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Issue 2  
July 1996

# **CAS for Windows**

## Installation and User's Guide

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**RELEASE NOTES FOR  
CAS FOR WINDOWS INSTALLATION AND USER'S GUIDE  
VERSION 2.2**

Global changes:

- AT&T references replaced by Lucent Technologies where appropriate. Carrier references left as AT&T.
- All pictures replaced with Windows 95 samples.

Other modifications to the 2.1 book:

- page 1-12 icons replaced by task bar
- page 1-12 information from "Creating Colored Icons" and "Viewing CAS Icons on the Task Bar" sections of the Addendum added
- page 1-15 section named "Closing the Application"
- page 2-2 changes from the Addendum related to equipment requirements including internal tape drive (optional), mouse, operating system, serial port boards
- page 2-4 changes from the Addendum step 2 of procedure (Win 95 references)
- page 2-9 changed protocol icon to task bar protocol button
- page 3-1 added security alert sent by Lucent
- page 3-9 and 3-10 replaced immediate output icon with task bar button
- page 3-13 added security alert sent by Lucent
- page 7-2 through 7-7 changes from the Addendum for "Backup and Restore"
- page 7-13 removed note that recommended stopping call processing for backup and restore
- page 7-13 replaced the picture of a close button
- page 8-2 replaced FAX/Pager Equipment section with Preparing to Use a FAX/Pager for Alarms and sub-sections Installing Microsoft Exchange, Verification of Microsoft Fax Installation, Setting Up Microsoft Exchange, Pager Configuration from the Addendum.
- page 8-6 added Beep on Alarm description
- Page 8-8 revised FAX setup using information from the Addendum
- page C-2 replaced table with one from Addendum.
- Appendix E removed references to other than Win 95
- Appendix E changed all CATDATA references to AUTODIR

- page E-4 replaced setup section with "Windows 95 Setup" section from Addendum
- Appendix F replaced with information from 10M00301A revised for CAS 2.2 and Carbon Copy V2
- Removed note at end of Appendix F (see CAS 2.1 book)

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## About This Document

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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, *Lucent Technologies 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**

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The following document may provide you with additional information:

*Carbon Copy for Windows User Guide* (Microcom 24-0000839-001) — manual to install and administer the Remote Access "Guest" package.

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## Overview

# 1

---

The Lucent Technologies 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**

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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.

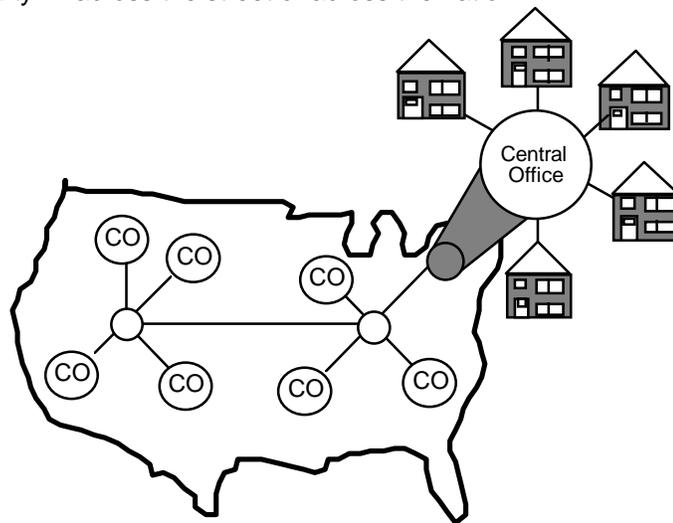
Let's begin by looking at how the public switched network functions, then at the carriers, trunks, and services in the network.

## The Public Network

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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**

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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**

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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 101xxx if the 1995 North American Numbering Plan (NANP) has been implemented — then the area code and local number.

## Trunks and Services

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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**

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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**

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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**

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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:

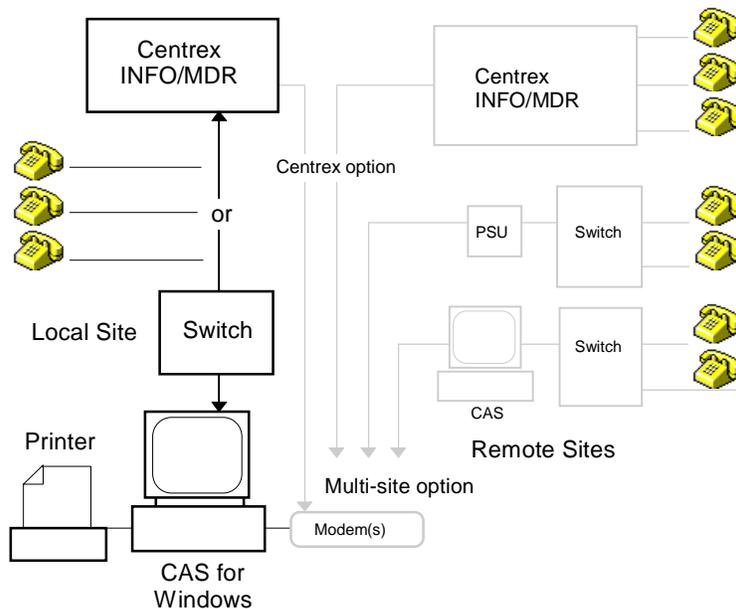
- Online access and ad hoc reports provide current and historical data, either as summaries of trends and traffic patterns or in detail to pinpoint problem areas.
- Organization reports consistent with your corporate structure and billing practices allow flexible cost allocation.
- Full coverage of your 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**

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The following highlights CAS major features:

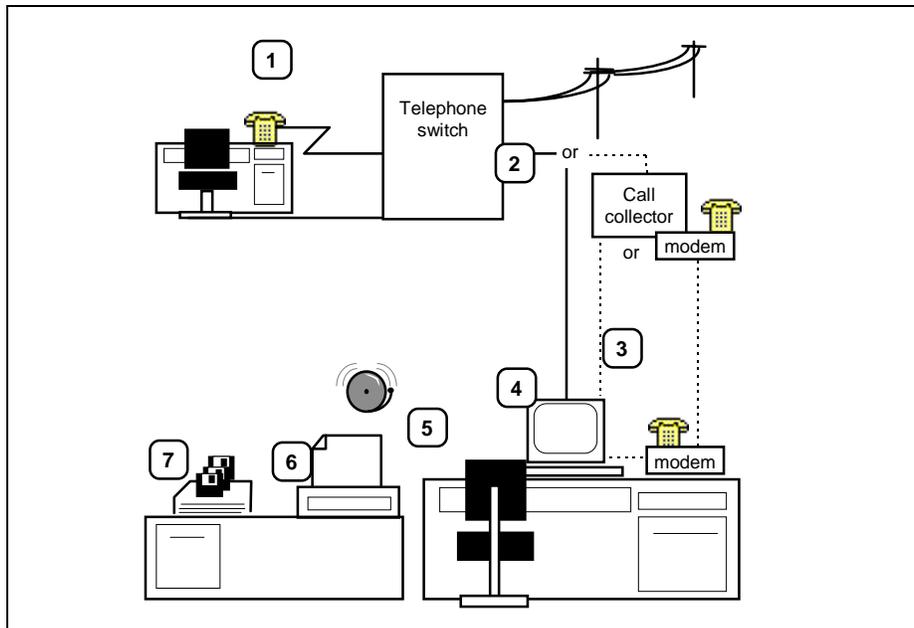
- Call Collection Interfaces — CAS can collect SMDR from most Lucent Technologies and non-Lucent Technologies telephone switches, either directly from the switch or indirectly from storage systems such as:
  - PC file transfer
  - Pollable Storage Units (PSUs)
  - Call Detail Recording Units (CDRUs)
  - 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

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CAS for Windows is easy to use. It works with all basic elements in Windows 95 — task bar, menus, dialog boxes, and windows.

At installation, CAS automatically creates buttons with icons on the task bar.



If CAS for Windows icons appear in black and white, use the steps below to change them to colors.

1. Shut down CAS for Windows and return to your desktop.
2. Click the right mouse button and select **Properties** from the resulting menu.
3. Select the **Settings** tab and set the **Desktop area** for at least 800x600 pixels.
4. Change **Font Size** to **Large Fonts** and click **Apply**.
5. Click **Yes** to Restart PC. This causes CAS and Windows 95 to automatically restart.

➤ Monitor resolution and card styles can vary. If this procedure does not produce color icons, repeat the procedure except for Step 4. Instead of changing to large fonts, click **Custom** and enter a font scale of **150%** or greater.

Recommendations for viewing the Windows 95 task bar are listed below:

- If you have multiple CAS sites, your task bar may have too many buttons/icons to view clearly. Increase the size of your task bar to fully view all buttons/icons.
- If you set the task bar's properties to "auto hide" you may not see CAS alarms when they occur.

The main menu appears while CAS for Windows is running.



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.

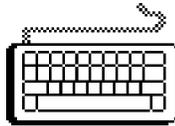
## Working with Menus

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With the mouse:

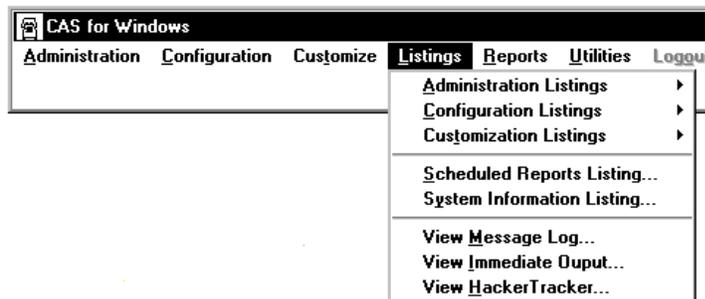
- To open a menu, click on the item's name.
- To close a menu, click elsewhere.



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 **L**istings.
- To close a menu, press **ESC**.

On the resulting menu — for example...



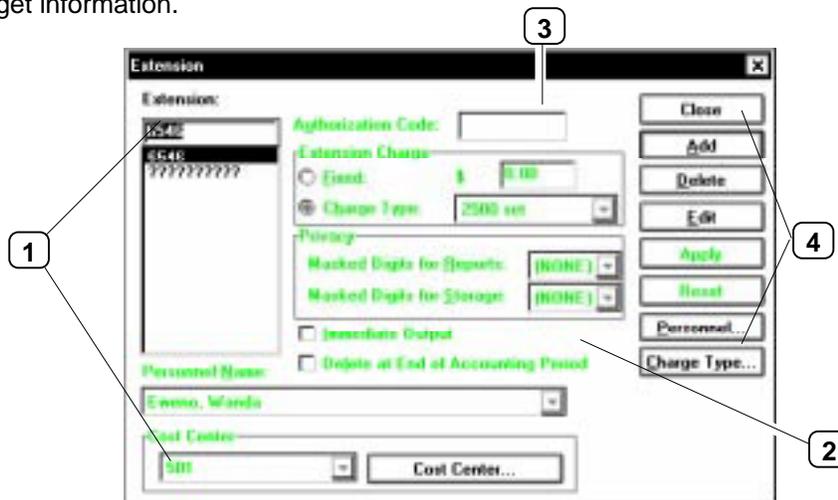
... the triangle (▶) next to an option leads to a “cascading” menu; an ellipsis (...) leads to a dialog box.

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

## Working with Dialog Boxes

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



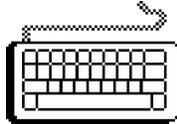
Completing a box means supplying all requested information in the list boxes (1), check boxes (2), or text boxes (3) and then using a command button (4) to carry out the operation.

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

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

To access the complete main 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.

## Closing the Application

---

Some procedures described in this manual require CAS to be shut down. To do so:

- Click on the telephone icon in the left hand corner of the title bar in the main menu, select **Shut Down** and confirm with **Yes**.
- Use the left mouse button to click on the Message Log icon. From the menu displayed, **select Shut Down** and confirm with **Yes**.



**CAUTION**

*The call record database does not include records of calls sent or received while the CAS application is shut down.*

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## Installation

# 2

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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.

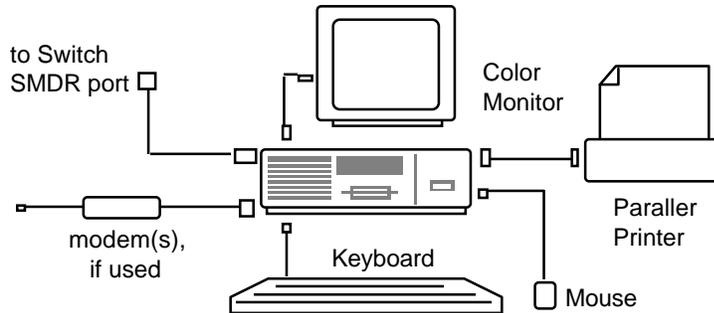
The installation process is divided into the following tasks:

- *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, internal tape drive (optional), and storage configuration for your expected traffic (see Appendix C).
- A Windows 95-compatible bus or PS2-type mouse, keyboard, graphics monitor, parallel printer and cable.
- Windows 95 operating system defaults and Backup Disk Tools, as documented in the manuals; DO NOT use any disk compression utilities.
- Two serial ports (minimum); ports may be added with up to two additional boards such as the Control Rocket Port Board (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 Lucent Technologies HackerTracker)
- Hayes<sup>®</sup>-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 Lucent Technologies 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:

<b>Worksheet</b>	<b>Who should use it</b>	<b>Reference</b>
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)
  - *Lucent Technologies 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 **Start** menu, and enter the drive letter followed by **:"setup"** (for example, **a:setup** for the A drive), then click **OK**.
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.)

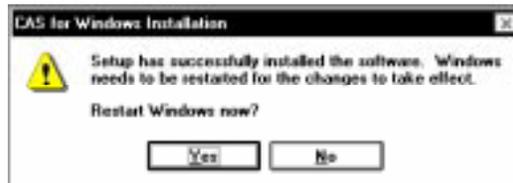


4. As the installation progresses, follow the screen prompts to load the *Program* and *Configuration* diskettes into the named drive.

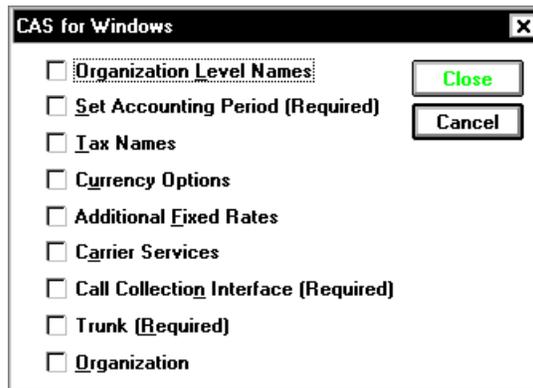
When a dialog box similar to the one below appears, click on **OK** (follow screen instructions if the start-up drive is other than "c:").



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



6. As the system re-starts, the Lucent Technologies logo appears, then the CAS setup dialog box:

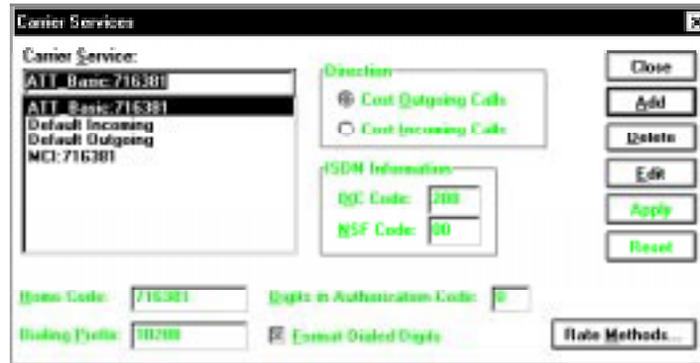


In this procedure, when you select [x] an item, its dialog box appears. When you close it, the above display reappears so that you may continue to the next item. For help, press **F1**.

