CIMS Lab, Inc.

CIMS Server

Administrator's Guide

Version 4.3

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Preface

As companies continue to integrate computer technology into their business operations, it becomes increasingly important to properly administer the IT function, particularly with respect to performance and cost.

CIMS Server provides an essential component of an effective financial management system. The technology behind CIMS Server is based on CIMS Lab's many years of experience in the development and implementation of Resource Accounting, Capacity Planning, and IT Chargeback products.

About CIMS Lab

Founded in 1974, CIMS Lab has focused on meeting the financial and resource reporting requirements of Information Services Departments. CIMS has evolved with corporate IT management requirements. Focused commitment to client service and support sets CIMS apart from competing products. Our goal is to provide the best chargeback and resource reporting software in the world at the lowest possible cost to our customers.

CIMS Lab strongly believes in and executes the concept of continuous product improvement. Customers have access to CIMS product development personnel to ensure that customer feedback and other critical issues are incorporated into the next release of the product.

Contacting CIMS Lab

To contact CIMS Lab with questions, comments or problems, please use one of the following methods:

For product assistance or information:

USA & Canada, toll free - (800) 283-4267
International - (916) 783-8525
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About This Guide

This guide describes the installation procedures and administration functions and features of CIMS Server.

The following table describes the chapters in this guide. If you are installing and setting up CIMS Server for the first time, you should begin with *Chapter 1, About CIMS Server* and then continue to *Chapter 2, Installing CIMS Server and Getting Started* before continuing to the other chapters in the guide.

Ch. No.	Chapter Name	Content Description
1	*About CIMS Server*	Describes the overall structure and feature set of the CIMS Server system.
2	*Installing CIMS Server and Getting Started*	Discusses the installation of the CIMS Server system components and provides a Getting Started section.
3	*Setting Up the System*	Explains how to configure the various components of the system.
4	*Report Administration*	Describes how to administer and distribute reports.
5	*Database Administration*	Describes how to use CIMS Server Administrator to create and administer CIMS Server databases.
6	*Processing Data*	Provides an overview of the data processing cycle and components and describes how to use CIMS Server Administrator to set processing options.
7	*Working With CIMS Financial Modeler*	Describes CIMS Financial Modeler. This Web-based application provides an interface for performing IT finance-related tasks, such as cost analysis and allocation and rate calculation.
8	*Troubleshooting and Additional Information*	Describes problems you may encounter while setting up and using the CIMS Server system and how to solve them.
A	*Database Tables*	Describes the layout of key database tables used by CIMS Server.
B	*File Layouts*	Describes the file layout of important files used by the CIMS Server system.
C	*Scripts*	Describes the scripts that are included in the CIMS Server installation.
D	*Control and Processing Statements*	Describes the control and processing statements used by CIMS Processing Engine.

Conventions

Some or all of the following conventions appear in this guide:

Symbol or Type Style	Represents	Example
<u>Alternate color</u>	hyperlinked cross-references to other sections or chapters in this guide; if you are viewing this guide online, you can click the cross-reference to jump directly to its location	...see Chapter 1.
Italic	words that are emphasized	...the entry *after* the current entry...
	a new term	...called a *source object*.
	the titles of other manuals	*CIMS Server Web Reporting User's Guide*
	variables in file names or system names	`IUSR_`*`computername`* `AcctExcp-`*`yyyymmdd`*`.txt`
Bold	names of interface items such as tabs, boxes, buttons, lists, and check boxes.	Select the **Use 13 Periods** check box Enter the path in the **Process Definition Path** box
`Monospace`	directories, file names, command names, computer code, computer screen text, system responses, command line commands, what the user types	`Processes` folder `BatchReport.wsf` script Type `inetmgr`
< >	the name of a key on the keyboard	Press <Enter>
▶	navigating a menu or a folder	File ▶ Import ▶ Object

Terminology: Reports, Spreadsheets, and Graphs

For simplicity, in this guide, the term "report" refers to reports, spreadsheets, and graphs.

Related Publications

As you use this guide, you might find it helpful to have these additional guides available for reference:

■ *CIMS Server Web Reporting User's Guide*

■ *CIMS Data Collectors for Microsoft Windows Installation and User Guide*

1

About CIMS Server

This chapter describes the overall structure, benefits, and features of the CIMS Server system.

What Is CIMS Server?

CIMS Server is a full-featured resource accounting and chargeback system that enables users to consolidate accounting data from multiple IT resources into a common output format for costing and reporting. This output is database ready and may be used for multiple purposes such as reporting and as a feed to internal or third-party systems.

CIMS Server tracks usage data associated with:

■ Operating systems

■ Databases

■ Network systems

■ Storage systems

■ Internet systems

■ E-mail systems

■ Other applications or monitors that create usage metering data

As shown in Figure 1-1 on page 1-3, it is useful to think of CIMS Server as a funnel that accepts usage data and returns organized information that can help IT managers and staff to track and allocate resources.
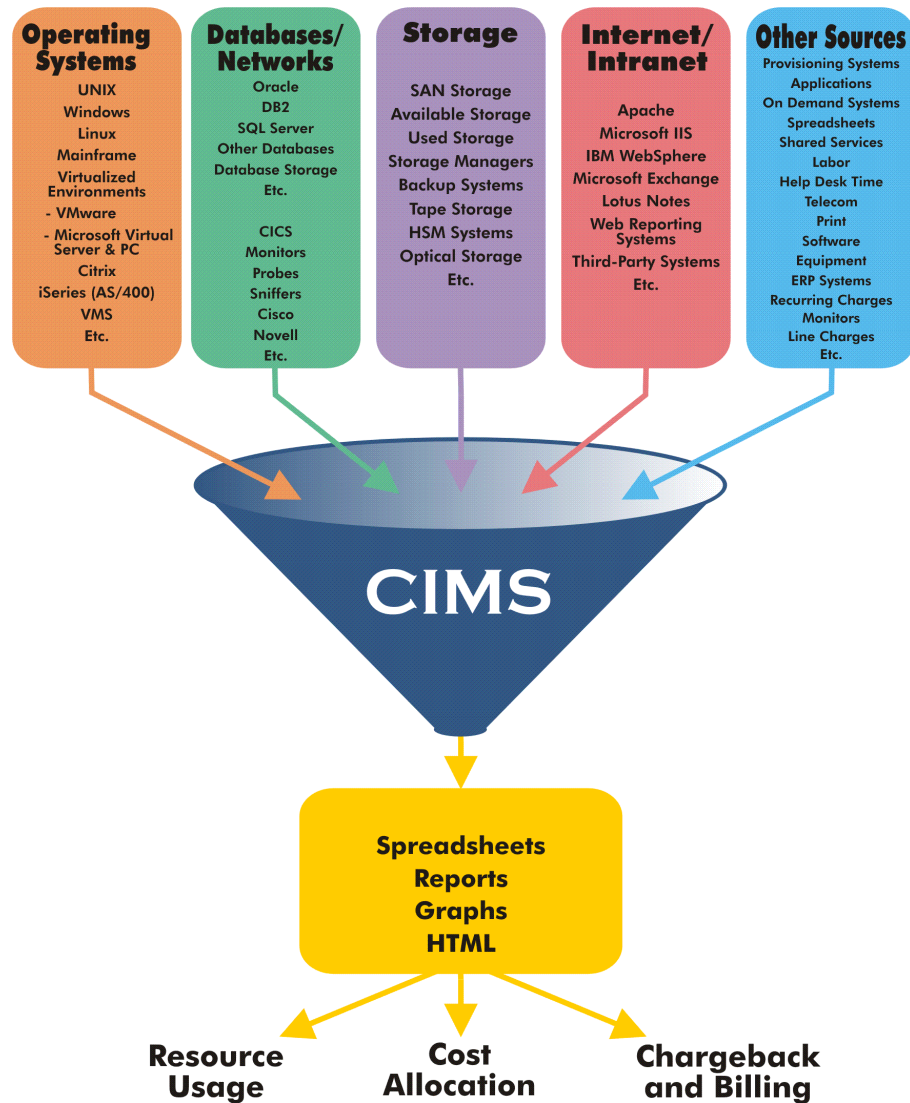
Figure 1-1 • CIMS Server Collects Usage Data and Organizes It As Reporting Information

CIMS Server runs on the Microsoft® Windows® 2000 Server, Windows Server 2003, or Windows XP operating system with any of the Database Management Systems (*DBMS*) described in *Database Server* on page 1-11 and a Microsoft Internet Information Services (IIS) Web server.

Benefits of CIMS Server

Keeping track of IT usage can be a formidable task for any organization. Most sizable enterprises consist of many platforms, systems, and subsystems, each costly to own, maintain and operate. In addition, each component has its own unique record format and metrics.

With CIMS Server, you can process, access, and analyze IT resource usage metrics from many IT resources and view the results right in your Web browser. CIMS Server helps you to better understand who is using IT resources and how the resources are being used.

The following are just a few of the benefits of CIMS Server:

■ **Enterprise-wide cost analysis of IT systems.** CIMS Server enables enterprise-wide cost analysis of IT systems. CIMS Server allows you to allocate, distribute, or charge IT costs to users, cost centers, and organizations in a manner that is fair, understandable, reproducible, and easy to administer.

■ **Centralized data processing.** CIMS Server centralizes the processing of your accounting data on one computer and allows you to view the data on the Web via extensive customizable reporting features. It is possible to view both high-level and detailed information with a few clicks of a mouse.

■ **Full data access and reporting capabilities**. CIMS Server integrates Microsoft SQL Server Reporting Services or Crystal Reports with an *ODBC*-compliant database to give your enterprise full data access and reporting capabilities.

System Features

CIMS Server features include:

■ Report, spreadsheet, and graph generation and viewing via the Web.

■ Batch processing and report generation. (You can also run processes and reports individually.)

■ Multi-level drill down capabilities to view detailed cost and usage information in reports.

■ Integration with the CIMS Data Collectors for Windows, Mainframe, and UNIX®/ Linux® systems.

■ Up to 128-byte account code with powerful account code conversion.

CIMS Data Collectors

CIMS Data Collectors read and convert usage metering data generated by applications (usually standard usage metering files such as log files) and produce a common output file that is used by CIMS Server.

CIMS Data Collectors include the following individual data collection applications:

■ CIMS Data Collectors for Microsoft® Windows®

■ CIMS Mainframe Data Collector and Chargeback System

■ CIMS Data Collector for UNIX

The following sections provide a brief overview of these data collectors and describe the files that the collectors produce for CIMS Server.

CIMS Data Collectors for Windows

The CIMS Server installation includes the option of installing CIMS Data Collectors for Windows. (Contact CIMS Lab for licensing requirements.) These collectors run on the Windows operating system, but collect usage data from Windows and Windows-compatible applications (including older Windows operating systems such as Windows NT®) and non-Windows applications and operating systems. For more information about CIMS Data Collectors for the Windows, refer to the *CIMS Data Collectors for Microsoft Windows Installation and User Guide*.

Each Windows collector collects usage data for a specific application or system and converts the data to an input file, the CIMS Server Resource (CSR) file, that can be processed by CIMS Server or CIMS Mainframe Data Collector and Chargeback System.

The CSR file contains comma-delimited records that show the resource or resources that were consumed and an identifier or identifiers that denote the source of the resources. For more information about this file, see *About CSR and CSR+ Files* on page 1-8.

CIMS Mainframe Data Collector and Chargeback System

CIMS Mainframe Data Collector and Chargeback System provides comprehensive job accounting, chargeback, resource utilization, and system performance reporting for mainframe systems including z/OS®, OS/390®, MVS, CICS®, DB2®, VSE, storage systems/SAN and many more.

You can use CIMS Mainframe to perform all of your mainframe data processing and reporting or you can perform all or part of your processing and reporting using CIMS Server. This flexibility enables you to view your mainframe data using CIMS Server's powerful Web-based reporting and report drill down capabilities.

CIMS Mainframe Data Collector and Chargeback System produces the following files for integration with CIMS Server. The files differ depending on whether CIMS Server is used to perform the processing and reporting of mainframe data or just reporting.

- **CIMS Server Resource (CSR) file.** This file is produced by CIMS Mainframe 11.6 and earlier. The CSR file requires processing by CIMSAcct and CIMSBill in CIMS Server before it can be loaded into the CIMS Server database. For more information about this file, see *About CSR and CSR+ Files* on page 1-8.

  Or

- **CIMS Server Resource Plus (CSR+) file.** This file is produced by CIMS Mainframe 12.0 and later. The format of the CSR+ file is the same as the CSR file, with the exception that the records in the CSR+ file contain an additional header at the beginning of the record. For more information about this file, see *About CSR and CSR+ Files* on page 1-8.

  The CSR+ file requires processing by CIMSAcct and CIMSBill in CIMS Server before it can be loaded into the CIMS Server database.

  Or

- **CIMS Ident, Detail, and Summary files.** These files are produced by CIMS Mainframe 12.0 and later. These files do not require processing by CIMSAcct and CIMSBill. They are loaded directly into the CIMS Server database. For more information about these files, see *Chapter 6, Processing Data* and *Appendix B, File Layouts*.

For more information about the creation of these files and about data collection and processing using CIMS Mainframe, refer to the *CIMS Mainframe Data Collector and Chargeback System User Guide*.

For more information about integrating these files with CIMS Server, refer to the *CIMS Data Collectors for Microsoft Windows Installation and User Guide*.

CIMS Data Collector for UNIX

CIMS Data Collector for UNIX collects usage data for UNIX/Linux systems including databases such as Oracle and DB2 and other software. CIMS UNIX collects data such as disk storage, CPU time, connect time, I/Os, pages printed, and user sessions.

CIMS Data Collector for UNIX produces the CIMS Server Resource (CSR) file, which can be processed by CIMS Server or CIMS Mainframe Data Collector and Chargeback System. For more information about this file, see *About CSR and CSR+ Files* on page 1-8.

For more information about the creation of the CSR file and about data collection using CIMS UNIX, refer to the *CIMS Data Collector for UNIX User Guide*.

For more information about integrating the CSR file with CIMS Server, refer to the *CIMS Data Collectors for Microsoft Windows Installation and User Guide*.

About CSR and CSR+ Files

CSR files are created by CIMS Data Collectors for Windows, CIMS Data Collector for UNIX, and CIMS Mainframe Data Collector and Chargeback System (11.6 and earlier). CSR files can also be created by many other third-party applications.

CSR+ files are created by CIMS Mainframe Data Collector and Chargeback System 12.0 and later.

The format of the CSR and CSR+ file records is the same, with the exception that the records in the CSR+ file contain an additional header at the beginning of the record.

For a complete description of the CSR and CSR+ file formats, see *Appendix B, File Layouts*.

Key pieces of information in the CSR and CSR+ records include the identifiers and resources. All CIMS Data Collectors define the most useful identifiers and resources to be collected from the usage data and provide this information in the records of the output CSR or CSR+ file.

For example, the CIMS Data Collector for Microsoft Exchange Server produces CSR records with one identifier and four resources as shown in the following example records:

```
Exchange,20060916,20060916,01:00:47,01:00:47,,1,User,"joe",4,EXEMRCV,1,EXBYRCV,3941,EXEMSNT,0,EXBYSNT,0
Exchange,20060916,20060916,01:00:47,01:00:47,,1,User,"mary",4,EXEMRCV,1,EXBYRCV,3863,EXEMSNT,0,EXBYSNT,0
Exchange,20060916,20060916,01:00:47,01:00:47,,1,User,"joan",4,EXEMRCV,1,EXBYRCV,2748,EXEMSNT,0,EXBYSNT,0
```

The identifier name, User, is followed by the identifier value designating the ID of the user who consumed the resources. Examples of other identifier names and values that might appear in a CSR or CSR+ record are those that designate device name, server name, system ID, job name, user ID, phone number, state code, or building number.

The resources consumed are designated by the rate codes EXEMRCV (e-mails received), EXBYRCV (bytes received), EXEMSNT (e-mails sent), and EXBYSNT (bytes sent).

Processing Identifiers and Resources (Rate Codes)

All identifiers and resources in the CSR or CSR+ records must be defined in the CIMS Server database. However, the process for defining identifiers and resources differs.

Resource rate codes require a monetary value and other user-defined options that must be defined *before* the CSR or CSR+ records are processed. CIMS Lab pre-loads the rate codes produced by many of the data collectors (including the Exchange Server rate codes in the preceding example) in the CIMSRate table. You can then use CIMS Server Administrator to modify the monetary value and other options for the rate codes for your site as described in *Working With Rates* on page 3-9.

Note • **The rate codes for some collectors are not pre-loaded in the CIMSRate table and must be added. To determine whether the rate codes for a specific collector are pre-loaded, refer to the documentation for that collector.**

Because identifier names and values do not require additional definition, you do not need to define the names and values for CIMS Server before the CSR or CSR+ records are processed. Identifier names and values in the records are automatically defined in the CIMSIdent table when the CSR or CSR+ file is processed.

CIMS Server System Component Overview

The CIMS Server system is composed of the following components:

■ The CIMS Server application server

■ A database server

■ A Web server

You can install all components on one server or on separate servers. The most common configuration is to have CIMS Server and the Web server on one server and the database on a second server. For more information, see *CIMS Server System Components* on page 2-3.

The following sections describe each of the CIMS Server system components.

CIMS Server Application Server

The CIMS Server application server contains the following key components:

■ CIMS Processing Engine

■ CIMS Server Administrator

CIMS Processing Engine

CIMS Processing Engine is a fast, efficient data processing engine capable of processing and applying business rules to large volumes of data. CIMS Processing Engine consists of multiple programs. The four main programs are CIMSAcct, CIMSSort, CIMSBill, and CIMSAdminLib:

■ CIMSAcct processes the input sources provided by CIMS Data Collectors (see *CIMS Data Collectors* on page 1-5) and performs functions such as account code conversion. CIMSAcct produces an output file containing records that are properly formatted for input into CIMSBill.

■ CIMSSort sorts output from CIMSAcct and produces a sorted file that is ready to be processed by CIMSBill.

■ CIMSBill processes the output from CIMSAcct and builds output files that contain the billing information that is used to generate invoices and reports.

■ CIMSAdminLib contains the class `CCIMSCBSLoad` that loads the output files from CIMSAcct and CIMSBill into the CIMS Server database. CIMSAdminLib is the central controlling library for all Windows-based CIMS Server functions. It contains all the COM objects used to manipulate CIMS data.

For more information about CIMS Processing Engine, see *Chapter 6, Processing Data*.

CIMS Server's powerful data processing capability provides all the data needed to produce complete and detailed reports, spreadsheets, and graphs. The actual generation of reports, however, is completed by SQL Server Reporting Services or Crystal Reports (see *Web Server* on page 1-12).

CIMS Server Administrator

CIMS Server Administrator is the administration tool for the CIMS Server system. This Windows-based GUI application allows the system administrator and CIMS Server administrators to configure and maintain the information contained in the CIMS Server database such as rates, users and groups, clients, system configuration settings, and processing and reporting settings. CIMS Server Administrator also enables administrators to perform real-time processing.
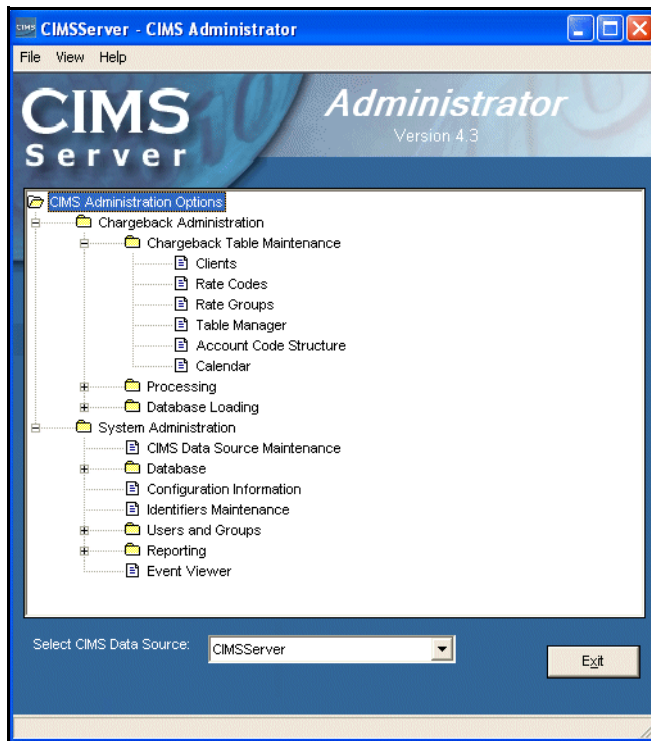
Figure 1-2 • CIMS Server Administrator Main Window

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The following table shows the administrative tasks performed by the system administrator and the CIMS Server administrator.

System Administrator Tasks	CIMS Server Administrator Tasks
■ Defining and configuring the CIMS Server database	■ Defining account code structures
■ Selecting the Open Database Connectivity (ODBC) Data Source	■ Creating and maintaining rate, client, and calendar definitions
■ Creating, adding, and dropping database tables	■ Defining CIMS Server users and groups
■ Creating, adding, and dropping database objects	■ Setting reporting options
■ Performing database backup procedures	■ Configuring the CIMS Server system settings
■ Defining and categorizing input sources	■ Loading and exporting data to and from the database
■ Scheduling input selection	■ Setting processing options
	■ Executing processing jobs
	■ Setting CIMSAcct and CIMSBill options

Database Server

The database stores administration information as well as the Ident, Detail, and Summary records that are produced by CIMS Processing Engine (see *Chapter 6, Processing Data*, for more information about these records). These records are used by SQL Server Reporting Services or Crystal Reports to provide robust Web reporting.

The DBMS that you can use with CIMS Server depends on the edition of CIMS Server that you are using as discussed in the following sections.

CIMS Server Enterprise Edition

If you are using CIMS Server Enterprise Edition, you can use any of the following databases:

■ Microsoft SQL Server 2000 or 2005.

■ Oracle 9 (UNIX or Windows). If you are using Oracle 10, contact CIMS Lab.

■ DB2 8 (Universal Database for z/OS)

■ MSDE 2000. MSDE 2000 is included with the CIMS Server installation. However, the use of MSDE has some disadvantages as discussed in *CIMS Server Professional Edition*.

Note • **SQL Server Reporting Services is not available for MSDE. In addition, CIMS Server 4.3 does not support the use of Reporting Services with a DB2 database.**

CIMS Server Professional Edition

CIMS Server Professional Edition requires MSDE 2000. The use of MSDE provides the following advantages and disadvantages:

Advantages

■ No additional cost—MSDE 2000 is included with the CIMS Server installation

■ Easy upgrade path from MSDE to Microsoft SQL Server

Disadvantages

■ Limit of 2 GB of storage

■ Limit of two processors per computer

■ Limited administrative tool

■ Does not support SQL Server Reporting Services

Web Server

The Web server contains the following key components:

■ IIS and the reporting application as follows:

If you are using Crystal Reports, IIS and Crystal Reports must be installed on the same server.

If you are using SQL Server Reporting Services, IIS can be on the same server or on a separate server than Reporting Services. Regardless of which server you choose to install Reporting Services on, the server must have SQL Server 2000 or 2005 installed. For more information, see *Installing SQL Server Reporting Services* on page 2-18.

Note • **SQL Server Reporting Services is not available for MSDE. In addition, CIMS Server 4.3 does not support the use of Reporting Services with a DB2 database.**

■ CIMS Server Web Reporting

■ CIMS Financial Modeler

CIMS Server Web Reporting

The CIMS Server Web Reporting application provides comprehensive cost accounting, chargeback, and resource reporting in an easy-to-use, browser-based environment. CIMS Server Web Reporting includes the following features that ensure that users receive the data they need in a clear, user-friendly format:

■ **Drill down.** CIMS Server Web Reporting invoices and many other reports include drill down that enables users to view detailed cost and usage information.

∎ **Multiple report formats.** CIMS Server Web Reporting provides reports in report, graph, and spreadsheet format.

∎ **User customization options.** CIMS Server Web Reporting users can set up their own list of favorite reports, spreadsheets, and graphs. Users can also create reports "on-the-fly" within the CIMS Server Web Reporting Web site and publish reports for review by other users.

CIMS Server Web Reporting works with both SQL Server Reporting Services and Crystal Reports. Both tools provide a feature-rich environment for creating Web-based and paper reports. However, a benefit of SQL Server Reporting Services is that it is provided with your SQL Server 2000 or 2005 license (for more information go to http://www.microsoft.com/sql/reporting/howtobuy/).

Note • **SQL Server Reporting Services is not available for MSDE.**

CIMS Server includes standard reports written in both Crystal Reports and the Report Definition Language (RDL) for SQL Server Reporting Services. RDL is an XML-based industry standard used to define reports.

Your report developer can use these standard reports as templates to create custom reports for your organization. Reports created specifically for your organization are referred to as "custom reports" in this guide to differentiate them from the CIMS standard reports.

For more information about CIMS Server Web Reporting, including descriptions of the standard reports that are provided with CIMS Server, refer to the *CIMS Server Web Reporting User's Guide.*

CIMS Financial Modeler

CIMS Financial Modeler provides a browser-based interface for performing IT finance-related tasks, such as cost analysis and allocation and rate calculation. For more information about CIMS Financial Modeler, see *Chapter 7, Working With CIMS Financial Modeler*.

CIMS Server System Architecture Diagram

Figure 1-3 shows the most common system configuration in which CIMS Server and the Web server are on one server and the database is on a separate server. For a detailed list of hardware and software specifications required for the CIMS Server system, see page 2-4.
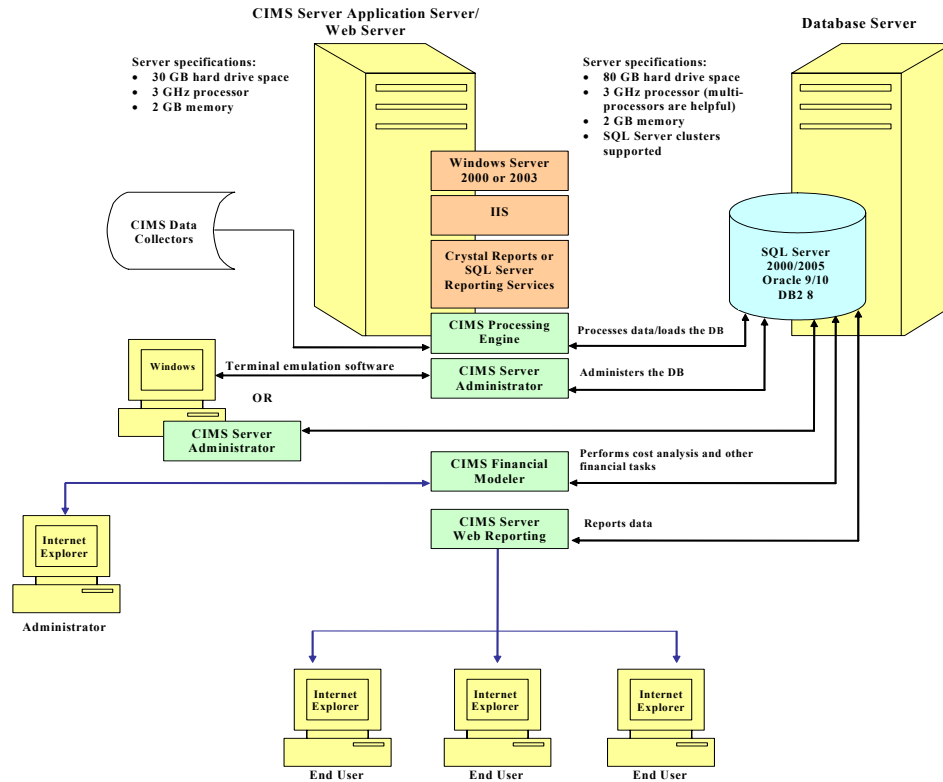
Figure 1-3 • Example CIMS Server System Architecture

2

Installing CIMS Server and Getting Started

This chapter provides installation, configuration, and upgrade procedures for the CIMS Server system. This chapter also provides a Getting Started section to help you to quickly set up the system.

CIMS Server System Components

Note • **For an overview of the CIMS Server system architecture,
see** *Chapter 1, About CIMS Server*.

The CIMS Server system is composed of the following hardware/software components:

■ **CIMS Server application server.** Contains the CIMS Server application (includes the Processing Engine and Administrator components).

If you are using an Oracle database, the Oracle Client must be installed on this server. The client installation includes OO4O (Oracle Objects for OLE), which is required to access the database.

■ **Database server.** Contains an ODBC-compliant database (see *Server Specifications* on page 2-4).

■ **Web server.** Contains Microsoft IIS, CIMS Server Web Reporting, and other CIMS Web applications. If you are using Crystal reports for reporting, Crystal Reports must also be installed on this server. If you are using SQL Server Reporting Services reports for reporting, Reporting Services can be installed on any server that has SQL Server 2000 or 2005 installed (see *Installing Reporting Services* on page 2-20).

If you are using an Oracle database, the Oracle Client must be installed on this server.

You can install all components on one server or on separate servers. The most common configuration is to have CIMS Server and the Web server on one server and the database on a second server (see example Figure 1-3 on page 1-14). In general, a configuration involving multiple servers might offer users better performance.

Note • **If you install the CIMS Server application server and Web server on separate servers, you need to install CIMS Server Administrator on the Web server (see** *Install CIMS Server Administrator and CIMS Web Applications on the Web Server (If Using a Separate Server)* **on page 2-66).**

In addition, the system might include multiple clients containing the CIMS Server Administrator application, terminal emulation software such as Microsoft Terminal Services, or both.

If you have questions regarding setting up and configuring the CIMS Server system for your organization, contact CIMS Lab.

Suggested Software and Hardware

CIMS Lab recognizes that different organizations have unique existing enterprise systems in place. As a result, *this section describes suggested specifications, not absolute, rigid system requirements*. It is possible that CIMS Server can be run on components not matching these suggestions, although the system was developed with these specifications in mind.

If you have any questions regarding compatibility of your existing system with CIMS Server, contact CIMS Lab.

Server Specifications

The following are the suggested server specifications for the CIMS Server system. The specifications reflect a two server configuration in which CIMS Server and the Web server are on one server and the database is on another server. However, all components can be on one server or each component can be on a separate server.

CIMS Server Application Server/Web Server

■ Microsoft Windows 2000 Server or Windows Server 2003 with the latest service pack.

> **Note** • **If the Web server is on a computer running Microsoft Windows XP (unlikely), you might receive errors when you attempt to run reports from the CIMS Server Web Reporting Web site.**

■ Microsoft IIS 5.0 or later (included with Windows 2000 Server and Windows Server 2003).

■ Microsoft SQL Server Reporting Services (included with SQL Server 2000 and 2005, see *Installing SQL Server Reporting Services* on page 2-18).

> **Note** • **SQL Server Reporting Services is not available for MSDE. In addition, CIMS Server 4.3 does not support the use of Reporting Services with a DB2 database.**

Or

■ Crystal Reports (see the following note).

> **Note** • **If you are using a SQL Server database, CIMS Server supports Crystal Reports 8.5 Developer Edition, Crystal Reports 9 and 10 Advanced Edition, and Crystal Reports XI Server Edition.**
>
> **If you are using an Oracle or DB2 database, CIMS Server supports Crystal Reports 9 and 10 Advanced Edition and Crystal Reports XI Server Edition and Developer Edition.**

■ Microsoft .NET Framework 1.1 (you can install the .NET Framework during the installation of CIMS Server or you can download it from the Microsoft Web site [see *page 2-11*]).

■ ASP.NET (included with Windows 2000 Server and Windows Server 2003, see *Installing and Enabling ASP.Net* on page 2-17).

■ Java™ 2 Standard Edition Runtime Environment (JRE) 1.5 (required by CIMS Web Console and CIMS Integrator, installed by default during the CIMS Server installation)

For more information about CIMS Web Console, see *Setting Up and Starting CIMS Web Console* on page 2-82. For more information about CIMS Integrator, refer to the *CIMS Data Collectors for Microsoft Windows Installation and User Guide*.

■ Apache Tomcat 5.5 (required by CIMS Web Console, installed if CIMS Web Console is selected for installation)

■ Oracle Client (if you are using an Oracle database)

■ 30 GB available hard drive space.

■ 3 GHz processor.

■ 2 GB of memory.

Database Server

■ Any of the following DBMS platforms:

• Microsoft SQL Server 2000 or 2005 with the latest service pack.

> **Note** • **CIMS Server supports SQL Server clusters. A cluster refers to a group of two or more servers that work together and represent themselves as a single virtual server to a network.**

• Oracle 9 or 10 (UNIX or Windows).

> **Note** • **CIMS Server supports only native Oracle drivers for Oracle. Contact CIMS Lab for information about using Microsoft or other drivers.**

• DB2 8 (Universal Database for z/OS)

• MSDE 2000. MSDE 2000 is included with the CIMS Server installation. However, the use of MSDE has some disadvantages as discussed in *CIMS Server Professional Edition* on page 1-12.

■ 80 GB available hard drive space (depending on particular data requirements).

■ 3 GHz processor (multi-processors are helpful).

■ 2 GB of memory (additional memory is helpful).

If You Are Installing CIMS Server on Multiple Computers

If you install CIMS Server components on multiple computers, consider the following:

■ If you are running CIMSAcct or CIMSBill on a client and the database is on a server, the data is stored in the database but physical processing occurs on the client. This can result in slower performance because large amounts of data need to be transferred over the network during processing. CIMS Lab recommends that you perform all CIMSAcct or CIMSBill processing directly on the server using terminal emulation software.

■ If the CIMS Server Administrator application on each computer (server or client) points to the same database, you should assign a share to the `...CIMSLab\Processes` and `...CIMSLab\Server\Reports<type>` folders and use a Universal Naming Convention (*UNC*) name for the paths to the folders (see *Enter CIMS Server Configuration Settings* on page 2-59). The use of logical drive names is not recommended when using multiple computers.

■ If you use a UNC for the `Reports<type>` folder, CIMS Lab recommends that the folder is located on the Web server. In addition you need to assign the following folder security or share permission for the Windows account that the CIMS Server Web Reporting Web site is running under:

    • If the Web site is running under the local `ASPNET` or `NETWORK SERVICE` system account, you need to assign a *security* permission of `Read` and `Write`. To set the permission:

        a Right click the report folder, and click **Sharing and Security**.

        b On the **Security** tab, add the `ASPNET` or `NETWORK SERVICE` account and select the `Read` and `Write` permissions.

    • If the Web site is running under one or more Windows user or group accounts, you need to assign a *share* permission of `Read` for each account. To set the permission:

        a Right click the report folder, and click **Sharing and Security**.

        b On the **Sharing** tab, click **Permissions**.

        c Add the user/group accounts and select the `Read` permission for each account.

Note that user or group accounts rather than the local `ASPNET` or `NETWORK SERVICE` account are used only if `<identity impersonate="true"/>` is added after the end of `authorization` element in the `Web.config` file as follows:

```
<authorization>
        <allow users="*"/> <!-- Allow all users -->
           <!--  <allow    users="[comma separated list of users]"
                           roles="[comma separated list of roles]"/>
                 <deny     users="[comma separated list of users]"
                           roles="[comma separated list of roles]"/>
           -->
</authorization>
<identity impersonate="true"/>
```

If you install CIMS Server in the default location, the `Web.config` file is in `C:\Program Files\CIMSLab\Server\Web\CIMSReporting`. For more information about the use of this file, contact CIMS Lab.

Client Specifications

The following are the specifications for installing CIMS Server Administrator on a client (optional) and for viewing reports.

For Installing CIMS Server Administrator (Optional)

CIMS Server Administrator is a Windows-based GUI application that enables administrators to create and maintain the administrative and processing settings for CIMS Server. Administrators can access CIMS Server Administrator remotely using terminal emulation software to connect to the application on the server (recommended) or directly by installing CIMS Server Administrator on a client.

The following are the suggested specifications for installation on a client:

■ Microsoft Windows 2000/2003/XP with the latest service pack.

■ 40 MB available hard drive space.

■ 400 MHz or faster processor.

■ 128 MB of memory.

You can also install and run CIMS Processing Engine on a client. However, if possible, it is recommended that you run CIMS Processing Engine on the server using terminal emulation software to connect to the engine.

Important! • **If you are using an Oracle database, the Oracle Client must be installed on the client.**

For Viewing Reports

The following requirements apply to computers used to view reports in CIMS Server Web Reporting:

■ Internet Explorer 5.5 or later on the Windows platform (if you are using Netscape Navigator, contact CIMS Lab).

■ Internet or network access with necessary security permissions.

Report Design Specifications

The following are the specifications for designing Crystal and SQL Server Reporting Services reports.

For Designing Custom Crystal Reports

The following are the suggested specifications for computers used to design custom Crystal reports for use with CIMS Server:

■ Crystal Reports 8.5 or later (preferably the same edition that is on the Web server).

> **Note** • **If you are using an Oracle or DB2 database, CIMS Server does not support Crystal Reports 8.5.**

■ Microsoft Windows 2000/2003/XP.

■ 30 MB hard drive space minimum.

■ 128 MB of memory.

For Designing Custom SQL Server Reporting Services Reports

The following are the specifications for computers used to design custom SQL Server Reporting Services reports for use with CIMS Server:

■ Reporting Services Report Designer.

■ Microsoft Visual Studio .NET 2003 or another product that provides the Visual Studio 2003 shell (such as Visual Basic .NET 2003 or Visual C# .NET 2003).

■ SQL Server 2000 or 2005 with the latest service pack.

■ 30 MB hard drive space minimum.

■ 128 MB of memory.

Pre-Installation Setup

Before you install CIMS Server, you should review the following sections to make sure that you have all required third-party software licenses and have your system set up correctly (including set up for internationalization if needed).

Third-Party Software Licensing Requirements

In addition to licensing CIMS Server, your organization must obtain the appropriate licenses for the following products. These products are integral to the CIMS Server system:

■ Microsoft SQL Server, Oracle, or DB2 (note that this is not applicable if you are using MSDE).

■ Microsoft Windows 2000 Server or Windows Server 2003.

■ SQL Server Reporting Services. Reporting Services requires a valid license for SQL Server 2000 or 2005 (for license requirements, go to http://www.microsoft.com/sql/reporting/howtobuy/).

Or

Crystal Reports.

Note • **Use of Crystal Reports may require specific licensing based on the number and type of users. For more information or clarification about licensing issues, contact CIMS Lab.**

System Setup Checklist

Before installing CIMS Server, make sure that you have installed and configured the components in the following list. Note that the Web server, database server, and CIMS Server application server may be on one computer.

On the Web Server

■ Windows 2000 Server or Windows Server 2003.

■ IIS 5.0 or later (included with Windows 2000 Server and Windows Server 2003).

■ Crystal Reports (if used for reporting).

■ If SQL Server Reporting Services is used for reporting, Reporting Services can be installed on the Web server or another server. (Regardless of which server you choose to install Reporting Services on, the server must have SQL Server 2000 or 2005 installed.) See *Installing SQL Server Reporting Services* on page 2-18 for the steps required to install Reporting Services for CIMS Server.

■ Oracle Client (if you are using an Oracle database)

■ Open Web access (and FTP access if necessary). The server must have Port 80 open for HTTP access by other client computers in the organization.

On the Database Server

■ Microsoft SQL Server 2000 or 2005, Oracle 9 or later, DB2 8, or MSDE 2000.

■ Available database user ID (login) that has permission to create tables, views, stored procedures, and indexes.

On the CIMS Server Application Server

■ Windows 2000 Server or Windows Server 2003.

■ ASP.NET.

If you are using Microsoft Windows 2000 Server, ASP.NET is installed by default as part of the IIS installation.

If you are using Windows Server 2003, you need to install and enable ASP.NET as described in *Installing and Enabling ASP.Net* on page 2-17.

■ Microsoft .NET Framework 1.1.

You can install the .NET Framework during the installation of CIMS Server (see page 2-24) or you can download it from the Microsoft Web site, http://v4.windowsupdate.microsoft.com.

If you download the .NET Framework, on the Windows Update page, click **Pick updates to install** and then click your operating system. Microsoft .NET Framework 1.1 appears in the **Recommended Updates** list if it is not installed on your system.

