account codes are typically dialed when placing or receiving a call to identify the call subject matter, client account, and so on.

accounting period

A period of time, based on your company's fiscal year, to keep call record statistics. CAS uses this concept to create "current" and "archive" call record files automatically and to produce summary and trend statistics at the closing of each period.

answer supervision

The capability to detect when a telephone call has been answered. Answer supervision is one of the many advantages provided by ISDN services.

CAS allows a user-defined "correction time" for switches without answer supervision to subtract all non-chargeable, dial-to-answer time from the call duration reported by the switch.

area code

A geographic area encompassing many CO exchanges. A telephone number, for example, 716-555-1212, identifies the area code (716) and CO exchange (555) used by the subscriber's line (1212).

AT&T HackerTracker

A CAS option that helps identify fraudulent use of switch resources. It monitors phone activity and sends alarms whenever an excessive number of calls and/or charges trips specified alarm criteria.

authorization code

A switch feature whereby users dial their assigned code, typically to identify the call origin and/or use limited-access facilities.

Whenever authorization codes appear in call records, CAS substitutes their user's extension as call origin — even if the call was dialed from a different extension.

automatic number identification (ANI)

The ability of ISDN equipment to pass to their subscribers (in digital form) the phone number of subscribers' callers. CAS supports ANI for switches that provide this feature.

B

bar chart

A graphical representation of a report displaying vertical or horizontal bars against an X (horizontal) or a Y (vertical) scale of values.

Vertical bars "sit" on the X-axis (which represents line entries such as hours in a Time of Day Traffic Report); the Y-axis displays a scale of values representing either the total number, cost, or usage (depending on the report). The bar's height corresponds to the value on the scale. For horizontal bars, the axis are reversed.

baud rate

A measurement of digital transmission speed representing the number of signal events per second. If the signal event represents the presence or absence of one bit, baud is identical to bits per second.

bits per character

The length (number of bits) of a single character transmission.

C

call collector

A device that collects and stores calls from a telephone switch, to transmit them later to a processor with a telecommunication management application such as this one.

call type

The type of telephone service used by the call. Local, IDDD, WATS, etc. are call type examples used in CAS reports.

carrier

1. A company that provides telephone services, such as AT&T Communications, MCI, and US SPRINT. 2. A field in a call record that contains the interexchange carrier (IXC) code for the carrier used by a call.

central office (CO)

The telephone company facility that routes and connects calls from a local area — also known as “public exchange” outside North America.

Centrex

A business service offered by local telcos that provides direct inward and outward dialing for extensions. The subscriber is assigned a CO identification number and made a part of the numbering plan.

charge bands

A call rating method used by CAS, also called “codebook.”

cost center

The level-2 default name in a company's organizational hierarchy. CAS allows call cost markups by cost center. Marked up charges appear on Organization Reports.

D

database

A collection of data in your system — such as the set of all call records in an accounting period — structured and organized for easy access; also, the information in system tables that identifies its users' equipment, company organization, etc.

department

The level-3 default name in a company's organizational hierarchy used to allocate telephone expenses.

dialed digit processing

A CAS feature whereby specific dialed number patterns can be identified for additional processing.

dialing pattern

The way a telephone number is dialed from a locality.

E

equal access

The ability to place long-distance calls over any carrier network. A customer's primary carrier is accessed by dialing 1 or 0 before the telephone number, any other carrier is accessed by its 10xxx or 101xxx dialed code.

exchange

A geographic area within which calls are generally toll-free. A telephone number, for example, 716-555-1212, identifies the area code (716) and CO exchange (555) used by the subscriber's line (1212).

extension

The level-1 default name in the company organization hierarchy corresponding to the number of a voice terminal; a field in a call record that contains the number of a voice terminal, indicating the origin of an out going call or destination of an incoming call.

F

facility

The system designation for a group of telephone lines programmed at the switch to carry calls requiring a specific telephone service.

fixed rates diskette

A floppy diskette containing a CAS site's call rating tables and other licensing information that is required for its installation.

flow control

A mechanism — such as buffering or controls that turns a device on and off — used to prevent loss of data during transmission.

foreign exchange (FX)

A line connecting a subscriber's switch to a remote CO.

G

G3-MA Call Accounting Transfer

An option of a DEFINITY G3 switch administration package, used to transfer to CAS switch trunking and organization data.

Grade of Service (GOS)

A way to measure telephone facility service on a worst case scenario. GOS is the probability of receiving a busy signal on any given day, during a facility busiest hour.

H

holidays

The holidays during which telephone discount rates apply.