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

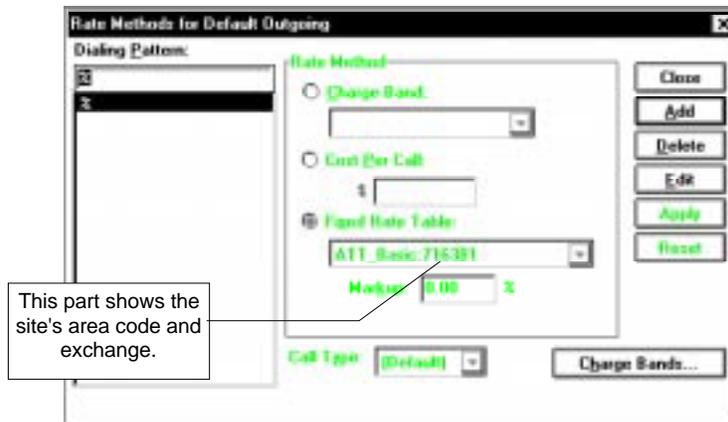
For each diskette (order is not important), insert it in a drive and follow instructions to complete the operation.

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



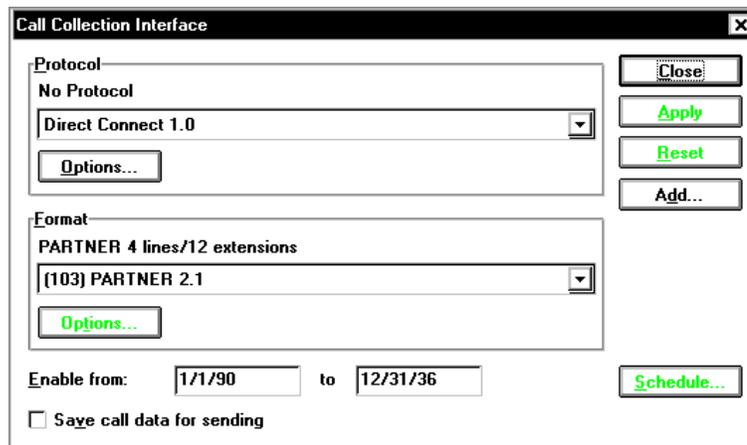
- i. One at a time, select each carrier service whose fixed rates you installed in 6b and verify the information brought on display.
- ii. Next, select “**Default Outgoing**” and click on **Rate Methods**.

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**.

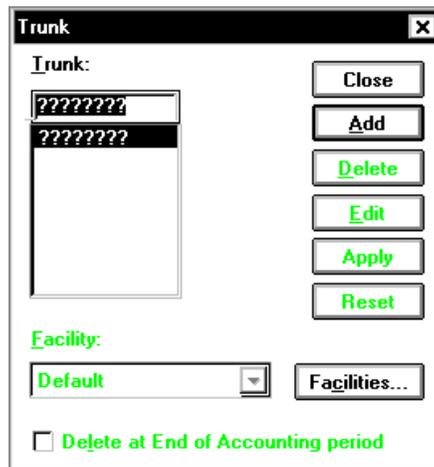


- iii. You may add any other entries from your CARRIER SERVICES worksheets now or you may do so at a later date (see this topic in Chapter 4). Click on **Close** to continue.

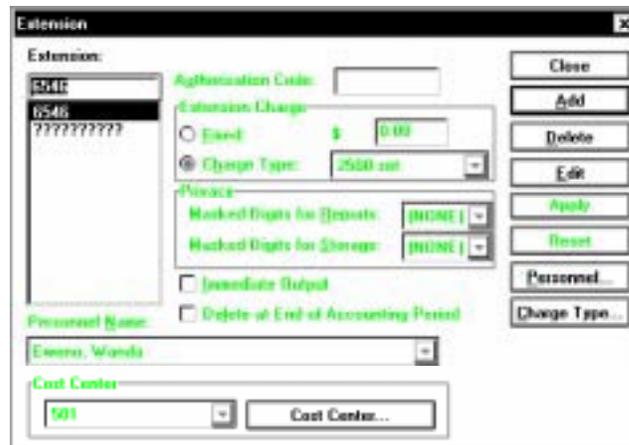
- d. Select [x] **Call Collection Interfaces**.
  - i. Use the **Add** button to load each *Call Collection* diskette, one at a time. Follow screen instructions.
  - ii. Select the *protocol*, *format*, and *protocol options* from the CALL COLLECTION INTERFACE WORKSHEET - Part I.



- 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  **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.

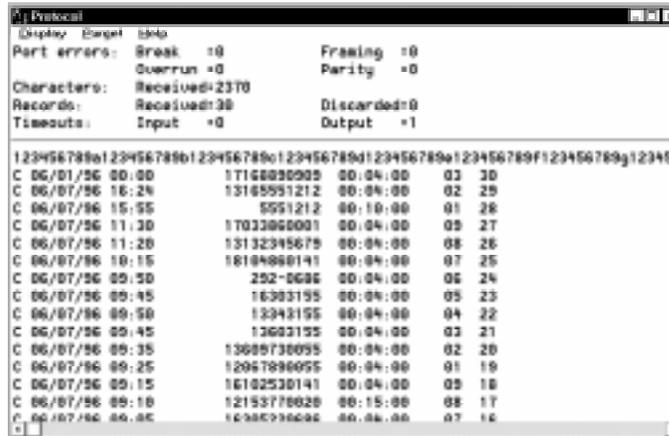
8. For now, leave the Call Processing Status window in the background (do not enable call rating). You may skip to the last installation task or you may load the options in the software package:
- **Multi-Site**. Install each site for which you have received *Fixed Rates* diskettes as documented in *Site Maintenance* in chapter 7.
  - **Lucent Technologies 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 button on the task bar. 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.

\* 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).

⇒ 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.

3. At the PC, double-click on the Format button on the task bar:



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.

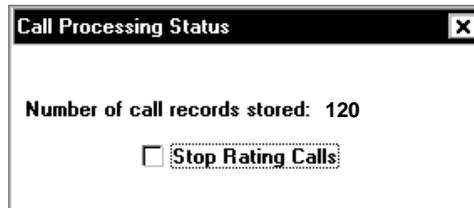


*If you did not install custom fixed rates, skip the next step and leave your system collecting calls without rating them.*

*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 this button in the top right corner.



---

## Administration

# 3

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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.
- *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 site list) prior to accessing site-specific tables.

### Security Alert:

You should always limit access to system information that could possibly be used to gain access to WATS lines, FX lines etc. The following are some recommendations:

- Keep telephone logs and printed reports in locations that only authorized personnel can enter.
- Design distributed reports so they do not reveal password or trunk access code information.

HackerTracker options, under the Administration menu, are documented in detail in chapter 8.

## Organization Table

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**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.

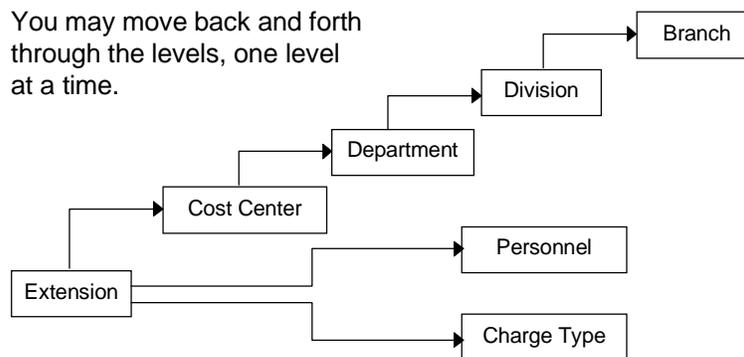
### Related Functions

- 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:

- 2500 set
- 2500 set
- LCD set
- none
- speakerphone
- voice mail

Charge: 5.00

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

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:

Eweno, Wanda

Title:

Ms

First Name:

Wanda

Last Name:

Eweno

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

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)

The screenshot shows a dialog box titled "Department". It features a list box containing "Marketing" (selected) and "Default Marketing". To the right of the list box are buttons for "Close", "Add", "Edit", "Apply", and "Reset". Below the list box is a "Division:" label, a dropdown menu showing "HQ", and a "Division..." button. At the bottom, there is a "Budget: \$" label with a text box containing "0.00" and a checkbox labeled "Delete at End of Accounting Period".

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 these sections 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

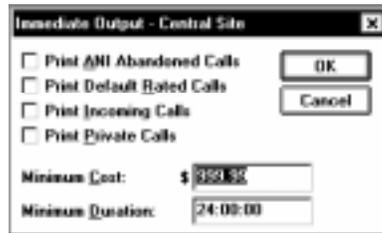
**Purpose** To log calls that were ANI-abandoned, default-rated, incoming, private, costly, and/or lengthy. A copy of the call record is logged in the Immediate Output file (the log can hold up to 500 records).

### 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 task bar button:



**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.

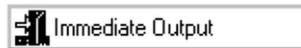
Minimum Cost (in your currency, default \$999.99) / Duration (in hours:minutes:seconds, default 24:00:00). Enter values to log expensive or lengthy calls — for example, if you enter \$10.00 and 0:30:00, calls that either cost at least \$10.00 or lasted at least 30 minutes will be sent to the Immediate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



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



**Dialled 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:

- 123456789
- 1234567890

Account Name: WAC Co.

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:

- WAC Co.
- WAC Co.

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

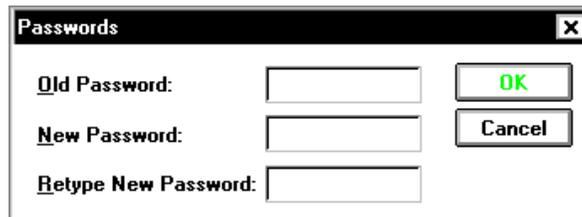
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**Purpose** To change the password of the currently logged user. (This dialog box is disabled on systems without restricted access.)

**Related** To restrict access to the system and assign privileges, use the **Users**

**Functions** selection on the **Configuration** menu (see chapter 4, *System Users*).

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



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

### Security Alert:

Passwords should be as long as allowed by the system. Passwords should be hard to guess and therefore should not contain:

- all the same numbers (for example 1111, 666666)
- sequential characters (for example 123456)
- numbers that can be associated with you or your business, such as your name, birthday, business name, telephone number, or social security number
- words and commonly used names

Passwords should use as wide a variety of characters as possible. Passwords should be changed regularly, at least on a quarterly basis. Do not recycle old passwords.

## 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.

---

## Configuration

# 4

---

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

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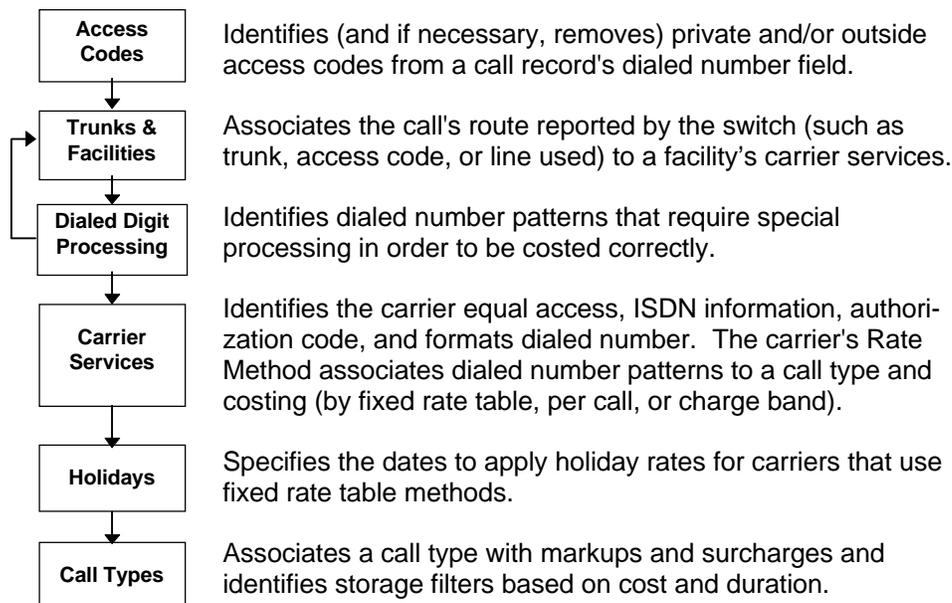
Call rating is set up at installation by loading the site-specific Fixed Rates diskette, then entering the information in the *Carrier Services* and the *Trunks & Facilities* worksheets.

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).

Configuration

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

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

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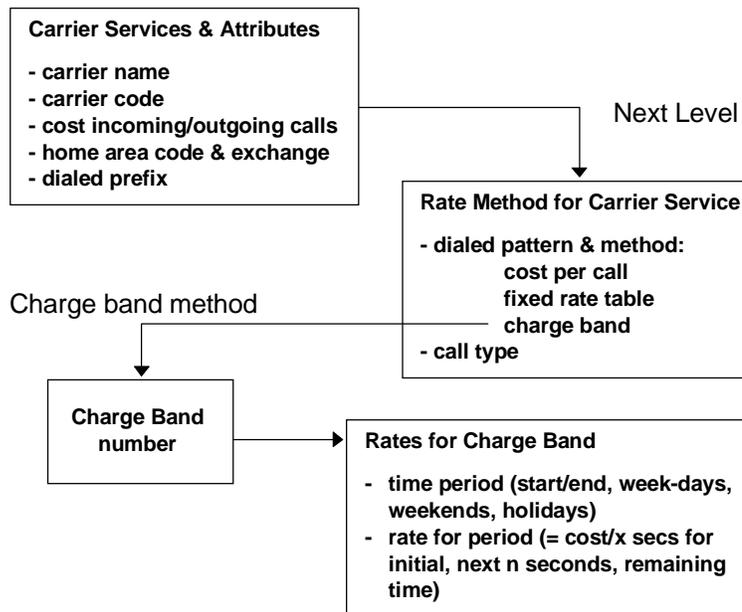
**Purpose** To set up or change the table of carrier services — in particular, to set up attributes of the carrier services supplied at installation and/or to set up additional carrier services and their rates.

### Related Functions

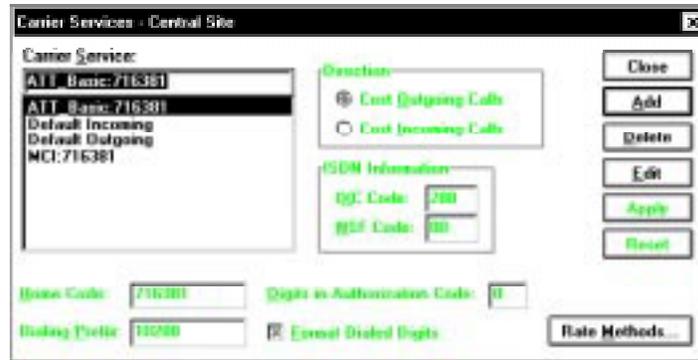
- See *Overview of Call Rating Tables* in this section for the role of related tables in costing calls and setup examples.
- If you wish to name your own call types based on dialing patterns or specific carrier services, you must create the call types first. See *Call Types* later in this section for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

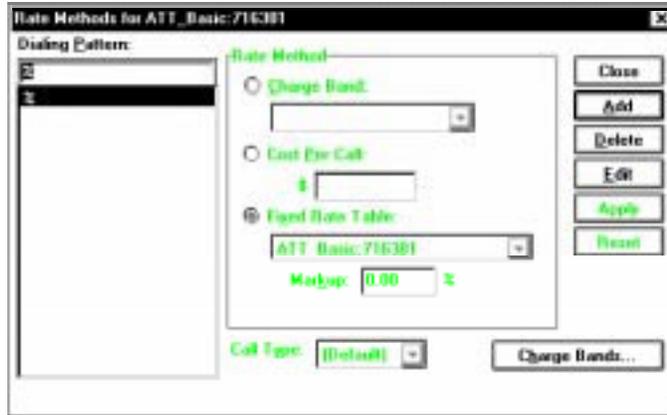
Digits in Authorization Code. In Equal Access areas = 0; elsewhere, the length of your account with the carrier (this value is used to strip off the authorization code digits prefixed to the dialed number).