■ Oracle Client (if you are using an Oracle database)

On All Servers

■ Terminal emulation software such as Microsoft Terminal Services or physical access to the server.

■ Servers are connected to the network and are visible to each other—preferably on the same Windows *domain*.

■ User has administrative access to the servers.

■ File share enabled (preferred) or FTP access to all servers.

■ If using CIMS Mainframe, FTP access from the servers to the z/OS system and vice versa.

■ If using CIMS UNIX, FTP or Secure Shell access from the servers to the UNIX system and vice versa.

On All Clients Accessing CIMS Server Web Reporting

■ Internet Explorer 5.5 or later on the Windows platform.

On All Clients Running CIMS Server Administrator

■ Administrative authority on the client to install CIMS Server Administrator.

**On All Clients Running
Terminal Emulation Software**

■ Authority for the client computer and client user ID to access the servers via terminal emulation software.

■ Oracle Client (if you are using an Oracle database).

Other Tasks

■ Obtain the CIMS Server license key provided by CIMS Lab. You will need to enter the license key in CIMS Server Administrator after installation.

If you do not have your license key, contact CIMS Lab.

Internationalization Setup

Note • The steps in this section are applicable if you are using a SQL Server database. If you are using an Oracle or DB2 database, contact CIMS Lab for assistance in localizing CIMS Server.

You can localize the following features in CIMS Server to reflect the language required for your organization (the default is US English).

■ Date and numeric formatting (such as numbers and currency) that appear in:

   • The CIMS Server Web Reporting Web site

   • CIMS Server Administrator

   • Reports

■ Headers and footers that appear in reports

You cannot localize the text that appears in CIMS Server Administrator or the Help text in CIMS Server Administrator and CIMS Server Web Reporting. In addition, it is not recommended that you change the text that appears on the CIMS Server Web Reporting Web site. Changing this text requires changes to the Active Server Pages (*ASP*) and JavaScript code that runs the Web site.

Setting Up Your System for Internationalization

The language used by CIMS Server is determined by the following settings:

■ The locale ID set in the **Site Localization ID (LCID)** box in the Configuration dialog box (see *Web Settings* on page 3-49).

■ On the Web server, the regional settings for the Crystal Reports services (see page 2-14).

■ On the CIMS Server application server, the language specified for the database ODBC Data Source(s) used by CIMS Server (see page 2-15).

■ On the server running CIMS Server Administrator, the regional settings for the Windows user account logged on to the server (see page 2-15).

■ On a client accessing CIMS Server Web Reporting, the regional settings for the Windows user account logged on to the client (see page 2-15).

Important! • To avoid unexpected results, make sure that all of the preceding settings are set to the same language. If you want to use the same database to produce Web reports in different languages, you need to set up a separate Web server and repeat the steps in this section for each language.

The following are the instructions for configuring internationalization settings for your organization. *In most cases, you will already have these settings set to the correct language*. The instructions are ordered by the component on which they are installed.

Note • **Where individual steps are provided in the instructions, the steps reflect the Microsoft Windows Server 2000 operating system. If you are using another operating system, refer to the Microsoft documentation if needed.**

On the Web Server

Set the Crystal RAS User Log On Account (Crystal Reports 9 or 10 only)

If you are using Crystal Reports 9 or 10, the Crystal RAS uses the local system account for the Web server by default.

If you do not want Crystal Reports to use the regional settings for the local system account, you need to set the log on to an account with the correct regional settings. CIMS Lab recommends that you create a user for use as the RAS log on. This user should have a password that is never changed.

To set the Crystal RAS Log On:

1 In Windows Control Panel, double-click **Administrative Tools ▶ Services**.

2 Double-click **Crystal Report Application Server**.

3 On the **Log On** tab, click **This account**.

4 Enter the account and password.

A message appears stating that the log on will not take affect until you restart the service.

5 Click **OK**, and then restart the Crystal RAS service (right-click the service and click **Restart**).

Set the Crystal Reports Cache, Job, and Page Server Log On Account (Crystal Reports XI only)

If you are using Crystal Reports XI, the Crystal Reports Cache, Job, and Page Server use the local system account for the Web server by default.

If you do not want Crystal Reports to use the regional settings for the local system account, follow the same instructions as provided for creating a RAS user log on account (see preceding), except select the services **Crystal Reports Cache Server**, **Crystal Reports Job Server**, and **Crystal Reports Page Server** rather than **Crystal Report Application Server**.

**On the CIMS Server
Application Server**

Select the Language for the ODBC Data Source

In the Windows ODBC Data Source Administrator, you need to select the language for each ODBC Data Source used by CIMS Server. The steps for configuring a data source for CIMS Server are provided in *Configure the CIMS Data Source for the Database* on page 2-33.

Note • **The change to the language source will not appear in reports until you restart IIS. (To restart IIS, see** page 8-5**.)**

**On the Server Running
CIMS Server Administrator**

Select the CIMS Server Administrator User's Regional Settings

You need to select the regional settings for the user logged on to the server running CIMS Server Administrator. To select the regional settings for the user:

1 In Windows Control Panel, double-click **Regional Options**.

The Regional Options dialog box appears.

2 On the **General** tab, click the language that you want from the list.

3 Click **OK** to save the change and close the dialog box.

**On All Clients Accessing CIMS
Server Web Reporting**

Select the CIMS Server Web Reporting User's Regional Settings

You need to set the correct regional setting for the user on each client that is using CIMS Server Web Reporting. This enables Microsoft Excel to display dates, times, currency, and numbers in the correct format when you view a report as a spreadsheet.

To select the regional settings for the user, follow the steps in *Select the CIMS Server Administrator User's Regional Settings*.

Changing the Report Text (Optional)

CIMS Server includes a variety of standard reports and spreadsheets for Crystal Reports, SQL Server Reporting Services, and CIMS Advanced Spreadsheets. You can use these reports and spreadsheets as templates to create custom reports/spreadsheets (see *About CIMS Server Reports* on page 4-3), and then change the text as follows.

For Crystal reports:

1   In Crystal Reports, open the report that you want to change.

2   Right-click the text that you want to change, and then click **Edit Text Option**.

3   Save the report using the same file name in the `Custom` reports folder.

For SQL Server Reporting Services reports:

1   In Visual Studio .NET or another product that provides the Visual Studio 2003 shell, click **File ▸ New Project**.

2   In Business Intelligence Projects, double click **Report Projects**.

3   Right-click the **Reports** folder in the Solution Explorer window, and then click **Add Existing Item**.

4   Browse to find the report file that you want to edit, and then open the report.

5   Right click the text that you want to change, and then click **Expression**.

6   In the **Edit Expression** dialog box, change the text in the **Expression** box.

7   Click **OK**.

8   Repeat steps 1 through 5 for each text area that you want to change.

9   Click **File ▸ Select Items** when you are finished.

For CIMS Advanced Spreadsheets:

Contact CIMS Lab for assistance in changing the text and other culture-specific information in CIMS Advanced Spreadsheets.

Installing and Enabling ASP.Net

If you are using Microsoft Windows 2000 Server, ASP.NET is installed by default as part of the IIS installation.

If you are using Windows Server 2003, you need to install and enable ASP.NET as described in this section.

Installing ASP.NET

To install ASP.NET on a computer running Windows Server 2003:

1 In Windows Control Panel, click **Add/Remove Programs**.

2 Click **Add/Remove Windows Components**, and then select the **Application Server** check box if it is not selected.

3 Click **Details**, and then select the **ASP.NET** check box if it is not selected.

Enabling ASP.NET

To enable ASP.NET:

1 In IIS Manager, navigate to and click **Web Service Extensions**.

Note that you can easily start IIS Manager by clicking **Start ▶ Run**. Type `inetmgr` in the **Open** box, and then click **OK**.

2 Click **Active Server Pages** and then click **Allow**.

3 Click **ASP.NETv**<*version number*> and then click **Allow**.

4 Make sure that Allowed appears in the status column for these features.

Installing SQL Server Reporting Services

> **Note •** This section is applicable only if you want to use SQL Server Reporting Services for reporting.

The installation steps in this section are preceded by a brief overview of the licensing requirements, components, and system requirements for SQL Server Reporting Services. For more detailed information about obtaining, licensing, installing, and using Reporting Services, go to http://www.microsoft.com/sql/reporting/.

About Licensing Reporting Services

Reporting Services is part of the SQL Server 2000 or 2005 license. There is not a separate license for Reporting Services. If you have a licensed copy of SQL Server, you may run Reporting Services on the same server for no additional license fee. If you want to run Reporting Services on a server that is not licensed for SQL Server, you will need to obtain a SQL Server license for that additional server.

For example, if you want to have your CIMS Server database on one server and Reporting Services and IIS on a separate Web server, you will need to obtain a separate SQL Server license and install SQL Server on the second server.

Overview of Reporting Services Components

Reporting Services is composed for four main components:

- **Report Server.** A Web service that handles report management and processing. It connects to a SQL Server database for report metadata and caching.

- **Report Server database.** A SQL Server database used for report metadata and caching.

- **Report Manager.** A Web-based tool for managing Report Server.

- **Report Designer.** A graphical report-authoring tool that is integrated with Microsoft Visual Studio .NET 2003.

Report Server requires a local or remote connection to the Report Server database. If you have Report Server on one server and the Report Server database on another server, a separate SQL Server license is required for each server.

System Requirements for Reporting Services

For the Server Running Reporting Services:

■ SQL Server 2005

Or

SQL Server 2000 with the following:

- The latest SQL Server 2000 Service Pack.

- The latest Reporting Services Service Pack (see *Installing Reporting Services* on page 2-20).

■ ASP.NET. If you are using Microsoft Windows 2000 Server, ASP.NET is installed by default as part of the IIS installation. If you are using Windows Server 2003, make sure that ASP.NET is installed and enabled (see *Installing and Enabling ASP.Net* on page 2-17).

For the browser used with Reporting Services Report Manager:

For the browser used to access and manage Report Server using Report Manager, the client computer must have Microsoft Internet Explorer 6.0 with Service Pack 1 (SP1), with scripting enabled.

Installing Reporting Services

The following steps reflect installing Reporting Services from a CD. To perform the installation from another source, refer to the Microsoft documentation. You must have SQL Server 2000 or 2005 installed on the server to install Reporting Services.

Note • **Once you have installed Reporting Services and CIMS Server, you need to complete configuration steps in both applications. See** *Set Up SQL Server Reporting Services* **on page 2-71.**

To install Reporting Services From a CD:

1 Log on to Windows as a user in the Administrators group.

2 Insert the Reporting Services CD. If the CD does not start automatically, browse to your CD-ROM drive and double-click setup.exe.

3 Follow the instructions in the Reporting Services installation wizard.

Install the latest Reporting Services Service Pack after you install Reporting Services.

Note • **If you do not have Visual Studio .NET 2003 or another product that provides the Visual Studio 2003 shell installed, you will receive notification when the installer checks for Reporting Services prerequisites. Visual Studio 2003 is not required unless you want to use Report Designer.**

Installing Crystal Reports

Note • **This section is applicable only if you want to use Crystal Reports XI for reporting. For information about installing other versions of Crystal Reports, see** *Chapter 8, Troubleshooting and Additional Information***.**

Effective for Crystal Reports XI, the Crystal Reports product suite includes Crystal Reports Server. You need to install Crystal Reports Server before installing Crystal Reports. If possible, both components should be installed on the same drive.

Crystal Reports Server requires a database to store information about the system and its users. The following instructions describe how to install Crystal Reports Server using the default configuration which installs an MSDE database. If you want to create a database before installing Crystal Reports Server and/or you want use a different database, refer to the BusinessObjects document *Installing Crystal Reports Server on Microsoft Windows*. This guide is available from the BusinessObjects Web site and is included with the Crystal Reports Server installation files.

Important! • **After you install the Crystal Reports XI components, you need to follow the steps in** *Configure Crystal Reports Server* **on page 2-77 before you can run reports.**

To install Crystal Reports XI Server:

1 Log on to Windows as a user in the Administrators group.

2 Do one of the following:

- If you are installing from the installation CD, insert the Crystal Reports CD. If the CD does not start automatically, browse to your CD-ROM drive and double-click `setup.exe`.

- If you are installing from another location, for example from a network drive, double-click `setup.exe`.

3 Click **Install Crystal Reports Server** and proceed with the instructions in the Installation Wizard until the Select Client or Server installation dialog box appears.

4 Click **Perform Server Installation**, and then click **Next**.

5 In the Directory Selection dialog box, enter an installation directory or accept the default. Click **Next**.

6 In the Install Type dialog box, click **New**. Leave the **Install MSDE or use existing local SQL Server** check box selected. Click **Next**.

7 The installation differs depending on whether MSDE or SQL Server is already installed on the server. Follow the instructions presented.

8 In the Start Installation dialog box, click **Next**.

9 Click **Finish** when the installation is complete. (If you do not want to launch the BusinessObjects Administration Console, clear the check box before you click **Finish**).

To install Crystal Reports XI:

Double click `setup.exe` on the installation CD or other location and follow the instructions presented in the Installation Wizard. CIMS Lab recommends that you click **Typical** in the Select Installation Type dialog box.

Install Crystal Reports Service Pack 1 after you install Crystal Reports.

Installing CIMS Server

This section describes the steps required to install CIMS Server. Before you begin the installation, make sure that you have installed and configured the components described in *System Setup Checklist* on page 2-10.

Note • **You can install the CIMS Server Administrator component of CIMS Server on a client or clients (see *Client Specifications* on page 2-7) in addition to installation on the server. You can also install CIMS Processing Engine on a client. However, if possible, it is recommended that you install CIMS Processing Engine on the server.**

To begin the CIMS Server installation:

1 Log on to Windows as a user in the Administrators group.

2 Click the Windows **Start** button, and then click **Run**.

3 Enter the path to the CIMS Server setup program (`Setup.version&release.exe`), and then click **OK**. (The path depends on the location of the setup program, i.e., CIMS Product CD, network drive, etc. For example, if you are installing from the CIMS Product CD on drive D, the path is `D:\CIMSServer\Setup.version&release.exe`.)

4 Follow the steps provided in the InstallShield Wizard as described in the following sections. The steps differ depending on whether you are performing a new installation or modifying an existing installation. To modify an existing installation, see page 2-25.

Performing a New Installation

Note • **The CIMS Server 4.3 installation includes Microsoft Data Access Components (MDAC) 2.8. This is the current MDAC version as of this CIMS Server release. If a later MDAC version is available at the time that you install CIMS Server 4.3, you can download the new version from http://msdn.microsoft.com/data/downloads/ updates/default.aspx#MDACDownloads.**

The InstallShield Wizard contains the following steps that guide you through the installation.

Choose the Destination Location

Choose the default location for installation (`C:\Program Files\CIMSLab`) or click **Browse** to choose another location. Click **Next** after making your selection.

Note • **The folder in which you install CIMS Server (`CIMSLab` or other) should be backed up periodically.**

Select the Features That You Want to Install

Select the CIMS Server components that you want to install or clear the components that you do not want to install. Click **Next** after you have made your selections. For a detailed description of these components, see *Chapter 1, About CIMS Server*.

■ **CIMS Administrator**. This option installs CIMS Server Administrator. CIMS Server Administrator is a graphical interface that enables you to create and maintain administrative and processing settings.

■ **CIMS Processing Engine.** This option installs CIMS Processing Engine components including `CIMSACCT.dll`, `CIMSBILL.dll`, `CIMSSORT.dll`, and `CIMSAdminLib.dll`. These components process the CIMS Server Resource (CSR) or CIMS Server Resource Plus (CSR+) files and load the output into the CIMS Server database. This option also installs CIMS Aggregation Engine (`CIMSAggregation.dll`) used by CIMS Data Collectors.

■ **CIMS Web Console.** This option installs CIMS Web Console. This Web-based application provides an interface for creating job files, viewing job log files, and performing some CIMS Server administration tasks. CIMS Web Console is a beta release in CIMS Server 4.3. For more information about this application, contact CIMS Lab. To set up and start CIMS Web Console, see *Setting Up and Starting CIMS Web Console* on page 2-82.

■ **CIMS Web Reporting.** This option installs CIMS Server Web Reporting. This Web-based application allows end users to view reports from a Web browser.

■ **Scripts.** This option installs scripts that can be used to automate tasks in CIMS Server. For example, scripts that enable batch reporting, scripts used by CIMS Data Collectors, etc. For a description of these scripts, see *Appendix C, Scripts*.

■ **CIMS Conversion Engine.** This option installs CIMS Conversion Engine. CIMS Conversion Engine is a utility that converts data collected by CIMS Universal Data Collector and converts the data into CSR files. For more information about CIMS Conversion Engine and the CIMS Universal Data Collector, refer to the *CIMS Data Collectors for Microsoft Windows Installation and User Guide*.

■ **CIMS Collectors & Processors.** This option installs the collector and process components of CIMS Data Collectors for Windows. These components enable you to gather usage data from many different sources such as operating systems, databases, and applications for input into CIMS Server.

To install individual collectors and processes, expand **CIMS Collectors & Processors**, and then select the collectors that you want.

■ **MSDE—Microsoft SQL Server 2000 Desktop Data Engine**. This option installs MSDE 2000. In a production environment, it is strongly recommended that you use SQL Server, Oracle, or DB2 to manage your database. However, in other situations, MSDE might meet your requirements. For more information, see *CIMS Server Professional Edition* on page 1-12.

■ **CIMS Financial Modeler.** This option includes CIMS Financial Modeler in the installation. CIMS Financial Modeler is a Web-based application that provides an interface for performing IT finance-related tasks, such as cost analysis and allocation and rate calculation. For more information about this application, see Chapter 7.

Select the Program Folder

Choose the program folder. Use the default (`CIMS Server`), type a new program folder name, or select one from the list. Click **Next** when you are finished.

Start Copying Files

Click **Next** to begin copying program files to your system. If IIS is running, a message appears asking you to confirm that is okay to shut down IIS. Click **Yes**. Note that the installer restarts IIS before finishing installation.

Install Microsoft .NET Framework 1.1 (If Applicable)

If you have not installed Microsoft .NET Framework 1.1, the Microsoft .NET Framework 1.1 Setup appears. Follow the instructions in the setup, and then click **OK** when the installation is complete.

Note • **If the message Files In Use appears during the installation, click Ignore. The .NET Framework will continue to install.**

Enter the IIS Web User Name

There are two options for controlling user access to the CIMS Server Web Reporting Web site: anonymous access and Windows authenticated access. Anonymous access allows remote access by the IUSR_*computername* account. IIS user access is described in detail in *Set the User Authentication Method for the Web Sites* on page 2-67.

The InstallShield Wizard allows you to enter the IUSR_*computername*. This name is used for granting security permissions for CIMS Server folders as described in *Assign Folder Security Permissions on the Web Server* on page 2-69.

In most situations, the IUSR_*computername* account that appears is correct and you can click **Next** to continue. If you want to confirm that it is correct, follow the instructions in *To set anonymous access:* on page 2-68 to locate the IUSR_*computername.* If the IUSR_*computername* is not correct (for example, you changed your computer name after installing IIS), you can change it here and then click **Next**.

If you do not enter the correct IUSR_*computername* here, you can assign the required folder privileges manually (see page 2-69). A series of error messages will appear. Click **OK** for each message.

Complete the Installation

Follow the instructions in the Setup Complete—Reboot Required dialog box, and then click **Finish**.

Modifying an Existing Installation

Follow the steps in this section to modify an existing installation. For example, you have already installed certain CIMS Data Collectors but now want to install others.

1 Run the CIMS Server setup program.

Or

In Windows Control Panel, click **Add or Remove Programs**, and then click **Change** for CIMS Server.

The InstallShield Wizard appears.

2 Click **Modify,** and then click **Next**.

Note • **Do not click Repair to modify the installation. The Repair option should be ignored.**

---

3 Select the check boxes for the components that you want to install. (For a description of all components, see *Select the Features That You Want to Install* on page 2-23.) Do not clear a check box unless you want to delete that component.

4 Follow the instructions presented in the wizard to complete the installation.

Upgrading to a New Release of CIMS Server

> **Important!** • If you are performing an upgrade, you should back up the `Program Files\CIMSLab` folder before you upgrade to a new version of CIMS Server. If you have made changes to files in this folder and have not renamed these files, the files will be overwritten when you upgrade to a new version or release of CIMS Server.
>
> You should also confirm that you have a regular and working backup schedule for the following: the `CIMSLab` folder; the folder that contains your process definitions (this folder is referred to as `Processes` in this guide); and your database.

To upgrade to a new release of CIMS Server:

1 Follow the steps in *To begin the CIMS Server installation:* on page 2-22 to start the InstallShield Wizard.

2 In the InstallShield Wizard, a message appears asking you to confirm that is okay to uninstall the existing CIMS Server version. Click **Yes**.

3 When prompted to modify, repair, or remove the existing installation, make sure that **Remove** is selected, and then click **Next**.

4 Click **OK** in the Confirm Uninstall message box.

5 If IIS is running, a message appears asking you to confirm that is okay to shut down IIS. Click **Yes**.

6 Choose the default location for the upgrade. Click **Next** after making your selection.

> **Important!** • When you upgrade to a new version or release of CIMS Server, make sure that you install the program in the same folder as the existing CIMS Server installation. If there is a reason that you want to keep your previous CIMS Server version and install the upgrade, contact CIMS Lab.

7 Select the check boxes for the components that you want to upgrade, and then click **Next**. (For a description of all components, see *Select the Features That You Want to Install* on page 2-23.) Do not clear a check box unless you want to delete that component.

8 Choose the program folder. Use the default (`CIMS Server`), type a new program folder name, or select one from the list. Click **Next** when you are finished.

9 Click **Next** to begin copying program files to your system. If IIS is running, a message appears asking you to confirm that is okay to shut down IIS. Click **Yes**.

10 Accept the default IIS Web user name or enter a new name as described in *Enter the IIS Web User Name* on page 2-24, and then click **Next**.

11 Follow the instructions in the Setup Complete—Reboot Required dialog box, and then click **Finish**.

Getting Started

This section takes you through the steps required to set up and use CIMS Server. You should follow these steps in the order presented.

To help you to get started quickly, this section does not contain the detailed information found in other chapters in this guide. Where applicable, references to more detailed information are provided.

Before getting started, make sure that you have installed the system components required by CIMS Server as shown in *System Setup Checklist* on page 2-10.

Create a Database

The database stores administration information as well as the output records produced by CIMS Processing Engine. These records are called the Ident, Detail, and Summary records and contain data processed from CSR or CSR+ records. Each process definition in the `Processes` folder produces separate Ident, Detail and Summary files .

You can use more than one database with CIMS Server. For example, you might have a production database and a development database. For more information about creating multiple databases, see *Chapter 5, Database Administration*.

The following sections provide steps for creating a database in MSDE 2000 or Microsoft SQL Server. Information about recommended database back up methods follows these sections.

Note • **To create an Oracle or DB2 database, consult your DBA. For more information about the requirements for using an Oracle or DB2 database with CIMS Server, refer to the *CIMS Server for UNIX Installation and User Guide* or *CIMS Server for DB2 Database Setup Guide*. Continue to *Configure the CIMS Data Source for the Database* on page 2-33.**

Creating an MSDE 2000 Database

To create an MSDE database, use either the OSQL or ISQL command-line interface as follows. Press <Enter> after each command.

1 At the command prompt, log on to the database server. For example:

```
osql -S servera-test -E
```

Where `-S servera-test` indicates the server name and `-E` indicates use a trusted connection. Note that there are other switches that you may have to use depending on your environment. For example, you may have to specify the login ID (`-U`) and password (`-P`) switches. To view the OSQL switches, type `osql /?` at the command prompt.

2 At the `1>` prompt, type:

```
create database database name
```

Where *database name* is the name that you want to give the database. The name `CIMSServer` is used in this guide, but you can use any name.

3 At the `2>` prompt, type:

```
go
```

The following messages appear:

```
The CREATE DATABASE process is allocating 0.63 MB on disk 'database name'.
The CREATE DATABASE process is allocating 0.49 MB on disk 'database name_log'.
```

4 At the `1>` prompt, type:

```
quit
```

Note • Because the MSDE `master` database contains system tables, CIMS Lab recommends that you do not use this database as your CIMS Server database. However, if you do choose to use the `master` database, it is supported by CIMS Server.

Creating User Logins for the MSDE Database

There are two types of CIMS Server users: the CIMS Server administrator or administrators and CIMS Server Web Reporting end users. CIMS Lab recommends that you use the default SQL Server user login `sa` with a password of `sa` for both CIMS Server administrators and end users.

If you want to use a user login or logins other than `sa`, you can use the OSQL or ISQL command-line interface or a third-party product for maintaining the MSDE database.

Creating a Microsoft SQL Server Database

Note • **The steps in this section reflect creating a database in SQL Server 2000. If you are using SQL Server 2005, refer to the Microsoft documentation if needed.**

You can create a database using SQL Server Enterprise Manager or the OSQL or ISQL command-line interface. The following are the steps needed to create a database using Enterprise Manager:

1 In Windows, click **Start ▸ Programs ▸ Microsoft SQL Server ▸ Enterprise Manager**.

2 In the Tree window, under **Console Root**, navigate to **Microsoft SQL Server ▸ SQL Server Group ▸** *computername* **▸ Databases.**

3 Right-click the **Databases** folder, and then click **New Database**.

4 In the Database Properties dialog box, enter the configuration information for the new database as follows:

- On the **General** tab do the following:

  - In the **Name** box, type a name for the database. The name `CIMSServer` is used in this guide, but you can use any name.

  - In the **Collation name** box, click `SQL_Latin1_General_CP1_CI_AS`. Make sure that you select only this database collation type and not a type that looks similar. CIMS Server currently does not support other collation types.

- Unless you need to change the default settings for the database, you do not need to reset values in the **Data File** or **Transaction Log** tabs.

5 Click **OK** when you are finished.

Creating User Logins for the Database

There are two types of CIMS Server users: the CIMS Server administrator or administrators and CIMS Server Web Reporting end users. After you create the database, you need to create a database login for these users. You can create one login for both user types or separate logins. For example, you can create a login for the end users that has fewer database permissions than the login for the administrator(s).

Note • **You can also create a separate login for the CIMS Job Runner application. This application runs CIMS Data Collectors in batch. The login for CIMS Job Runner must have the same database permissions as the CIMS Server administrator.**

The user login includes the user authentication method for the database (Windows authentication or SQL Server authentication). When creating a login, consider the following when choosing the authentication method:

■ Windows authentication verifies the SQL Server user using the Windows user account. If the user is the CIMS Server administrator, SQL Server uses the account on the computer running CIMS Server Administrator.

SQL Server authentication verifies the user using the SQL Server login ID and password. Using this authentication method, you could create a single login for all CIMS Server administrators, a login for all CIMS Server Web Reporting end users, or a login for both administrators and end users.

Note • **CIMS Server provides an optional table audit feature that enables you to track changes that have been made to the data in certain database tables (see** *Table Audit Settings* **on page 3-54). This information includes the user ID of the person who made the change. If you use SQL Server authentication for multiple users, you will not be able to identify the actual user who made the change.**

The authentication type that you can use is dependent on the SQL Server and IIS configuration as shown in Table 2-1. Note that if you are using SQL Server Reporting Services for reporting, Windows authenticated access is recommended for configurations where authenticated access or anonymous access can be used for IIS. See *Set the User Authentication Method for the Web Sites* on page 2-67.

IIS and SQL Server Configuration	Required IIS User Authentication	Required SQL Server User Authentication
IIS and SQL Server on the same server. CIMS Server Web Reporting on an intranet site.	Authenticated access	Windows authentication
	Or	
	Authenticated access	SQL Server authentication
	Or	
	Anonymous access	SQL Server authentication
IIS and SQL Server on separate servers. CIMS Server Web Reporting on an intranet site.	Authenticated access	SQL Server authentication
	Or	
	Anonymous access	SQL Server authentication
IIS and SQL Server on same or separate servers. CIMS Server Web Reporting on an Internet site.	Anonymous access	SQL Server authentication

Table 2-1 • IIS and SQL Server User Authentication Requirements

■ The number of ODBC Data Sources and CIMS Data Sources that you need to configure for a database depends on the number of logins that you created for the database and the authentication method used for the logins. The steps required to set up ODBC and CIMS Data Sources are provided in *Configure the CIMS Data Source for the Database* on page 2-33. A summary table of possible ODBC and CIMS Data Source configurations is provided on page 8-18.

To create a user login:

Note • **For example purposes, the following steps reflect creating a separate user login for CIMS Server administrators and CIMS Server Web Reporting end users. To create one login for both user types, follow the steps as if you are creating an administrator login.**

---

1 In the SQL Server Enterprise Manager, right-click the `CIMSServer` database.

2 Click **New ▸ Database User**. The Database User Properties—New User dialog box appears.

3 In the **Login name** box, click **<new>**. The SQL Server Login Properties—New Login dialog box appears.

4 On the **General** tab, do the following:

- In the **Name** box, do one of the following:

  - To use Windows user authentication, enter the user name. To browse for a user, click the Browse button ....

  - To use SQL Server user authentication, type a user login name, for example `CIMSAdmin` **or** `CIMSUser`.

- In the **Authentication** area, click either **Windows Authentication** or **SQL Server Authentication**. If you select **SQL Server Authentication**, type a password.

- In the **Defaults** area, enter the `CIMSServer` database in the **Database** box.

5 If you are creating a login for a CIMS Server administrator, on the **Server Roles** tab, select the **System Administrators** check box.

6 On the **Database Access** tab, select the **Permit** check box for the `CIMSServer` database.

A list of database permits appears with the **public** check box selected.

7 Leave the **public** check box selected and do one of the following:

- If you are creating a login for a CIMS Server administrator, select the **db_owner** check box, and then click **OK**.

- If you are creating a login for CIMS Server Web Reporting end users, select the **db_datareader** and **db_datawriter** check boxes, and then click **OK**.

8 If you selected SQL Server authentication, in the Confirm Password dialog box, type the login password again, and then click **OK**.

9 Click **OK** to close the SQL Server Login Properties—New Login dialog box, and then click the Close button ⊠ to close the Database User Properties—New User dialog box.

To confirm that the user login has been added, expand the database and click **Users**.

Backing Up the MSDE or SQL Server Database

It is extremely important that you back up your CIMS Server database(s) so that you can recover your data in case of media failure or natural disaster. CIMS Lab recommends that you back up your database(s) weekly and that you back up to *a different server at another site*.

If you are using an MSDE database, you can use the script `SampleSQLMaintenance.bat` to back up and maintain the database. For more information about this script, see *SampleSQLMaintenance.bat Script* on page C-26.

If you are using an SQL Server database, you can use the `SampleSQLMaintenance.bat` script or you can use the steps shown in *Backing Up and Maintaining Databases* on page 5-5.

Set Up CIMS Server

To set up CIMS Server, start CIMS Server Administrator (**Start** ▸ **Programs** ▸ **CIMS Server** ▸ **Administrator** if you installed CIMS Server in the default location) and follow the steps in this section.

Configure the CIMS Data Source for the Database

CIMS Server Administrator, the CIMS Web and batch reporting, and CIMS Data Collectors all require access to the database that you created for CIMS Server. To enable these components to use the database, you need to do the following:

■ Create an ODBC Data Source that points to the database.

■ Create a CIMS Data Source that points to the ODBC Data Source. The CIMS Server components use the CIMS Data Source ID to identify and access the correct ODBC Data Source.

When you install CIMS Server for the first time, the CIMS Data Source Maintenance dialog box in CIMS Server Administrator opens automatically. This dialog box is initially blank. Use this dialog box to create the ODBC Data Source and CIMS Data Source. The options required to create the ODBC and CIMS Data Source depend on the database that you are using with CIMS Server.

■ For SQL Server, see the following.

■ For MSDE, see .

■ For Oracle, see .

■ For DB2, see .

Configuring the Data Source for a SQL Server Database

The number of ODBC Data Sources and CIMS Data Sources that you need to configure for a SQL Server database depends on the number of logins that you created for the database and the authentication method used for the logins as follows:

■ If you created one database user login for both the CIMS Server administrators and CIMS Server Web Reporting end users or you created separate logins that both use Windows authentication, you need one ODBC Data Source and one CIMS Data Source.

For an example of how to set up this configuration, see *Example Configuration 1* on page 2-34.

■ If you created one login for the administrators and one login for the end users and both logins use SQL Server authentication, you need one ODBC Data Source and two CIMS Data Sources that point to the ODBC Data Source. One CIMS Data Source will contain the user ID and password for the administrator login and the other CIMS Data Source will contain the user ID and password for the end user login.

For an example of how to set up this configuration, see *Example Configuration 2* on page 2-37.

■ If you created one login for the administrators and one login for the end users and each login uses a different authentication method, you need to create a separate ODBC Data Source and CIMS Data Source for each login.

For an example of how to set up this configuration, see *Example Configuration 3* on page 2-39.

Example Configuration 1

Assume that one user login has been created for the database. This login uses SQL Server authentication with user ID of CIMSAdmin and a password of admin. This login is used by both the CIMS Server administrators and the CIMS Server Web Reporting end users.

In this situation, you need to create one ODBC Data Source that points to the database and one CIMS Data Source that points to that ODBC Data Source.

1 In the CIMS Data Source Maintenance dialog box, click **Add**. (If the CIMS Data Source Maintenance dialog box is not open, click **System Administration ▶ CIMS Data Source Maintenance**.)

2 In the Add CIMS Data Source dialog box, type an ID for the CIMS Data Source, and then click **OK**. In this example, the CIMS Data Source ID is CIMSServer. The Configure CIMS Data Source dialog box appears.

3 Click **ODBC Data Source Administrator**. The ODBC Data Source Administrator dialog box appears.

4 On the **System DSN** tab, click **Add**. The Create New Data Source wizard appears.

5 Follow the steps provided in the wizard to point to the database. Consult your SQL Server DBA to determine the settings that you should select in the wizard. Note the following:

 • The wizard prompts you to type a name for the ODBC Data Source. For this example, the name is CIMSServer.

 • Select the specific SQL Server installation that you want to connect to regardless of whether the the database is on the local server. Do do not select (local).

 • The wizard prompts you with the following: **How should SQL Server verify the authenticity of the login ID?** Click the correct authentication method (Windows or SQL Server). If you select SQL Server authentication, type the SQL Server user ID and password in the **Login ID** and **Password** boxes.

 In this example, you would click the SQL Server authentication method and then type the user ID CIMSAdmin and the password in the **Login ID** and **Password** boxes.

 • **For Internationalization Only.** To select the language for the data source other than the default language, select the **Change Language of SQL Server Messages to** check box and click the language that you want from the list.

 > **Important! •** **Do not select the Use regional settings when outputting currency, numbers, dates, and times check box (the default for this check box is unselected). CIMS Server does not support this option. Regional settings are supplied by the regional options for the user logged on to the computer (see** *Internationalization Setup* **on page 2-13).**

6 When the wizard completes, click **Test Data Source** to make sure that the configuration was successful, and then click **OK** until the wizard and ODBC Data Source Administrator dialog boxes close.

7 In the Configure CIMS Data Source dialog box, do the following:

a In the **Select a System ODBC Data Source** list, click the ODBC Data Source that you just created.

b In the **User ID** and **Password** boxes, type the SQL Server user ID `CIMSAdmin` and the password `admin` as shown in example Figure 2-1. The password is encrypted.

c In the **Owner/Schema** box, CIMS Lab strongly recommends that you leave the default `dbo.` prefix. This prefix sets the owner of the database objects in the database to `dbo`, which allows any authorized database user to view the objects. For more information about the database objects in CIMS Server, see *Chapter 5, Database Administration*.

d In the **Additional Parameters** box, type any additional parameters that are required to enable connection to the database. For more information, consult your SQL Server DBA or CIMS Lab.
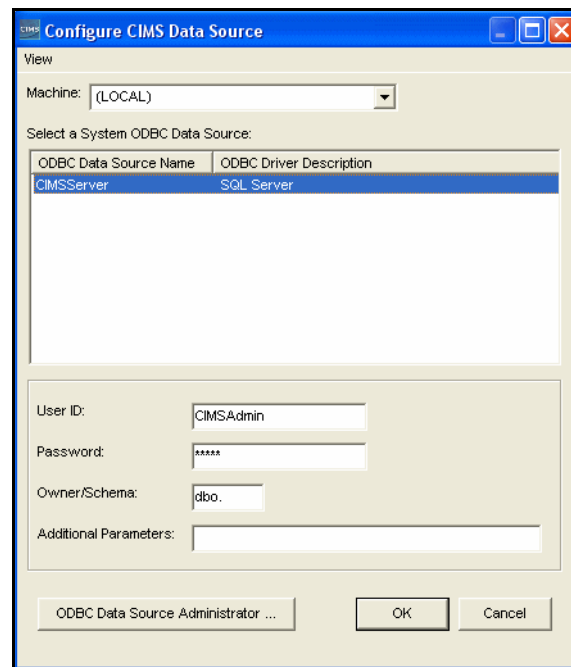
Figure 2-1 • Configure CIMS Data Source Dialog Box—SQL Server Example 1

8 Click **OK** to save the data source information and close the Configure CIMS Data Source dialog box. The data source entry appears in the CIMS Data Source Maintenance dialog box as shown in example Figure 2-2.

Because the CIMSServer data source entry is the only entry in the list, it is automatically set as the default data source for the Web and batch reporting and CIMS Data Collectors. For more information about setting the default data source, see page 5-7.

Figure 2-2 • CIMS Data Source Maintenance Dialog Box—SQL Server Example 1

Note that if you pointed to the master database when you set up the ODBC Data Source, the following message appears when you close the CIMS Data Source Maintenance dialog box:

The data source <*ODBC Data Source Name*> is using the database 'master'. The use of the 'master' database to store CIMS data is not recommended. Do you want to create a database called <*ODBC Data Source Name*> and use it instead?

If you want to use the master database, click **No**.

If you do not want to use the master database, click **Yes** and a database with the same name as the ODBC Data Source is created.

Example Configuration 2

Assume that two user logins have been created for the database: one login for the administrators and one login for the end users. Both logins use SQL Server authentication. The user IDs for the administrator and end user logins are `CIMSAdmin` with a password of `admin` and `CIMSUser` with a password of `user`, respectively.

In this situation, you need to create one ODBC Data Source that points to the database and two CIMS Data Sources that point to that ODBC Data Source. One CIMS Data Source will contain the user ID and password for the administrator login and the other CIMS Data Source will contain the user ID and password for the end user login.

1 Complete the steps in *Example Configuration 1* on page 2-34 to create the ODBC Data Source and the CIMS Data Source for the administrator login `CIMSAdmin`.

2 To add the second CIMS Data Source for the end user login, click **Add** in the CIMS Data Source List Maintenance dialog box.

3 In the Add CIMS Data Source dialog box, type an ID for the second CIMS Data Source, and then click **OK**. In this example, the CIMS Data Source ID is `CIMSServerUser`. The Configure CIMS Data Source dialog box appears.

