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# **Optivity Telephone Manager Release 2.1: Telemanagement Applications**

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## Preface

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The Optivity\* Telephony Manager (OTM) telemanagement applications provide OTM users with telecom network management services, including telecom billing and management, web-based reporting, consolidated reporting, and call monitoring.

### Before you begin

This user guide is intended for telecom network managers using PC-based software. Prior knowledge of the OTM suite is not required; however, since these applications are installed as part of OTM, users should become familiar with OTM before proceeding. This guide assumes that you have the following background:

- User-level knowledge of the Windows\* 98, Windows NT\* V4.0, and Windows 2000 operating systems

## Text conventions

This guide uses the following text conventions:

<b>bold</b> <b>Courier text</b>	Indicates command names and options and text that you need to enter. Example: Use the <b>dinfo</b> command. Example: Enter <b>show ip {alerts routes}</b> .
brackets ( [ ] )	Indicate optional elements in syntax descriptions. Do not type the brackets when entering the command. Example: If the command syntax is <code>show ip interfaces [-alerts]</code> , you can enter either <code>show ip interfaces</code> or <code>show ip interfaces -alerts</code> .
<i>italic text</i>	Indicates new terms, book titles, folder and file names, and variables in command syntax descriptions. Where a variable is two or more words, the words are connected by an underscore. Example: If the command syntax is <code>show at &lt;valid_route&gt;</code> , <i>valid_route</i> is one variable and you substitute one value for it.
plain Courier text	Indicates command syntax and system output (for example, prompts and system messages). Example: <code>Set Trap Monitor Filters</code>
separator ( > )	Shows menu paths. Example: <code>Protocols &gt; IP</code> identifies the IP option on the Protocols menu.
vertical line (   )	Separates choices for command keywords and arguments. Enter only one of the choices. Do not type the vertical line when entering the command. Example: If the command syntax is <code>show ip {alerts routes}</code> , you enter either <code>show ip alerts</code> or <code>show ip routes</code> , but not both.



## Acronyms

This guide uses the following acronyms:

IP	Internet Protocol
ISDN	Integrated Services Digital Network
SDI	Serial Data Interface

## Related publications

For more information about using Optivity Telephony Manager and associated applications, refer to the following Nortel Networks technical (NTP) publications:

- *Installing and Configuring Optivity Telephony Manager* (553-3001-230)  
Provides installation and configuration procedures for Optivity Telephony Manager.
- *Using Optivity Telephony Manager* (553-3001-330)  
Provides information on using the applications and features available with Optivity Telephony Manager.

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# Chapter 1

## Overview of telemanagement applications

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Optivity Telephony Manager's telemanagement applications offer you a wide range of telecom and network management services, including telecom billing and management, web-based reporting, consolidated reporting, and call monitoring. Each application contains unique functions that allow you to collect, cost, track, and report on your telecom data. Together, they provide you with a complete call management and billing solution for your telecom network.

The following is a list of the telemanagement applications available from the Optivity Telephony Manager (OTM):

- Telecom Billing System
- Consolidated Call Cost Reports
- Telecom Billing System Web Reporting
- General Cost Allocation System
- Consolidated Reporting System
- Call Tracking

Each application is installed separately onto OTM and runs independently of the other applications while still sharing common data, such as employee and configuration information. As well, some applications use data from the other applications during their operation. For example, Telecom Billing System Web Reporting reports on data from the Telecom Billing System; and the Consolidated Reporting System generates reports for the Telecom Billing System and the General Cost Allocation System applications.

Based on your OTM license, you may have some or all of these applications included with your OTM system. Contact your vendor for information on ordering additional telemanagement applications for OTM.

## Description of telemanagement applications

The following is a brief description of the telemanagement applications available for OTM. Refer to the remaining chapters in this user guide for more information on these applications.

### Telecom Billing System

The Telecom Billing System is OTM's advanced cost allocation and billing application. It collects call records from your Meridian 1 or Succession CSE 1000 system. It uses multiple costing models over multi-level organizational hierarchies to allocate costs to the appropriate users, and generate detail and summary reports outlining these costs. These reports detail the actual usage of your telephone system, thus allowing you to assess the effectiveness of your telephone services. As well, its network utilization and system administration reports help you to manage your telecom network more effectively.

### Consolidated Call Cost Reports

Consolidated Call Cost Reports is OTM's system integration and reporting application. Consolidated Call Cost Reports combines data from the Corporate Directories in each of your OTM systems and generates billing reports based on this consolidated data. Specifically used for the OTM Telecom Billing System, the Consolidated Call Cost Reports application reports on your calling activity across multiple systems on a single OTM server.

### Telecom Billing System Web Reporting

Telecom Billing System Web Reporting is OTM's Web-based reporting application for your telecom network. With Telecom Billing System Web Reporting, you can generate reports containing data from the Telecom Billing System through your intranet or Internet server. These reports provide you with valuable information about your organization's calling activities. Its intuitive Web-based interface allows you to view this information from any PC with intranet or Internet access to your server. Since these reports are based on data from the Telecom Billing System, you must have previously installed and configured the Telecom Billing System application as part of OTM.

## **General Cost Allocation System**

The General Cost Allocation System is OTM's generic billing application. It assigns usage charges to appropriate individuals or departments within an organization. It can import bill information, identify and log departmental or user-specific spending characteristics, and generate meaningful reports summarizing these costs. With the General Cost Allocation System, you can enter billing information, either through an imported file or manually from the printed vendor statement. The data can then be used to allocate charges, such as those obtained from cellular calls or pagers, to relevant individuals or departments within your organization. The General Cost Allocation System generates detail and summary reports, including the billed products or services, associated costs, and departments or persons to be billed.

## **Consolidated Reporting System**

The Consolidated Reporting System is OTM's telemanagement reporting application. It generates reports for both the Telecom Billing System and the General Cost Allocation System from a single interface. By defining filtering and sorting criteria, you can generate custom reports that detail organizational and employee spending characteristics for these applications. Each report is broken down into subreports, which detail usage costs for the Telecom Billing System and the General Cost Allocation System.

## **Call Tracking**

Call Tracking is OTM's call monitor and alarm application. Its graphs indicate trends and provide displays of unusual calls, enabling you to adjust your equipment and services to maximize your resources. Call Tracking monitors and displays information output from the Meridian 1 or Succession CSE 1000 system. It accumulates this data and displays the information in different formats in its graphical displays. The Call Tracking interface consists of several graphical displays, which list your monitored call data in different formats.

Call Tracking also provides alarm generating functions, which can be set up to warn you of unusual calling patterns. This is useful in the quick detection of unauthorized telephone calls that occur with toll fraud. You can define multiple alarm templates to detect different calling patterns, including calls exceeding a certain duration, calls made at unusual times, and toll calls. Call Tracking can also be configured to output different types of alarms, including visible and audible alarms on your PC, remote paging, and network reported alarms.

## Purpose of this guide

This user guide is designed to provide you with basic information on setting up and using the Optivity Telephony Manager (OTM) telemanagement applications. Where applicable, it includes any additional system requirements or installation procedures for specific applications. Before using these applications, you must install and configure them as part of the Optivity Telephony Manager (OTM) system. Refer to *Installing and Configuring Optivity Telephony Manager* (553-3001-230) for complete details on installing these applications and assigning them to a site and a system.

## Online and Web-based Help

This user guide only briefly discusses the functions and commands of the OTM telemanagement applications. It provides you with a basic understanding of each of these applications and helps you to start using the applications. For detailed information on each function and command for these applications, refer to the online Help function included with them.

You can use the Help functions to obtain help for topics either directly or via their indexes and word-search functions. While running these applications, you can obtain context-sensitive Help on any topic you require by simply clicking Help from a specific window or dialog box. This accesses the Windows Help function and displays context-sensitive Help information on the current topic.

To obtain help for a topic in Telecom Billing System Web Reporting, click Help from the currently selected web page. This accesses the Help function and displays context-sensitive Help information on the current topic.



**Note:** If you click Help from a web page other than that belonging to Telecom Billing System Web Reporting (for example, the OTM Administrator Login page), then the other web application's Help appears.

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## Chapter 2

# Telecom Billing System

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This chapter provides basic information on setting up and running the Telecom Billing System (TBS). It also includes example procedures and reference information to assist you in setting up the Telecom Billing System.

## Introduction

As the Optivity Telephony Manager's advanced costing and billing application, the Telecom Billing System helps monitor and control telecom costs for your telephone system. It collects call records from your Meridian 1 or Succession CSE 1000 system, allocates costs to the appropriate users, and generates detail and summary reports outlining these costs. The reports provide details on the actual usage of your telephone system, and allow you to assess the effectiveness of your telephone services.

The Telecom Billing System collects data from your Meridian 1 or Succession CSE 1000 system through a buffer device, a direct connection, or through a network connection. It uses defined communications and collection parameters to communicate with the Meridian 1 or Succession CSE 1000 system and collect the necessary telephone usage data.

The Telecom Billing System supports the Meridian 1 and Succession CSE 1000 lines of telephony equipment. The Meridian 1 or Succession CSE 1000 system must be equipped with a suitable Serial Data Interface (SDI) port for proper connection to the PC or CDR buffer unit. This enables the Telecom Billing System to communicate with, and collect data from, the Meridian 1 or Succession CSE 1000 system.

Once you collect the call records either directly from the Meridian 1 or Succession CSE 1000 system or from the CDR buffer unit, the records must be costed, collated, sorted, and printed on a report. This call detail information helps you achieve the following goals:

- The system provides details on the actual telephone usage. Management can isolate individual users and departments who are not properly utilizing the telephone system through misuse or neglect.
- It provides usage details for cost allocation within the organization or for client billing purposes.
- Management can use the information to determine which telephone company services are not being utilized. This analysis allows you to adjust your telephone services to suit your needs, resulting in savings to your organization.

## CDR data collection options

The Telecom Billing System can collect CDR data from the Meridian 1 or Succession CSE 1000 system in several ways:

- It can collect CDR data directly from the Meridian 1 or Succession CSE 1000 system to its databases.
- It can collect CDR data through the OTM Data Buffering and Access (DBA) application (network connection).
- It can collect CDR data through a buffer unit.

The DBA application and the optional buffer units can be used to continuously collect CDR data from the Meridian 1 or Succession CSE 1000 system and store the data for later collection and processing by the Telecom Billing System. CDR data is saved to system-specific files so that multiple DBAs or buffer units (multiple Meridian 1 or Succession CSE 1000 systems) can be supported concurrently by the Telecom Billing System. For a complete list of script files used for communications and data collection, refer to “Appendix B: Script File Summary” in *Using Optivity Telephony Manager* (553-3001-330). For more information about the DBA application, refer to the “Data Buffering and Access” section in the “Common Services” chapter of *Using Optivity Telephony Manager*.

Where required, buffer units can connect to each Meridian 1 or Succession CSE 1000 system via its RS-232 port, and connect to the PC using a supported modem. It is recommended that the buffer unit contain battery backup power in the event of a power failure. Refer to the buffer unit's reference documentation for more information.



**Note:** It is recommended that you use either the DBA application or a buffer unit for CDR data collection. If you use one of these devices, the CDR data is collected and securely stored for later retrieval by the Telecom Billing System. Although the DBA or buffer units are not required to properly use the Telecom Billing System, these options are recommended to securely store the CDR data. If you choose to collect the CDR data directly to the PC without the use of the DBA or buffer unit, then you may lose data if the PC is accidentally rebooted or shut down.

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The Telecom Billing System allows you to collect data from multiple buffer units into one system. This way, you can integrate data from multiple sites into a single system.

## Getting started

This section describes how to access the Telecom Billing System and set it up for initial use. Use the following instructions and examples to configure the Telecom Billing System to collect and process the call detail recording (CDR) records that are output from your Meridian 1 or Succession CSE 1000 system.

This section includes:

- An overview of a call record and how the Telecom Billing System applies costs to it
- The options that you must activate in the Meridian 1 or Succession CSE 1000 system to allow for CDR data collection
- How to connect and set up a CDR buffer unit, specifically the MDR-2000 Intelligent Storage Device (ISD)
- How to run the Telecom Billing System for a system
- How to set up and start data collection for the Telecom Billing System

- How to set up the Telecom Billing System Telephone Configuration Database (including entering node information, rate tables, and location books)

The following instructions and examples are intended to assist you in setting up the Telecom Billing System for your own configuration. Since each telephone system is configured differently and each OTM installation is different, these examples cannot predict every scenario. You should, therefore, use these examples to teach yourself how to set up your hardware, and configure the Telecom Billing System software to work with this hardware. These examples are designed to account for the majority of cases and provide you with valuable assistance in getting started.

Before using the Telecom Billing System, you must install and configure it as part of the Optivity Telephony Manager (OTM) system. Refer to *Installing and Configuring Optivity Telephony Manager* (553-3001-230) for complete details on installing the Telecom Billing System as part of OTM and assigning it to a site and a system.

## Anatomy of a call record

Before you enter your system configuration and update your Telecom Billing System databases, you should first understand the nature of the data that is output from the Meridian 1 or Succession CSE 1000 system. This will help you to construct your system configuration databases to match your system. This section describes the components of a call record, as well as how it is processed and costed by the Telecom Billing System.

CDR call records, which are output from the Meridian 1 or Succession CSE 1000 system and are collected by the Telecom Billing System, contain the key information to producing costing reports. The following is a summary of what happens to a call record:

### **Meridian 1 and Succession CSE 1000 systems outputs call records**

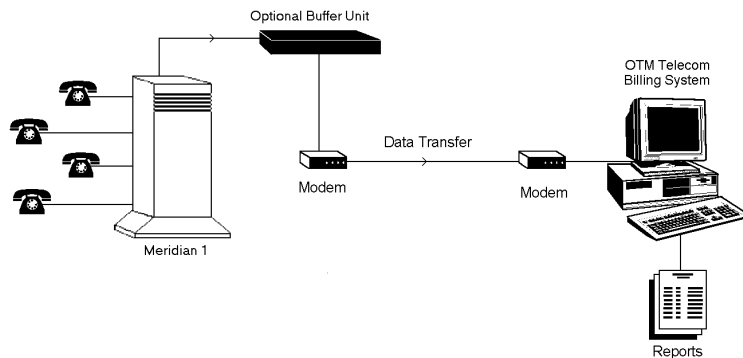
When a user places or receives a telephone call, the Meridian 1 or Succession CSE 1000 system records its information as a CDR record (call record). This record contains such information as the call's start date and time, its duration, the trunk it went out on, its associated line, and the digits dialed. This data is sent to the Meridian 1 or Succession CSE 1000 system SDI port. From here, an

application or hardware device must record it so it can be processed. This can be a buffer unit that is connected to the Meridian 1 or Succession CSE 1000 system's SDI port (recommended), or even a PC running the Telecom Billing System for a direct connection.

As call records are output from the Meridian 1 or Succession CSE 1000 system, the Telecom Billing System collects this data either through a buffer unit, such as the MDR-2000 ISD, or directly to the PC. Buffer units are recommended for collecting CDR data since they can continuously collect and safely store these call records. A buffer unit is portable enough to be located close to the Meridian 1 or Succession CSE 1000 system. Some may also have security features to allow for safe data storage (for example, battery backups). Whichever way you decide to collect the call records, remember that unless something is collecting the call records output from the Meridian 1 or Succession CSE 1000 system, they will be lost.

The following schematic displays the movement of a call record from the Meridian 1 or Succession CSE 1000 system through a buffer unit to the Telecom Billing System software program on a PC. Notice that modems can be used to communicate with the Meridian 1 or Succession CSE 1000 system and buffer units from distant locations:

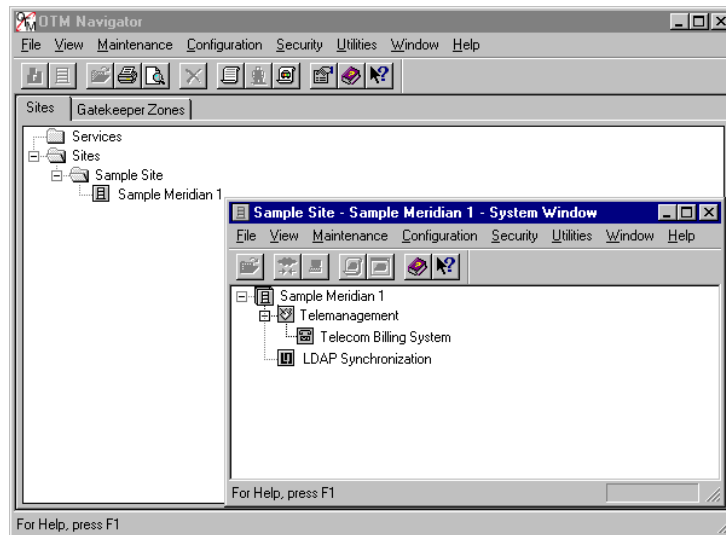
**Figure 1** System block diagram



The example in the above schematic represents a single “system.” This system usually represents a Meridian 1 or Succession CSE 1000 system or a physical location in the Telecom Billing System software, and contains the actual database files for it. Before attempting to use the Telecom Billing System, you must add it as an application to the appropriate system.

The following is an example of how the sample system is set up.

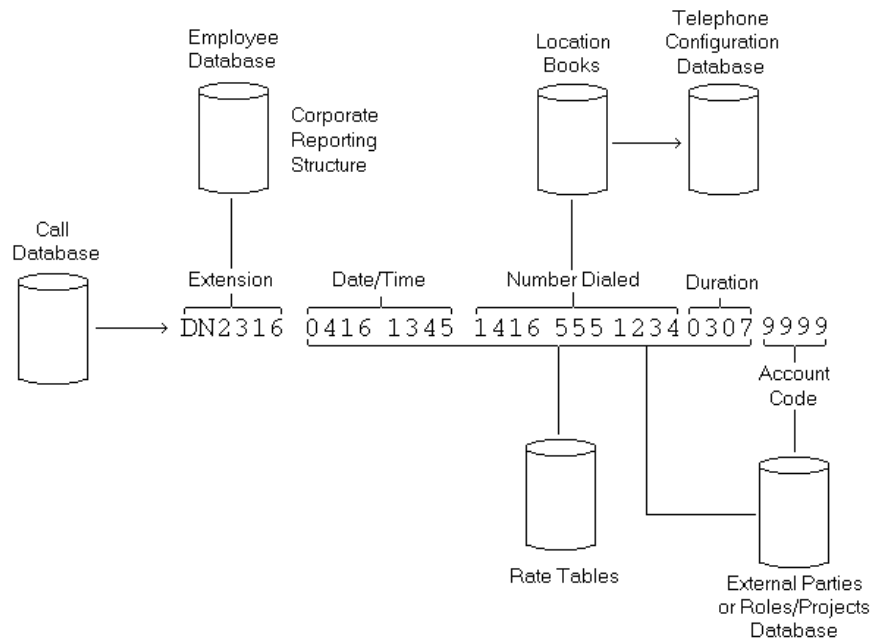
**Figure 2** Sample system setup



## The Telecom Billing System collects call records

The Telecom Billing System collects call records from your Meridian 1 or Succession CSE 1000 system through the buffer unit, and formats and appends them to the end of the Call Database. The Call Database is an indexed collection of call records that reflects the calling activity of the Meridian 1 or Succession CSE 1000 system.

The following is a breakdown of the information found in each call record. Notice how the Telecom Billing System databases use each component of the call record:

**Figure 3** Sample call record allocation

## The Telecom Billing System costs call records

Once the Telecom Billing System collects the call records, it runs them through a series of calculations to apply costs to them. It then stores these costed call records in the Call Database. Each process uses the parameters stored in the Telephone Configuration Database (you will see how to configure these later).

The following is a summary of how the call records are processed:

1. The Call Digit Translation table of the Telephone Configuration Database translates the digits dialed to remove or edit any access codes.
2. The Telecom Billing System looks up the trunk on which the call went out to see which service definition to check. It looks this up in the Telephone Configuration Database's Service Definition table.
3. The Telecom Billing System applies any minimum call duration and network connect time adjustment values to the call.

4. The Telecom Billing System identifies the Carrier Pricing Template assigned to the trunk. This indicates the type of call it is, how the number should be formatted on the report, and which rate structure should be used to cost it.
5. The Telecom Billing System applies any fixed costs to the call.

This completes the overview of how the Telecom Billing System processes a call record.

## **Setting up the Telecom Billing System: Example scenario**

The example setup is based on the following scenario:

- The Acme Company has its head office located in Dallas, Texas. The telephone number for its head office is (214) 555-1111.
- The telephone system requires that users enter the access code “9” before making any outgoing calls.
- There are five trunks on the Meridian 1. These are configured as trunks 1 to 5.
- The Meridian 1 located in the switch room of the Acme Company head office building requires an MDR-2000 ISD to collect CDR data. A modem is attached to it to allow for communications between it and a PC in another room. It has a dedicated extension number of 222.
- The PC on which the Telecom Billing System is installed is located in another room of the same building. A modem is attached to this PC's COM1 port and is used to connect to the MDR-2000 ISD.

## **Setting up the Telecom Billing System: Summary**

The following is a summary of the steps required to set up and configure the Telecom Billing System to process call records. You only need to perform these steps when you first install and use the Telecom Billing System or if your configuration or hardware changes:

1. Ensure that the Meridian 1 or Succession CSE 1000 system is set up to properly output CDR data.
2. Install and set up the buffer unit.



3. Install any rate tables purchased for your dialing plan.
4. Run the Telecom Billing System so it can be configured.
5. Set up and test the data collection process before running it in a real-time situation.
6. Obtain the List Trunk and Member (LTM) values from the Meridian 1.
7. Set up the telephone configuration.
8. Test the telephone configuration.

For more details on each of the Telecom Billing System functions and features described in the following sections, refer to the online Help included with the Telecom Billing System. For more details on the hardware components included with the OTM Telecom Billing System (for example, buffer units, modems), refer to their associated documentation.

## **Step 1: Ensure that Meridian 1 or Succession CSE 1000 system is set up properly**

For the Telecom Billing System to collect and process CDR data, the Meridian 1 or Succession CSE 1000 system must output the data in the proper format. You must, therefore, enable the required features and options in the Meridian 1 or Succession CSE 1000 system overlays. This section describes the options that are required for the Telecom Billing System to process the CDR data.



**Note:** This document is not intended to describe all options related to CDR data. For complete details on the available CDR options and information on configuring CDR, see *Call Detail Recording, Description and Formats* (553-2631-100) in the Meridian 1 documentation library.

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### **Select CDR output format**

In overlay 17, select either NEW or OLD format CDR output (FCDR=NEW). The Telecom Billing System contains script files for supported buffer units, including the MDR-2000 ISD. As well, it can be configured to support both NEW and OLD CDR formats.

## **Auxiliary Identification output in CDR record**

In overlay 15, configure the Auxiliary Identification to be output in CDR (AXID=Yes). The AXID field is not captured by the Telecom Billing System, but is required to ensure that data fields output in the CDR record appear in the expected positions.

## **Configure routes for CDR output**

In overlay 16, configure the routes that output CDR data (CDR=Yes), and determine the type of CDR data to output. For example, you may want to record all incoming calls and only outgoing toll calls.

Ensure that the SDI port for your system is configured to match the settings on the buffer unit. If you plan to collect data at a higher baud rate, you may need to change both the SDI port and the buffer unit settings.

The default settings for the MDR-2000 ISD are:

- Baud = 1200
- Data Bits = 8
- Parity = None
- Stop Bits = 1

If you plan to use the default values for the MDR-2000 ISD, you must use the same values for the SDI port.

## **Step 2: Install and set up buffer unit**

The Telecom Billing System collects CDR data from the Meridian 1 or Succession CSE 1000 system either directly or through one of several types of buffer units. Based on your configuration, you may need to collect the CDR data from a buffer unit in a specific format and share it between different applications.

For this setup, assume that the Telecom Billing System is collecting CDR data from the MDR-2000 ISD. This section describes how to connect the MDR-2000 ISD to the Meridian 1 or Succession CSE 1000 system and the PC via a modem connection. This provides you with an example by which you can learn how to set up the other OTM-supported buffer units. Since other buffer units have different connection and communications requirements, you should refer to their documentation for more details on setting them up.

## **Security precautions for MDR-2000 ISD**

The MDR-2000 ISD is a precision electronic product. Remember to review all of the documentation included with the MDR-2000 ISD before attempting to install and use it. Failure to observe the precautions and guidelines outlined in the documentation may lead to product failure, damage, and invalidation of all warranties.

Before handling the MDR-2000 ISD, take all proper electrostatic discharge (ESD) precautions, including personnel and equipment grounding:

- Do not rest the MDR-2000 ISD on the power cord. A damaged power cord can cause fires or electrical shocks.
- Do not use the MDR-2000 ISD in damp, dusty, or dirty places.
- Store spare components in proper antistatic material.
- Make sure equipment is turned off before handling or changing components.



**Warning:** ESD damage is not always immediate and can result in failures after months of operation.

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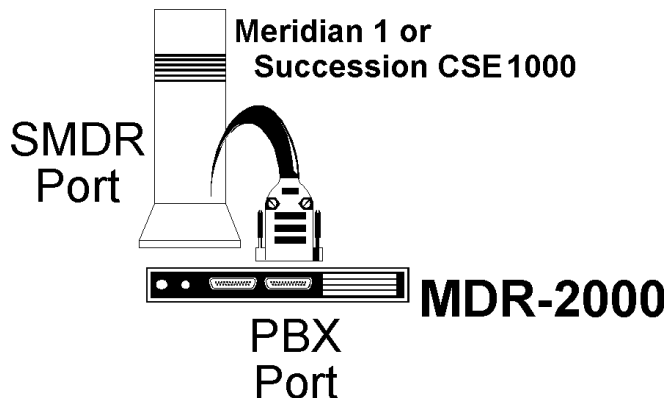
## **Connect MDR-2000 ISD to Meridian 1 or Succession CSE 1000 system and PC**

The first step is to connect and install the MDR-2000 ISD onto the Meridian 1 or Succession CSE 1000 system. It can then collect and store call records as they are output from the Meridian 1 or Succession CSE 1000 system. You must then connect the PC to the MDR-2000 ISD so the Telecom Billing System can collect the call records from its database files. For this example, you configure and connect modems to the MDR-2000 ISD and to the PC.

Perform the following steps to connect the MDR-2000 ISD to the Meridian 1 or Succession CSE 1000 system, and then to the PC via a modem connection.

- 1** Locate the SDI port on the Meridian 1 or Succession CSE 1000 system.
- 2** Connect the MDR-2000 ISD to the Meridian 1 or Succession CSE 1000 system SDI port using an RS-232C cable:
  - a** Connect one end of the RS-232C cable to the PBX port on the MDR-2000 ISD, and the other end to the SDI output port on the Meridian 1 or Succession CSE 1000 system.
  - b** Use a male DB-25 connector when connecting to the PBX port of the MDR-2000 ISD.

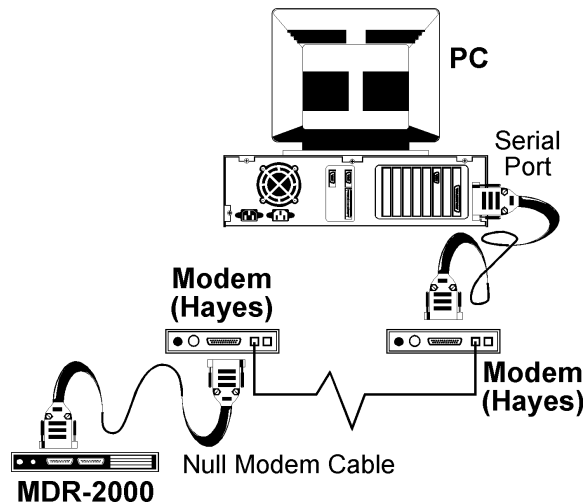
**Figure 4** Meridian 1 to MDR-2000 ISD



- 3** Connect the MDR-2000 ISD to the first modem:
  - a** Connect the null modem cable, which is provided with the MDR-2000 ISD, from the Modem port of the MDR-2000 ISD to the serial port of the modem.
  - b** Connect a telephone line cord from the “To Line” output jack of the first modem to the telephone jack.
- 4** Connect the PC to the second modem:
  - a** Connect a modem cable from an available communications port (for example, COM 1) on the PC to the serial port of the second modem. If you have an internal modem attached to your PC, ignore this step.

- b** Connect a telephone line cord from the “To Line” output jack of the second modem to the telephone jack.

**Figure 5** MDR-2000 ISD to modems to PC



- 5** Plug in and turn on the MDR-2000 ISD:
  - a** Plug in the MDR-2000 ISD's AC adapter into the electrical outlet.
  - b** Insert the AC power supply connector into the 9 VDC jack of the MDR-2000 ISD.
- 6** Plug in and turn on the modems:
  - a** Plug in the modems' AC adapters into the electrical outlets.
  - b** Insert the AC power supply connector into the power jack of the modem.
- 7** Test the MDR-2000 ISD to ensure that it is collecting data. Once you have turned on the MDR-2000 ISD, all the lights flash briefly and the RUN and BMT indicators remain on. After the second valid call record is obtained, only the RUN indicator remains on. The first valid call is used to populate the buffer registries when the MDR-2000 ISD has been turned off and on.

The PBX indicator flashes as the MDR-2000 ISD receives data. This indicates that the data stream is being received. If the PBX light does not flash and you are sure that a call has been made, check the following:

- If you require a null modem adapter between the Meridian 1 or Succession CSE 1000 system and the MDR-2000 ISD, then ensure that it is connected between the SDI port of the Meridian 1 or Succession CSE 1000 system and the PBX port of the MDR-2000 ISD.
- Ensure that CDR is turned on for the trunk route you are using.

### *Verify that the MDR-2000 ISD is collecting data*

Access the MDR-2000 ISD to view and verify that the incoming data stream is valid. To access the MDR-2000 ISD, perform the following steps.

- 1 Run a terminal program such as Windows HyperTerminal.
- 2 Dial up the telephone number of the MDR-2000 ISD. This is the number where the MDR-2000 ISD was connected via its modem. If the PC is connected directly to the MDR-2000 ISD, then you can simply start typing the commands to edit the parameters. For this example, enter **222**.
- 3 Type **<Ctrl-V> I D <Enter>**. This verifies that you are communicating with the MDR-2000 ISD. The response is the serial number of the MDR-2000 ISD.
- 4 To view the data, type **<Ctrl-V> D U <Enter>** (you may need to type this twice). If the data appears incorrect (for example, it contains random characters), then there is probably a communications problem.

### **Changing communications parameters**

The MDR-2000 ISD default communications parameters may be different from the Meridian 1 or Succession CSE 1000 system. For example, the MDR-2000 ISD baud rate defaults to 1200, and the Meridian 1 or Succession CSE 1000 system may be 9600. If they are different, you must change the communications parameters of one or the other.

The following example demonstrates how to change the communications parameters of the MDR-2000 ISD and also set it for NEW CDR format. If you want to change the communications parameters on the Meridian 1 or Succession CSE 1000 system, refer to the documentation provided with it.

To change the MDR-2000 ISD's communications parameters, access the MDR-2000 ISD interface using any terminal program running directly from your PC. The following example demonstrates this process.

- 1 Run a terminal program such as Windows HyperTerminal.
- 2 Dial up the telephone number of the MDR-2000 ISD (for example, 222). This is the number where the MDR-2000 ISD was connected via its modem. If the PC is connected directly to the MDR-2000 ISD, then you can simply start typing the commands to edit the parameters.
- 3 Access the MDR-2000 ISD interface by typing **<Ctrl-V> I M <Enter>**. The M2K> prompt appears.
- 4 Check the status of the MDR-2000 ISD by typing **ST <Enter>**. The status appears similar to the following:

**Figure 6** MDR-2000 ISD status

```

M2K> Status (Enter)

Date/Time (mm/dd hh:mm): 01/01 00:00                      AutoDate: No
Number of Records Stored: 0                               Records to be Collected: 0
Access Codes: Yes                                         Leap Year Selection: No
Port Config (PBX/Modem): 1200-8-N/1200-8-N               Minimum Duration: 0
Incoming Calls: Yes                                       Minimum Digits: 0

CDR Collection: Yes                                       Image Collection: No
Meter Pulse Detection: No                                 Multi Tenant Detection: No
Tandem Conversion Option: No                             Internal Calls (Ext->Ext): No
Last Scan Error Position: 0                               Alarm Threshold: 0
Port Reset Timer: 15                                     Idle PBX Alarm Threshold: 0

Logical Error Count: 0                                    Alarm Enabled: No
Buffer Memory Size: 128K                                  I/O Interrupt Status: Clear
Site Name:                                                Site #:
Primary Alarm Phone No:
Secondary Alarm Phone No:

M2K> _

```

- 5 To change the baud rate for the modem port on the MDR-2000 ISD to 9600, type **SE BA <Enter> 9600 <Enter>**. This responds as SE (Set Options) BA (Baud) PBX (PBX default) 9600. The first <Enter> in this line selects the default baud rate for the PBX port on the MDR-2000 ISD.