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)**

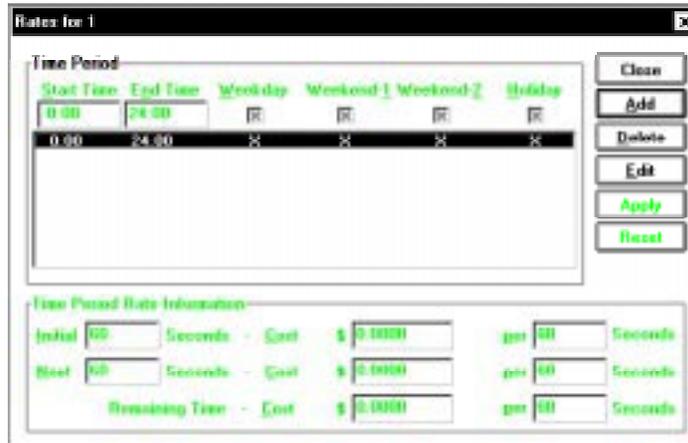
1. Use of the charge band method requires the creation of a "code-book" or rate schedule (see the next topic). To do so, click on **Charge Bands**, then return here to complete the function.
2. For additions or edits: write or select an entry, click on **Add** or **Edit**, complete the dialog box, and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



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**



## Configuration

---

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.

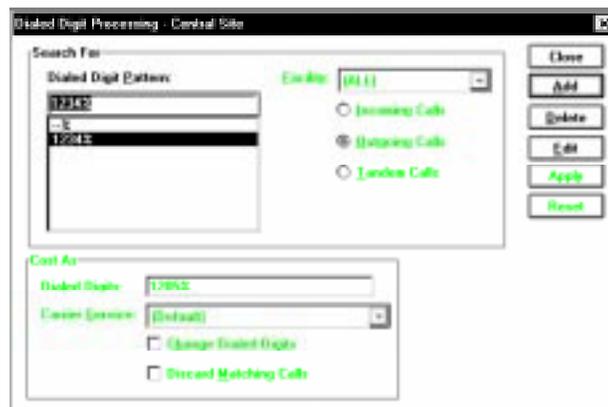
Change Dialed Digits (stores the replaced number) and Discard Matching Calls. The disposition of calls matching the search criteria.

### 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 out-going 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** See *Overview of Call Rating Tables* at the beginning of this section

**Functions** 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).

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	all values = 0
INCOM	incoming	
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 Trunks/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)**.



### 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)**.



### 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

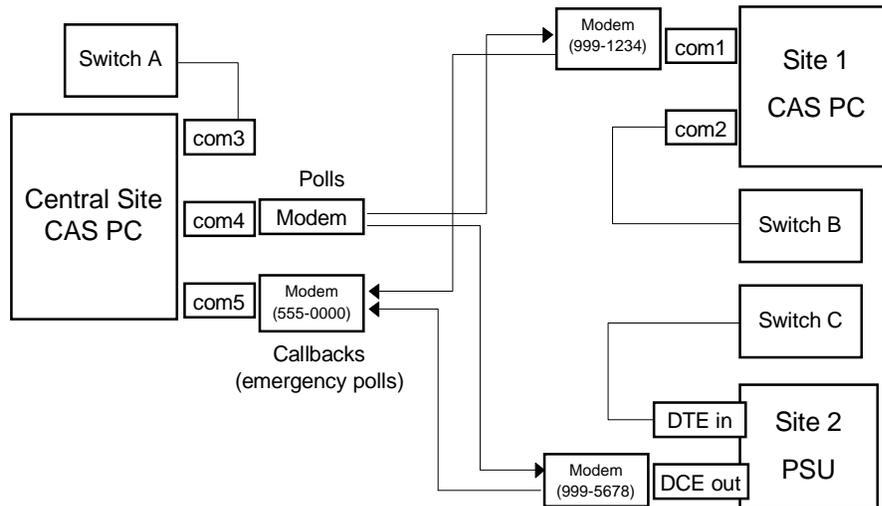
CAS can collect SMDR from most Lucent Technologies and non-Lucent Technologies telephone switches, either directly from the switch, or indirectly via file transfers or polls to storage systems such as PSUs, CDRUs, CAS PCs, or INFO/MDR™ Centrex products. In a multi-site system, CAS manages SMDR collection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

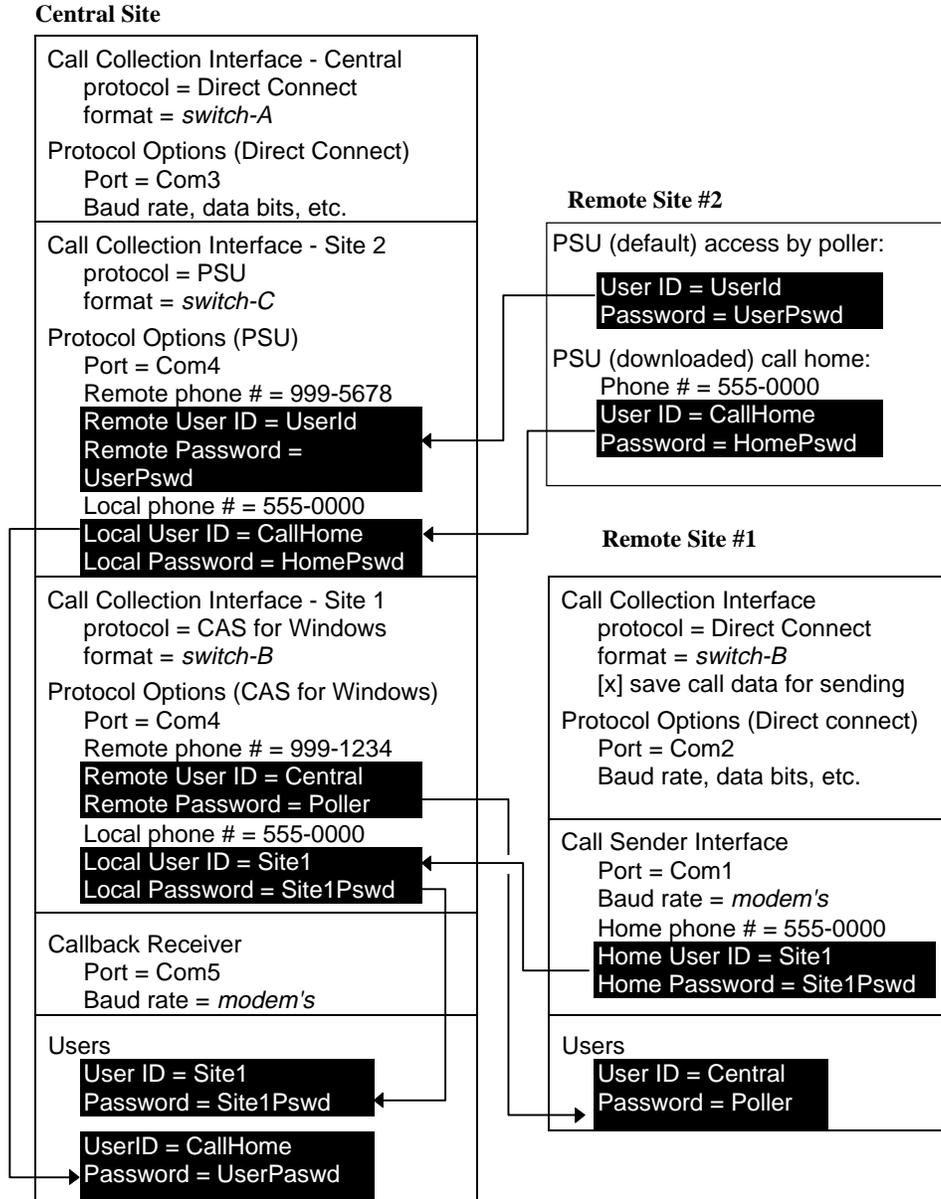
### Overview of Call Collection

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.





## Call Collection Interface

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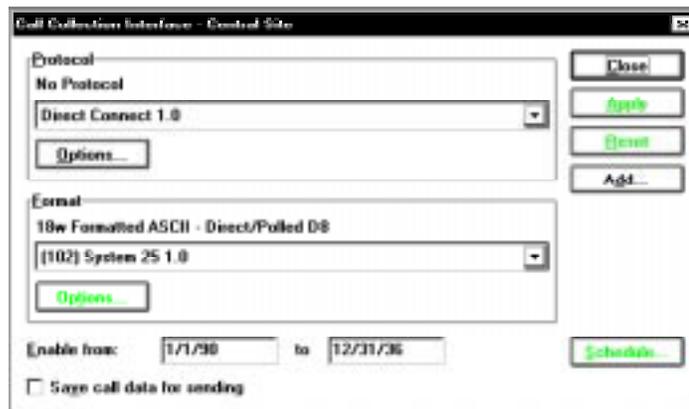
**Purpose** To set up interface details with the source of call records for a site. These details consist of:

- 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).



**Summary of procedures (Call Collection Interface)**

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

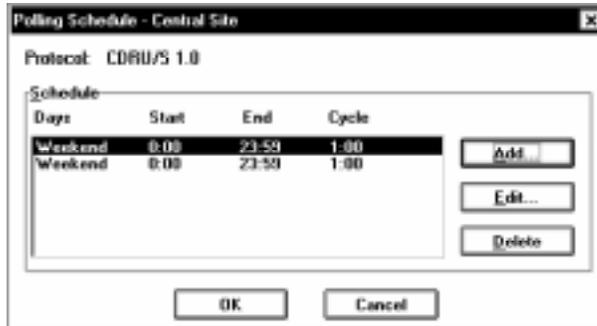
 You may have to load a *Call Collection Interfaces* diskette before selecting protocols or formats. To do so, click on **Add**, follow instructions to name a drive and load the diskette.

*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.

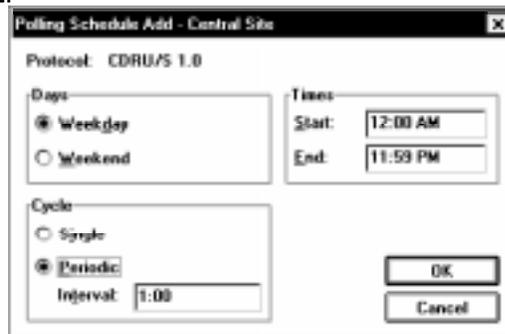
**Polling Schedule**



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**.



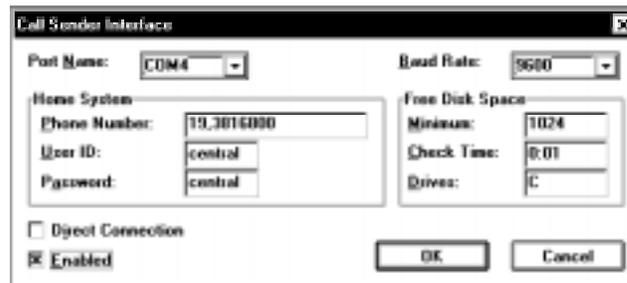
## Call Sender Interface

**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 contains several fields and controls:

- Port Name:** A dropdown menu with "COM4" selected.
- Baud Rate:** A dropdown menu with "9600" selected.
- Home System:** A group box containing:
  - Phone Number:** A text field with "19.3014000".
  - User ID:** A text field with "central".
  - Password:** A text field with "central".
- Free Disk Space:** A group box containing:
  - Minimum:** A text field with "1024".
  - Check Time:** A text field with "0:01".
  - Drives:** A text field with "C".
- Direct Connection:** An unchecked checkbox.
- Enabled:** A checked checkbox.
- 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

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**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).

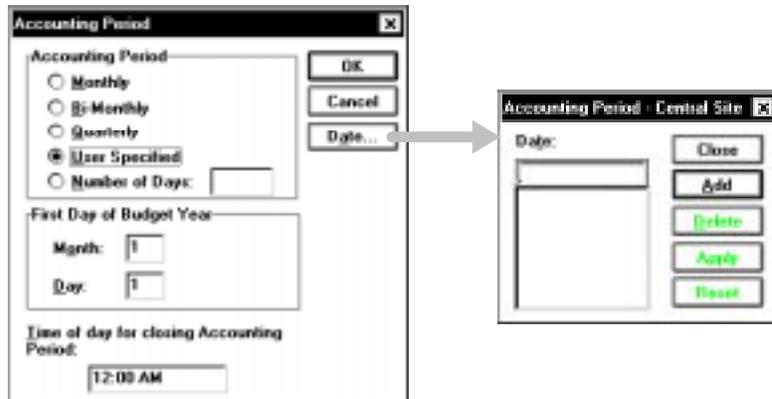
Enable [X] or disable the port for receiving emergency calls.

## 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).

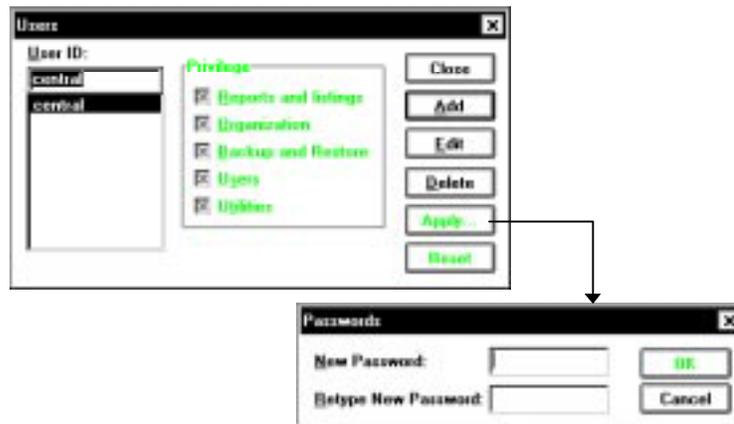
Time of day for closing Accounting Period. The time in a 24-hour format (0:00 to 23:59 — default = 0:00).

## 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 Functions** Your company's organization structure is built using the **Organization** selection on the **Administration** menu and contains the actual entries for the levels defined here.

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

The screenshot shows a dialog box titled "Organization Levels". At the top, there is a "Company Name" text field containing "Company Name", a "Number of Levels" dropdown menu set to "5", and a "Budget Level" dropdown menu set to "Level-3". To the right of these fields are "OK" and "Cancel" buttons. Below these fields is a section titled "Level Names" containing five rows, each with a label and a text field: "Level-1: Extension", "Level-2: Cost Center", "Level-3: Department", "Level-4: Division", and "Level-5: Branch".

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

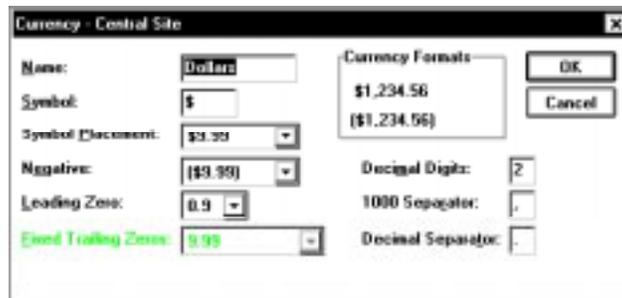
## Currency

---

**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).

Tax	Name	Active	Action
Tax-1	Federal	<input checked="" type="checkbox"/> Active	OK
Tax-2	State	<input checked="" type="checkbox"/> Active	Cancel
Tax-3	Local	<input checked="" type="checkbox"/> Active	

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

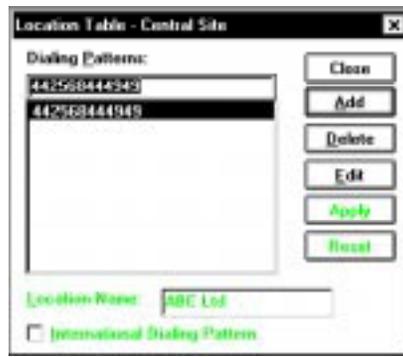
## Location Table

---

**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 - Control Sln". It has a standard Windows-style title bar with a close button. The main area is divided into two sections. The "Type of Day" section on the left lists the days of the week from Monday to Sunday, each with a dropdown menu. Monday through Friday are set to "Weekday", Saturday is set to "Weekend-1", and Sunday is set to "Weekend-2". The "Business Hours" section on the right has two input fields: "Start" and "End". The "Start" field contains "8:00 AM" and the "End" field contains "5:00 PM". Both fields have "h:mm" labels to the right. In the top right corner of the dialog, there are "OK" and "Cancel" buttons.