4 In the Configure CIMS Data Source dialog box, do the following:

   a In the **Select a System ODBC Data Source** list, click the ODBC Data Source that you created in Step 1.

   b In the **User ID** and **Password** boxes, type the SQL Server user ID `CIMSUser` and the password `user` as shown in example Figure 2-3. The password is encrypted.

   c Leave the other boxes set to the defaults unless you have a specific reason otherwise (see Step 7 on page 2-35 for more information).
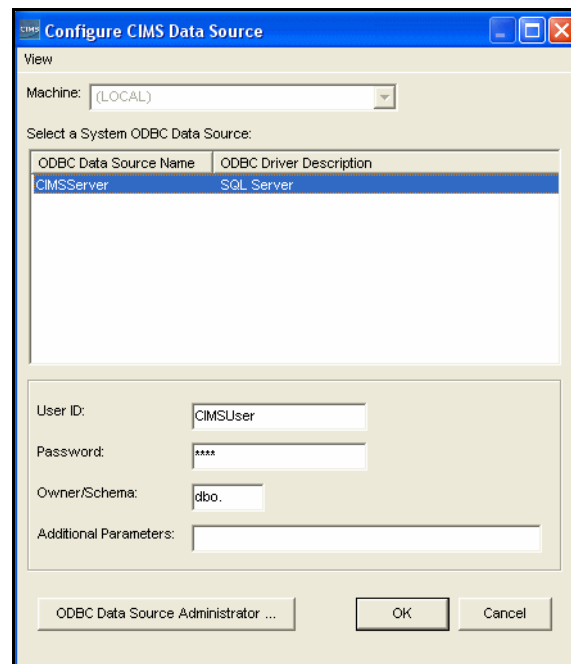
Figure 2-3 • Configure CIMS Data Source Dialog Box—SQL Server Example 2

5 Click **OK** to save the data source information and close the Configure CIMS Data Source dialog box.

Two data source entries appear in the CIMS Data Source Maintenance dialog box as shown in example Figure 2-4.
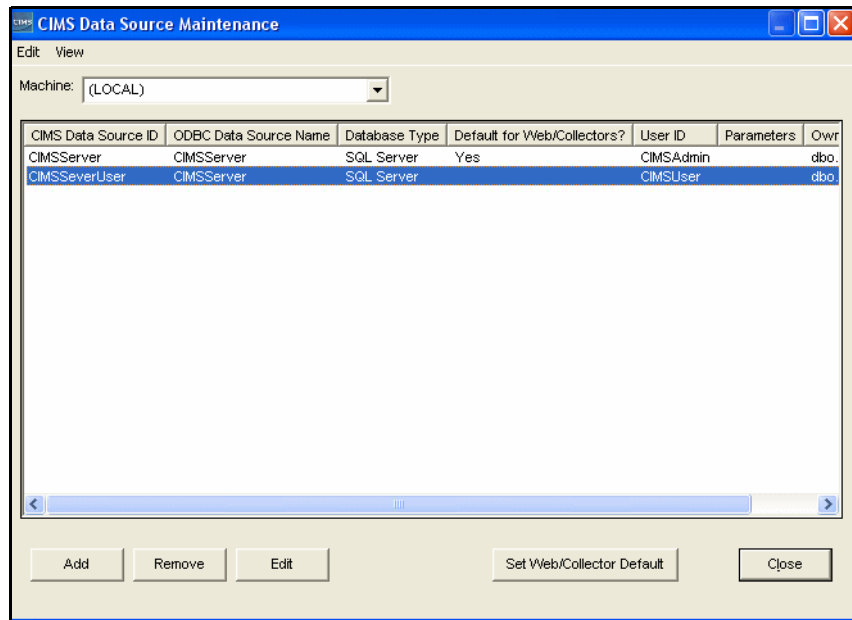
Figure 2-4 • CIMS Data Source Maintenance Dialog Box—SQL Server Example 2

Example Configuration 3

Assume that two user logins have been created for the database: one login for the administrators and one login for the end users. The administrator login uses SQL Server authentication and the end user login uses Windows authentication.

In this situation, you need to create two ODBC Data Sources that both point to the database and separate CIMS Data Sources that point to each ODBC Data Source.

1 Complete the steps in *Example Configuration 1* on page 2-34 to create the ODBC source and CIMS Data Source for the administrator login `CIMSAdmin`.

2 To add the ODBC Data Source and CIMS Data Source for the end user login, click **Add** in the CIMS Data Source List Maintenance dialog box.

3 In the Add CIMS Data Source dialog box, type an ID for the second CIMS Data Source, and then click **OK**. In this example, the CIMS Data Source ID is `CIMSServerUser`.

The Configure CIMS Data Source dialog box appears.

4 Click **ODBC Data Source Administrator**. The ODBC Data Source Administrator dialog box appears.

5 On the **System DSN** tab, click **Add**. The Create New Data Source wizard appears.

6 Follow the steps provided in the wizard to point to the database. Consult your SQL Server DBA to determine the settings that you should select in the wizard. Note the following:

- The wizard prompts you to type a name for the ODBC Data Source. For this example, the name is `CIMSServerUser`.

- Select the specific SQL Server installation that you want to connect to regardless of whether the the database is on the local server. Do do not select `(local)`.

- The wizard prompts you with the following: **How should SQL Server verify the authenticity of the login ID?** Click the Windows authentication method.

7 When the wizard completes, click **Test Data Source** to make sure that the configuration was successful, and then click **OK** until the wizard and ODBC Data Source Administrator dialog boxes close.

8 In the Configure CIMS Data Source dialog box, do the following:

a In the **Select a System ODBC Data Source** list, click the ODBC Data Source that you just created.

b Leave the **User ID** and **Password** boxes blank as shown in example Figure 2-5 on page 2-40.

c Leave the other boxes set to the defaults unless you have a specific reason otherwise (see Step 7 on page 2-35 for more information).
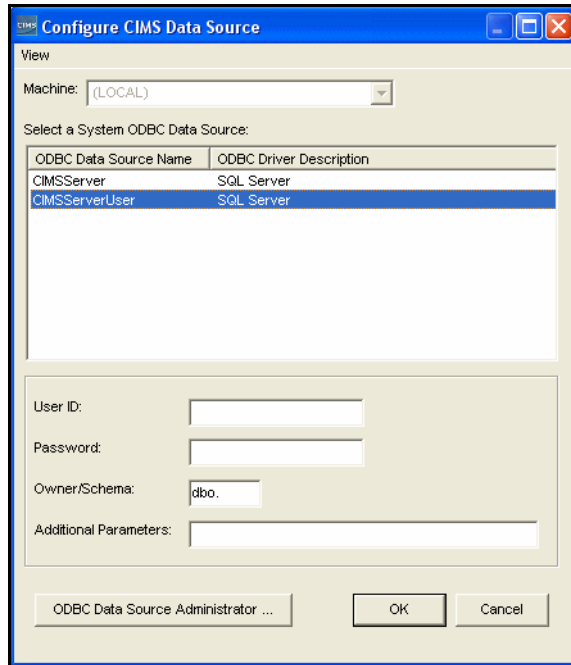
Figure 2-5 • Configure CIMS Data Source Dialog Box—SQL Server Example 3

9 Click **OK** to save the data source information and close the Configure CIMS Data Source dialog box. Two data source entries appear in the CIMS Data Source Maintenance dialog box as shown in example Figure 2-6.

For example purposes, the `CIMSServer` data source entry is set as the default data source for Web and batch reporting and CIMS Data Collectors. For more information about setting the default data source, see page 5-7.
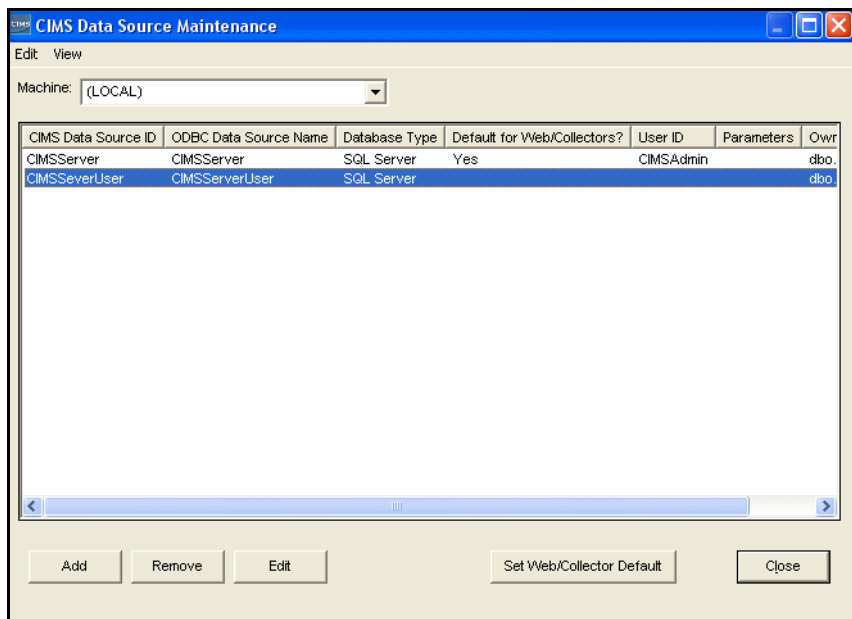
Figure 2-6 • CIMS Data Source Maintenance Dialog Box—SQL Server Example 3

Configuring the Data Source for an MSDE Database

The following steps assume that you are using the database user login `sa` for both the CIMS Server administrators and the CIMS Server Web Reporting end users. In this situation, you need to create one ODBC Data Source that points to the database and one CIMS Data Source that points to that ODBC Data Source.

Example Configuration

1 In the CIMS Data Source Maintenance dialog box, click **Add**. (If the CIMS Data Source Maintenance dialog box is not open, click **System Administration** ▸ **CIMS Data Source Maintenance**.)

2 In the Add CIMS Data Source dialog box, type an ID for the CIMS Data Source, and then click **OK**. In this example, the CIMS Data Source ID is `CIMSServer`.

The Configure CIMS Data Source dialog box appears.

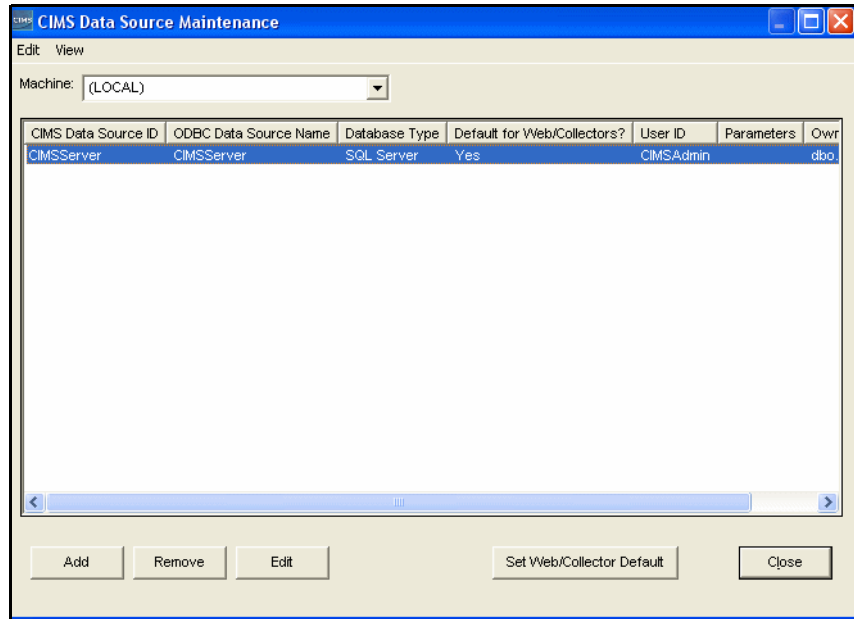**3** Click **ODBC Data Source Administrator**. The ODBC Data Source Administrator dialog box appears.

4 On the **System DSN** tab, click **Add**. The Create New Data Source wizard appears.

5 Follow the steps provided in the wizard to point to the database. Consult your SQL Server DBA to determine the settings that you should select in the wizard. Note the following:

- The wizard prompts you to type a name for the ODBC Data Source. For this example, the name is `CIMSServer`.

- Select the specific SQL Server installation that you want to connect to regardless of whether the the database is on the local server. Do do not select `(local)`.

- The wizard prompts you with the following: **How should SQL Server verify the authenticity of the login ID?** Click the SQL Server authentication method and type `sa` in both the **Login ID** and **Password** boxes.

- **For Internationalization Only.** To select the language for the data source other than the default language, select the **Change Language of SQL Server Messages to** check box and click the language that you want from the list.

  Important! • **Do not select the Use regional settings when outputting currency, numbers, dates, and times check box (the default for this check box is unselected). CIMS Server does not support this option. Regional settings are supplied by the regional options for the user logged on to the computer (see** *Internationalization Setup* **on page 2-13).**
  ---

6 When the wizard completes, click **Test Data Source** to make sure that the configuration was successful, and then click **OK** until the wizard and ODBC Data Source Administrator dialog boxes close.

7 In the Configure CIMS Data Source dialog box, do the following:

a In the **Select a System ODBC Data Source** list, click the ODBC Data Source that you just created.

b In the **User ID** and **Password** boxes, type sa (the SQL Server user ID and password) as shown in example Figure 2-7.

c Leave the other boxes set to the defaults unless you have a specific reason otherwise (see Step 7 on page 2-35 for more information).

Figure 2-7 • Configure CIMS Data Source Dialog Box—MSDE Example

8 Click **OK** to save the data source information and close the Configure CIMS Data Source dialog box. The data source entry appears in the CIMS Data Source Maintenance dialog box as shown in example Figure 2-8 on page 2-43.

Because the CIMSServer data source entry is the only entry in the list, it is automatically set as the default data source for Web and batch reporting and CIMS Data Collectors. For more information about setting the default data source, see page 5-7.

Figure 2-8 • CIMS Data Source Maintenance Dialog Box—MSDE Example

Note that if you pointed to the `master` database when you set up the ODBC Data Source, the following message appears when you close the CIMS Data Source Maintenance dialog box:

```
The data source <ODBC Data Source Name> is using the database 'master'. The
use of the 'master' database to store CIMS data is not recommended. Do you
want to create a database called <ODBC Data Source Name> and use it instead?
```

If you want to use the `master` database, click **No**.

If you do not want to use the `master` database, click **Yes** and a database with the same name as the ODBC Data Source is created.

Configuring the Data Source for an Oracle Database

Note • The information in this section assumes that the Oracle database has been created and connection to the database has been set up as described in the *CIMS Server for UNIX Installation and User Guide*.

You need to create one ODBC Data Source that points to the database. The number of CIMS Data Sources that you need to create for the ODBC Data Source depends on the number of database users that you created for CIMS Server.

If you created one database user for all CIMS Server users you need to create one ODBC Data Source and one CIMS Data Source. See *Example Configuration 1*.

If you created multiple database users (for example, one for the CIMS Server administrators and one for the CIMS Server Web Reporting end users), you need to create one ODBC Data Source and then create a separate CIMS Data Sources that points to that ODBC Data Source for each user. Each CIMS Data Source will contain the appropriate database user ID and password. See *Example Configuration 2* on page 2-47.

Example Configuration 1

Assume that one Oracle user has been created for the database. This user is used by both CIMS Server administrators and the CIMS Server Web Reporting end users. The user ID is `CIMSAdmin` and the password is `admin`.

In this situation, you need to create one ODBC Data Source that points to the database and one CIMS Data Source that points to that ODBC Data Source.

1 In the CIMS Data Source Maintenance dialog box, click **Add**. (If the CIMS Data Source Maintenance dialog box is not open, click **System Administration ▶ CIMS Data Source Maintenance**.)

2 In the Add CIMS Data Source dialog box, type an ID for the CIMS Data Source, and then click **OK**. In this example, the CIMS Data Source ID is `CIMSServer`.

The Configure CIMS Data Source dialog box appears.

3 Click **ODBC Data Source Administrator**. The ODBC Data Source Administrator dialog box appears.

4 On the **System DSN** tab, click **Add**. The Create New Data Source wizard appears.

5 Click the Oracle driver that you want to use to set up the data source and then click **Finish**. The Oracle ODBC Driver Configuration dialog box appears.

6 In the Oracle ODBC Driver Configuration dialog box, do the following. Consult your Oracle DBA for assistance. The dialog box also includes a **Help** button.

   a In the **Data Source Name** box, type the name that you want to assign to the ODBC Data Source. For this example, the name is `CIMSServer`.

   b In the optional **Description** box, type a description of the ODBC Data Source.

c In the **TNS Service Name** box, enter the location of the Oracle database from which the ODBC driver will retrieve data. This is the same name entered in the `tnsnames.ora` file using the Oracle Net Manager.

d In the optional **User ID** box, type a user ID for the Oracle database from which the ODBC drive will retrieve the data. If you do not provide the user ID in this box, you can type it when you test the connection to the database in Step 7.

e You can leave the remaining options in the dialog box set to the defaults or change the options as needed.

7 When you have set the options in the Oracle ODBC Driver Configuration dialog box, click **Test Connection** to make sure that the configuration was successful. The Oracle ODBC Driver Connect dialog box appears. Type a user ID and password for the database and click **OK.** If you entered a user ID in the **User ID** box, that user ID appears by default.

8 Click **OK** until you return to the Configure CIMS Data Source dialog box and do the following. Consult your Oracle DBA for assistance.

a In the **Select a System ODBC Data Source** list, click the ODBC Data Source that you just created.

b In the **User ID** and **Password** boxes, type the Oracle user ID `CIMSAdmin` and the password `admin` as shown in example Figure 2-9 on page 2-46. The password is encrypted.

c In the **Owner/Schema** box, type the name of the database schema that is used for the CIMS Server database. Consult your Oracle DBA for the database schema. In example Figure 2-9, the schema is `CIMS.`. Note that the period at the end of the schema name is required and will be added automatically if you do not include it.

Important! • **The preceding steps associate a user ID with the schema for the CIMS Server database. The user ID may or may not be the same as the schema name. Because the user ID and schema defined here are not applied to all CIMS administrative options, CIMS scripts, or Crystal Reports, you need to install a trigger that changes the user's default schema to the CIMS database schema if the user ID and schema are different. For example, in Figure 2-9 the user ID is** `CIMSAdmin` **and the schema is** `CIMS`**. You would need to install a trigger that changes the default schema for the user** `CIMSAdmin` **to the** `CIMS` **schema. To create and install the trigger, use the** `OracleLogonTrigger.bat` **script as described on page C-16.**

---

d In the **Additional Parameters** box, type any additional parameters that are required to enable connection to the database. For more information, consult your Oracle DBA or CIMS Lab.
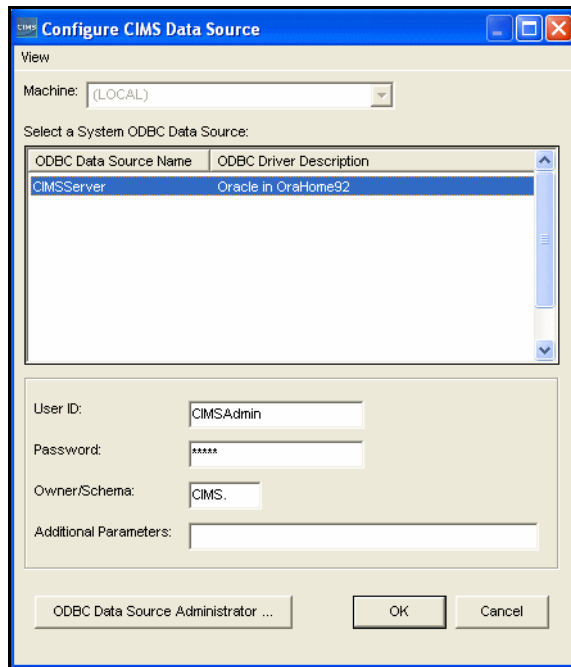
Figure 2-9 • Configure CIMS Data Source Dialog Box—Oracle Example 1

9 Click **OK** to save the data source information and close the Configure CIMS Data Source dialog box. The data source entry appears in the CIMS Data Source Maintenance dialog box as shown in example Figure 2-10. Because the `CIMSServer` data source entry is the only entry in the list, it is automatically set as the default data source for Web and batch reporting and CIMS Data Collectors. For more information about setting the default data source, see page 5-7.

Figure 2-10 • CIMS Data Source Maintenance Dialog Box—Oracle Example 1

Example Configuration 2

Assume that two Oracle users have been created for the database: one for CIMS Server administrators and one for CIMS Server Web Reporting end users. The user IDs for the administrator and end user logins are `CIMSAdmin` with a password of `admin` and `CIMSUser` with a password of `user`, respectively.

In this situation, you need to create one ODBC Data Source and two CIMS Data Sources that point to the ODBC Data Source. One CIMS Data Source will contain the user ID and password for the administrator and the other CIMS Data Source will contain the user ID and password for the end user.

1 Complete the steps in *Example Configuration 1* on page 2-44 to create the ODBC Data Source and the CIMS Data Source for the user `CIMSAdmin`.

2 To add the second CIMS Data Source for the end user login, click **Add** in the CIMS Data Source List Maintenance dialog box.

3 In the Add CIMS Data Source dialog box, type an ID for the second CIMS Data Source, and then click **OK**. In this example, the CIMS Data Source ID is `CIMSServerUser`.

The Configure CIMS Data Source dialog box appears.

4 In the Configure CIMS Data Source dialog box, do the following. Consult your Oracle DBA for assistance.

   a In the **Select a System ODBC Data Source** box, click the ODBC Data Source that you added in Step 1.

   b In the **User ID** and **Password** boxes, type the Oracle user ID `CIMSUser` and the password `user` as shown in example Figure 2-11 on page 2-48. The password is encrypted.

   c In the **Owner/Schema** box, type the name of the database schema that is used for CIMS Server. Consult your Oracle DBA for the database schema. In example Figure 2-11, the schema is `CIMS.`. Note that the period at the end of the schema name is required and is added automatically.

> **Important!** • As noted on page 2-45 in the instructions for creating the `CIMSAdmin` user, you need to install a trigger that changes the user's default schema to the CIMS database schema if the user ID and schema are different. For example, in Figure 2-11 the user ID is `CIMSUser` and the schema is `CIMS`. You would need to install a trigger that changes the default schema for the user `CIMSUser` to the `CIMS` schema. To create and install the trigger, use the `OracleLogonTrigger.bat` script as described on page C-16.

   d In the **Additional Parameters** box, type any additional parameters that are required to enable connection to the database. For more information, consult your Oracle DBA or CIMS Lab.
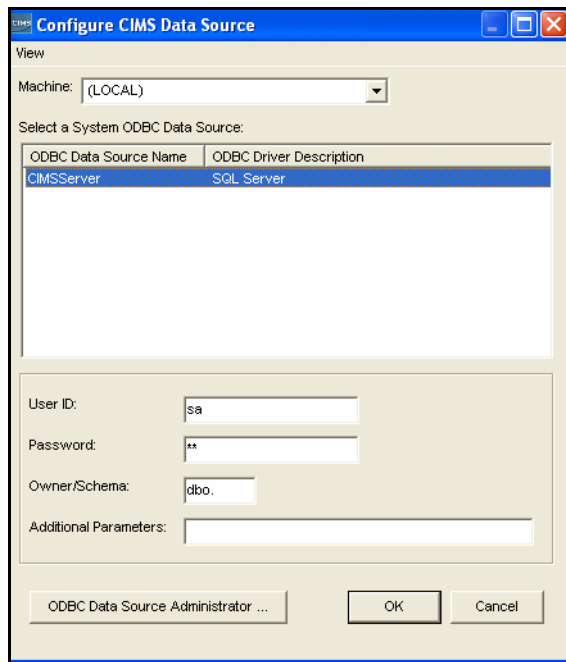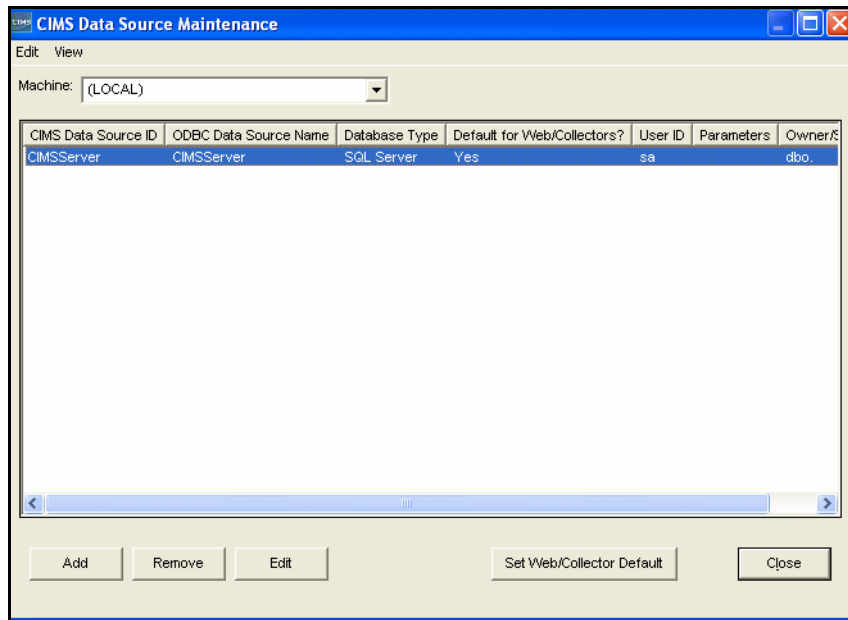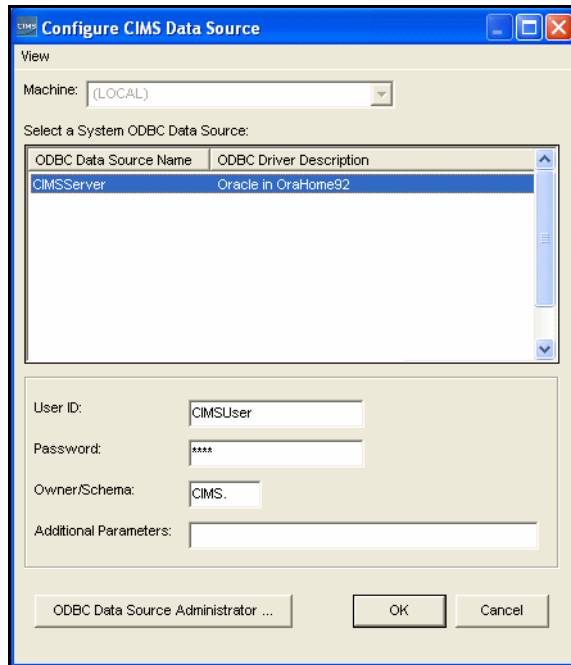
Figure 2-11 • Configure CIMS Data Source Dialog Box—Oracle Example 2

5 Click **OK** to save the data source information and close the Configure CIMS Data Source dialog box. Two data source entries appear in the CIMS Data Source Maintenance dialog box as shown in example Figure 2-12.

For example purposes, the `CIMSServer` data source entry is set as the default data source for Web and batch reporting and CIMS Data Collectors. For more information about setting the default data source, see page 5-7.
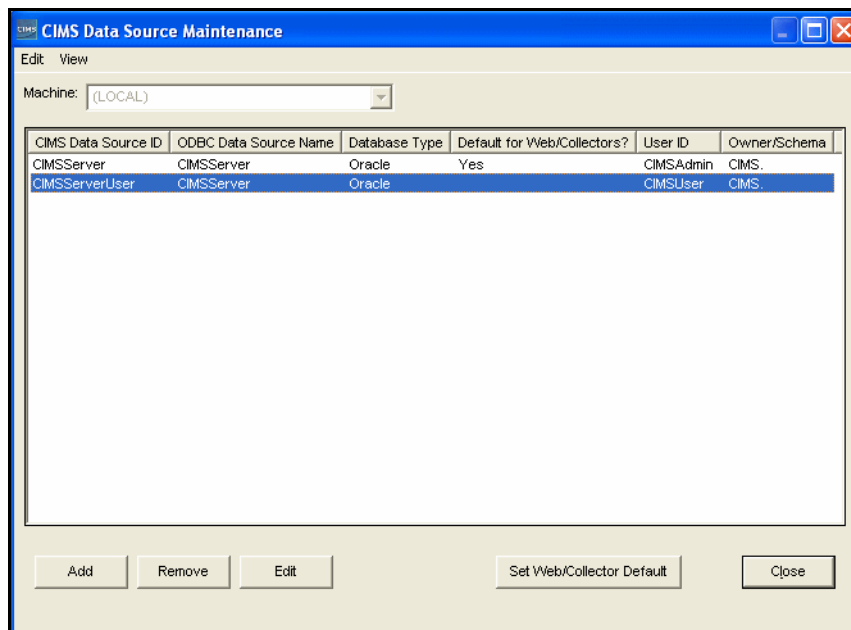
Figure 2-12 • CIMS Data Source Maintenance Dialog Box—Oracle Example 2

Configuring the Data Source for a DB2 Database

Note • **The information in this section assumes that the DB2 database has been created and connection to the database has been set up as described in the** *CIMS Server for DB2 Database Setup Guide***.**

The following are a data source configuration examples for a single DB2 database and multiple databases.

Example Configuration—One Database

Assume that the user ID `cimsadmin` and the password `admin` is used to access the database. This user is used by both CIMS Server administrators and the CIMS Server Web Reporting end users. The CIMS Server database is named `CIMSSERVER` and the creator is `CIMS`.

In this situation, you need to create one ODBC Data Source that points to the database and one CIMS Data Source that points to that ODBC Data Source.

1 In the CIMS Data Source Maintenance dialog box, click **Add**. (If the CIMS Data Source Maintenance dialog box is not open, click **System Administration** ▸ **CIMS Data Source Maintenance**.)

2 In the Add CIMS Data Source dialog box, type an ID for the CIMS Data Source, and then click **OK**. In this example, the CIMS Data Source ID is `CIMSServer`. The Configure CIMS Data Source dialog box appears.

3 Click **ODBC Data Source Administrator**. The ODBC Data Source Administrator dialog box appears.

4 On the **System DSN** tab, click **Add**. The Create New Data Source wizard appears.

5 Click the DB2 driver that you want to use to set up the data source and then click **Finish**. The *driver name* – Add dialog box appears.

6 In the *driver name* – Add dialog box, do the following:

    a In the **Data source name** box, type the name that you want to assign to the ODBC Data Source. For this example, the name is `CIMSServer`.

    b In the **Database alias** list, click the alias for the database that you want the ODBC Data Source to point to. You can also click **Add** to add an alias if needed. If you need assistance choosing or creating the *database alias*, consult your DB2 DBA.

    c In the **Description** box, type an optional description of the ODBC Data Source.

    d Click **OK** to close the dialog box and return to the **System DSN** tab.

7 Double-click the ODBC Data Source that you just added. The CLI/ODBC Settings dialog box appears.

8 On the **Data Source** tab, do the following:

   a Type the DB2 user ID `cimsadmin` and the password `admin` in the **User ID** and **Password** boxes.

   b Click **Connect** to test the connection.

9 On the **Advanced Settings** tab, the parameter `DBALIAS` appears with the alias that you selected in Step 6 on page 2-49. You need to add the parameters `DBNAME` and `CURRENTSCHEMA`. You can locate the database name and schema in the DB2 Control Center under **Databases**. The schema name is in the **Creator** column.

To add the `DBNAME` parameter:

   a Click **Add**. The Add CLI/ODBC parameter dialog box appears.

   b In the **Select a CLI/ODBC parameter** list, click **DBNAME**, and then click **OK**.

   c In the MVS DBNAME filter dialog box, type the database name `CIMSSERVER`, and then click **OK**.

To add the `CURRENTSCHEMA` parameter:

   a Click **Add**.

   b In the **Select a CLI/ODBC parameter** list, click **CURRENTSCHEMA**, and then click **OK**.

   c In the Schema for 'SET CURRENT SCHEMA' issued after connect dialog box, type the schema name `CIMS`, and then click **OK**.

10 Click **Apply**. The parameters DBNAME and CURRENTSCHEMA appear in the parameter list on the **Advanced Settings** tab as shown in example Figure 2-13. Click **OK** to close the dialog box.
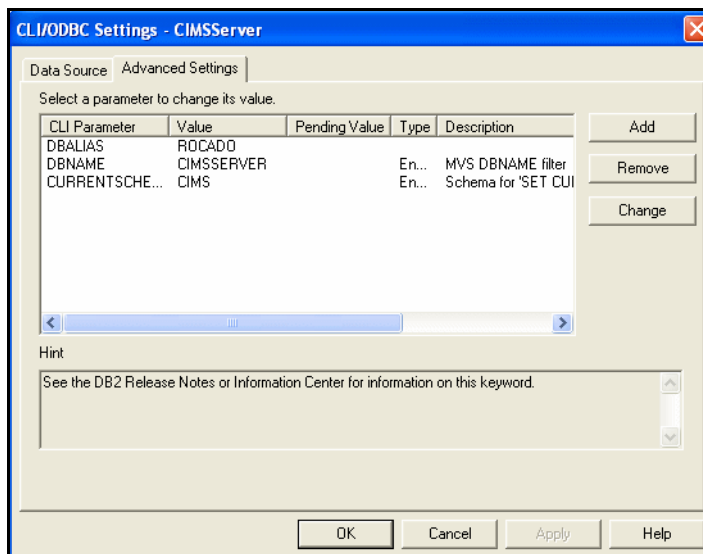
Figure 2-13 • CLI/ODBC Dialog Box─DB2 Example

11 Click **OK** until you return to the Configure CIMS Data Source dialog box and do the following.

a In the **Select a System ODBC Data Source** list, click the ODBC Data Source that you created for the database.

b In the **User ID** and **Password** boxes, type the DB2 user ID `cimsadmin` and the password `admin` as shown in example Figure 2-14. The password is encrypted.

c In the **Owner/Schema** box, the schema value *must be* the same as the schema value that you typed for the CURRENTSCHEMA parameter in Step 9 on page 2-50.

In this example, the schema is `CIMS.` as shown in example Figure 2-14. Note that the period at the end of the schema name is required and will be added automatically if you do not include it.

Important! • At this time, there is not an automated check to ensure that the value in the Owner/Schema box matches the CURRENTSCHEMA parameter value, so it is very important that you confirm that the values are the same in both places.

---

d In the **Additional Parameters** box, type any additional parameters that are required to enable connection to the database. For more information, consult your DB2 DBA or CIMS Lab.
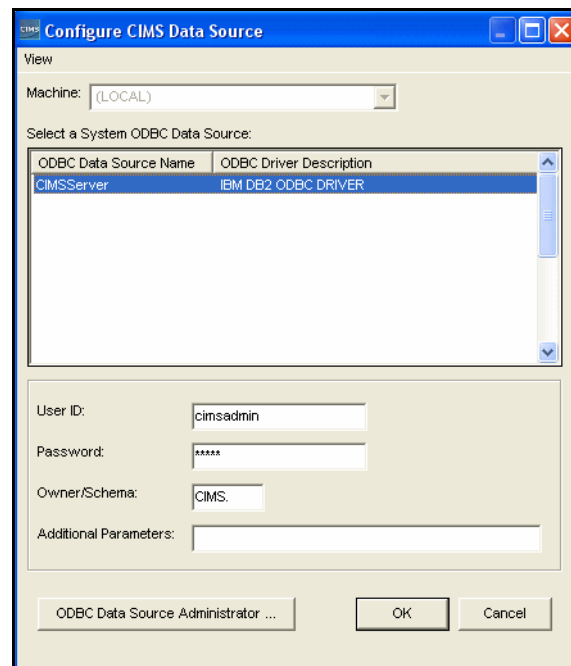
Figure 2-14 • Configure CIMS Data Source Dialog Box—DB2 Example

12 Click **OK** to save the data source information and close the Configure CIMS Data Source dialog box. The data source entry appears in the CIMS Data Source Maintenance dialog box as shown in example Figure 2-15.

Because the `CIMSServer` data source entry is the only entry in the list, it is automatically set as the default data source for Web and batch reporting and CIMS Data Collectors. For more information about setting the default data source, see page 5-7.
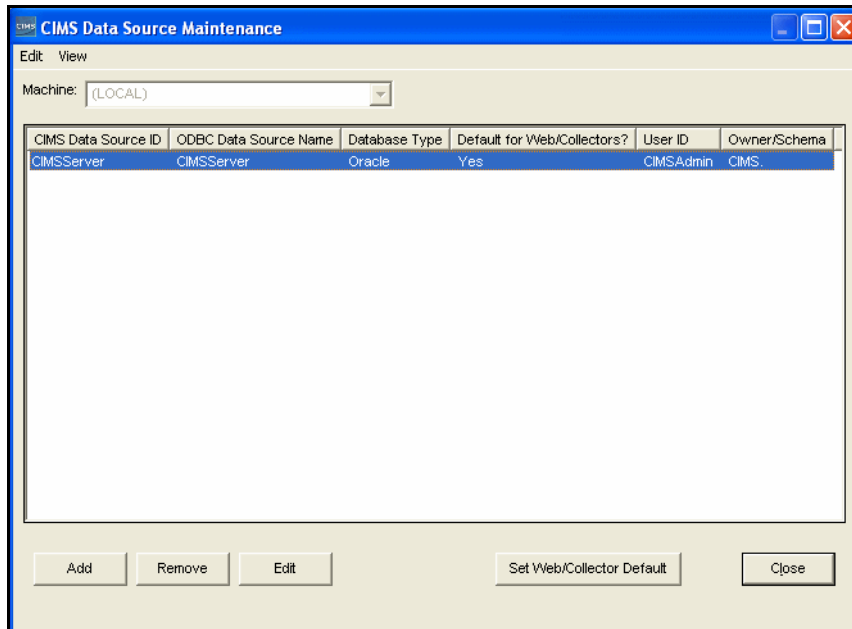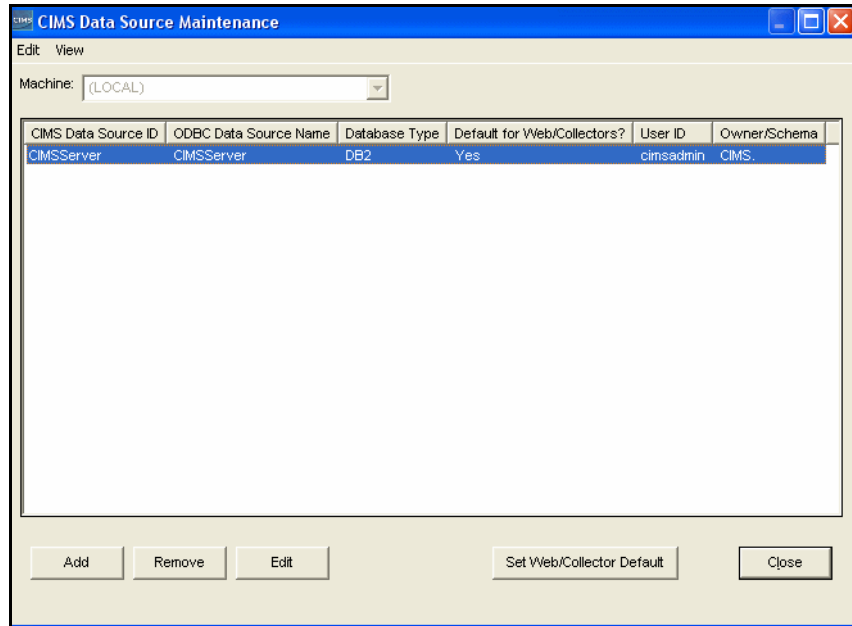

Figure 2-15 • CIMS Data Source Maintenance Dialog Box—DB2 Example

Example Configuration—Two Databases

If you are using multiple DB2 databases with CIMS Server, each database must have tables with a unique creator.tablename pair.

In the preceding example, the creator for the tables in the `CIMSSERVER` database is `CIMS`. Assume that `CIMSSERVER` is your production database and you have also created a development database named `CIMSDEV` that also has a creator of `CIMS`. In this situation, you need to create tables for the `CIMSDEV` database with a unique creator.

The following example shows you how to create a creator named `CIMSD` for the tables in the `CIMSDEV` database. The DB2 user ID and password for the DB2 subsystem is `cimsadmin` and `admin`, respectively.

1 In the DB2 Control Center application, create a database user named `CIMSD`. The user must have privileges to select, insert, update, and delete tables.

2 In CIMS Server Administrator, open the CIMS Data Source Maintenance dialog box and click **Add**.

3 In the Add CIMS Data Source dialog box, type an ID for the CIMS Data Source, and then click **OK**. In this example, the CIMS Data Source ID is `CIMSDEV`. The Configure CIMS Data Source dialog box appears.

4 Click **ODBC Data Source Administrator**. The ODBC Data Source Administrator dialog box appears.

5 On the **System DSN** tab, click **Add**. The Create New Data Source wizard appears.

6 Click the DB2 driver that you want to use to set up the data source and then click **Finish**. The *driver name* – Add dialog box appears.

7 In the *driver name* – Add dialog box, do the following:

    a In the **Data source name** box, type the name that you want to assign to the ODBC Data Source. For this example, the name is `CIMSDEV`.

    b In the **Database alias** list, click the alias for the database that you want the ODBC Data Source to point to. You can also click **Add** to add an alias if needed. If you need assistance choosing or creating the database alias, consult your DB2 DBA.

    c In the **Description** box, type an optional description of the ODBC Data Source.

    d Click **OK** to close the dialog box and return to the **System DSN** tab.