- 6 To quit and exit from this interface, enter: **q** (quit).



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**Note:** If you are changing the baud rate for the modem, ensure that the modem answers at the desired speed first. For example, if you are using the Windows HyperTerminal program to access the modem, it prompts `Connect 9600` when you are connected.

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**Note:** Once you have completed accessing the MDR-2000 ISD, remember to exit from it by entering **q** (quit). If your communications session is interrupted (for example, by a disconnected line or a power failure), then you lose your edits.

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### *Notes for customization strings*

In certain cases, you may need to change the customization strings of the MDR-2000 ISD to match the output of the Meridian 1 or Succession CSE 1000 system. If you need to change the customization strings, use the CU (Customize) command in the MDR-2000 ISD interface and change the strings as necessary. Refer to the documentation provided with the MDR-2000 ISD for more details on what the customization strings represent.

## **Step 3: Install rate tables and location books**

Before you configure the Telecom Billing System, you must install the rate tables that reflect your telecom provider's rates. These provide such rates as long distance charges for direct dialed calls to North America, as well as international long distance charges. The Telecom Billing System requires these rate tables to accurately apply costs to your long distance calls.

As well as rate tables, you must install a set of location books for your software. Location books contain codes for the actual locations that are used by the rate tables to determine the charges incurred when calling these locations.

You can obtain rate tables from a rate service or from your dealer. Remember that the rate table files must be compatible with the Telecom Billing System software. If in doubt, check with your supplier before purchasing any rate tables.



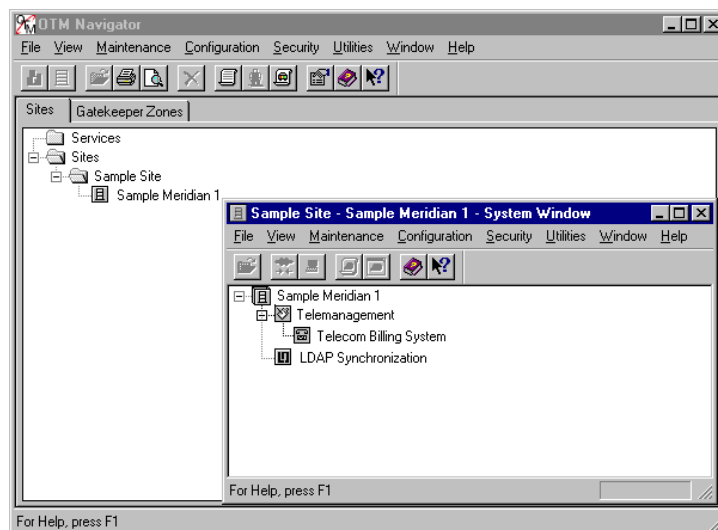
To install the rate tables and location books, simply follow the instructions included with them. Remember to install the rate table files onto your OTM Telecom Billing System directory so you can select the appropriate rate table files when you are defining your carrier pricing templates.

## Step 4: Run Telecom Billing System so it can be configured

If OTM is not already running, click OTM Navigator from the StartUp program group. In the OTM Navigator, open a predefined site and system (for example, Site=Acme Company, System=Head Office).

Once you open the site and system, the following windows appear:

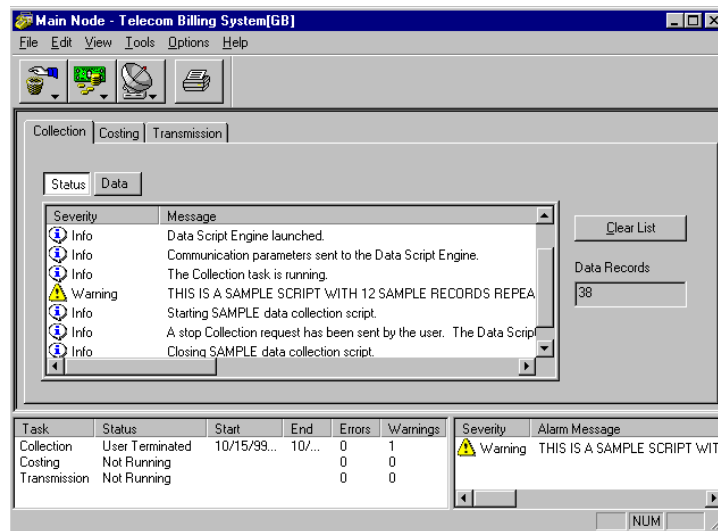
**Figure 7** OTM Navigator



From the selected site and system in the OTM Navigator, click Telemanagement, and then click Telecom Billing System. This accesses the Telecom Billing System application main window from which you can set up the communications parameters, telephone configuration, and rate tables for initial use. You must also test the data collection and run reports to see if the data was collected and costed properly.

When you first run the Telecom Billing System for a specific site and system, the Telephone Configuration Wizard appears. This allows you to optionally enter a basic telephone configuration for this site and system. Since you are not using the Telephone Configuration Wizard to enter your configuration, leave these fields blank and click OK to access the Telecom Billing System.

**Figure 8** Telecom Billing System main window



## Step 5: Set up and test data collection

Before you enter your telephone configuration, you should verify that the Telecom Billing System is collecting data from the Meridian 1 or Succession CSE 1000 system in the correct format. This way, you can test the configuration against actual calls. To test the data collection, simply enter the data collection parameters, collect the call records from the Meridian 1 or Succession CSE 1000 system, and view them in the Call Database.

## Enter data collection parameters

For the Telecom Billing System to collect data from the Meridian 1 or Succession CSE 1000 system, you must enter the data collection parameters for the site and system. You should have already connected and configured your hardware (previous sections entitled “Step 1: Ensure that Meridian 1 or Succession CSE 1000 system is set up properly” and “Step 2: Install and set up buffer unit”). You only need to access the System Configuration function’s Communications tab to select the communications and data collection parameters.

To enter the data collection parameters for the Telecom Billing System, perform the following steps.

- 1** From the Telecom Billing System main window, click Options > System Configuration. The System Configuration dialog box appears.
- 2** Click the Collection tab and enter your communications and collection parameters. For example, enter the following values:
  - Type: Dial-Up
  - Phone No: 222
  - Redials: 3
  - Port: COM1
  - Baud Rate: 9600
  - Data Bits: 8
  - Parity: None
  - Stop Bits: 1
- 3** In the Collection Script box, enter the name of the script file that is used for this data collection. This file contains the instructions used to communicate with the buffer unit and collect data from it. The script filename you select depends on the type of buffer unit and the format of the data being collected. For example, if you are collecting data from the MDR-2000 ISD, then select MDR2000.COL. Refer to the appendix “Script File Summary” in *Using Optivity Telephony Manager* (553-3001-330) for a list of supported buffer units and their corresponding script filenames.

In certain cases, you may want to report on transferred call records (also known as X records). With this option, call records representing calls that have been transferred, are broken down into individual call records based on the call transfer. Refer to the section entitled “[Processing X \(transferred\) records](#)” ([page 130](#)) for more information on reporting on X records. Note that X records cannot be processed if you are collecting data from the MDR-2000 ISD.

- 4 Click OK to select these options and return to the Telecom Billing System main window.

## Test data collection

Now that you have configured your hardware and entered the required communications parameters, you are ready to test the data collection. At this stage, you should only run a data collection as a test. Later, you can set up and invoke data collection once you have entered all of your system information and you are ready to run it live.

The following is an example to demonstrate how to test the data collection process. This example assumes the following:

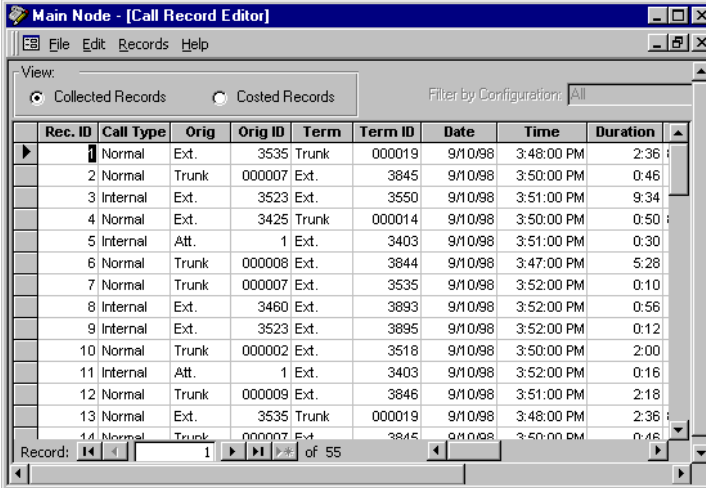
- The Meridian 1 or Succession CSE 1000 system is outputting CDR data to the SDI port.
- The MDR-2000 ISD is directly connected to the Meridian 1 or Succession CSE 1000 system and is continuously collecting and storing the raw CDR data (call records) as they are output from the Meridian 1.
- The Telecom Billing System collects this CDR data from the MDR-2000 ISD and stores it in the Call Database.

To test the data collection for this scenario, perform the following steps.

- 1 Wait for some calls to be recorded by the Meridian 1 or Succession CSE 1000 system. Either wait for some calling activity on the Meridian 1 or make a few telephone calls. If the MDR-2000 ISD is properly connected to the Meridian 1 or Succession CSE 1000 system, it collects and stores these call records as they are recorded by the Meridian 1 (note that the BMT light is out).
- 2 Start the data collection process by clicking Tools > Collection > Start from the Telecom Billing System main window.

- 3 From the Start Collection dialog box, select the Batch option and then click Start. The Telecom Billing System starts collecting the call records from the MDR-2000 ISD and places them in the Call Database.
- 4 During the data collection process, the Telecom Billing System displays both the collection activities as well as the call records as they are collected. To view this information, click the Collection tab in the System Tasks pane. Click Status to view the status of the collection. Click Data from this tab to view the call records and verify that they are in the correct format.
- 5 Review the call records for any invalid fields. For example, check the trunk numbers and digits dialed for invalid values. The trunk numbers appear in the Orig ID or Term ID fields depending on the “Orig” or “Term” values. Check the first digits in the Digits Dialed fields to confirm the access codes. As well, check the call records’ dates and times to ensure that they match the date and time on the Meridian 1 or Succession CSE 1000 system.

**Figure 9** Call Database



Rec. ID	Call Type	Orig	Orig ID	Term	Term ID	Date	Time	Duration
1	Normal	Ext.	3535	Trunk	000019	9/10/98	3:48:00 PM	2:36
2	Normal	Trunk	000007	Ext.	3845	9/10/98	3:50:00 PM	0:46
3	Internal	Ext.	3523	Ext.	3550	9/10/98	3:51:00 PM	9:34
4	Normal	Ext.	3425	Trunk	000014	9/10/98	3:50:00 PM	0:50
5	Internal	Att.	1	Ext.	3403	9/10/98	3:51:00 PM	0:30
6	Normal	Trunk	000008	Ext.	3844	9/10/98	3:47:00 PM	5:28
7	Normal	Trunk	000007	Ext.	3535	9/10/98	3:52:00 PM	0:10
8	Internal	Ext.	3460	Ext.	3893	9/10/98	3:52:00 PM	0:56
9	Internal	Ext.	3523	Ext.	3895	9/10/98	3:52:00 PM	0:12
10	Normal	Trunk	000002	Ext.	3518	9/10/98	3:50:00 PM	2:00
11	Internal	Att.	1	Ext.	3403	9/10/98	3:52:00 PM	0:16
12	Normal	Trunk	000009	Ext.	3846	9/10/98	3:51:00 PM	2:18
13	Normal	Ext.	3535	Trunk	000019	9/10/98	3:48:00 PM	2:36
14	Normal	Trunk	000007	Ext.	3845	9/10/98	3:50:00 PM	0:46

- 6 If the data appears invalid, then repeat the previous steps, checking to ensure that your hardware is connected properly and that you have the correct settings. Check the parameters on your Meridian 1 or Succession CSE 1000 system and the MDR-2000 ISD.

This completes the steps required to initiate a data collection and verify the call records.

## Step 6: Obtain LTM from Meridian 1 or Succession CSE 1000 system

Before you start entering the telephone configuration, you must first obtain the List Trunk and Member (LTM) report from the Meridian 1 or Succession CSE 1000 system. This provides you with valuable information on how to set up your configuration.



**Note:** If you have ISA, the LTM does not show any members for the service routes. You should print the Route Data Block (RDB) to determine the service routes associated with the ISA routes. All members indicated in the ISA route must be added to the associated service routes.

---

To obtain the LTM and RDB information for your configuration, access the Meridian 1 or Succession CSE 1000 system, and then print the associated LTM and RDB reports.

## Step 7: Set up Telephone Configuration

The next step in setting up the Telecom Billing System is to define the telephone configuration. This identifies how the Telecom Billing System processes the call records. It involves assigning the appropriate rate tables and carrier pricing templates to your system's trunk groups, entering any call digit translations, and setting any reporting options.

Since defining the telephone configuration is a complex task, it is helpful to demonstrate how to define one using an example configuration. This example represents a typical configuration and helps you to set up your own configuration.



**Note:** This telephone configuration is only an example. When setting up your own configuration, you must enter your own company's system and rate information. You should review all of the documentation provided with your Meridian 1 or Succession CSE 1000 system and by your service provider. This includes trunk route and member numbers, output format, and rate table names.

---

## Summary of steps

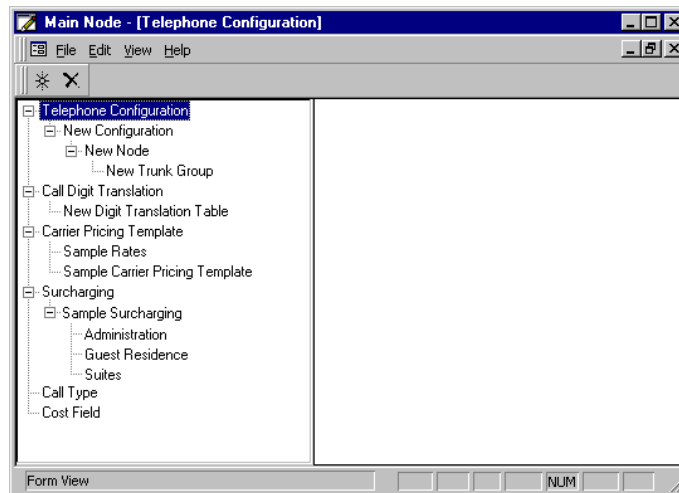
The following summary outlines the steps that you must perform to define the telephone configuration for this example.

1. Access Telephone Configuration Database editor.
2. Update Call Type Definitions table.
3. Define Carrier Pricing Template.
4. Define Call Digit Translation.
5. Enter Telephone Configuration:
  - a. Create Telephone Configuration.
  - b. Add Main Node.
  - c. Add Long Distance Service Definition to Main Node.

## Access Telephone Configuration Database editor

To access the Telephone Configuration Database tables, click Edit > Telephone Configuration from the Telecom Billing System main window.

The following is a sample Telephone Configuration editor. When you access this function for the first time, it appears with blank menu items in the Telephone Configuration menu tree.

**Figure 10** Telephone Configuration editor

Review the LTM report from the Meridian 1 or Succession CSE 1000 system to identify the call types for reporting. For example, you can set up the call types CO, DID, 800, and TIE. With this information, you can set up columns of costing details or cost summaries for these call types.

## Update Call Type Definitions

The Call Type Definition function contains a list of the types of calls that may be used by your organization (for example, International, Local, and so on). You select these call types when you define the dialing patterns of your organization in the Carrier Pricing Template. Select these predefined call types when entering your costing and reporting options.

The Call Type Definition function lists a set of default call types, which you can select when entering your costing and reporting options. In this step, add any additional call types that you may require for your configuration (for example, emergency calls). If you do not require any additional call types, skip this step.

The following steps demonstrate how to enter a call type. For this example, enter the call type Emergency for Emergency 911 calls (these are sometimes costed differently).

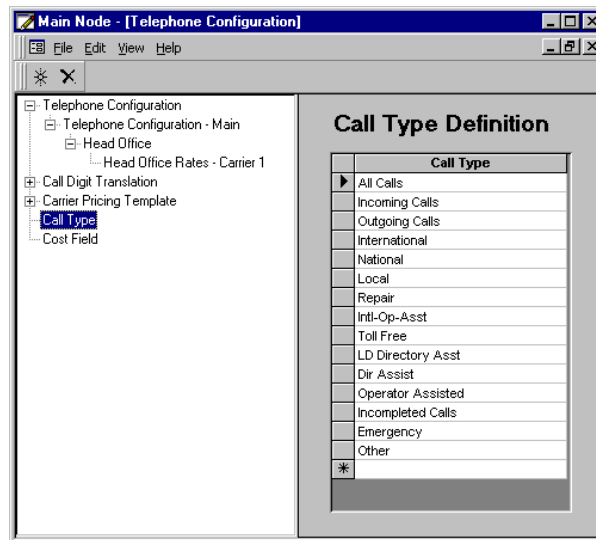
- 1 From the Telephone Configuration menu tree, click Call Type. The Call Type Definition grid appears in the right pane with a list of default definitions.



- 2 Click a blank line at the bottom of this grid and type **Emergency**. This adds this call type to this list.

The following diagram lists the default call types plus the new one that you just entered:

**Figure 11** Call Type Definition



You have now told the Telecom Billing System that calls from this trunk should be costed according to the template you created.

## Define Carrier Pricing Templates

Carrier Pricing Templates help determine the type and cost of a call. The Telephone Configuration Database uses these templates to assign costs to the calls based on the trunks used and the digits dialed. For this example, you define a template for regular long distance service with multiple pricing definitions.

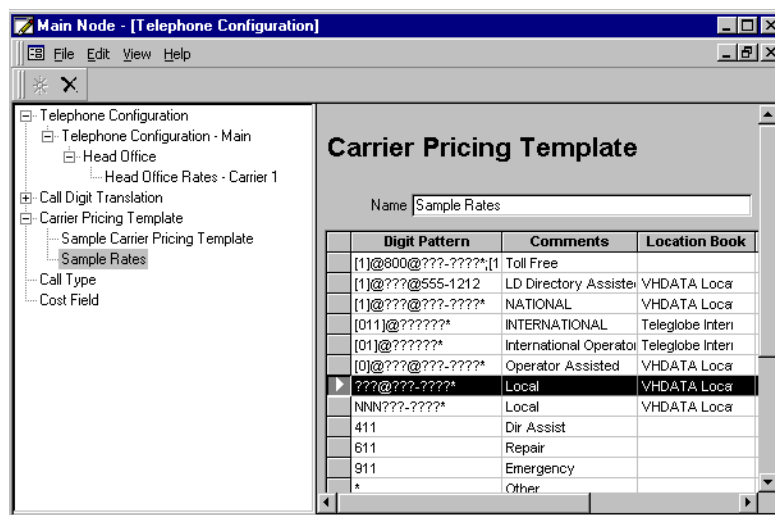
For each digit pattern that represents a billable call, assign either the rate file and table from your telephone company or a flat per-minute or per-call charge. Add the flat per-call charges to the cost assigned by the rate file of your telephone company.

## Carrier Pricing Template—Sample Rates

To enter the sample carrier pricing template, perform the following steps.

- 1 From the Telephone Configuration menu tree, click Carrier Pricing Template, and then click File > New Carrier Pricing Template. This displays the Carrier Pricing Template grid in the right pane.
- 2 In the Name field, enter **Sample Rates**.
- 3 Click Use Default Template to create a set of default values for North America. Update these values with your own system requirements.

**Figure 12** Carrier Pricing Template



### Edit pricing definitions in Carrier Pricing Template

The following steps describe how to edit the pricing definitions for this default table. These pricing definitions allow the Telecom Billing System to interpret any type of call containing identifiable digit patterns, and then cost them accordingly. They appear as a line-by-line listing in the grid.

For this example, you only edit the pricing definitions for international and North American long distance calls to specify the appropriate rate tables for your carrier. These default pricing definitions have already been created to provide you with standard North American dialing patterns. You only need to select the appropriate rate tables for them. The following examples demonstrate the use of the rate tables.

**National Calls:** These types of calls use the location book VHDATA Location Book.

**International Calls:** These types of calls use the location book Tele globe International Location Book.

In certain cases, you may need to add new pricing definitions to match your own configuration and dialing patterns.



**Note:** The order in which you enter these pricing definitions is important. During costing, calls are compared to the digit pattern of the first definition at the top of the list. The Telecom Billing System then proceeds down the list until it matches the Digit Pattern field and, if used, the rate table. The Telecom Billing System then proceeds to the next definition if the rate table cannot cost the call (even if the digit patterns are matched).

---

When you enter digit patterns for the pricing definitions, you can use certain wild card and format characters as digit placeholders. Use the asterisk \* (multiple placeholder) or question mark? (single placeholder) as wildcards for selecting common digit patterns. Use the optional flags {} (curled brackets) to select optional digits to be included in the digits dialed. Use the delete flags [ ] (square brackets) to select any digits that need to be suppressed during rate table lookups but displayed on reports. Use the hide flag. (period) to hide all of the digits that follow it in formatted reports. Refer to the online Help under Pricing Definition for more details on using wild card characters.

You can modify each pricing definition in this Carrier Pricing Template by clicking the record line in the list and typing over the available fields. To view each record in a dialog box, click the record line and click Edit.

For example, to edit the International pricing definition, click the record line for International (you may need to scroll across the grid to locate International in the Comments box), and then click Edit. In the dialog box that appears, simply enter the desired information for it. Once you have entered the rate information for each type of call, click OK to save it and return to the Carrier Pricing Template grid.

Perform the following steps to modify these pricing definitions.

### *International Calls*

- 1 Click the record line in the Carrier Pricing Template grid that contains International in the Comments box, and then click Edit.
- 2 Enter the information as listed in the following dialog box for International calls, and then click OK.

**Figure 13** Carrier Pricing Template: International Calls

The screenshot shows a dialog box titled "Carrier Pricing Template". It contains the following fields and controls:

- Digit:** [011]@??????\*
- Comments:** INTERNATIONAL
- Location Book:** Teleglobe International Location Book (dropdown menu)
- Rate Filename:** (empty dropdown menu)
- Rate Table:** (empty dropdown menu)
- Best Guess Lookup:** ☐ (checkbox)
- Use Volume Discount Plan:** ☐ (checkbox)
- Call Type:** International (dropdown menu)
- Cost/Minute:** \$0.00
- Cost/Call:** \$0.00
- Cost/Pulse:** \$0.00
- % Cost Adj:** 0
- Initial Duration Rounding Period:** 1 (Seconds)
- Additional Duration Rounding Period:** 1 (Seconds)
- Buttons:** OK and Cancel

### **Long Distance (National) Calls**

- 1 Click the record line in the Carrier Pricing Template grid that contains National in the Comments box, and then click Edit.
- 2 Enter the information as listed in the following dialog box for national calls, and then click OK.

**Figure 14** Carrier Pricing Template: Long Distance (National) Calls

**Carrier Pricing Template**

Digit: [1]@???@???-????\*

Comments: NATIONAL

Location Book: VHDATA Location Book ☐ Best Guess Lookup

Rate Filename:

Rate Table:

Use Volume Discount Plan: ☐

Call Type: National

Cost/ Minute: \$0.00

Cost/Call: \$0.00

Cost/Pulse: \$0.00

% Cost Adj: 0

Initial Duration Rounding Period: 1 (Seconds)

Additional Duration Rounding Period: 1 (Seconds)

OK Cancel

Repeat the above steps for other dialed digit patterns where other charges may apply. This completes the entries for this template's pricing definitions.

## Define Call Digit Translation

The Call Digit Translation function translates the digits dialed on call records. This translation can be applied to all outgoing calls in the system or to calls on specific trunk groups in the system. This allows the Telecom Billing System to process and print a different digit pattern from the one that is actually dialed (for example, suppressing access codes).

**Note:** Call Digit Translation does not affect Calling Line ID or Automatic Number Identification (CLID/ANI) digit patterns on incoming calls.

For this example, you build a System Call Digit Translation table to remove the access code "9" from the digits dialed of the call records. This way, each call record appears without the access code on reports. The digit is the access code used to access a trunk on the Meridian 1 or Succession CSE 1000 system to

initiate a call. For example, your Meridian 1 or Succession CSE 1000 system may require that you enter “9” to select a trunk to make an outgoing call. Each call record contains the access code digits, which are entered as part of the digit stream.

To translate the digit patterns for all calls, perform the following steps.

- 1 Click Call Digit Translation from the Telephone Configuration menu tree.
- 2 Click File > New Digit Translation Table to add a new definition for this table. This creates another menu item entitled New Digit Translation Table 1 under this menu item. For this new call digit translation, a blank table appears in the right pane.
- 3 Rename this table by typing **Sample CDT** in the Name box.
- 4 Enter the following information in the first line of this grid:
  - Match Digits: **9**
  - Replace Digits: **-**
- 5 Leave the remaining fields and boxes blank.

If you are not sure of what your access codes are, review the collected call records in the Collection tab (Data) of the System Task pane. Access the Telecom Billing System main window, click the Collection tab of the System Task pane, and then click Data. Check the Digits field for any of the outgoing call records. If the system inserts an access code in the digit stream, it appears here.

This completes the steps for entering the Call Digit Translation.

## Enter Telephone Configuration

The Telephone Configuration Database is the key to pricing calls and tracing them to their destinations. This database defines the type of costing used through each defined service and includes any additional costs defined for your system and location. Each defined service uses predefined location books and rate tables based on your telecom carrier’s offerings. The Telecom Billing System uses this configuration information to cost the call records and report on them.

Now that you have all of the elements required to construct your telephone configuration, you must add them to this table. The Telephone Configuration table (in the Telephone Configuration Database editor) is sorted into the following three components:

- General information (includes internal call definitions)
- Node information
- Service definitions (trunks)

You can define multiple nodes for each telephone configuration. As well, you can define multiple service definitions for each node.

The following sections describe how to create each of these components.

### *Create Telephone Configuration (General Information)*

The first part of the Telephone Configuration table contains its general information and optional costing for internal calls.

To create a new telephone configuration table and enter its general information, perform the following steps.

- 1 Click the Telephone Configuration menu item, and then click File > New Configuration. A data entry form appears in the right pane allowing you to enter this telephone configuration's general information.
- 2 Enter a descriptive name for this configuration by typing **Telephone Configuration Head Office** in the Telephone Configuration box.
- 3 Specify the Call Digit Translation table that will be used for this Telephone Configuration by selecting Sample CDT from the Call Digit Translation drop-down list box. You previously defined this table in the Call Digit Translation function.
- 4 If you want to assign bill party surcharging to this configuration (that is, you want to apply additional surcharges for telephone usage based on extensions, authorization codes, or account codes), then select the surcharge definition from the Call Party Surcharge Profile drop-down list box. For this example, leave this field blank. It does not require surcharging.
- 5 If your Meridian 1 or Succession CSE 1000 system outputs CDR for internal calls (that is, calls made between extensions within the Meridian 1 or

Succession CSE 1000 system), then enter these costs in the Internal Calls fields of this table. For this example, leave the default values in these fields.

**Figure 15** Telephone Configuration editor

This completes the steps for creating a new Telephone Configuration table and entering its general information.

### *Add Main Node (Node Information Editor)*

The next step in entering this telephone configuration is to define the general information for the main node. Since a telephone configuration can contain multiple nodes, you must define each node separately. For example, your company's telephone system may span different offices (nodes), which may use multiple tie trunks. For this example, you are creating the minimum required node—the Main Node.



To add a node to this defined configuration, click the menu item Telephone Configuration Head Office (which you just created in the previous steps), and then click File > New Node.

Perform the following steps to edit this node.

- 1** In the Node Name box, enter the name for this node. For example, enter **Main Node**. The title in the menu tree changes to Main Node.
- 2** In the Node Location box, enter the city and province/state for your company. For example, enter **Dallas, Texas**.
- 3** In the Main Phone Number box, enter the telephone number for this location. For example, enter **214-555-1111**.
- 4** From the Location Book drop-down list box, select VHDATA Location Book.
- 5** Since this is the main node, leave the Time Zone Adjustment box blank.
- 6** Since this is the main node, leave the Currency Exchange box at its default value: 1.
- 7** Leave the Main Node check box turned on. Only one node can have this checked.
- 8** If the rates defined for this node require additional taxes, then select them from the Tax Information drop-down list boxes. You must have defined these taxes in the Taxes editor.

**Figure 16** Telephone Configuration - Node editor

**Main Node - [Telephone Configuration]**

File Edit View Help

Telephone Configuration

- Telephone Configuration Head Office
  - Main Node**
- Call Digit Translation
  - Sample CDT
- Carrier Pricing Template
  - Surcharging
  - Call Type
  - Cost Field

Node Name: Main Node

Node Location: Dallas, Texas

Main Phone Number: 214-555-1111

Location Book: VHDATA Location Book

Time Zone Adjustment: 0

Currency Exchange: 1

☒ Main Node

Tax Information

	Percentage %
Tax1	
Tax2	
Tax3	
Tax4	

This completes the steps for defining the Main Node. The next step is to create the service definitions for this node. That is, you must enter the costing parameters for the different trunk groups in this node.

### *Add Long Distance Service Definition to Main Node*

Now that you have selected a node, you must enter its pricing definitions. These pricing definitions apply to different trunk groups. For example, trunks 1 to 5 may be used for regular long distance calling, and trunks 7 and 8 may be used exclusively for toll free calls.

To add a long distance service definition to the main node, click the Main Node menu item, and then click File > New Service/Trunk Group. This creates another menu item under it entitled New Service 1, and displays the tabs in which you can enter the service definition, fixed and variable and carrier costs, and reporting options. Click the following tabs to enter the information for this service:

## Service Definition Tab

In this tab, enter the general information for this service definition. This includes the range of trunks using this service, as well as its billing parameters.

Perform the following steps to enter this service definition.

- 1** In the Name box, enter **Main Trunk Group** over the “New Service 1” text. Notice that the tree menu item changes to reflect what you just typed.
- 2** Leave the Termination option (Public Switch Network) and the Billing Parameters fields in their defaults.
- 3** In the Trunk Numbers table, enter the trunk range for this trunk group in your Meridian 1 or Succession CSE 1000 system. For this example, enter the following:
  - Total Number of Equipped Trunks: **5**
  - Line/Description: **CO Trunks**
  - Low Range: **1**
  - High Range: **5**

## Note on Billing Parameters

For certain types of calls (for example, international calls), you may need to enter a connect time adjustment or a minimum call duration to allow for a delayed connection. Enter this information in the Billing Parameters table of the Service Definition tab.

Click the first record line of the Billing Parameters table, and then perform the following steps to enter a minimum call duration and a connect time adjustment for international calls.

- 1** In the Match Digits box, enter **011**. The system interprets all calls starting with the digits 011 (international calls) and applies the minimum call duration and connect time adjustment from the following fields.
- 2** In the Comments box, enter **International Calls**.
- 3** In the Min. Duration box, enter **10**. This is the minimum call duration in seconds that a call must exceed for it to be costed.

- 4 In the Connect Time box, enter **5**. This is the time in seconds that the system allows for a connection. This is subtracted from the call duration before costing.



**Note:** If these trunks have answer supervision, then you do not need to enter a connect time adjustment value. You can, therefore, ignore these steps.

**Figure 17** Telephone Configuration - Service Definition

**Main Node - [Telephone Configuration]**

File Edit View Help

Telephone Configuration

- Telephone Configuration Head Office
  - Main Node
    - Main Trunk Group
- Call Digit Translation
  - Sample CDT
- Carrier Pricing Template
  - Surcharging
  - Call Type
  - Cost Field

**Service Definition** Fixed Costs Variable and Carrier Costing Report Options

Name: Main Trunk Group

Access Code(s): 9

Call Digit Translation:

Termination: ☒ Public Switch Network ☐ Tie/FX Line Tie Node Location:

**Billing Parameters**

Duration Rounding Periods: Initial 1 Additional 1 Monthly Billing Period 1 - 31

Match Digits	Comments	Min. Duration	Connect Time
▶ 011	International Calls	10	5
*		0	0

**Trunk Numbers**

Total Number of Equipped Trunks: 5

Line/Description	Low Range	High Range
▶ CO Trunks	1	5
*		

### Fixed Costs Tab

If your system requires fixed costs for these trunk groups, enter them in the Fixed Costs tab. You can enter fixed costs per minute, per call, per meter pulse, or per month. As well, you can define these costs for outgoing or incoming calls.

## Variable and Carrier Costing Tab

In this tab, enter the costs that are applied to calls made on this service. You can enter costs for both outgoing and incoming calls. For outgoing calls, you can enter variable costs based solely on the digit patterns, or you can enter the carrier costs that are based on these digit patterns. The carrier costs vary depending on the destinations of the outgoing calls.