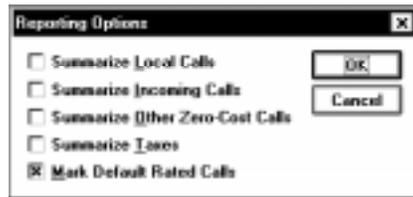
Select the Type of Day — *Weekday*, *Weekend-1*, or *Weekend-2* — for Monday through Sunday and the Start and End of your business hours.

## 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 Selection**.



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.

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## Reports and Listings

# 6

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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:

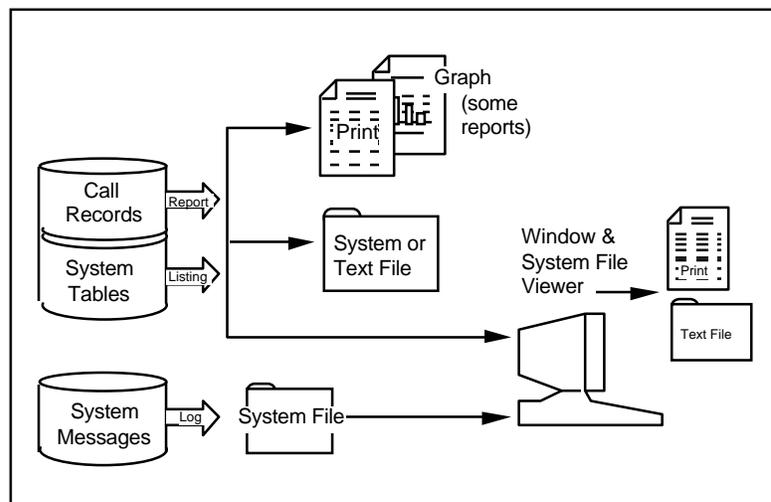
- *Common Functions* — describes the general procedures to run reports on a schedule or immediately, how to define their output and set up charts.
- *Report-specific Functions* — describes all call accounting reports:
  - Organization Reports
  - Selection Reports
  - Account Code Reports
  - Traffic 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

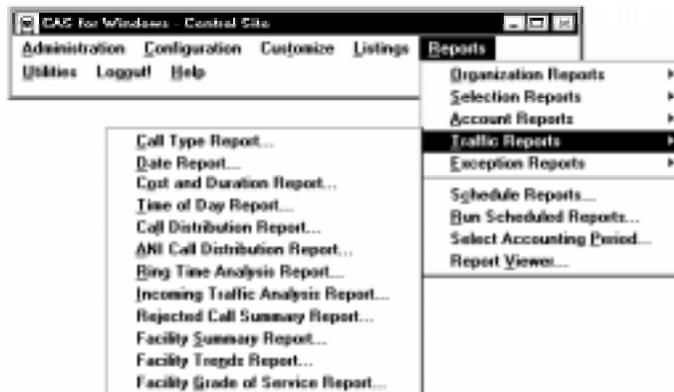
**Purpose** To generate any report or listing from the stored current or archived accounting period.

### 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:

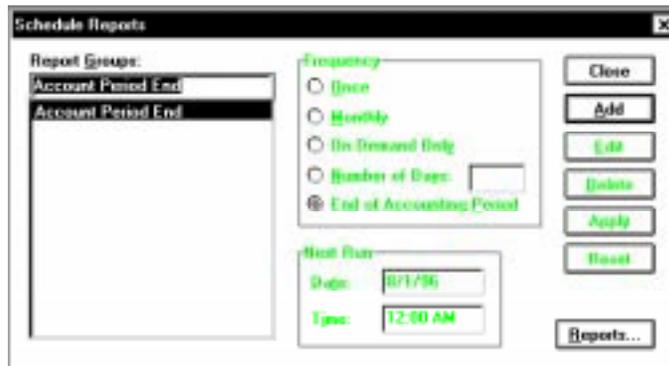


3. Complete the resulting dialog box. See the report-specific topic and the topics *Output* and *Chart* in this chapter for details.
4. Click on **OK** to run the report (**Cancel** exits without a report).

## 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)

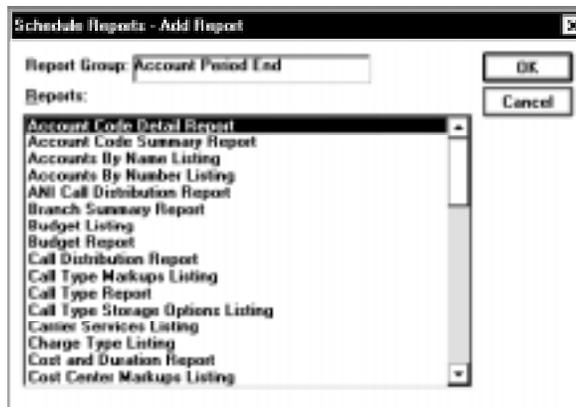
1. For additions or edits, enter or select a *Report Group* and click on **Add** or **Edit**, as appropriate.
2. For deletions, select a *Report Group*. To remove the entire group, click on **Delete**; remove specific reports via the **Reports** button.
3. Click on **Reports** to set up or delete specific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

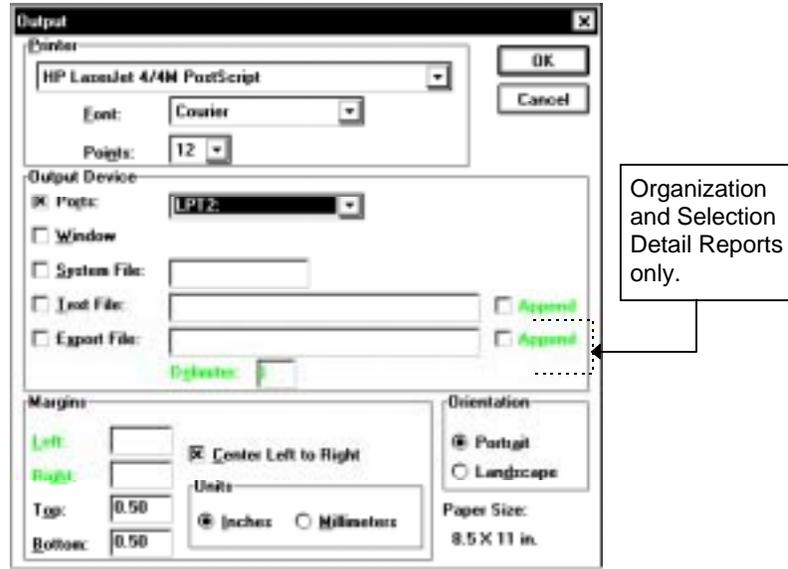


5. To define the output and other options on the selected report, choose **Criteria**. See the report specifics in this chapter and the topics *Output* and/or *Chart* for details.
6. Back at the **Schedule Reports** dialog box, choose **Apply** to save your schedules and report definitions (**Reset**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

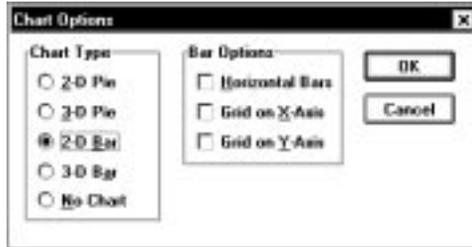
---

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

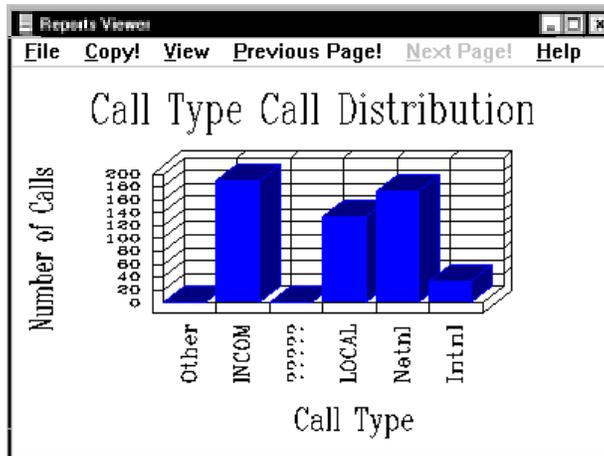
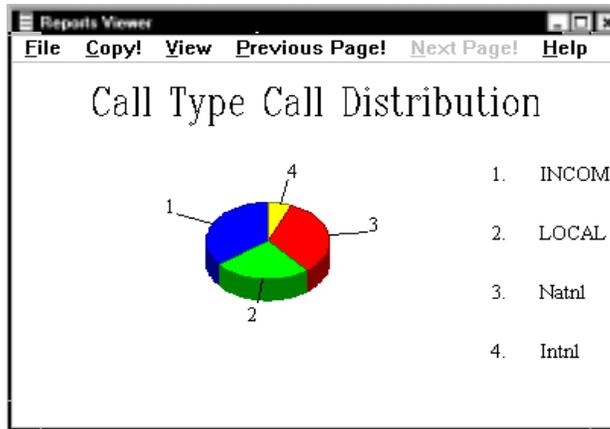
- The bar chart is used to display report parameters — for example, *dates* in a Date Report or *hours* in a Time of Day Report — as bars against a vertical or horizontal scale.  
  
A vertical bar's height (or a horizontal bar's length) corresponds to a value on the scale — which may be either the cost, 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**

Organization Detail Report

Organization Selections:

Site: [ALL] Branch: [ALL] Division: [ALL] Department: [ALL] Cost Center: [ALL] Extension: [ ] [ ] [ ]

Range Selections:

Date Range: 7/8/96 to 8/1/96

Time Range: 12:00 AM to 11:59 PM

Minimum Selections:

Cost: \$ 0.00

Duration: -- OR -- 0:00:00

Other Selections:

Call Type: [ALL]

Dialed Number: %

Private Calls:

Include  Exclude  Only

Page Break After Each Extension

OK Cancel Output...

In an Organization Summary, you will also see:  
 Use Internal Summaries

**Other  
Organization  
Summaries**

Cost Center Summary Report

Department: [ALL] [ ] [ ] [ ]

OK Cancel Output... Chart...

Page Break After Each Department

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**.

The screenshot shows a dialog box titled "Selection Detail Report" with a close button (X) in the top right corner. The dialog is divided into several sections:

- Organization Selections:** A vertical stack of dropdown menus for Site, Branch, Division, Department, and Cost Center, all currently set to "[ALL]". Below these are three empty text input fields.
- Minimum Selections:** A section with a "Cost:" label and a text box containing "\$ 0.00". Below it is a "Duration:" label and a text box containing "0:00:00". A "-- OR --" separator is between the two.
- Other Selections:** A section with a dropdown for "Account Code" set to "[ALL]", a "Line:" label and a dropdown set to "[ALL]", and a "Call Type:" label and a dropdown set to "[ALL]". Below these is a "Dialed Number:" label and a text box containing "%".
- Range Selections:** A section with "Date Range:" and two text boxes containing "7/8/96" and "8/1/96" with "to" between them. Below is "Time Range:" and two text boxes containing "12:00 AM" and "11:59 PM" with "to" between them.
- Private Calls:** A section with three radio buttons: "Include" (which is selected), "Exclude", and "Only".
- Buttons:** On the right side, there are three buttons: "OK", "Cancel", and "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.

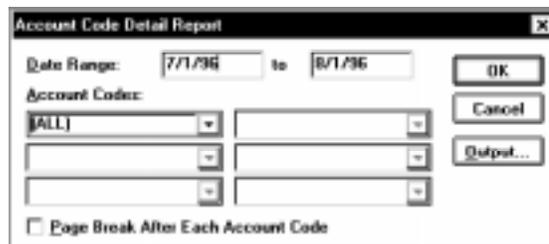
## Account Code Reports

---

**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 "7/1/96" and "8/1/96" entered, separated by "to".
- Account Codes:** A dropdown menu currently showing "[ALL]", followed by two empty dropdown menus.
- Buttons:** "OK", "Cancel", and "Output..." buttons.
- 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.

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\* 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.

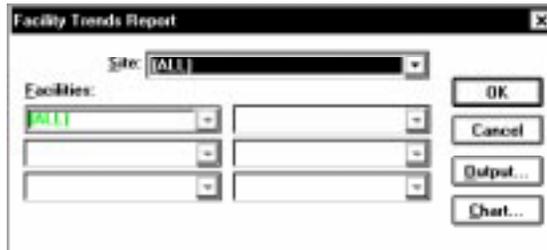
**Access** From the **Reports** menu, select **Traffic Reports** and then, your choice of report.

**Time of Day Report**



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

**All Facility Reports**



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**



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

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

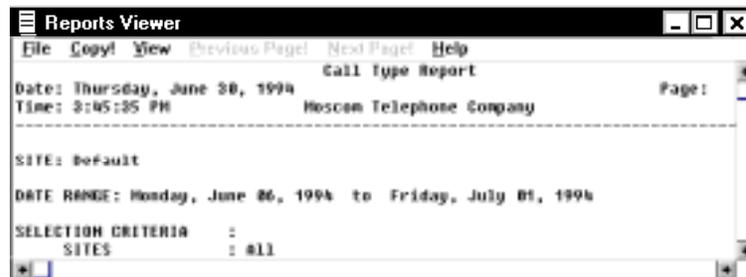
- *Report Viewer* — to display reports sent to the “window” or saved to a “system file.” When minimized, a Report Viewer button appears on the task bar with this icon: 
- *Immediate Output* — to display details of calls sent to the “immediate output file.” The Immediate Output button on the task bar contains this icon: 
- *Message Log* — to display system messages. The “normal” icon on the Message Log task bar button 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).

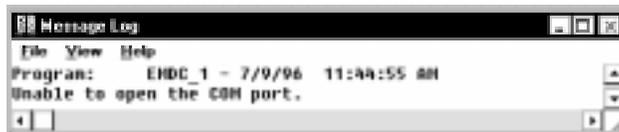
**PreviousPage!** and **NextPage!** — paginate through the report.

## 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.

A screenshot of a window titled "Immediate Output". The window has a menu bar with "File", "View", and "Help". Below the menu bar is a table with the following columns: TYPE, DATE, TIME, DURATION (HH:MM:SS), Extension, DIALED NUMBER, and LOCATION. The table contains two rows of data. The first row is for an "ALARM" call on 05/05/96 at 14:00 with a duration of 02:33:25, extension 6814, dialed number 16145551234, and location Columbus. The second row is for a rejected call marked with an asterisk (\*) on 05/01/95 at 18:30 with a duration of 00:00:10, extension 6814, dialed number 16145551234, and location Columbus. There are scroll bars at the bottom of the window.

TYPE	DATE	TIME	DURATION HH:MM:SS	Extension	DIALED NUMBER	LOCATION
ALARM	05/05/96	14:00	02:33:25	6814	16145551234	Columbus
*	05/01/95	18:30	00:00:10	6814	16145551234	Columbus

⇒ 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 removable media.
  - *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 and Restore functions support tape as well as floppy diskette backups. The two backup programs supported are: HP and Windows 95. CAS backups copy the full system or the current or archived period's data onto removable media. You use the restore function of your backup program (Windows 95 or HP) to restore prior CAS backups to the original locations — 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, after closing each accounting period. For large databases, tape backups are recommended (see the following section).

### **Tape Backup/Restore Recommendations**

---

Tape backups are recommended for installations with a large call record volume.

<b>Backup</b>	<b>When</b>	<b>Comments</b>
Full*	Upon initial installation and any time you install an upgrade or update	Keep two backup sets, rotating them as needed: one with the latest data and the other, with the prior backup
Archive	After a period closes	Keep each taped archive, do not reuse
Current	Weekly or daily, depending on the volume and importance of your data	Keep two backup sets, rotating them as needed: one with the latest data and the other, with the prior backup
* Remember that a full backup is current up to when it was made and that "current" backups contain only partial data. Used together, they minimize the need for full backups, which might interfere with call collection and polling schedules. Thus, for a full restore you need the latest "full" plus the "current" backup.		

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.

## **Backup Configuration**

---

If you use a Colorado Memory Systems T1000 tape drive, the information in the following paragraphs apply.

For new installations, CAS 2.2 uses the HP backup program as the default.

- This program is compatible with the T1000 tape drive and TRAVAN tapes.
- The HP backup program does not allow backup to floppy disks.
- File names for the backup set must use the extension *.fst*, see *Backup / Restore Initialization*, step 8b., later in this document.

For software upgrades from version 2.1 to 2.2, CAS uses the Windows 95 backup program as the default.