8 Double-click the ODBC Data Source that you just added. The CLI/ODBC Settings dialog box appears.

9 On the **Data Source** tab, do the following:

    a Type the DB2 user ID `cimsadmin` and the password `admin` in the **User Id** and **Password** boxes.

    b Click **Connect** to test the connection.

10 On the **Advanced Settings** tab, the parameter `DBALIAS` appears with the alias that you selected in . You need to add the parameters `DBNAME` and `CURRENTSCHEMA`. The schema name is database user that you created in .

    To add the `DBNAME` parameter:

    a Click **Add**. The Add CLI/ODBC parameter dialog box appears.

    b In the **Select a CLI/ODBC parameter** list, click **DBNAME**, and then click **OK**.

    c In the MVS DBNAME filter dialog box, type the database name `CIMSDEV`, and then click **OK**.

To add the `CURRENTSCHEMA` parameter:

a Click **Add**.

b In the **Select a CLI/ODBC parameter** list, click **CURRENTSCHEMA**, and then click **OK**.

c In the Schema for 'SET CURRENT SCHEMA' issued after connect dialog box, type the schema name `CIMSD`, and then click **OK**.

The parameters DBNAME and CURRENTSCHEMA appear in the parameter list on the **Advanced Settings** tab as shown in example Figure 2-16. Click **APPLY** and then click **OK** to close the dialog box.
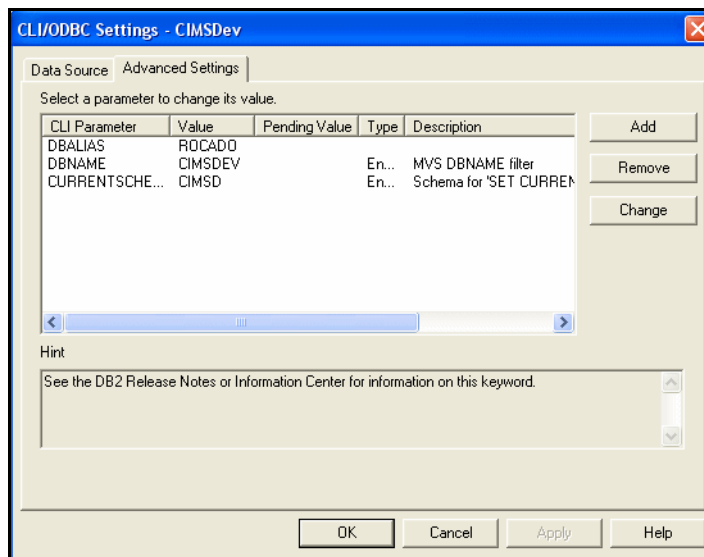
Figure 2-16 • CLI/ODBC Dialog Box—DB2 Example

11 Click **OK** until you return to the Configure CIMS Data Source dialog box and do the following:

a In the **Select a System ODBC Data Source** list, click the ODBC Data Source that you created for the database.

b In the **User ID** and **Password** boxes, type the DB2 user ID `cimsadmin` and the password `admin` as shown in example Figure 2-17. The password is encrypted.

c In the **Owner/Schema** box, the schema value *must be* the same as the schema value that you entered for the CURRENTSCHEMA parameter in Step 10 on page 2-53.

In this example, the schema is `CIMSD.` as shown in example Figure 2-17. Note that the period at the end of the schema name is required and will be added automatically if you do not include it.

Important! • At this time, there is not an automated check to ensure that the value in the Owner/Schema box matches the CURRENTSCHEMA parameter value, so it is very important that you confirm that the values are the same in both places.

---

d In the **Additional Parameters** box, type any additional parameters that are required to enable connection to the database. For more information, consult your DB2 DBA or CIMS Lab.
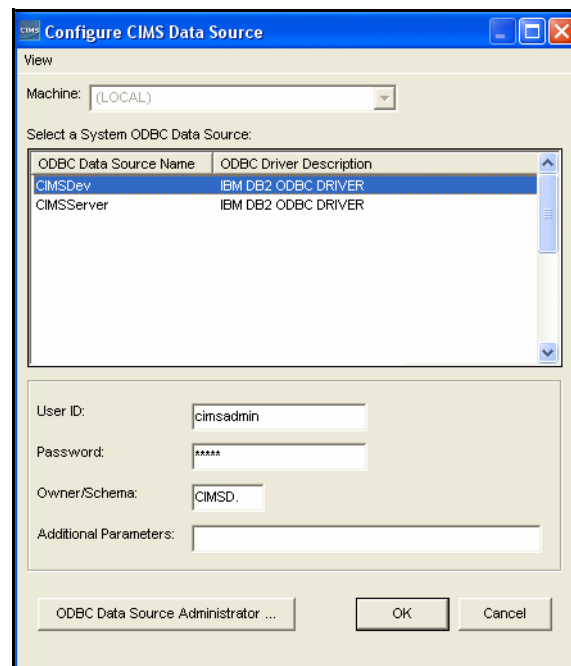
Figure 2-17 • Configure CIMS Data Source Dialog Box—DB2 Example

12 Click **OK** to save the data source information and close the Configure CIMS Data Source dialog box. The data source entry appears in the CIMS Data Source Maintenance dialog box as shown in example Figure 2-18.
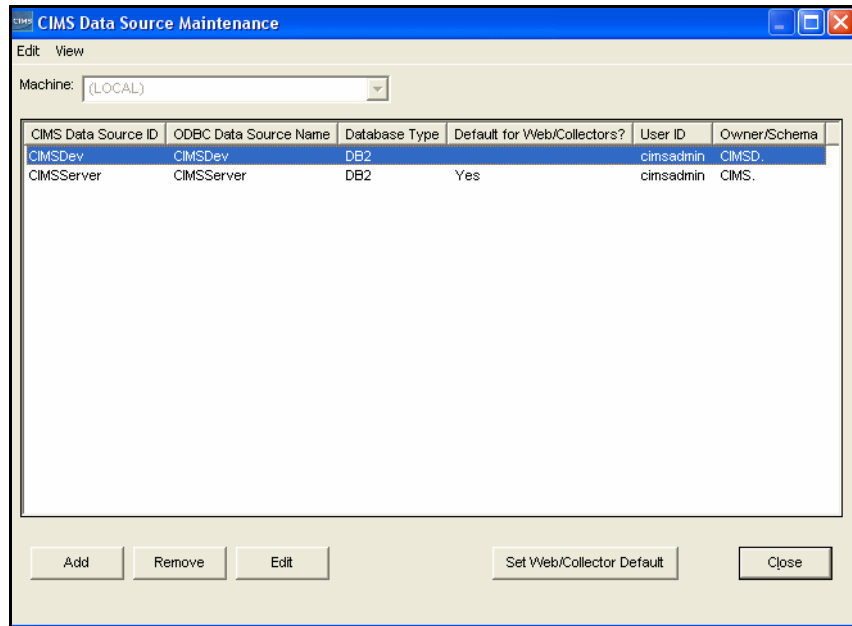
Figure 2-18 • CIMS Data Source Maintenance Dialog Box—DB2 Example

13 Close the CIMS Data Source Maintenance dialog box, and go to the **Select CIMS Data Source** list at the bottom of the CIMS Server Administrator main window. This list enables you to point CIMS Server Administrator to the data source that you want to use. Make sure that you select the `CIMSDev` data source that you just created and not the `CIMSServer` data source.

14 Click **System Administration ▶ Database ▶ Initialize Database** and initialize the database as described in *Initialize the Database* on page 2-57.

The initialization process will create tables in the `CIMSDEV` database with a creator of `CIMSD`. To confirm that the tables have been created, start the DB2 Control Center and navigate to the subsystem that contains the `CIMSDEV` database. Expand the subsystem, and click **Tables**. The tables for `CIMSDEV` database should appear with a creator of `CIMSD`.

Initialize the Database

When you add a CIMS Data Source, the data source appears in the **Select CIMS Data Source** list at the bottom of the CIMS Server Administrator main window. This list enables you to point CIMS Server Administrator to the data source that you want to use.

At this point, you should have created one CIMS Data Source for the database and the data source ID should appear in **Select CIMS Data Source** list.

To enable CIMS Server to use the database referenced by the CIMS Data Source, you need to initialize the database. Initializing the database performs the following tasks:

■ Creates new database tables

■ Populates these tables with an initial set of data

■ Creates necessary database objects

Note • **A database should be initialized only once. Initializing will overwrite any existing data. You will receive a warning if you attempt to initialize a database that has already been initialized.**

To initialize the database:

1 In the CIMS Server Administrator main window, click **System Administration ▶ Database ▶ Initialize Database**.

The Database Initialization dialog box appears as shown in Figure 2-19.
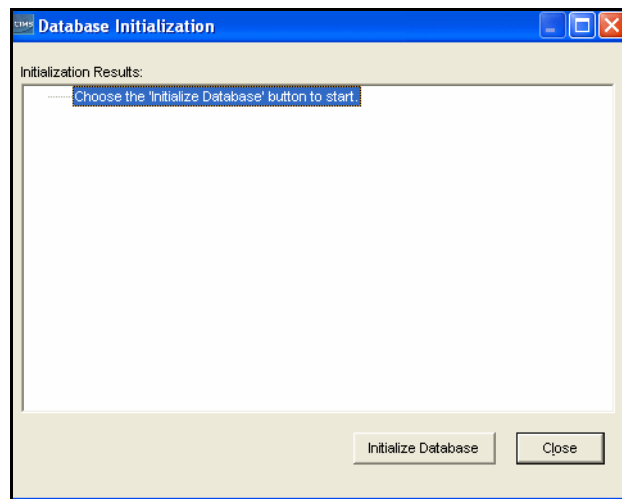
Figure 2-19 • Database Initialization Dialog Box

2 Click **Initialize Database** to populate the database with the necessary defaults.

Note • **If the user ID that you are using to access the database does not have sufficient system administration authority, CIMS Server might not be able to create database objects or to create objects with the appropriate permissions during database initialization. In this situation, a warning message appears recommending that you contact your database administrator or CIMS Lab before continuing.**

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3 In the Select Web Reports Version dialog box, click the report version that you are using for Web reporting (SQL Server Reporting Services or Crystal Reports 8.5, 9, 10, or XI), and then click **OK**. The report version that you select determines the default report paths that appear in the Configuration dialog box (see *Reporting Tab* on page 2-60).

4 Click **OK** when the initialization is complete.

Create a Processes Folder

In Windows, rename and/or move the `Sample Processes` folder. This folder is in `C:\Program Files\CIMSLab` if you installed CIMS Server in the default location.

CIMS Lab recommends that you rename this folder `Processes` and move it to a location where you keep data that is backed up. However, you can give this folder any name and move it to any location. This folder is referred to as `Processes` in this guide.

The `Processes` folder is used to store process definitions. A process definition is a folder that contains the files required to process usage data from a particular source such as a database, operating system, or application. For more information about process definitions, see *CIMS Server Administrator Processing* on page 6-21.

Note that the process definitions in the `Sample Processes` folder contain sample CSR or CSR+ files that you can process and load into the database as described in *Process a Sample Resource File (Optional)* on page 2-64.

Enter CIMS Server Configuration Settings

You need to set the configuration settings for CIMS Server in CIMS Server Administrator. To configure the settings:

1 In the main window, click **System Administration** ▶ **Configuration Information**.

The Configuration dialog box appears.

2 For the purpose of getting started, complete the **Organization**, **Processing**, **Reporting**, and **License** tabs as shown in the following sections. For information about the remaining tabs, see *Configuring System Settings* on page 3-42.

Organization Tab

Enter your organization name and address (maximum of 255 characters in each line). This information appears on the standard invoices that are provided with CIMS Server.

Processing Tab

In the **Process Definition Path** box, enter the path to the `Processes` folder as shown in example Figure 2-20.
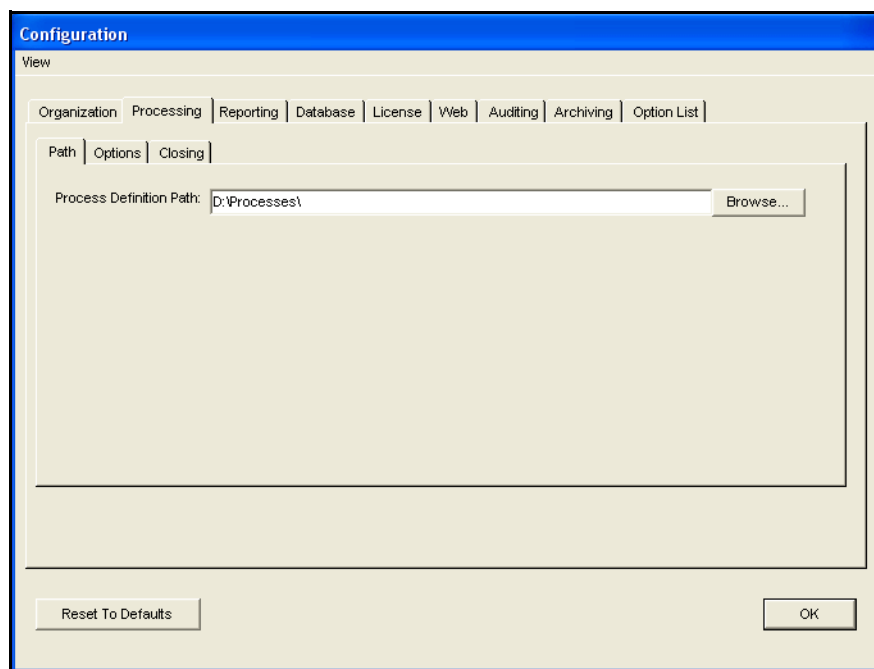
Figure 2-20 • Configuration Dialog Box—Processing Tab

For more information about the **Processing** tab, see *Processing Settings* on page 3-44.

Reporting Tab

The **Reporting** tab contains the settings for CIMS Server Web and batch reporting. The default report paths that appear on the **Paths** subtab are determined by the report type that you selected when you initialized the database. The **Paths** subtab contains the paths to the following report folders:

■ **Standard.** CIMS Server produces chargeback and resource accounting reports based on IT usage data from your organization. This folder contains a variety of standard reports that you can use as templates to create custom reports for your organization. For a description of each of the standard reports, refer to the *CIMS Server Web Reporting User's Guide*.

■ **Custom.** This folder contains custom reports. Custom reports are those that your report developer creates either independently or from the standard reports.

■ **Published.** This folder contains published reports. Published reports are reports that have been saved with the data that was generated at the time the reports were run. Publishing a report enables users to view a report without having to regenerate it.

> **Note • End user access to published reports is dependent on the security permissions described in** *Folder Permissions Required for Publishing and Viewing Batch Reports* **on page 4-48.**

CIMS Lab recommends that you keep the Standard folder in the default location because standard reports might be updated and/or added with a new version or release of CIMS Server. (A list of new and updated reports is included in the release notes that accompany the new CIMS Server version or release. You can also view all of the available standard reports at http://www.cimsserver.com.)

You can keep the Custom and Published report folders in the default location or you can rename and/or move the folders to any location. The reports in the Custom and Published report folders are not overwritten when you upgrade to a new version or release of CIMS Server. CIMS Lab recommends that if you move the Custom and Published report folders, you move the folders to a location where you keep data that is backed up.

Enter the paths for storing your reports or accept the default locations as shown in example Figure 2-21.
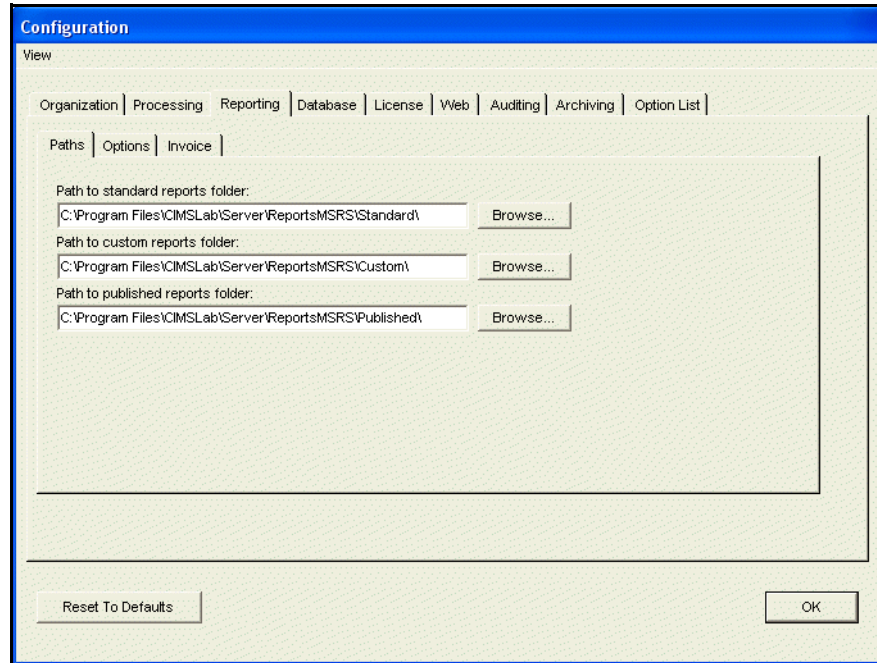
Figure 2-21 • Configuration Dialog Box—Reporting Tab

For more information about the **Reporting** tab, see *Reporting Settings* on page 3-45.

License Tab

CIMS Server requires a license key that is provided by CIMS Lab. If you do not have your license key, contact CIMS Lab.

To enter licensing information:

1 Click the appropriate workstation (machine) and enter the license key as shown in example Figure 2-22.

If you installed CIMS Server on Windows XP or Windows Server 2003, you should be logged on to the CIMS Server application server as a user in the Windows Administrators group to enter the license key. If you are not a member of this group, complete the steps in *Update the System Registry*.
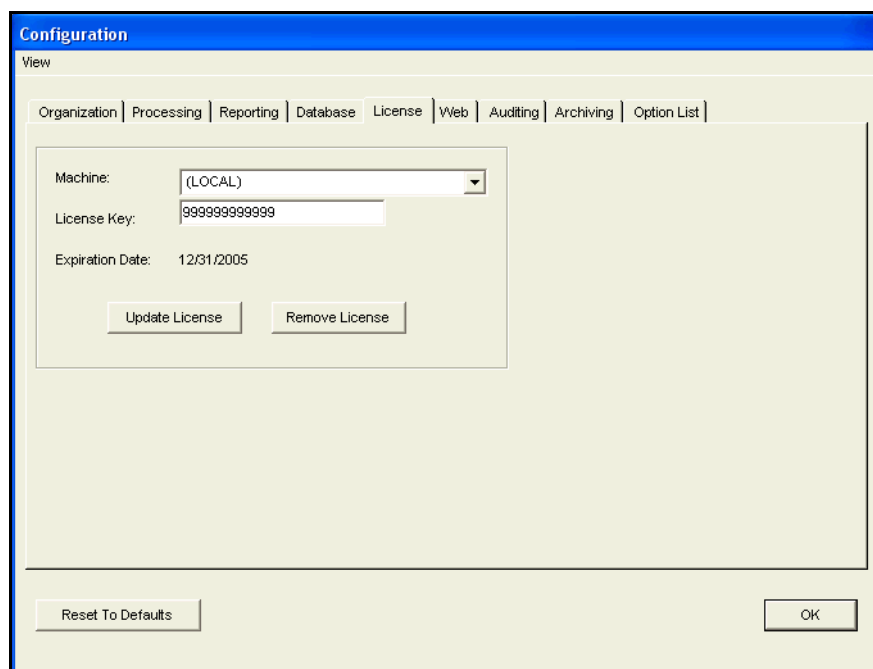
Figure 2-22 • Configuration Dialog Box—License Tab

2 Click **Update License**.

Update the System Registry

1 Click the Windows Start button, and then click Run.

2 Type regedit, and then click **OK**.

3 Navigate to HKEY_LOCAL_MACHINE ▶ SOFTWARE ▶ CIMS.

4 Right-click the CIMS folder, and then click **Permissions**.

5 Add the user account that will be working with CIMS Server and give the account Full Control and Read permissions.

Note that if you installed CIMS Server on Windows 2000 Server, you cannot set registry permissions at the key level.

Set the Account Code Structure

CIMS Server uses an account code to identify entities for billing and reporting. This code determines how CIMS Server interprets and reports input data. The account code structure defines the account code levels that appear on invoices and other reports.

To define the account code structure:

1 Click **Chargeback Administration** ▸ **Chargeback Table Maintenance** ▸ **Account Code Structure**.

The Account Code Structure List Maintenance dialog box appears.

2 Click **Edit**.

The Account Code Structure Maintenance dialog box appears as shown in Figure 2-23.
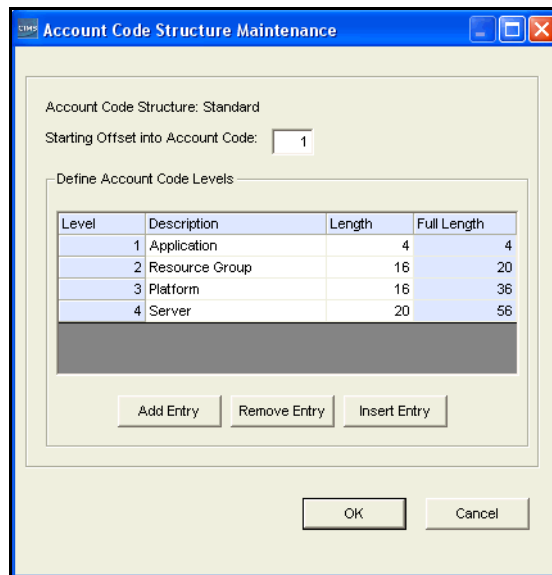
Figure 2-23 • Account Code Structure Maintenance Dialog Box

3 Edit the example account code levels (descriptions and lengths) for your site and then click **OK**. You can add or delete levels as needed. For detailed instructions on how to define the account code levels, see *Setting Up the Account Code Structure* on page 3-3.

Process a Sample Resource File (Optional)

Note • **This is an optional step intended to provide a quick introduction to processing CSR and CSR+ files. For more information about processing these files, see** *Chapter 6, Processing Data*.

The primary method for input into CIMS Server is the CSR or CSR+ file. The CSR file is produced by CIMS Data Collectors for Windows and UNIX. The CSR file is also produced by CIMS Mainframe Data Collector and Chargeback System 11.6 and earlier.

The CSR+ file is produced by CIMS Mainframe Data Collector and Chargeback System 12.0 and later.

CIMS Server includes sample CSR and CSR+ files from different databases, operating systems, and applications. The files are contained in process definition subfolders within the `Processes` folder that you created in *Create a Processes Folder* on page 2-58. You can process a sample CSR or CSR+ file as follows:

1   In the CIMS Server Administrator main window, click **Chargeback Administration ▶ Processing ▶ Process Definitions**.

The Process Definitions List Maintenance dialog box appears as shown in Figure 2-24.
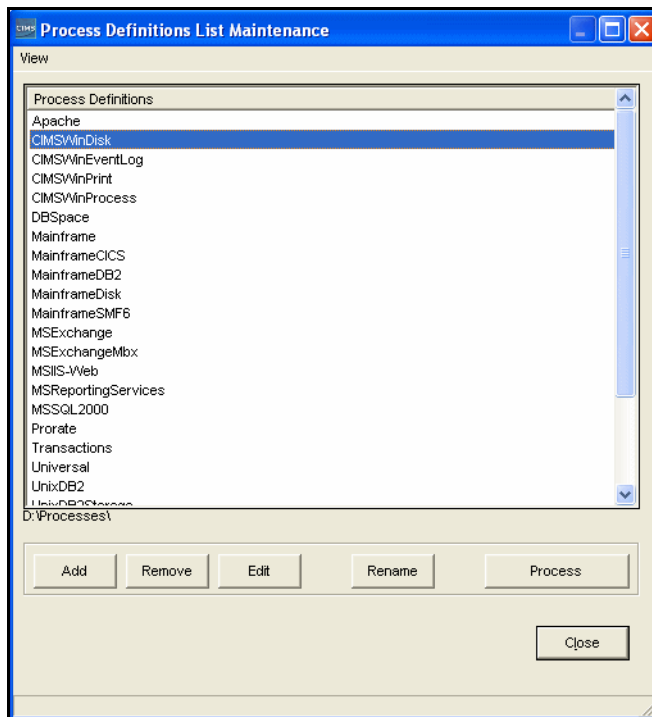
Figure 2-24 • **Process Definitions List Maintenance Dialog Box**

2 Click the process definition that contains the resource file that you want to process, and then click **Process**.

Note • **Processing of the Apache and VMware sample CSR files will not be successful unless the rate codes contained in these files have been entered in the CIMSRate table. The rate codes for Apache and VMware are not entered by default. For more information about rate codes, see** *Working With Rates* **on page 3-9.**

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3 The processed data loads to the database and the **Processing Complete!** message appears. Click **Yes** to view the event log (the Event Viewer appears showing the files processed) or **No** to skip the event log.

To view the processing results, make sure that the process definition is selected, and then click **Edit.** Click the **Process Results** tab to view the results. (For more information, see *Process Results Tab* on page 6-37.)

Increase the Event Viewer Maximum Log Size

CIMS Server logs all events (successful and unsuccessful) to the Windows Event Viewer. To accommodate the large number of data loads generated by CIMS Server, you need to increase the maximum log size in the Event Viewer as shown in the following steps. (Note that these steps are for the Microsoft Windows Server 2000 operating system. If you are using another operating system, refer to the Microsoft documentation if needed.)

1 In Windows Control Panel, double-click **Administrative Tools** ▸ **Event Viewer**.

The Event Viewer window appears.

2 Right-click **Application**, and then click **Properties**.

The Application Properties dialog box appears.

3 On the **General** tab, increase the **Maximum log size** to at least 16000 KB.

4 Choose one of the following options under **When maximum log size is reached:**

- Click **Overwrite events older than** and enter 45 days.

 Or

- Click **Do not overwrite events**. This option requires that you clear the log manually rather than automatically when the log is full.

 To avoid deleting older events, do not click **Overwrite events as needed**.

5 Click **OK** when you are finished.

Set Up the Web Server

Follow the steps in this section to set up the Web server. The Web server may reside on the same server as the CIMS Server application server or on a separate server. Note that these steps are for IIS 5.1 on the Microsoft Windows 2000 Server operating system. If you are using another operating system, refer to the Microsoft documentation or contact CIMS Lab.

Install CIMS Server Administrator and CIMS Web Applications on the Web Server (If Using a Separate Server)

Note • If the Web server resides on the same server as the CIMS Server application server, skip this section and continue to *Set the User Authentication Method for the Web Sites* on page 2-67.

If you are installing the Web server on a separate server than the CIMS Server application server, you need to install CIMS Server Administrator and CIMS Server Web Reporting on the Web server. If you want to use the optional CIMS Web Console and CIMS Financial Modeler applications, you must also install these applications on the Web server.

To install the applications, run the CIMS Server setup program and choose the **CIMS Administrator**, **CIMS Web Reporting**, **CIMS Web Console, and CIMS Financial Modeler** options (see *Performing a New Installation* on page 2-22).

When installation is complete, you need to start CIMS Server Administrator and point to the CIMS Data Source for the database in the **Select CIMS Data Source** list. To add a CIMS Data Source for the database, see *Configure the CIMS Data Source for the Database* on page 2-33.

Set the User Authentication Method for the Web Sites

By default, the CIMS Server Web Reporting application uses the IIS Default Web Site and sets the home directory path to `...Program Files\CIMSLab\Server\Web`.

Virtual directories for other CIMS applications and files and for Crystal Reports and SQL Server Reporting Services are installed below the Default Web Site.

There are two options for controlling user access to the default Web site and virtual directories: anonymous access and authenticated access. Anonymous access allows remote access by the IUSR_*computername* account. Users can connect to the Web site or directory without a user name or password. Authenticated access uses the current Windows user information on the client computer to allow users to connect to the Web site or directory.

If the Web site and directories are accessed via the Internet, you must set the user access for the default Web site and directories to anonymous.

If you are using a SQL Server or MSDE database and the Web site and directories are accessed via an intranet, CIMS Lab recommends that you set the Web site/directories to authenticated access.

If you are using an Oracle or DB2 database and the Web site and directories are accessed via an intranet, you can set the Web site/directories to authenticated access or anonymous access.

To set authenticated access:

1 In IIS Manager, navigate to the Web site or directory.

2 Right-click the Web site or directory, and then click **Properties.**

3 In the Properties dialog box, click the **Directory Security** tab.

4 In the **Anonymous access and authentication control** area, click **Edit**.

5 In the Authentication Methods dialog box, select the **Integrated Windows authentication** check box and clear all other check boxes.

6 Click **OK** until the Properties dialog box closes.

7 Restart IIS.

To set anonymous access:

1 Complete Step 1 through Step 4 on page 2-67.

2 Click the **Anonymous access** check box and clear all other check boxes.

3 Click **Edit** and do the following in the Anonymous User Account dialog box:

a Enter the Windows account `IUSR_computername` in the **Username** box. If the IUSR name does not appear, click **Browse** to find it.

b Select the **Allow IIS to control password** check box. CIMS Lab recommends this option because it enables IIS to change the password for each access to the CIMS Server Web Reporting Web site.
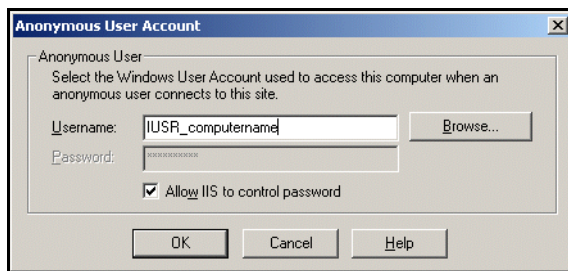
Figure 2-25 • Anonymous User Account Dialog Box

4 Click **OK** until the Default Web Site Properties dialog box closes.

5 Restart IIS.

Features Not Available With Anonymous Access

■ **Auto logon for CIMS Web applications.** CIMS Server Web Reporting and the other CIMS Web-based applications provide an auto logon feature. This feature enables end users and administrators to use the application without entering a CIMS user ID and password to log on. (To enable auto logon, see *Web Settings* on page 3-49.) The auto logon feature is not available if you use anonymous access for IIS.

■ **Tracking user IDs for transactions.** If you use anonymous access and are using the transaction audit feature, the user ID associated with the transaction will not reflect the actual user. The transaction audit feature enables CIMS Server administrators to track miscellaneous, recurring, and credit transactions created in CIMS Server Web Reporting. (For more information about transactions, refer to the *CIMS Server Web Reporting User's Guide*). To enable transaction audits and other table audits such as client and rate, see *Table Audit Settings* on page 3-54.

Note • **The table audit feature is available if you are using a SQL Server database. Support for Oracle and DB2 will be included in a future release of CIMS Server.**

Assign Folder Security Permissions on the Web Server

The CIMS Web application users must have the following security permissions for the CIMS Server folders shown. The default location for these folders is `C:\Program Files\CIMSLab`.

Folder	Required Permissions
`Server`	Read & Execute
`Server\Web\temp`	Full Control
`Server\Reports\Published`	Read & Execute, Write
`Admin`	Read & Execute

If anonymous access is enabled for IIS, the user is `IUSR_computername` and that user name must be provided with these permissions. If Windows authenticated access is enabled, each Windows user that will be accessing the Web application must be provided with these permissions.

Note • **If the user is** `IUSR_computername` **and you entered the correct** `IUSR_computername` **account during installation, CIMS Server automatically sets the folder security permissions for the user. See** *Enter the IIS Web User Name* **on page 2-24.**

Enable Secure Sockets Layer (SSL) for the
CIMS Server Web Reporting Web Site (Optional)

CIMS Server provides an optional auto logon feature that enables users to access the CIMS Server Web Reporting Web site without entering a user ID and password (see *Web Settings* on page 3-49). If you use this feature, Secure Sockets Layer (SSL) is not needed.

If you do not use the auto logon feature, you can enable SSL to protect the user ID and password needed to access the Web site. SSL is a protocol for ensuring security and privacy in internet communications via encryption. When SSL is enabled, `https://` rather than `http://` appears in the URL when a user accesses the Login page of the CIMS Server Web Reporting Web site.

To set up and enable SSL for the Web site, you need to first obtain a SSL certificate from a third-party certificate authority and install the certificate for the site. For the steps required to obtain and install the certificate, refer to the Microsoft Knowledge Base Article 298805.

Once you have installed the SSL certificate, complete the following steps to enable SSL for the login ID and password and then restart IIS.

In the IIS Manager Window:

1 Navigate to **Default Web Site** and expand it.

2 Right-click the `Secure` folder, and then click **Properties**.

3 On the **Directory Security** tab, click **Edit** in the **Secure communications** area.

4 In the Secure Communications dialog box, select the **Require secure channel (SSL)** check box, and then click **OK**.

In CIMS Server Administrator:

1 Click **System Administration** ▶ **Configuration Information** ▶ **Web tab** ▶ **General subtab**.

2 Select the **Secure Login** check box.

3 If you are using an SSL port other than the default port 443 for the Web site, type the port number in the **Secure Port** check box.

4 Click **OK** when you are finished.

Set Up SQL Server Reporting Services

Note • **This section is applicable only if you selected SQL Server Reporting Services when you initialized the CIMS Server database.**

To use SQL Server Reporting Services with CIMS Server, you need to perform the following configuration steps in the order presented.

Make sure that you have installed Reporting Services as described in *Installing SQL Server Reporting Services* on page 2-18.

Enter the Reporting Services Report Server URL

The URL for Reporting Services Report Server must be entered as a configuration option. From the CIMS Server Administrator main Window, click **System Administration** ▶ **Configuration Information** to open the Configuration dialog box and then click the **Web** tab. The URL is entered in the **Report Server URL** box.

If you are upgrading from a previous CIMS Server release, the place holder ServerName appears in the URL (e.g., http://ServerName/ReportServer). Change ServerName to the name of the server that Reporting Services resides on.

If you are installing CIMS Server for the first time and have initialized the database, the correct URL will appear in the **Report Server URL** box if Reporting Services is on the local server.

If Reporting Services is not found on the local server, the **Report Server URL** box is blank and you need to type the URL for the remote server.

Note • **The Report Server URL box will also be blank if CIMS Server Administrator could not connect to Reporting Services on the local server during initialization. For example, IIS or Report Server was not running.**

Configure Reporting Services With CIMS Server Administrator

CIMS Server Administrator must perform certain configuration tasks in Reporting Services. If CIMS Server Administrator is able to connect to Reporting Services on the local server, these configuration tasks are performed during the CIMS Server database initialization process.

If CIMS Server Administrator is unable to connect to Reporting Services, either because Reporting Services is installed on a remote server or another issue is preventing connection, the following message appears during initialization:

You need to correct the issue and then click **System Administration** ▶ **Reporting** ▶ **Configure Reporting Services with CIMS Administrator.**

Set IIS User Authentication for Report Manager and Report Server

As described in *Set the User Authentication Method for the Web Sites* on page 2-67, CIMS Lab strongly recommends that you set Integrated Windows authenticated access for the IIS Default Web Site and its virtual directories (which include the Reporting Services Reports and ReportServer virtual directories). Because Reporting Services can be installed on any server, Reports and ReportServer may be on the Web server or another server.

Install CIMS Report Component on the Reporting Services Server (If Reporting Services and the Web Server are on Separate Servers)

CIMS Report Component contains CIMS components required by SQL Server Reporting Services. CIMS Report Component is installed by default when you install the CIMS Server components on the Web server. If Reporting Services and the Web server are on separate servers, you need run the `CIMSRSLibSTD.msi` file to install CIMS Report Component on the Reporting Services server.

You can find the `CIMSRSLibSTD.msi` file in the following locations:

■ In the `...CIMSLab\Redist\CIMSWebRsReports` folder.

■ On the CIMS Product CD or FTP site in the `CIMSServer\CIMS MSRS Additional Files` folder.

■ On the CIMS Server Product Downloads page on the CIMS Lab Web site.

When you run the `CIMSRSLibSTD.msi` file, the CIMS Report Component DLL (`CIMSRSLibSTD.dll`) is installed in the Report Server `bin` folder.

Create a Role in Reporting Services

Reporting Services uses a role definition to define which tasks a user is allowed to perform in connection with a folder, report, or other item. In Reporting Services Report Manager, you need to create one role definition for all CIMS Server Web Reporting users and set the user options for that role as described in the following sections.

To create a role:

1 Start Report Manager.

If Reporting Services is installed on a remote server, you must access Report Manager through your Web browser using the Report Manager URL. For example:

```
http://roca/Reports
```

If Reporting Services is installed on the local server, you can use the URL or you can click **Start ▶ Programs ▶ Microsoft SQL Server ▶ Reporting Services ▶ Report Manager**.

Note • **If you receive a message stating that the report server cannot decrypt the symmetric key when you try to start Report Manager, follow the steps in** *Report Server cannot decrypt the symmetric key message appears* **on page 8-12.**

---

2 Click **Site Settings** in the upper right corner of the Report Manager home page.

3 On the Site Settings page, click **Configure item-level role definitions** under **Security**.

4 On the Item-Level Roles page, click **New Role**.

5 On the New Role page, do the following:

- In the **Name** box, type a name for the role. The name `CIMSUser` is used in this guide, but you can use any name.

- In the **Description** box, type a description for the role. For example, `Role used for CIMS users to view/deploy reports`.

- Click the following tasks:

  - Manage data sources

  - Manage folders

  - Manage reports

  - Manage resources

  - View reports

  - View resources

6 Click **OK**.

The role is saved to the Reporting Services Report Server database. The role name and description appears on the Item-Level Roles page as shown in example Figure 2-26.
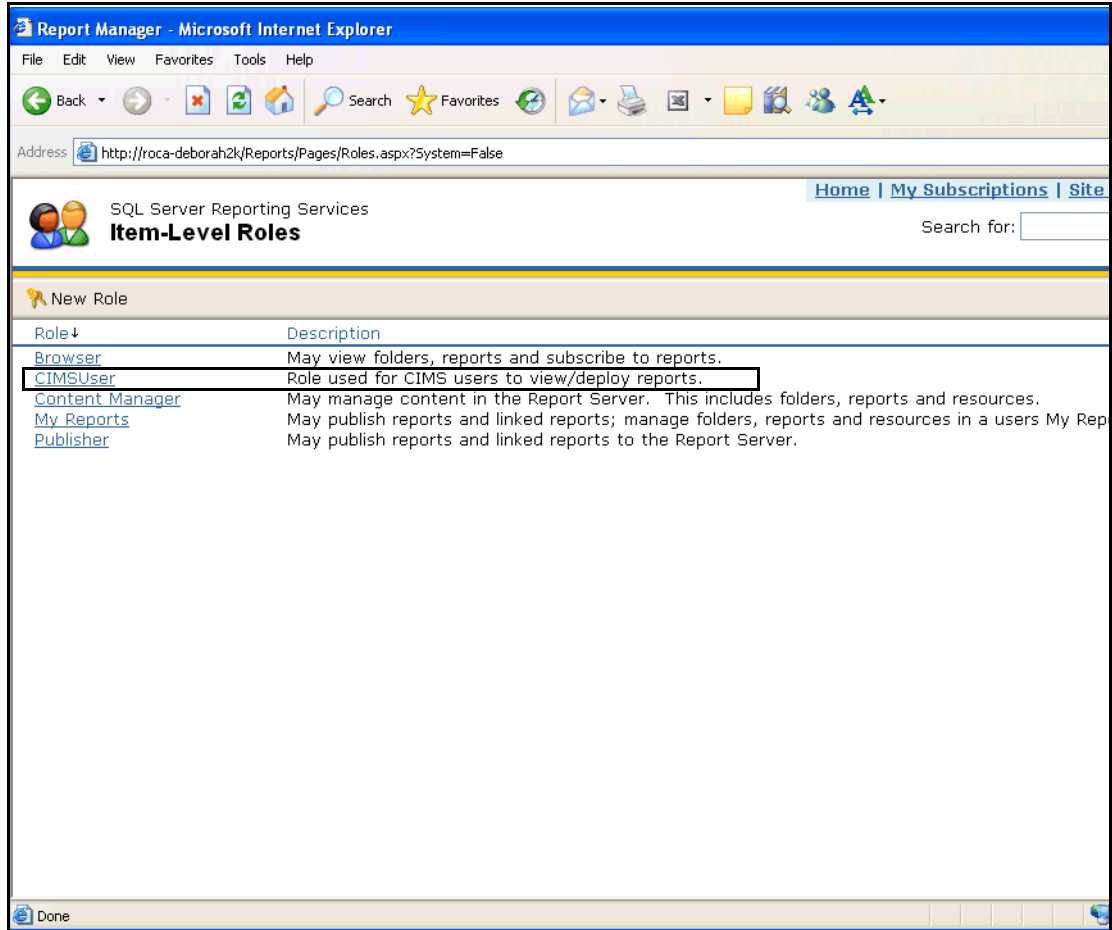
Figure 2-26 • Report Manager Item-Level Roles Page

Assign Users to the CIMSUser Role

The users that you can add to the `CIMSUser` role are dependent on whether you are running Reporting Services on the Web server or another server.