For this example, select the predefined Carrier Pricing Template for all calls using this service. The Carrier Pricing Template can then distinguish between different types of calls for its costing.

Perform the following steps to select the carrier costing for this service.

- 1 In the Comments box under Carrier Costing by Digits, enter **Outgoing Calls**.
- 2 Leave the VPN Location Book box blank.
- 3 From the Carrier Pricing Template drop-down list box, select Sample Rates.
- 4 Leave the % Cost Adjust box blank.

## Report Options Tab

In this tab, enter the call reporting options for this trunk service. This allows you to define how calls that use this service appear on reports. For example, you can suppress all incoming calls.

To enter the call reporting options for all calls using this service, perform the following steps.

- 1 Click the first record in this grid.
- 2 From the Call Type drop-down list box, select All Calls.
- 3 From the Cost Field drop-down list box, select DDD. This determines the report grouping and summary field on reports. Cost fields are defined in the Cost Field table.
- 4 From the Print Option drop-down list box, select Detail. This indicates that these calls should be displayed in the main report body of the detail reports.

- 5 In the Route Description box, enter **DDD**. This is the route used on detail reports for this call.

This completes the defined service for the main node. You have now defined how calls from this trunk should be costed according to the template you created. Click File > Close to save this information and return to the Telecom Billing System main window.

## Step 8: Test telephone configuration

Now that you have entered your system's costing model and configuration, you should test the accuracy of the configuration. To do so, you must apply these costs to the collected call records and print some reports to review the generated costs.

### *Apply costs to call records*

The Telecom Billing System applies the costs based on your Telephone Configuration Database and Rate Tables as a separate step to data collection. That is, once you have collected the call records from the Meridian 1 or Succession CSE 1000 system, you must apply costs to them as a separate step.

To apply these costs to the collected call records, perform the following steps.

- 1 Click Tools > Costing > Start from the Telecom Billing System window.
- 2 From the Start Costing dialog box that appears, select the Batch Costing Mode option. This performs a one-time costing of all non-costed call records.
- 3 In the Available Telephone Configurations list, turn on the Telephone Configuration Head Office check box. This applies this specific telephone configuration to these call records.
- 4 Click Start to cost the call records. The Telecom Billing System then starts the costing procedure.
- 5 Click the Costing tab Status view of the System Tasks pane to check this process. Once it displays the message *The Costing task has completed*, you are ready to generate reports based on the costed call records.

This completes the steps involved in costing the call records.

## *Generate reports*

Generate the following reports to test the accuracy of the telephone configuration that you just entered.

### **Telephone Configuration Report**

The Telephone Configuration Report displays your telephone configuration information.

To print this report, perform the following steps.

- 1 Click File > Reports from the Telecom Billing System main window. The Reporting dialog box appears.
- 2 From the Telecom Billing System Reports menu folder in the Reporting menu tree (left pane), double-click the Utility Tools folder.
- 3 From the list of reports that appears, click Telephone Configuration.
- 4 From the Output Type drop-down list box, select Printer.
- 5 From the Configuration drop-down list box, select Telephone Configuration Head Office. This represents the telephone configuration you just defined.
- 6 Click Go to print the report.

### **Exception Chronological Report**

The Exception Chronological Report lists in chronological order all of the calls that were made, and then collected by the Telecom Billing System. Review this report to verify that the calls were processed and costed accurately. Look for calls that have no location (except toll free calls). Check that the long distance calls have costs assigned to them and that local calls do not. Some common errors in the Telephone Configuration Database include incorrect access codes and missing trunks.

To print this report, perform the following steps.

- 1 Click File > Reports from the Telecom Billing System main window. The Reporting dialog box appears.
- 2 From the Telecom Billing System Reports menu folder in the Reporting menu tree (left pane), double-click the Cost Analysis folder.

- 3 From the list of reports that appears, click Exception Chronological Report.
- 4 From the Output Type drop-down list box, select Printer.
- 5 From the Configuration drop-down list box, select Telephone Configuration Head Office. This represents the telephone configuration you just defined.
- 6 Click Go to print the report.

If either of these reports appears inaccurate, then review your input and make any necessary adjustments to your telephone configuration.

## Update databases

For your call records to accurately link to the proper employees and their extensions, as well as to your company's customers and projects, you should update the following databases with the latest employee and customer information:

**Employee Database:** This database contains a list of employees linked to specific telephones and their associated display names on the Meridian 1 or Succession CSE 1000 system. When a call record is generated, it must be associated with a specific telephone. The Employee Database contains this information, as well as the organizational hierarchy level to which this telephone belongs. If you have installed the OTM Station Administration application, then this is populated from the Station Database. Refer to *Using Optivity Telephony Manager* (553-3001-330) for more information on editing this database.

**External Parties Database:** This database contains information about individuals or companies with whom you have regular contact.

**Roles/Projects Database:** This database contains information about the different roles or projects that require reporting in the Telecom Billing System.

To view these databases and add any additional records to them, click the appropriate name in the Edit drop-down menu of the Telecom Billing System main window.

This completes the instructions for getting started with the Telecom Billing System. Refer to the online Help for complete details on all of the commands and functions described in the previous sections.



## Operating procedures

Once you have initially populated the main databases with your company's information, all that you need to do is to collect data, apply costs to the call records, and generate reports regularly. Since the Telecom Billing System can perform these activities based on a routine schedule, you should establish your own schedule of activities to allow for regular data collection and reporting. As well, you should routinely maintain and back up your databases to keep them accurate.

The following sections outline the standard procedures that you should incorporate into your regular operational routines. They provide a model for you to follow during the operation of the Telecom Billing System.

### Schedule of activities

The following table contains a recommended schedule of activities that you should follow while using the Telecom Billing System. To simplify these activities, use the OTM Scheduler to schedule them to run at regular intervals:

<b>Task</b>	<b>Frequency</b>
Data collection	Daily
Costing of call records	Daily
Report generation	Monthly
Directory updates	
Employee Database	Weekly
External Parties Database	Weekly
Roles/Projects Database	Weekly
Telephone Configuration Database	Monthly
Location Books	Quarterly
Rate Tables	Quarterly
Database management	
Backup databases	Weekly

Task	Frequency
Restore databases	When recovering lost data
Call Database maintenance	
Archive Call Database	Monthly
Purge Call Database	Monthly
Restore Call Database	When recovering lost data

## Data collection (daily)

The collection of call records from the Meridian 1 or Succession CSE 1000 system (or optional CDR buffer unit) to the PC is a key task of your Telecom Billing System operations. Without this detailed calling information, the Telecom Billing System reports do not contain any call record data. Therefore, it is important to regularly collect call records from the Meridian 1 or Succession CSE 1000 system.

Run data collection on a daily basis. If there is a problem with the flow of data from the Meridian 1 or Succession CSE 1000 system, the system warns you of the malfunction within a short time period. This early detection can provide for quick corrective action and minimal data loss.

To collect data for a system, access the Telecom Billing System for the selected system, and then click Tools > Collection > Start from its main window. From the Start Collection dialog box, select either Batch or Real Time mode, and then click Start. Select the Batch option to perform a one-time data collection from the Meridian 1 or Succession CSE 1000 system, or from the buffer unit. Select Real Time to continuously collect CDR records from the Meridian 1 or Succession CSE 1000 system or from the buffer unit.

During the data collection process, the Telecom Billing System collects data from the Meridian 1 or Succession CSE 1000 system (or optional buffer unit), and builds that data into the Call Database. Based on the size of the buffer unit, communications usually take place nightly. Less frequent data collection is possible, provided the buffer unit does not reach capacity.



**Note:** If the buffer does reach capacity and data collection has not been initiated, the system may lose valuable call records. Remember to collect data regularly.

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The status of each data collection procedure is tracked in the Collection tab of the System Tasks pane. As well, all activity completed by the Telecom Billing System will be recorded in the OTM Event Log Viewer for diagnostics and troubleshooting. You can access the Event Log Viewer from the OTM Navigator. Review this information while collecting data to ensure that the system is collecting properly.

Once you have collected CDR data from the Meridian 1 or Succession CSE 1000 system, you are ready to apply costs to them and generate reports based on this information.

## Data collection troubleshooting

During data collection, the Telecom Billing System displays the call records it has collected. If this number fails to increment or remains at zero, then either there is no data to collect, or the Telecom Billing System has not been able to communicate with the Meridian 1 or Succession CSE 1000 system. In this case, take the following actions:

- Click the Collection tab from the System Tasks pane (main pane in the Telecom Billing System window), and then click Status to review the task's status.
- Check the System Alarms pane (bottom right pane in the Telecom Billing System window) to review any relevant information.
- If communicating through a modem, ensure that the modem's AA (auto-answer) light is on.
- Make sure that the communications port that you specified in the System Configuration Collection tab is the same as the connection on the back of your PC (the port on which you connected your cable).

The following is a list of common data collection problems:

- Data files are in use by another network workstation, or the Call Database editor is opened.
- The communications parameters are not set up properly for the system.
- The data collection parameters are not set up properly.
- The PC has insufficient disk space for the Call Database.

## **Costing of call records (daily)**

The Telecom Billing System applies the costs based on your Telephone Configuration Database and Rate Tables as a separate step to data collection. That is, once you have collected the call records from the Meridian 1 or Succession CSE 1000 system, you must then apply costs to them based on the telephone configuration. As with the Data Collection procedure, you should run the costing procedure on a daily basis. This way, you can quickly identify any problems in the costing model or telephone configuration.

To cost call records for a system, access the Telecom Billing System for the selected system, and then click Tools > Costing > Start from its main window. From the Start Costing dialog box, select either Batch or Real Time mode, and then click Start. Select the Batch option to perform a one-time costing of all non-costed call records. Select Real Time to continuously cost all non-costed call records.

During this process, the Telecom Billing System creates a costed Call Database containing the calculated costs. The status of each costing procedure is tracked in the Costing tab of the System Tasks pane. As well, all activity completed by the Telecom Billing System is recorded in the Event Log Viewer for diagnostics and troubleshooting. Review this information while costing the call records to ensure that the system is costing properly.

Once you have costed the call records, you are ready to generate reports based on this information.

## Report generation (monthly)

The Telecom Billing System reports provide information on the details of the call records that were collected from the Meridian 1 or Succession CSE 1000 system. They also include information on your system databases and configurations. Once you have collected the call records from the Meridian 1 or Succession CSE 1000 system, you should then generate your detail and summary reports to display their information.

To access the Reporting function, click File > Reports from the Telecom Billing System main window. Perform the following steps to generate a report.

### Step 1: Select report

Select the report you want to generate from the Report menu tree in the Reporting dialog box. For example, to select the Extension Detail Report, click Telecom Billing System Reports > Cost > Extension Detail Report from the Reporting menu tree.

### Step 2: Select output device

The Telecom Billing System can send reports to a selected output device, such as a configured printer, the PC's screen, to a file, or to an e-mail address. Select the output device from the Output Type drop-down list box in the Reporting dialog box.

### Step 3: Select report filters

Before you generate your reports, you should select the parameters (filters) that determine the data ranges on which the reports are run. This includes only the desired range of data.

To enter your reporting filters, access the Reporting dialog box and click the ellipsis command (...) next to the Filters field. In the Filters dialog box that appears, click Add. The Filter editor dialog box appears allowing you to enter the report's filters. Once you have defined this filter's parameters, enter a unique name for it in the Filter Name box. When you exit from this function and return to the Reporting dialog box, you can simply select this predefined filter from the Filter drop-down list box.

### Step 3: Generate report

Once you have selected your parameters, you can then generate your report by simply clicking Go.

If you want to schedule a report to run at a specific date and time, click Schedule. This invokes the OTM Scheduler. Use the Scheduler to enter the date and time that you want to run the report. It then generates it at the selected date and time.

## Database updates

The Telecom Billing System contains a set of functions to assist you in managing your system's databases. Proper management of data ensures that your reports contain timely and accurate information. If the Telecom Billing System databases contain outdated information (for example, the Employee Database contains employees who are no longer with the company), then the reports are inaccurate. You should, therefore, regularly update your databases.

As well, it is important to make backup copies of the main Telecom Billing System database files for recovery purposes. This way, if your PC loses data (for example, in case of hardware or disk failure), you can recover the lost data.



**Note:** You must decide on the frequency of the backup and archive procedures. Base this frequency on the size of your data records and your system capacity. As a rule, you should back up your data once a month.

---

The following is a list of the databases that you should update on a regular basis:

### Employee Database (weekly)

The Employee Database controls the distribution of costs to the different cost centers within your company. It is extremely important to have each extension's charges allocated to the appropriate organizational level. Update this directory as often as necessary depending on the frequency of changes made to the employee records. As a rule, you should update it weekly.

To avoid any problems, follow these steps during your Employee Database updates.

- 1 Print the Employee Directory Report. Access the Reporting dialog box by clicking File > Reports from the Telecom Billing System main window. From the Reporting dialog box, click Telecom Billing System Reports > Directory Information > Employee Directory. Select Printer as the Output Type, and then click Go to print this report.
- 2 On the hard copy printout of this report, enter the changes that have occurred over the past week (for example, New department, Staff moving to another department, New extensions, and so on).
- 3 Enter the new changes into this database using the Employee editor. Access the Employee editor by clicking Edit > Employees from the Telecom Billing System main window.
- 4 Print the Employee Database Report again and verify your changes. Save this hard copy printout to track changes over a long time frame without having to repeatedly access the system.

### **External Parties and Roles/Projects Databases (weekly)**

Similar to the Employee Database, these databases contain valuable information that is used to generate accurate reports. To avoid errors or out-of-date records, print the External Parties and the Roles/Projects reports, and then check them. Remember to update these databases on a weekly basis.

### **Telephone Configuration Database (monthly)**

The Telephone Configuration Database contains the information needed to cost your telephone carrier's services. Periodically, you may be required to enter changes to ensure the accuracy of your rates. These changes may involve edits to the rate tables, carrier pricing templates, or to the trunk tables.

To avoid any problems, follow these steps during your Telephone Configuration Database updates.

- 1 Print the Telephone Configuration Report. From the Reporting dialog box, click Telecom Billing System Reports > Utility Tools > Telephone Configuration. Select Printer as the Output Type, and then click Go to print this report.

- 2 Check that the information on this report is complete.
- 3 Review the information for accuracy with the appropriate personnel.
- 4 Make the appropriate changes to the Telephone Configuration Database. Access this database by clicking Edit > Telephone Configuration from the Telecom Billing System main window.

### **Location Books (quarterly)**

Location books serve two purposes in calculating costs for the Telecom Billing System. Their first and primary purpose is to find a meaningful location name for the source and destination of a phone call. The second purpose is to obtain additional rating information, which is used to determine the cost of a call. That is, it identifies the physical or virtual locations of calls so that the Telecom Billing System can apply the appropriate usage costs to them based on their distance or codes.

Periodically, location designations change (for example, new area codes are added to the North American V&H grid). You must, therefore, remember to update your defined location books on a regular basis. You can obtain the latest location books from your dealer.

### **Rate Tables (quarterly)**

The Rate Tables provide the Telecom Billing System with the required rates and coverage areas used to identify how the calls to different locations are costed. This way, the Telecom Billing System knows which calls are costed with which rates.

Similar to the Location Books, Rate Tables must be updated on a regular basis due to changes in tariffs. You must, therefore, update your rate tables on a regular basis. You can obtain the latest rate tables from your dealer as they are updated.

## **Database management (weekly)**

The Telecom Billing System provides you with tools to back up and restore your main databases. It is important to maintain backup files of these databases on floppy disks for security purposes. If your disk drive fails or you erase valuable database files, you can recover this data from your backup disks. Storage of alternate copies off-site is also beneficial for disaster recovery. As a rule, you should back up your data on a weekly basis.



## **Backup Utility**

Use the Backup Utility from the OTM Navigator to make backup copies of all of the database files used by the Telecom Billing System for this site/system.

## **Restore Utility**

In the event that you do lose some data for this site/system, use the Restore Utility from the OTM Navigator to copy the backed up files back to your system.

## **Call Database maintenance (monthly)**

The Call Database contains all of the call records (CDR) that you have collected from your Meridian 1 or Succession CSE 1000 system and optionally costed using the Telephone Configuration Database. As the Telecom Billing System collects call records from the Meridian 1 or Succession CSE 1000 system, the Call Database file continues to grow in size and take up more space on your PC's disk drive. You should, therefore, periodically remove any old or unwanted call records from the Call Database to make room for the new call records. This prevents the Call Database from taking up too much disk space on your PC. You should remove old data from the Call Database on a monthly basis. Based on the size of your Call Database, you may need to remove old data from it more frequently.

You can remove old call records from the Call Database by either copying (or archiving) them to an external source, or by simply deleting them. The following sections briefly describe the functions used to archive, delete (purge), and restore these call records.

### **Archive Call Database**

The Archive function is used to copy—or archive—a range of call records from the Call Database to an external device, such as a network drive or a disk. Use the Archive function's Purge option to delete this same range of call records from the current Site/System directory on your PC after the archive has completed. This frees more disk space on your PC for new call records. You can archive an entire

Call Database, or you can archive a range of call records within a Call Database based on their call dates. This way, you can archive any old call records that you no longer require. If you ever need this data again, you can copy it back to your source Call Database by using the Restore function.

To access this function, click File > Call Database > Archive from the Telecom Billing System main window. Enter your archive information, and then click Go to proceed with the archive.

## **Purge Call Database**

The Purge function is used to delete—or purge—a range of call records from the Call Database. This frees more disk space on your PC for new call records and improves overall system performance. You can purge an entire Call Database, or you can purge a range of call records within a Call Database based on their call dates. This way, you can remove any old call records that you no longer require.

To access this function, click File > Call Database > Purge from the Telecom Billing System main window. Enter your purge information, and then click Go to start purging the range of call records. The Archive/Restore/Purge status dialog box appears with the message Purge is an irreversible action. Are you sure you want to purge the records?. Click Yes to proceed.

## **Restore Call Database**

The Restore function is used to copy—or restore—the archived call records from an external device such as a network drive back to the Call Database.

To access this function, click File > Call Database > Restore from the Telecom Billing System main window. The Restore dialog box appears. Enter your restore information, and then click Go to proceed with the restore operation.

## Summary of tasks

The following is a summary of the major tasks described in the previous sections as they are run by time period:

### Daily tasks

- Collect CDR data from your buffer unit (it is recommended that you use a buffer unit to store CDR data). Collections can be scheduled to occur automatically every day, or they can be manually invoked each day. If you are not using a buffer unit, a dedicated PC COM port continuously collects the CDR data as they are output from the Meridian 1 or Succession CSE 1000 system.
- Review the data collection Status pane daily to ensure that your scheduled collection was successful. As the Telecom Billing System collects call records, it displays them in the data collection Data tab.

### Ongoing tasks (recommended weekly)

- If you are not using the Station Administration application, you must perform your Employee Database updates manually.
- Update External Parties and Roles/Projects Databases. These databases assign the names of external parties or roles and projects to the digits dialed. The reports can then include both the dialed number and these names. If you use these databases, they should be updated periodically.
- Perform database backups. It is important to maintain backup files of your databases on external devices or media (such as floppy disks) for security purposes.

### Monthly tasks

- Run your monthly reports. Select your reporting filters to ensure that you are reporting on the correct subset of the collected data. Typically, this includes setting the date for your reporting period.
- Archive or purge your Call Database data. Remove any old or unwanted call records from the Call Database to make room for the new call records. Based on the size of your Call Database, you may need to remove old data from it more frequently than once a month.

### **Quarterly tasks**

- Update your system's Location Books. Periodically, location designations change (for example, new area codes are added to the North American V&H grid). You must, therefore, remember to update your defined location books on a regular basis.
- Similar to the Location Books, Rate Tables must be updated on a regular basis due to changes in tariffs.

## **System setup for hospitality billing**

In addition to its standard general business functions (that is, those required by most organizations to collect, cost, and report on calls), the Telecom Billing System also includes functions and reports to allow for hospitality and campus billing. The Bill Party Surcharge function applies charges to calls in addition to the trunk-based usage charges. This allows for additional telephone usage charges to be assigned to users based on such criteria as their extensions, authorization codes, and account codes. The filterable data transmission function can post this usage data to an existing Property Management System.

This section explains how to set up the Telecom Billing System to process call records for hospitality billing. Specifically, it describes how to set up the system databases to assign surcharges to guests at a hotel and transmit this data to a Property Management System.

This section also describes how to perform the other functions required to set up and run the Telecom Billing System. These include data collection, trunk-based costing, and report generation. Although these additional functions are described previously in this chapter (for the general business sample setup), they are included here to help you understand how the hospitality-related functions relate to the other Telecom Billing System's general business functions.

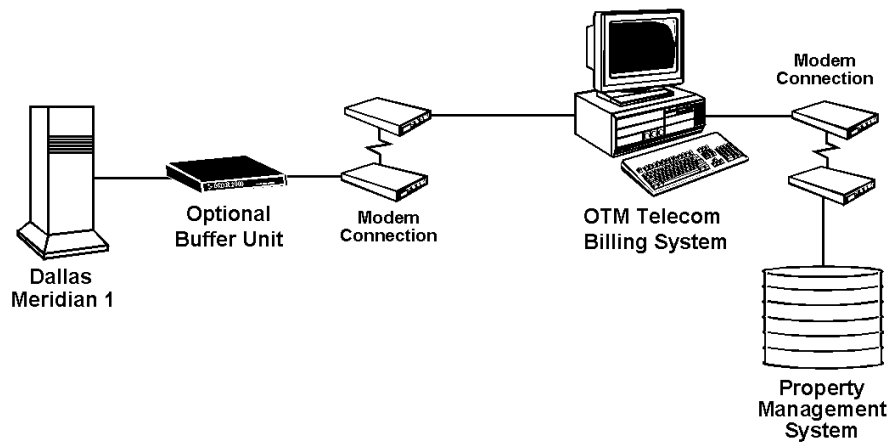
## Example scenario

The instructions in this section are based on the following scenario:

- A hotel chain, Rooms International, has a property located in Dallas, entitled Downtown Property. The telephone number for this hotel is (214) 555-1111. The telephone system requires that all users and guests enter the access code 9 before making any outgoing calls.
- There are five trunks on the Meridian 1. These are configured as trunk 1 to 5.
- The Meridian 1 located in the switch room of this property requires an MDR-2000 ISD to collect CDR data. A modem is attached to it to allow for communications between it and a PC in another room. It has a dedicated extension number of 222.
- The PC on which the Telecom Billing System is installed is located in another room of the same building. A modem is attached to this PC's COM1 port and is used to connect to the MDR-2000 ISD. The Telecom Billing System collects the CDR data from the MDR-2000 in real-time mode.
- The Telecom Billing System must also post all calling activity for its rooms (Guest Rooms and Suites with extensions 100 to 999) to its Property Management System.

## System schematic

The following schematic outlines the relationship between the Telecom Billing System and its hardware components:

**Figure 18** System block diagram

## Summary: Setting up the Telecom Billing System

The following is a summary of the steps required to set up and configure the Telecom Billing System to process call records.

1. Ensure that the Meridian 1 or Succession CSE 1000 system is set up to properly output CDR data.
2. Install and set up the MDR-2000 ISD.
3. Install any rate tables that were purchased for your dialing plan.
4. Run the Telecom Billing System so it can be configured.
5. Set up and test the data collection process before running it in a real-time situation:
  - a. Enter the data collection parameters.
  - b. Test data collection.
6. Obtain the List Trunk and Member (LTM) values from the Meridian 1 or Succession CSE 1000 system.

7. Set up the Organizational Hierarchy and Employee Databases to include the extensions for the guest rooms and suites, as well as for the hotel's staff.
8. Set up Telephone Configuration Database:
  - a. Access the Telephone Configuration Database editor.
  - b. Update the Call Type Definitions table.
  - c. Define carrier pricing templates.
  - d. Define the call digit translation.
  - e. Define the bill party surcharges.
  - f. Enter the telephone configuration.
9. Test the telephone configuration.
10. Set up data transmission to post call records to the Property Management System in real time.
11. Start data collection and transmission.

## **Step 1: Ensure that Meridian 1 or Succession CSE 1000 system is set up properly**

For the Telecom Billing System to collect and process CDR data, the Meridian 1 or Succession CSE 1000 system must output the data in the proper format. You must, therefore, enable the required features and options in the Meridian 1 or Succession CSE 1000 system overlays. This section describes the options that are required for the Telecom Billing System to process the CDR data.



**Note:** This document is not intended to describe all options related to CDR data. For complete details on the available CDR options and information on configuring CDR, refer to the appropriate documentation (for example, *Call Detail Recording Description and Formats*).

---

## Select CDR output format

In overlay 17, select either NEW or OLD format CDR output (FCDR=NEW). The Telecom Billing System contains script files for supported buffer units, including the MDR-2000 ISD. As well, it can be configured to support both NEW and OLD CDR formats.

## Auxiliary Identification output in CDR record

In overlay 15, configure the Auxiliary Identification to be output in CDR (AXID=Yes). The AXID field is not captured by the Telecom Billing System, but is required to ensure that data fields output in the CDR record appear in the expected positions.

## Configure routes for CDR output

In overlay 16, configure the routes that output CDR data (CDR=Yes), and determine the type of CDR data to output. For example, you may want to record all incoming calls and only outgoing toll calls.

Ensure that the SDI port for your system is configured to match the settings on the buffer unit. If you plan to collect data at a higher baud rate, you may need to change both the SDI port and the buffer unit settings.

The default settings for the MDR-2000 ISD are:

- Baud = 1200
- Data Bits = 8
- Parity = None
- Stop Bits = 1

If you plan to use the default values for the MDR-2000 ISD, you must use the same values for the SDI port.



## Step 2: Install and set up buffer unit

The Telecom Billing System collects CDR data from the Meridian 1 or Succession CSE 1000 system either directly or through one of several types of buffer units. Based on your configuration, you may need to collect the CDR data from a buffer unit in a specific format and share it between different applications.

For this setup, assume that the Telecom Billing System is collecting CDR data from the MDR-2000 ISD. This section describes how to connect the MDR-2000 ISD to the Meridian 1 or Succession CSE 1000 system and the PC via a modem connection. This provides you with an example by which you can learn how to set up the other OTM-supported buffer units. Since other buffer units have different connection and communications requirements, you should refer to their documentation for more details on setting them up.

### Connect MDR-2000 ISD to Meridian 1 or Succession CSE 1000 system and PC

The first step is to connect and install the MDR-2000 ISD onto the Meridian 1 or Succession CSE 1000 system. It can then collect and store call records as they are output from the Meridian 1 or Succession CSE 1000 system. You must then connect the PC to the MDR-2000 ISD so the Telecom Billing System can collect the call records from its database files. For this example, you configure and connect modems to the MDR-2000 ISD and to the PC.

For a complete description of how to connect the MDR-2000 ISD to the Meridian 1 or Succession CSE 1000 system and the PC, refer to [“Getting started” \(page 27\)](#).

#### *Verify that the MDR-2000 ISD is collecting data*

Access the MDR-2000 ISD to view and verify that the incoming data stream is valid. To access the MDR-2000 ISD, perform the following steps.

- 1 Run a terminal program such as Windows HyperTerminal.
- 2 Dial up the telephone number of the MDR-2000 ISD. This is the number where the MDR-2000 ISD was connected via its modem. If the PC is connected directly to the MDR-2000 ISD, then you can simply start typing the commands to edit the parameters. For this example, enter **222**.

- 3 Type **<Ctrl-V> I D <Enter>**. This verifies that you are communicating with the MDR-2000 ISD. The response is the serial number of the MDR-2000 ISD.
- 4 To view the data, type **<Ctrl-V> D U <Enter>** (you may need to type this twice). If the data appears incorrect (for example, it contains random characters), then there is probably a communications problem.

### Step 3: Install rate tables and location books

Before you configure the Telecom Billing System, you must install the rate tables that reflect your telecom provider's rates. These provide such rates as long distance charges for direct dialed calls to North America as well as international long distance charges. The Telecom Billing System requires these rate tables to accurately apply costs to your long distance calls.

As well as rate tables, you must install a set of location books for your software. Location books contain codes for the actual locations that are used by the rate tables to determine the charges incurred when calling these locations.

You can obtain rate tables from a rate service or from your dealer. Remember that the rate table files must be compatible with the Telecom Billing System software. If in doubt, check with your supplier before purchasing any rate tables.

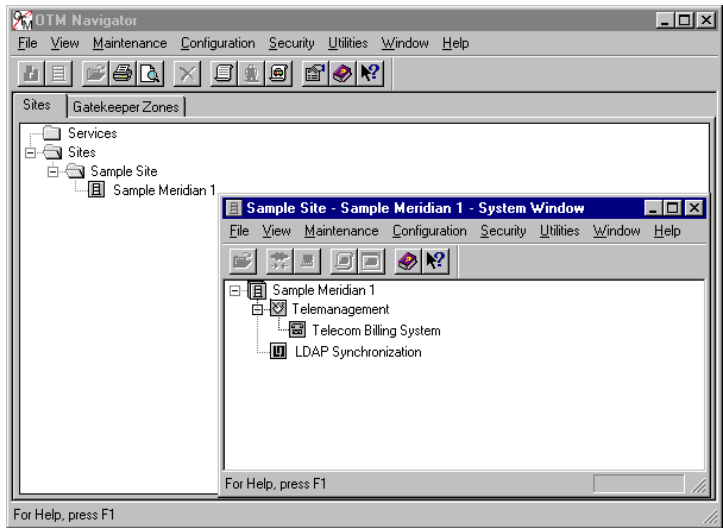
To install the rate tables and location books, simply follow the instructions included with them. Remember to install the rate table files onto your OTM Telecom Billing System directory so you can select the appropriate rate table files when you are defining your carrier pricing templates.

### Step 4: Run Telecom Billing System so it can be configured

If OTM is not already running, click OTM Navigator from the StartUp program group. In the OTM Navigator, open a predefined site and system (for example, Site=Acme Company, System=Head Office).

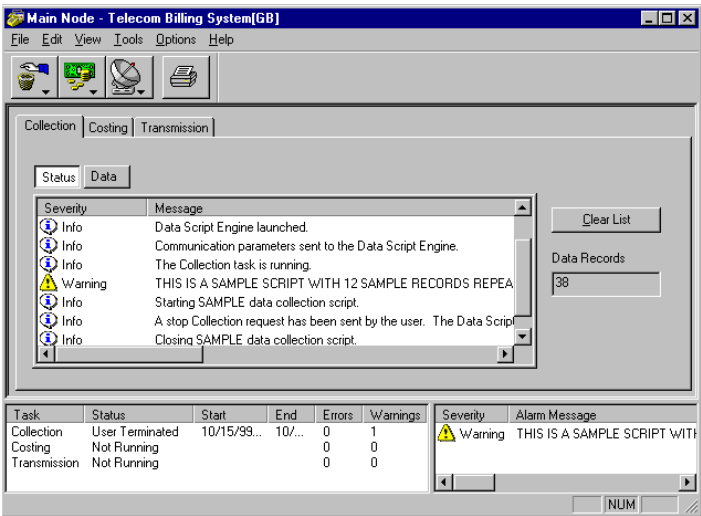
Once you open the site and system, the following windows appear:

**Figure 19** OTM Navigator



From the selected site and system in the OTM Navigator, click Telemanagement, and then click Telecom Billing System. This accesses the Telecom Billing System application main window from which you can set up the communications parameters, telephone configuration, and rate tables for initial use. You must also test the data collection and run reports to see if the data was collected and costed properly.

**Figure 20** Telecom Billing System main window



## Step 5: Set up and test data collection

Before you enter your telephone configuration, you should verify that the Telecom Billing System is collecting data from the Meridian 1 or Succession CSE 1000 system in the correct format. This way, you can test the configuration against actual calls. To test the data collection, simply enter the data collection parameters, collect the call records from the Meridian 1 or Succession CSE 1000 system, and view them in the Call Database.

### Enter data collection parameters

For the Telecom Billing System to collect data from the Meridian 1 or Succession CSE 1000 system, you must enter the data collection parameters for the site and system. You should have already connected and configured your hardware (previous sections entitled “Step 1: Ensure that Meridian 1 or Succession CSE 1000 system is set up properly” and “Step 2: Install and set up buffer unit”). You only need to access the System Configuration function’s Communications tab to select the communications and data collection parameters.

To enter the data collection parameters for the Telecom Billing System, perform the following steps.

- 1 From the Telecom Billing System main window, click Options > System Configuration. The System Configuration dialog box appears.
- 2 Click the Collection tab, and then enter your communications and collection parameters. For example, enter the following values:
  - Type: **Dial-Up**
  - Phone No: **222**
  - Redials: **3**
  - Port: **COM1**
  - Baud Rate: **9600**
  - Data Bits: **8**
  - Parity: **None**
  - Stop Bits: **1**
- 3 In the Collection Script box, enter then name of the script file that is used for this data collection. This file contains the instructions used to communicate with the buffer unit and collect data from it. The script filename you select

depends on the type of buffer unit and the format of the data being collected. For example, if you are collecting data from the MDR-2000 ISD, then select MDR2000.COL. Refer to the “Common Services” chapter of *Using Optivity Telephony Manager* (553-3001-330) for a list of supported buffer units and their corresponding script filenames.