- This program is not compatible with TRAVAN tapes.
- Use this program for backups to diskettes.

If you wish to change the default backup program for any reason, edit your win.ini file as described in the procedure that follows. A change may be necessary if, for example,

- a new installation wishes to utilize the Windows 95 backup program.
- after upgrading to CAS 2.2, you wish to use a T1000 tape drive with an HP TRAVAN tape.

1. From the **Start** menu on your desktop, select **Run**. Type *sysedit* in the **Open** field, then click **OK**.
2. Close the dialog boxes one at a time until the C:\WINDOWS\WIN.INI dialog appears.
3. Locate the section of the file labeled [*Emerald*], and the backup entry in this section.
  - a. To run the HP backup program enter: *HP* (must be upper case)
  - b. To run the Windows 95 backup program enter: *Win95* (enter as shown)
4. In the **System Configuration Editor** dialog box, click **Close**, and **Yes** to confirm your change.

## **Backup / Restore Initialization**

---

The CAS Backup function requires you to pre-define *file sets* containing specific instructions. To do so, proceed as follows:

1. If the Windows Backup tool is already installed, proceed directly to Step 2. Otherwise, complete these steps:
  - a. From the **Start** menu on your desktop, select **Settings**, then **Control Panel**. Double-click on **Add/Remove Programs**.
  - b. Select the Windows Setup tab, check the **Disk Tools** box, then click **Details**. Check the **Backup** box and click **OK**.
  - c. Follow the on-screen instructions to complete the installation.
2. Back at your desktop, open the **Start** menu and select **Run**. Enter one of the following, then click **OK**:
  - a. **backup.exe** if you set up the Windows 95 backup
  - b. **c:\windows\backup\hpbackup.exe** if you set up HP backup
3. Click **OK** if the Welcome to Microsoft Backup notice(s) appears (you may elect not to show these again by checking the appropriate box on the notice window).
4. Select **Options...** from the **Settings** menu.
  - a. Click on the Backup tab and select these items:  
**Quit Backup after operation is finished**  
**Type of backup — Full: backup of all selected files**  
**Advanced options — Use data compression**
  - b. Click on the Restore tab and select these items:  
**Quit Backup after operation is finished**  
**Restore backed up files to: — Original locations**  
**Advanced Options — Overwrite files**
  - c. Click **OK** and proceed to the next step.
5. From the **Settings** menu select **Drag and Drop**. Disable the item: **Confirm operation before beginning**, and click **OK**.

The next three steps define (respectively) the source, destination, and file name for a specific type of backup. Start with a "full" backup; repeat for a "current" backup, then for an "archive" if it exists (new installations do not have an archive. You must define its *backup set* after the file is created at the closing of the first accounting period).

6. Back at the main dialog's Backup tab, select what to back up:

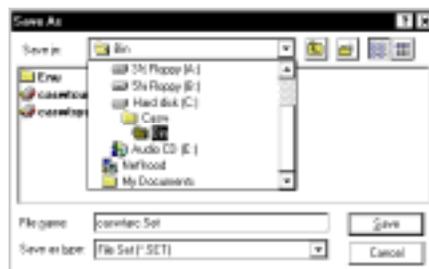
- a. For a full CAS backup, double-click on the drive where you installed CAS, then check the box by **Casw** in the right side of the window. Proceed to the next step.



- b. Otherwise, double-click on **Casw** to display CAS subdirectories. Check the box by **Cur** (for a current backup) or by **Archive.acv** (for an archive backup, if it exists—the archive directory is created the first time CAS performs an archive).
7. Click on the **Next Step>** button. When a dialog box similar to the one below appears, select where to back up: for tapes, click on your tape drive; for floppy disks, click on your floppy drive.



8. Select **Save As...** from the **File** menu.
  - a. When a dialog box similar to the one below appears, select to save in the **Bin** directory under the **Casw** directory.



- b. Type the file name for the type of backup and media that you want to define (use the table below) and then click **Save**.

Backup	Media	Set File Name
Full CAS system	floppy diskette*	<b>caswdsys.set</b>
	tape	<b>caswtsys.set**</b>
Current CAS data	floppy diskette*	<b>caswdcur.set</b>
	tape	<b>caswtcur.set**</b>
Archive CAS data	floppy diskette*	<b>caswdarc.set</b>
	tape	<b>caswtarc.set**</b>

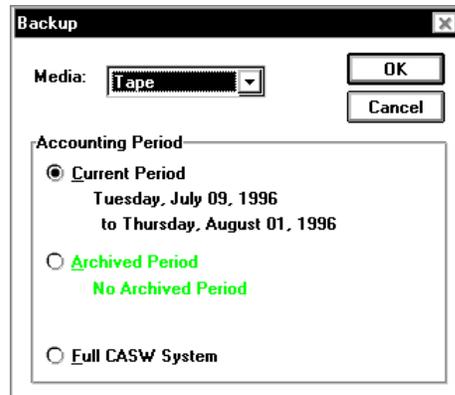
\* Not available with HP backup program.

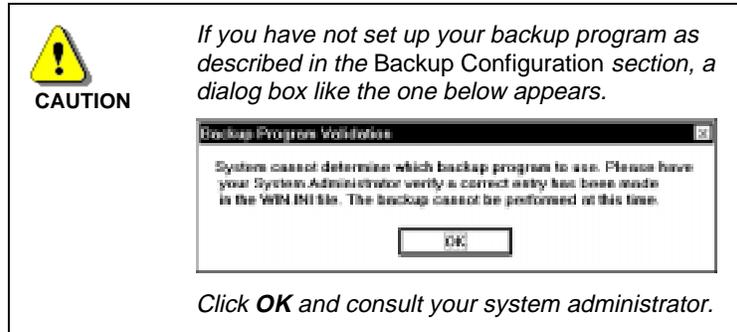
\*\*Files for use with the HP backup program must include the extension .fst in the name, for example caswtarc.fst.

9. Repeat Steps 6 to 8 until you have completed the definition of all backup sets (full, current, and archive) for the type of media you will be using. When complete, exit the Backup function.

### Summary of Procedures (Backup)

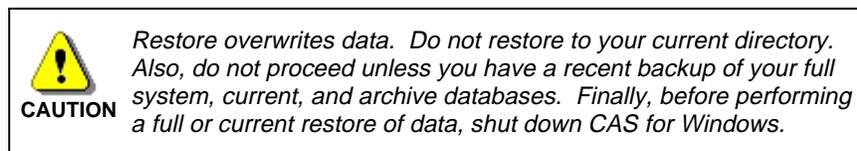
1. Have your supply of formatted backup media ready, then load it into the appropriate drive.
2. Access CAS for Windows and select **Backup** from the **Utility** menu.
3. When the dialog box appears:
  - a. Select the media and the accounting period to backup and click **OK**. Follow the prompts to continue.





- b. When complete, label the tape or diskettes with the backup dates and sequence (if necessary).

### Summary of Procedures (Restore)



1. From your desktop, select **Run** from the **Start** menu, enter **backup.exe**, if using Windows 95 backup or, if using HP backup, enter **C:\windows\backup\hpbackup.exe**, and click **OK**.
2. Click the **Restore** tab. Then in the **Restore From** field, choose the media type that contains the data you are restoring.
3. Select the **Backup Set** you wish to restore, then click **Next Step**. You may experience a delay while Backup searches for it.
4. Check the box next to **casw** and click **Start Restore**.
5. When complete, close your backup program. If a CAS for Windows shutdown was necessary, select **Run** from the **Start** menu, enter **emlog**, and click **OK**.

## 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
<b>Personnel</b>	"last name" "first name" "title " <b>Example:</b> "Sohn"   "Maria"   "Ms"
<b>Level-1</b>	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" <b>Example:</b> 6546   "Sohn"   "Maria"   "Ms"   6546   "Publications"   0   0   0   no   "voice mail"
<b>Level-2</b>	"cost center" "markup" "surcharge" "minimum cost" "department"   budget (if applicable or 0) <b>Example:</b> "Publications"   0   0   0   "Marketing"   0
<b>Level-3</b>	"department name" "budget (if applicable or 0)" "division name" <b>Example:</b> "Marketing"   5000.00   "TELECOM"
<b>Level-4</b>	"division name" "budget (if applicable or 0)" "branch name" <b>Example:</b> "TELECOM"   0   "USA BRANCH"
<b>Level-5</b>	"branch name" "budget (if applicable or 0) <b>Example:</b> "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**.



**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

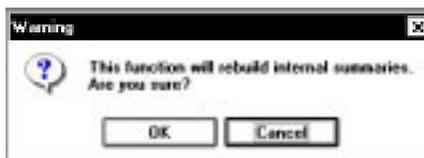
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**Purpose** To check the integrity of your files and repair them if possible:

- 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	Enable SMDR collection. This involves setting up a call collector system (which may be another PC running CAS) to pass call records to the central site.
	Provide information for input at installation: <ul style="list-style-type: none"> <li>— The Call Collection and the Trunk &amp; Facilities worksheets</li> <li>— The Organization worksheet (or provide Organization information via the File Import utility)</li> <li>— (Optional) the Customization and the Carrier Services worksheets</li> </ul>
At the central site	Provide a PC port and modem to poll the remote site (may share modem used to poll other sites).
	Obtain: <ul style="list-style-type: none"> <li>— Fixed rates diskettes for the new site (one diskette per carrier service used on site)*</li> <li>— The new site's worksheet information</li> </ul>
	Install in CAS: <ul style="list-style-type: none"> <li>— Multi-site option (via Upgrades function)</li> <li>— New site (via Site Maintenance function)</li> </ul>
* 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).	

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



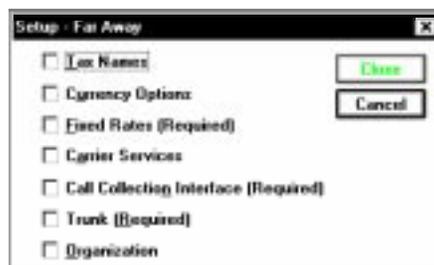
Site name. Up to 25 characters used as report headings.

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.



- 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.)



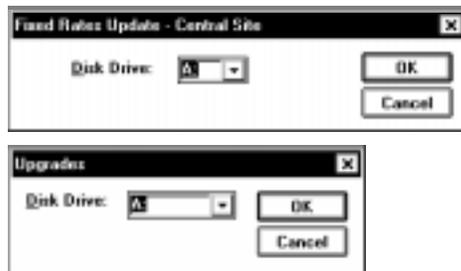
Call rating starts out disabled for new sites. If you did not load a custom *Fixed Rates* diskette for the site, leave the PC collecting calls without rating them. Then start call rating (via **Call Processing Status** documented in this chapter) after you install custom rates (see *Rate Updates/System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

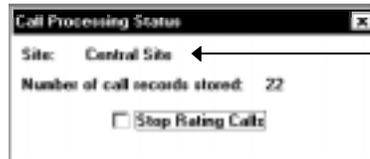
If you need to configure a new option, proceed to the appropriate where it is documented in this manual.

## Call Processing Status

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

**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, click on this button:



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## Lucent Technologies HackerTracker

# 8

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

How can the Lucent Technologies 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 Lucent Technologies 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*.

## Preparing to Use a FAX/Pager for Alarms

CAS uses Microsoft Exchange to fax Lucent Technologies HackerTracker alarms. This requires installing a fax modem, Windows 95 Microsoft Exchange, and Microsoft Fax, then performing a preliminary setup. Install the fax modem and/or any other devices or drivers before continuing with the procedures in the following sections.

### **Installing Microsoft Exchange**

To determine if Microsoft Exchange is already installed, double click on the **Inbox** icon on your desktop.

- If the **Inbox - Microsoft Exchange** dialog box appears, you may proceed to Verification of Microsoft Fax Installation.
- If the **Inbox Setup Wizard** dialog appears, check the box next to the Microsoft Fax option and follow the on-screen instructions to complete the installation. Then proceed to Setting Up Microsoft Exchange, step 3.

### Verification of Microsoft Fax Installation

⇒ Your PC may have Microsoft Exchange installed but not Microsoft Fax. To check if Microsoft Fax is installed: double-click on the **Inbox** icon on your desktop (if the **Choose Profiles** dialog box appears, simply click **OK**) and select **Services** from the **Tools** menu. If Microsoft Fax appears as one of the services, it is already installed and you may proceed to *Setting Up Microsoft Exchange*. If it does not appear, proceed with steps 1 - 3.

1. From the desktop, select **Settings** from the **Start** menu, and then **Control Panel**. Double-click on the **Add/Remove Programs** icon and select the **Windows Setup** tab.
2. Scroll down to **Microsoft Fax** and check its box, then click **Details** to verify that **Microsoft Fax Services** and **Microsoft Fax View** are both checked.
3. Follow the on-screen instructions to complete the installation.

### Setting Up Microsoft Exchange

1. If this is a "first-time" configuration, double-click on the **Inbox** icon on your desktop. When the **Choose Profile** dialog box appears, click on the **New** button and proceed to Step 3.
2. If a configuration already exists, double-click on **Start**, select **Settings** and then **Control Panel**. Open the **Mail and Fax** icon, click **Show Profiles** on the resulting dialog box, and then **Add**.
3. When the **Inbox Setup Wizard** dialog box appears, select **Manually configure information service**, click **Next>**, enter a **Profile Name** (**CASW22** is recommended), and click **Next>**.
4. When the **CASW22 Properties** dialog box appears:
  - a. Click **Add**, select **Microsoft Fax**, click **OK**, and **Yes**. Under the **User** tab, enter **Your full name** (the sender of HackerTracker faxes) and his/her **Fax Number**. All other information is optional.  
  
Click **OK**, then **Yes**. In the **Modem** dialog box, select the appropriate modem and click **OK**.

⇒ It is advisable to use a dedicated fax modem (i.e., other than the HackerTracker pager modem) to avoid port contention when an alarm occurs and CAS tries dialing out to both devices.

- b. Back at the **CASW22 Properties** dialog box, click **Add** and select **Personal Folders**, then click **OK**. In the **Path** field, enter the file name **casw22.pst** under your CAS for Windows directory — for example, **c:\casw\casw22.pst** — and click **Open**.

When the **Create Microsoft Personal Folders** dialog box appears, click **OK**. **DO NOT ENTER A PASSWORD**.

- c. Back at the **CASW22 Properties** dialog box, click **Add** and select **Personal Address Book**, then click **OK**. Under the **Personal Address Book** tab in the **Path** field, enter the file name **casw22.pab** under your CAS for Windows directory — for example, **c:\casw\casw22.pab** — and click **OK**.

Back at the **CASW22 Properties** dialog box, click **OK** to keep these settings and exit.

6. If this is a “first-time” configuration or your Inbox is not in your Start-up group, the **Inbox Setup Wizard** includes the option **Add Inbox to the StartUp Group**. Check this option to have Microsoft Exchange running at the same time CAS for Windows is operating. Click in succession **Next>**, **Finish**, and **Close**.

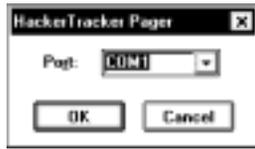
⇒ A “first-time” configuration starts Microsoft Exchange automatically after completing the above — so if this is the case, you may proceed directly to Step 7a.

7. Back at the desktop, start Microsoft Exchange by clicking on the **Inbox** icon. Then complete the following steps:
  - a. Select **Options** from the **Tools** menu. Then select **Always use this profile** and verify that **CASW22** is displayed. Click **OK** to save settings.
  - b. Select **Address Book** from the **Tools** menu. Then select **New Entry** from the **File** menu.
  - c. Select **Fax** and click **OK**. Enter the **Name to show on cover page** (the recipient of HackerTracker fax alarms) and his/her **Fax Number**. Click **Apply**, then **OK**. Close the **Address Book** dialog box and **LEAVE MICROSOFT EXCHANGE RUNNING**.