■ If you are running Reporting Services on the Web server, you can add the following local Windows user account to the role. This account enables all users to access Reporting Services.

• *computername*`\ASPNET` (Windows 2000)

Or

• `NT AUTHORITY\NETWORK SERVICE` (Windows 2003)

■ If you are running Reporting Services on a server other than the Web server, you cannot use the local user account `ASPNET` or `NETWORK SERVICE`. In this situation, you need to do the following:

1 On the Web server, add a local Windows user account named `CIMSUser` to be used for Reporting Services. Assign a password of `password` to the user. Make sure that you *disable* the option to change the password at next logon and *enable* the password never expires option.

2 In the `...CIMSLab\Server\Web\CIMSReporting\Web.config` file on the Web server, add the following after the end of the `authorization` element:

```
<authorization>
        <allow users="*"/> <!-- Allow all users -->
            <!--  <allow     users="[comma separated list of users]"
                            roles="[comma separated list of roles]"/>
                <deny     users="[comma separated list of users]"
                            roles="[comma separated list of roles]"/>
            -->
</authorization>
<identity impersonate="true" userName="CIMSUser" password="password"/>
```

Where `password` is the actual password for `CIMSUser`, not a placeholder.

Note • The updated `Web.config` file *will not* be overwritten when you upgrade to a new release of CIMS Server.

---

3 Assign the following security permissions for `CIMSUser` account to the folders shown:

• `Full Control    ...WINDOWS\Microsoft.NET\Framework\v1.1.4322\Temporary ASP.NET Files`

• `Read and Write  ...Program Files\CIMSLab\Server\ReportsMSRS`

4 On the server running Reporting Services, create a user account `CIMSUser` with the password `password`.

5 Add the user account `CIMSUser` to the `CIMSUser` role (see *To assign users to a role:* on page 2-76).

6 Make sure that IIS is set for Integrated Windows authentication on both the Web Server and the server running Reporting Services. If you are using anonymous access, contact CIMS Lab.

To assign users to a role:

1 On the Report Manager home page, click the `CIMSReporting` folder. This is the folder that contains the CIMS reports.

2 On the CIMSReporting page, click the **Properties** tab.

3 Click the **Security** link in the left frame.

4 Click **New Role Assignment**. (If **New Role Assignment** does not appear immediately, click **Edit Item Security**, and then click **OK** in the message box.)

5 In the **Group or user name** box, type `CIMSUser`.

6 Select the check box for the role that you created in *To create a role:* on page 2-73.

7 Click **OK**.

The user is saved to the Reporting Services Report Server database. The user name and role appears on the **Properties** tab as shown in example Figure 2-27.
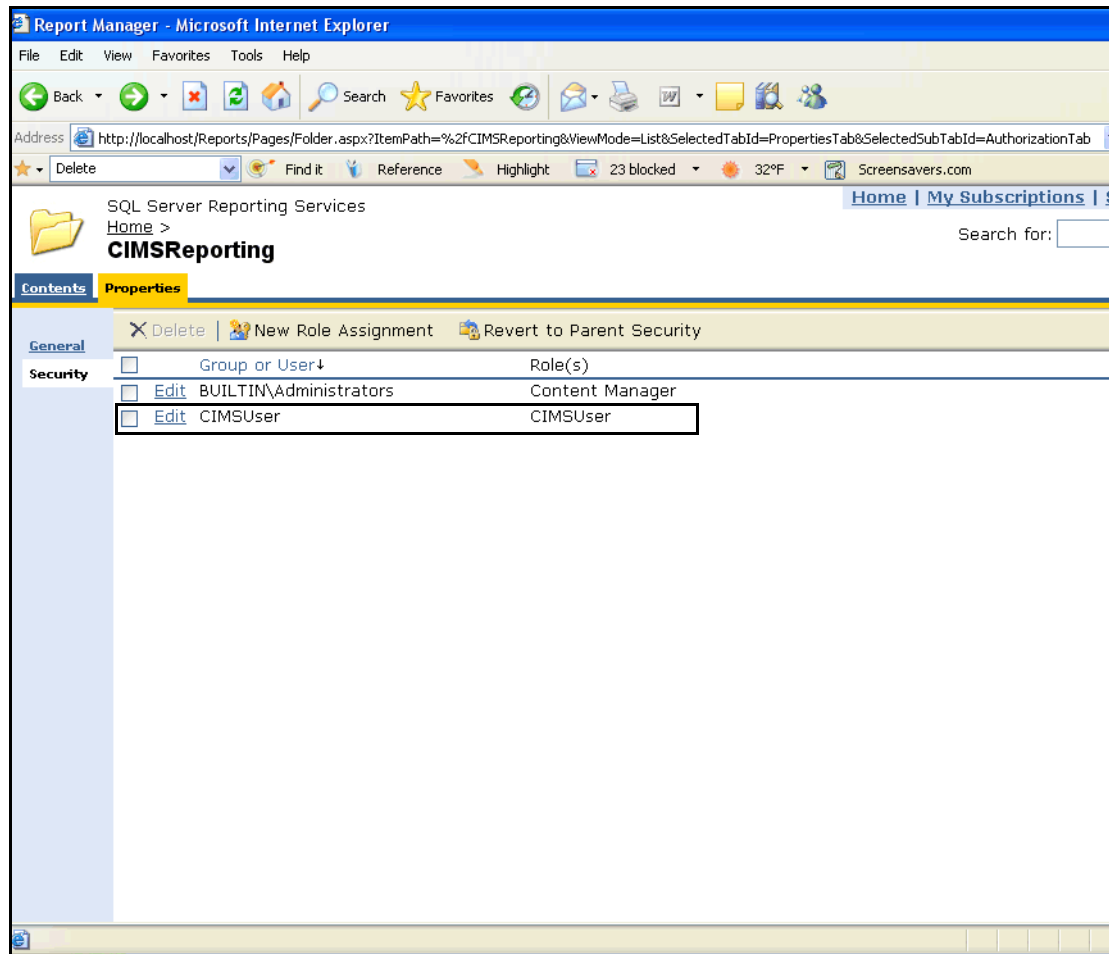
Figure 2-27 • Report Manager Properties Tab

Configure Crystal Reports Server

Note • This section is applicable only if you selected Crystal Reports XI when you initialized the CIMS Server database.

This section provides information to enable you to quickly configure Crystal Reports Server to work with CIMS Server. If you want more detailed information about configuring Crystal Reports Server, refer to the documentation that accompanies the product including the *BusinessObjects Enterprise 11 Administrator's Guide*.

To use Crystal Reports XI with CIMS Server, you need to add CIMS users as Crystal Reports Server users and deploy CIMS reports to Crystal Reports Server. CIMS Server Administrator provides a wizard that enables you to perform these steps easily as described in *Configuration in CIMS Server Administrator:* on page 2-78.

Before you run the wizard in CIMS Server Administrator, CIMS Lab recommends that you start BusinessObjects Enterprise Central Management Console and perform the steps in *Configuration in BusinessObjects Enterprise Central Management Console:*. (Crystal Reports Server is a component of BusinessObjects Enterprise.) Detailed instructions for using Central Management Console are provided in the application's Help files and in the *BusinessObjects Enterprise 11 Administrator's Guide*.

Configuration in BusinessObjects Enterprise Central Management Console:

1 To log on to the Central Management Console, open your Web browser and go to the following page:

    `http://webserver/businessobjects/Enterprise11/WebTools/adminlaunch/default.aspx`

   Where `webserver` is the name of the Web server. If you changed this default virtual directory on the Web server, you will need to type your URL accordingly.

2 On the BusinessObjects Enterprise Administration Launchpad page, click **Central Management Console**.

   The Central Management Console Log On page appears.

3 Type `Administrator` in the **User Name** box. This default account does not have a password until you create one.

4 Click **Enterprise** in the **Authentication Type** list.

5 Click **Log On**.

6 From the Central Management Console home page, do the following:

- The default administrator account for Crystal Reports Server is `Administrator` with no password. You can use this default account for CIMS Server; however, CIMS Lab recommends that you assign a password for the account as follows:

  a Click **Users**.

  b On the All Users page, click the **Administrator** account.

  c Set a password for the `Administrator` account.

  If you do not want to use the `Administrator` account, you can click **New User** on the All Users page to create another account and password for use by CIMS Server.

- The user password requirements (e.g., number and type of characters) differs between CIMS Server and Crystal Reports Server. You will receive an error message when you try to add a password in CIMS Server Web Reporting or CIMS Server Administrator that does not match the requirement for Crystal Reports Server. To avoid this message, you can change the password restrictions in BusinessObjects Enterprise Central Management Console as follows:

  a From the Central Management Console home page, click **Authentication** and clear the restriction check boxes on the Authentication page.

  b Click **Update**.

Configuration in CIMS Server Administrator:

1 In the CIMS Server Administrator main window, click **System Administration ▸ Reporting ▸ Configure BusinessObjects Enterprise Server**.

2 When the Configure BusinessObjects Enterprise Wizard appears, click **Next**.

3 Enter the following, and then click **Next**.

- **Enterprise Server Name.** Type the name of the server running Crystal Reports Server.

- **User Name.** Type the default user account `Administrator` or the user account that you created for CIMS Server.

- **Authentication Type.** If you are using the default `Administrator` account, click **Enterprise**. If you are using another account, click the applicable authentication type (**Enterprise** or **Windows**).

- **Password.** Type the password for the account.

4 Type a name for the BusinessObjects Enterprise user group for CIMS users or accept the default (CIMS Users), and then click **Next**.

5 Type a name for the BusinessObjects Enterprise folder in which CIMS reports will be deployed, or accept the default (CIMS Reports). Click **Next**.

6 CIMS Server provides an optional auto logon feature that enables users to access the CIMS Server Web Reporting Web site without entering a user ID and password (see *Web Settings* on page 3-49). If you want to use this feature, click **Single sign-on is enabled**. Otherwise, the auto logon feature will be disabled in CIMS Server Administrator. That is, the setting in the **Single sign-on is enabled** check box controls the setting of the **Enable Intranet Auto Logon** check box in the Configuration dialog box.

7 In the **CIMS Users** box, click the CIMS users that you want to include as Crystal Reports Server users, and then click **Add to move the users to the appropriate tab in the BusinessObjects Enterprise Users** box. Note that depending on when you run the wizard, the CIMS user `Admin` may be the only user that appears in the **CIMS Users** box (see *Notes About Using the Configure BusinessObjects Enterprise Wizard* on page 2-80).

The tab or tabs that appear for adding the users depends on the type and number of licenses that you purchased for Crystal Reports. The type and number of licenses available appear in blue on the line that begins with **Enterprise Licenses**. If you are licensed for named users, the number of unassigned named user licenses available is provided below the **Enterprise Licenses** line.

- If Crystal Reports is licensed for named users, the tab **Named** appears in the **BusinessObjects Enterprise Users** box. Add the CIMS users that you want to specify as named users (up to the maximum number of licensed named users allowed). If you do not have a named users or processor license, this tab does not appear.

- If Crystal Reports is licensed for concurrent users, the tab **Concurrent** appears in **BusinessObjects Enterprise Users** box. You can add or remove as many CIMS users from this tab as you want to share concurrent licenses. If you do not have a concurrent users license, this tab does not appear.

- If Crystal Reports is licensed for processor, the tab **Named** appears in the **BusinessObjects Enterprise Users** box. Add the CIMS users that you want to specify as named users (up to the maximum number of licensed named users allowed). In this situation, the **Concurrent** tab does not appear.

Note • **You can also use the Configure BusinessObjects Enterprise Wizard to remove CIMS users from Crystal Reports Server.**

---

8 Click **Finished**.

9 Click **OK** in the configuration ran successfully message box, and then click **OK** to close the wizard.

Notes About Using the Configure BusinessObjects Enterprise Wizard

■ The wizard is intended to provide an easy-to-use interface that enables you to access Crystal Reports Server to perform the basic configuration required to run CIMS reports. You can perform the same steps using the BusinessObjects Enterprise Central Management Console.

■ The wizard is intended to deploy CIMS users and reports to Crystal Reports Server in the following situations:

• You are setting up CIMS Server for the first time.

• You have upgraded from an earlier release of Crystal Reports to Crystal Reports XI.

• You have changed the Crystal Reports Server account that you were previously using for CIMS Server.

After using the wizard to initially deploy CIMS users and reports, you will be able to add users and reports to Crystal Reports Server when you are adding users or reports in CIMS Server Administrator.

■ When you use the wizard to add CIMS users to Crystal Reports Server, the users' passwords are not saved in the Crystal Reports Server database. To update the passwords in Crystal Reports Server, you need to do the following for each CIMS user:

1 Log on to the CIMS Server Web Reporting Web site using the CIMS user ID with the password `password`. Logging on the Web site is discussed in *Start CIMS Server Web Reporting*.

2 At the prompt to change the password, type a password. You can use the user's previous password or choose a new password.

Start CIMS Server Web Reporting

1 In your Web browser, enter the address for the Web server. This is the server that you set up in *Set Up the Web Server* on page 2-66.

2 Click **Login** to open the Login page.

3 Type the user ID `admin` and the password `password`, and then click **OK**. This is a default user and password created by CIMS Server (see *About Users and Groups* on page 2-82).

If you are using Crystal Reports XI, you will be prompted to change the password. You can type a new password or you can type in `password` if you want to continue using this password. Passwords are alphanumeric and case-sensitive and can be a maximum of 16 characters.

Note • **You can enable the auto logon feature that allows users to access CIMS Server Web Reporting without entering a user ID and password. For more information,** see *Web Settings* **on page 3-49.**

If you have successfully loaded sample data from the `Processes` folder, you should be able to create reports from the **Reports ▸ Run Reports** menu (see Figure 2-28). For instructions, refer to the *CIMS Server Web Reporting User's Guide*.
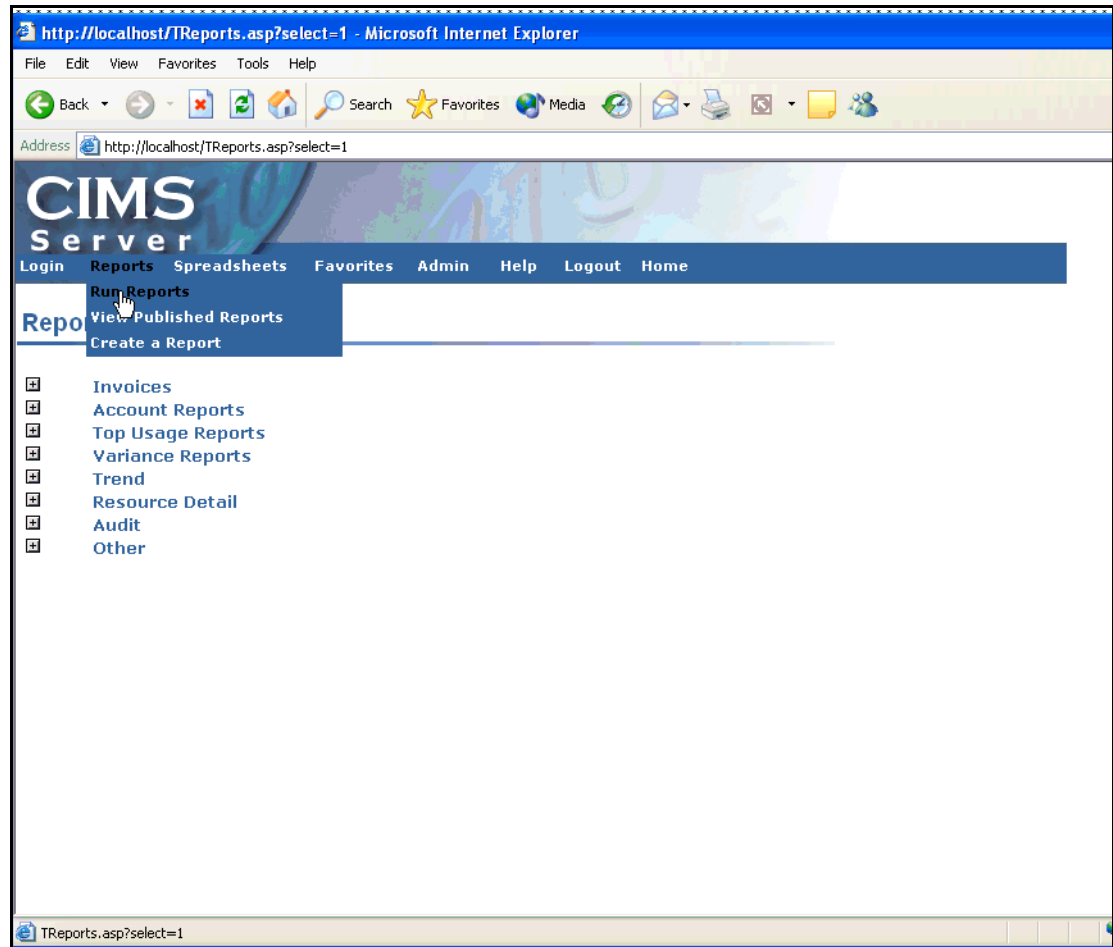
Figure 2-28 • CIMS Server Web Reporting—Reports Menu

Note • If you are using Crystal Reports for Web reporting, you can select the Crystal Report viewer that you want to use to view reports (see *Web Settings* on page 3-49). If you are using Crystal Reports 9, 10, or XI, the default is the HTML viewer. If you are using Crystal Reports 8.5, the default is the ActiveX viewer.

If you select the ActiveX or Java viewer, you will receive a warning message asking if you want to install and run Crystal Smart Viewer for ActiveX or Java when you attempt to run a report after installing CIMS Server for the first time. Click Yes. It is also advisable that you select the Always trust content from Crystal Decisions, Inc check box.

About Users and Groups

A user is an individual with access rights to CIMS Server Web Reporting. Each user can belong to only one user group. Users are granted the rights and privileges granted to the group. This system of users and groups allows you to control which reports a user can access, the clients that the user can view in reports, and the administrative privileges for the user.

When you initialized the database (see page 2-57), CIMS Server added the default administrator user `admin` that belongs to the user group `Admin`. The group `Admin` has administrative privileges in CIMS Server Web Reporting and can view all reports and clients.

For instructions on how to create users and groups, see *Working With Users and Groups* on page 3-28.

Troubleshooting

For troubleshooting information, see Chapter 8.

Setting Up and Starting CIMS Web Console

CIMS Web Console is a Web-based application that provides an interface for creating job files, viewing job log files, and performing some CIMS Server administration tasks. CIMS Web Console is a beta release in CIMS Server 4.3. For more information about this application, contact CIMS Lab.

CIMS Web Console requires a CIMS user ID to access the application. The ID must belong to a user group that has CIMS Web Console access enabled (see *Defining User Groups* on page 3-33).

Configuring IIS for Apache Tomcat

CIMS Web Console uses Apache Tomcat, a servlet container for Java Servlet and JavaServer Pages (JSP) technologies. To configure IIS for use with Tomcat, you need to do the following depending on the Microsoft Windows version that you are using.

For Microsoft Windows 2000 Server:

1 In IIS Manager, navigate to the **Default Web Site**.

2 Right-click **Default Web Site**, and then click **Properties.**

3 In the Properties dialog box, click the **ISAPI Filters** tab.

4 On **ISAPI Filters** tab, click **Add**.

5 In the Filter Properties dialog box, type the filter name `jakarta`, and then click **Browse**.

> **Note** • **Make sure that you type** `jakarta` **in lowercase as shown.**

6 Browse to the folder `...CIMSLab\Server\Web\Tomcat\bin\win32`, click `isapi_redirector.dll`, and then click **Open**.

The path to the DLL appears in the **Executable** box in the Filter Properties dialog box.

7 Click **OK** until the Filter Properties and Properties dialog boxes close.

8 Restart IIS.

For Microsoft Windows Server 2003:

1 Complete the steps to set the ISAPI filter as described in *For Microsoft Windows 2000 Server:* on page 2-82. (Do not restart IIS until you complete the following steps.)

2 In IIS Manager, navigate to and click **Web Server Extensions.**

3 Click **Add a new Web service extension**.

4 In the New Web Service Extension dialog box, type the extension name `jakarta`, and then click **Add**.

Note • **Make sure that you type** `jakarta` **in lowercase as shown.**

---

5 In the **Add file** dialog box, click **Browse**.

6 Browse to the folder `...CIMSLab\Server\Web\Tomcat\bin\win32`, click `isapi_redirector.dll`, and then click **Open**.

The path to the DLL appears in the **Path to file** box in the **Add file** dialog box.

7 Click **OK** to close the **Add file** dialog box.

8 In the New Web Service Extension dialog box, select **Set extension status to Allowed**, and then click **OK**.

The extension jakarta appears in the Web Service Extension list with a status of Allowed.

9 Restart IIS.

Starting CIMS Web Console

Note • **To start CIMS Web Console, you must have job log files in XML format. To set the file format for job log files, refer to the** *CIMS Data Collectors for Microsoft Windows Installation and User Guide.*

You can start CIMS Web Console in either of the following ways:

■ From the Web browser, type `http://servername/CIMSAdmin/ ListJobRunnerJobs.faces`, where `servername` is the Web server name.

■ From CIMS Server Web Reporting, click **Admin ▶ Web Console**. Note that the **Web Console** link appears only if the CIMS user ID that is used to log on to Web Reporting belongs to a user group that has CIMS Web Console access enabled.

Logging On to CIMS Web Console

By default, auto logon is enabled for the CIMS Web Console. The auto logon feature for CIMS Web Console is independent of auto logon for other CIMS Web applications.

To enable manual log on, you need to change `require.login=false` to `require.login=true` in the `cims.properties` file. If you installed CIMS Server in the default location, this file is in `C:\Program Files\CIMSLab\Server\Web\Tomcat\webapps\ CIMSAdmin\WEB-INF\conf`.

Moving and Resizing Dialog Boxes

You can move and resize the dialog boxes in CIMS Server Administrator. To move a dialog box, simply drag the box. To resize the box, point to the horizontal or vertical edge of the box. When the double arrow appears, click the edge of the box and drag it to the size that you want.

To return a dialog box to its original position and size, click **View ▶ Reset Form Position to Default** where this command is available. Where this command is not available, the dialog box returns to its original location and size when it is closed and reopened.

Viewing Online Help

Press <F1> to view context-sensitive online help in CIMS Server Administrator.

Downloading Product Updates

You can download product updates by visiting the CIMS Lab Web site (http:// www.cimslab.com) and clicking **Customer Area ▶ Product Updates**. Note that you need to provide your CIMS Server license key as a password.

3

Setting Up the System

This chapter describes how to use CIMS Server Administrator to set up the CIMS Server system, including defining the account code structure, entering rates and rate groups, creating users and groups, and setting reporting options.

Setting Up the Account Code Structure

CIMS Server uses an account code to identify entities for billing and reporting. This code determines how CIMS Server interprets and reports input data.

One of the first steps in implementing CIMS Server is defining the account code structure. This structure defines the account code levels that appear on invoices and other reports.

For more information about account codes, see *Setting Up Account Codes and Performing Account Code Conversion* on page 6-39.

Account Code Structure Example

An account code can contain up to 128 bytes. The structure of the account code reflects the chargeback hierarchy for your organization arranged from highest to lowest level (e.g., company, division, department). You can define as many account code levels as necessary within the maximum available 128-byte field length.

For example, the following 17-byte account code contains four levels:

AABBBBCCCDDDDDDDD

Level 1, AA

Full Length = 2 bytes

Description = Company

Level 2, AABBBB

Full Length = 6 bytes

Description = Division

Level 3, AABBBBCCC

Full Length = 9 bytes

Description = Department

Level 4, AABBBBCCCDDDDDDDD

Full Length = 17 bytes

Description = User

To see how you would define this account code for CIMS Server, see Figure 3-3 on page 3-6.

Note • You can use business rules to map identifiers to applications in addition to or instead of business units, departments, cost centers, etc.

Defining the Account Code Structure

CIMS Server includes a default account code structure called Standard. Use this structure to define your account code.

If you need to create additional account code structures for reporting, see *Defining Alternate Account Code Structures* on page 3-8.

To create account code levels:

1 In the CIMS Server Administrator main window, click **Chargeback Administration** ▶ **Chargeback Table Maintenance** ▶ **Account Code Structure**.

The Account Code Structure List Maintenance dialog box appears as shown in Figure 3-1.
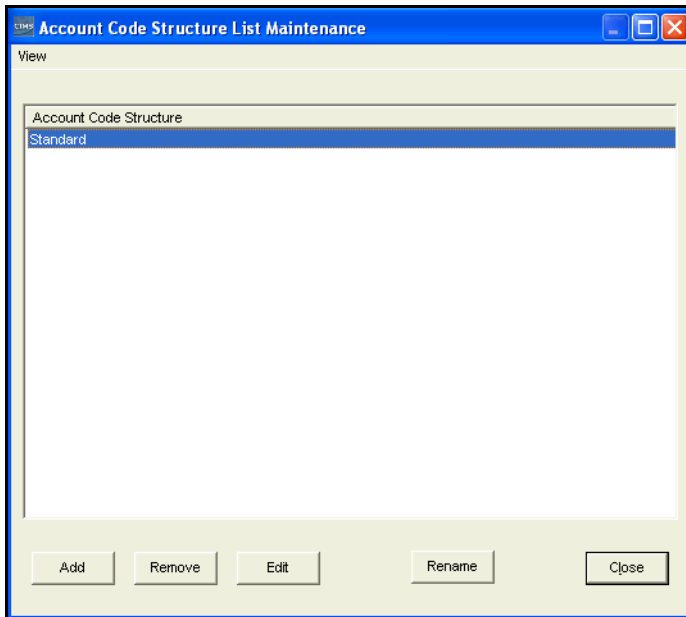
Figure 3-1 • Account Code Structure List Maintenance Dialog Box

2 Click **Edit**.

The Account Code Structure Maintenance dialog box appears as shown in Figure 3-2.
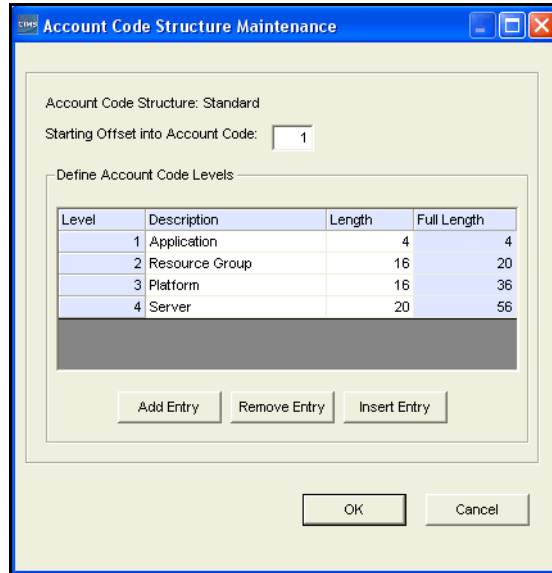
Figure 3-2 • Account Code Structure Maintenance Dialog Box

3 In the **Starting Offset into Account Code** box, accept the default to begin reporting from the first account code level or enter another starting position to begin reporting at another level (see *To set the starting offset number:* on page 3-7).

4 In the **Description** and **Length** boxes, edit the sample description and length for each level of the account code (maximum of 128 levels where each level is a length of 1). To add a level to the end of the account code structure, click **Add Entry**. To add a level above an existing level, click the level, and then click **Insert Entry**.

For example, the account codes structure shown in *Account Code Structure Example* on page 3-3 is entered as shown in Figure 3-3 on page 3-6.
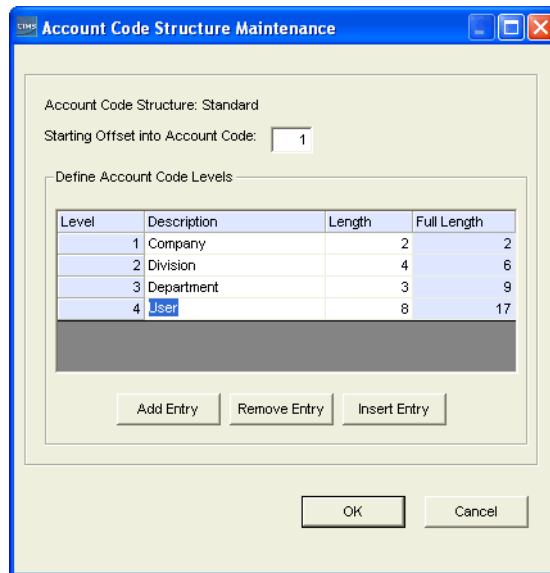
Figure 3-3 • Example Account Code Structure

Note the difference between the length and full length. The length is the number of bytes representing the specific entity. For example, the 4-byte BBBB in Level 2 represents the division.

The full length is automatically calculated and represents the total number of bytes for the level. For example, Level 2 includes 2 bytes for the company and 4 bytes for the division for a total of 6 bytes.

5 Click **OK** when you are finished.

To set the starting offset number:

The starting *offset* number determines the account code levels that are presented in reports. If you want to begin reporting from a level other than Level 1, enter the offset position for the level at which you want to begin reporting.

For example, if you have two user groups and one group wants to begin reporting at the User level shown in Figure 3-3 on page 3-6, you could set up a second account code structure with one level for User and an offset of 10 (the position where the User level begins in the account code structure) as shown in Figure 3-4.
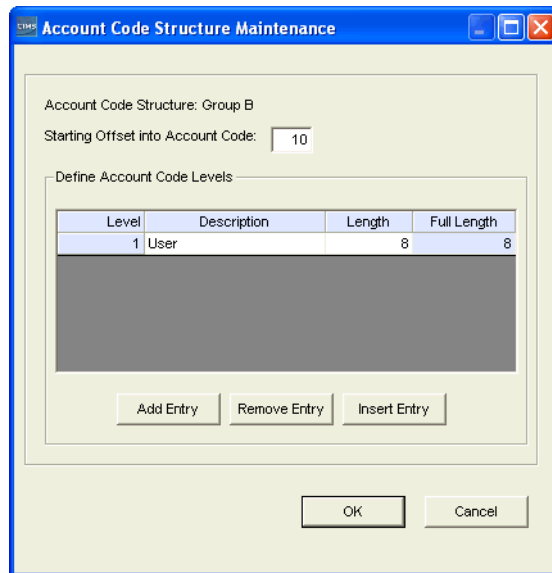
Figure 3-4 • Adding a Second Account Code Structure with Different Starting Offset

Note that in this situation, users in groups using this account code structure cannot view any account code levels other than User in CIMS Server Web Reporting. To avoid this restriction, your report developer could create a report for the User level rather than create an additional account code structure. For more information, contact CIMS Lab.

To remove an account code level:

Click the level, and then click **Remove Entry**.

Defining Alternate Account Code Structures

If needed, you can create additional account code structures. For example, you may need account codes with different levels or different offset positions.

Note • **You can assign multiple account code structures to a user group. This enables users of the group to select the account code structure that they want to use for reports on the CIMS Server Web Reporting Web site. For more information, see** *To add a user group:* **on page 3-33.**

To add an alternate account code structure:

1 In the CIMS Server Administrator main window, click **Chargeback Administration** ▸ **Chargeback Table Maintenance** ▸ **Account Code Structure**.

The Account Code Structure List Maintenance dialog box appears.

2 Click **Add**.

3 In the Add Account Code Structure dialog box, enter the name of the new account code structure (maximum of 32 characters), and then click **OK**.

The Account Code Structure Maintenance dialog box appears.

4 In the **Starting Offset into Account Code** box, accept the default or enter a starting offset number (see *To set the starting offset number:* on page 3-7).

5 Click **Add Entry** to add each level. (To add a level above an existing level, click the level, and then click **Insert Entry**).

6 Click **OK** when you are finished.

To rename an alternate account code structure:

1 Click the structure, and then click **Rename**.

2 In the Change Account Code Structure Name dialog box, enter the new name of the account code structure, and then click **OK**.

To remove an alternate account code structure:

Click the structure, and then click **Remove**.

Working With Rates

CIMS Server uses a rate to calculate a cost for each resource being reported. Rates are organized by rate codes, tables, and groups as described in the following sections.

Defining Rate Codes

The CIMS Server Resource (CSR) and CIMS Server Resource Plus (CSR+) files used by CIMS Server contain rate codes. Rate codes represent the resource units being reported (CPU time used, jobs started, data received or sent, disk space used, lines printed, etc.).

To enable CIMS Server to process and report the rate codes in the CSR or CSR+ file, the codes must be defined in the CIMSRate table. The definition for each rate code includes a monetary value for the rate code and other rate processing information.

CIMS Lab pre-loads the rate codes produced by many of the CIMS Data Collectors in the STANDARD rate table within the CIMSRate table. You can then use CIMS Server Administrator to modify rate code values, delete rate codes that you do not use, and/or add rate codes that are not included in the STANDARD table by default.

Note • **One of the settings associated with a rate code is the rate value. You can use CIMS Financial Modeler to calculate and and update rates for rate codes as described in** *Chapter 7, Working With CIMS Financial Modeler***.**

If you need to perform differential costing, for example, you want to charge Client A different rates than Client B, you can create other rate tables in addition to the STANDARD table (see *Defining Alternate Rate Tables* on page 3-15).

Each rate code belongs to one rate group. Rate groups are logical groups that are used for grouping resources on invoices and other reports and for drill down (detailed) reporting. For more information about rate groups, see *Defining Rate Groups* on page 3-17.

To add a rate code:

Note • **A rate table can contain a maximum of 999 rate codes.**

---

1 In the CIMS Server Administrator main window, click **Chargeback Administration ▸ Chargeback Table Maintenance ▸ Rate Codes**.

   The Rate Code List Maintenance dialog box appears.

2 If the **Rate Table** list contains multiple tables, click the rate table that you want to add the rate to. (If there are multiple tables, **All** appears in the **Rate Table** list by default.)

3 Click **Add Rate**.

4 In the Add New Rate Code dialog box, enter the new rate code (maximum of eight characters), and then click **OK**.

Important! • **Rate codes are case-sensitive. Type the rate code exactly as it appears in the CSR or CSR+ file.**

The Rate Code Maintenance dialog box appears as shown in example Figure 3-5.
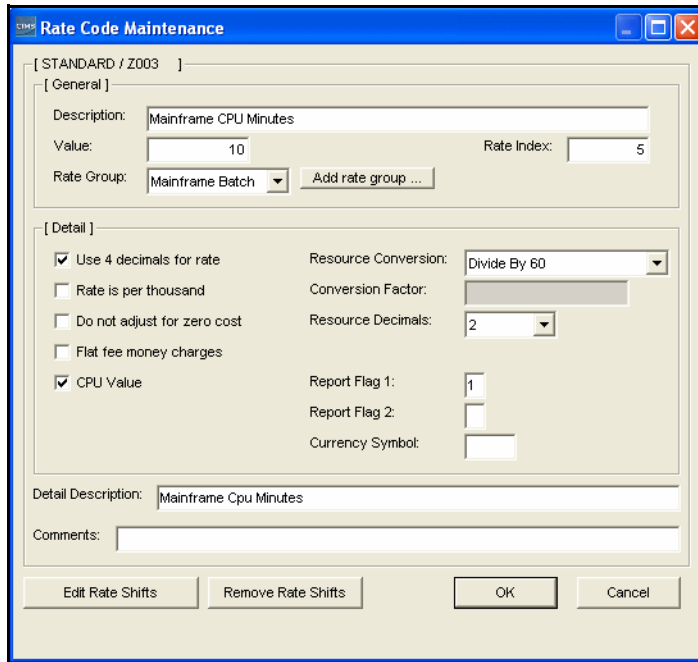
Figure 3-5 • Rate Code Maintenance Dialog Box

5 Edit the rate code settings as follows:

- **Description.** Enter a meaningful description of the rate code (maximum of 255 characters). The description appears on reports, graphs, and spreadsheets. CIMS Lab recommends that you include units of measurement (GB, MB, hours, minutes, etc.) as applicable.

- **Value.** Enter the amount to be charged for the consumption of the resource represented by this rate code. Keep in mind:

  - Rate value corresponds to the specified rate code.

  Note • **The following currency values are for example purposes only. CIMS Server supports all currencies.**

  - $25 is input as 25.

  - $1.25 is input as 1.25.

  - Negative values are preceded by a minus (e.g., –1).

  - Maximum Rate is 9999999v99999999.

  - The value is multiplied by the resource amount contained in matching CSR or CSR+ file. For example, if the rate code value is 25 and a matching resource file contains a value of 5 hours, then the total charge would be $125.

- **Rate Index.** The rate index defaults to the order in which the rate code appears in reports. You can change the order; however, you cannot enter an index number that is already in use.

- **Rate Group.** Click the rate group for the rate code or click **Add rate group** to create a new rate group. All rate codes must be assigned to a rate group.

Note • **You can also create rate groups and assign rate codes using the Rate Group Maintenance dialog box (see** *Defining Rate Groups* **on page 3-17).**

- **Use 4 decimals for rate.** This option determines the number of decimal digits that appear in the rate value in reports. If this check box is selected, the rate value includes four decimal digits. If this check box is not selected, the rate value includes eight decimal digits. For an example of rate values in a report, see page 4-13.

- **Rate is per thousand.** Select this check box to change the rate in reports from per resource unit to per thousand units.

- **Do not adjust for zero cost.** Select this check box if you do not want the associated rate code to be included in zero cost calculations.

About Zero Costing

It is possible within CIMS Server Web Reporting to enter a *target* recovery amount for the billing period. (See the *CIMS Server Web Reporting User's Guide* for information about the CIMS Server Zero Cost Center Invoice). CIMS Server then makes the appropriate adjustments to recover the targeted amount rather than the amount reflected by the standard multiplication of rate by resource units. This zero costing allows IT departments to recover a specified amount each billing period rather than show a profit or loss.

It is not always desirable to apply zero costing to all rates. Often, fixed cost items such as leased line charges, delivery services, or license fees are excluded from zero costing. The cost of these items is used as part of the overall calculation, but the specific rate is not adjusted.

- **Flat fee money charges.** Select this check box if the resource units for the rate code are considered a monetary amount rather than units of utilization. In this situation, the resource units and the charges are the same in reports.

Note • **When this check box is selected, the Value box does not appear and any rate value previously entered in the Value box is ignored. However, the value does appear in the rate column in CIMS standard reports. You can customize the standard reports to remove or modify this value as needed.**

- **CPU Value.** Select this check box to normalize CPU usage for this rate (see *Normalizing CPU Values* on page 6-55).

- • **Resource Conversion.** You can adjust the total resource units value in reports using the following conversion factors:

  - • **Default.** No conversion is performed.

  - • **Divide By or Multiply By.** The total resource units are divided or multiplied by a set conversion factor (e.g., Divide by 1000, Multiply by 60, etc.).

  - • **Multiply By Conversion Factor.** The total resource units are multiplied by the factor in the **Conversion Factor** box.