I

immediate output/alert numbers

A feature whereby the system flags calls that match "alert" numbers or user-specified conditions — such as from specific extensions or over a minimum cost duration — and sends a copy of the call details to the Immediate Output file for later viewing.

Integrated Services Digital Network (ISDN)

A network that provides end-to-end digital communications to support a wide range of services, including voice and data, to which users have access by a set of standard, multipurpose user network interfaces.

Some examples of ISDN services include calling number information (also known as ANI for "automatic number identification"), call waiting, credit card calling, network access, and simultaneous data calls.

IS-IL and IS-OL

The CAS call types for calls placed within their own state; IS-IL calls stay in-LATA, IS-OL go outside their LATA boundaries.

L

LATA

Local Access Transport Area; a region covering adjacent COs. Calls within their LATA are serviced by the local telephone company, calls outside their LATA require the services of a long distance carrier.

M

Megacom / Megacom 800

AT&T services similar to WATS, except that the local lines from a subscriber site and the AT&T service office are the responsibility of the subscriber (typically T1 lines).

modem

A device that converts digital data signals to analog signals for transmission over voice-terminal circuits. Analog signals are converted back to original digital data signals by another modem at the other end of the circuit. Also called a data set.

N

NANP

The North American Numbering Plan. Refers to the method of identifying telephone trunks in North America's public network. Beginning in 1995, to accommodate additional area codes, the NANP will stop restricting the second digit to a "0" or a "1".

O

organization

The user-specified structure of a company — the company name, the number and names of its hierarchical or corporate levels, and the level associated with budget tracking — as well as the set of individual entries (the "organization database").

System defaults use five levels, named: Level-1 = Extension, Level-2 = Cost Center, Level-3 = Department, Level-4 = Division, and Level-5 = Branch. In multi-site systems, level-1 entries are unique for each site (entries for all other levels are system-wide).

OS-IL and OS-OL

The CAS call types for out-of-state calls; OS-IL calls stayed within their LATA; OS-OL crossed their LATA boundaries.

P

parity

A method used by some devices to check that data was transmitted correctly. Parity can be "odd," "even," or not used at all.

password

A unique string of characters that a user enters to access a program.

path name

A sequence of directory names separated by a backslash (\) and ending with the name of a file or directory, used to define the connection between some directory and the named file.

pie chart

A graphical representation of a summary report displaying pie slices as line entries (such as hours in a Time of Day Traffic Report). The size of the slice corresponds to the percent value of the line entry over the total value — number, cost, or usage (depending on the report).

polling

The process of periodically accessing another system for its data — in our context, a call collector for its call detail records. Poller systems control and regulate data transfers from call collectors.

Private Branch Exchange (PBX)

A specialized computer system that provides voice and data communications services (including access to public and private networks) for voice and data terminals on a customer's premises. The switch itself consists of a digital computer, software, storage, and carriers with special hardware to perform the actual connections.

privacy

A CAS feature, whereby called numbers from specific extensions or all calls in general, are partially or entirely hidden from view — either permanently and/or for reports only.

private line

A phone line between two points reserved for the use of a single customer.

privileges

Permission granted each user to read and/or change data shared by other users in a computer system.

protocol

A set of conventions or rules that describe how data is organized, transmitted, and received.

PSU

Pollable Storage Unit. A PSU is a small processor dedicated to collecting and storing call records from a telephone switch, then transmitting them to a poller system (such as a PC running this application) upon a polled request.

R

rate method

User-specified instructions for costing a call, whereby you associate dial ing patterns with an existing call type and a costing schemes such as by charge band, by call, or by an existing tariff with/without markups.

record

The smallest piece of information that a database management system can retrieve from a file. Records may contain several items of informa tion (fields) — for example, a call record contains the time of a call, its duration, city and state destination, account code dialed, and cost.

rejected call

A call discarded by the system because either (a) it did not meet the minimum duration or cost criteria by Call Type or (b) it matched a dialed digit pattern to be discarded by the Dialed Digit Processing function. Rejected calls print in the Immediate Output log, flagged by an asterisk (*).

S

SMDR

Station Message Detail Recording. A switch capability with which the details concerning the path of a call from origination to termination are recorded in the form of an SMDR record.

Software Defined Network (SDN)

A service for connecting subscriber's multiple sites in a network. A call over an SDN line first goes to a local service office which forwards the call via the public network. Off-net calls continue out of the SDN, on to the local central office servicing the called number. On-net calls go to the appropriate service office, then on to the called site over an SDN line. Substantial discounts apply to calls that stay on-net throughout.