## Pager Configuration

For alarms by pager:

1. You may use the FAX modem or any Hayes-compatible modem configured with the modem's default settings.
2. Then, select **HackerTracker Pager** from the **Configuration** menu to identify the port for the pager modem — for example:

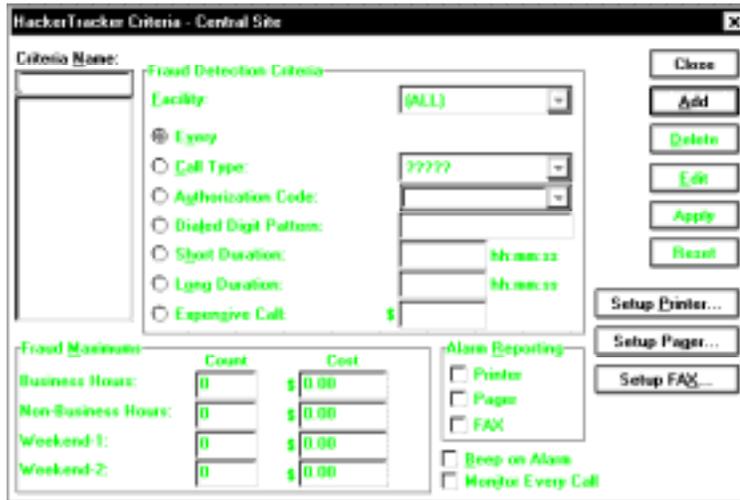


## Alarm Criteria

---

**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).

Beep on Alarm. Enable [X] if you wish to hear a "beep" when an alarm is issued.

-  The Beep on Alarm feature is either enabled or disabled globally for HackerTracker. This includes all criteria sets and, in a multi-site system, all sites.

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)

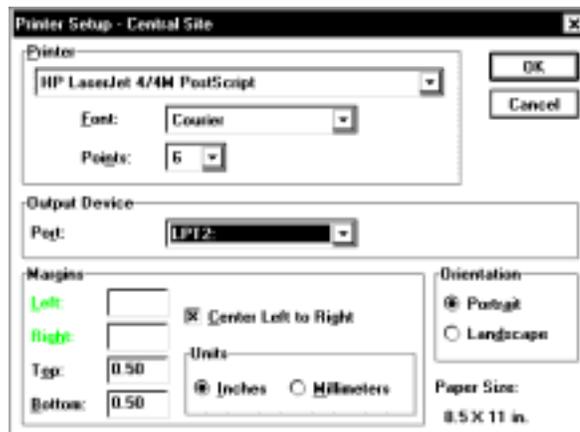
1. To delete a criteria setting, select it and click on **Delete**.
2. For additions or edits:

- 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



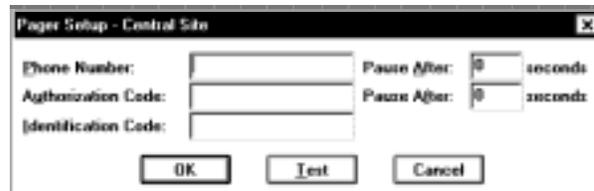
Printer and Output Device. Select the *Printer*, *Font*, *Point* size, and *Port* from their list boxes.

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



The dialog box titled "Pager Setup - Central Site" contains three input fields: "Phone Number:", "Authorization Code:", and "Identification Code:". To the right of the "Phone Number:" and "Authorization Code:" fields are "Pause After:" labels followed by a numeric input field and the word "seconds". At the bottom of the dialog are three buttons: "OK", "Test", and "Cancel".

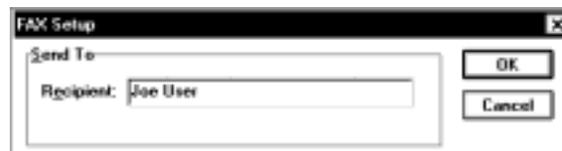
Phone Number and Pause After \_\_ seconds. The dialed pattern to reach the pager or pager service, then the pause (in seconds) before dialing the *Authorization Code* (below).

⇒ 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



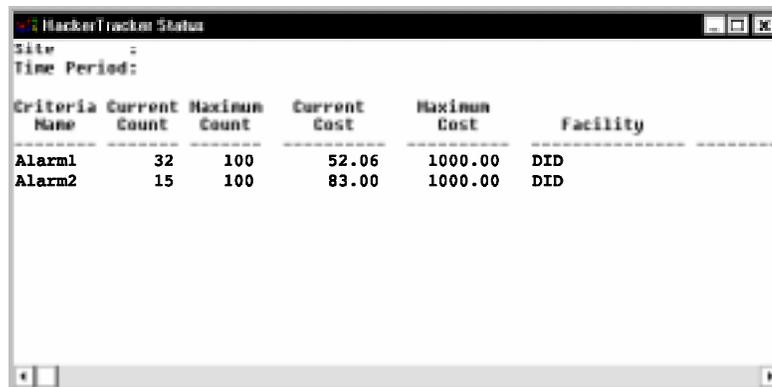
The dialog box titled "FAX Setup" has a "Send To:" label above a text input field. The input field contains the text "Joe User". To the right of the input field are two buttons: "OK" and "Cancel".

Enter the name the recipient of HackerTracker faxes (the name entered in "Setting Up Microsoft Exchange," Step 7c) and click **OK** to complete this procedure.

## Alarm Status

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

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



The screenshot shows a window titled "HackerTracker Status". It displays a table with the following data:

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 Lucent Technologies 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.
- A dialog box appears on your screen telling you that an alarm has been tripped.

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 Lucent Technologies HackerTracker (alarm or normal) icon or **View HackerTracker** from the **Listings** menu.



The screenshot shows a window titled "HackerTracker" with a menu bar containing "File", "View...", and "Help". Below the menu bar is a table with the following columns: ALARM TYPE, DATE, TIME, DURATION (HH:MM:SS Extension), DIALED NUMBER, and LOCATION. A single row of data is displayed:

ALARM TYPE	DATE	TIME	DURATION HH:MM:SS Extension	DIALED NUMBER	LOCATION
RMN_FAC	04/28/96	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)

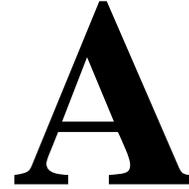
Add report	Set criteria	
Selection Detail	Call type = IDDD	Date range = <i>today</i>
Selection Detail	Minimum cost = \$10.00	Date range = <i>today</i>
Selection Detail	Min. duration = 0:30:00	Date range = <i>today</i>

**Report Group: HackerTracker #2** (Frequency = weekly)

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

---

## Worksheets



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)  <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Level Names (defaults)			Budget Level (Check one)  <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>															
		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)																			
	<table border="1" style="width: 100%; height: 40px;"> <tr><td> </td><td> </td><td> </td><td> </td></tr> </table>																			
First day of budget year    Month (1-12): _____    Day (1-31): _____    Time of day for closing Acc. Period: ____ : ____																				

Part II. Site Setup

Reference (multi-site systems)	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
	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.		Currency format    12.3456 123.456 1,234.56 12,345.60 12,345.6 123,456.0 123,456.00 123,456 1,234,560 12,345,600 123,456,000 1,234,560,000
	Positive value	Negative value	
	If appropriate, select to use/not use leading 0's for values <1: <input type="checkbox"/> 0.9 <input type="checkbox"/> .9		

CARRIER SERVICES WORKSHEETS

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: 100px;" 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: 100px;" 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**



CALL COLLECTION INTERFACE WORKSHEETS

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"/> INFO Monitor Kermit (D)		<input type="checkbox"/> DNC 50/500 (E)		
		<input type="checkbox"/> CAS for Windows, PSU, INFO Monitor/Collector - PollComm (C)		
		<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
		Stop Bits	1 or 2	Flow Control
			Xon/Xoff, DTR, or RTS	4, 5, 6, 7, or 8
	B	File Name		Polling Interval
				Seconds
	C*	Remote System	Phone Number	
			UCT Diff.	
		User ID		Pass-word
		Local System	Phone Number	
	UCT Diff.			
User ID		Pass-word		
D*	Remote System	Phone Number		
		User ID		
		Pass-word		
E*	DNC 50/500	Phone Number		
		Customer		
		Pass-word	Location	
F*	Parity		Even, Odd, None, Mark, or Space	
	Data Bits		7 or 8	
	Stop Bits		1 or 2	
	Remote System	Phone Number		
User ID				
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

CALL COLLECTION INTERFACE WORKSHEETS

Part II. Polling Schedule

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

**TRUNKS & FACILITIES WORKSHEETS**

---

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

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

Facility	Carrier Service <small>(from CARRIER SERVICES worksheet)</small>		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="checkbox"/> Storage <input type="checkbox"/>
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="checkbox"/> Storage <input type="checkbox"/>
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="checkbox"/> Storage <input type="checkbox"/>
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="checkbox"/> Storage <input type="checkbox"/>
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="checkbox"/> Storage <input type="checkbox"/>
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="checkbox"/> Storage <input type="checkbox"/>
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="checkbox"/> Storage <input type="checkbox"/>

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"/>	



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## Sample Reports

# B

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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 HHH: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 HHH: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	Montevocchio, 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	DURATION		COST		
			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	
503 - Doc	180	45:53:12	0:15:17	326.90	1.81	0.11	
TOTALS:		1084	276:46:45	0:15:13	1,938.36	1.79	0.11

### GRAND TOTALS

Department	TOTAL CALLS	TOTAL HHHH:MM:SS	DURATION		COST		
			PER CALL HH:MM:SS	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	0:15:13	1,938.36	1.79	0.11

End of Organization Summary Report

## Sample Reports

### Cost Center Summary Report

Date: Friday, October 09, 1994

Page: 1

Time: 4:47:37 PM

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	DURATION			COST		
	TOTAL CALLS	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	DURATION			COST		
	TOTAL CALLS	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	DURATION			COST		
	TOTAL CALLS	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	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 Cost Center Summary Report

## Sample Reports

Department Summary Report

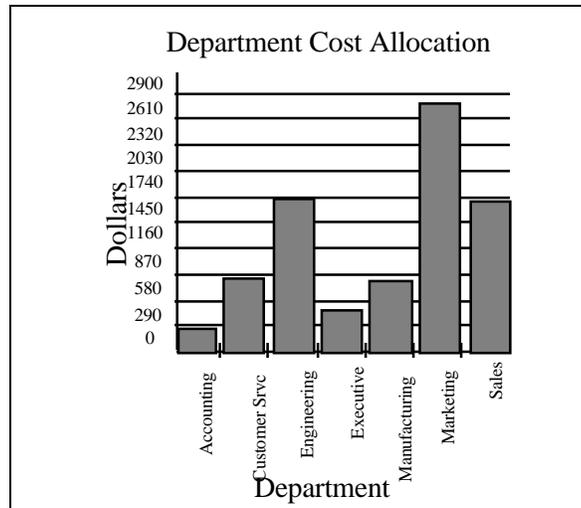
Date: Friday, October 09, 1994 Page: 1  
 Time: 5:19:19 PM MOSLEY Corporation

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
<b>TOTALS:</b>	<b>4683</b>	<b>1174:02:52</b>	<b>0:15:02</b>	<b>8,400.18</b>	<b>1.79</b>	<b>0.11</b>

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

Page: 1

Time: 5:31:40 PM

MOSLEY Corporation

SELECTION CRITERIA :  
Cost Center : 503 - Doc

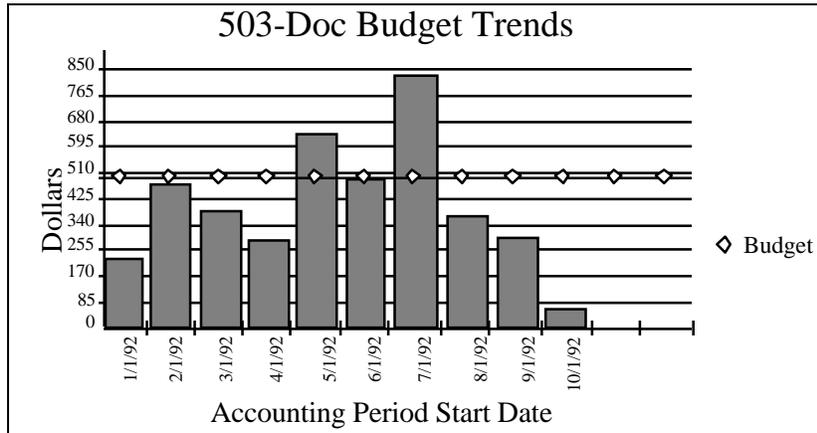
CURRENT ACCOUNTING PERIOD:  
Thursday, October 01, 1994 to Saturday, October 31, 1994

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

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

Selection Detail Report  
 MOSLEY Corporation

Page: 1

-----

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		6.29
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

MOSLEY Corporation

Page: 1

-----

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 -----		----- COST -----		
	TOTAL HHH:MM:SS	PER CALL HH:MM:SS	TOTAL (Dollars)	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

Date: Friday, October 09, 1994 Account Code Detail Report Page: 1  
 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 HHHH: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

Date: Friday, October 09, 1994 Account Code Summary Report Page: 1  
 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	DURATION			COST		
	TOTAL CALLS	TOTAL HHHH:MM:SS	PER CALL HH:MM:SS	TOTAL (Dollars)	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

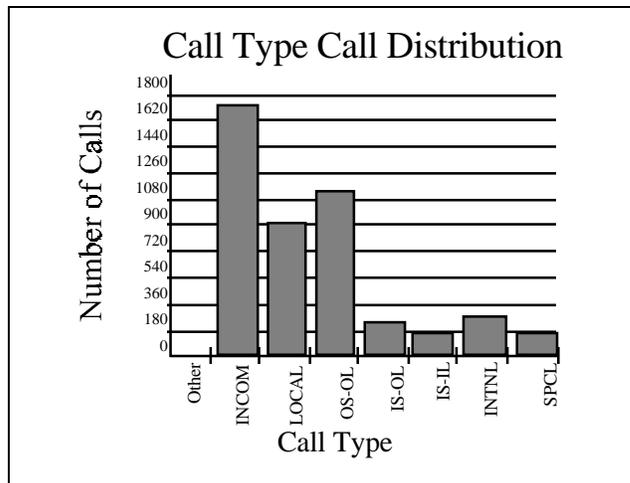
### Call Type Report

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

DATE	----- DURATION -----			----- COST -----		
	TOTAL CALLS	TOTAL HHHH:MM:SS	PER CALL HH:MM:SS	TOTAL (Dollars)	PER CALL (Dollars)	PER MINUTE (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

Page: 1

MOSLEY Corporation

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

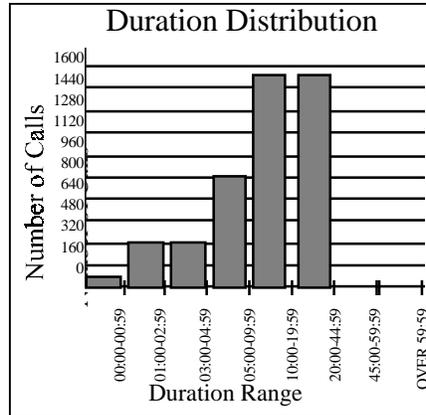
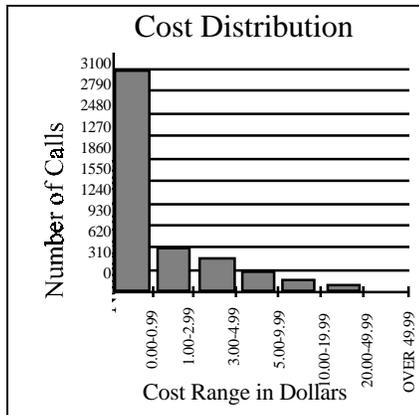
### COST DISTRIBUTION

COST RANGE (Dollars )	TOTAL CALLS	DURATION		COST		
		TOTAL HHHH:MM:SS	PER CALL HH:MM:SS	TOTAL (Dollars )	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
<b>TOTALS:</b>	<b>4683</b>	<b>1174:02:52</b>	<b>0:15:02</b>	<b>8,400.18</b>	<b>1.79</b>	<b>0.11</b>

### DURATION DISTRIBUTION

DURATION RANGE MM:SS	TOTAL CALLS	DURATION		COST		
		TOTAL HHHH:MM:SS	PER CALL HH:MM:SS	TOTAL (Dollars )	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
<b>TOTALS:</b>	<b>4683</b>	<b>1174:02:52</b>	<b>0:15:02</b>	<b>8,400.18</b>	<b>1.79</b>	<b>0.11</b>