- • **Conversion Factor.** This box is available only when **Multiply By Conversion Factor** is selected in the **Resource Conversion** box. Type a number by which you would like to multiply the total resource units for the rate code. This factor can be up to 16 digits including a decimal.

- • **Resource Decimals.** This option determines the number of decimal digits that appear in the resource units value in reports (e.g., 0= 99, 4 = 99.9999). The default is two decimal digits. For an example of resource units in a report, see page 4-13.

- • **Report Flag 1 and 2.** The use of these boxes is user-specified. These boxes allow you to type a one-character value that you can use in custom reports.

- • **Currency Symbol.** The use of this box is user-specified. This box allows you to type a currency symbol (maximum of three characters) that you can use in custom reports.

- • **Detail Description.** The use of this box is user-specified. This box allows you to type a description of the rate code that you can use in custom reports. Maximum of 255 characters.

- • **Comments.** Type any comments regarding the rate code. Maximum of 255 characters.

6 Click **OK** when you are finished.

You cannot add duplicate rate codes to a rate table. Each rate code in a table must be unique. If you want to use the same rate code more than once, e.g., you charge different clients different rates for the same resource, you must create separate tables (see *Defining Alternate Rate Tables* on page 3-15).

Note • **Rates in the Rate Code List Maintenance dialog box are sorted by the index number. To sort the rates by rate code, rate group, description, etc., click the appropriate column header. To reverse the sort order, click the column header again.**

To edit a rate code:

1 Double-click the code, or click the code and then click **Edit Rate**.

The Rate Code Maintenance dialog box appears.

2 Follow the steps in *To add a rate code:* beginning with Step 5 on page 3-10.

To remove a rate code:

Click the rate code, and then click **Remove Rate**.

Setting Rate Shifts

Rate shifts allow you to set different rates based on the time of day. For example, if a user is using a computer's resources at 4 a.m., you might charge the user less than if he uses these resources at 1 p.m. By default, every rate code has one shift. If your CSR or CSR+ files contain multiple shift codes, you can define up to eight additional rate shifts for rate code for a total of nine shifts.

You can set rate shifts by clicking the **Edit Rate Shifts** button from either of the following locations:

■ From the Rate Code List Maintenance dialog box. First click the rate code that you want to apply rate shifts to.

■ From the Rate Code Maintenance dialog box for a specific rate code.

The Rate Shift Maintenance dialog box appears. Complete this dialog box as follows:

1 Click the **Rate Value** box next to the shift number and enter a monetary value. In the adjacent **Description** box, enter an optional short description of the rate shift. See example Figure 3-6.

Figure 3-6 • Rate Shift Maintenance Dialog Box

2 Click **OK** when you are finished.

Note • **To enable CIMS Server to use rate shift values to calculate costs for a rate code, you must have the Use Shift Codes option enabled in the Edit Process Definitions dialog box (see** page 6-33**). If you do not have this option enabled, the default rate shift 1 is used for processing regardless of the rate codes that appear in the CSR or CSR+ file.**

Removing Rate Shifts

Once you click **OK** in the Rate Shift Maintenance dialog box, the rate values for the shifts are applied as applicable when CSR or CSR+ files are processed. Therefore, if a rate shift value is set to 0, a rate of 0 will appear in reports for the applicable rate code and shift.

If you decide that you do not want to use rate shifts after you have saved them for a rate code, you can remove the shifts by clicking the **Remove Rate Shifts** button from either of the following locations:

■ From the Rate Code List Maintenance dialog box. First click the rate code that you want to remove the rate shifts from.

■ From the Rate Code Maintenance dialog box for a specific rate code.

Defining Alternate Rate Tables

If needed, you can create rate tables in addition to the STANDARD table. For example, you might have clients who are charged different rates for the same resource usage (the Finance department is charged $20 per hour of CPU usage while the Marketing department is charged $5 per hour). In this case, you could use the STANDARD table for the Finance department and create a second rate table with the same rate codes but different values for the Marketing department.

Note • **To use a rate table other than STANDARD for a client, you need to assign the rate table to the client in the Client Maintenance dialog box (see** *Defining Clients* **on page 3-20) and to select the Enable client search check box in the Process Definition dialog box for each process (see** page 6-35**).**

To add a rate table:

1 In the CIMS Server Administrator main window, click **Chargeback Administration ▸ Chargeback Table Maintenance ▸ Rate Codes**.

The Rate Code List Maintenance dialog box appears.

2 Click **Add Table** at the top of the dialog box.

3 In the Add New Rate Table dialog box, enter a name (maximum of eight characters), and then click **OK**.

The new rate table appears in the Rate Code List Maintenance dialog box.

4 To add rates to the table, follow the steps for adding a rate code in *To add a rate code:* on page 3-9.

To duplicate a rate table:

1 Click a table in the **Rate Table** list, and then click **Duplicate Table**.

2 In the Duplicate Rate Table dialog box, enter a name (maximum of eight characters), and then click **OK**.

The new rate table appears in the Rate Code List Maintenance dialog box. The new table contains all of the rate codes contained in the original rate table.

3 To edit the rates in the table, double-click the code, or click the code and then click **Edit Rate**, and follow the steps in *To add a rate code:* beginning with Step 5 on page 3-10.

To remove a rate table:

Click the table in the **Rate Table** list, and then click **Remove Table**.

WARNING • **When you remove a rate table, you lose all rate codes with their associated rates specific to that table.**

Synchronizing Rate Tables With CIMS Mainframe

If you are using CIMS Mainframe 12.1 or later in addition to CIMS Server, you can maintain the rate tables on the CIMS Mainframe system or on the CIMS Server system.

If you maintain the rate tables on the CIMS Server system, use the `ExportRatetoMainframe.wsf` script to create rate files that you can load into CIMS Mainframe. (For more information about this script, see page C-14). In this situation, the rate tables on the CIMS Mainframe system are considered secondary.

If you maintain the rate tables on the CIMS Mainframe system, use member `CIMSRTPR` in `CIMS.DATAFILE` to create the rate files that you can load into CIMS Server. In this situation, the rate tables on the CIMS Mainframe system are considered primary.

Sending Rate Tables to CIMS Server

On the CIMS Mainframe system, use member `CIMSRTPR` in `CIMS.DATAFILE` to unload the CIMS Rate file and create flat files that are sent via FTP to the CIMS Server application server. To write the files, customize the JCL in the members that control the FTP request including the `FTPID` and `FTPRATEP` members. These members control the FTP request to write the files.

To load the rate files into CIMS Server, see *Managing Database Tables* on page 5-11.

Getting Rate Tables from CIMS Server

On the CIMS Mainframe system, use member `CIMSRTSC` in `CIMS.DATAFILE` to get a file containing rate tables from CIMS Server and rebuild the CIMS Rate file in CIMS Mainframe. To get the file, customize the JCL in the members that control the FTP request including the `FTPID` and `FTPRATES` members. These members control the FTP request to get the file from the CIMS Server computer.

Defining Rate Groups

Tip • When working with rate groups, you can access commands for an item by clicking the appropriate button, or you can access the same commands by right-clicking the item.

Creating and using rate groups lets you create rate subtotals in reports, graphs, and spreadsheets. Grouping rates such as Mainframe charges, Windows charges, and UNIX charges allows reports to be summarized in a way that is meaningful. It also allows users to create reports based on grouping rates that have the same *identifier* or identifiers.

All rate codes must be assigned to a group. For more information, see *Adding an Unassigned Rate Code to a Rate Group* on page 3-19.

Note • It is recommended that you *do not* assign rate codes with different identifiers to the same rate group. Combining rate codes with different identifiers within the same group results in reporting anomalies.

Suggestion: Create a separate rate group for each resource file type. For example a UNIX charges group for UNIX resource files with the same identifiers. This ensures that the rate codes within the group have the same identifiers.

To add a rate group:

1 In the CIMS Server Administrator main window, click **Chargeback Administration ▸ Chargeback Table Maintenance ▸ Rate Groups**.

2 The Rate Group Maintenance dialog box appears displaying an expandable hierarchy of existing rate groups. Individual rate codes appear within each rate group. See example Figure 3-7 on page 3-18.
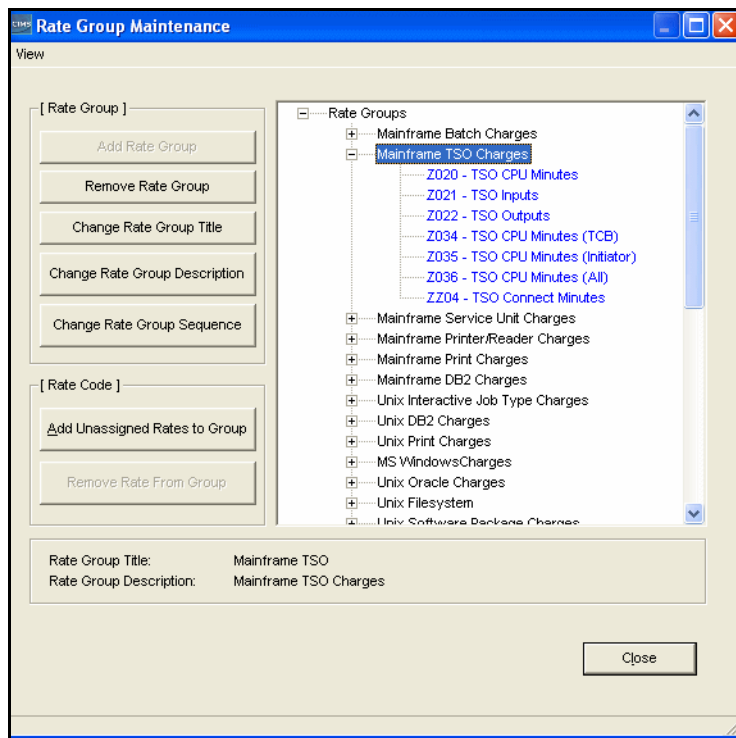
Figure 3-7 • Rate Group Maintenance Dialog Box

3 Click **Rate Groups** at the top of the group list (if it is not selected), and then click **Add Rate Group**.

4 In the Add Rate Group dialog box, enter a description of the rate group (maximum of 32 characters), and then click **OK**.

To remove a rate group:

Click the rate group, and then click **Remove Rate Group**. If the rate group contains rate codes, you must delete the codes before you can delete the group.

Changing the Rate Group Description and Title

When you add a rate group, the description and title default to the description that you assigned to the group. You can change both the description and title of the rate group. In most cases you do not need to change the title unless you require a shorter field length for custom reports. Standard reports show the description field, not the title field.

To change the rate group description:

1 Click the group and click **Change Rate Group Description**.

2 In the Change Rate Group Description dialog box, enter the new description of the rate group (maximum of 255 characters), and then click **OK**.

To change the rate group title:

1 Click the group and click **Change Rate Group Title**.

2 In the Change Rate Group Title dialog box, enter the new title of the rate group (maximum of 32 characters), and then click **OK**.

Changing the Rate Group Sequence

The sequence in which the rate groups appear in the tree is the sequence that the groups will appear in reports. You can sequence the rate groups in any order.

To change the group sequence:

1 Click **Change Rate Group Sequence**.

The Rate Group Display Sequence dialog box appears.

2 Click a group, and then click the up or down arrow to reposition the group.

3 Click **OK** when you are finished.

Adding an Unassigned Rate Code to a Rate Group

To add an unassigned rate code to a rate group:

1 Click the group, and then click **Add Unassigned Rates to Group**.

The Select Rate Code dialog box appears.

2 Choose the code or codes that you want to add, and then click **OK**.

Note • In most cases, rate codes are assigned to a rate group when the rate code is added (see *Defining Rate Codes* on page 3-9).

Moving an Assigned Rate Code to Another Rate Group

To move a rate code from one group to another, click the rate code that you want to move and drag it to the desired rate code description.

Removing a Rate Code from a Rate Group

To remove a rate code from a rate group, click the rate code, and then click **Remove Rate From Group**.

Working With Clients

Once you have created the account code structure (see *Setting Up the Account Code Structure* on page 3-3), you can assign descriptions for the clients represented by your structure. These descriptions appear in place of the client's account code in invoices and other reports. For example, if account code AABBBBCCC represents the Marketing department, you might assign the description Marketing Department for this code.

You can also specify the rate table used for the client and set up budget and contact and information.

> **Note** • **CIMS Server provides sample clients. You should remove these sample clients before adding clients for your organization (see *To remove a client:* on page 3-22).**

Defining Clients

To add a client:

1 In the CIMS Server Administrator main window, click **Chargeback Administration ▶ Chargeback Table Maintenance ▶ Clients**.

The Client List Maintenance dialog box appears as shown in example Figure 3-8.

> **Note** • **Clients in the Client List Maintenance dialog box are sorted by account code. To sort the clients by account name, rate table, etc., click the appropriate column header. To reverse the sort order, click the column header again.**
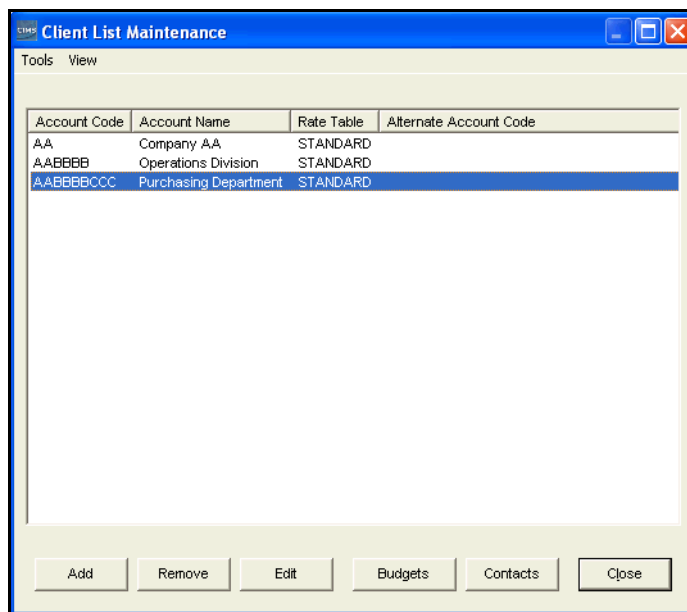
Figure 3-8 • Client List Maintenance Dialog Box

2 Click **Add.**

3 In the Add Account Code dialog box, enter the account code for the client (maximum of 128 characters), and then click **OK**. The Client Maintenance dialog box appears.

4 Edit the client settings as follows:

- **Account Name**. Enter the name of the client as you want it to appear in invoices and other reports. Maximum of 255 characters.

- **Alternate Account Code.** Enter an alternate account code if used for reporting to a General Ledger system or other types of reporting where the standard account code is different. Maximum of 128 characters.

- **Rate table.** If other than STANDARD, click the rate table used for calculating the client's charges. Alternate rate tables are used for clients who are charged different rates for the same resource usage. For example, the Finance department is charged $20 per hour of CPU usage, while the Marketing department is charged $5 per hour. For more information, see *Defining Alternate Rate Tables* on page 3-15.

- **Invoice Contact.** If a contact is available for this client, the contact appears in this list box (see *Defining Client Contacts* on page 3-25). If there are multiple contacts for this client, click the appropriate contact from the list.

- **Action Codes.** CIMS Server does not use action codes. These codes are strictly for reporting purposes and can be used in the custom reporting process for selecting data.

5 Click **OK** when you are finished.

An example of a configured Client Maintenance dialog box is shown in Figure 3-9.
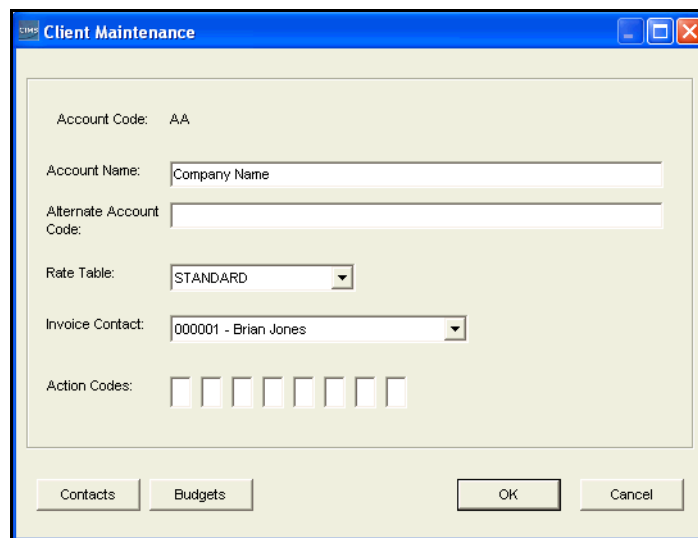
Figure 3-9 • Client Maintenance Dialog Box

For information on adding a budget and contact for the client, see *Setting Up Client Budgets* on page 3-22 and *Defining Client Contacts* on page 3-25.

To edit a client:

1   Double-click the client or click the client, and then click **Edit**.

The Client Maintenance dialog box appears.

2   Follow the steps in *To add a client:* beginning with

To remove a client:

Click the client, and then click **Remove**.

Setting Up Client Budgets

Using CIMS Server's powerful budgeting feature, you can establish budgets by amount or units for the individual resources used and/or all resources used by a client. These budgets allow users to report on client actual vs. budget information.

CIMS Server includes reports that you can use as templates to create custom account level and resource level budget reports for your organization. For more information about CIMS Server budget reports, see the *CIMS Server Web Reporting User's Guide*.

To create a budget:

1   In the CIMS Server Administrator main window, click **Chargeback Administration ▸ Chargeback Table Maintenance ▸ Clients**.

The Client List Maintenance dialog box appears.

2   Click the client that you want to establish a budget for, and then click **Budgets**.

The Client Budget Maintenance dialog box appears.

3   Edit the budget settings as follows:

- **Year.** Click the appropriate year. If the year is not listed, click **Budget ▸ Add Year**.

- **Overall Account Budget.** You can set both an overall account budget and budgets for individual resources.

  To set an overall budget for an account, click **Overall Account Budget**.

  To set a budget for individual resources, click **Budget ▸ Add Resource Budget** or right-click **Overall Account Budget**, and then click **Add Resource Budget**. The **Select Rate Codes** dialog box appears. Select the rate code or codes for the resources that you want, and then click OK. The rate codes appear under **Overall Account Budget**.

- **Budget Amount/Budget Units.** You can budget by the monetary amount of consumed resources (**Budget Amount**) or the unit amount of consumed resources (**Budget Units**). You can enter a total budget and a budget for each month (period) within the year.

  Enter the total budget amount or budget units for the year in the **Total** box and the budget amount for each period in the **Period** boxes (1 through 12/13). (To use 13 month periods, see page 3-27.)

- **Divide Total (Budget Amount and Budget Units).** Click **Divide Total** to divide the total budget amount of budget units by the number of periods and automatically populate the **Period** boxes with the result. Note that if you change a total, you must perform this step again.

- **Sum Periods (Budget Amount and Budget Units).** Click **Sum Periods** to add the amounts entered in **Period** boxes and automatically enter the sum in the **Budget Amount Total** or **Budget Units Total** boxes. Note that if you change the amount for a period or periods, you must perform this step again.

4 Click **Apply** to save the changes or click **OK** to save the changes and close the dialog box.

An example of a configured Client Budget Maintenance dialog box is shown in Figure 3-10. In this example, a budget is set for the resource represented by rate code Z003.

Figure 3-10 • Client Budget Maintenance Dialog Box

To remove a budget:

To remove all budget information for a year, click **Budget ▶ Remove Year**. This removes the overall budget and all individual resource budgets for the year selected in the **Year** box.

To remove an individual resource budget, click the budget, and then click **Budget ▶ Remove Resource Budge**t, or right-click the budget, and then click **Remove Resource Budget**. *The budget is removed from all years.*

Defining Client Contacts

You can create one or multiple contacts for each client. Contact information includes name, street and e-mail addresses, phone numbers, and department.

The first contact in the client contact list appears in CIMS Server standard invoices. However, you might develop custom reports that display multiple contacts.

To add a contact:

1 In the CIMS Server Administrator main window, click **Chargeback Administration ▸ Chargeback Table Maintenance ▸ Clients**.

The Client List Maintenance dialog box appears.

2 Click the client that you want to establish a contact for, and then click **Contacts**.

The Client Contact List Maintenance dialog box appears.

3 Click **Add**.

4 In the Client Contact Maintenance dialog box, edit the contact settings as follows:

- **Address tab.** Type the contact's name and company and e-mail addresses. You can type the street address on any address line or lines. However, if want to use the View Address Map button to view a map for the address, you need to enter the address in the following order:

    - Address Line 1: Street Address

    - Address Line 3: City, State, Zip

- **Phone tab.** Enter the contact's phone numbers.

- **Other tab.** Enter other contact information such as department, comments, and Web site URL.

5 Click **OK** when you are finished.

The contact appears in the Client Contact Maintenance dialog box with an index number. This number is a key that uniquely identifies the contact for reports.

To edit a contact:

Click the contact, and then click **Edit**.

To remove a contact:

Click the contact, and then click **Remove**.

Importing and Exporting Client Data

Client information is contained in the CIMS Client table. You can load and unload data to/from the CIMS Client table via a number of custom scripts that are provided with CIMS Server. For more information, see *Appendix C, Scripts* or contact CIMS Lab.

Setting Up a Calendar

CIMS Server Administrator includes a default calendar with the standard 12 monthly periods (the first day of the month to the last day) by year. Organizations using standard monthly/yearly periods do not need to change the calendar.

If you do not want to run billings using standard monthly/yearly periods, you can change the period start and end dates and optionally include 13 periods per year (see page 3-27).

Setting Up Calendar Information

1 Click **Chargeback Administration** ‣ **Chargeback Table Maintenance** ‣ **Calendar**.

The Setup Calendar dialog box appears as shown in example Figure 3-11.
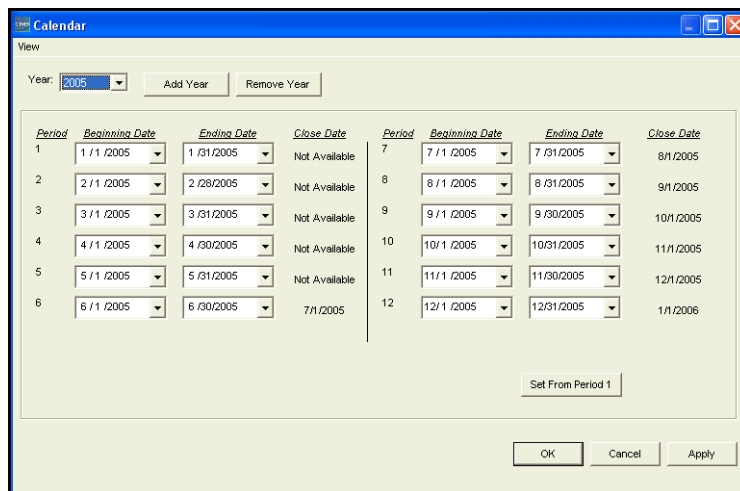
Figure 3-11 • Setup Calendar Dialog Box

2 Edit the calendar as follows:

- In the **Year** list, click the appropriate year if it is not displayed.

- Set the **Beginning Date** and **Ending Date** for each period as needed.

- To have all periods proceed sequentially from the first period, click **Set From Period 1**.

- To add a new year, click **Add Year**.

- To remove the currently displayed year, click **Remove Year**.

Note that the **Close Date** for the period appears if a day-of-month close date has been set (see page 3-44). The close date appears for the period in which it was set, the previous period, and future periods. In example Figure 3-11 on page 3-26, a first of the month close date was set in Period 7 (July). Therefore Period 6 and all future periods show a close date.

Note • **If you do not set a close date or set a specific close date rather than a day-of-month date, the Close Date column does not appear in the CIMSCalendar table.**

---

3 Click **Apply** to save the changes or click **OK** to save the changes and close the dialog box.

Using 13 Accounting Periods

If your organization uses 13 accounting periods, you can set this calendar format as follows:

1 In the CIMS Server Administrator main window, click **System Administration ▶ Configuration Information**.

2 In the Configuration dialog box, click the **Processing** tab.

3 On the **Options** subtab, select the **Use 13 Periods** check box, and then click **OK**.

Calendar Considerations

■ The maximum entries that CIMSAcct or CIMSBill reads from the CIMSCalendar table is 52. (See page A-14 for more information about the CIMSCalendar table.) Therefore, you need to delete periods from previous years as they pass.

■ The periods for a particular year must be entered in date sequence.

■ The CIMSCalendar table must have the current and previous periods defined.

Working With Users and Groups

A user is an individual with access rights to CIMS Web-based applications (i.e., CIMS Server Web Reporting, CIMS Financial Modeler, etc.). Each user can belong to only one user group. Users are granted the rights and privileges granted to the group.

In CIMS Server Web Reporting, this system of users and groups allows you to control the following:

■ The reports that a user can access in CIMS Server Web Reporting. A user can access only those reports that are assigned to the user's group.

■ The clients (account codes) that a user can view in reports. A user can view only those clients that are assigned to the user's group.

■ The administrative privileges for a user. A user assigned to a group with administrative privileges can update configuration and other information in CIMS Server Web Reporting.

In other CIMS Web applications, this system allows you to control who can access the applications.

Default Administrator User and Group

When you initialize the database during the setup process (see *Initialize the Database* on page 2-57), CIMS Server adds a default user and user group. This group has administrative privileges in CIMS Server Web Reporting and can view all reports and clients.

The ID for the default user is `admin` and the password is `password`. The ID for the default user group is `Admin`.

Defining Users

You can use CIMS Server Administrator to create and maintain user information such as e-mail address, ID, password, and other user-specific options.

To add a user:

1 In the CIMS Server Administrator main window, click **System Administration ▸ Users and Groups ▸ Users**.

The User List Maintenance dialog box appears as shown in example Figure 3-12 on page 3-29.
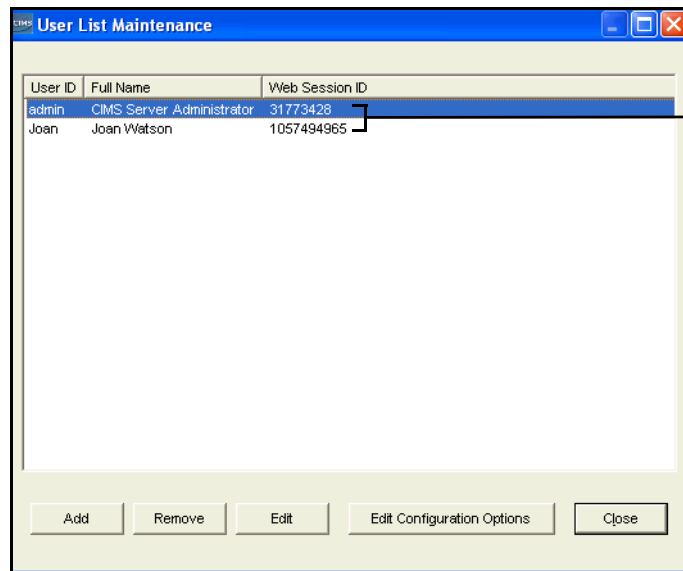
Figure 3-12 • User List Maintenance Dialog Box

2 Click **Add**.

3 In the Add New User dialog box, enter an ID for the user (maximum of eight characters) and the click **OK**. The User Maintenance dialog box appears.

4 Edit the user settings as follows.

- **Full Name**. Type the user's full name.

- **Email Address.** CIMS Server includes an automatic report distribution feature (see *Distributing Published Reports* on page 4-26). To enable the user to receive reports using this feature, type the user's e-mail address.

- **Display full path on Favorites page**. Select this check box to display the full path for published reports on the Favorites page of CIMS Server Web Reporting. For more information, refer to the *CIMS Server Web Reporting User's Guide*.

- **Display full path on Published Reports page.** Select this check box to display the full path for published reports on the Published Reports page of CIMS Server Web Reporting. For more information, refer to the *CIMS Server Web Reporting User's Guide*.

- **Crystal Viewer.** Click the Crystal viewer used for this user in CIMS Server Web Reporting. (To set this option for all users, see *Web Settings* on page 3-49.) If you are using SQL Server Reporting Services for reporting, leave this box set to **Default**.

   You can choose one of the following. For the advantages and disadvantages of each viewer, see page 3-49.

   - **Default.** This option uses the viewer set on the **Web** tab of the Configuration dialog box.

- **ActiveX.** This option works only in Internet Explorer.

- **Java using Browser JVM.** This option works in Internet Explorer or Netscape Navigator. This viewer requires the Java Virtual Machine. Because this viewer might be more difficult to set up, CIMS Lab recommends that you use the HTML or ActiveX viewer.

- **HTML.** This option works in Internet Explorer or Netscape Navigator.

- **Group.** Click the group that you want to add the user to or accept the default `Admin` group. Note that if you need to add a new group for the user, you can create the group and add the user as described in *Defining User Groups* on page 3-33.

- **Configuration Options Maintenance.** When you click this button, the User Configuration Options List Maintenance dialog box appears. You can add user configuration options that can be used for custom reports and Web pages in this dialog box. See *To add configuration options:* on page 3-56.

  CIMS Lab recommends that you consult technical support for assistance in adding user configuration options.

- **Domain Name/Domain User ID.** CIMS Server Web Reporting and the other CIMS Web-based applications provide an automatic logon feature. To enable a user to use this feature, you need to enter the user's Windows domain name and user ID. You also need to enable auto logon (see *Web Settings* on page 3-49) and to set IIS security for the CIMS Server Web Reporting Web site and any other CIMS sites to Integrated Windows authentication (see page 2-67).

  You can click **Browse** to select the domain and user from the Select Domain Name and User ID dialog box. To find a domain and user in the **Select Location** and **Select User** lists:

  a Type a complete or partial value in the text box and then click **Find** or use the scroll bar.

  b Click **OK** when you are finished.

- **New Password**. If you are not using the automatic logon feature for CIMS Web applications, use this box to enter a password for the user or to change an existing password as follows:

  a Type the password. The password is alphanumeric and case-sensitive and can be a maximum of 16 characters.

  b Click **OK**.

  c In the Confirm New Password dialog box, type the password again, and then click **OK**.

  d Click **OK** to confirm that the password has been changed.

If you are using Crystal Reports XI, note the following

- The user password requirements (e.g., number and type of characters) differs between CIMS Server and Crystal Reports Server. You will receive an error message when you try to add a CIMS user password that does not match the requirements for Crystal Reports Server. To avoid this message, you can change the password restrictions in BusinessObjects Enterprise Central Management Console as described in *Configuration in BusinessObjects Enterprise Central Management Console:* on page 2-77.

- When the user logs on to the CIMS Server Web Reporting Web site for the first time, the user will be prompted to change the password. The user can use the password entered here or choose a new password.

5 Click **OK** when you have finished editing the user settings. If you are using Crystal XI for reporting, a message appears asking if you would like to add the user to BusinessObjects Enterprise Manager. Click **Yes**.

An example of a configured User Maintenance dialog box is shown in Figure 3-13.
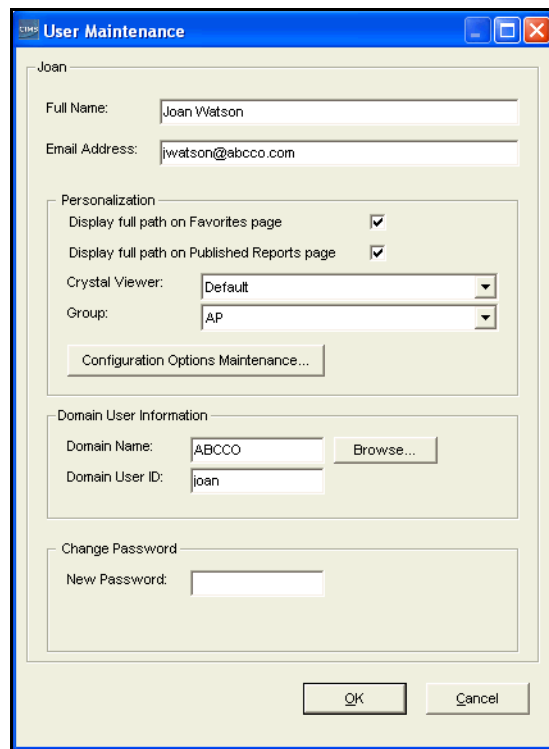
Figure 3-13 • User Maintenance Dialog Box

To edit a user:

1 Click the user, and then click **Edit**.

The User Maintenance dialog box appears.

2 Follow the steps in *To add a user:* beginning with Step 4 on page 3-29.

To remove a user:

Click the user, and then click **Remove**. If your are using Crystal XI for reporting, the user is automatically removed as a Crystal Reports Server user.

Defining User Groups

You can use CIMS Server Administrator to create and maintain user groups including adding users to groups; defining one or multiple account code structures for a group; assigning group access to reports and clients for Web reporting; and assigning access rights to CIMS Web applications.

Tip • When working with groups, you can access commands for an item from the menu bar, or you can access the same commands by right-clicking the item.

Note • A user can belong to only one group. If you need to place a user in more than one group, create a new group for the user. For example, a user who needs access to the reports assigned to Group A and Group B should be assigned to Group C that has access to the combined reports of Group A and Group B. Assigning a user to only one group makes it easier to determine the user's full access rights.

To add a user group:

1 In the CIMS Server Administrator main window, click **System Administration ▸ Users and Groups ▸ Groups**. The Group List Maintenance dialog box appears as shown in example Figure 3-14.
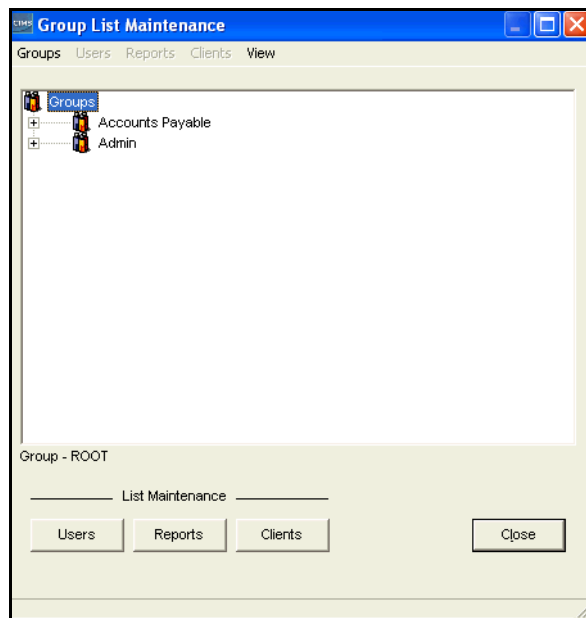
Figure 3-14 • Group List Maintenance Dialog Box

2 Click **Groups ▸ Add Group** on the menu bar.

3 In the Add Group dialog box, enter an ID for the group (maximum of eight characters), and then click **OK**. The Group Maintenance dialog box appears.

4 Edit the group settings as follows:

- **Description.** Use this box to change the description of the group (the default is the group ID followed by "Group"). Note that if you add a description, the description rather than the group ID appears in the Group List Maintenance dialog box.

- **Selected Account Code Structures/Available Account Code Structures.** Use these boxes to define the account code structure or structures that the users of the group can use for reporting.

  You can add and remove structures from one box to the other. All structures that appear in the **Selected Account Code Structures** box are available to users in the group from the CIMS Server Web Reporting Web site. This feature enables users to dynamically select the account code structure that they want to use to generate reports.

  If you have multiple account code structures in the **Selected Account Code Structures** box, you need to set one of the structures as the default structure by clicking the structure and then clicking **Make Default**. The default structure appears on the Set User Options page of the CIMS Server Web Reporting Web site until another structure is selected from the Web site. The default structure is also used when publishing reports in batch for a user or group (see *Working With Batch Reporting/Published Reports* on page 4-25).

  Note • **The account code structure selected as the default in the Select Account Code Structures box initially determines the structure that appears on the Web site when the site is accessed by a user in the group. However, once the user selects another account code structure on the Web site, that structure is stored in a cookie and not the CIMS Server database. Changing the default structure in CIMS Server Administrator does not change default structure on the Web site.**

- **Allow Transaction Maintenance.** Select this check box to allow the users in this group to perform transaction maintenance in CIMS Server Web Reporting. For more information, refer to the *CIMS Server Web Reporting User's Guide*.

- **Administrative Access.** Select this check box to give the users in this group administrative configuration options in CIMS Server Web Reporting. For more information, refer to the *CIMS Server Web Reporting User's Guide*.

- **Allow Financial Modeler Access.** Select this check box to allow users in this group to access CIMS Financial Modeler. If this check box is selected, **Financial Modeler** appears as a link in the CIMS Server Web Reporting **Admin** menu. For more information about CIMS Financial Modeler, see *Chapter 7, Working With CIMS Financial Modeler*.

- **Allow Web Console Access.** Select this check box to to allow users in this group to access CIMS Web Console. If this check box is selected, **Web Console** appears as a link in the CIMS Server Web Reporting **Admin** menu. CIMS Web Console is a beta release in CIMS Server 4.3. For more information about this application, contact CIMS Lab.

- **Split Account Code on Transaction Entry.** If this check box is selected (the default), users in this group are allowed to enter account codes by levels when adding account codes in the Miscellaneous, Recurring, and Credit Transaction pages in CIMS Server Web Reporting. Users can either type the account code in the box for each level or select the code if an accompanying select box is available. The following option, **Max Levels of Account Code to Display**, determines the number of account code levels that include a select box.

  The account code levels displayed are dependent on the levels defined in the account code structure selected for the group.

  For more information about using transactions in CIMS Server Web Reporting, refer to the *CIMS Server Web Reporting User's Guide*.

- **Max Level of Account Code to Display.** If the **Split Account Code on Transaction Entry** check box is selected, type the number of levels that you want to include select boxes for. For example, if you have five account code levels, but only want to include select boxes for the three highest levels, type 3 in this box. The remaining two levels will have a text box in which users can type the account code, but no select box to browse for the account code.

  The data loaded in the select boxes is pulled from the CIMSClient table. If the CIMSClient table is large, the transaction page can take more time to load if multiple select boxes are included. Limiting the number of select boxes can reduce the amount of time required for the transaction page to load.

  The default, 0, specifies that *all* account code levels include select boxes.

- **Configuration Options Maintenance.** When you click this button, the Group Configuration Options List Maintenance dialog box appears. This dialog box contains entries for some of the group configuration options that you have set. For example, the option **TransSplitAccountCode** represents the **Split Account Code on Transaction Entry** check box. *Do not delete these entries.*

  You can add group configuration options that can be used for custom reports and Web pages in this dialog box. See *To add configuration options:* on page 3-56.

  CIMS Lab recommends that you consult technical support for assistance in adding group configuration options.

5 Click **OK** when you are finished editing the group settings.

An example of a configured Group Maintenance dialog box for the Admin group is shown in Figure 3-15 on page 3-36. In this example, the account code structure Alternate has been added to the list of structures that the users in this group can use for reporting. This group has been given all group priveleges.
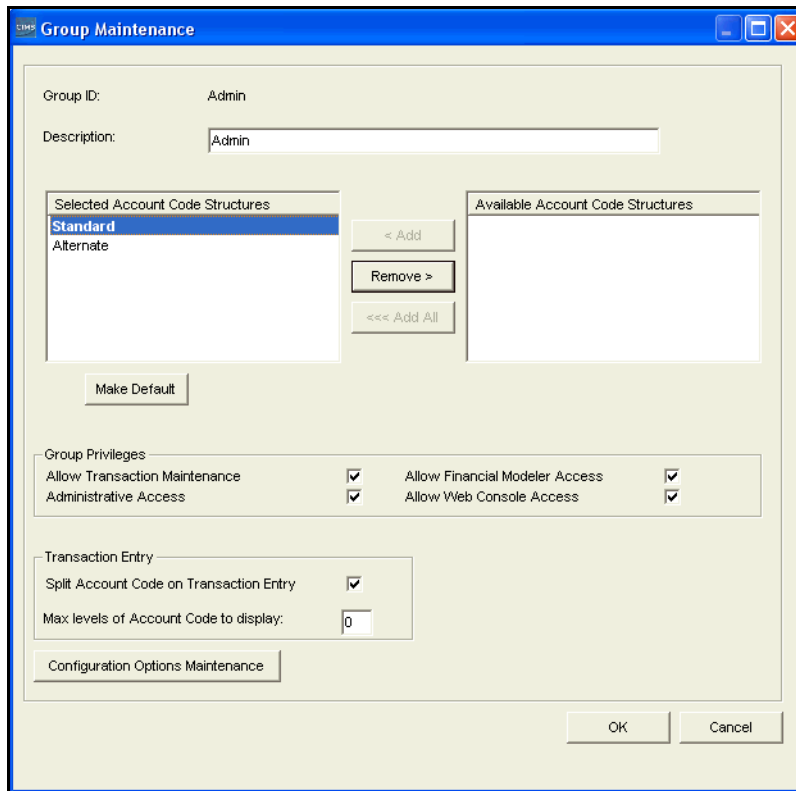
Figure 3-15 • Group Maintenance Dialog Box

To edit a user group:

1 Click the group and click **Groups ▸ Edit** on the menu bar.

The Group Maintenance dialog box appears.