SPCL

The CAS call type for "special numbers," such as information, 911, 800 and 900 numbers.

stop bits

The number of bits that trail after the transmission of a single character.

switch

The software-controlled communications processor that interprets dialing pulses, tones, and keyboard characters, and makes the proper interconnections within and out of the system. The switch consists of a digital computer, software, storage, and carriers with special hardware to perform the actual connections. A switch provides voice and/or data communications services on a customer's premises.

T

T1

A digital facility that can carry multiple, simultaneous voice or data communications at high speeds on the same physical link. A T1 line is connected to a private switch using transmit/receive interface equipment that translates the voice or data streams into and out of a carrier's digital network.

tandem call

A connecting call in a telephone network, coming into a switch through one line and transferred out again through another.

tie

A line that "ties" together two telephone switches. Extensions at either point, as well as the CO exchange, can be dialed locally.

trunk

1. A dedicated communication channel between two switches. 2. A field in a call detail record that contains the identifier for the specific route used by the call. Also known as "line," "circuit ID," and "used access code."

V

V & H Coordinates

Vertical and Horizontal grid coordinates. Pairs of numbers set up by the Bell Labs that locate each rate center on a grid of the North American continent. V & H numbers are used to determine the mileage (and thus, the cost of long-distance phone calls) between any two rate centers.

W

WATS

Wide Area Telephone Services; a long distance service provided by some carriers like MCI and AT&T, where bulk usage over a billing period determines the rates for calls within the same distance band.

wildcards

The characters "%" and "?" — used as follows:

- ? match a single character in that position
- % match any number of trailing characters

worksheet

A printed form used to gather information from various sources and compile it into a final, complete form. CAS printed documentation contains blank worksheets to input information during system setup procedures.

Index

A

Access codes, 4-16
Account codes, 3-11
 edit call record, 7-4
 reports, 6-13, B-11
Accounting period, 4-26
Administration functions, 3-1
 account codes, 3-11
 alert numbers, 3-10
 immediate output, 3-9
 organization table, 3-2
 password, 3-13
 privacy, 3-8
 site selection, 3-14
Alarms. See alert numbers,
 HackerTracker
Alert numbers, 3-10
 view file, 6-19
ANI, 1-5
 call distribution report, 6-15, B-16
Answer supervision, 1-7
Authorization code
 alarm criteria, 8-4
 carrier service, 4-6
 extension, 3-3

B

Backup system, 7-2, 7-3
Bar charts, 6-8
Branch. See organization
Budget. See organization

C

Cables (switch interface), C-4

Call collection interface, 4-21, A-7
Call distribution reports, 6-15, B-16
Call rating, 4-2
 access codes, 4-16
 call types, 4-12
 carrier services, 4-5
 dial digit processing, 4-10
 trunks & facilities, 4-14
 ISDN BCC markups, 4-18
 holidays, 4-17
Call record
 edit, 7-4
 delete, 7-7
 format (see call collection interface)
Call sender interface, 4-24
Call types, 4-12
 traffic report, 6-14, B-12
Callback receiver, 4-25
Capacities, C-5
Carrier services, 4-5
 updates (fixed rates), 7-12
 worksheets, A-3
Centrex, 1-6
Charts, 6-8
CO (central office), 1-3
Company name, 5-2
Configuration functions, 4-1
 accounting period, 4-26
 call collection interface, 4-21
 call sender interface, 4-24
 callback receiver, 4-25
 call rating tables, 4-2
 call types, 4-12
 carrier services, 4-5
 dial digit processing, 4-10
 holidays, 4-17
 ISDN BCC markups, 4-18
 trunks & facilities, 4-14
 system users, 4-27
Cost and duration report, 6-14, B-14

Cost center. See organization
Currency, 5-3
Customize functions, 5-1
 currency, 5-3
 languages, 5-8
 location table, 5-5
 organization levels, 5-2
 reporting options, 5-7
 tax names, 5-4
 work week, 5-6
Customization worksheet, A-2

D

Date report, 6-14, B-13
Department. See organization
Dialed digit processing, 4-10
Direct connect protocol. See call
 collection interface

E

Equal access, 1-4
Exception reports, 6-17, B-21, B-22
Expensive calls report, 6-17, B-21
Export files, 7-5
Extension. See organization

F

Facility. See also G3-MA
 traffic report, 6-15, B-12 to B-20
 trunks, 4-14
 worksheet, A-8
Files
 database check & repair, 7-8
 G3-MA data transfer, E-1
 import/export, 7-7
 viewing report, 6-18