End of Cost and Duration Report



## Sample Reports

Time of Day Report

Date: Friday, October 09, 1994 Page: 1  
 Time: 5:19:19 PM MOSLEY Corporation

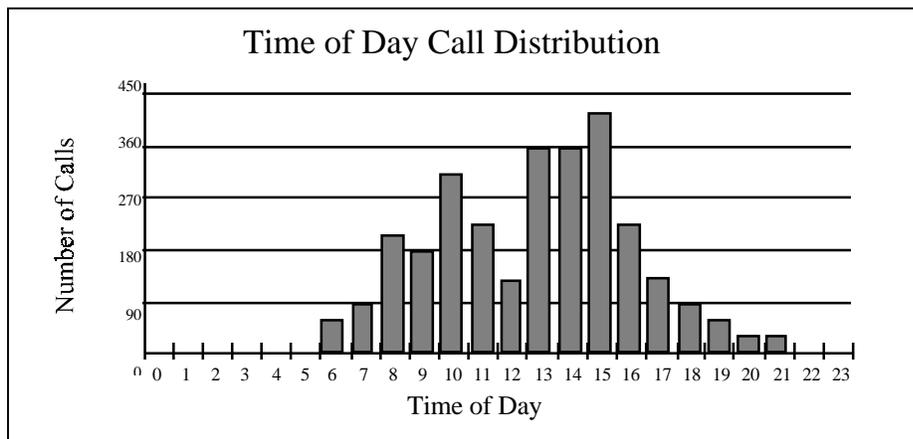
DATE RANGE: Tuesday, September 01, 1994 to Wednesday, September 30, 1994

SELECTION CRITERIA :

INCLUDE OUTGOING CALLS: Yes  
 INCLUDE INCOMING CALLS: No

TIME OF DAY	TOTAL CALLS	DURATION		COST		
		TOTAL HHHH: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
<b>TOTALS:</b>	<b>2973</b>	<b>736:43:34</b>	<b>0:14:52</b>	<b>8,400.18</b>	<b>2.82</b>	<b>0.19</b>

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 Page: 1  
 Time: 6:12:44 PM MOSLEY Corporation

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

LOCATION CODE	LOCATION	TOTAL CALLS	DURATION		COST		
			TOTAL HH: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 Page: 1  
 Time: 6:16:28 PM MOSLEY Corporation

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

LOCATION CODE	LOCATION	TOTAL CALLS	DURATION		COST		
			TOTAL HH: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

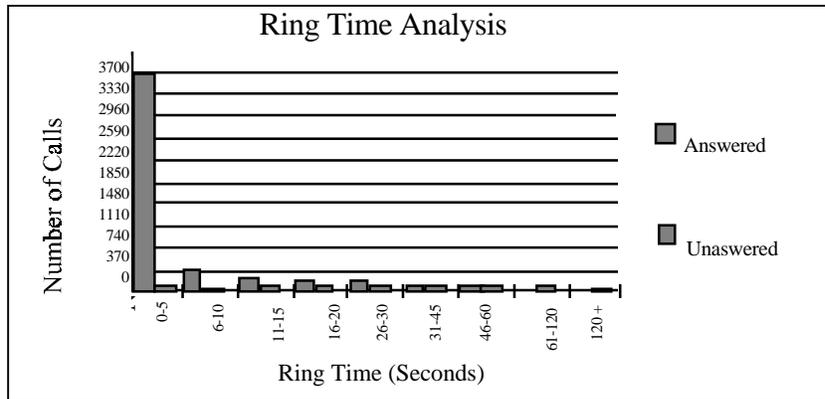
Ring Time Analysis Report

Date: Monday, November 09, 1994 Page: 1  
 Time: 6:17:36 PM 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

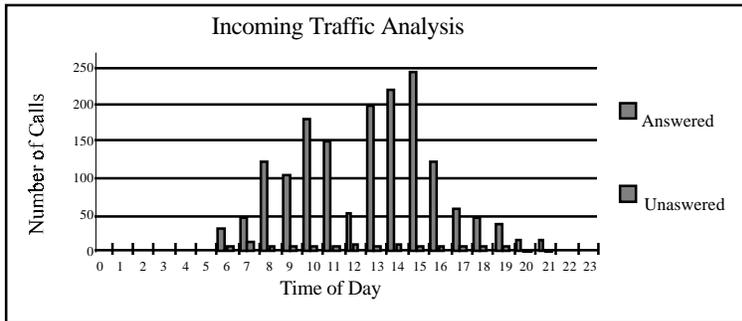
Date: Monday, November 09, 1994 Page: 1  
 Time: 6:20:06 PM MOSLEY Corporation

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

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

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	TOTAL HHHH:MM:SS	PER CALL HH:MM:SS	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	DURATION		COST		
			TOTAL 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	DURATION		GOS		Trunk REQUIRED
				AVERAGE HHHH:MM:SS	PER CALL HH:MM:SS	ACTUAL %	TARGET %	
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

Date: Monday, November 09, 1994 Expensive Calls Report Page: 1  
 Time: 6:41:21 PM 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	09/25/94	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	MOSCOMGmbH	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	09/26/94	13:00	01181355439209	JAPAN	1049	Albert, Steve
25.14	0:25:43	09/25/94	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

Date: Monday, November 09, 1994 Longest Calls Report Page: 1  
 Time: 7:04:45 PM 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

Page: 1

MOSLEY Corporation

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

SELECTION CRITERIA :  
Extension : All

DIALED NUMBER	LOCATION	TOTAL CALLS	DURATION		COST		
			TOTAL HHHH:MM:SS	PER CALL HH:MM:SS	TOTAL (Dollars )	PER CALL (Dollars)	PER MINUTE (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

Page: 1

MOSLEY Corporation

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

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## Specifications

# C

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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

You can use CAS for Windows 2.2 on any processor running Windows 95. The recommended minimum PC configurations are shown below.

Processor	Class/ Speed	RAM (Mb)	Monthly Call Record Volume*	Available Hard Disk (Mb)	
				1 month	min 2 mths
	486 / 33	8	250,000	60	200
	486 / 100	12	500,000	80	250
	Pentium / 90	16	750,000	100	300
	Pentium / 133**	16	1,000,000	140	500
	Pentium / 166	16	over 1,000,000	280	1200
<b>Software</b>	Windows 95 default settings + Backup Disk Tools, <b><i>NO disk compression tools</i></b>				
<b>Devices</b>	Windows 95-compatible bus or PS/2-type mouse, VGA color monitor, parallel printer				
	Windows 95-compatible fax modem (if sending HackerTracker alarms by fax)				
	Control RocketPort 32 bit PCI multi-port board (if more than 2 serial ports are needed)				
	Windows 95-compatible internal tape drive (see <i>Backup and Restore</i> )				
<b>Serial Ports (2 PCI slots required)</b>	Single site: COM1 = Remote Access; COM2 = SMDR input. Systems using the Call Sender and/or HackerTracker FAX/pager modems require a compatible multi-port board				
	Multi-site systems require multi-port boards: COM1 = Remote Access; COM2 = SMDR input; COM3 - COM10 (or higher, if using more than one 8-port board): <ul style="list-style-type: none"> <li>— 1 port per direct SMDR input</li> <li>— 1 port per modem polling 10 sites</li> <li>— 1 port for Callback Receiver modem (optional)</li> <li>— 1 port for HackerTracker FAX/pager modem</li> </ul>				

\*These figures are derived from systems where CAS is the only application installed on the processor. Exceeding the call volumes listed here may diminish CAS's performance.

\*\*System supplied by Lucent Technologies with 1.2 Gb hard disk.

## Serial Port Pinouts

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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:

<b>Baud rate</b>	any — controlled by CAS
<b>DTR</b>	on — controlled by CAS
<b>DCD and DSR</b>	on
<b>“AT” command set</b>	on
<b>Echo commands</b>	off — set by CAS
<b>Result codes</b>	on — set by CAS
<b>Autoanswer</b>	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"> <li>• 103A connecting block</li> <li>• 7400A, cable &amp; power supply</li> <li>• DB25-to-modular adapter</li> <li>• RJ45 modular cable</li> </ul>
* 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"> <li>• DB25-to-modular adapter</li> <li>• RJ45 modular cable</li> </ul>
System 85 R2V4 DEFINITY G2	From: PCC pack TN474B <ul style="list-style-type: none"> <li>• 103A connecting block</li> <li>• D8W-87 cable</li> <li>• ADU w/EIA and aux power kit</li> <li>• DB25-to-modular adapter</li> <li>• RJ45 modular cable</li> </ul>
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"> <li>• DB25-to-modular adapter</li> <li>• RJ45 modular cable</li> </ul>
System 25, MERLIN LEGEND, or Spirit 2448	From: SMDR port <ul style="list-style-type: none"> <li>• RJ45 modular cable</li> </ul>

## Capacities

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

Specifications

<b>Call Types</b>	50 (names $\leq$ 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		
<b>Carrier Services</b>	256 (names $\leq$ 15 characters)			
<b>Rate Methods</b>	1000 definitions from among these choices: <ul style="list-style-type: none"> <li>• Custom (fixed) rates*</li> <li>• User-defined markup of installed fixed rates</li> <li>• User-defined flat cost per call</li> <li>• User-defined charge band</li> </ul>			
* Custom rates for most carriers are readily available, including: <table border="0" style="width: 100%;"> <tr> <td style="width: 50%; vertical-align: top;"> <b>AT&amp;T</b>            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;"> <b>MCI</b>            Basic service            Prism 1            Prism Plus            Vision switched            Vision dedicated            US Sprint®            Basic service            Clarity Custom switched            Clarity Custome select            Advanced WATS 1         </td> </tr> </table>			<b>AT&amp;T</b> 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	<b>MCI</b> Basic service Prism 1 Prism Plus Vision switched Vision dedicated US Sprint® Basic service Clarity Custom switched Clarity Custome select Advanced WATS 1
<b>AT&amp;T</b> 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	<b>MCI</b> Basic service Prism 1 Prism Plus Vision switched Vision dedicated US Sprint® Basic service Clarity Custom switched Clarity Custome select Advanced WATS 1			
<b>Location Table</b>	5000 entries (each entry $\leq$ 10 characters)			
<b>Holidays</b>	100 entries			
<b>Alert Numbers</b>	250 entries			
<b>Scheduled Reports</b>	1000 individual reports; 25 groups			
<b>Dialed Digit Processing Table</b>	100 dialed number patterns			

---

## PSU Installation

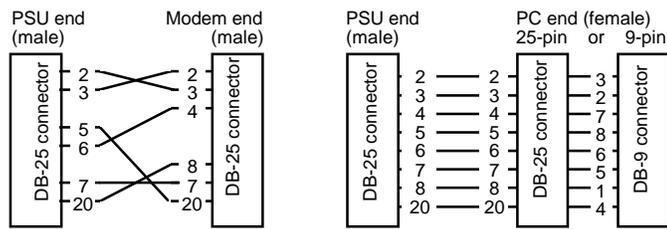
# D

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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**

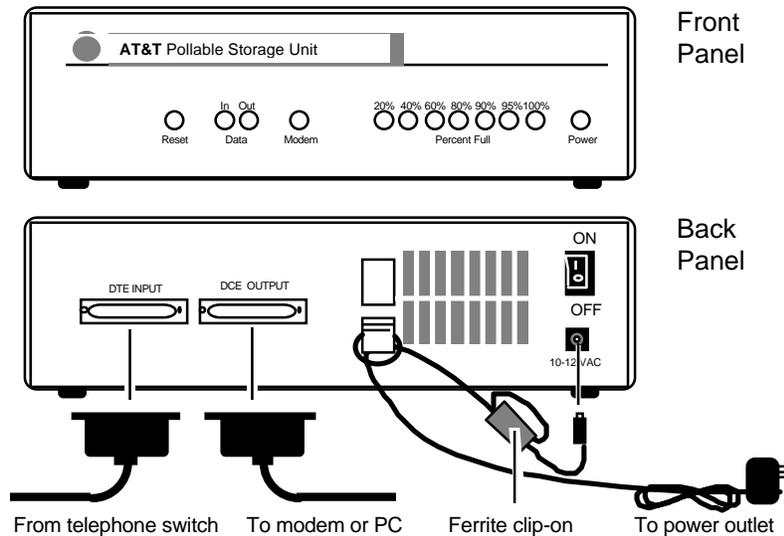
- Shielded\* switch-to-PSU cable, terminated at the PSU end in a 25-pin male connector for an RS232 DTE interface (pin: #2 TXD, #3 RXD, #5 CTS, #7 GND, and #20 DTR)

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

## Connecting the Unit

Refer to the illustrations below as you install the unit.

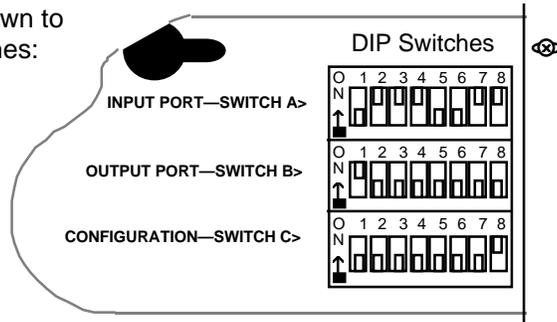


⇒ The ferrite clip-on is mounted on the power cord next to the input jack ONLY on units to be installed outside the U.S.A. and which must comply with CISPR-22 Emissions Requirements.

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:

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

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

<b>Baud Rate*</b> (B-1, B-2, B-3)	OFF-OFF-OFF = 150 OFF-OFF-ON = 300 OFF-ON-OFF = 600 OFF-ON-ON = 1200	ON-OFF-OFF = 2400 ON-OFF-ON = 4800 ON-ON-OFF = 9600 ON-ON-ON = 19200
<b>Direct/Modem Connection (B-8)</b>	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:

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

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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:

<b>Option</b>	<b>Remote System</b>	<b>Local System</b>
<b>Phone number</b>	<i>PSU modem's</i>	<i>Callback modem's (*)</i>
<b>User ID</b>	<b>UserId</b>	<b>CallHome (*)</b>
<b>Password</b>	<b>UserPswd</b>	<b>HomePswd (*)</b>
<b>UCT Difference</b>	<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.

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## G3-MA Data Transfer Option

# E

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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.

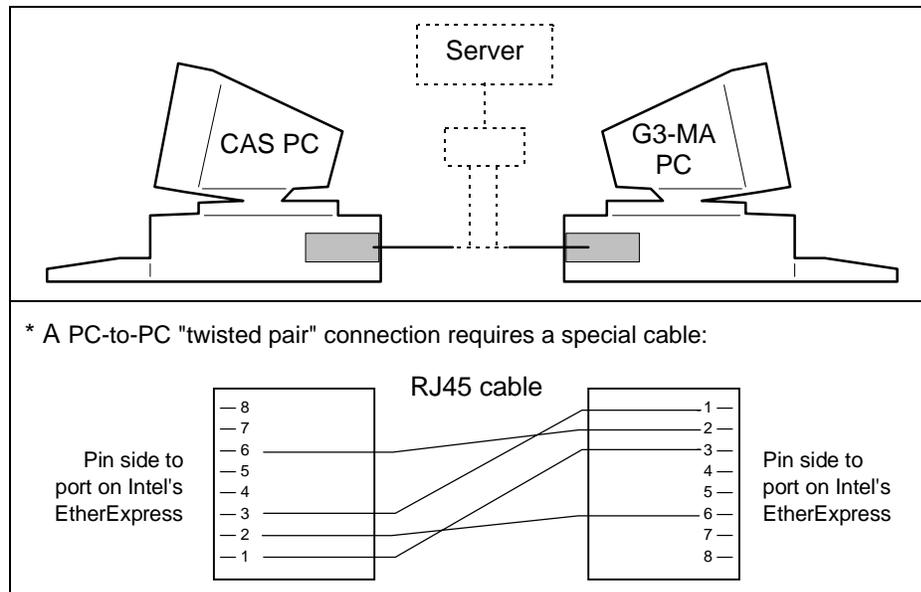
- Existing records are left untouched.
- New records and/or associations are added or updated:
  - New facilities are associated with default Carrier Services.
  - Organization entries without association to higher levels, are associated to the default parent organization.
- Records omitted in the download, 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 95 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 95 and Novell Netware.