- 4 Click OK to select these options and return to the Telecom Billing System main window.

## Test data collection

Now that you have configured your hardware and entered the required communications parameters, you are ready to test the data collection. At this stage, you should only run a data collection as a test. Later, you can set up and invoke data collection once you have entered all of your system information and you are ready to run it live.

The following is an example to demonstrate how to test the data collection process. This example assumes the following:

- The Meridian 1 or Succession CSE 1000 system is outputting CDR data to the SDI port.
- The MDR-2000 ISD is directly connected to the Meridian 1 or Succession CSE 1000 system and is continuously collecting and storing the raw CDR data (call records) as they are output from the Meridian 1.
- The Telecom Billing System collects this CDR data from the MDR-2000 ISD and stores it in the Call Database.

To test the data collection for this scenario, perform the following steps.

- 1 Wait for some calls to be recorded by the Meridian 1 or Succession CSE 1000 system. Either wait for some calling activity on the Meridian 1 or make a few telephone calls. If the MDR-2000 ISD is properly connected to the Meridian 1 or Succession CSE 1000 system, it collects and stores these call records as they are recorded by the Meridian 1 (note that the BMT light is out).
- 2 Start the data collection process by clicking Tools > Collection > Start from the Telecom Billing System main window.

- 3 From the Start Collection dialog box, select the Batch option, and then click Start. The Telecom Billing System starts collecting the call records from the MDR-2000 ISD and places them in the Call Database.
- 4 During the data collection process, the Telecom Billing System displays both the collection activities as well as the call records as they are collected. To view this information, click the Collection tab in the System Tasks pane. Click Status to view the status of the collection. Click Data from this tab to view the call records and verify that they are in the correct format.
- 5 Review the call records for any invalid fields. For example, check the trunk numbers and digits dialed for invalid values. The trunk numbers appear in the Orig ID or Term ID fields depending on the “Orig” or “Term” values. Check the first digits in the Digits Dialed fields to confirm the access codes. As well, check the call records’ dates and times to ensure that they match the date and time on the Meridian 1 or Succession CSE 1000 system.

**Figure 21** Call Database

Rec. ID	Call Type	Orig	Orig ID	Term	Term ID	Date	Time	Duration
1	Normal	Ext.	3535	Trunk	000019	9/10/98	3:48:00 PM	2:36
2	Normal	Trunk	000007	Ext.	3845	9/10/98	3:50:00 PM	0:46
3	Internal	Ext.	3523	Ext.	3550	9/10/98	3:51:00 PM	9:34
4	Normal	Ext.	3425	Trunk	000014	9/10/98	3:50:00 PM	0:50
5	Internal	Att.	1	Ext.	3403	9/10/98	3:51:00 PM	0:30
6	Normal	Trunk	000008	Ext.	3844	9/10/98	3:47:00 PM	5:28
7	Normal	Trunk	000007	Ext.	3535	9/10/98	3:52:00 PM	0:10
8	Internal	Ext.	3460	Ext.	3893	9/10/98	3:52:00 PM	0:56
9	Internal	Ext.	3523	Ext.	3895	9/10/98	3:52:00 PM	0:12
10	Normal	Trunk	000002	Ext.	3518	9/10/98	3:50:00 PM	2:00
11	Internal	Att.	1	Ext.	3403	9/10/98	3:52:00 PM	0:16
12	Normal	Trunk	000009	Ext.	3846	9/10/98	3:51:00 PM	2:18
13	Normal	Ext.	3535	Trunk	000019	9/10/98	3:48:00 PM	2:36
14	Normal	Trunk	000007	Ext.	3845	9/10/98	3:50:00 PM	0:46

- 6 If the data appears invalid, then repeat the previous steps, checking to ensure that your hardware is connected properly and that you have the correct settings. Check the parameters on your Meridian 1 or Succession CSE 1000 system and the MDR-2000 ISD.

This completes the steps required to initiate a data collection and verify the call records.

## Step 6: Obtain LTM from Meridian 1 or Succession CSE 1000 system

Before you start entering the telephone configuration, you must first obtain the List Trunk and Member (LTM) report from the Meridian 1 or Succession CSE 1000 system. This provides you with invaluable information on how to set up your configuration.



**Note:** If you have ISA, the LTM does not show any members for the service routes. You should print the Route Data Block (RDB) to determine the service routes associated with the ISA routes. All members indicated in the ISA route must be added to the associated service routes.

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To obtain the LTM and RDB information for your configuration, access the Meridian 1 or Succession CSE 1000 system, and then print the associated LTM and RDB reports.

## Step 7: Set Up Organizational Hierarchy and Employee Databases

The next step is to set up your Organizational Hierarchy and Employee Databases to include the extensions for the guest rooms and suites, as well as for your hotel staff.

### Set up Organizational Hierarchy Database

The Organizational Hierarchy Database stores the information for the different levels within your hotel. It provides you with a flexible means of structuring these levels (for example, properties, towers, guest rooms, suites, and so on).

The following example demonstrates how to add the hotel's property in Dallas (Downtown Property) as an organizational level to the Organizational Hierarchy Database. It also demonstrates how to add "Guest Rooms" and "Suites" as sublevels to the Downtown Property level. Once you have defined these levels, you can then enter their corresponding room numbers and details in the Employee Database.

### *Add Downtown Property to Rooms International*

To add the level Downtown Property to the Rooms International System, perform the following steps.

- 1 Access the Organizational Hierarchy Database editor by clicking Edit > Organizational Hierarchy from the Telecom Billing System main window. The Organizational Hierarchy Editor dialog box appears with a set of default levels.
- 2 Click the Organizations tab. The Organizations menu tree appears with the following top-level default value: ORG.
- 3 Change this default title by right-clicking the ORG node. From the pop-up menu that appears, click Rename and type **Rooms International**.
- 4 Add a new division to this node by right-clicking the newly named Rooms International node. From the pop-up menu that appears, click Add New Division.
- 5 A new node appears with the default value New Division 1. Type over this name with the desired division title. For this example, type **Downtown Property**.

### *Add Guest Rooms and Suites to Downtown Property*

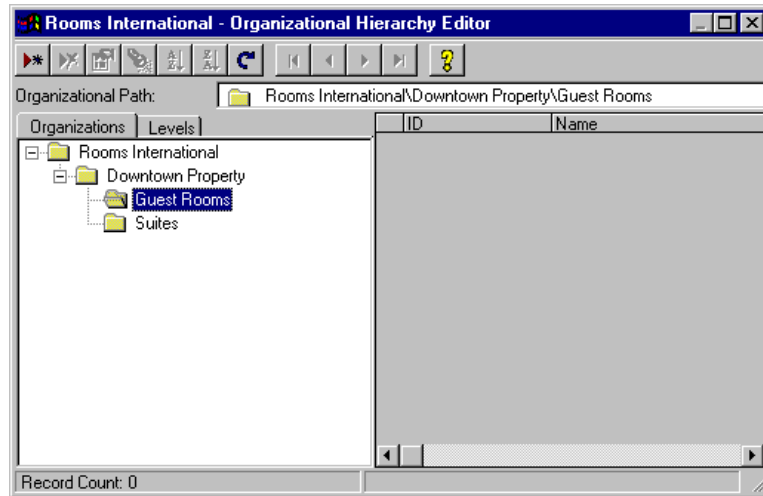
To add the levels Guest Rooms and Suites to the Downtown Property level, perform the following steps.

- 1 Add the level Guest Rooms to the Downtown Property level by right-clicking the newly named Downtown Property node. From the pop-up menu that appears, click Add New Department.
- 2 A new node appears with the default value New Department 1. Type over this name with the desired department title. For this example, type **Guest Rooms**.
- 3 Add the level Suites to the Downtown Property level by right-clicking the Downtown Property node again. From the pop-up menu that appears, click Add New Department.
- 4 Again, a new node appears with the default value New Department 1. Type over this name with the desired department title. For this example, type **Suites**.



The following is an example of the Organizational Hierarchy editor with this input.

**Figure 22** Organizational Hierarchy Editor



## Enter Guest Rooms and Suites in Employee Database

The Employee Database contains information about the employees in your organization. For hospitality billing, this database can also be used to store information about the rooms within your property (for example, the extensions in these rooms). This information is required to cost and allocate telephone calls to the proper extensions and cost centers within your hotel—for both guests and staff.

The following steps demonstrate how to enter a sample guest room (Guest Room 10 with extension 101) in the Employee Database. You must repeat these steps for each guest room and suite that has a telephone extension and that requires billing.

- 1 Click Edit > Employees from the Telecom Billing System main window. The Employee Editor dialog box appears.
- 2 Click the Add New Record icon.
- 3 Enter the following information in the Employee tab:
  - Last Name: **Guest Room 10**

- Org. Path: **Rooms International\Downtown Property\Guest Rooms**
- 4** Leave the remaining fields and boxes blank and click Apply.
  - 5** Click <New Asset> from the Assets field.
  - 6** Click Extension from the Type drop-down list box.
  - 7** In the blank box, under the Type drop-down list box, enter **101**.
  - 8** Turn on the Prime check box (if you do not turn on this check box, the system marks it as prime as a default).
  - 9** Click Apply from the assets field.
  - 10** Click OK to save this information and return to the Employee Editor dialog box. Note that a new record line appears with this room's identification and name. Click Close from this dialog box to save this information and return to the Telecom Billing System main window.

This completes the steps required to enter this room's information in the Employee Database. Repeat these steps for each guest room and suite in your property. Remember to assign each guest room to the Guest Room level and each suite to the Suite level.

The following is a sample of the Employee Editor dialog box with this room's information.

Figure 23 Employee Database Employee Editor

The **Employee Editor** dialog box has two tabs: **Employee** and **Additional Info**. The **Employee** tab is active, showing the following fields:

- Identification:
- Publish: ☐
- First Name:
- Middle Name:
- Last Name:
- Manager:
- Org. Path:
- Job Title:
- Email:
- Street/No.:
- City:  Prov./State:
- Country:  Postal/Zip:
- Description:

On the right, there is a table with columns: **Type**, **Value**, **Prime**, and **Pub...**.

Type	Value	Prime	Pub...
<New Asset>			
Extension	101	Yes	Yes

Below the table, there is a section with the text: **\* This asset is read only.**

Below this text, there is a **Type** dropdown menu and an empty text field.


At the bottom of this section, there are two checkboxes: **Prime** (checked) and **Publish** (checked).

At the bottom of the dialog box, there are five buttons: **OK**, **Cancel**, **Apply**, **Apply/New**, and **Help**.

## Step 8: Set up Telephone Configuration Database

The next step in setting up the Telecom Billing System is to define the telephone configuration. This identifies how the Telecom Billing System processes the call records. It involves assigning the appropriate rate tables and carrier pricing templates to your system's trunk groups, entering any call digit translations, and setting any reporting options.

Since defining the telephone configuration is a complex task, it is helpful to demonstrate how to define one using an example configuration. This example represents a typical configuration and helps you to set up your own configuration.

 **Note:** This telephone configuration is only an example. When setting up your own configuration, you must enter your own company's system and rate information. You should review all of the documentation provided with your Meridian 1 or Succession CSE 1000 system and by your service provider. This includes trunk route and member numbers, output format, and rate table names.

## Summary of steps

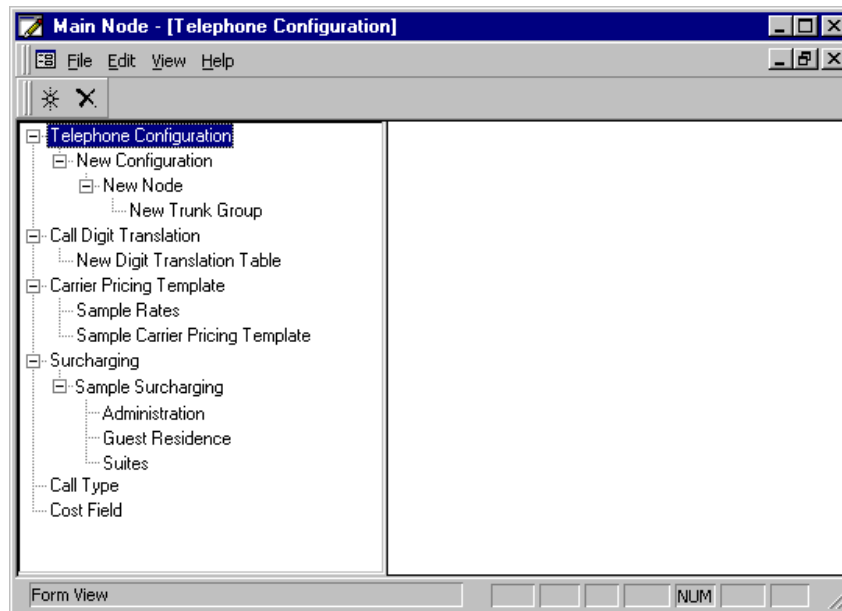
The following summary outlines the steps that you must perform to define the telephone configuration for this example:

1. Access Telephone Configuration Database editor.
2. Update Call Type Definitions table.
3. Define Carrier Pricing Template.
4. Define Call Digit Translation.
5. Define Surcharges.
6. Enter the Telephone Configuration:
  - a. Create Telephone Configuration.
  - b. Add Main Node to Telephone Configuration.
  - c. Add Long Distance Service Definition to Main Node.

## Access Telephone Configuration Database editor

To access the Telephone Configuration Database tables, click Edit > Telephone Configuration from the Telecom Billing System main window.

The following is a sample Telephone Configuration editor. When you access this function for the first time, it appears with blank menu items in the Telephone Configuration menu tree.

**Figure 24** Telephone Configuration editor

Review the LTM report from the Meridian 1 or Succession CSE 1000 system to identify the call types for reporting. For example, you can set up the call types: CO, DID, 800, and TIE. With this information, you can set up columns of costing details or cost summaries for these call types.

## Update Call Type Definitions

The Call Type Definition function contains a list of the types of calls that may be used by your organization (for example, International, Local, and so on). You select these call types when you define the dialing patterns of your organization in the Carrier Pricing Template. Select these predefined call types when entering your costing and reporting options.

The Call Type Definition function lists a set of default call types that you can select when entering your costing and reporting options. In this step, add any additional call types that you may require for your configuration (for example, emergency calls). If you do not require any additional call types, then skip this step.

## Define Carrier Pricing Templates

Carrier Pricing Templates help determine the type and cost of a call. The Telephone Configuration Database uses these templates to assign costs to the calls based on the trunks used and the digits dialed. For this example, you define a template for regular long distance service with multiple pricing definitions.

For each digit pattern that represents a billable call, assign either the rate file and table from your telephone company or a flat per-minute or per-call charge. Add the flat per-call charges to the cost assigned by the rate file of your telephone company.

### *Carrier Pricing Template—Sample Rates*

To enter the sample carrier pricing template, perform the following steps.

- 1 From the Telephone Configuration menu tree, click Carrier Pricing Template, and then click File > New Carrier Pricing Template. This displays the Carrier Pricing Template grid in the right pane.
- 2 In the Name box, enter **Sample Rates**.
- 3 Click Use Default Template to create a set of default values for North America. Update these values with your own system requirements.

### *Edit pricing definitions in Carrier Pricing Template*

The following steps describe how to edit the pricing definitions for this default table. These pricing definitions allow the Telecom Billing System to interpret any type of call containing identifiable digit patterns and then cost them accordingly. They appear as a line-by-line listing in the grid.

For this example, you only edit the pricing definitions for international and North American long distance calls to specify the appropriate rate tables for your carrier. These default pricing definitions have already been created to provide you with standard North American dialing patterns. You only need to select the appropriate rate tables for them. The following examples demonstrate the use of the rate tables:

**National Calls:** These types of calls use the location book VHDATA Location Book.

**International Calls:** These types of calls use the location book Teleglobe International Location Book.

In certain cases, you may need to add new pricing definitions to match your own configuration and dialing patterns.



**Note:** The order in which you enter these pricing definitions is important. During costing, calls are compared to the digit pattern of the first definition at the top of the list. The Telecom Billing System then proceeds down the list until it matches the Digit Pattern field and, if used, the rate table. The Telecom Billing System then proceeds to the next definition if the rate table cannot cost the call (even if the digit patterns are matched).

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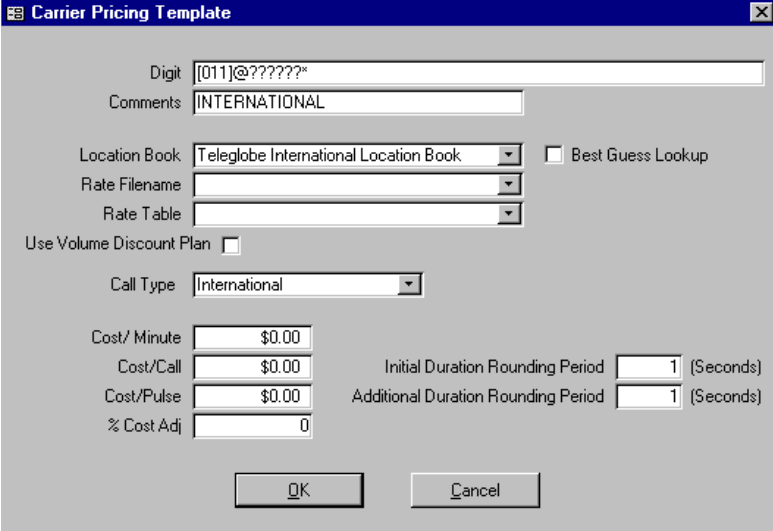
You can modify each pricing definition in this Carrier Pricing Template by clicking the record line in the list and typing over the available fields. To view each record in a dialog box, click the record line, and then click Edit.

For example, to edit the International pricing definition, click the record line for International (you may need to scroll across the grid to locate International under the Comments field), and then click Edit. In the dialog box that appears, simply enter the desired information for it. Once you have entered the rate information for each type of call, click OK to save it and return to the Carrier Pricing Template grid.

Perform the following steps to modify these pricing definitions.

### *International Calls*

- 1 Click the record line in the Carrier Pricing Template grid that contains International in the Comments field, and then click Edit.
- 2 Enter the information as listed in the following dialog box for International calls, and then click OK.

**Figure 25** Carrier Pricing Template: International Calls

The image shows a Windows-style dialog box titled "Carrier Pricing Template". It contains several input fields and checkboxes for configuring international call pricing. The "Digit" field is set to "[011]@?????\*", and the "Comments" field is set to "INTERNATIONAL". The "Location Book" is a dropdown menu showing "Tele globe International Location Book". The "Rate Filename" and "Rate Table" are also dropdown menus. There is a checkbox for "Best Guess Lookup" which is unchecked. The "Use Volume Discount Plan" checkbox is also unchecked. The "Call Type" is a dropdown menu set to "International". The "Cost/Minute" field is set to "\$0.00". The "Cost/Call" field is set to "\$0.00". The "Cost/Pulse" field is set to "\$0.00". The "% Cost Adj" field is set to "0". The "Initial Duration Rounding Period" is a spinner box set to "1" with the unit "(Seconds)". The "Additional Duration Rounding Period" is a spinner box set to "1" with the unit "(Seconds)". At the bottom, there are "OK" and "Cancel" buttons.

Digit: [011]@?????\*

Comments: INTERNATIONAL

Location Book: Tele globe International Location Book ☐ Best Guess Lookup

Rate Filename:

Rate Table:

Use Volume Discount Plan ☐

Call Type: International

Cost/Minute: \$0.00

Cost/Call: \$0.00 Initial Duration Rounding Period: 1 (Seconds)

Cost/Pulse: \$0.00 Additional Duration Rounding Period: 1 (Seconds)

% Cost Adj: 0

OK Cancel

**Long Distance (National) Calls**

- 1 Click the record line in the Carrier Pricing Template grid that contains National in the Comments field, and then click Edit.
- 2 Enter the information as listed in the following dialog box for national calls, and then click OK.



**Figure 26** Carrier Pricing Template: Long Distance (National) Calls

The image shows a 'Carrier Pricing Template' dialog box. It has the following fields and controls:


- Digit:** [1]@???@???-????\*
- Comments:** NATIONAL
- Location Book:** VHDATA Location Book (dropdown)
- Rate Filename:** (dropdown)
- Rate Table:** (dropdown)
- Use Volume Discount Plan:** ☐
- Call Type:** National (dropdown)
- Cost/ Minute:** \$0.00
- Cost/Call:** \$0.00
- Cost/Pulse:** \$0.00
- % Cost Adj:** 0
- Initial Duration Rounding Period:** 1 (Seconds)
- Additional Duration Rounding Period:** 1 (Seconds)
- Best Guess Lookup:** ☐
- Buttons:** OK, Cancel

Repeat the above steps for other dialed digit patterns where other charges may apply. This completes the entries for this template’s pricing definitions.

### Define Call Digit Translation

The Call Digit Translation function translates the digits dialed on call records. This translation can be applied to all outgoing calls in the system or to calls on specific trunk groups in the system. This allows the Telecom Billing System to process and print a different digit pattern from the one that is actually dialed (for example, suppressing access codes).

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 **Note:** Call Digit Translation does not affect Calling Line ID or Automatic Number Identification (CLID/ANI) digit patterns on incoming calls.

---

For this example, you build a System Call Digit Translation table to remove the access code “9” from the digits dialed of the call records. This way, each call record appears without the access code on reports. The digit is the access code used to access a trunk on the Meridian 1 or Succession CSE 1000 system to

initiate a call. For example, your Meridian 1 or Succession CSE 1000 system may require that you enter “9” to select a trunk to make an outgoing call. Each call record contains the access code digits, which are entered as part of the digit stream.

To translate the digit patterns for all calls, perform the following steps.

- 1 Click Call Digit Translation from the Telephone Configuration menu tree.
- 2 Click File > New Digit Translation Table to add a new definition for this table. This creates another menu item entitled New Digit Translation Table 1 under this menu item. For this new call digit translation, a blank table appears in the right pane.
- 3 Rename this table by typing **Sample CDT** in the Name box.
- 4 Enter the following information in the first line of this grid:
  - Match Digits: **9**
  - Replace Digits: **-**
- 5 Leave the remaining fields and boxes blank.

If you are not sure of what your access codes are, review the collected call records in the Collection tab (Data) of the System Task pane. Access the Telecom Billing System main window, click the Collection tab of the System Task pane, and then click Data. Check the Digits field for any of the outgoing call records. If the system inserts an access code in the digit stream, it appears here.

This completes the steps for entering the Call Digit Translation.

## Define surcharges

The Bill Party Surcharge function of the Telephone Configuration Database is used to define any charges that are applied to calls in addition to your trunk-based charges. This function allows for additional telephone usage charges to be assigned to users based on their extensions, authorization codes, or account codes.

The following sections describe how to set up the surcharge profiles for this example configuration. Surcharge profiles define two key pieces of information: they define how to calculate the surcharges and to whom these surcharges should be applied. Once you have defined these surcharges and assigned them to a surcharge profile, you can select this profile when entering the telephone configuration (see next).

### *Create surcharge profile and surcharge groups*

For this example, you create the surcharge profile entitled Room Group Surcharge. This profile contains the surcharge groups entitled Guest Rooms and Suites. These surcharge groups allow you to apply telephone usage charges to the Guest Rooms and Suites that you defined in the Organizational Hierarchy and Employee Databases.

#### **Surcharge profile**

To create the new surcharge profile Room Group Surcharge, perform the following steps.

- 1 Click Surcharging from the Telephone Configuration menu tree.
- 2 Click File > New Surcharge Profile to add a new surcharge profile to this table.
- 3 In the Name box, enter **Room Group Surcharge**.
- 4 Select Extension from the first Identify Bill Party by drop-down list box.

#### **Surcharge group**

To assign the surcharge groups Guest Rooms and Suites to the surcharge profile that you just defined, perform the following steps.

- 1 Click the name of the Surcharge Profile that you just created (that is, Room Group Surcharge), and then click File > New Surcharge Group.
- 2 In the Name box, enter **Guest Rooms**.
- 3 Repeat the above steps and create the Surcharge Group Suites.

## *Define surcharges for Guest Rooms and Suites*

Now that you have created the surcharge profile and its groups, you are ready to apply the surcharges to these rooms. You do so by entering the organizational units Guest Rooms and Suites in the Members tab for each group. You already defined these units in the Organizational Hierarchy Database and assigned the appropriate extensions to them in the Employee Database. You then enter the appropriate surcharges for these members in the Surcharges tab.

### **Define surcharges for Guest Rooms**

To define the surcharges for the surcharge group Guest Rooms, perform the following steps.

- 1** Click Guest Rooms from the Surcharging profile Room Group Surcharge.
- 2** Click the Members tab, and then click the Organizational Unit drop-down list box. Select Rooms International/Downtown Property/Guest Rooms. Since there are no sub-units to this node that require additional surcharges, you can turn off the Include Sub-units check box.
- 3** Click the Surcharges tab. For this example, you assign a surcharge of \$1.00 to all local outgoing and incoming calls. You also add a surcharge of \$2.00 to all national outgoing and incoming calls.
- 4** Click the first line and enter the following information:
  - Rule Name: **Local Calls**
  - Call Type: **Local**
  - Cost/Call: **1.00**
  - Transmit Call: **Enabled**
- 5** Click the second line and enter the following information:
  - Rule Name: **National Calls**
  - Call Type: **National**
  - Cost/Call: **2.00**
  - Transmit Call: **Enabled**
- 6** Leave the remaining fields in each line at their defaults.

This completes the steps for defining surcharges for Guest Rooms.

## Define surcharges for Suites

To define the surcharges for the surcharge group Suites, perform the following steps.

- 1 Click Suites from the Surcharging profile Room Group Surcharge.
- 2 Click the Members tab, and then click the Organizational Unit drop-down list box. Select Rooms International/Downtown Property/Suites. Since there are no sub-units to this node that require additional surcharges, you can turn off the Include Sub-units check box.
- 3 Click the Surcharges tab. For this example, you assign a surcharge of \$2.00 to all outgoing calls only. Click the first line and enter the following information:
  - Rule Name: **Outgoing Calls**
  - Call Type: **Outgoing Calls**
  - Cost/Call: **2.00**
  - Transmit Call: **Enabled**
- 4 Leave the remaining fields and boxes at their defaults.

This completes the steps for defining surcharges for Suites. Now that you have defined the surcharges for this surcharge profile, you can enter it in the Telephone Configuration table (next).

## Enter Telephone Configuration

The Telephone Configuration Database is the key to pricing calls and tracing them to their destinations. This database defines the type of costing used through each defined service and includes any additional costs defined for your system and location. Each defined service uses predefined location books and rate tables based on your telecom carrier's offerings. The Telecom Billing System uses this configuration information to cost the call records and report on them.

Now that you have all of the elements required to construct your telephone configuration, you must add them to this table. The Telephone Configuration table (in the Telephone Configuration Database editor) is sorted into the following three components:

- General information (includes internal call definitions)
- Node information

- Service definitions (trunks)

You can define multiple nodes for each telephone configuration. As well, you can define multiple service definitions for each node.

The following sections describe how to create each of these components.

### *Create Telephone Configuration (general information)*

The first part of the Telephone Configuration table contains its general information and optional costing for internal calls.

To create a new telephone configuration table and enter its general information, perform the following steps.

- 1 Click the Telephone Configuration menu item, and then click File > New Configuration. A data entry form appears in the right pane allowing you to enter this telephone configuration's general information.
- 2 Enter a descriptive name for this configuration by typing **Telephone Configuration Rooms International** in the Telephone Configuration box.
- 3 Specify the Call Digit Translation table that is used for this Telephone Configuration by selecting Sample CDT from the Call Digit Translation drop-down list box. You previously defined this table in the Call Digit Translation function.
- 4 Select the surcharge definition from the Call Party Surcharge Profile drop-down list box. For this example, select Room Group Surcharge. This applies the surcharges that you defined for the hotel guest rooms and suites.
- 5 If your Meridian 1 or Succession CSE 1000 system outputs CDR for internal calls (that is, calls made between extensions within the Meridian 1 or Succession CSE 1000 system), then enter these costs in the Internal Calls fields of this table. For this example, leave the default values in these fields.

This completes the steps for creating a new Telephone Configuration table and entering its general information.

### *Add Main Node (Node Information Editor)*

The next step in defining this telephone configuration is to enter the general information for the main node. Since a telephone configuration can contain multiple nodes, you must define each node separately. For example, your company's telephone system may span different offices (nodes). For this example, you are creating the minimum required node—the Main Node.

To add a node to this defined configuration, click the menu item Telephone Configuration Rooms International (that you just created in the previous steps), and then click File > New Node.

Perform the following steps to edit this node.

- 1** In the Node Name box, enter the name for this node. For example, enter **Main Node**. The title in the menu tree changes to Main Node.
- 2** In the Node Location box, enter the city and province/state for your company. For example, enter **Dallas, Texas**.
- 3** In the Main Phone Number box, enter the telephone number for this location. For example, enter **214-555-1111**.
- 4** From the Location Book drop-down list box, select VHDATA Location Book.
- 5** Since this is the main node, leave the Time Zone Adjustment box blank.
- 6** Since this is the main node, leave the Currency Exchange box at its default value: 1.
- 7** Leave the Main Node check box turned on. Only one node can have this checked.
- 8** If the rates defined for this node require additional taxes, then select them from the Tax Information drop-down list boxes. You must have defined these taxes in the Taxes editor.

This completes the steps for defining the Main Node. The next step is to create the service definitions for this node. That is, you must enter the costing parameters for the different trunk groups in this node.

### *Add long distance service definition to Main Node*

Now that you have selected a node, you must enter its pricing definitions. These pricing definitions apply to different trunk groups. For example, trunks 1 to 5 may be used for regular long distance calling, and trunks 7 and 8 may be used exclusively for toll free calls.

To add a long distance service definition to the main node, click the Main Node menu item, and then click File > New Service/Trunk Group. This creates another menu item under it entitled New Service 1, and displays the tabs in which you can enter the service definition, fixed and variable and carrier costs, and reporting options. Click the following tabs to enter the information for this service:

#### **Service Definition tab**

In this tab, enter the general information for this service definition. This includes the range of trunks using this service as well as its billing parameters.

Perform the following steps to enter this service definition.

- 1** In the Name box, enter **Main Trunk Group** over the New Service 1 text. Notice that the tree menu item changes to reflect what you just typed.
- 2** Leave the Termination option (Public Switch Network) and the Billing Parameters fields in their defaults.
- 3** In the Trunk Numbers table, enter the trunk range for this trunk group in your Meridian 1 or Succession CSE 1000 system. For this example, enter the following:
  - Total Number of Equipped Trunks: **5**
  - Line/Description: **CO Trunks**
  - Low Range: **1**
  - High Range: **5**

#### **Fixed Costs tab**

If your system requires fixed costs for these trunk groups, then enter them in the Fixed Costs tab. You can enter fixed costs per minute, per call, per meter pulse, or per month. As well, you can define these costs for outgoing or incoming calls.



### Variable and Carrier Costing tab

In this tab, enter the costs that are be applied to calls made on this service. You can enter costs for both outgoing and incoming calls. For outgoing calls, you can enter variable costs based solely on the digit patterns, or you can enter the carrier costs that are based on these digit patterns. The carrier costs vary depending on the destinations of the outgoing calls.

For this example, you select the predefined Carrier Pricing Template for all calls using this service. The Carrier Pricing Template can then distinguish between different types of calls for its costing.

Perform the following steps to select the carrier costing for this service.

- 1 In the Carrier Costing by Digits Comments box, enter **Outgoing Calls**.
- 2 Leave the VPN Location Book box blank.
- 3 From the Carrier Pricing Template drop-down list box, select Sample Rates.
- 4 Leave the % Cost Adjust box blank.

### Report Options tab

In this tab, enter the call reporting options for this trunk service. This allows you to define how calls that use this service appear on reports. For example, you can suppress all incoming calls.

To enter the call reporting options for all calls using this service, perform the following steps.

- 1 Click the first record in this grid.
- 2 From the Call Type drop-down list box, select All Calls.
- 3 From the Cost Field drop-down list box, select DDD. This determines the report grouping and summary field on reports. Cost fields are defined in the Cost Field table.
- 4 From the Print Option drop-down list box, select Detail. This indicates that these calls should appear in the main report body of the detail reports.
- 5 In the Route Description box, enter **DDD**. This is the route used on detail reports for this call.

This completes the defined service for the main node. You have now defined how calls from this trunk should be costed according to the template you created. Click File > Close to save this information and return to the Telecom Billing System main window.