Fixed rates, 7-12. See also carrier
 services
Frequently called numbers report,
 6-17, B-22
FX (foreign exchange), 1-5

G

G3-MA data transfer, E-1
Grade of service (GOS),
 facility target, 4-14
 traffic report, 6-15

H

HackerTracker, 8-1
 alarm checks, 8-9
 alarm setup, 8-4
 FAX setup, 8-7
 pager setup, 8-6
 printer setup, 8-6
 status, 8-8
 tips, 8-10
Hard disk
 backup/restore, 7-2, 7-3
 delete calls from, 7-7
 storage requirements, C-2
Help (on-line), 1-12
Holidays, 4-17

I

IDDD (international direct distance dial).
 See call types
Immediate output , 3-9
 alert numbers, 3-10
 extensions, 3-3
 viewing file, 6-19
Import/export files, 7-5
Incoming traffic report, 6-15, B-18

Installation, 2-1
 add site, 7-9
 equipment requirements, C-1
 G3-MA data transfer, E-1
 HackerTracker, 8-2
 options (system upgrades), 7-12
 PSU, D-1
 rate updates, 7-12
 remote access, F-1
 worksheets, 2-3, A-1
IS-IL, IS-OL (in-state, in/out-of-LATA).
 See call types
ISDN, 1-5
 BCC markups, 4-18
 carrier services, 4-5

L

Languages, 5-8
Local calls. See call types
Location table, 5-5
Logging in, 1-13
Longest calls report, 6-17, B-21

M

Markups
 account code, 3-11
 call type, 4-12
 cost center, 3-5
 ISDN BCC, 4-18
Message log, 6-19
Modems, C-3

O

Organization table, 3-3
 level, budget, company name, 5-2
 import/export files, 7-5
 reports, 6-10, B-2 to B-9
 worksheets, A-10

OS-IL, OS-OL (out-of-state, in/out-of-LATA). See call types

P

Password
 change own, 3-13
 logging in, 1-13
 set up user, 4-27
Personnel, 3-2, 3-5
PollComm protocol. See call collection interface
Polling schedule, 4-23, A-9
Ports, C-2, C-3
Printing. See reports output
Privacy
 access codes, 4-16
 extensions, 3-3
 general, 3-9
Privileges. See user access
Protocols. See call collection interface
PSU installation, D-1
 protocol. See call collection interface

R

Rate methods, 4-6
Rate updates (fixed rates), 7-12
Rejected call summary report, 6-15, B-19
Reporting options, 5-7
Reports, 6-1
 account code, 6-13, B-11
 charts, 6-8
 exception, 6-17, B-21, B-22
 organization, 6-10, B-2 to B-9
 output, 6-6
 running, 6-3
 scheduling, 6-4
 selection, 6-12, B-10
 traffic, 6-14, B-12 to B-20
 viewing, 6-18
Restore system, 7-2, 7-3
Ring time analysis report, 6-15, B-17

S

- Scheduled report, 6-4
- Selection reports, 6-12, B-10
- Serial port pinouts, C-3
- Site,
 - adding/maintenance, 7-9
 - selection, 3-14
- Sound (alarm)
 - alert numbers, 3-10
 - HackerTracker, 8-4
- Storage
 - delete call records, 7-7
 - PC requirements, C-2
- Stop/start call rating (call processing status), 7-13
- Surcharge. See markups

T

- Tax names & structure, 5-3
 - entries by call type, 4-12
- Telecom manager's report, 6-17, B-22
- Tie line, 1-5
- Time of day traffic report, 6-14, B-15
- Traffic reports, 6-14, B-12 to B-20
- Trunks and facilities
 - reports, 6-15, B-19, B-20
 - tables, 4-14
 - worksheets, A-9

U

- Updates/upgrades, 7-12
- User access, 4-27
- Utilities, 7-1
 - add/change site, 7-9
 - backup/restore, 7-2, 7-3
 - call processing status, 7-13
 - call record edits, 7-4
 - database maintenance, 7-8
 - import/export files, 7-5
 - update/upgrade, 7-12

V

- Verification (call processing), 2-9
- Viewing
 - immediate output, 6-19
 - message log, 6-19
 - reports, 6-18

W

- WATS, 1-5
- Windows
 - dialog boxes, 1-13
 - version required, C-2
- Work week, 5-6
- Worksheets
 - call collection, A-7, A-8
 - carrier services, A-3, A-4, A-5, A-6
 - customization, A-2
 - organization, A-10, A-11, A-12
 - trunks & facilities, A-9