2 Follow the steps in *To add a user group:* beginning with Step 4 on page 3-34.

To add a user to a user group:

1 Click the group, and then click **Groups ▸ Add User** on the menu bar.

The Select User dialog box appears.

2 Choose the user or users, and then click **OK**.

Note • **You can edit a user's settings by double-clicking the user in the Group List Maintenance dialog box.**

To remove a user from a user group:

Click the user, and then click **Users ▶ Remove** on the menu bar.

To remove a user group:

Click the group, and then click **Groups ▶ Remove** on the menu bar.

Adding or Removing Report Access to/from a Group

By default, new users are added to the Admin group, which has administrative access enabled and full access to all reports. If you want to restrict user access to reports, you need to do the following:

■ Select the **Use Report Access Security** check box on the Configuration dialog box **Reporting/Options** subtab (see page 3-45). If this check box *is not* selected, all users can access all reports regardless of whether administrative access is enabled for their group.

■ Create a group or groups that *do not* have administrative access enabled (the **Administrative Access** check box is not selected) and add the appropriate users. (Users that belong to a group that has administrative access enabled have access to all reports.)

■ Add reports to the group as described in *To add access to reports:*.

Note • **If you change the Use Report Access Security option (i.e., you select the check box or clear it), the change will not take effect in CIMS Server Web Reporting until you click Upgrade Configuration on the Edit Configuration page *or* restart IIS.**

To add access to reports:

Expand the group, click **Reports Allowed**, and do one of the following:

■ To allow all reports, click **Reports ▶ Allow All Reports** on the menu bar. When you add a group, this is the default.

■ To allow certain reports, click **Reports ▶ Add** on the menu bar. In the Select Report dialog box, choose the report or reports that you want to add, and then click **OK**.

Reports Allowed expands to show **All Reports** or the reports that you added.

To remove access to a report:

1 Expand **Reports Allowed**.

2 Click the report, and then click **Reports ▶ Remove** on the menu bar.

Adding or Removing Client Access to/from a Group

You can add access to clients to each group. This allows members of the group to see these client account codes in reports. For more information about clients, see *Working With Clients* on page 3-20.

To add access to clients:

1 Expand the group, click **Clients Allowed**, and do one of the following:

- To allow all clients, click **Clients ▸ Allow All Clients** on the menu bar. When you add a group, this is the default.

- To allow certain clients, click **Clients ▸ Add** on the menu bar. In the Select Client dialog box, choose the client or clients that you want to add, and then click **OK**.

  Note • **To prevent duplicate data in reports, you cannot add a client with an account code that overlaps an existing client account code in the Clients Allowed list. For example, if you add client AABBB you cannot add client AA or AABBBCC.**

  ---

2 Expand **Clients Allowed** to view the clients that you added.

Note that the account code structure selected for the group might have an offset position greater than 1. However, client access is always determined by the first position in the account code, regardless of the offset position. The clients that you add will contain the full account code as assigned for the clients in the CIMSClient table.

Although the full account code appears for the clients in the **Clients Allowed** list for the group, the users assigned to the group will be able to view data for only the account code level(s) specified by the offset.

For example, assume that you have the following account codes:

```
AABBB
AACCC
```

In the account code structure selected for the group, the first level of the account code is defined as a length of 2 and the second level is defined as a length of 3. The offset position for the account code is 3, which determines that users assigned to the group can view data for clients BBB and CCC only. However, the complete client account codes AABBB and AACCC appear in the **Clients Allowed** list.

For more information about the account code structure, see *Setting Up the Account Code Structure* on page 3-3.

To remove access to clients:

1 Double-click **Clients Allowed**.

2 Click the client, and then click **Clients ▸ Remove** on the menu bar.

Accessing User, Report, and Client Lists

You can edit user, report, and client settings by clicking **Users**, **Reports**, or **Clients** in the Group List Maintenance dialog box.

Using Web Reporting Headlines

Headlines are links that appear in the home page of the CIMS Server Web Reporting Web site. A headline can link to any URL. This feature has many uses including displaying announcements such as the latest CIMS chargeback data is available, a new report is available, etc.

To add a headline:

1 In the CIMS Server Administrator main window, click **System Administration** ▶ **Reporting** ▶ **Web Reporting Headlines**.

The Web Reporting Headline Maintenance dialog box appears.

2 Click **Add**.

The Headline Maintenance dialog box appears.

3 Enter the headline settings as follows:

- **Date**. Click the date that you want to assign to the headline. Note that this is not the date that the headline appears on the Web site—the headline appears as soon as it is created.

- **Headline**. Type the text of the headline.

- **Headline Link**. Type the URL for the headline (the headline appears as a link).

4 Click **OK** when you are finished.

An example of a configured Headline Maintenance dialog box is shown in Figure 3-16.
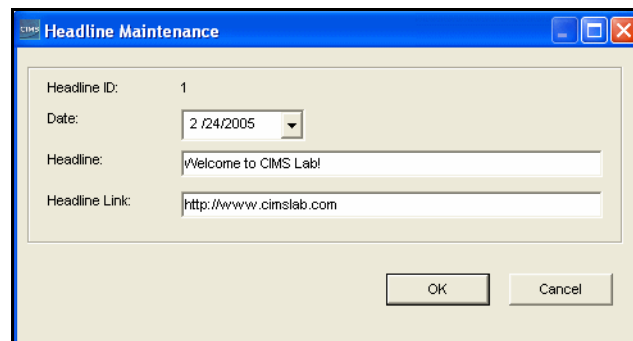
Figure 3-16 • **Headline Maintenance Dialog Box**

To edit a headline:

1 Click the headline and in the Web Reporting Headline Maintenance dialog box, and then click **Edit**. The Headline Maintenance dialog box appears.

2 Follow the steps in *To add a headline:* beginning with Step 3.

To remove a headline:

Click the headline in Web Reporting Headline Maintenance dialog box, and then click **Remove**.

Maintaining Identifiers

When you process a CSR or CSR+ file, the identifier names within that file are stored in the CIMSIdent table. You can perform the following maintenance tasks for the identifiers:

■ **Add a description for the identifier.** By default, the identifier description is the same as the identifier name. For reporting purposes, you can add detailed descriptions for identifiers that are difficult to decipher such as alphanumeric strings. In reports that provide drill down by identifier, the identifier descriptions appear in the **Identifier** list to enable drill down of units or rates by identifier.

■ **Remove unused identifiers.** You can remove any unused identifiers from the CIMSIdent table. Unused identifiers are those that are not contained in the CIMSDetailIdent table. For more information about the CIMSIdent and CIMSDetailIdent tables, see *Appendix A, Database Tables*.

■ **Enable options for custom reporting.** You can set options for each identifier, such as flags, for custom reporting.

To add an identifier description:

1 In the CIMS Server Administrator main window, click **System Administration ▸ Identifiers Maintenance**. The Identifier List Maintenance dialog box appears.

2 Click the identifier that you want to edit, and then click **Edit**. The Identifier Maintenance dialog box appears.

3 Enter the identifier settings as follows:

- **Active/Inactive.** These options are available for custom reports. The use of these options is user-specified.

- **Name.** This is the name of the identifier as it appears in the CSR or CSR+ file. Do not change the name unless you want to assign a new identifier to the same description. For example, the identifier ABC has been changed to ABCD. The identifier name has changed, but the description remains the same.

- **Description**. Enter a description for the identifier (maximum of 255 characters).

- **Report Flag.** This box allows you to enter a one-character value that you can use in custom reports. The value for this flag is user-specified.

An example of a configured Identifier Maintenance dialog box is shown in Figure 3-17 on page 3-41.
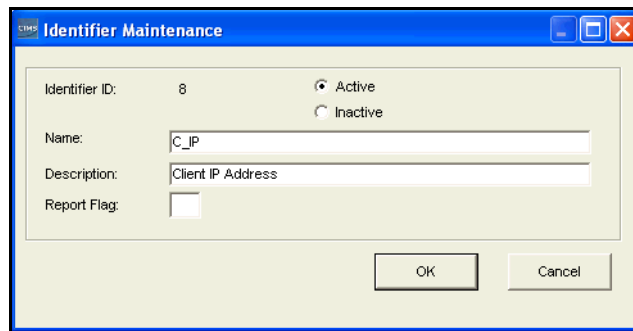
Figure 3-17 • Identifier Maintenance Dialog Box

To remove unused identifiers:

Click **Remove Unused Identifiers**.

Configuring System Settings

You can configure the following system settings using CIMS Server Administrator:

■ **Organization information.** Name and address of your organization.

■ **Processing settings.** Global processing settings for the system such as the path to the `Processes` folder and whether a close date is used for processing.

■ **Reporting settings.** Report-related settings such as file location, invoice numbering, and security.

■ **Database settings**. Database-related settings such as time-out period and load priority.

■ **License information.** Product license key.

■ **Web settings**. Web site settings for CIMS Server Web Reporting.

■ **Table audit settings.** Table audit options.

■ **Database load archive settings.** Settings for archiving database loads.

■ **Configuration options.** Additional settings for custom reports and Web pages.

Important! • **If you change any of these settings in CIMS Server Administrator, the changes will not take effect in CIMS Server Web Reporting until you click Upgrade Configuration on the Edit Configuration page *or* restart IIS.**

In addition, some of these settings can be configured in CIMS Server Administrator or CIMS Server Web Reporting. If CIMS Server Web Reporting is open when you make these changes, click Refresh before you click Upgrade Configuration. This ensures that the settings are populated with the values that you set in CIMS Server Administrator.

To configure the system settings:

1 In the CIMS Server Administrator main window, click **System Administration ▸ Configuration Information**.

The Configuration dialog box appears as shown in example Figure 3-18.
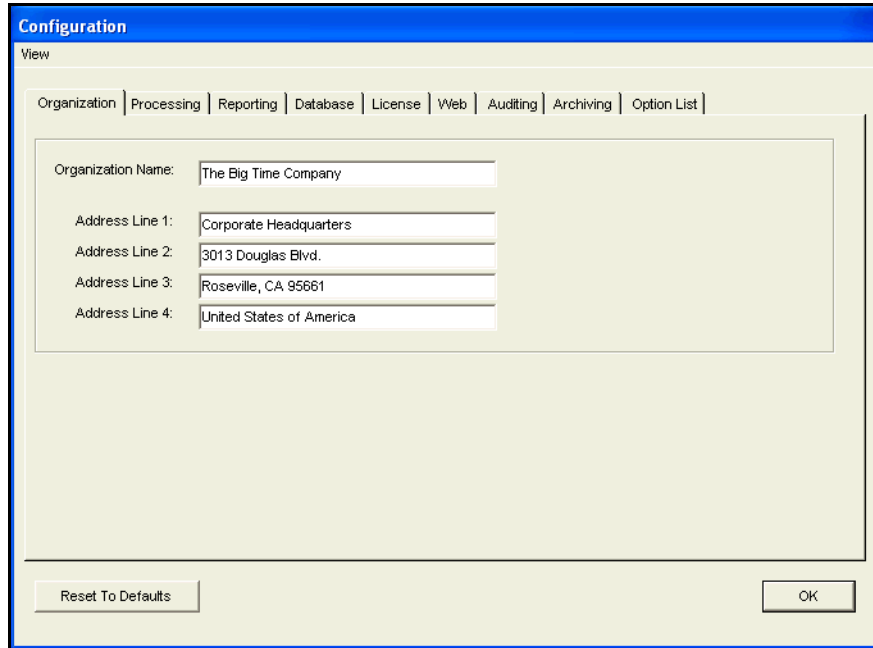
Figure 3-18 • Configuration Dialog Box

2 Complete the tabs in the dialog box as shown in the following sections, and then click **OK** to save the settings and close the dialog box.

Note • To return the settings in *all* tabs to the original default settings, click Reset To Defaults.

Organization Information

Use the **Organization** tab to type the name and address of your organization (maximum of 255 characters in each line), and then click **OK**. This information appears on the standard invoices that ship with CIMS Server.

You can also type this information on the Edit Configuration page in CIMS Server Web Reporting.

Processing Settings

Use the **Path**, **Options**, and **Closing** subtabs on the **Processing** tab to set the processing settings for CIMS Server.

Path Subtab

■ **Process Definition Path.** Enter the path for the process definitions (maximum of 255 characters). For more information about process definitions, see *CIMS Server Administrator Processing* on page 6-21.

Options Subtab

■ **Use 13 Periods.** Select this check box if your organization uses 13 accounting periods. For more information, see *Using 13 Accounting Periods* on page 3-27.

■ **Decimal positions used in money calculation.** Enter the number of decimal digits (0–6) that you want to appear in money values in the CIMSSummary table. Before you set this value, you should review *Defining Decimal Positions for Money Values in the CIMSSummary Table* **on page 4-13**.

Closing Subtab

■ **Close Date.** You can set an optional close date for processing input file records. Records that contain dates before or after this date are processed as described in *How Accounting Dates Are Calculated* on page 6-19. You can also set close dates for an individual process definition or definitions (see page 6-32). If you set a close date for an individual process definition, it overrides the date that you set here.

Click one of the following:

• **No Close Date.** No close date is set.

• **Use Specific Date.** Enter a specific close date.

• **Use Day Of Month.** Type the day of the month that you want to set as the close date. For example, type 15 if you want a close date of the fifteenth of each month.

Reporting Settings

Use the **Paths**, **Options**, and **Invoice** subtabs on the **Reporting** tab to set the report settings for CIMS Server Web Reporting.

Note • You can also enter some of these settings on the Edit Configuration page in CIMS Server Web Reporting.

Paths Subtab

■ **Path to standard reports folder.** Enter the path for standard reports (maximum of 255 characters). Standard reports are those that are provided with CIMS Server. In most cases, standard reports require customizing for your organization.

CIMS Lab recommends that you keep the Standard folder in the default location because standard reports may be updated and/or added with a new version or release of CIMS Server.

■ **Path to custom reports folder.** Enter the path for custom reports (maximum of 255 characters). Custom reports are those that your report developer creates either independently or from the standard reports provided with CIMS Server. Custom and standard (if applicable) reports are available to users via the Reports or Spreadsheets page of CIMS Server Web Reporting.

■ **Path to published reports folder.** Enter the path for published reports (maximum of 255 characters). Published reports are reports that have been saved with the data that was generated at the time the reports were run. Publishing a report enables users to view a report without having to regenerate it.

CIMS Server provides a batch reporting feature that creates and distributes published reports. This feature includes the option of distributing reports via a UNC link in an e-mail message. If you want to use this option, you need to type a UNC path in this box. For example, if you are using the default Published folder for published reports, the UNC path might be *servername*\Published.

For more information about creating and distributing published reports in batch, see *Working With Batch Reporting/Published Reports* on page 4-25.

Note • End user access to published reports is dependent on the share permissions described in *Folder Permissions Required for Publishing and Viewing Batch Reports* on page 4-48.

Options Subtab

- **Last Reporting Date.** Enter the last reporting date for reports that CIMS Server Web Reporting users who do not have administrative privileges can view. For example, if you do not want non-administrator users to view reports for dates after March 2005, enter `03/31/2005`. Users with administrative privileges can view reports for any date.

- **Rate Drilldown Report.** Type the file name for the Multilevel Drilldown on Rate report (`IINXC006`). This report enables you to drill down on up to five identifiers concurrently when you drill down on the units for a rate in a Web report. If you are using a custom version of this report, enter the file name for the custom report.

  Note • **Consult CIMS Lab before replacing this report with a custom report. The report must follow certain rules.**

- **Rate Group Drilldown Report.** Type the file name for the Multilevel Drilldown on Rate Group report (`IINXC007`). This report enables you to drill down on up to five identifiers concurrently when you drill down on the units for a rate group in a Web report. If you are using a custom version of this report, type the file name for the custom report.

  Note • **Consult CIMS Lab before replacing this report with a custom report. The report must follow certain rules.**

- **Report Script Timeout.** Enter the length of time in seconds that the ASP page will allow a script to generate a report before timing out. The default is 900 seconds (15 minutes). The minimum value for this setting is 600 seconds (10 minutes) and the maximum value is 2700 seconds (45 minutes).

  Note • **IIS allows you to set the time-out value for ASP scripts. The value set for Report Script Timeout overrides the time set in IIS only for scripts that are generating reports. All other scripts use the time-out value set in IIS.**

- **Currency Symbol.** The use of this box is user-specified. This box allows you to enter a currency symbol that you can use in custom reports (maximum of three characters).

- **Currency Description.** The use of this box is user-specified. This box allows you to enter a currency description that you can use in custom reports (maximum of 255 characters).

- **Use Report Access Security.** Select this check box to set access to reports by user group (see *Adding or Removing Report Access to/from a Group* on page 3-37). If this check box *is not* selected, users within a group can view all reports regardless of whether the report is allowed for the group.

■ **Use only 1 Crystal Report License on drilldown reports.**

> **Note** • This check box works only with Crystal Reports 8.5. This feature does not provide a benefit for the Crystal Reports 9 or later licensing structure.

By default, when you open a second window in Crystal Reports (for example, when you drill down on resource units or a rate group in a Web report), a second Crystal Reports license is used.

When this check box is selected, all report information appears in the same window and only one Crystal Reports license is used.

■ **Use PDF for Published Reports.** This option is required only if you are using Crystal Reports XI *and* you have not purchased the full Crystal Reports Server license. In this case, published reports cannot be viewed in Crystal Reports. If this check box is selected, reports are published as PDF files and Acrobat Reader rather than Crystal Reports is invoked when the file is viewed. Note that the group tree that is used for navigation in a report does not appear in reports published as PDF files.

This option is applicable only when reports are published from the CIMS Server Web Reporting Web site. For more information about batch reporting including how to set the report format for batch reports, see *Working With Batch Reporting/Published Reports* on page 4-25.

Invoice Subtab

■ **Invoice Number Automation.** When this check box is selected, invoice numbers in CIMS Server Web Reporting increase sequentially from the number set in the **Invoice Number** box.

When this check box is selected, the parameter **Invoice Number** does not appear as a report parameter in CIMS Server Web Reporting. For more information about Web report parameters, refer to the *CIMS Server Web Reporting User's Guide*.

■ **Invoice Number.** If the **Invoice Number Automation** check box is selected, use this box to set the number at which you want invoice numbers to begin. Invoice numbers increase in sequential order from this number. If the **Invoice Number Automation** check box *is not* selected, the invoice number entered as a report parameter in **CIMS Server Web Reporting** is used.

Database Settings

Use the **Database** tab to set the following:

■ **Connection Timeout (seconds).** Type the maximum number of seconds (maximum of 9999) that a database may respond to a query before timing out. If this time period is exceeded, CIMS Server Administrator assumes that the database server is not responding and returns an error message.

If you accept the default (0), no time-out period is applied.

■ **Database Load—Process Priority Class.** This setting determines the priority in which CIMS Server processes are run (CIMSAcct, CIMSBill, database loads, etc.). Because these processes can use a large amount of CPU time, CIMS Lab recommends that you accept the default, **Below Normal**, which allows other processes (for example, IIS and SQL Server tasks) to take precedence. Consult CIMS Lab before using a priority other than **Below Normal**.

Note • Below Normal will not cause processes to run longer if the system is idle. However, if other tasks are running, processes will take longer to run.

License Information

Use the **License** tab to enter the license key provided by CIMS Lab. If you do not have your license key, contact CIMS Lab.

To enter a license:

1 Enter the appropriate workstation (machine) and type the license key.

2 Click **Update License**.

To remove a license for a workstation:

1 Enter the workstation.

2 Click **Remove License**.

If you installed CIMS Server on Windows XP or Windows Server 2003, you should be logged on to the CIMS Server application server as a user in the Windows Administrators group to enter or remove the license key. If you are not a member of this group, complete the following steps:

1 Click the Windows **Start** button, and then click **Run**.

2 Type `regedit`, and then click **OK**.

3 Navigate to `HKEY_LOCAL_MACHINE` ▶ `SOFTWARE` ▶ `CIMS`.

4 Right-click the `CIMS` folder, and then click **Permissions**.

5 Add the user account that will be working with CIMS Server and give the account `Full Control` and `Read` permissions.

Note that if you installed CIMS Server on Windows 2000 Server, you cannot set registry permissions at the key level.

Web Settings

Use the **General**, **User Logging**, and **Customization** subtabs on the **Web** tab to set the Web site settings for CIMS Server Web Reporting, including optional custom settings.

General Subtab

- **Session Timeout Minutes**. Enter the number of minutes of inactivity that are allowed before a CIMS Server Web Reporting user is automatically logged off the system. The minimum is 1 minute and the maximum is 9999 minutes. The default is 60 minutes.

- **Display Account Code Selection to Level**. This setting determines the level of account codes that appear in the **Starting Account Code** and **Ending Account Code** parameter lists in CIMS Server Web Reporting. For example, if you type 1, only the top level account codes appear. However, if you type 3, the first, second, and third level account codes appear. For more information, about using starting and ending account codes, refer to the *CIMS Server Web Reporting User's Guide*.

  You can also enter this setting on the Edit Configuration page in CIMS Server Web Reporting.

- **Crystal Report Viewer**. Click the Crystal viewer used for CIMS Server Web Reporting. If you are using SQL Server Reporting Services for reporting, leave this box set to **Default**. You can also enter this setting on the Edit Configuration page in CIMS Server Web Reporting.

  Note • **You can set different viewers for individual users. CIMS Server Web Reporting uses the viewer set for the user if it differs from the viewer set here. To set this option for an individual user, see** **.**

  You can choose the following:

  - **Default.** If you are using Crystal Reports 9, 10, or XI, the default is the HTML viewer. If you are using Crystal Reports 8.5, the default is the ActiveX viewer.

  - **ActiveX**. This option works only in Internet Explorer. This viewer has the following advantages and disadvantages:

    Advantage: This viewer provides more features than the HTML viewer provides.

    Disadvantage: This viewer requires that the Crystal Smart Viewer for ActiveX be installed on the user's computer (see *Start CIMS Server Web Reporting* **on page 2-80**)**.** The user might not have the administrative privileges required to install and run the viewer.

  - **Java using Browser JVM**. This option works in Netscape Navigator or Internet Explorer. This viewer requires the Java Virtual Machine. Because this viewer might be more difficult to set up, CIMS Lab recommends that you use the HTML or ActiveX viewer.

  - **HTML.** This option works in Internet Explorer or Netscape Navigator. This viewer has the following advantages and disadvantages:

    Advantage: This viewer works with any browser and does not require any additional files or set up.

    Disadvantage: This viewer provides fewer features than the ActiveX viewer provides.

■ **Crystal Release.** Click the Crystal Reports release that you are using for Web reporting: 85, 90, 10, or XI.

Or

Click RS if you are using SQL Server Reporting Services. Type the URL for the Reporting Services Report Server virtual directory if the correct URL does not appear by default. For more information, see *Enter the Reporting Services Report Server URL* on page 2-71.

■ **Port Number.** If SSL *is not* enabled for the CIMS Server Web Reporting Web site and a port other than port 80 is used, type the port number.

■ **Secure Port.** If SSL is enabled for the CIMS Server Web Reporting Web site and a port other than port 443 is used, type the port number.

■ **Site Localization ID (LCID):** If you want to use regional settings other than US English for the CIMS Server Web Reporting Web site, type the locale ID for the settings that you want to use. This must be one of the decimal values provided at http:// msdn.microsoft.com/library/en-us/script56/html/vsmsclcid.asp. Do not use the short string or hex values. For more information about setting CIMS Server up for internationalization, see page 2-13.

■ **Enable Intranet Auto Logon.** Select this check box to enable users to automatically log on to CIMS Server Web Reporting and other CIMS Web-based applications. This feature saves time for users and eliminates the need to maintain user passwords in the CIMS Server database.

To use this feature, the Windows domain name and user ID for the user must be entered in the User Maintenance dialog box (see page 3-28) and IIS security for the CIMS Server Web Reporting Web site and any other CIMS Web sites must be set to Integrated Windows authentication (see page 2-67).

■ **Secure Login.** Select this check box if SSL is enabled for the CIMS Server Web Reporting Web site. For more information about enabling SSL, see page 2-70.

■ Allow Password Change. Select this check box to enable users to change their user password on the CIMS Server Web Reporting Login page.

■ **Display Account Name on Account Code drop downs.** Select this check box to display the account code description in the **Starting Account Code** and **Ending Account Code** parameter lists in CIMS Server Web Reporting. If you do not select this check box, the account code description does not appear with the account code.

■ **Enable Client Dropdown Exact Length.** When this check box is selected, only account codes of the level set in the **Display Account Code Selection to Level** box appear as parameters in CIMS Server Web Reporting.

For example, assume that you have an account code of AABBBCCCC, where AA is level 1, AABBB is level 2, and AABBBCCCC is level 3. If **Display Account Code Selection to Level** is set to 3, only code AABBBCCCC appears in the **Starting Account Code** and **Ending Account Code** parameter lists in CIMS Server Web Reporting.

Note that if you select this check box and you do not have clients defined in the CIMSClient table for the level set in **Display Account Code Selection to Level**, no account codes will appear in the parameter lists.

User Logging Subtab

■ **Log File.** If you are logging the usage of CIMS Server Web Reporting, enter the path for the log file.

■ **Log IP Address To Skip.** If you are logging the usage of CIMS Server Web Reporting, type the IP address of any client that you *do not* want to track in the log file. If you enter only the first number or numbers of an address, any address that begins with the number(s) will not appear in the log file. For example, if you enter 127.0.0, the addresses 127.0.0.0 and 127.0.0.1 are not included.

■ **Require Company Name on login.** When this check box is selected, the user must enter a company or organization name when logging on to CIMS Server Web Reporting. A text box for the name appears on the Login page.

Customization Subtab

CIMS Server enables you to create custom Web site settings for CIMS Server Web Reporting. For example, you might want the Web site to conform to your corporate standards or to use a custom startup ASP page.

You can use the custom settings feature to select the *cascading style sheets*, images, background color, and menu alignment for the Web site.

To use custom Web site settings, you need to first set up the appropriate folders and files in Windows.

In Windows:

1 Make sure that you have a `Custom` folder in `C:\Program Files\CIMSLab\Server\Web`. (This is the default location. The location of the `Web` folder might differ on your system.) The `Custom` folder should contain an `images` folder. See example Figure 3-19.
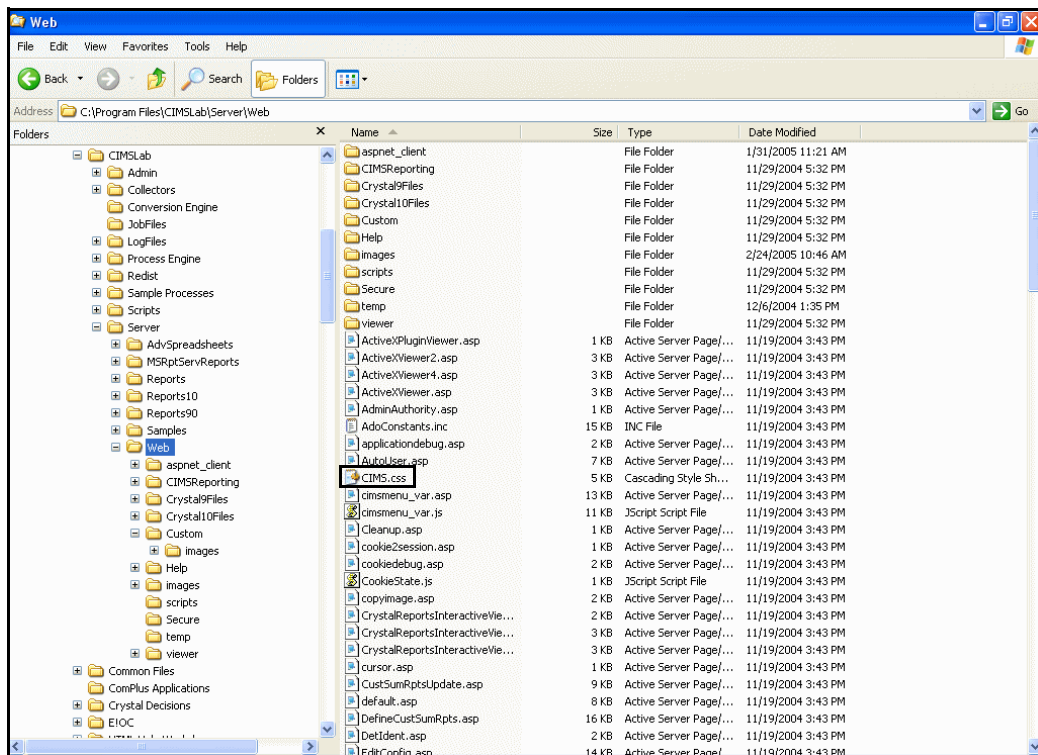
Figure 3-19 • Web Folder Contents

2 Copy everything in `Web\images` to `Web\Custom\images`. (Click **Yes** to replace the existing `topgraphic.gif` file in `Custom\images`).

3 Copy the `CIMS.css` file from the `Web` folder to `Web\Custom`.

4 Customize the `CIMS.css` file in the `Custom` folder as needed.

5 Customize the images in `Custom\images` as needed.

6 In `Web\Custom\images`, replace the `topgraphic.gif` file with your own image. This is the image that appears at the top of all Web pages. The image must be named `topgraphic.gif`, but it can be in the GIF or JPEG format.

7 In the `Custom` folder, customize the `default.asp` page. This is the home page.

In CIMS Server Administrator:

1 On the **Web** tab, click **Custom** in the **Custom Site** box. Edit the following:

- **Background Color.** Type the hexadecimal number for the background color.

- **CSS Location.** Type `Custom\CIMS.css` (do not add beginning or ending slashes).

- **Image Location.** Type `Custom\images` (do not add beginning or ending slashes).

- **Menu Vertical Start Position.** Enter the start position (in pixels) for the menu. The menu begins at the specified number of pixels from the top of the page. The number of pixels depends on the size of your `topgraphic.gif` image. To determine the number of pixels:

  a Right-click the `topgraphic.gif` file, and then click **Properties**.

  b Click the **Summary** tab to get the image height.

2 Click **OK** when you are finished.

Table Audit Settings

Important! • Auditing a table can degrade the table's performance because the audit feature uses SQL triggers. Do not use this feature for tables that you do not need to audit.

This feature is available if you are using a SQL Server database. Support for Oracle and DB2 will be included in a future release of CIMS Server.

Use the **Auditing** tab to audit changes to certain database tables. Auditing tracks changes that have been made to the data in the tables, including the Windows user ID of the person who made the change and the date and time that the change occurred.

Note • Transaction audits might reflect the SQL Server login ID rather than the Windows user ID. For more information, see *Creating User Logins for the Database* on page 2-29.

To audit tables, select the appropriate check boxes in the **Select audit types** area. Audit data for a table is stored in an additional table named CIMSAudit*<audit type>*. For example, the CIMSAuditRate table tracks changes to the CIMSRate table.

You can also view changes to the CIMSClient, CIMSRate, and CIMSTransaction tables via the following standard Web reports.

■ Client Audit Report (file name `RACLX001.rpt`)

■ Rate Audit Report (file name `RARTX001.rpt`)

■ Transaction Audit Report (file name `RATRX001.rpt`)

For more information about these reports, including examples, refer to the *CIMS Server Web Reporting User's Guide*.

Note • You need to add these reports to the reports list in the Report List Maintenance Dialog box and to a report group in the Report Group Maintenance Dialog box if the reports are not already present (see *Adding Reports to the CIMS Server Report List* on page 4-19 and *Defining Report Groups* on page 4-21).

Database Load Archive Settings

> **Note** • **These settings support the database load archive feature described in** *Archiving, Purging, and Restoring Database Loads* **on page 5-20**.

Use the **Archiving** tab to set the archiving options for database loads. Archiving saves selected database loads in a format that you can reload (restore) into the database if the loads are purged.

- **Archive Path.** Enter the path for storing the archived database loads. The default path is `C:\Program Files\CIMSLab\Admin\Archive\`*DSNname*, where *DSNname* is the name of the CIMS Data Source selected in the **Select CIMS Data Source** list. If you are using multiple databases with CIMS Server, you should store the archived loads from each database in separate folders. The archived database loads are stored in a zip file and you cannot determine the data source by the zip file name.

- **Compression Type.** Click the compression type that you want to use for the archive files or **None**. The default, **Deflate**, is recommended; however, **Deflate64** and **BurrowsWheeler** may be used for zip tools that support them.

- **Compression Level.** Move the slider to set the compression level. The compression level controls the amount of compression to be applied when compressing data. The greater the amount of compression applied, the greater the time it takes to perform the compression.

Configuration Options

The Option List tab stores the following variables used by CIMS Server for batch reporting. These variables should not be deleted or changed without consulting CIMS Lab.

■ BatchPortNumber

■ BatchServerNode

■ BatchVirtualDir

The Option List tab also stores the following variables for use with Crystal Reports XI. These variables are set using the Configure BusinessObjects Enterprise Wizard (see *Configure Crystal Reports Server* on page 2-77 for more information about using the wizard).

■ BOEnterpriseAuthenticationMethod

■ BOEnterpriseFolderName

■ BOEnterpriseServerName

■ BOEnterpriseUserGroupName

■ BOEnterpriseUserName

You can use this tab to add optional configuration settings as documented in other sections in this guide and to add options for use in custom reports. CIMS Lab recommends that you consult CIMS Lab for assistance in adding configuration settings for custom reports.

To add configuration options:

1 Click **Add**.

2 In the Add New Configuration Option dialog box, enter the name for the new option (maximum of 80 characters), and then click **OK**. The Configuration Option Maintenance dialog box appears.

3 Enter the following information for the option:

• **Description.** An optional description of the setting. Maximum of 80 characters.

• **Value.** The value for the setting (e.g., a folder path or a flag value). Maximum of 255 characters.

• **Data Type.** The data type for the value: String, Integer, Floating Point, or Date/Time.

■ 4

Report Administration

This chapter describes how to use CIMS Server Administrator to define and group the reports that appear on the CIMS Server Web Reporting Web site. This chapter also describes how to generate and distribute published reports in batch mode.

■ **4-2**

About CIMS Server Reports

CIMS Server processes data contained in an input CIMS Server Resource (CSR) or CIMS Server Resource Plus (CSR+) file and produces CIMS Ident, Detail, and Summary files. The data in these files is loaded into the CIMSSummary, CIMSDetail, CIMSDetailIdent, and CIMSIdent tables in the CIMS Server database. The data in these tables is then used for reporting. For more information, see *Tables Used for Reports* on page 4-7.

CIMS Server includes a variety of standard reports that can be used "as is" or can be customized for your organization. For a description of each of the standard reports, refer to the *CIMS Server Web Reporting User's Guide*.

This section describes the folder hierarchy for storing CIMS Server reports and describes the types or reports available.

Location of CIMS Server Reports

If CIMS Server is installed in the default location, reports are located in the following folders. Each of these folders contains the subfolders `Standard`, `Custom`, and `Published`. For example, `ReportsMSRS\Standard`, `ReportsMSRS\Custom`, and `ReportsMSRS\Published`.

Crystal Reports

- `C:\Program Files\CIMSLab\Server\Reports85` (contains Crystal 8.5 reports for SQL Server only)

- `...\ReportsORADB2` (contains Crystal reports for Oracle and DB2)

- `...\ReportsSQL` (contains Crystal reports for SQL Server)

SQL Server Reporting Services Reports

- `C:\Program Files\CIMSLab\Server\ReportsMSRS`

> **Note •** SQL Server Reporting Services is not available for MSDE. In addition, CIMS Server 4.3 does not support the use of Reporting Services with a DB2 database.

CIMS Advanced Spreadsheets

- `C:\Program Files\CIMSLab\Server\AdvSpreadsheets`

How CIMS Server Determines the Report Folder to Use

During database initialization, CIMS Server determines the default folder to be used for reporting based on the following:

■ If you selected Crystal Reports 8.5 during database initialization, the `Reports85` folder is used.

■ If you selected Crystal Reports 9, 10, or XI, the type of database determines the default folder (e.g., if the database selected for initialization is a SQL Server database, the default reports folder is `ReportsSQL`).

■ If you selected SQL Server Reporting Services, the `ReportsMSRS` folder is used.

If you move the report folder to another location or move the `Standard`, `Custom`, or `Published` subfolders, you need to change the paths on the **Reporting** tab in the Configuration dialog box (see *Reporting Settings* on page 3-45).

Types of CIMS Server Reports

There are four types of reports available with CIMS Server:

■ **Standard or Custom Reports.** CIMS Server includes a variety of standard Crystal and SQL Server Reporting Services reports. These standard reports include invoice, budget, summary, trend, and variance reports in report, graph, and spreadsheet format. Standard reports are available as `.rpt` files for Crystal Reports and `.rdl` files for SQL Server Reporting Services.

Standard Crystal and Reporting Services reports are stored in the `Reports<database type>\ Standard` folder and the `ReportsMSRS\Standard` folder, respectively. For a description of each of the standard reports, refer to the *CIMS Server Web Reporting User's Guide*.

Typically, your report developer will customize the CIMS standard reports for your organization or will create new reports. The CIMS Server installation includes a default `Reports<database type>\Custom` or `ReportsMSRS\Custom` folder that you can use to store these custom reports.

If a report of the same name is in both the `Standard` and `Custom` folder, CIMS Server will use the report in the `Custom` folder.

Once you have the standard and custom reports in the appropriate folders, you need to specify which of the reports that you want to use with CIMS Server (see *Adding Reports to the CIMS Server Report List* on page 4-19 and *Defining Report Groups* on page 4-21). Users can then run these reports from the CIMS Server Web Reporting Web site.

■ **CIMS Web User Created Reports.** Web reporting end users create these reports directly within the CIMS Server Web Reporting Web site using report templates that are supplied with CIMS Server or developed by your Crystal Reports developer. These templates are stored in the `Standard\Templates` folder. For more information about these reports, refer to the *CIMS Server Web Reporting User's Guide*.

By default, Web user-created reports are placed in the **Custom** or **Custom Spreadsheets** report groups. However, you can use CIMS Server Administrator to define any report group as the default group for user-created reports (see *To set the default group for reports created by CIMS Web users:* on page 4-23).

■ **Published Reports.** Published reports are standard or custom reports that have been saved with the data that was generated at the time the reports were run. Publishing a report enables users to view a report without having to regenerate it. Published reports are stored in the `Published` folder that is defined in the Configuration dialog box.

Users can publish reports from the CIMS Server Web Reporting Web site or you can use CIMS Server Administrator and batch reporting scripts to automatically generate and publish reports. For more information about generating and publishing reports in batch, see *Working With Batch Reporting/Published Reports* on page 4-25.

■ **CIMS Advanced Spreadsheets**. CIMS Advanced Spreadsheets have more advanced features than Crystal Reports or SQL Server Reporting Services spreadsheets, including drill down and sorting capability.

Note • **If you are using an Oracle or DB2 database, contact CIMS Lab for information about using CIMS Advanced Spreadsheets.**

CIMS Advanced Spreadsheets are XML definition files. You can use these files "as is" or your report developer can customize these files for your organization or can create new files.