## Step 9: Test telephone configuration

Now that you have entered your system's costing model and configuration, you should test the accuracy of the configuration. To do so, you must apply these costs to the collected call records and print some reports to review the generated costs.

### *Apply costs to call records*

The Telecom Billing System applies the costs based on your Telephone Configuration Database and Rate Tables as a separate step to data collection. That is, once you have collected the call records from the Meridian 1 or Succession CSE 1000 system, you must apply costs to them as a separate step.

To apply these costs to the collected call records, perform the following steps.

- 1 Click Tools > Costing > Start from the Telecom Billing System window.
- 2 From the Start Costing dialog box that appears, select the Batch Costing Mode option. This performs a one-time costing of all non-costed call records.
- 3 In the Available Telephone Configurations list, turn on the Telephone Configuration Rooms International check box. This applies this specific telephone configuration to these call records.
- 4 Click Start to cost the call records. The Telecom Billing System then starts the costing procedure.
- 5 Click the Costing tab Status view of the System Tasks pane to check this process. Once it displays the message *The Costing task has completed*, you are ready to generate reports based on the costed call records.

This completes the steps involved in costing the call records.

### *Generate reports*

Generate the following reports to test the accuracy of your configuration:

## **Trunk Diagnostic Report**

The Trunk Diagnostic Report compares trunk ranges you entered in the Telephone Configuration with the trunks that have actual call activity.

To print this report, perform the following steps.

- 1** Click File > Reports (or simply click the Reports icon) from the Telecom Billing System main window.
- 2** In the Reports dialog box that appears, double-click the Telecom Billing System Reports menu item, and then double-click Utility Tools > Trunk Diagnostic Report.
- 3** From the Output Type drop-down list box, select Printer.
- 4** From the Configuration drop-down list box, select Telephone Configuration Rooms International. This represents the telephone configuration you defined.
- 5** Click Go to print the report.

## **Extension Diagnostic Report**

The Extension Diagnostic Report compares the extensions assigned to users in the Corporate Directories (that is, employees, external parties, and roles and projects) with the extensions that have actual call activity.

To print this report, perform the following steps.

- 1** Click File > Reports from the Telecom Billing System main window.
- 2** In the Reports dialog box that appears, double-click the Telecom Billing System Reports menu item, and then double-click Utility Tools > Extension Diagnostic Report.
- 3** From the Output Type drop-down list box, select Printer.
- 4** From the Configuration drop-down list box, select Telephone Configuration Rooms International. This represents the telephone configuration you defined.
- 5** Click Go to print the report.

## Exception Chronological Report

The Exception Chronological Report lists in chronological order all of the calls that were made, and then collected by the Telecom Billing System. Review this report to verify that the calls were processed and costed accurately. Look for calls that have no location (except toll free calls). Check that the long distance calls have costs assigned to them and that local calls do not. Some common errors in the Telephone Configuration Database include incorrect access codes and missing trunks.

To print this report, perform the following steps.

- 1 Click File > Reports from the Telecom Billing System main window. The Reporting dialog box appears.
- 2 From the Telecom Billing System Reports menu folder in the Reporting menu tree (left pane), double-click the Cost Analysis folder.
- 3 From the list of reports that appears, click Exception Chronological Report.
- 4 From the Output Type drop-down list box, select Printer.
- 5 From the Configuration drop-down list box, select Telephone Configuration Rooms International. This represents the telephone configuration you just defined.
- 6 Click Go to print the report.

If any of these reports appears inaccurate, then review your input and make any necessary adjustments to your telephone configuration.

## Step 10: Set up Data Transmission

The Data Transmission function is used to transmit the call records to an external device or location, such as a Property Management System. For this example, you set up the Telecom Billing System to post the call usage records for your hotel's guests to a Property Management System using the ACK/NAK interface protocol. Once you have set up the data transmission, you run it in real time along with the data collection (see next).

To set up the data transmission for this example, perform the following steps.

- 1 Click Options > System Configuration from the Telecom Billing System main window, and then click the Transmission tab.
- 2 From the Connection Type drop-down list box, select Direct.
- 3 In the Port Settings boxes, enter the communications parameters required to connect to your Property Management System. For example, enter the following settings:
  - Port: **COM2**
  - Baud Rate: **9600**
  - Data Bits: **8**
  - Parity: **None**
  - Stop Bits: **1**
- 4 Click the Record Format command button from the Transmission tab, and then enter the fields you want to include in the call records that are posted.
- 5 Click the ellipsis (...) next to the Record Filter drop-down list box to select the filters for the call records being posted. For this example, you only post call records that have extensions 100 to 999. These extensions represent the guest rooms and suites in your hotel.
- 6 From the Filters dialog box that appears, click Add.
- 7 From the Filter dialog box, click the Extensions/Trunks tab.
- 8 Enter the following filters to post only the call records for extensions 100 to 999. Note that the first line represents outgoing calls from this range of extensions. The second line represents all incoming calls to this range of extensions:

**Table 1** Trunks and extensions filters

Originating ID Type	Low	High	Terminating ID Type	Low	High	Show Cost
Extension	100	999				Both
			Extension	100	999	Both

- 9 Click the Include option and the Activate check box to include this filter range.

- 10 In the Filter Name box, enter the name for this filter. For this example, enter **Guest Rooms and Suites**.
- 11 Click OK to save this filter range and return to the previous dialog box. Click OK again to save it and return to the Transmission tab.
- 12 Click the Record Filter drop-down list box, and then select Guest Rooms and Suites.
- 13 From the Interface Protocol list box, select ACK/NAK.
- 14 In the Script box, enter **Transmit.TRN**.
- 15 Under the Record Posting Options (ACK/NAK only) options, enter **1** in the Retries field.
- 16 Click OK to save these settings and return to the Telecom Billing System main window.

This completes the steps used for entering your data transmission values. The following dialog box represents these settings:

**Figure 27** Transmission tab

The screenshot shows the 'System Configuration' dialog box with the 'Transmission' tab selected. The dialog is divided into several sections:

- Connection:** Type: Direct (dropdown), Phone No. (text box), Retries: 1 (text box), File Name: (text box with browse button).
- Port Settings:** Port: COM2 (dropdown), Baud Rate: 2400 (dropdown), Data Bits: 8 (dropdown), Parity: None (dropdown), Stop Bits: 1 (dropdown).
- Record Posting:** Record Format (button), Record Filter: Guest Rooms and Suites (dropdown with browse button), Interface Protocol: ACK/NAK (dropdown), Script: Transmit.TRN (text box with browse button).
- Record Posting Option (ACK/NAK only):** Retries: 1 (text box), ☐ Print Failure Message, Failure Message (text box with browse button).

At the bottom are buttons for OK, Cancel, Apply, and Help.

## Step 11: Start data collection and transmission

Now that you have entered all of your collection, costing, and transmission settings, you are ready to start collecting and processing your call records. The following sections describe how to start the data collection, call costing, and data transmission processes in real time:

### *Start collection*

Perform the following steps to start collecting call records from a Meridian 1 or Succession CSE 1000 system through the MDR-2000 ISD.

- 1 Click Tools > Collection > Start from the Telecom Billing System main window. The Start Collection dialog box appears prompting you to select the collection mode and start the data collection.
- 2 Select the Real Time option to have the system continuously collect CDR records from the MDR-2000 ISD.
- 3 Click Start. The data collection starts. The status pane displays a list of the call records as they are collected.

### *Start costing*

Perform the following steps to start costing the call records.

- 1 Click Tools > Costing > Start from the Telecom Billing System main window. The Start Costing dialog box appears prompting you to select the costing mode and start the call costing process.
- 2 Select the Real Time option to have the system apply costs to the collected call records continuously.
- 3 In the Available Telephone Configurations list, turn on the Telephone Configuration Rooms International check box. This applies this specific telephone configuration to these call records.
- 4 Click Start to start costing the call records.

### *Start transmission*

Perform the following steps to start posting the call records to the Property Management System.

- 1** From the Telecom Billing System main window, click Tools > Collection > Start. The Start Transmission dialog box appears prompting you to select the data transmission mode and start the data transmission.
- 2** Select the Real Time option to have the system continuously transmit calls that have not been transmitted.
- 3** Click Start to start transmitting the call records.

This completes the steps required to set up the Telecom Billing System to process call records for hospitality billing.

## **User's reference**

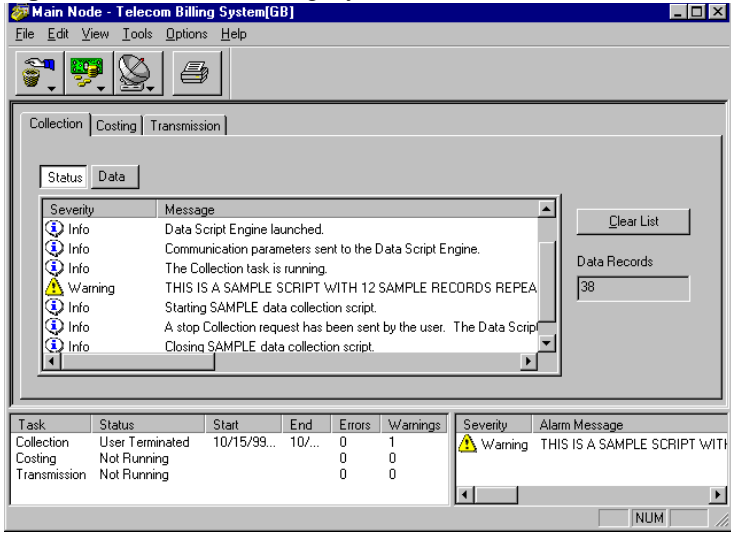
This section contains an overview of the Telecom Billing System functions and databases. It briefly describes their function and purpose. For complete details on each of these functions and their operation, refer to the online Help included with the software.

### **Interface**

The Telecom Billing System's main window is the main interface for editing the databases, collecting data, and generating reports.



**Figure 28** Telecom Billing System



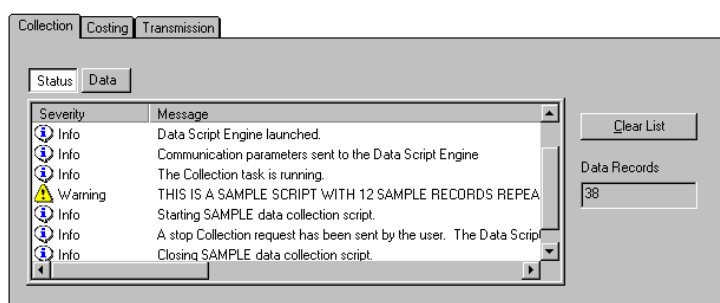
The following sections provide a brief outline of the Telecom Billing System commands, databases, and panes:

## Panes

The Telecom Billing System displays its activities in the following panes:

### *System Tasks pane*

The System Tasks pane displays information about the data collection, costing, and data transmission functions. Each tab in this pane displays the data being processed, as well as the status of each process. Use this pane to view the status of your data and of the system's functions.

**Figure 29** System Tasks pane

### *System Monitor pane*

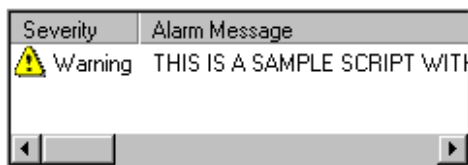
The System Monitor pane displays another view of the Collection, Costing, and Transmission activities. You can easily view the status of a particular process and determine at a glance if the system is running properly.

**Figure 30** System Monitor pane

Task	Status	Start	End	Errors	Warnings
Collection	User Terminated	10/15/99...	10/...	0	1
Costing	Not Running			0	0
Transmission	Not Running			0	0

### *System Alarm pane*

The System Alarm pane displays any alarm messages to indicate any abnormal activity during the Telecom Billing System session. It displays the alarm messages for alarms that were defined in the System Configuration function. When the system encounters an activity that surpasses a defined alarm threshold, it displays the corresponding alarm in this pane. As well, this pane displays all status messages for any running tasks with a severity level of “Warning” or higher.

**Figure 31** System Alarm pane

## File menu

The File menu accesses functions used to archive, purge, and restore the Call Database; import and export data; generate reports; and exit from the Telecom Billing System.

To access these functions, click File from the main window, and then select from the following menu items:

- Call Database
  - Archive
  - Restore
  - Purge
- Import
- Export
- Reports
- Exit

### Call Database

The Call Database menu item accesses another cascading menu containing the Archive, Restore, and Purge menu items. These menu items access the Archive, Restore, and Purge functions, which help you to manage your Call Database records.

#### *Archive*

The Archive function is used to copy—or archive—a range of call records from the Call Database to an external device, such as a network drive or a disk.

#### *Restore*

The Restore function is used to copy—or restore—the archived call records from an external device, such as a network drive back to the Call Database.

## *Purge*

The Purge function is used to delete—or purge—a range of call records from the Call Database. This frees more disk space on your PC for new call records and improves overall system performance.

## **Import**

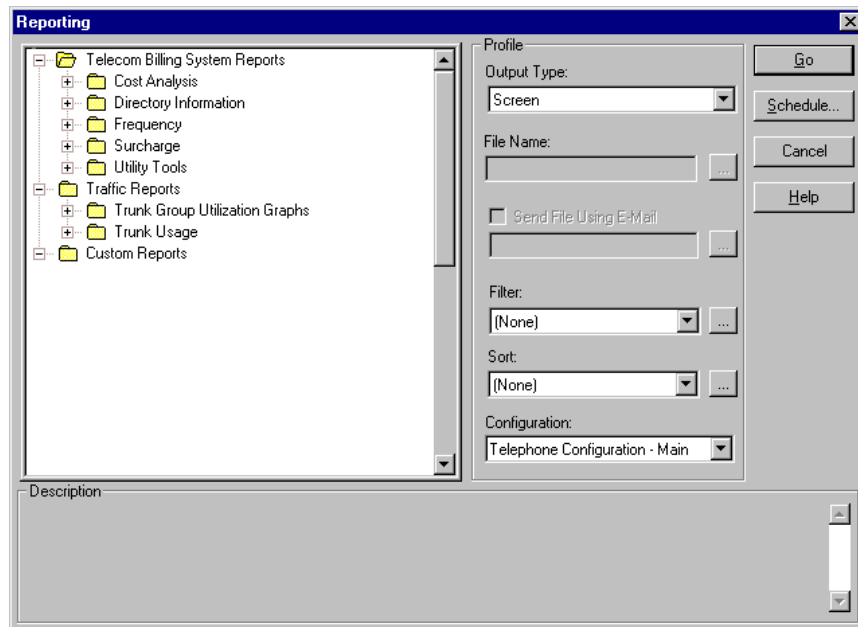
The Import function is used to import data records from an external source to this system and convert them to a format compatible with the Telecom Billing System databases. This function is useful for quickly updating the Telecom Billing System databases with data from another application.

## **Export**

The Export function is used to export data from the Telecom Billing System databases to an external source.

## **Reports**

The Telecom Billing System reports provide you with thorough and detailed information about your telephone system. These reports detail and summarize your telephone system's usage, assign costs to the appropriate cost centers, and display information on your system's organizational databases. As well, they provide statistics on your system to help assess the effectiveness of your telephone services.

**Figure 32** Reporting dialog box

### *Reporting options*

The following options are used to select the output device for the report, as well as its filters and sorting definitions. These options appear in the Profile section (right side) of the Reporting dialog box.

#### **Output Type**

The Output Type drop-down list box contains a list of output formats for the selected report. You can select from the following options:

**Screen:** This option displays the report on the screen.

**Printer:** This option prints the report to the Windows-configured printer.

**Rich Text Format:** This option exports the report to a file in rich text format (RTF). Its filename is the name you entered in the File Name box with the extension.RTF.

**HTML Format:** This option exports the report to a file in hypertext markup language format (HTML). Its filename is the name you entered in the File Name box with the extension.HTM.

**Snapshot Format:** This option exports the report to a file in Microsoft Snapshot format. Its filename is the name you entered in the File Name box with the extension.SNP. To open the file in Snapshot format, you must have the Snapshot Viewer installed on your PC.

### **File Name**

When outputting a report to a format other than a printer or screen, the Report Generator requires that you specify its filename and destination. This way, it can save the report to a file in that selected format. In the File Name box, enter the name of the file to which the report will be exported. Also select the destination drive and directory for this file. This filename has an extension that corresponds to the format of the file. This field is only activated if you are exporting the report to a file in one of the supported formats (RTF, HTML, or Snapshot).

Note that you can enter specific variable tags in your filenames to create unique filenames during report generation. This provides you with added flexibility when you are generating reports at scheduled intervals and you do not want to rename the files for each interval.

### **Send File Using E-Mail**

When generating a report to a file, you can also send copies of that file to definable e-mail addresses. The Send File Using E-Mail option allows you to e-mail a copy of the report to selected e-mail addresses. When you generate the report, this option inserts the report file as an attachment to an e-mail message. This option e-mails the outputted file that you entered in the File Name box. Since this function inserts the report file as an attachment to an e-mail message, it is only available if you are outputting a file to RTF or Snapshot format.

## Filter Definitions

The Filter Definitions function is used to select the reporting criteria for your reports. This allows you to generate reports based on very specific requirements. For example, you may want to view a report for only the current day. You can simply use the Filter Definitions function to select the most recent day for this report. You can then select this filter name from the Filter drop-down list box in the main Report Generation dialog box when you print the report.

## Sort Definitions

The Sort Definition function is used to sort the data in the reports in different formats. For example, you may want to display a report by date and time. You can simply use the Sort Definition function to sort the report by the selected date and time. You can then select this sort definition name from the Sort drop-down list box in the Reporting dialog box when you print the report.

## *Reporting commands*

The following is a list of the Report Generator commands:

**Go:** This command generates the selected report.

**Schedule:** This command schedules the report to be run at a later date and time. This accesses the Scheduler application from which you can enter the scheduling criteria for the report, including the initial date and time of the report generation, as well as any subsequent intervals for generating the report.

**Cancel:** This command exits from this function.

**Help:** This command allows you to obtain help on the Report Generator function.

## *Creating custom logos on reports*

The Telecom Billing System reports each contain a common header graphic, which is located at the top left corner of the report. This graphic helps you to easily identify the reports as part of the Telecom Billing System.

The Telecom Billing System allows you to edit this graphic, or even replace it with another graphic, by simply editing a bitmap (BMP) file. You can replace this graphic with another more descriptive design, such as your company logo, to suit your own needs. For example, you can include your company logo on your Telecom Billing System reports to provide you with professional-looking reports that are customized for your organization.



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**Caution:** Be careful when editing this graphic file. If the file is too large, it may cause errors with the generated reports. To ensure that the original graphic file is secure, you should make a backup copy of it. To do so, copy the file Logo.bmp from the site/system directory to another directory, or simply rename it (for example, Backup\_Logo.bmp).

---

Perform the following steps to create a custom graphic or logo for your reports.

- 1 Use a graphics program such as MS Paint to create a bitmap with the following dimensions: 3.73" (W) by 0.86" (H).
- 2 Insert or create the new graphic (for example, your company logo) in the bitmap file.
- 3 Save this file as Logo.bmp to the drive and directory for your site and system (for example, C:\Nortel\Common Data\Sample Site\Sample System\Logo.bmp).

To help you to use the correct dimensions for your logo, you can make a copy of the original graphic file Logo.bmp and use it as a template for your own graphic. Simply open the file Logo.bmp and insert the new graphic in the file.

The Telecom Billing System reporting function automatically uses this logo on your reports.

### *List of reports*

The following is a list of the reports that are available for the Telecom Billing System.



## **Cost Analysis Reports**

The Cost Analysis Reports display costing information for calls made by your employees, either by their extensions or authorization codes. The tabulated costs are then rolled up to their respective organizational level summaries. Costs can also be identified by account codes and then charged back to your clients.

The following is a list of the available Cost Analysis Reports:

- Extension Detail Report
- Exception Chronological Report
- Entity Detail Report
- DNIS Summary Report
- DNIS Detail Report
- Auxiliary ID Detail Report
- Authorization Code Detail Report
- Account Code Summary Report
- Account Code Detail Report
- Entity Summary Graphs
- Organization Roll-up Summary Graphs
- Account Code Roll-up Summary Reports
- Authorization Code Roll-up Summary Reports
- Entity Roll-up Summary Reports
- Extension Roll-up Summary Reports

## **Directory Information Reports**

The Directory Information Reports provide you with details about your system's corporate databases. Such reports as the role/project, external party, and employee directory reports are useful in maintaining an up-to-date listing of your projects, customers, and employees.

The following is a list of the available Directory Information Reports:

- Role/Project Directory Report
- External Party Directory Report
- Employee Directory Report (ordered by Organizational Unit)

- Employee Directory Report

### **Frequency Reports**

The Frequency Reports provide details on actual telephone usage. Management can isolate individual users and departments that are not properly using the telephone system through misuse or neglect. As well, system administrators can use this information to determine which services are not being utilized. This analysis allows you to adjust your telephone services to suit your needs.

The following is a list of the available Frequency Reports:

- Undisbursed Verification Report
- Unanswered Calls Summary Report
- Unanswered Call Detail Report
- Ring Time Report
- Ring Time Analysis Report
- Location Summary Report
- Hold Time Summary Graph
- Hold Time Detail Report
- Frequently Called Numbers Report
- External Party Summary Report
- Duration Summary Graph by Call Type
- Duration Summary Graph
- Digits Detail Report
- Call Area Summary Report
- Area Code Summary Report
- Area Code Location Summary Report
- Area Code Summary Graphs
- Location Summary Graphs

## **Surcharge Reports**

The Surcharge Reports display costing information for calls made through your system. They itemize the total usage charges by cost, surcharge (profit), and total cost (billed amount). The tabulated costs are then rolled up to their respective organizational level summaries. These costs are identified by the associated authorization codes and extensions on the entity reports. The costs can also be identified by account codes and then charged back to your clients.

The following is a list of the available Surcharge Reports:

- Exception Chronological Surcharge Report
- Entity Surcharge Summary Report
- Entity Surcharge Detail Report
- Account Code Surcharge Summary Report
- Account Code Surcharge Detail Report
- Account Code Surcharge Roll-up Summary Reports
- Entity Surcharge Roll-up Summary Reports

## **Utility Tools Reports**

The Utility Tools Reports provide assistance in managing the telephone configuration databases. These reports highlight features of your telephone configuration that must be updated regularly to keep your network management and fiscal reports accurate.

The following is a list of the available Utility Tools Reports:

- Trunk Diagnostic Report
- Telephone Configuration Report
- System Configuration Report
- Extension Diagnostic Report
- Authorization Code Diagnostic Report
- Account Code Diagnostic Report

## **Traffic Reports**

The Traffic Reports help to determine cost effective networking solutions by critically examining the telephone system's trunks and services.

The following is a list of the available Traffic Reports:

- Trunk Group Utilization Graphs
- Trunk Usage Reports
  - Trunk Utilization Report
  - Trunk Graph
  - Trunk Detail Report
  - Tandem Tie Summary Report

## **Custom Reports**

The Custom Reports folder contains any custom reports that have been created using the Custom Reports Utility. This utility is used to create and build reports using the tables and data from the Telecom Billing System databases.

## **Edit menu**

The Edit menu accesses the Telecom Billing System's main databases. These databases contain all of the information you need to run the Telecom Billing System effectively for your organization.

To access these databases, click Edit from the main window, and then select the following:

- Organizational Hierarchy
- Employees
- External Parties
- Roles/Projects
- Asset Assignments
- Telephone Configuration
- Location Books
- Rate Tables

- Taxes
- Call Database

## **Organizational Hierarchy**

The Organizational Hierarchy Database contains the different structural levels within your organization (for example, departments, divisions, and so on). You can create up to 20 different levels in this hierarchy. The Organizational Hierarchy and the Level editors are used to create, name, and arrange these different organizational levels. The employees in your organization are assigned to these levels. The cost summary reports can then summarize the calling activity and associated usage costs by these levels.

## **Employees**

The Employee Database contains information about your organization's employees that is relevant to the Telecom Billing System. It includes such information as your employees' names, telephone extensions, authorization codes, and their locations within the organizational hierarchy. This information is required to cost and allocate telephone calls to the proper extensions and cost centers within your organization.

## **External Parties**

The External Parties Database contains information about individuals or companies with whom you have regular contact. It includes such information as the external party's name, address, telephone number, and account code. Use this database to define the telephone numbers and optional account codes for your customers and contacts so you can identify commonly called telephone numbers on your detail and summary reports. This database can also be used to maintain a list of your frequently called customers or clients.

## **Roles/Projects**

The Roles/Projects Database contains information about the different roles or projects that require reporting in the Telecom Billing System. It is used to assign extensions, authorization codes, account codes, or dedicated trunk groups to projects or personnel for reporting purposes. For example, it can contain

information on individuals or companies who use dedicated extensions but are not included in the Employee Database (for example, contract workers). It can also contain information on projects that require dedicated extensions and, therefore, require a name and organizational position for reporting.

## **Asset Assignments**

This database defines how the different assets are assigned to the corporate entities in the Employee, External Parties, and Roles/Projects Databases.

## **Telephone Configuration**

The Telephone Configuration Database is the Telecom Billing System's main costing database. It combines rate tables, location books, and carrier pricing templates to calculate usage costs for the various trunk groups that are defined for the sites in your organization. It also calculates additional fixed costs, which can be added to the basic usage costs of these trunk groups. As well, it allows you to assign various reporting groups to calls for the system's detail and summary reports.

When calls are made through the trunks in these trunk groups, the Telecom Billing System uses the Telephone Configuration Database to calculate their total costs. It can then assign these costs to the appropriate extensions (and, therefore, personnel), as well as any defined organizational hierarchy levels within your company.

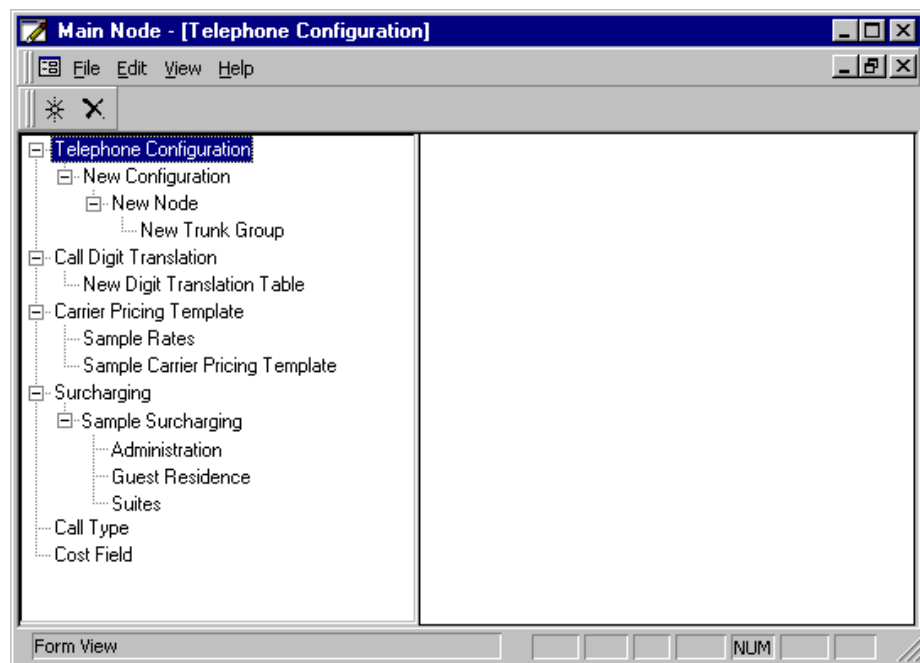
The following is a summary of some of the features of the Telephone Configuration Database:

- You can define multiple telephone configurations, call digit translations, and carrier pricing templates. This allows you to set up multiple costing scenarios for a specific location, and then compare rates from different carriers based on your telephone usage patterns. This way, you can find out the true savings of using different carriers.
- This single editor allows you to define multiple telephone configurations, and easily assign any predefined call digit translations and carrier pricing templates to them.
- The Telephone Configuration menu tree allows you to easily view your configuration information for each system. Therefore, you can easily make any corrections to your configuration for all of your systems.

- The Bill Party Surcharge function is used to define and apply additional charges to calls over and above the standard charges calculated using the Telephone Configuration Database. These surcharges are assigned to bill (or call) parties—typically, the extension from which the call was placed, rather than the trunk line over which the call was transmitted. This feature is used primarily in the hospitality and campus billing market where the Telecom Billing System can be used to bill guests and other users.

The following is an example of the Telephone Configuration Database editor:

**Figure 33** Telephone Configuration Database editor



## Location Books

The Location Books function is used to define the location books (distance based, latitude and longitude, and non-distance-based), and virtual private network books, which are used by the Telecom Billing System. Location books serve two purposes in calculating costs for the Telecom Billing System. Their first and primary purpose is to find a meaningful location name for the source and

destination of a phone call. The second purpose is to obtain additional rating information, which is used to determine the cost of a call. That is, it identifies the physical or virtual locations of calls so that the Telecom Billing System can apply the appropriate usage costs to them based on their distance or codes.

## **Rate Tables**

The Telecom Billing System includes a set of common rate tables provided by different telecommunications carriers. These rate tables provide the Telecom Billing System with the required rates and coverage areas used to identify how the calls to different locations are costed. This way, the Telecom Billing System knows which calls are costed with which rates. Simply select these predefined rate table files from the Telephone Configuration Database.

In most cases, you do not need to edit these rate tables. Your supplier can provide you with the latest rate tables as they are updated. If, however, you want to review or modify the rate tables included with the Telecom Billing System, or if you want to create new rate tables, then use the Rate Table editor to do so.

## **Taxes**

The Tax Definition editor is used to define the taxes that are applied to the telephone usage costs for your system. For example, if you want to add a sales tax to all usage costs calculated for the main node, then enter this tax value in this editor. You can then select it from the Tax Information fields of the Node Information editor. If your system requires compound taxes, then you must calculate them first, and then enter the resulting value in these fields.

## **Call Database**

The Call Database editor is used to display and edit the call records stored in the Call Database. The Call Database contains all of the call records that have been collected from the switch. In some cases, it may be necessary to edit or delete some call records (due to invalid fields, such as corrupted dates or IDs). This allows you to remove bad or unwanted sections of the database or replace invalid dates with valid dates.



## View menu

The View menu contains commands that are used to display or hide the Telecom Billing System's graphical toolbar and status bar. As well, you can clear the contents of the Alarms pane and select the data to be displayed in the System Tasks pane.

To access these functions, click View from the main window, and then select from the following menu items:

- Toolbar
- Status Bar
- Clear Alarms Pane
- Settings

## Tools menu

The Tools menu accesses the commands that manage the Telecom Billing System's main processes. Use these commands to start, stop, schedule, and configure the data collection, call costing, and data transmission processes.

To access these commands, click Tools from the Telecom Billing System main window, and then click the following menu items. Note that you can also click the corresponding icons in the toolbar.

### Collection

The Collection menu accesses the functions that manage the data collection process.

**Start Collection:** Starts the data collection in either batch or real-time mode.

**Stop Collection:** Stops the data collection process.

**Schedule Collection:** Accesses the Scheduler to schedule data collection at a later date and time.

**Configuration:** Defines the parameters used by the Telecom Billing System to communicate with and collect data from the Meridian 1 or Succession CSE 1000 system.

### *Processing X (transferred) records*

Your Meridian 1 or Succession CSE 1000 can be programmed to output transferred call records (also known as X records) as individual call records. Where required, you can set up the Telecom Billing System to process and report on these X records. For example, you may want to more accurately identify calling activity within the different departments in your organization. Note that this option affects call volumes and, therefore, makes any costing based on volume plans inaccurate.

With this option enabled, call records representing calls that have been transferred are broken down into individual call records based on the call transfer. For example, an incoming call that has been transferred once, becomes two call records. The first call record is identified as an incoming call to a specific extension. The second call record is identified as an internal call from the first extension to the second extension. If this option is disabled, then this is only identified as a single call record.

To set up the Telecom Billing System to process X records, you must edit the Script Configuration initialization file (ScriptConfig.ini). This text file, located in your site/system directory (for example, C:\Nortel\Common Data\Sample Site\Sample System\), identifies how the X records are processed. By default, it is set to not process X records.

The following is an example of this file (with the ProcessXRecords option set to NO):

```
[SL1NEW]
ProcessXRecords=No
```

To change its settings so that the Telecom Billing System can process X records, open the file using a text editor such as MS Notepad, and change the text to read as follows:

```
[SL1NEW]
ProcessXRecords=Yes
```

Save this file and run the Telecom Billing System to process these records. You are prompted with a warning message stating that X records are being processed.

## Costing

The Costing menu accesses the functions that manage the call costing process.

**Start Costing:** Starts the call costing process.

**Stop Costing:** Stops the call costing process.

**Schedule Costing:** Accesses the Scheduler to schedule call costing at a later date and time.

**Configuration:** Defines the costing parameters in the Telephone Configuration Database.

## Transmission

The Transmission menu accesses the functions that manage the data transmission process.