## Windows 95 Setup

---

If you are using CAS for Windows with a DEFINITY® Enterprise switch, you may use Windows 95 network sharing tools to set up the G3-MA Data Transfer Option.

For example, at the G3-MA PC, after you set up the G3-MA data transfer directory ("**AUTODIR**" under **C:\G3-MA**), proceed as follows:

1. Use the **Explorer** to find and select **AUTODIR**.
2. Open its **Properties** under the Explorer's **File** menu.
3. Click on the **Sharing** tab and select **Share As, Full** access type, and no passwords. (see sample) →



## 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:\AUTODIR**"
- 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:\AUTODIR**" — appears in the **Windows Explorer** of both the CAS and G3-MA PCs.

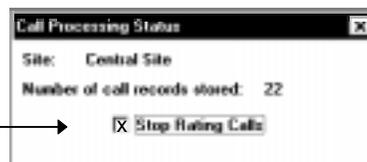
## Synchronize Common Fields

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.

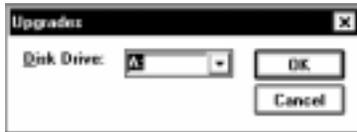
**⚠** In new CAS installations do NOT enable call rating until the data transfer setup is complete. Keep the check on this box.



## Installation and Setup

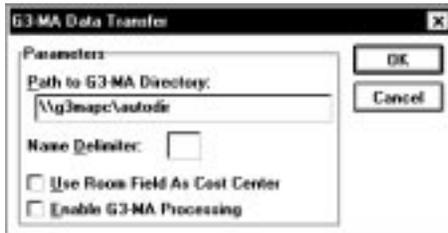
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1. From the CAS **Utility** menu, select **Upgrades**.



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\AUTODIR**" from our Windows 95 example; if we had used the Novell Network example, it would be "**F:\AUTODIR**").

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:

Facilities - Central Site

Facility: TIE photo

Outgoing Carrier Service: ATT TIE svc:716381

Incoming Carrier Service: Default Incoming

Target Grade of Service: 0.0

Number of Lines: 0

Delete at end of Accounting Period

- Organization table. For proper reporting of newly-downloaded extensions and/or cost centers, associate them to the appropriate parent organization. For example:

Cost Center

Cost Center: 500

Call Rating

Markup: 0.00 %

Surcharge: \$ 0.00

Minimum Cost: \$ 0.00

Department: Marketing

Delete at End of Accounting Period

**⚠** 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.

Call Processing Status

Site: Central Site

Number of call records stored: 22

Stop Rating Calls

---

## Remote Access — Carbon Copy Host

# F

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This appendix will help you install the Remote Access option for CAS for Windows. You will need:

- The *Carbon Copy Host V3* software (4 diskettes)
- A PC serial port (typically, "Com1") dedicated to this function
- An AT-compatible modem (minimum, 9600 bps)

⇒ This procedure shuts down Windows 95 automatically. If you have installed applications that process phone calls in real time, install *Carbon Copy Host* at a time of low telephone activity.

1. Connect the modem to the selected PC serial port, plug the modem's phone cord into a telephone outlet, and turn the modem ON. (You may use the modem's default settings.)
2. Insert the *Carbon Copy Setup* diskette in a disk drive.
3. Select **Run** from the **Start** menu and 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. Accept the default installation options (**Carbon Copy Host**).

5. Screen instructions will prompt you to install *Disk #2* and *Disk #3* (*Disk #4* is not used with the installed options).

 As configuration checks are carried out, you may be prompted to replace existing drivers and/or older Carbon Copy files. Choose **Yes** to replace them.

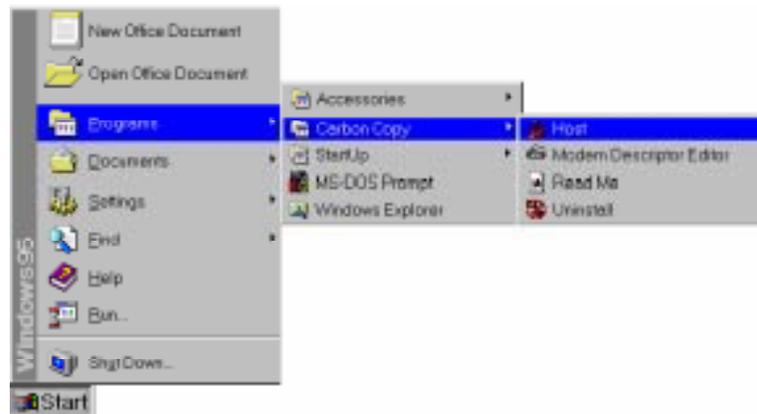
6. The Modem Wizard dialog box appears.
  - a. To have it detect and configure your modem, select **Yes**, then **OK**. Follow instructions when other verification dialog boxes appear, then proceed to step 7.
  - b. To configure your modem manually, select **No** and proceed as follows:
    - i. When the Communications dialog box appears, select **Serial Port** then the **Setup** button.
    - ii. When the Serial Port Setup dialog box appears, select the Port, Modem, and Speed used. If your modem is not listed, select **AT Compatible**.



- iii. Select **Test** to check the connection. (If it fails, verify port settings and repeat.)
      - iv. Select **OK** to continue.

7. Select **No** if prompted to convert password tables or modify the `autoexec.bat` file. Select **Yes** to save suggested changes in an `autoexec.ccw` file.
8. When the Setup program concludes, it informs you that Windows will restart. Select **OK** to acknowledge the message.

When Windows 95 re-starts, you will see the newly-created Carbon Copy Host program:



This completes the installation.

## Quick Reference Tips

### Enable Remote Access

Open the **Carbon Copy** program and select **Host**. The Carbon Copy Host main menu appears:



Select **Wait for Call**.

The **Host - Waiting for Call** Task Bar button appears at the bottom of your screen. This indicates that your PC is ready for access.

### Disable Remote Access

Click on the **Host - Waiting for Call** Task Bar button at the bottom of your screen. When the Carbon Copy Host main menu appears, exit from this program.

Subsequent callers will not be able to connect with your PC until you re-start Carbon Copy Host and select **Wait for Call** from its main menu.

### Change Options

Access the Carbon Copy main menu by re-starting the Carbon Copy Host program.

Select **Communications** under the **Options** menu.

When the Communications dialog box appears, select **Serial Port** then the **Setup** button and follow instructions in steps 6b-ii through 6b-iv.

---

## Getting Assistance for Problems

# G

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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.

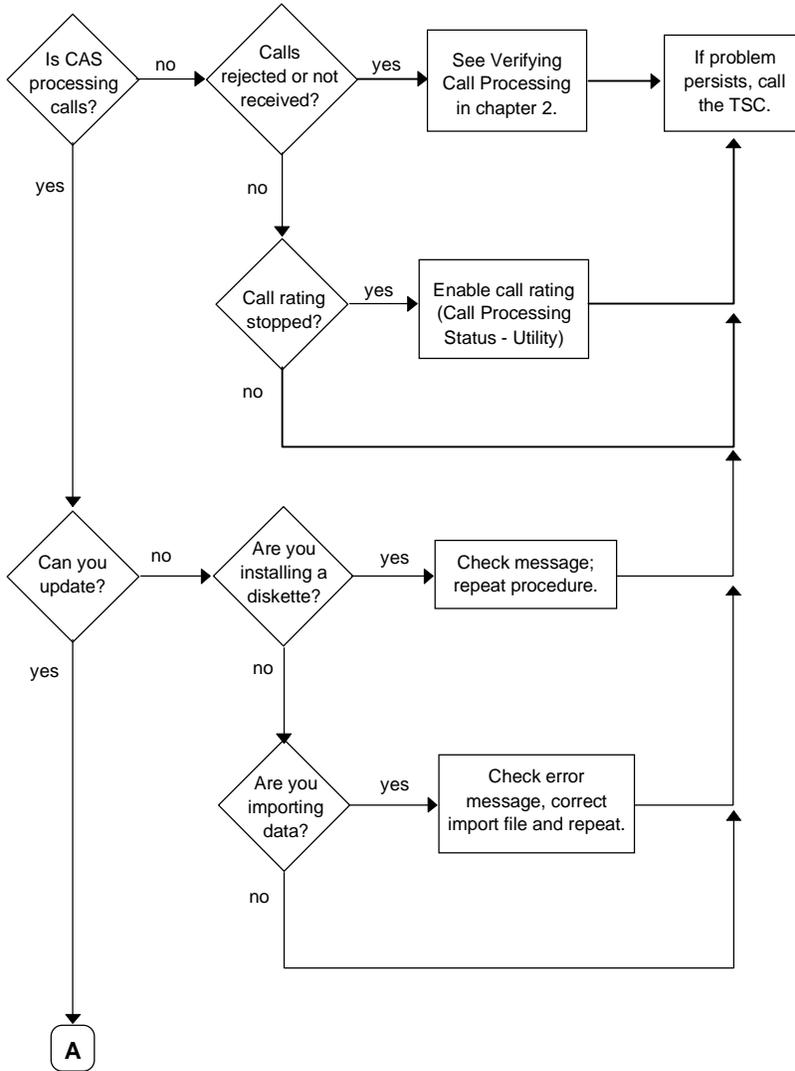
If you cannot correct the problem, call the Technical Support Center (TSC) at 1-800-422-6622. The TSC will assist you by performing remote diagnostics.

When you call, please be at your computer, if possible. Be prepared to provide the following information:

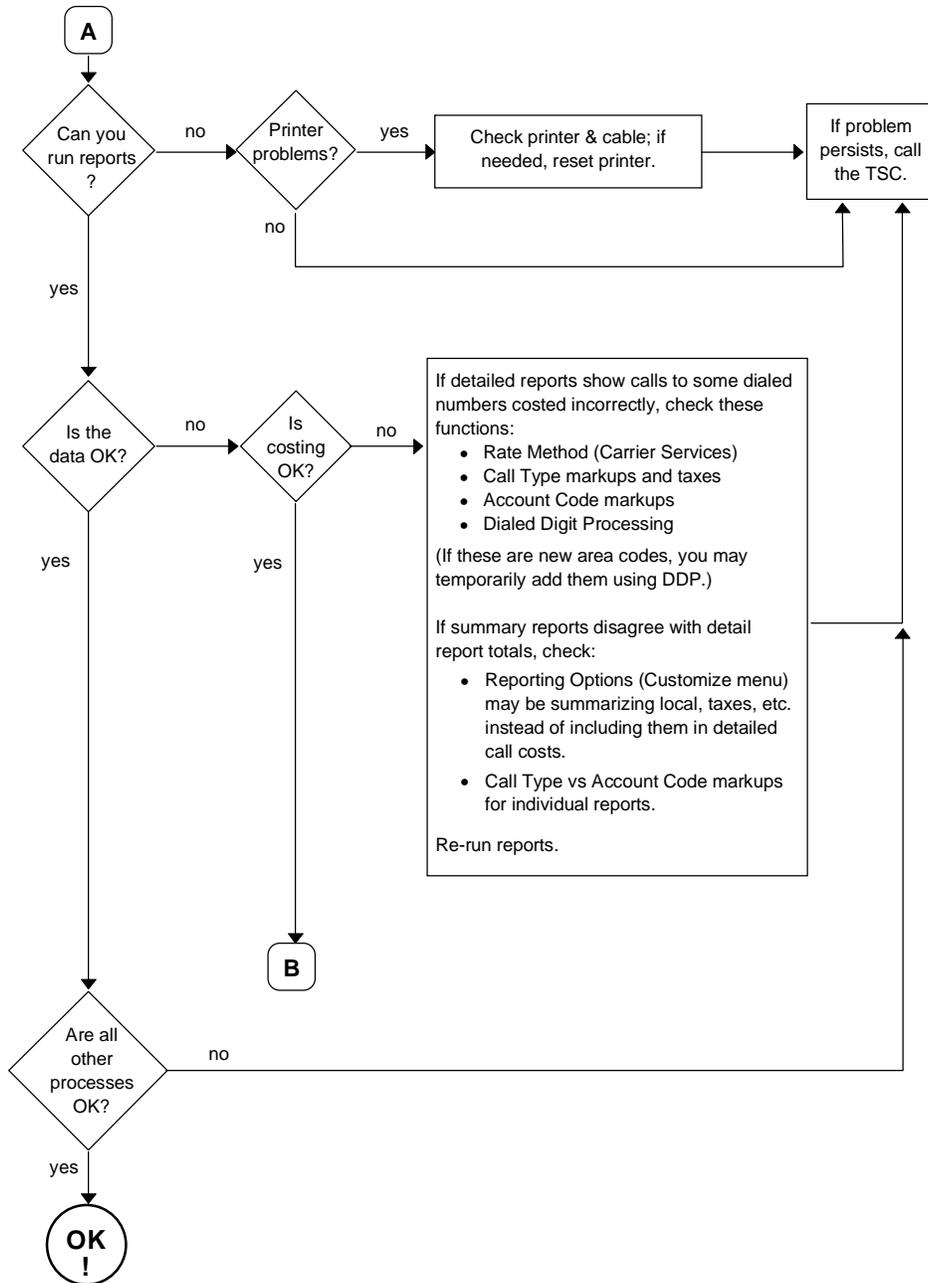
- your IL number or main telephone number
- detailed description of the problem, including any messages given and your actions and keystrokes leading up to the message
- any relevant steps you have taken
- telephone number used by the remote access (Carbon Copy) modem attached to the PC where CAS for Windows resides

## Basic Troubleshooting

The flowchart below displays the path to take when a problem manifests itself.

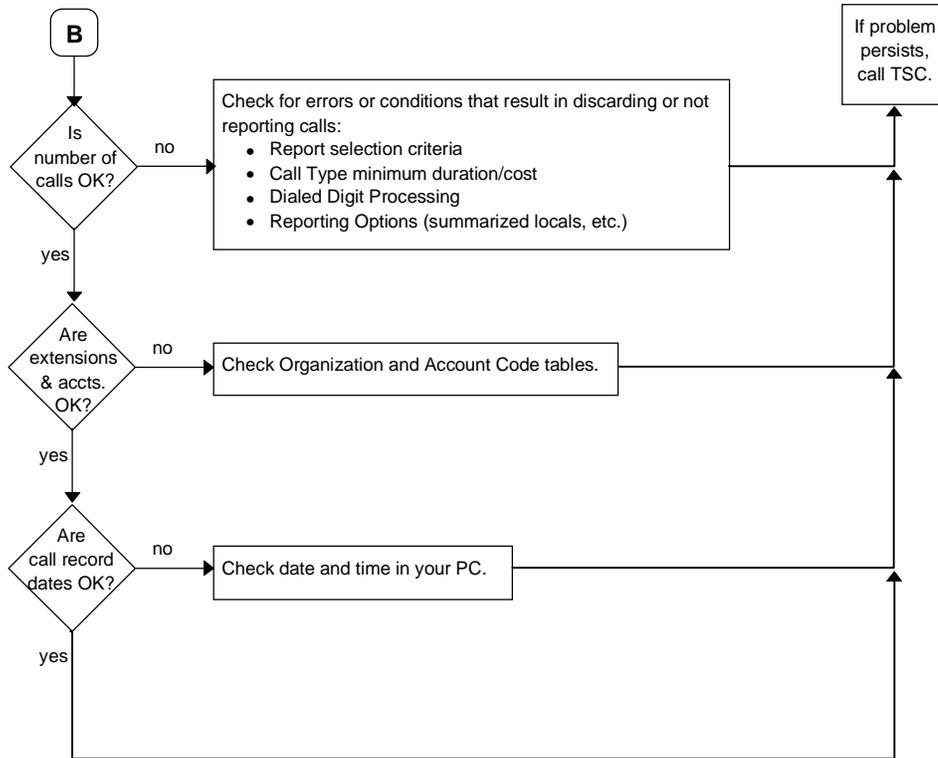


## Getting Assistance for Problems



## Getting Assistance for Problems

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## Glossary

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### 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).

#### **Lucent Technologies 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.

## Glossary

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### **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 101xxxx dialed code.

## Glossary

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### **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 outgoing 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.

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## 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 dialing 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 information (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.

## Glossary

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### **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.

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