**Start Transmission:** Starts data transmission in real-time or batch mode.

**Stop Transmission:** Stops the data transmission process.

**Schedule Transmission:** Accesses the Scheduler to schedule data transmission at a later date and time.

**Configuration:** Defines the parameters used by the Telecom Billing System to communicate with and transmit data to an external source, such as a Property Management System (PMS).

## Options menu

The Options menu accesses the System Configuration function. To access this function, click Options > System Configuration from the main window.

## System Configuration

The System Configuration function allows you to set up system options, data collection and transmission parameters, and alarm thresholds.

**System Tab:** This tab contains processing parameters for the call records.

**Collection Tab:** This tab contains the connection and communications parameters for data collection.

**Transmission Tab:** This tab contains the connection and communications parameters for data transmission, as well as the transmission setup configuration.

**Alarms Tab:** This tab contains any alarm thresholds and their corresponding alarm messages. These messages appear in the System Alarms pane of the main window.

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## Chapter 3

# Consolidated Call Cost Reports

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This chapter provides basic information on setting up and running Consolidated Call Cost Reports (CCCR). Along with a brief outline of its main features and functions, this chapter contains step-by-step instructions that assist you in setting up Consolidated Call Cost Reports.

## Introduction

Consolidated Call Cost Reports is OTM's system integration and reporting application. Consolidated Call Cost Reports combines data from the corporate directories in each of your OTM systems and generates billing reports based on this consolidated data. Specifically used for the OTM Telecom Billing System, the Consolidated Call Cost Reports application reports on your calling activity across multiple systems on a single OTM server.

Used in conjunction with the Telecom Billing System, Consolidated Call Cost Reports synchronizes your organization's information and calling activity from the individual OTM systems. You still use the Telecom Billing System to collect and cost the CDR data for each system. Once this data is processed, you then use Consolidated Call Cost Reports to consolidate the corporate data from each enabled system into its read-only database for reporting. The resulting corporate database is for the use of Consolidated Call Cost Reports only, and cannot be viewed or edited by other applications.

## Overview

The following is an overview of some of Consolidated Call Cost Reports' features:

- The consolidated reports provide details on the actual telephone usage of the different sites and systems across your entire organization. Management can then isolate individual users or departments who are not utilizing the telephone system properly through misuse or neglect.
- Its intuitive corporate editor allows you to merge the different organizational hierarchies from your OTM systems into a single consolidated server.
- The OTM Scheduler application can be used to set up the database synchronization and report generation functions to run at scheduled intervals. This way, once you have initially set up the databases in Consolidated Call Cost Reports, you can use the Scheduler to generate your consolidated reports automatically.
- Its alternate currency option allows you to include two different currencies on your consolidated reports.

## Getting started

This section describes how to access Consolidated Call Cost Reports and set it up for initial use. Use the following instructions to be able to configure this application to synchronize the corporate databases from the OTM systems and generate your consolidated reports.

Before using Consolidated Call Cost Reports, you must install and configure it as part of the Optivity Telephony Manager (OTM) system. Refer to *Installing and Configuring Optivity Telephony Manager* (553-3001-230) for complete details on installing this application as part of OTM.

## Systems access and setup

The following is a summary of the steps required to set up Consolidated Call Cost Reports and generate reports for it. These steps assume that you have already set up the OTM databases with your company's information. Before proceeding, set up your sites and systems, assign the Telecom Billing System application to each

applicable system, and populate the OTM common databases with the required organizational hierarchy and entity information. Remember to completely set up the Telecom Billing System for all of your sites and systems before proceeding with Consolidated Call Cost Reports.

The following is a summary of the steps you should perform to set up Consolidated Call Cost Reports.

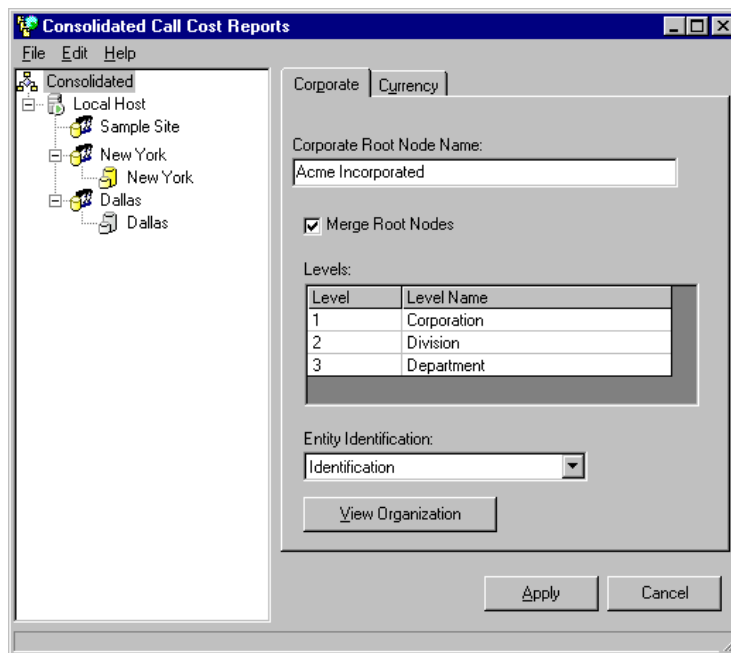
1. Run Consolidated Call Cost Reports from the OTM Navigator.
2. Assign systems to the consolidated server.
3. Download and synchronize the corporate data to the Consolidated Call Cost Reports database.
4. Review and edit the levels in the consolidated organizational hierarchy.
5. Select the local and alternate currencies to be used on the reports.
6. Generate the desired detail and summary reports.

### **Step 1: Run Consolidated Call Cost Reports**

Before you can set up Consolidated Call Cost Reports, you must first run it from the OTM Navigator. Since Consolidated Call Cost Reports is not assigned to a specific site or system, you can simply access it from the OTM Navigator.

Perform the following steps to run Consolidated Call Cost Reports from OTM.

- 1** Run OTM by clicking OTM Navigator from the StartUp program group.
- 2** From the OTM Navigator window, click Utilities > Consolidated Call Cost Reports. This accesses the main Consolidated Call Cost Reports window.

**Figure 34** Consolidated Call Cost Reports

## Step 2: Assign systems to consolidated server

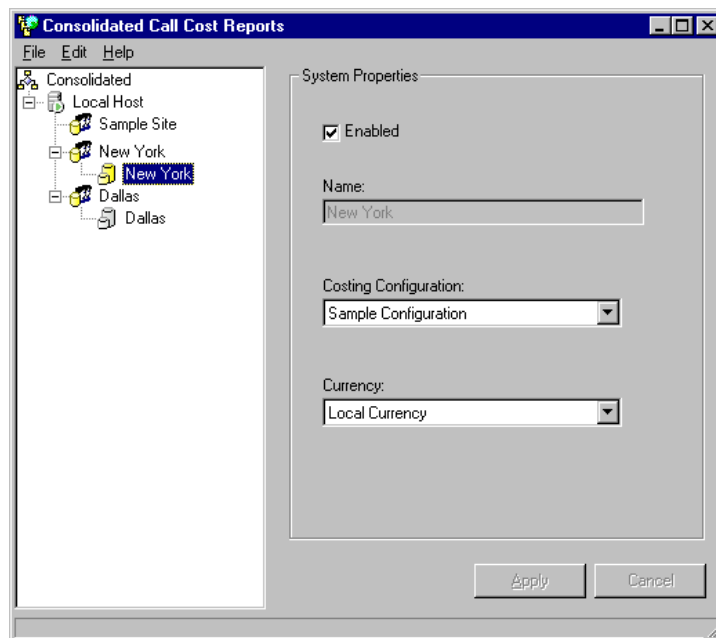
To allow for the consolidation of data from the different systems in your organization, Consolidated Call Cost Reports stores the directory structure of all of the OTM sites and systems in a consolidated database. This directory structure represents the defined OTM sites and systems that have the Telecom Billing System application assigned to them.

When you access the Consolidated Server list, Consolidated Call Cost Reports displays the default consolidated server along with all of the defined OTM sites and systems. This site and system list is auto-populated when you expand the server node (or when you select Edit > Refresh Site List). By default, the systems that appear in this list are not enabled for consolidation. That is, even though they appear in this list, they are not actually part of the consolidated database. You must select each system and assign it to the consolidated server database.



Perform the following steps to assign your systems to the consolidated server database.

- 1** Access the Consolidated Server list and expand the server node labeled Local Host. This displays all of the sites and systems that you have defined in OTM. Only the systems that contain the Telecom Billing System application appear in this list. By default, each system is disabled for consolidated (identified by a gray icon).
- 2** Click the name of the system that you want to enable for consolidation (for example, New York). The System Properties fields for this system appears.
- 3** Click the Enabled check box, and then click Apply to assign this system to the consolidated server database. This enabled system is identified by a yellow icon.
- 4** Select a costing configuration from the Costing Configuration drop-down list box. If you have defined a single costing configuration for this system, then this drop-down list box defaults to that defined configuration. If you have defined multiple configurations, then this drop-down list box defaults to <None>. You must, therefore, select from the list of defined configurations (for example, Sample Configuration).
- 5** Select a sample currency from the Currency drop-down list box.
- 6** Repeat the above steps for each system that you want to enable for the consolidated server database.

**Figure 35** Consolidated Server list

Once you have completed these steps, the Consolidated Server list displays all of the systems that have just been assigned to the consolidated server database.

### Step 3: Synchronize corporate data

The next step is to synchronize the corporate data from your OTM systems with the Consolidated Call Cost Reports database. This function downloads the corporate database records from the assigned OTM systems (that is, the Organizational Hierarchy, Employee, External Parties, and Roles/Projects Databases). It then synchronizes this data with the Consolidated Call Cost Reports database to ensure that the consolidated corporate information is up to date with the most current information from your OTM systems.

To run the database synchronization, click **File > Synchronize Corporate Data > Start**. Once you start a synchronization process, a status dialog box appears displaying its progress.

## Step 4: Review and edit levels in consolidated organizational hierarchy

The following steps outline how to edit the levels in the consolidated organizational hierarchy. Once you have synchronized the corporate data from the OTM systems with the Consolidated Call Cost Reports database, you should review the defined levels to ensure that they reflect your organizational hierarchy. If you need to edit these levels, you can do so by accessing the Corporate Properties tab of the Consolidated Call Cost Reports window. This tab contains the basic information required to create a consolidated version of the OTM corporate directory. These properties determine how the different systems are merged into the new consolidated root node of Consolidated Call Cost Reports.

Perform the following steps to edit the levels in the consolidated organizational hierarchy.

- 1 Click the Corporate tab from the Consolidated Call Cost Reports window.
- 2 In the Corporate Root Node Name box, enter a name for the consolidated hierarchy. For this example, enter **Acme Incorporated**.
- 3 Enable the Merge Root Nodes option to merge common nodes within your hierarchy under a single node.
- 4 Leave the Levels table with the default values. This table contains the names of the different levels in the consolidated corporate directory (for example, Corporate, Division, and Department).
- 5 From the Entity Identification drop-down list box, select the value that determines how the corporate entities are identified in the consolidated database. For this example, select Identification.
- 6 Click Apply to save these settings.

To review the consolidated organizational hierarchy, click View Organization. This accesses the Consolidated Organizational View dialog box, which displays all of the different levels in the consolidated database. Review these levels to ensure that they accurately represent the consolidated organizational hierarchy for your company (that is, all of the organizational levels are structured correctly). If you need to change this structure, then repeat the above steps and change your settings as required.

## Step 5: Select local and alternate currencies

The following steps outline how to select the local and alternate currencies that are used on your reports. Note that this is an optional step, and is only required if you want to use two different currencies for the costs on your reports.

Perform the following steps to select the local and alternate currencies for your reports.

- 1 Click the Currency tab from the Consolidated Call Cost Reports window.
- 2 Click Configure to define the local and alternate currencies used for Consolidated Call Cost Reports. This accesses the OTM Navigator's Currency Configuration dialog box in which you can enter your local and alternate currencies. You can also access this dialog box directly from the OTM Navigator.
- 3 For this example, you select US Dollars as the local currency. Select the Currency tab, and then enter the following information:
  - Currency Name: **US Dollars**
  - Currency Symbol: **\$**
  - Position of Currency Symbol: **\*1.1**
  - Negative Number Format: **(\*1.1)**
  - Decimal Symbol: **.**
  - No. of Digits after Decimal: **2**
  - Digit Grouping Symbol: **,**
  - Number of Digits in Group: **3**
- 4 For this example, you select Canadian Dollars as the alternate currency. Select the Alternate Currency tab, and then enter the following information:
  - Currency Name: **Canadian Dollars**
  - Currency Symbol: **\$**
  - Position of Currency Symbol: **\*1.1**
  - Negative Number Format: **(\*1.1)**
  - Decimal Symbol: **.**
  - No. of Digits after Decimal: **2**
  - Digit Grouping Symbol: **,**
  - Number of Digits in Group: **3**

- Currency Exchange Rate: **1.54**
- 5 Click Apply and OK from the Currency Configuration dialog box to save these settings and return to the Consolidated Call Cost Reports window. Notice that the Currency Name and Alternate Currency fields are updated with these new values.
- 6 The Currency Exchange Rates table only displays the Local Currency with the exchange rate of 1.00. To add the exchange rate for Canadian Dollars, right-click over this grid, and then select Add from the pop-up menu.
- 7 In the blank line (cell) that appears, enter the following information:
  - Currency: **Canadian Dollars**
  - Exchange Multiplier: **1.54**
- 8 Once you have entered these settings, click Apply to save them to the Consolidated Call Cost Reports configuration database.

Once you have defined a currency, you must assign it to the different systems that are collecting data in that currency. To do so, access the System Properties for the different systems and assign the new currency to each system. Refer to “[Step 2: Assign systems to consolidated server](#)” ([page 136](#)).

## Step 6: Generate reports

Once you have set up Consolidated Call Cost Reports to reflect your organizational data, you are ready to generate your consolidated reports. This step outlines how to generate a sample report entitled Entity Detail Report. To generate a different report, you can perform the same steps as outlined in this example. Simply select a different report from the Report list.

Perform the following steps to generate the Entity Detail Report.

- 1 Access the Reporting dialog box by selecting File > Reports from the Consolidated Call Cost Reports main window.
- 2 Select the desired report by clicking the corresponding report name in the Report menu tree. For example, to generate the Entity Detail Report, select Entity Detail Report from the Report menu tree.
- 3 Select the type of output from the Output Type drop-down list box. For example, to print the report, select Printer.

- 4 Select the optional filters from the Filter drop-down list box.
- 5 Click Go to generate the consolidated report.

Consolidated Call Cost Reports automatically downloads the Call Database information from all of the enabled systems and generate the Entity Detail Report, which details the calling activity for these systems.

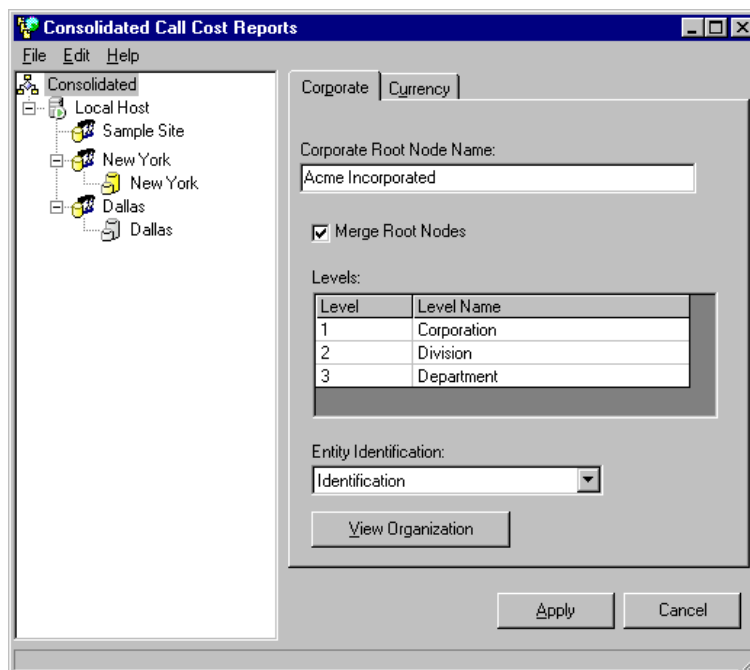
This completes the steps required to set up Consolidated Call Cost Reports.

## User's reference

This section contains a brief overview of the Consolidated Call Cost Reports interface. For complete details on each of its functions, refer to the online Help.

### Interface

The Consolidated Call Cost Reports main window is the main interface from which you define the consolidated server and systems, set up the corporate properties, and generate your reports.

**Figure 36** Consolidated Call Cost Reports

## File menu

The following File menu commands are used to synchronize the corporate database, generate reports, and exit from Consolidated Call Cost Reports:

- Synchronize Corporate Data
- Reports
- Exit

## Synchronize Corporate Data

The Synchronize Corporate Data commands are used to synchronize the data from the different systems that you have added to the Consolidated Call Cost Reports database. These systems appear in the Consolidated Server list:

- Start
- Schedule

## Reports

Consolidated Call Cost Reports includes a number of reports that provide you with details about your organization's calling activities. These reports are based on the call records that you have collected from the different OTM systems in your organization, and then saved to the Consolidated Call Cost Reports database. This reporting function is used to generate the reports to selected output devices (for example, printers) based on definable filters.

### *Reporting options*

The following options are used to select the output device for the report as well as its filters. These options appear in the Profile section (right side) of the Reporting dialog box:

**Output Type:** The Output Type drop-down list box contains a list of output formats for the selected report. You can select from the following options: Screen, Printer, Rich Text Format, HTML Format, and Snapshot Format.

**File Name:** In the File Name box, enter the name of the file to which the report is exported.

**Send File Using E-Mail:** The Send File Using E-Mail option allows you to e-mail a copy of the report to selected e-mail addresses.

**Filter:** The Filter definitions are used to select the reporting criteria for your reports.

### *Reporting commands*

The following is a list of the Report Generator commands:

- Go
- Schedule
- Cancel
- Help



### *Creating custom logos on reports*

The reports in Consolidated Call Cost Reports each contain a common header graphic, which is located at the top left corner of the report. This graphic helps you to easily identify the reports as part of Consolidated Call Cost Reports.

Consolidated Call Cost Reports allows you to edit this graphic, or even replace it with another graphic, by simply editing a bitmap (BMP) file. You can replace this graphic with another more descriptive design, such as your company logo, to suit your own needs. For example, you can include your company logo on your reports to provide you with professional-looking reports that are customized for your organization.



**Caution:** Be careful when editing this graphic file. If the file is too large, it can cause errors with the generated reports. To ensure that the original graphic file is secure, you should make a backup copy of it. To do so, copy the file Logo.bmp from the Consolidated Call Cost Reports directory to another directory, or simply rename it (for example, Backup\_Logo.bmp).

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Perform the following steps to create a custom graphic or logo for your reports.

- 1** Use a graphics program such as MS Paint to create a bitmap with the following dimensions: 3.73" (W) by 0.86" (H).
- 2** Insert or create the new graphic (for example, your company logo) in the bitmap file.
- 3** Save this file as Logo.bmp to the dedicated Consolidated Call Cost Reports drive and directory (for example, C:\Nortel\Millennium\RootData\CCCR\Logo.bmp).

To help you to use the correct dimensions for your logo, you can make a copy of the original graphic file Logo.bmp and use it as a template for your own graphic. Simply open the file Logo.bmp and insert the new graphic in the file.

Consolidated Call Cost Reports automatically uses this logo on your reports.

### *List of reports*

The following is a list of the reports that are available for Consolidated Call Cost Reports:

- Entity Detail Report
- Entity Summary Report
- Entity Rollup Report
- Account Code Summary Report
- Account Code Rollup Report

### **Exit**

The Exit command ends the current Consolidated Call Cost Reports session.

## **Edit menu**

The Edit menu accesses the following command:

- Refresh Site List

### **Refresh Site List**

The Refresh Site List command refreshes the list of sites and systems for a selected server in the Consolidated Server list. This ensures that the server is up to date with the most current site and system information before data synchronization. For example, if you add sites and systems to the server and you update its costing configuration, then you use the Refresh Site List command to update the server with this most recent information. When you invoke this command, Consolidated Call Cost Reports re-queries the selected server to reconstruct the list of sites and systems.

## **Consolidated Server list**

The Consolidated Server list (left pane of the Consolidated Call Cost Reports main window) displays (in a menu tree format) the server that has been defined for Consolidated Call Cost Reports. The server's nodes display all of the OTM sites and systems that have been assigned to it. The root node for this list (labeled

Consolidated) lists the defined server along with its sites and systems. The default server (labeled Local Host) contains the sites and systems that you have defined for OTM. To view the sites and systems within the server, double-click the server name from the menu tree. Once you have opened the menu trees for these sites and systems, click the menu tree command buttons to expand the menus.

Each system in this list is identified by an icon. These icons allow you to view, at a glance, which systems are enabled in the Consolidated Call Cost Reports configuration database. Systems that are enabled for consolidation are identified by a yellow icon. Systems that are disabled are identified by a gray icon. By default, systems are disabled. Use the System Properties fields to enable these systems.

Use this list to view and edit the consolidated server and systems in Consolidated Call Cost Reports. To edit the properties of a server or system, click the name of the server or system in this menu tree. The corresponding server or system properties fields appear in the right pane.

## Server Properties

The Server Properties fields contain general information about the sites and systems that are being consolidated into the server of the Consolidated Call Cost Reports database.

To edit the properties of the server, select the server name from the Consolidated Server list (left pane of this window). In the Server Properties fields that appear, enter the following information:

**Server Name:** This field contains the name of the server as it appears in the menu tree of the Consolidated Server list. By default, it is the same name as the Server URL. Enter a new name by typing over the existing name.

**Server URL:** This read-only field displays the original name of this server.

**Description:** In this field, enter a description of this server. This is for informational purposes only.

## System Properties

The System Properties fields contain general information about each system that has been assigned to the server.

To edit the properties of a system, select the system from the Consolidated Server list (left pane of this window). In the System Properties fields that appear, enter the following information:

**Enabled:** Turn on the Enabled check box to activate this system as part of Consolidated Call Cost Reports. This adds the Telecom Billing System's data to the Consolidated Call Cost Reports database. If this check box is turned on (that is, this system is enabled), the icon next to the system in the Consolidated Server list turns yellow; otherwise, the icon is gray. These icons allow you to view, at a glance, which systems are enabled for the Consolidated Call Cost Reports configuration database. If this check box is turned off (that is, this system is disabled), the Telecom Billing System data from this system is not included in any reports. By default, each system is disabled.

**Name:** This read-only field identifies this system. You previously named the system when you created it in the OTM Navigator.

**Costing Configuration:** This drop-down list box contains a list of all of the telephone configurations that are part of the systems included in the server. From this drop-down list box, select the telephone configuration to be used to cost this system on your reports. This list box is auto-populated from the originating system. If this system contains only one configuration, then that configuration appears in this drop-down list box by default; otherwise, it defaults to (None). You must select a configuration from this list before this system can be enabled.

**Currency:** This drop-down list box lists the currencies that have previously been defined in the Currency Exchange Rates grid of the Currency Properties tab. From this drop-down list box, select which currency you want to use for this system's reports. By default, it displays Local Currency.

## Corporate Properties

The Corporate Properties tab contains the basic information required to create a consolidated version of the OTM corporate directory. These properties determine how the different systems are merged into the new consolidated root node of Consolidated Call Cost Reports.

**Corporate Root Node Name:** This field contains the name of the consolidated root node. In this box, enter the name of your organization. This becomes the root node of the newly consolidated corporate hierarchy.

**Merge Root Nodes:** The Merge Root Nodes option determines how the organizational hierarchies in the different systems are combined within the new root node. Enable the Merge Root Nodes option to merge common nodes within your hierarchy under a single node. For example, if you have two systems, each with a Sales and Support department, that you want to merge under a main node containing these departments, then enable this option.

**Levels Table:** The Levels table contains the names of the different levels in the consolidated corporate directory (for example, Corporate, Division, and Department). This prevents conflicts between databases if different systems have their levels defined differently. The default values in this table are the same as those in the OTM corporate directories.

**Entity Identification:** The Entity Identification value determines how the corporate entities are identified in the consolidated database. When the original corporate directories are consolidated into the new Consolidated Call Cost Reports database, an entity's record is consolidated only if the chosen field is the same on both records. Select the following values from this drop-down list box: Identification, E-mail, LDAP ID, or Login Name.

**View Organization:** Click View Organization to view the current organizational structure in the consolidated corporate directory. This accesses the Consolidated Organizational View dialog box, which displays a menu tree of the organizational levels in the newly consolidated corporate directory. This displays ORG as the root node until you first consolidate the systems.

## Currency Properties

Consolidated Call Cost Reports allows you to define currency settings that are independent from the settings in the individual OTM systems. This way, you can define the main (local) and alternate currencies used by the reports in Consolidated Call Cost Reports. These currency settings do not necessarily need to match the local and alternate currencies from each of your OTM systems. Use the Currency Properties tab to configure the different currency values and exchange rates for Consolidated Call Cost Reports.

**Currency Name:** This read-only field displays the name of the currently selected main currency. This is the main currency that is used on all reports generated by Consolidated Call Cost Reports. To change this currency, click Configure. This accesses the OTM Navigator's Currency Configuration dialog box in which you can enter your local and alternate currencies.

**Alternate Currency:** This read-only field displays the name of the currently selected alternate currency. This is the alternate currency that is used on all reports generated by Consolidated Call Cost Reports. If no alternate currency is selected, or the alternate currency has been disabled, then this field is blank.

**Configure:** Click Configure to define the local and alternate currencies used for Consolidated Call Cost Reports. This accesses the OTM Navigator's Currency Configuration dialog box in which you can enter your local and alternate currencies.

**Currency Exchange Rates:** This table contains the different currencies and exchange rates used across your consolidated systems. In this table, enter the names of the different currencies used in your systems, as well as the current multiplier used to convert each currency from the local currency to that selected currency. By default, this table contains only one Local Currency entry with an exchange rate of 1.

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## Chapter 4

# Telecom Billing System Web Reporting

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This chapter provides basic information on setting up and running Telecom Billing System (TBS) Web Reporting. Along with a brief outline of its main functions, this chapter also contains procedures and reference information to assist you in setting up Telecom Billing System Web Reporting.

## Introduction

Telecom Billing System Web Reporting is the Optivity Telephony Manager's web-based reporting application for your telecom network. With Telecom Billing System Web Reporting, you can generate reports containing data from the Telecom Billing System through your intranet or Internet server. These reports provide you with valuable information about your organization's calling activities.

The Telecom Billing System application is the Optivity Telephony Manager's telephone cost accounting and billing application. It collects call records from your telephone system, calculates usage costs based on defined rates and configurations, and allocates these costs to the appropriate users in your organization. Telecom Billing System Web Reporting generates reports summarizing and detailing these costs. It provides you with an easy method of accessing the Telecom Billing System information.

## Overview

The following is an overview of some of the features of Telecom Billing System Web Reporting:

- Telecom Billing System Web Reporting produces a variety of costing reports detailing your organization's calling activities.

- Based on your access rights, you can view call detail information for any level in your organizational hierarchy (for example, departments and users), both from a summary level and a detail level.
- Its reports provide details on the actual telephone usage of your system. Management can then isolate individual users or departments who are not utilizing the telephone system properly through misuse or neglect.
- Its intuitive interface allows you to easily access this information through any PC. Simply run a web browser, access the Optivity Telephony Manager (OTM) web server, and run Telecom Billing System Web Reporting.

## Getting started

This section describes how to access and use Telecom Billing System Web Reporting.

Before using Telecom Billing System Web Reporting, you must install and configure it as part of the Optivity Telephony Manager (OTM). You must then assign it to a site and system. Refer to *Installing and Configuring Optivity Telephony Manager* (553-3001-230) for complete details on installing this application and assigning it to a site and system.

## Additional system requirements

The server and client PCs that run Telecom Billing System Web Reporting each have their own hardware and software requirements. The server PC is used to store the files for Telecom Billing System Web Reporting. The client PC is only used to access this application's reports through a browser, such as Microsoft Internet Explorer or Netscape Navigator. Since this client PC can be different from the server PC, these system requirements may differ from those of OTM common services. Refer to *Installing and Configuring Optivity Telephony Manager* (553-3001-230) for a complete list of hardware and software requirements for all of the OTM applications.



## Server setup and installation

Before installing Telecom Billing System Web Reporting, you must first ensure that the server is set up properly. This means that you must set up your server and install the Internet Information Server (IIS) to allow other users to have remote Web access to the server. You must also install the OTM common services and Telecom Billing System onto the server on which you are installing Telecom Billing System Web Reporting.

Since Telecom Billing System Web Reporting is the reporting application for OTM Web Services, you must also install OTM Web Services onto the web server before attempting to run it. Refer to the Web Services chapter in *Using Optivity Telephony Manager* (553-3001-330) for instructions on installing and setting up OTM Web Services.

### Installation

The Telecom Billing System Web Reporting installation kit includes all of the components you need to install, configure, and run the program as part of OTM Web. The Setup utility installs each of the required components for Telecom Billing System Web Reporting and prompts you for specific information pertaining to your system (for example, install drive, directory, program folder, and so on). During the installation procedure, enter your system information as directed.

## System access

The following sections list the steps that are required to access OTM Web and run Telecom Billing System Web Reporting as an end user.

### Setting up Telecom Billing System Web Reporting

It is assumed that you have previously set up the access rights for the OTM Web users, and selected Telecom Billing System Web Reporting as a reporting application. To learn how to install and set up Telecom Billing System Web Reporting as part of OTM Web, refer to *Installing and Configuring Optivity*

*Telephony Manager* (553-3001-230). To learn how to set up the access rights for Telecom Billing System Web Reporting, refer to the subsection “Enable Web desktop access” under “Directory Services” in “Chapter 3: Common Services” of *Using Optivity Telephony Manager* (553-3001-330).

## **Accessing Telecom Billing System Web Reporting**

To log in to OTM Web and run Telecom Billing System Web Reporting, perform the following steps.

- 1** Log on to OTM Web by pointing your browser to the OTM Server.
- 2** From the Login page, enter your Login Name and Password. This accesses the My Profile page. This page contains your user information, as well as links to the Web reporting applications to which you have access.
- 3** From the Web Desktop Services menu tree in the My Profile page, select Billing Reports. This accesses the Billing Reports page, which contains links to your Telecom Billing System reports.
- 4** From the Billing Reports page, access the Telecom Billing System Reports page by clicking a system link. You can also access your reports through any defined personal assets. This accesses the Telecom Billing System Reports page for the selected system or asset.
- 5** To view a report from the Telecom Billing System, click the report name in the Telecom Billing System Reports page. From here, you can select a telephone configuration table and any filters for the report.
- 6** Click Run Report to view the selected report.

## **User's reference**

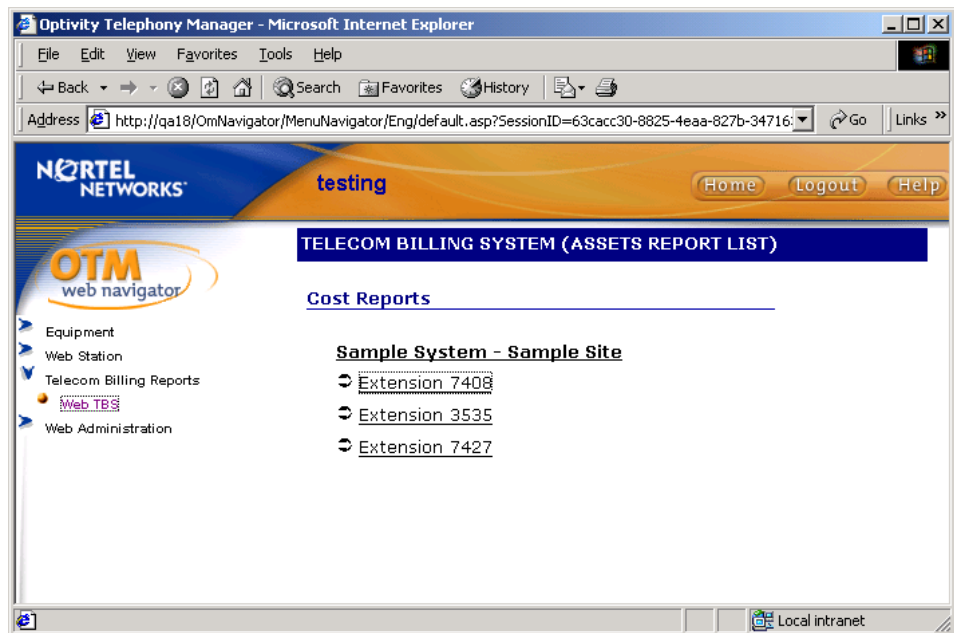
This section contains a brief overview of the Telecom Billing System Web Reporting main Web interface. For complete details on each of its functions, refer to the online Help.

## Telecom Billing System Web Reports

The Telecom Billing System reports provide you with thorough and detailed information about your telephone system. These reports detail and summarize your telephone system's usage, assign costs to the appropriate cost centers, and display information on your system's organizational databases.

Once you have logged in to OTM Web, you can view the Telecom Billing System Web Reports. The following is a sample page listing these reports:

**Figure 37** Telecom Billing System Web Reports page



### List of reports

The following sections briefly describe the reports available for Telecom Billing System Web Reporting. Based on your access rights, some or all of these reports appear in this list.

### *Cost reports*

The following reports provide summaries and details of your organization's telephone usage costs. These are based on your extensions, authorization codes, or account codes:

- Extension Summary Report
- Authorization Code Summary Report
- Account Code Summary Report

### *Level reports*

The following reports provide roll-up summaries of telephone usage costs for your organization based on extensions, authorization codes, or account codes. They access summary and detail reports displaying this data based on the organizational level. For example, the Extension Roll-up Report consists of the Extension Roll-up Report for the current organizational level, the Extension Summary Report for its sublevel, and so on, until you have reached the detail report for each user:

- Extension Roll-up Report
- Authorization Code Roll-up Report
- Account Code Roll-up Report

### *Frequency/Digits reports*

The following reports provide roll-up summaries of your calling activity based on frequency of calls to specific numbers and locations:

- Frequently Called Numbers Report
- Frequently Called Location Report
- Area Code Summary Report
- Ring Time by Time of Day Report
- Ring Time by Extension Report
- Hold Time by Time of Day Report
- Hold Time by Extension Report

### *Trunk reports*

The following reports provide call usage details for each trunk or trunk group in your organization:

- Trunk Group Utilization Report
- Trunk Utilization Report

### *Diagnostic reports*

The following reports list all of the extensions and trunks that are entered in the telephone configuration that have no call activity, as well as all of the extensions and trunks that have call activity but have not been entered in the telephone configuration:

- Extension Diagnostic Report
- Trunk Diagnostic Report

## **Filters and configurations**

The Filters page is used to select the reporting criteria for your reports. This allows you to generate reports based on very specific requirements. Whenever you select a report from the Telecom Billing System page, the Filters page appears allowing you to select its filters.

The following is a sample Filters page for the Extension Report. Based on the report you select, the Filters page displays different filters:

Figure 38 Filters and Configuration page

**Sample System - Sample Site  
Extension Report**

Corporation: **Acme Inc**

Costing Configuration: Web Reporting

Minimum Date: 9 / 10 / 2001

Maximum Date: 9 / 10 / 2001

Call Direction: Both

Duration(Seconds):  *enter minimum call duration*

Cost:  *enter minimum call cost*

Specific Extension(s):  *example: 100,250-300*

Employee First Name:  *? matches 1 character, \* matches 0 or more*

Employee Last Name:  *? matches 1 character, \* matches 0 or more*

Role/Project Name:  *? matches 1 character, \* matches 0 or more*

External Party Name:  *? matches 1 character, \* matches 0 or more*

Organization Level: Acme Inc

Exclude Sublevels: ☐

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## Chapter 5

# Call Tracking

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This chapter provides basic information on setting up and running Call Tracking. It also includes an example to assist you in setting it up for a real-time monitoring session.

## Introduction

Call Tracking is OTM's call monitor and alarm program. Its graphs indicate trends and provide displays of unusual calls enabling you to adjust your equipment and services to maximize your resources. Call Tracking monitors and displays information output from the Meridian 1 or Succession CSE 1000 system. It then accumulates the data and displays the information in different formats in its graphical displays.

Call Tracking consists of several graphical displays that list your monitored call data. Each of these is a separate window or dialog box, which displays the call information in a unique format.

The main window is the background for these graphical display windows. The commands in its main window provide you with the overall functions of these graphical displays.

Call Tracking also provides alarm generating functions, which can be set up to warn you of unusual calling patterns. This is useful in the quick detection of unauthorized telephone calls that occur with toll fraud. You can define multiple alarm templates to detect different calling patterns including calls exceeding a certain duration, calls made at unusual times, and toll calls. Call Tracking can also be configured to output different types of alarms including visible and audible alarms on your PC, remote paging, and network reported alarms.

## Getting started

This section provides an overview of how to run and set up Call Tracking for a real-time and data file monitoring session.

Before using Call Tracking, you must install and configure it as part of the Optivity Telephony Manager (OTM). Refer to *Installing and Configuring Optivity Telephony Manager* (553-3001-230) for complete details on installing this application.

## System access

After you have assigned Call Tracking to a site and system, you can set it up to collect and monitor CDR data and configure its alarms. The following sections highlight the main functions required to use Call Tracking to collect and monitor CDR data in real-time mode and from a data file.



**Note:** Before proceeding with the data collection, you must first select the data collection filename, or the communications script used for the connection to the Meridian 1 or Succession CSE 1000 system.

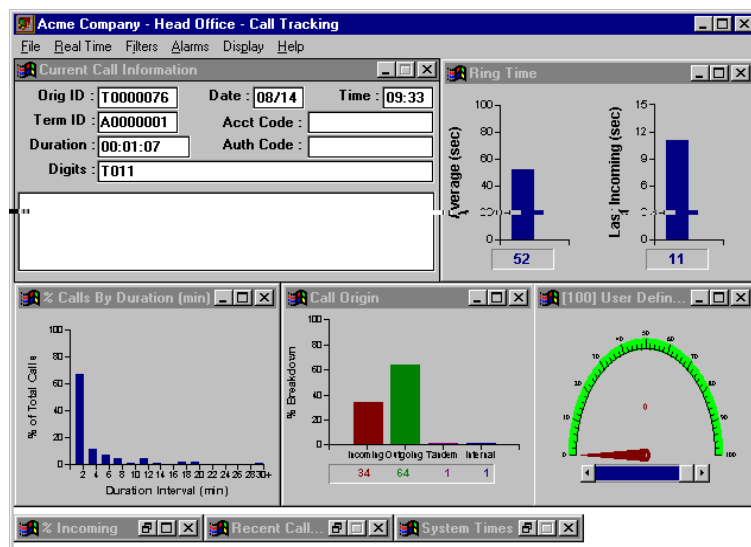
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If Call Tracking has not been assigned to this system, it does not appear in the Telemanagement menu. To assign Call Tracking to this system, access the OTM System Properties function. In the Communications tab, assign a profile for Call Tracking by entering it in the Communications Profile box. In the Applications tab, select the communications profile you just entered in the Communications tab, click Call Tracking to highlight it, and then click the Enable check box. Click OK from the System Properties dialog box to assign Call Tracking to this system.

## Run Call Tracking

To access Call Tracking from the OTM Navigator, click the desired site and system, and then click Call Tracking from the Telemanagement menu. The main Call Tracking window appears.



**Figure 39** Call Tracking main window

### *Set filters*

During the Call Tracking session, you can use the Filters commands to set the filters for the call records as they are being collected. You can, for example, set a filter to have Call Tracking only collect call records having a set minimum call duration. You can select up to 10 different filters and have Call Tracking include or exclude the call records matching these filters.

### *Set alarms*

The Alarms function is used to set an alarm monitor to warn of suspicious calls. These alarms can be sent to your PC as a visual or audible alarm, or to an external device such as a log file, printer, network workstation, pager, or modem.

## **Collect CDR data from Meridian 1 or Succession CSE 1000 system in real-time mode**

Once you have accessed Call Tracking, you can then use the Real Time command to initiate a call monitoring session.

Before initiating the real-time data collection and monitoring process, you should first access the Communications Database dialog box and verify the communications settings for Call Tracking on this system. In this dialog box, you can also select the script file that is used for this session.

### *Verify communications parameters*

To verify the communications parameters for this system, click Edit Database from the Real Time drop-down menu. The Communications Database dialog box appears displaying the communications and connection criteria for this Meridian 1 or Succession CSE 1000 system. These are displayed for informational purposes.

Review the data in these fields to ensure that they correspond to your system's connection parameters. If any of these values are incorrect, then return to the System Configuration function in the OTM Navigator, access the Communications tab, and edit them. When you access the Call Tracking Communications Database again, its values are changed accordingly.

The next step is to select the script file that is used for this communications session. To select this script file, click the script file name from the Script Setup Name drop-down list box (for example, SL1.SCR). Click OK to save this selection and exit to the main window.

In certain cases, you may need to collect Call Tracking data from a file (for example, the Data Buffering and Access [DBA] application). You must, therefore, enable the File Collection option in this dialog box. To do so, check the File Collection check box and, in the Filename box, enter the filename from which the data is collected. The other fields in the Communications Database dialog box are grayed out since they do not apply to file collection.

### *Connect*

To initiate a connection to the Meridian 1 or Succession CSE 1000 system and start collecting and monitoring the call records, click Connect from the Real Time drop-down menu. There is a brief delay as the communications process is initiated. Call Tracking then monitors calls as they are recorded by the Meridian 1 or Succession CSE 1000 system.

If you want to pause the monitoring process at any time, click Pause from the File drop-down menu. Click Pause again to resume the monitoring session. To stop the real-time monitoring of the calls, click Disconnect from the Real Time drop-down menu. Click Connect again to resume the session.

## User's reference

This section describes the Call Tracking main menus, their functions, and the graphical displays. For a detailed description of each menu command and function, refer to the online Help.

### Call Tracking menus

The main Call Tracking window is the background for the graphical display windows. Use these commands to configure the appearance of your graphical displays, connect to the Meridian 1 or Succession CSE 1000 system, and define your alarms.

#### File menu

The File menu contains commands used to affect the main action of the call records as they are collected. Use these functions to pause the data collection, print graphical displays of data, reset the call collection and display Employee Database information.

The following is a list of the functions and commands in this menu:

- Call Tracking ID Code
- Schedule
- Print
- Print Setup
- Reset
- Reset Longest Call
- Employee Database Options
- Detail File
- Pause

- Exit

## **Real Time menu**

The Real Time menu contains functions and commands used to view communications parameters, select connection scripts, and connect to the Meridian 1 or Succession CSE 1000 system to start and end a real-time monitoring session. For a complete list of script files used for communications and data collection, refer to “Appendix B: Script File Summary” in *Using Optivity Telephony Manager* (553-3001-330).

The following is a list of the functions and commands in this menu:

- Edit Database
- Connect
- Disconnect

## **Filters menu**

Use the Filters commands to set the filters for the call records as they are being monitored. You can, for example, set a filter to have Call Tracking only collect call records having a set minimum call duration. You can select up to 10 different filters and have Call Tracking include or exclude only the call records matching these filters.

The following is a list of the functions and commands in this menu:

- Definitions
- Include
- Exclude

## **Alarms menu**

The Alarms menu contains functions used to configure the Call Tracking alarm monitor. These alarms can be sent to your PC as a visual or audible alarm, or to an external device such as a log file, printer, network workstation, pager, or modem.

The Alarm Definitions function is used to define the alarm criteria. The Alarm Setup function is used to define the alarm parameters used by the Alarm Definitions. These parameters are global and can, therefore, be used by any alarm definitions. This includes such information as pager and modem alarm parameters, audible alarm time-outs, and inactivity alarm monitoring.

The Alarm Log displays a listing of all of the alarm calls that have been logged using the Log File alarm mode. This displays the last 200 call records that signaled the alarms having the Log File mode turned on. Each alarm definition accompanies the call record that it signaled. In this way, you can scan through the call records based on specific alarm definitions.

The following is a list of the functions and commands in this menu:

- Definition
- Setup
- Log

## **Display menu**

The Display menu contains functions used to manipulate the graphical display windows in the Call Tracking main window. As well, it lists the names of the graphical displays allowing you to select them by name.

The following is a summary of the graphical display commands:

- Display Detail Digits
- Auto Save Positions
- Arrange Icons
- All Icons
- Tile
- Refresh

## Graphical displays

The individual graphical displays are the main graphical components of Call Tracking. Each graphical display highlights call records in a different statistical format. These windows continuously display your call record information. To edit the parameters and features of each graphical display, use their control-menu commands.

The following sections provide a brief description of these graphical displays:

### System Times

The System Times graphical display lists the current time (as recorded by the PC's internal clock). It also displays the date and time when you started collecting the call record information.



**Note:** The time in this dialog box is the PC time, not the Meridian 1 or Succession CSE 1000 system time.

---

### Recent Call History

The Recent Call History dialog box lists the details of the last 20 call records. Refer to this dialog box to review the most recent call records. Each call record consists of the originating and terminating IDs (extensions or trunks), the date and time, duration, the digits dialed, and any authorization codes.

### Current Call Information

The Current Call Information graphical display lists the information of the most recent call. It includes such items as the start date and time, the originating and terminating ID, the call duration, and the digits dialed. If you enabled the Additional Info command from the Employee Database Options drop-down menu, then this window also includes the information of the employee sending or receiving this call.

## **User Defined Speedometer**

The User Defined Speedometer is a speedometer-like analogue gauge (call meter), which displays user-definable calling activity as a percentage value. This call meter represents the percentage of calls that meet the criteria specified for a sample size. It also contains an alarm function that activates a predefined alarm when an alarm threshold is exceeded.

## **Percent Calls by Duration Graph**

The Percent Calls by Duration Graph displays a percentage of the total calls separated into distinct time periods. Each item in the graph represents the percentage of total calls that have a duration within each time period, and lists the total for each period as a percentage of the total calls. Use this graph to spot trends in call duration and gain an overview of your telephone system's usage. Select the intervals for this graph by selecting the total range from its control menu.

## **Call Origin Graph**

The Call Origin Graph displays the total percentage of incoming, outgoing, tandem, and internal calls. The horizontal axis contains each type of call, and the vertical axis lists their percentage values based on total calls.

## **Call Origin Pie Chart**

The Call Origin Pie Chart displays the percentage of incoming, outgoing, tandem, and internal call records. This represents a different way of displaying a specific call type as shown in the Call Origin Graph.

## **Ring Time Meter**

The Ring Time Meter window contains two graphs that display ring time information (time taken for an extension to ring before it is answered or disconnected). If your release of Meridian 1 or Succession CSE 1000 system software supports ring-time output, then this dialog box displays this information.

## Sample setup for real-time monitoring

The following sample setup provides information on setting up Call Tracking to connect to the Meridian 1 or Succession CSE 1000 system and collect CDR data in real-time mode.

### Sample scenario

A user requires a connection between Call Tracking and the Meridian 1 or Succession CSE 1000 system. CDR data is output through the SDI port and is routed via a y-cable to a CDR buffer unit and to a modem (connected to Call Tracking). This y-cable allows the CDR data to be output in two identical data streams: one for storage in the buffer unit (optional), and the other for real-time monitoring by Call Tracking.

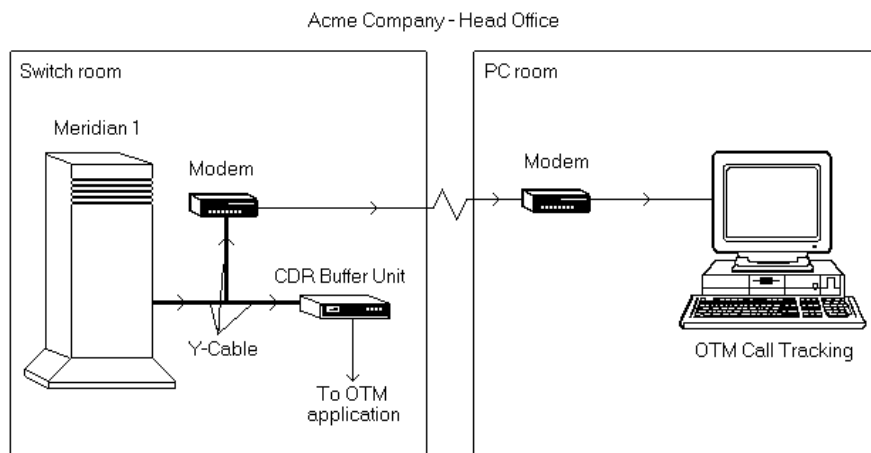
The following details apply:

- The company's Meridian 1 is located in the switch room of the Head Office and is configured to output CDR information from its SDI port.
- A y-cable is connected to the SDI port with one connection to a CDR buffer unit (optional), and the second to a modem.
- The modem at the Meridian 1 is configured to communicate with another modem at the Head Office in the PC room. This second modem is attached to the PC (on COM1) on which Call Tracking is installed.
- Call Tracking requires a script file (SL1.SCR) to collect the CDR records from the Meridian 1 through these modems in real time. This script is provided with the OTM kit.

Since this scenario outlines the steps required to set up Call Tracking, it assumes that you have already entered the following information:

- Call Tracking was installed as part of the OTM installation on a PC in the Head Office.
- A site and system have been created and configured for this connection to the Meridian 1. The site is entitled Acme Company, and the system is entitled Head Office. Its communications parameters for the SDI port have already been entered in the Communications tab of the OTM System Configuration function.



**Figure 40** Schematic for sample scenario

## Steps to connecting Call Tracking to a Meridian 1 or Succession CSE 1000 system

The following is a summary of the tasks required to start Call Tracking and connect to the Meridian 1 in real-time mode:

- Run OTM and open a site and system.
- Run Call Tracking.
- Verify communications parameters and select a script file.
- Ensure hardware connections.
- Collect CDR data from the Meridian 1 or Succession CSE 1000 system in real-time mode.



**Note:** The instructions in this example assume that you have already installed the OTM software and completed the OTM configuration tasks described in the “Common Services” chapter of *Using Optivity Telephony Manager* (553-3001-330). It also assumes that you have created a site and system on which you can assign Call Tracking.

## Step 1: Run OTM and open site/system

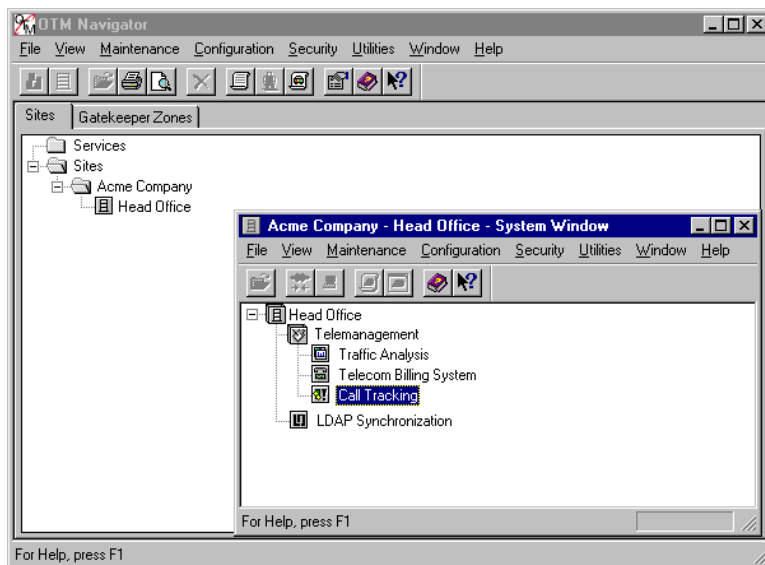
Before you run Call Tracking, you must first run the OTM Navigator, and open this site and system. You can then select Call Tracking from the Telemanagement menu in this system's window.

Perform the following steps to open the site and system:

- 1 Run the OTM Navigator by clicking the OTM Navigator icon. At the Login dialog box that appears, enter your user ID and password, and then click OK to continue.
- 2 To open the site and system for this example (for example, site name is Acme Company and system name is Head Office), click Acme Company in the OTM Navigator window, and then double-click Head Office from this site.

This accesses the system window for Head Office.

**Figure 41** OTM Navigator



## Step 2: Run Call Tracking

Perform the following steps to run Call Tracking.

- 1 From the system window, click the Telemanagement menu item. This displays the OTM applications that have been assigned to the system Head Office under Telemanagement.
- 2 To run Call Tracking, double-click Call Tracking from this menu. The Call Tracking main window appears. You can then use its commands to connect to the Meridian 1 or Succession CSE 1000 system and start the call monitoring session.

## Step 3: Verify communications parameters and select script file

To verify the communications parameters for Call Tracking in this system, click Edit Database from the Real Time drop-down menu. The Communications Database dialog box appears displaying the communications and connection criteria for the Meridian 1 or Succession CSE 1000 system. These appear for informational purposes.

Review the data in these fields to ensure that they correspond to your system's connection parameters. If any of these values are incorrect, then return to the System Configuration function in the OTM Navigator, access the Communications tab and edit them. When you access the Call Tracking Communications Database again, its values are changed accordingly.

The next step is to select the script file that is used for this communications session. Select SL1.SCR from the Script Setup Name drop-down list box. Click OK to save this selection, and then exit to the main window.

## Step 4: Ensure hardware connections

Since this system requires a modem connection between the PC and the Meridian 1 or Succession CSE 1000 system, you must ensure that the equipment used in this connection is turned on and running properly.

Check the following equipment:

- Y-Cable attached to Meridian 1 or Succession CSE 1000 system (switch room)

- Modem attached to y-cable (switch room)
- Modem attached to PC (PC room)

Refer to the documentation provided with this equipment to ensure that they are properly connected and configured.

### **Step 5: Collect CDR data from Meridian 1 or Succession CSE 1000 system in real-time mode**

To start collecting and monitoring the call records using the defined communications criteria, click Connect from the Real Time drop-down menu. There is a brief delay as the communications process is initiated. Call Tracking then monitors calls as they are recorded by the Meridian 1 or Succession CSE 1000 system.

If you want to pause the monitoring process at any time, click Pause from the File drop-down menu. Click Pause again to resume the monitoring session. To stop the real-time monitoring of the calls, click Disconnect from the Real Time drop-down menu. Click Connect again to resume the session.

This completes the steps required to establish a real-time connection for Call Tracking. Use the Call Tracking Filter Definition and Graphical Display commands to control the display of the call records as they are collected from the Meridian 1 or Succession CSE 1000 system. As well, you can use the Alarm Setup function to define any required alarms for this session.

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## Chapter 6

# General Cost Allocation System

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This chapter provides basic information on setting up and running the General Cost Allocation System (GCAS). It also includes example procedures and reference information to assist you in setting up the General Cost Allocation System.

## Introduction

The General Cost Allocation System is used to assign usage charges to appropriate individuals or departments within an organization. It can import bill information, identify and log departmental or user-specific spending characteristics, and generate meaningful reports summarizing these costs.

With the General Cost Allocation System, you can enter billing information either through an imported file or manually from the printed vendor statement. The data can then be used to allocate charges, such as those obtained from cellular calls or pagers, to relevant individuals or departments within your organization. The General Cost Allocation System generates detail and summary reports, including the billed products or services, associated costs and departments, or persons to be billed.

The following is a summary of some of the General Cost Allocation System's features:

- It allows for effective distribution, tracking, and monitoring of all chargeable costs to departments or persons within an organization.
- Its reports detail products or services purchased, and the appropriate chargeable entity. Management can then effectively monitor and isolate specific costs to various business lines within an organization.

- Billing charges can be imported directly from a vendor's electronic bill, thus significantly reducing data entry time.
- The user-friendly hierarchical organizational interface allows for quick, easy, and effective control of the chargeable groups within your organization.
- Intuitive database editors allow you to easily populate, update, and view your database records.

## Getting started

This section describes how to access the General Cost Allocation System and set it up for initial use.

Before using the General Cost Allocation System, you must install and configure it as part of the Optivity Telephony Manager (OTM). You must then assign it to a site and system. Refer to *Installing and Configuring Optivity Telephony Manager* (553-3001-230) for complete details on installing this application and assigning it to a site and system.

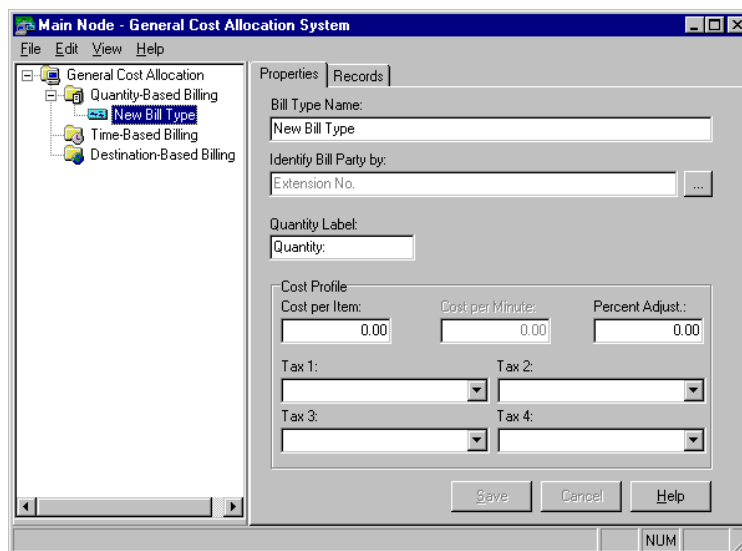
## System access

After you have assigned the General Cost Allocation System to a site and system, you can then run it to assign the usage charges to your organization.

To access the General Cost Allocation System from the OTM Navigator, click the desired site and system, and then click General Cost Allocation System from the Telemanagement menu. The main General Cost Allocation System window appears. From within this window, you can define and add your various bill types. [Figure 42](#) is an example of the General Cost Allocation System main window displaying the Properties tab for a sample quantity-based bill type ([page 175](#)).

## Operating procedures

The following sections outline the steps required to set up the General Cost Allocation System for initial use. These sections also describe the procedures you should follow when running the General Cost Allocation System.

**Figure 42** General Cost Allocation System main window

These sections briefly describe how to:

- Create an organizational hierarchy
- Enter employee, external party, and role or project information
- Enter bill type information
- Generate reports

## Create organizational hierarchy

The Organizational Hierarchy Database is a structured database containing important information about your organization, including the different organizational levels and how these levels are related (for example, departments within divisions). Once you have set up your organizational levels in this database, you can enter your bill type information and generate reports.

Before any meaningful allocation of billing charges can take place, you should define the logical hierarchical structure of your organization. In short, you are creating a framework that holds and links the billing information in the General Cost Allocation System to the correct billed entity (that is, the employee or department).

To define your organizational hierarchy, perform the following steps.

- 1 From the General Cost Allocation System main window, click Edit > Organizational Hierarchy.
- 2 Right-click the existing folder ORG, and from the pop-up menu, click Rename. Change ORG to a name that represents the top of your organizational structure. For this example, enter **Acme Company**.
- 3 For this example, the following levels have been defined: Division and Department. Therefore, to add the first level to this organization, right-click the existing folder, and then click Add New Division. The first menu item under Acme Company appears as New Division 1 in editable form. Type over this default name with the name **Head Office**.
- 4 Right-click over the name Head Office, and then click Add New Department. The first menu item under Head Office appears as New Department 1 in editable form. Type over this default name with **Sales**.

This completes the steps required to set up a sample organizational hierarchy with the levels Acme Company (top level), Head Office (Division level), and Sales (Department level).

## **Enter employee, external party, and role or project information**

With your organizational hierarchy now in place, the next step is to enter your company's employee, external party, and role or project information. These are entered in your corporate databases.

### *Enter employee information*

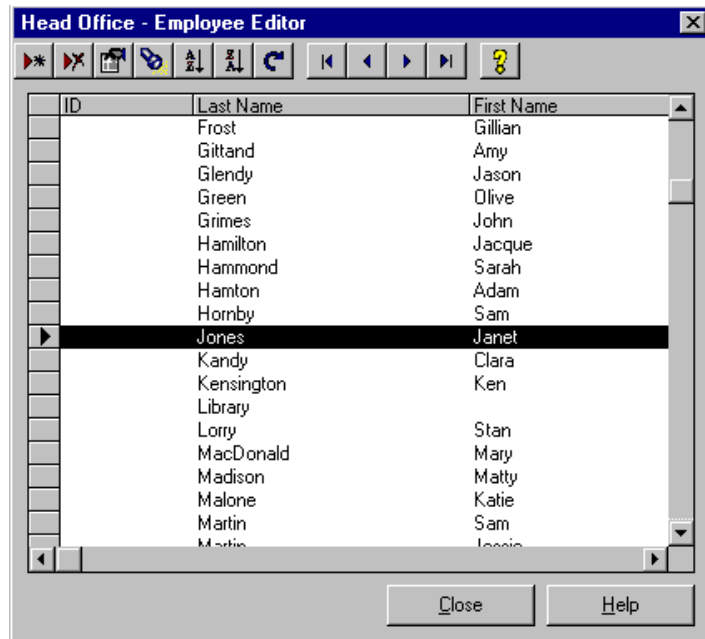
Employee information is necessary to cost and allocate billing data to the proper individuals and cost centers within your organization.

To enter specific employee information, perform the following steps.

- 1 From the main window, click Edit > Employees. The Employee Editor grid dialog box appears.
- 2 To add an employee to this grid, click Add New Record.



Figure 43 Employee Database Employee Editor



- 3 A blank Employee Editor appears. Enter the employee information in the following fields:
- **Identification:** This is a unique identifier for this employee. For this example, enter **001**.
  - **First, Middle, and Last Name fields:** These fields contain the employee's name (for informational purposes). For this example, enter **John Adam Smith**.
  - **Job Title:** For this example, enter **Sales Manager**.
  - **Org. Path:** This represents the employee's location in the organizational hierarchy. For this example, enter **\Acme Company\Head Office\Sales**.
  - **Manager:** In this field, enter the employee's manager. This can be selected from the drop-down menu. For this example, enter **M. President**.
  - **Email:** In this field, enter the employee's e-mail address. For this example, enter **jasmith@acme.com**.
  - **Street No., City, Prov./State, Country, Postal/Zip:** In these fields, enter the employee's address. For this example, leave these fields blank.

- **Description:** In this field, enter any additional comments about this employee. This is for informational purposes only. For this example, leave this field blank.
- 4 The right pane allows you to add any assets that should be assigned to the employee for billing and reporting purposes. This can include such assets as account codes, extensions, cellular phone, or pagers. To add an asset to this employee, click Apply. This enables the Asset list.
  - 5 From the Type drop-down list box, select the desired asset. For example, select Account Code.
  - 6 In the Account Code box that appears, enter the account code. For example, enter **1001**.
  - 7 Click OK to accept these values and return to the previous dialog box. Click Close from this grid to exit to the main window.

This completes the steps to entering a sample employee.

### *Enter external party information*

External parties are those individuals or organizations that exist outside the realm of your organization (for example, customers, vendors, and so on).

This database editor is similar to the Employee Database editor. For instructions on editing this type of database, see the example on entering information in the Employee Database.

To enter specific external party information in the External Party Database, perform the following steps.

- 1 From the main window, click Edit > External Parties.
- 2 The External Party Editor grid dialog box appears. To add an external party to this grid, click Add New Record.
- 3 A blank External Party editor appears. Enter the external party's information in the available fields.
- 4 Click OK to accept these values and return to the previous dialog box. Click Close from this grid to exit to the main window.

This completes the steps to entering a sample external party.

## *Entering roles or projects information*

Within the Roles/Projects Database, you can document information relevant to a particular organizational project. For example, within your organization, there can be a marketing project incurring costs. In turn, you can define your billing entity to be the role project name.

This database editor is similar to the Employee Database editor. For instructions on editing this type of database, see the example on entering information in the Employee Database ([page 176](#)).

To enter role or project information in the Roles/Projects Database, perform the following steps.

- 1** From the main window, click Edit > Roles/Projects.
- 2** The Roles and Projects Editor grid dialog box appears. To add a role or project to this grid, click Add New Record.
- 3** A blank Roles and Projects Editor appears. Enter the role or project information in the available boxes.
- 4** Click OK to accept these values and return to the previous dialog box. Click Close from this grid to exit to the main window.

This completes the steps to entering a sample role or project.

## **Enter bill types**

By default, bill types fall into one of three categories: quantity-based, time-based, and destination-based. Quantity-based bill types are defined as having quantitative amounts and unit charges (for example, office furniture, computers, stationery, and so on). Time-based bill types are defined as having start and finish times (for example, Internet usage). Destination-based bill types are defined as having call attributes such as location, digits dialed and route, and source and destination (for example, cellular or pager calls).

### *Assign bill to a bill type*

After established what kind of bill type is best suited to represent your data, the next step is to enter the information from your bill into the General Cost Allocation System. There are two ways in which you can enter this information. You can import a file or manually enter the data from a printed statement (for example, from a vendor's bill). Whichever method of input used, your first task is to attach your bill to one of the three defined bill types: quantity-based, time-based, or destination-based.



**Note:** A quantity-based bill type is used for example purposes. The methods of data entry for both time-based and destination-based bill types are fundamentally the same as quantity-based bill types. However, where data entry formats are different, examples and illustrations provide extra guidance.

---

### *Example: Quantity-based bill type*

Perform the following steps to enter a quantity-based bill type.

- 1 From the General Cost Allocation System main window, click once on the Quantity-Based Billing type option in the menu tree.
- 2 Click File > New Bill Type.
- 3 The Properties tab appears. Under Bill Type Name, identify your bill with an appropriate name. For example, enter **Office Furniture**.
- 4 In the Identify Bill Party by box, enter how the billing information for this bill type is associated to the correct billing party in your organization. For example, you can use an employee's extension number to assign office furniture charges to the employee, or you can use a calling card to assign calling card charges to the employee.
- 5 To select an existing value or to add a new one, click the ellipsis button (...). The Billing Key Information dialog box appears.
- 6 The left pane displays the Lookup Keys that are used to allocate the bill type charges to the appropriate bill party in your organization. If a Lookup Key is not defined, click <Define New Bill Party Lookup>. In the Identify Bill Party by box, enter your Lookup Key name.

- 7 The display mask denotes the format used when entering values relevant to a particular bill type. The display mask characters can be numeric identifying the format of the Lookup Key. Refer to the following tables for examples of mask properties and definitions. You can enter up to 50 characters in this field. Once the new Lookup Key properties have been defined, click Apply to save the new Lookup Key into the system.
- 8 For this example, you assign the office furniture to each employee using their extension numbers. From the list box, click Extension No., and then click OK.

Repeat the above steps for each bill type you are defining.

The following tables represent the available mask properties:

**Table 2** Examples of mask properties

Mask	Description
Null String	(Default) No mask. Acts like a standard text box.
###	Example: 321 (extension number)
#### ##	Example: 1234 567 891 000 (phone card number)
#### ##	Example: ABCD 123 (license plate)
?.#####	Example: AB.12345 (purchase order number)

**Table 3** Mask characters

Mask	Description
#	Digit placeholder (Optional)
.	Decimal placeholder
'	Thousands separator
:	Time separator
/	Date separator
&	Character placeholder
>	Convert all the characters that follow to uppercase.
<	Convert all the characters that follow to lowercase.
A	Alphanumeric character placeholder (entry required)
a	Alphanumeric character placeholder (entry optional)
9	Digit placeholder (entry optional)

**Table 3** Mask characters (continued)

Mask	Description
C	Character or space placeholder
?	Letter placeholder

## Enter cost profiles

Having defined your bill party identification key within the Billing Key dialog box, you can now enter your cost profiles (optional). Cost profiles allow you to define additional “fixed” costs and applicable taxes to each billable item within a bill type.

Surcharges or deductions can be applied to an item in any of the following ways:

- A fixed cost per item charge added to the existing item charge. For example, a \$0.10 fixed surcharge can be made against each record related to a calling card bill. If a calling card has a base cost of \$2.00, the total cost of the record, not including tax, would be \$2.10.
- A cost per minute charge applied to each minute of each item. This surcharge is only applicable to time-based and destination-based bill types, and is calculated by multiplying each item’s duration (in minutes) by the value entered in this box.
- A percentage adjustment applied against the original charge of each item. To increase each item’s charge by 10%, enter 10.00 in the Percent Adjust box.

## Define taxes

You have the option of selecting up to four applicable taxes for each bill type. For this example, you enter one applicable tax: the Sample State Tax (SST) of 5%.

To define the taxes for this example, perform the following steps.

- 1 From the Properties/Cost Profile dialog box, click Edit > Taxes to launch the Tax Editor dialog box.
- 2 Click the Add graphical command button.
- 3 In the Name box, enter the tax name. For this example, enter **Sample State Tax**.

- 4 In the Short Name box, enter an abbreviation of the tax name. For this example, enter **SST**.
- 5 In the Percentage box, enter the percentile tax amount. For this example, enter **5**.
- 6 Click OK to accept the values and return to the previous dialog box.
- 7 Once you have defined all of the required taxes, click Close to save them and return to the main window.
- 8 In the Cost Profile group box, select the appropriate taxes for your bill type from the Tax drop-down list boxes.
- 9 Once all of the information for your bill type is entered, click Save to add the new bill type to the General Cost Allocation System.

### **Deleting bill types**

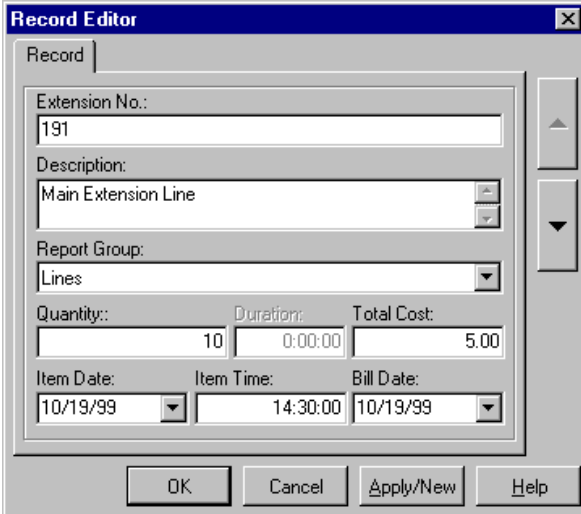
To delete a bill type, you need to search the menu view and highlight the desired bill type for deletion. Deletion of a bill type deletes any billing records associated with it. The deleted bill type is then removed from the menu tree. To delete a bill type, perform the following steps.

- 1 From the menu tree view of the General Cost Allocation System main window, click the bill type to be deleted.
- 2 Click File > Delete Bill Type.

### **Create billing records**

After having defined your bill types, you can now enter individual billing records or items that belong to them. To enter your new billing records, perform the following steps.

- 1 From the menu tree view of the General Cost Allocation System main window, click a defined bill type, and then click the Records tab.
- 2 Click the Insert New Record command button. The Record Editor dialog box appears.

**Figure 44** Record Editor dialog boxThe image shows a Windows-style dialog box titled "Record Editor" with a close button (X) in the top right corner. The dialog has a tab labeled "Record". Inside the tab, there are several input fields and a drop-down menu. The "Extension No.:" field contains the text "191". The "Description:" field contains the text "Main Extension Line". The "Report Group:" field is a drop-down menu showing "Lines". Below these are three fields: "Quantity:" with "10", "Duration:" with "0:00:00", and "Total Cost:" with "5.00". At the bottom of the input section are three date/time fields: "Item Date:" with "10/19/99", "Item Time:" with "14:30:00", and "Bill Date:" with "10/19/99". At the very bottom of the dialog are four buttons: "OK", "Cancel", "Apply/New", and "Help".

- 3 In the Record Editor dialog box, enter the appropriate value that identifies the bill party for this record. In this example, the employee extension is required. Therefore, in the Extension No. box, enter **191**.
- 4 In the Description box, enter a description of the bill record. This is an optional field. For this example, enter **Main Extension Line**.
- 5 From the Report Group drop-down combo box, select a Report Group value. If an appropriate value is not found in the list, you can type the required value in the Report Group drop-down combo box. This value further organizes billed items into smaller subgroups. This is optional. For this example, enter **Lines**.
- 6 In the Quantity box, enter the quantity of products or services which are to be billed. For this example, enter **10**.
- 7 In the Total Cost box, enter the pre-tax total cost for the specified quantity of items. For this example, enter **5.00**.
- 8 In the Item Date box, enter the date assigned to this item (for example, the original purchase date). For this example, enter **10/19/99**.
- 9 In the Item Time box, enter the time assigned to this item (for example, the original purchase time). For this example, enter **14:30:00**.



- 10** In the Bill Date drop-down combo box, enter the bill date (that is, the date of the bill or bill period on which this record should appear). For this example, enter **10/19/99**.
- 11** Click OK to accept the values, save the records, and return to the main window.

### *Summary of fields (Record Editor dialog boxes)*

You do not necessarily need to enter data into every available data field within the Record Editor. In many instances, you can choose what data you want to enter. However, dependent upon what type of bill you are entering, there are specific fields that must be entered with a value.

The following table displays a complete summary of all field headings. Each field is designated as a Required or Optional entry.

**Table 4** Summary of record fields

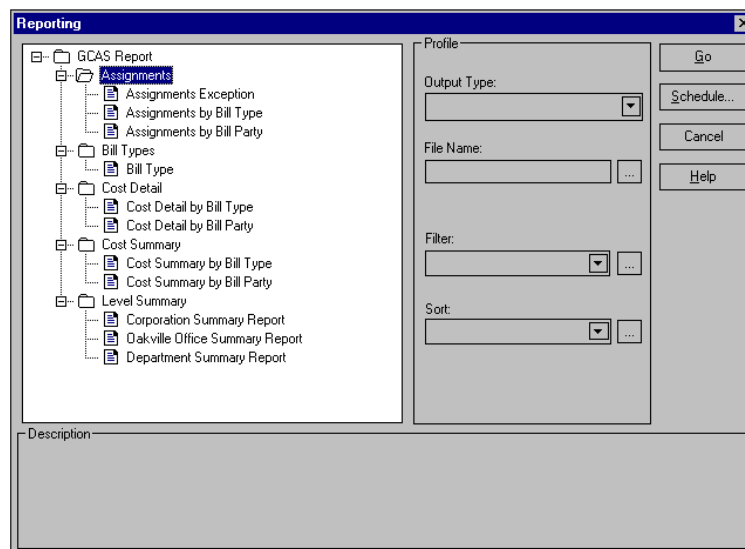
Field	Description
Billing Key	Required. The "Bill Party Lookup Key" value that associates the charge record to the appropriate bill party in your organization.
Report Group	Optional. Provides the ability to organize the records within a bill type into smaller subgroups for reporting purposes.
Description	Optional. Description of the record.
Item Date	Required. Date that the record was created. Dates appear in the format specified by the "short date format" entered in the regional settings of your PC's control panel.
Item Time	Optional. Time that the record was created. Time appears in the format hh:mm:ss.
Bill Date	Required. Default is the current date.
Quantity	Optional. The quantity of product or service items billed by this record. Default is 1.
Duration	Optional. Applicable for Time and Destination-Based bill types. The default value is 0:00:00, and the format is hhhh:mm:ss.
Total Cost	Optional. Default is 0.00.
Destination ID	Optional. For Destination-Based bill types. Digits dialed.
Destination Location	Optional. For Destination-Based bill types. Called location.
Source ID	Optional. For Destination-Based bill types. ID of the record source (for example, the source telephone number of a calling card call).

**Table 4** Summary of record fields (continued)

Field	Description
Source Location	Optional. For Destination-Based bill types. Location of where the record was made.
Direction	Optional. For Destination-Based bill types. Incoming or Outgoing.
Route Used	Optional. For Destination-Based bill types.

## Generate reports

Once you have created your organizational hierarchy, populated your corporate databases, and entered your billing information, you can generate detail and summary reports listing this information. The reports can appear on the screen, be saved to a file, be output to a printer, or be sent to an e-mail address. You can also filter and sort information within your bill and, therefore, create reports based on specific information. The following dialog box illustrates the types of billing reports that can be generated:

**Figure 45** Reporting dialog box

To generate a report, perform the following steps.

- 1 From the General Cost Allocation System main window, click File > Reports.

- 2 Click once on the report that you want to generate from the Reporting menu tree. When you select the report, a brief description of it is visible in the description field at the bottom of this dialog box.
- 3 Select the desired output device from the Output Type drop-down list box in the Profile group box. You can choose to output your report to a printer, to the PC's screen, to a file, or to an e-mail address.
- 4 If you do not want to select filters or sorting criteria for this report, click Go to generate the report. See the following steps for information on selecting filter and sorting criteria.

Before you generate your reports, you can select parameters (filters and sorting criteria) that determine what data appears on the report, and how the report details are sorted.

### *Select report filters*

To enter your filter and sort information, perform the following steps.

- 1 To define a filter, click the ellipsis button (...) next to the Filter drop-down list box. This accesses the Filters grid dialog box.
- 2 In the Filters grid dialog box, click Add. This accesses the Filter definition dialog box.
- 3 In the Filter definition dialog box, enter the following filter values:
  - **Filter Name:** In this box, enter the name of the filter. This appears in the Filters grid dialog box list and in the Filter drop-down menu of the Reporting dialog box. You can select this filter by clicking this name in the Filter drop-down menu of the Reporting dialog box.
  - **Name in Report:** In this box, enter the name of the filter that appears on the applicable reports.
  - **Description:** In this box, enter any additional descriptive information about this filter. This is for informational purposes and also appears in the Filters grid dialog box.
- 4 Define the report parameters using the various filter tabs in this dialog box. Each tab allows you to define specific information based on your filter requirements.

Several of the values entered on each tab are ranges of time or cost (that is, “From” a certain date “To” a certain date, and a “Minimum” cash amount to a “Maximum” cash amount). For example, you can print all reports between two dates and include all records that fall between two cost amounts.

However, the following tab fields do have different characteristics: Bill Type, Direction, and Organization. In each of these cases, you can select choices from a drop-down list by clicking the down arrow button located to the right of each option line.

- 5 Once you have entered the filter’s parameters, click OK to save them and return to the Filters grid dialog box. Notice that the name you entered in the Filter Name box appears in this grid.
- 6 To select this filter, click it once to highlight it, and then click OK. This name appears in the Filter drop-down menu of the Reporting dialog box.

Once the filter is defined, you can select it any time by simply clicking it from the Filter drop-down list box in the Reporting dialog box.

### *Select sorting criteria*

Perform the following steps to select sorting criteria for the reports.

- 1 To define a sort order, click the ellipsis button (...) next to the Sort drop-down list box. This accesses the Sort grid dialog box.
- 2 In the Sorts grid dialog box, click Add. This accesses the Sort definition dialog box.
- 3 In the Sort definition dialog box, enter the following values:
  - **Sort Name:** In this box, enter the name of the sorting definition. This appears in the Sorts grid dialog box list and in the Sort drop-down menu of the Reporting dialog box. You can select this sort definition by clicking this name in the Sort drop-down menu of the Reporting dialog box.
  - **Description:** In this box, enter any additional descriptive information about this sort definition. This is for informational purposes and also appears in the Sorts grid dialog box.
- 4 In the Sort by box, click the drop-down commands, and then enter the sorting criteria.

- 5 Once you have entered the sorting criteria, click OK to save them and return to the Sorts grid dialog box. Notice that the name you entered in the Sort Name box appears in this grid.
- 6 To select this definition, click it once to highlight it, and then click OK. This name appears in the Sort drop-down menu of the Reporting dialog box.

Once the sort order is defined, you can select it any time by simply clicking it from the Sort drop-down list box in this dialog box.

### *Schedule reports*

If you want to schedule a report to run at a specific time, click Schedule from the Reporting dialog box. Use the Scheduler to enter the date and time that you want to run the report.

## **User's reference**

This section contains an overview of the General Cost Allocation System functions and databases. It briefly describes their function and purpose. For complete details on each of these functions and their operation, refer to the online Help included with the software.

### **File menu**

The File menu contains commands used to manage the bill type records, generate reports, import and export data, and exit from the system.

The following is a list of the functions and commands in this menu:

- New Bill Type
- Delete Bill Type
- Reports
- General Export
- Import Bill Type
- Export Bill Type
- Archive Bill Type

- Merge Bill Type
- Purge Bill Type
- Exit

## Edit menu

The Edit menu accesses the General Cost Allocation System's main databases. These databases contain the corporate information you need to run the General Cost Allocation System effectively for your organization.

To access these databases, click Edit from the main window, and then select the following:

**Organizational Hierarchy:** This database contains the different structural levels within your organization (for example, departments, divisions, and so on). You can create up to 20 different levels in this hierarchy. The Organizational Hierarchy and the Level editor are used to create, name, and arrange these different organizational levels. The employees in your organization are assigned to these levels. The cost summary reports can then summarize the calling activity and associated usage costs by these levels.

**Employees:** This database contains information about your organization's employees, which is relevant to the General Cost Allocation System. It includes such information as your employees' names, telephone extensions, authorization codes, and their locations within the organizational hierarchy. This information is required to allocate charges to the proper extensions and cost centers within your organization.

**External Parties:** This database contains information about individuals or companies with whom you have regular contact. It includes such information as the external party's name, address, telephone number, and account code.

**Roles/Projects:** This database contains information about the different roles or projects that require reporting in the General Cost Allocation System. It is used to assign extensions, authorization codes, or account codes to projects or personnel for reporting purposes.

**Asset Assignments:** This database defines how the different assets are assigned to the corporate entities in the Employee, External Parties, and Roles/Projects Databases.

**Taxes:** This editor is used to define the taxes that are applied to the usage or equipment charges of the billing records.

## View menu

The View menu contains commands and toggles to display various components of the General Cost Allocation System database.

This menu contains the following commands and toggles:

- Bill Party
- Grid Lines
- Status Bar
- Refresh
- Find
- Replace

## Help menu

The Help menu offers commands which provide you with assistance as you use the General Cost Allocation System.

This menu contains the following commands:

- Help Topics
- About the General Cost Allocation System





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## Chapter 7

# Consolidated Reporting System

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This chapter provides basic information on setting up and running the Consolidated Reporting System (CRS). It also includes example procedures and reference information to assist you in setting up the Consolidated Reporting System.

## Introduction

The Consolidated Reporting System is used to generate reports by consolidating data from the Telecom Billing System and the General Cost Allocation System. By defining filtering and sorting criteria, you can generate custom reports that detail organizational and employee spending characteristics.

Each report is broken down into subreports that detail user costs for specific applications within OTM. The report is summarized by aggregating all the costs associated with the chargeable entity (that is, the sum of all the subreport totals).

The following is an overview of some of the features of the Consolidated Reporting System:

- The Consolidated Reporting System allows for effective, fast report generation of all chargeable costs to departments or persons within your organization.
- The Consolidated Reporting System combines data from the Telecom Billing System and General Cost Allocation System applications detailing products or services purchased, and the appropriate chargeable entity. Management can then effectively monitor and isolate specific costs to various business lines within your organization.
- You can quickly use this information to determine how organizational entities are utilizing corporate funds and resources.

- The user-friendly Tree View interface allows for quick, easy, and effective generation of your reports.
- The Report Engine prints professional-looking reports using TrueType fonts and customizable report logos.

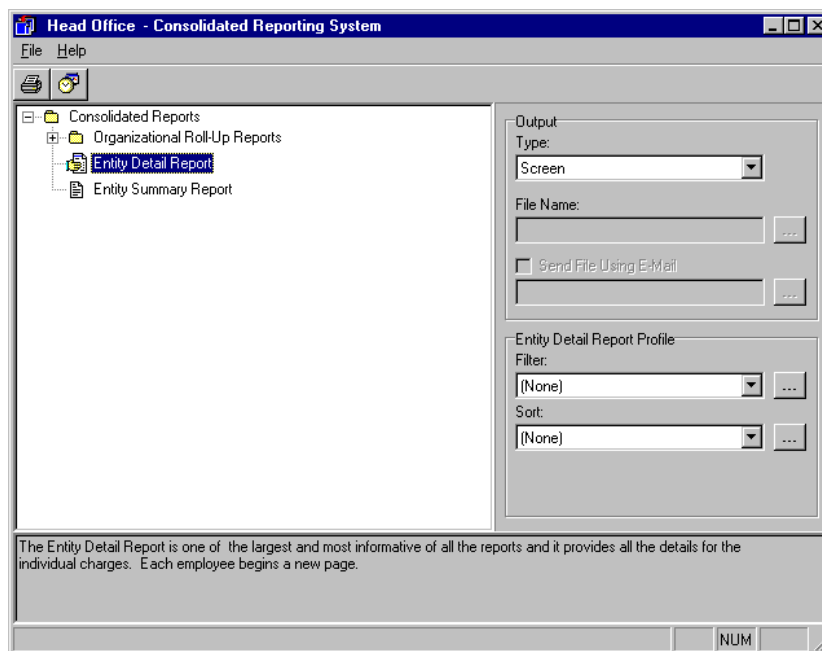
## Getting started

This section describes how to access and use the Consolidated Reporting System. Before using the Consolidated Reporting System, you must install and configure it as part of the Optivity Telephony Manager (OTM). You must then assign it to a site and system. Refer to *Installing and Configuring Optivity Telephony Manager* (553-3001-230) for complete details on installing this application and assigning it to a site and system.

### System access

After you have assigned the Consolidated Reporting System to a site and system, you can then run it to generate your reports.

To access the Consolidated Reporting System from the OTM Navigator, click the desired site and system, and then click Consolidated Reporting System from the Telemanagement menu. The main Consolidated Reporting System window appears. The following is an example of this window:

**Figure 46** Consolidated Reporting System main window

## Operating procedures

The remaining sections in this chapter outline the operational procedures of the Consolidated Reporting System. The following topics are discussed:

- Consolidated reports
- Report generation (filters, sort definitions, output, printing, and scheduling)

### Consolidated reports

The Consolidated Reporting System allows you to generate the following consolidated reports:

- Organizational Roll-Up Reports
- Entity Detail Report
- Entity Summary Report

## *Organizational Roll-up Reports*

Organizational Roll-up Reports consolidate organizational billing information (for example, corporate, divisional, and departmental). The Organizational Roll-Up Reports folder contains a report for each level in your organizational hierarchy (for example, Corporation Roll-Up Report, Division Roll-Up Report, and Department Roll-Up Report).

These reports provide a grouping of information based on the organizational level identified in the report name. For example, the Departmental Summary Report provides a grouping of information by department (for example, a report for Sales, Accounts, Administration., Engineering, and so on). The Engineering grouping displays a summary of all chargeable items incurred by any entity, person, or organizational unit immediately attached to the Engineering node, such as the Engineering Manager, the Quality Assurance Team, and the Research and Development Team. The latter two are roll-ups of the chargeable items of their respective members.

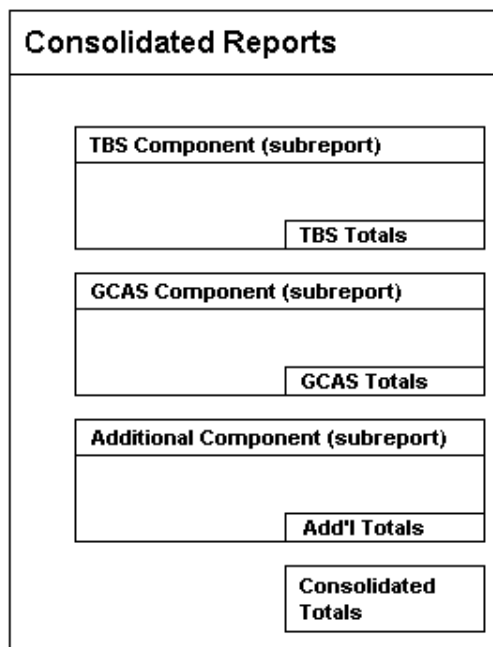
## *Entity Detail Report*

The Entity Detail Report consolidates the costs for the different entities (for example, employees, external parties, or roles and projects) from each of the supported OTM applications. By consolidating information in this manner, you can quickly and effectively determine entity costs.

This report details a listing of individual billing costs within each OTM application for each entity. The entity's chargeable records for each application are listed under separate headings called subreports (for example, Telecom Billing System and General Cost Allocation System). Each of these subreports contains a detailed listing and a subreport summary of the incurred costs for that application for that entity. These summary costs are then combined to produce a grand total cost/charge for that entity (that is, the sum of all the subreport totals).

## *Entity Summary Report*

The Entity Summary Report is fundamentally the same as the Entity Detail Report. However, unlike that report, the Entity Summary Report provides only a summary of consolidated bills for each entity in the organizational hierarchy.

**Figure 47** Consolidated report structure

## Generating an Entity Detail Report

To generate an Entity Detail Report, perform the following steps.

### *Step 1: Select report*

From the Tree View in the main window, click Entity Detail Report. You can either generate a report that incorporates all entity information from all the OTM applications, or you can define subreports. When you select subreports, it allows you to choose which OTM applications that you want to include in the report, and their order of inclusion. This example includes a subreport.

With the Entity Detail Report selected, right-click over the dialog box, and then click Select Subreport. From the Available Applications list, select one or more of the available applications that you want to include as subreports (for example, Telecom Billing System or General Cost Allocation System). Use the arrow keys

next to the Available Applications list to move the applications to the Selected Applications list. You can then order the chosen applications using the arrow keys next to the Selected Applications pane. Click OK to accept the settings, or click Cancel to return to the main window without changing the previous configuration.

***Step 2: Select application-specific filters and sort definitions (optional)***

You may also select filter and sort criteria that determine the data ranges that are reported on (optional). These filter and sort options can be applied to each subreport (for example, Telecom Billing System or General Cost Allocation System).

From the Tree View in the main window, click the chosen report's Tree View node expander button, and then click the application. To select a current reporting filter or sort option, click the Filter or Sort drop-down list box, and then select from the list.

To add new filters or sorts for this application, click the ellipsis button (...) next to the Filter field or Sort field. In the Filters or Sorts dialog box, click Add. You now have access to the application's own filter tabs or sort options. Navigate the filter tabs or sort options to define your filtering or sorting criteria. Click OK to save the filter or sort options, or click Cancel to return to the Filter or Sort dialog box without saving.

***Step 3: Select output device***

Click the report in the Tree View in the main screen. The Consolidated Reporting System can send reports to output devices, such as a printer (configured in the operating system), the PC's screen, or to a file. Select an output device from the Output Type drop-down list box in the Output group box. To output your report to a file, select the appropriate file type from the Output Type drop-down list box. Click the ellipsis button (...) to the right of the File Name field. From the Save As dialog box, select the desired name and location for the output file.

***Step 4: Add additional report filters and sort definitions (optional)***

In the Entity Detail Report Profile group box, select any additional report filters or sort options (optional). These are additional report filter or sort options, and are used over and above application-specific filter or sort options, detailed in step 2.

### ***Step 5: Generate report***

Once you have defined your filters, sorts, and output method, you can generate your report.

To generate your report, click File > Print, or click the Printer icon on the toolbar.

### ***Schedule report***

If you want to launch a report to run at a specific date and time, click File > Schedule, or click the Schedule icon on the toolbar.

## **Generating an Entity Summary Report**

The method of generating an Entity Summary Report is basically the same as generating an Entity Detail Report. Simply select the desired report and follow the same instructions detailed under the section “Generating an Entity Detail Report.”

## **Generating an Organizational Roll-up Report**

The method of generating an Organizational Roll-up Report is basically the same as generating an Entity Detail Report. The only difference is that you select the Organizational Roll-Up Report folder in the Tree View, which allows you to choose from a list of report types based on your organizational structure. Simply select the desired report and follow the same instructions detailed under the section “Generating an Entity Detail Report.”

## **User’s reference**

This section contains a brief overview of the Consolidated Reporting System’s main window interface. For complete details on each of the functions within the main window, refer to the online Help.

### **Interface**

The Consolidated Reporting System’s main window is the interface for generating consolidated reports.

In the main window you can:

- Select a report
- Define filters and sorts (optional)
- Define an output method
- Schedule or execute a report

By simply clicking on the desired report in the Tree View and defining report settings, you can generate reports easily and quickly. For a sample of the Consolidated Reporting System main window, see [Figure 46](#) on page 195.

The main window has the following menu commands:

- File
- Help

## **File menu**

The File menu contains the Print, Schedule, and Exit commands. To access these functions, click File from the main window, and then select the desired command.

### *Print*

Click the Print command to immediately launch your report.

### *Schedule*

Click the Schedule command to define a time and date when you want to launch the report.

### *Exit*

Click the Exit command to exit from the Consolidated Reporting System program.

## **Help menu**

The Help menu offers commands which provide you with assistance as you use the Consolidated Reporting System.



This menu contains the following commands:

- Help Topics
- About the Consolidated Reporting System



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# Glossary

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The following glossary provides a listing of commonly used telecommunications and computer terms. Many of these terms are used throughout the text without definition and are, therefore, offered here.

**Access Code**

The number dialed to connect the user with an outgoing trunk group (for example, 9 for local calls).

**Account Code**

An optional series of dialed digits used for internal corporate purposes of identifying a customer or client. These codes are used for client billing or tracking purposes.

**AIOD/SMDR**

Automatic Identification of Outward Dialing or Station Message Detail Recording. Suggests a method of capturing complete details of outgoing calls, which may be further processed.

**Area Code**

A three-digit number used to identify toll centers that are not in the Numbering Plan Area of the calling party.

**Attendant**

Console operator for the Meridian 1 or Succession CSE 1000 system, often referred to as the switchboard operator.

**Authorization Code**

A series of dialed digits that identify the caller and cause the Meridian 1 or Succession CSE 1000 system to grant access to services that are otherwise restricted.

**Band**

A geographical area to which a subscriber is entitled to call. Band 1 entitles the subscriber to call fewer area codes than Band 5. It is also referred to as Zone.

**Baud**

A measure of data transmission speed. It is expressed in bits per second, which roughly represents the character speed multiplied by 10. For example, 300 Baud is roughly 30 characters per second.

**CBX**

*See* Private Branch Exchange.

**CCS**

*See* Centi-Call Seconds.

**CDR**

Call Detail Recording. *See* Station Message Detail Recording.

**Centi-Call Seconds**

A unit used for the measurement of telephone traffic analysis, equivalent to one hundred seconds of telephone usage.

**Central Office**

Refers to the telephone company office to which incoming and outgoing lines are connected for the subscriber.

**Database**

A file or group of files, which are interrelated or serve a common purpose.

**DDD**

*See* Direct Distance Dialing.

**Direct Distance Dialing**

The service that allows dialing to areas outside the local area without the assistance of the operator.

**DN**

Directory Number. A user's telephone extension number.

**Duration**

The length of time taken for a call. The Meridian 1 or Succession CSE 1000 system records the duration as an estimate, because no signal is available to determine when the called party answers. Therefore, many short calls may be recorded for which no conversation took place. The limit for call duration is often adjustable.

**EAS NPA**

*See* Extended Area Service.

**Erlang**

The telephone traffic's international unit of measurement. One erlang is a trunk occupied for an hour; this is equivalent to 36 CCS.

**Exchange**

An area in which there is a uniform set of charges for the telephone service. It often refers to a central office and the first three digits dialed for a local call. It is also referred to as NXX.

**Extended Area Service**

A local telephone calling area, which is larger than normal.

**Field**

One data item, which is part of a group of data items making up a data record.

**File**

A group of data records.

**Flat Rate Service**

A uniform fee paid for services regardless of usage.

**Foreign Exchange**

A telephone number from a remote exchange working in a local exchange. Mileage charges usually apply.

**FX**

*See* Foreign Exchange.

**Grade of Service**

The probability of getting a busy signal when trying to access a line.

**LCR**

*See* Least Cost Route.

**Leased Lines**

Refers to private lines between two switching centers.

**Least Cost Route**

Some Meridian 1 and Succession CSE 1000 systems have the ability to determine the least expensive call route.

**Measured Service**

Measured service charges are dependent on the time of day, duration of the call, and the distance to the point dialed. Local calls in some cities are charged by measured unit, which is measured service.

**Message Unit**

A unit for charging local calls comprised of length of call, distance called, and time of day.

**Node**

Used to indicate a Meridian 1 or Succession CSE 1000 system in a network. It can also mean any endpoint in a network.

**NPA**

*See* Area Code.

**NXX**

*See* Exchange.

**Other Common Carrier**

A private company that has filed tariffs with the FCC to provide long distance telephone service to subscribers.

**PABX**

*See* Private Branch Exchange.

**PBX**

*See* Private Branch Exchange and Node.

**Peg Count**

A counting device within the Meridian 1 or Succession CSE 1000 system, which indicates the number of calls placed, received, or blocked.

**Private Branch Exchange**

A privately owned telephone system, which supplies the interface between the business user and the public network. It is also referred to as PABX (Automatic) and CBX (computerized).

**Pro-rated Costing**

When the cost per minute for calls (using a specific trunk or trunk group) is calculated automatically by the system based on the total fixed cost of the trunks and divided by the actual usage of those trunks.

**SDI port**

*See* Serial Data Interface port.

**Serial Data Interface port**

A port on the Meridian 1 or Succession CSE 1000 system that can be configured to output CDR data.

**SMDR**

*See* Station Message Detail Recording.

**Station Message Detail Recording**

The ability of a Meridian 1 or Succession CSE 1000 system to output information to supply reports which include time of call, calling extension, duration of call, number dialed, trunk group, and date. Additional information may also be output.

**Tariff**

A document filed with the FCC which details the services, equipment, and costs offered by a communications carrier. A tariffed item has a fixed cost.

**TELCO**

A telephone company.

**Tie Line**

A dedicated circuit linking two Meridian 1 or Succession CSE 1000 systems.

**Trunk**

A circuit used to connect two telephones. Trunks can be incoming, outgoing, two-way, or interoffice. Trunks are also identified by the type of service they provide (that is, DDD, FX).

**Trunk Group**

A group of trunks categorized by the type of service they provide. For example, trunks with DDD access are contained in a single trunk group.

**Zone**

*See* Band.



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