Although the standard advanced spreadsheets are installed in the `Server\AdvSpreadsheets\Standard` folder, you need to copy the standard spreadsheets that you want to use to the `Standard` or `Custom` folder that is defined in the Configuration dialog box (see *Reporting Settings* on page 3-45). You can choose either folder; however, you might want to use the `Standard` folder for consistency.

Likewise, you need to place any custom advanced spreadsheets in the `Custom` folder defined in the Configuration dialog box and not in the `Server\AdvSpreadsheets\ Custom` folder.

As with all CIMS Server reports, if a spreadsheet of the same name is in both the `Standard` and `Custom` folder, CIMS Server will use the spreadsheet in the `Custom` folder.

To copy the standard advanced spreadsheets to the appropriate folder, do the following:

1 In the Configuration dialog box, click the **Reporting** tab to view the paths to the report folders that have been defined for your standard and custom reports. The paths appear in the **Path to standard reports folder** and **Path to custom reports folders** boxes.

2 In Windows Explorer, copy the advanced spreadsheets from the `AdvSpreadsheets\Standard` folder to either the `Standard` or `Custom` folder that is defined in the Configuration dialog box. For example, copy the spreadsheets from the `AdvSpreadsheets\Standard` folder to `ReportsSQL\Standard` folder.

3 Define the advanced spreadsheets that you want to use with CIMS Server (see *Adding Reports to the CIMS Server Report List* on page 4-19 and *Defining Report Groups* on page 4-21). Users can then run these spreadsheets from the CIMS Server Web Reporting Web site.

For more information about CIMS Advanced Spreadsheets, refer to the *CIMS Server Web Reporting User's Guide*.

Tables Used for Reports

CIMS Server processes data contained in an input CSR or CSR+ file and loads the data into the tables described in this section.

CIMSSummary Table

All reports that include money values use the CIMSSummary table. The CIMSSummary table contains summarized resource units, rate, and money values for the *lowest level* of the account code by rate code/date range. That is, if there are multiple records in the CSR/CSR+ file for the same account code, date range, and rate code, the values in the records are aggregated together.

Example CIMSSummary Table Data

Assume that the following are the lowest level account codes that appear in the CIMSSummary table:

■ AABBBCCC

■ AAEEEFFF

The CIMSSummary table might contain the following data:

AccountCode	RateCode	StartDate	EndDate	Resource Units	Rate Value	Money Value
AABBBCCC	LLG104	7/01/2005	7/01/2005	1.247	0.01	0.01
AABBBCCC	LLG105	7/01/2005	7/01/2005	2.940	0.018	0.05
AAEEEFFF	LLG104	7/01/2005	7/01/2005	1.182	0.01	0.01
AAEEEFFF	LLG105	7/01/2005	7/01/2005	0.759	0.018	0.01
AABBBCCC	LLG104	7/02/2005	7/02/2005	1.984	0.01	0.02
AABBBCCC	LLG105	7/02/2005	7/02/2005	1.201	0.018	0.01
AAEEEFFF	LLG104	7/02/2005	7/02/2005	3.084	0.01	0.03
AAEEEFFF	LLG105	7/02/2005	7/02/2005	1.199	0.018	0.02
AABBBCCC	LLG104	7/03/2005	7/03/2005	1.083	0.01	0.01
AABBBCCC	LLG105	7/03/2005	7/03/2005	2.162	0.018	0.04
AAEEEFFF	LLG104	7/03/2005	7/03/2005	0.014	0.01	0.00
AAEEEFFF	LLG105	7/03/2005	7/03/2005	0.875	0.018	0.02

Note that the CIMSSummary table contains fields other than those shown. For a description of the fields in the CIMSSummary table, see page A-40.

To run a report, the user must specify the account code level and date for the data that will appear in the report. Data aggregation is performed in the report from the lowest to the highest account code level for the specified date range.

For example, assume that the highest level account code for account codes AABBBCCC and AAEEEFFF is AA. The second level account code is AABBB or AAEEE. If the report is run with a date range of 7/01/2005 to 7/03/2005 for the second level account code, the following aggregated data would appear in the report:

AccountCode	RateCode	StartDate	EndDate	Resource Units	Rate Value	Money Value
AABBB	LLG104	7/01/2005	7/03/2005	4.314	0.01	0.04
AABBB	LLG105	7/01/2005	7/03/2005	6.303	0.018	0.11
AAEEE	LLG104	7/01/2005	7/03/2005	4.28	0.01	0.04
AAEEE	LLG105	7/01/2005	7/03/2005	2.833	0.018	0.05

In this example, the resource units for July 1 through July 3 are aggregated by account code/rate code.

CIMSDetail Table

Some reports use the CIMSDetail table rather than the CIMSSummary table. These reports do not include money values, which are not included in the CIMSDetail table. In addition, the drill down reports `IINXC001.rpt` through `IINXC007.rpt` (which are invoked from a main report) use the CIMSDetail table.

The CIMSDetail stores resource data in the most detailed level. Each record in this table corresponds to a specific record in the input CSR or CSR+ file and contains a single rate code and its resource units from that record. For example, if one input CSR/CSR+ contains the rate codes LLG104 and LLG105, a separate record is created for each rate code in the CIMSDetail table

Each record in the CIMSDetail table identifies the number of the original CSR or CSR+ record from which the rate code and resource units were taken (i.e., 1 if it is the first record, 2 if it is the second record, etc.). This number is used to associate the rate codes from the input CSR/CSR+ records with identifiers that are in the input records. The identifier values from the input records are stored in the CIMSDetailIdent table.

Example CIMSDetail Table Data

Using the same account codes, rate codes, and date ranges shown in the CIMSSummary table example on page 4-7, the CIMSDetail might contain the following data. As with the CIMSSummary table, the account codes in the CIMSDetail table are always the lowest level account code.

DetailLine	AccountCode	RateCode	StartDate	EndDate	Resource Units
1	AABBBCCC	LLG104	7/01/2005	7/01/2005	0.599
2	AABBBCCC	LLG104	7/01/2005	7/01/2005	0.233
3	AABBBCCC	LLG104	7/01/2005	7/01/2005	0.415
4	AAEEEFFF	LLG104	7/01/2005	7/01/2005	1.003
5	AAEEEFFF	LLG104	7/01/2005	7/01/2005	0.179
....					
1	AABBBCCC	LLG105	7/01/2005	7/01/2005	1.295
2	AABBBCCC	LLG105	7/01/2005	7/01/2005	1.645
3	AAEEEFFF	LLG105	7/01/2005	7/01/2005	0.117
4	AAEEEFFF	LLG105	7/01/2005	7/01/2005	0.318
5	AAEEEFFF	LLG105	7/01/2005	7/01/2005	0.324
....					

Comparing this example to the CIMSSummary table example on page 4-7, the CIMSDetail record contains multiple records for the same rate code, rate code, and date range, while the CIMSSummary table contains one record with an aggregated resource units value.

Note that CIMSDetail table contains fields other than those shown. For a description of the fields in the CIMSDetail table, see page A-23.

Drilling Down on Resource Units by Identifier

You can drill down on resource values in a report to view a second report that shows the resources by broken down by specified identifier values such system ID, work ID, user name, server name, etc. For example, the following CSR records for the same date range contain the same identifier names and rate codes, but different identifier values:

`Exchange,20050916,20050916,01:00:47,01:00:47,,1,User,"joe",1,EXEMRCV,1`

`Exchange,20050916,20050916,01:00:47,01:00:47,,1,User,"mary",1,EXEMRCV,2`

In this example, an aggregated resource units value of 3 would appear in reports for rate code `EXEMRCV`. However, you could drill down to view the units by identifier values broken down by `joe` and `mary`.

The number in the DetailLine column of the CIMSDetail table indicates the record in the CSR or CSR+ from which the data was taken. Record numbers are also specified in the CIMSDetailIdent table which contains identifier values. CIMS uses the record numbers in the CIMSDetail and CIMSDetailIdent tables to determine which identifier values are associated with the resource units.

For more information about drill down reports, including examples, refer to the *CIMS Server Web Reporting User's Guide*.

CIMSIdentTable and CIMSDetailIdent Tables

The CIMSIdent table contains the identifier names from the input CSR or CSR+ file records. The CIMSDetailIdent table contains the identifier values associated with the identifier names in the CIMSIdent table.

Example CIMSIdent Table Data and CIMSDetailIdent

In this example, the identifier `SYSTEM_ID` and `USERNAME` are stored in CIMSIdent table. These identifiers are represented by the numbers 1 and 2, respectively.

CIMSIIdent Table

IdentNumber	IdentName
1	SYSTEM_ID
2	USERNAME

The identifier values that appear in the CSR or CSR+ records for `SYSTEM_ID` and `USERNAME` are stored in the CIMSDetailIdent table. The number in the DetailLine column identifies the number of the original CSR or CSR+ record from which the identifier value was taken (i.e., 1 if it is the first record, 2 if it is the second record, etc.). The value in the IdentNumber column correlates to the IdentNumber in the CIMSIdent table.

CIMSDetailIdent Table

DetailLine	IdentNumber	IdentValue
1	1	zeus
1	2	root
2	1	zeus
2	2	cims
3	1	zeus
3	2	cims
4	1	athena
4	2	adm
5	1	athena
5	2	webadm
....		
....		
....		

Note that CIMSDetailIdent and CIMSIdent tables contain fields other than those shown. For a description of the fields in these tables, see page A-24 and page A-25.

Defining Decimal Positions for Unit, Rate, and Money Values in Reports

Most reports use the CIMSSummary table, which includes resource unit, rate, and money values. Other reports and all drill down reports use the CIMSDetail table, which include rate or money values. The number of decimal digits shown for the unit, rate, and money values in reports may or may not match the number shown in the originating table depending on the rate code and configuration settings as follows:

■ **Units and rate values.** The number of unit and rate decimal digits that appear in reports are set by rate code. The decimal digits for units can be 0–5. The decimal digits for rate values can be 4 or 8. To set the unit and rate decimal digits for a rate code, see *Defining Rate Codes* on page 3-9.

■ **Money values.** Money values in reports always contain two decimal digits. However, the number of decimal digits that are included in the money value in the CIMSSummary table can be 0–6 positions. For more information, see *Defining Decimal Positions for Money Values in the CIMSSummary Table* on page 4-13.

In the following report example, the decimal digits set for the unit values in the Units column and rate values in the Rate column are two and four, respectively. The Charge column contains money values, which are always shown with two decimal digits.

/M=Divide by 1000
This option is set by rate code

	Units	Rate		Charge
Unix Process Block I/O (1,000s)	2	0.1000	/M	0.00
Unix Process Character I/O (100,000s)	73,102	0.0020	/M	0.19
Unix Process Image Time (Hours)	2,780.92	0.0000		0.00
Unix Process User CPU (Minutes)	156.68	0.0100		1.57
Unix Process System CPU (Minutes)	44.50	0.0180		0.74
Unix Process Total CPU (Minutes)	201.18	0.0300		6.02
Unix Process Memory (MB Days)	333,795.35	0.0006	/M	0.26
Unix Process Image Count	33,489	0.0200	/M	0.62
Unix Process Charges				**9.40**

Figure 4-1 • Example Report 1

Defining Decimal Positions for Money Values in the CIMSSummary Table

As described in the previous section, money values in CIMS standard reports always contain two decimal positions. However, you can define the number of decimal positions (0–6) that appear in the money value in the CIMSSummary table. To set the decimal positions for the money value that appears in the CIMSSummary table, see *Processing Settings* on page 3-44.

Note • For the advantage and disadvantage of using a greater number of decimal positions for money values in the CIMSSummary table, see page 4-15.

Example Using Four Decimal Digits

Looking at Figure 4-1 on page 4-12, note that many of the money values do not match the corresponding units multiplied by rate. For example, the units for rate code Unix Process System CPU (Minutes) are 44.50 and the rate is .0180. If you multiply the units by the rate code, the sum is .801(which would be rounded to .80). However, .74 appears as the sum in the report.

This discrepancy is due to the rounding that occurs in the CIMSSummary table for money values. In Figure 4-1, the money values in the CIMSSummary table were rounded to two decimal digits. If the decimal digits in the money values had been set to four in the CIMSSummary table, the report would appear as shown in Figure 4-2.

	Units	Rate		Charge
Unix Process Block I/O (1,000s)	2	0.1000	/M	0.00
Unix Process Character I/O (100,000s)	73,102	0.0020	/M	0.15
Unix Process Image Time (Hours)	2,780.92	0.0000		0.00
Unix Process User CPU (Minutes)	156.68	0.0100		1.57
Unix Process System CPU (Minutes)	44.50	0.0180		0.80
Unix Process Total CPU (Minutes)	201.18	0.0300		6.04
Unix Process Memory (MB Days)	333,795.35	0.0006	/M	0.20
Unix Process Image Count	33,489	0.0200	/M	0.67
Unix Process Charges				**9.42**

Figure 4-2 • Example Report 2

The charges for each rate code in the report now match the units multiplied by the rates. Assume that the charges for each rate code represent the total for all of the days in June. Using the rate code Unix Process System CPU as an example, Table 4-1 shows the difference between the money calculations using two digits and four digits.

Date	Units	Rate	Money Value 2 Dec. Digits	Money Value 4 Dec. Digits
6/1	1.295	0.018	0.02	0.0233
6/2	1.316	0.018	0.02	0.0237
6/3	1.323	0.018	0.02	0.0238
6/4	2.182	0.018	0.04	0.0393
6/5	2.117	0.018	0.04	0.0381

Table 4-1 • Money Value Calculation Example

Date	Units	Rate	Money Value 2 Dec. Digits	Money Value 4 Dec. Digits
6/6	1.575	0.018	0.03	0.0284
6/7	2.934	0.018	0.05	0.0528
6/8	2.899	0.018	0.05	0.0522
6/9	2.923	0.018	0.05	0.0526
6/10	1.887	0.018	0.03	0.0340
6/11	0.665	0.018	0.01	0.0120
6/12	0.581	0.018	0.01	0.0105
6/13	2.076	0.018	0.04	0.0374
6/14	1.352	0.018	0.02	0.0243
6/15	1.636	0.018	0.03	0.0294
6/16	1.413	0.018	0.03	0.0254
6/17	1.317	0.018	0.02	0.0237
6/18	0.691	0.018	0.01	0.0124
6/19	0.567	0.018	0.01	0.0102
6/20	1.572	0.018	0.03	0.0283
6/21	1.339	0.018	0.02	0.0241
6/22	1.313	0.018	0.02	0.0236
6/23	1.302	0.018	0.02	0.0234
6/24	1.350	0.018	0.02	0.0243
6/25	0.692	0.018	0.01	0.0125
6/26	0.575	0.018	0.01	0.0104
6/27	1.578	0.018	0.01	0.0284
6/28	1.365	0.018	0.03	0.0246
6/29	1.326	0.018	0.02	0.0239
6/30	1.336	0.018	0.02	0.0240
Totals	**44.497**		**0.74**	**0.801**

Table 4-1 • Money Value Calculation Example (Continued)

Advantage and Disadvantage of Setting a Greater Number of Decimal Digits for Money Values

The following are the advantage and disadvantage of changing the number of decimal digits for money values from the default setting (2 digits) to a greater number of digits.

Advantage

■ A greater number of decimal digits in the money values ensures that the charges in reports match the units multiplied by the rate on a line-by-line basis. Usually four decimal digits are sufficient.

Compare Figure 4-1 on page 4-12 to Figure 4-2 on page 4-13 for an example of the same report using money values with two underlying decimal digits vs. four underlying decimal digits.

Disadvantage

■ There is a possibility of a plus or minus one cent difference between totals in the reports for an account across account levels. For example, the total for account code AA might be 4309.33, but the total money value for account code AABBB might equal 4309.34. There is also the possibility of the same difference between the sum of individual charges shown in a report and the total for those charges. This is because total charges are calculated from the four decimal digit money values in the CIMSSummary table, not from the two digit money values in the report. For example, the total charge in the report in Figure 4-2 appears as 9.42. However, if you add the money values that appear in the report, the total is 9.43.

If the CIMSSummary table contains two or fewer decimal digits, total charges will always match the sum of the money values within a report and charges will match across account code levels. Two decimal digits are set as the default because accuracy across account levels is usually more important than accuracy across the individual lines of a report.

If you want to see the difference that the decimal digits setting makes in the money value, run a report for a *single day of data* at the *lowest account level*. In this situation, there are no differences in the money value on a line-by-line basis or in total charge values, regardless of the number of decimal digits that you have set. Then run the report for a month of data and compare the differences.

Customizing Report Parameters (Optional)

The CIMS standard reports include parameter field names that correlate to ASP.NET `.ascx` files (user controls). If you installed CIMS Server in the default location, these user controls are in `C:\Program Files\CIMSLab\Server\Web\CIMSReporting\CIMSParameters\CIMSComponents\Standard`.

If you want to use parameters other than the default parameters provided by CIMS Lab, you need to create parameter fields in your reports and user controls in the `CIMSComponents\Custom` folder. The process for creating custom parameters differs depending on whether your organization generates reports from the CIMS Server Web Reporting Web site or generates reports in batch only.

You can also customize the standard user controls for the parameters **provided with** CIMS Server. However, the ability to customize is limited to changing presentation logic.

Creating Custom Parameters for Web Reports

Creating Parameters Using CIMS Templates

To create custom parameters used by reports that run from the Web site, modify the `paramTemplate.ascx` user control and `paramTemplate.ascx.cs` source file in the `Custom` folder. For assistance with modifying these files, contact CIMS Lab.

When you modify the user control and source file, all of the following must match:

■ The file name of the user control and source file.

■ The parameter field name defined in the report.

■ The control name for the parameter within the user control.

For example, if the user control and source files are `paramABC.ascx` and `paramABC.ascx.cs`, the parameter field name in the report must be `ABC` (or `@ABC` if the parameter is not used in a stored procedure), and the control name must be `"ABC"`.

You should save custom parameter files in the `Custom` subfolder on the CIMS Server application server (see *Saving Custom Parameters* on page 4-18).

Note • **If parameter files of the same name are in both the** `Standard` **and** `Custom` **parameter folder, the parameter files in the** `Custom` **folder are used.**

Creating Parameters Using Parameter Fields
(Crystal Reports Only)

You can also use parameter fields to create parameters within a report. To add parameter fields:

1 Open the report in Crystal Reports, and then click **Insert** ▸ **Field Object**.

2 Right-click **Parameter Fields**, and then click **New**.

3 In the **Create Parameter Field** dialog box, type the name of the field.

4 In the **Prompting text** box, type one of the following:

- `LEN=` This creates a text box with the specified maximum character length on the report parameters page in CIMS Server Web Reporting. For example, `LEN=6` limits the maximum characters that can be typed in the box to six.

- `YorN` This creates a Y/N select box on the report parameters page in CIMS Server Web Reporting.

5 In the **Value type** box, leave the value at **String** (the default).

6 Click **OK** to save the parameter field.

Note • **You can set options in the Options area of the Create Parameter Field dialog box. However, these options are not used by CIMS Server Web Reporting. Refer to your Crystal Reports documentation for more information about these options.**

Creating Custom Parameters for Batch Reports Only

If you are distributing reports in batch mode only, the `.ascx` and `.ascx.cs` files required for Web reports are not needed. To use custom parameters with batch reports, do the following:

1 Create a blank `.txt` file with the same name as the as the parameter field name in the report.

2 Save the file in the `CIMSParameters\CIMSComponents\PlaceHolders\Show` folder on the CIMS Server application server (see *Saving Custom Parameters* on page 4-18).

For example, if the parameter field name is `paramAAADate`, you need to create an *empty* file named `paramAAADate.txt` in the `Show` folder as shown example Figure 4-3.

Note • The `Show` folder contains default parameter files used by some standard reports when the reports are run in batch mode only. All of these files are empty and are used only when running reports in batch.
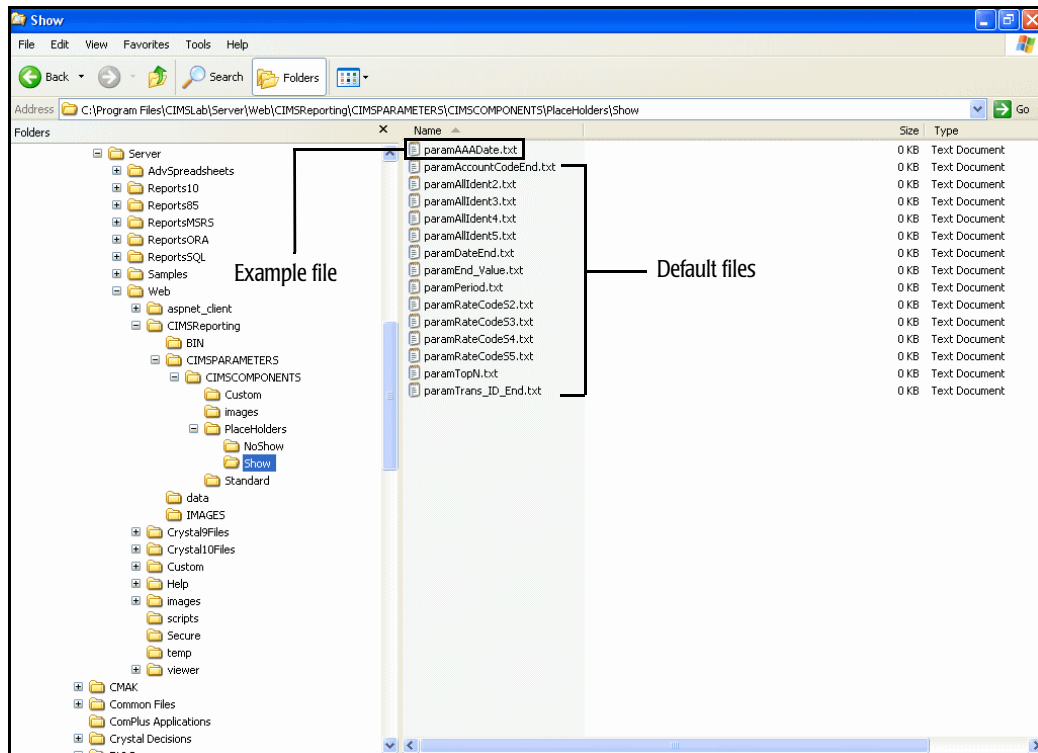
Figure 4-3 • Show Folder Contents

Saving Custom Parameters

If the CIMS Server **application server and the Web server are on separate servers, make sure that you save custom parameter files in the** `Custom` **or** `Show` **folder (as applicable) on the application server. The files are not read from the** Web server.

Adding Reports to the CIMS Server Report List

The report list in conjunction with the reports assigned to the user groups (see *Defining User Groups* on page 3-33) determines the reports that users can access from the CIMS Server Web Reporting Web site. You need to add a report to this list before it can appear on the Web site or be assigned to a user group.

By default, the report list contains CIMS standard reports (either Crystal or SQL Server Reporting Services reports). If you are using custom reports, you can remove the standard reports from the list (see *To remove a report:* on page 4-20). If a standard report is in a report group, you must first remove the report from the group (see *To remove a report from a report group:* on page 4-22).

Note • **If you want to use more than one report type, for example, Crystal Reports and Advanced Spreadsheets, make sure that all reports are in the same report folder and that the folder is defined in the Configuration dialog box. For more information about the location of CIMS reports, see** page 4-3**.**

To add a report:

1 In the CIMS Server Administrator main window, click **System Administration** ▸ **Reporting** ▸ **Reports**.

The Reports List Maintenance dialog box appears as shown in example Figure 4-4.

Note • **Reports in the Report List Maintenance dialog box are sorted by ID number. To sort the reports by name or description, click the appropriate column header. To reverse the sort order, click the column header again.**
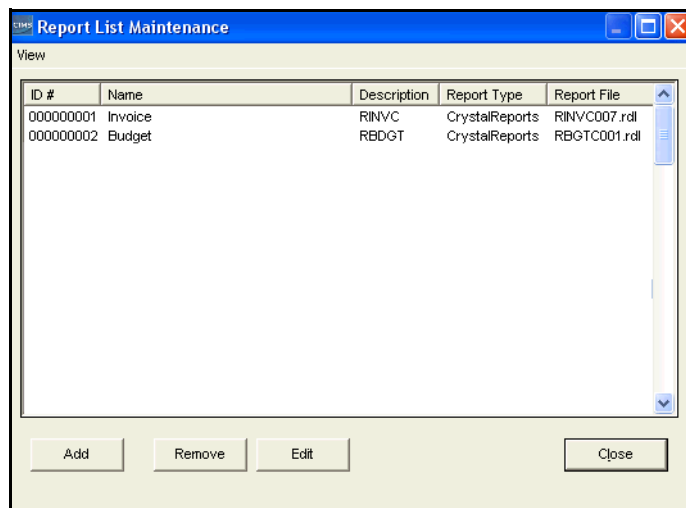
Figure 4-4 • Reports List Maintenance Dialog Box

2 Click **Add**.

3 In the Add New Report dialog box, enter the name of the report (e.g., `Cost Variance`), and then click **OK**. Maximum of 32 characters.

The Report Maintenance dialog box appears.

4 Enter the report settings as follows:

- **Name**. Use this box to change the name of the report.

- **File Name.** The name of the report file *without the path* (maximum of 255 characters). To browse for a report file, click the Browse button [...].

- **Template File Name.** Consult CIMS Lab before using this option.

- **Description**. Enter a description of the report. Maximum of 255 characters.

5 Click **OK** when you are finished.

If you added a SQL Server Reporting Services report, the report is automatically deployed to the Reporting Services Report Server. If you added a Crystal report and are using Crystal Reports XI, the report is automatically deployed to Crystal Reports Server.

An example of a configured Report Maintenance dialog box is shown in Figure 4-5.
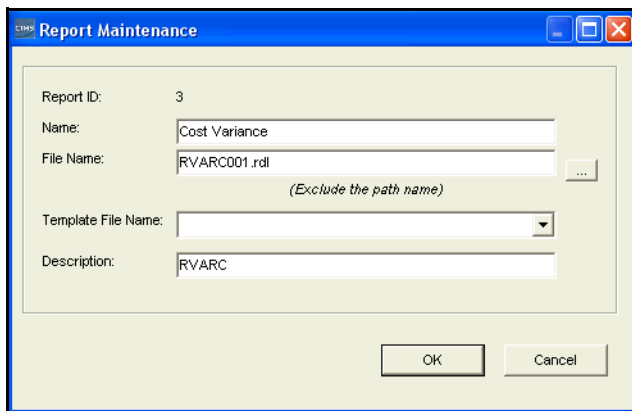
Figure 4-5 • Report Maintenance Dialog Box

To edit the settings for a report:

1 Click the report, and then click **Edit**.

The Report Maintenance dialog box appears.

2 Follow the steps in *To add a report:* beginning with Step 4.

To remove a report:

Click the report, and then click **Remove**. If the report is in a report group or a report cycle, you must first remove the report from the group or cycle (see *Defining Report Groups* on page 4-21 and *Creating a Report Cycle* on page 4-29).

If your are using Crystal XI for reporting, the report is automatically removed from Crystal Reports Server.

Defining Report Groups

Tip • When working with report groups, you can access commands for an item from the menu bar, or you can access the same commands by right-clicking the item.

Report groups are useful in CIMS Server Web Reporting because they allow you to categorize related reports in a single group. For example, you might create groups by report type (e.g., invoice, variance, account) or by data type (e.g., Mainframe, UNIX, Windows).

There are two types of report groups:

- **Start Groups.** These are the larger groups that contain other groups.

- **Groups**. These are the standard report groups that are contained in a Start Group. Groups contain reports.

There are three default Start Groups: Reports, Graphs, and Spreadsheets. Although you can add other Start Groups, only the default groups appear on the CIMS Server Web Reporting Web site. To use Start Groups other than the default groups, you need to create a customized Web site.

The default Start Groups (Reports, Graphs, and Spreadsheets) are required for CIMS Server Web Reporting and must be ordered 1, 2, and 3 as shown Figure 4-6. *Do not remove, rename, or reorder these groups*.

To add a report group:

1 In the CIMS Server Administrator main window, click **System Administration ▸ Reporting ▸ Report Groups**. The Report Group Maintenance dialog box appears as shown in example Figure 4-6.
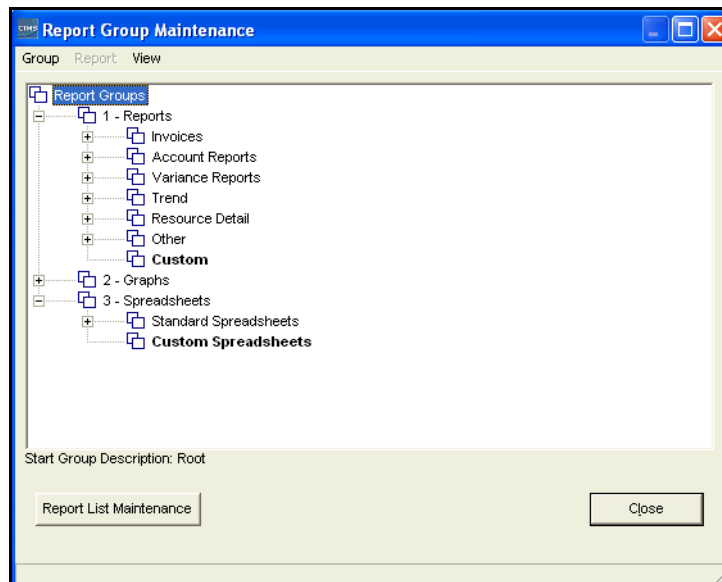
Figure 4-6 • Report Group Maintenance Dialog Box

2 Do one of the following:

- To add a Start Group, click **Group ▶ Add Start Group** on the menu bar. In the Add Start Group dialog box, enter the name of the Start Group, and then click **OK**.

- To add a group to a Start Group, click the Start Group, and then click **Group ▶ Add Group** on the menu bar. In the Add Group dialog box, enter the name of the group, and then click **OK**.

To add a report to a report group:

1 To add a report to a report group, click the group, and then click **Group ▶ Add Report** on the menu bar. Note that you cannot add a report to a Start Group.

The Select Report dialog box appears.

2 Choose the report or reports that you want to add, and then click **OK**.

To view the reports that you added, double-click the group.

Note • Report groups that do not contain at least one report will not appear on the Reports page on the CIMS Server Web Reporting Web site.

To remove a report from a report group:

Click the report, and then click **Report ▶ Remove Report from Group** on the menu bar.

Note • Removing a report deletes the report from the report group, *not from the system*.

To remove a report group:

Click the group, and then click **Group ▶ Remove Group** on the menu bar. If the report group contains groups and/or reports, you must delete the groups and reports before you can delete the group.

Other Report Group Options

Once you have created a report group, you can:

■ Rename the group or change its description.

■ Re-sort the group or report display order.

■ Make a group the default group for reports created by CIMS Web users.

To rename a report group or change its description:

1 Click the group, and then click **Group ▶ Change Group Name** or **Change Group Description** on the menu bar.

2 In the Change Group Name/Description dialog, box enter the new name or description. Note that the description is the same as the group name by default.

To re-sort the group or report display order:

1 Click the group that contains the groups or reports that you want to re-sort, and then click **Group** ‣ **Change Group Display Order** or **Change Report Display Order** on the menu bar.

The Report Group/Report Display Sequence dialog box appears.

2 Click a group/report, and then click the up or down arrow to reposition the item.

3 Click **OK** when you are finished.

To set the default group for reports created by CIMS Web users:

In CIMS Server Web Reporting, end users can create reports using the standard templates provided with CIMS Server or custom templates developed by your Crystal Reports developer. For more information about these reports and descriptions of the standard templates, refer to the *CIMS Server Web Reporting User's Guide*.

To make a group the default group for reports or spreadsheets created by end users, click the group, and then click **Group** ‣ **Default Report/Spreadsheet Group** on the menu bar. The default group appears bold and is designated by ***Reports/Spreadsheet Default** in the lower right corner of the Report Group Maintenance dialog box.

The user-defined reports or spreadsheets appear in the group selected as the default group on the Reports or Spreadsheets page of the CIMS Server Web Reporting Web site.

The default group for user-defined reports is **Custom** and the default group for user-defined spreadsheets is **Custom Spreadsheets**.

Changing the Logo in Reports

By default, the CIMS logo appears in reports. If you want to replace this logo with a custom logo, you need to complete the following steps. The steps differ depending on whether you are using Crystal or SQL Server Reporting Services reports.

Note • **If the custom logo is not the same height as the CIMS logo, report header data might be lost.**

For Crystal reports, you must modify each report file to include the logo that you want.

For Reporting Services, all reports automatically use the report image that is published to the Reporting Services Report Server.

To change the logo for Crystal reports:

1   In Crystal Reports, open the report that you want to change.

2   Right-click logo, and then click **Delete**.

3   On the menu bar, click **Insert ▸ Picture**.

4   Locate the file for the logo that you want to use and place it in the report.

5   Save the report in the `Custom` reports folder.

To change the logo for Reporting Services reports:

1   If you installed CIMS Server in the default location, locate the `ReportLogo.jpg` file in `C:\Program Files\CIMSLab\Server\Web\Images`.

2   Rename the `ReportLogo.jpg` file `CIMSReportLogo.jpg`.

3   Place the file for the logo that you want to use in the `Images` folder. The file must be named `ReportLogo.jpg`, but it can be in the JPEG or GIF format.

4   In the CIMS Server Administrator main window, click **System Administration ▸ Reporting ▸ Configure Reporting Services with CIMS Administrator**. This publishes the new logo file to the Reporting Services Report Server where it is used by all CIMS Reporting Services reports.

Working With Batch Reporting/Published Reports

Note • **This section is not applicable for SQL Server Reporting Services reports. The batch reporting feature will be supported for Reporting Services in a future CIMS Server release.**

Batch reporting enables you to automate the generation of published reports. A published report is a report that has been saved with the data that was generated at the time the report was run.

Publishing a report enables users to view a report without having to regenerate it. The report displays quickly because the data has already been read from the database and formatted.

Batch reporting also enables you to provide published reports to end users in a way that best meets the users' needs, including attaching the report to an e-mail or including a link to the report in an e-mail. The distribution methods for published reports are described in detail in *Distributing Published Reports* on page 4-26.

This section describes how to create and distribute published reports in batch using CIMS Server Administrator in conjunction with the `ReportDistribution.wsf` script. If you installed CIMS Server in the default location, this script is in `C:\Program Files\CIMSLab\Scripts\Batch Reporting`.

Creating Published Reports

Published reports can be created in either of the following ways:

■ **From the CIMS Server Web Reporting Web site.** This method requires that users publish reports from the Web site by clicking **Publish** after the report is generated. This method is described in detail in the *CIMS Server Web Reporting User's Guide*.

■ **In batch.** CIMS Lab provides the `ReportDistribution.wsf` script that you can use to automatically create, publish, and distribute reports. To publish reports using this script, you need to do the following:

• Create a report cycle in CIMS Server Administrator for the report or reports that you want to publish. The `ReportDistribution.wsf` script uses the definitions in the report cycle to generate and distribute the reports. For more information about distributing published reports and creating report cycles, see *Distributing Published Reports* on page 4-26 and *Creating a Report Cycle* on page 4-29.

• Set up and run the `ReportDistribution.wsf` script as described in *Running a Report Cycle* on page 4-44.

Distributing Published Reports

To best meet your users' needs, CIMS Server provides you with the flexibility to distribute published reports in any of the following ways.

■ **Distribute reports from the CIMS Server Web Reporting Web site.** This method requires that users search for and access published reports from the Web site by clicking **Reports ▶ View Published Reports**. This method is described in detail in the *CIMS Server Web Reporting User's Guide.*

You can use this distribution method with or without the following e-mail distribution feature. E-mail distribution notifies a user or users that the report is available and provides a link to the CIMS Server Web Reporting Web site.

■ **Distribute reports via e-mail.** This method enables you to "push" published reports to users. You can deliver the reports in any of the following ways:

• **Attach the report to the e-mail**. A benefit of this method is that the user receives the report directly. A disadvantage is that large reports included as attachments can affect the performance of your e-mail system.

• **Provide a link to the report in the e-mail subject or body.** This method saves e-mail space and enables the user to easily access the report by clicking the link. Published reports are stored in subfolders within the `Published` folder on the CIMS Server application server. (See *Storing Published Reports Using the Published Folder Structure* on page 4-27.)

• **Provide a link to the CIMS Server Web Reporting Web site in the e-mail subject or body.** You can use this method to provide a link to the Web site home page or a link directly to the report on the Web site (if auto logon is enabled for the user [see *Web Settings* on page 3-49]). A benefit of this method is that the security set up for the Web site is used to control user access to published reports (see *Security Requirements for Viewing Reports* on page 4-48).

To use the e-mail report distribution feature, you need to create a report cycle in CIMS Server Administrator as described in *Creating a Report Cycle* on page 4-29.

Storing Published Reports Using the Published Folder Structure

The `Published` folder contains the following subfolders for storing published reports. (The path to the `Published` folder is defined on the **Reporting** tab on the Configuration dialog box).The subfolder in which a report is stored is specified by the CIMS Web end users if the report is published from the CIMS Server Web Reporting Web site or is defined in the report cycle if the report was produced in batch (see *Creating a Report Cycle* on page 4-29).

The security and access rights for the published reports differ depending on whether users are accessing a published report from the Web site or directly from a link (see *Folder Permissions Required for Publishing and Viewing Batch Reports* on page 4-48).

■ `user`. This folder contains subfolders for specific users. Each subfolder name reflects a CIMS user ID. The following is the structure for the `user` folder. Note that the structure of the lowest two subfolders within the `user` folder is the same for the `group`, `account`, and `global` folders.

- `Published\user\`*userid*`\`*periodpublished*`\reports` (contains Crystal reports and reports and spreadsheets published as PDF files)

- `Published\user\`*userid*`\`*periodpublished*`\spreadsheets` (contains Excel spreadsheets)

- `Published\user\`*userid*`\`*periodpublished*`\CSV` (contains reports and spreadsheets published as CSV files)

For example, `user\Joan\200507\reports` contains Crystal reports and reports/ spreadsheets in PDF format for the user `Joan` that were published in July 2005 (if you are using the default periods in the CIMSCalendar table).

Note • **Published reports in the `CSV` subfolder are not accessible from the CIMS Server Web Reporting Web site.**

■ `group`. This folder contains subfolders for specific user groups. Each subfolder name reflects a CIMS user group ID. The following is the structure for the `group` folder:

`Published\group\`*groupid*`\`*periodpublished*`\<reports/spreadsheets/CSV>`

For example, `group\AP\200507\spreadsheets` contains Excel spreadsheets for the group `AP` that were published in July 2005 (if you are using the default periods in the CIMSCalendar table).

■ `account`. This folder contains subfolders for specific account codes. The following is the structure for the `account` folder:

`Published\account\`*accountcode*`\`*periodpublished*`\<reports/spreadsheets/CSV>`

For example, `account\AABBCCC\200507\CSV` contains reports and spreadsheets published as CSV files for the account code `AABBCCC` in July 2005 (if you are using the default periods in the CIMSCalendar table).

You cannot publish reports to the `account` folder if you are using a report cycle.

■ `global`. Reports in this folder are for all users, groups, and accounts. The following is the structure for the `global` folder:

`Published\global\`*datepublished*`\<reports/spreadsheets/CSV>`

For example, `global\200507\reports` contains Crystal reports and reports/ spreadsheets in PDF format that were published in July 2005 (if you are using the default periods in the CIMSCalendar table).

You cannot publish reports to the `global` folder if you are using a report cycle.

Deleting Published Reports

To delete published reports, start Windows Explorer and navigate to the `Published` folder. Delete the reports from the applicable subfolder.

Creating a Report Cycle

The report cycle defines such information as the reports that you want to publish, the output format for the reports, how you want to distribute the reports (attachment or link), and the user or user group that you want to distribute the reports to.

To add a report cycle:

1 In the CIMS Server Administrator main window, click **System Administration** ▸ **Reporting** ▸ **Report Distribution**.

The Report Cycle List Maintenance dialog box appears. This dialog box initially contains an example report cycle as shown in example Figure 4-7. You can use this report cycle as a reference or you can edit the cycle to publish and distribute your reports. If you want to edit this cycle, continue to Step 4.
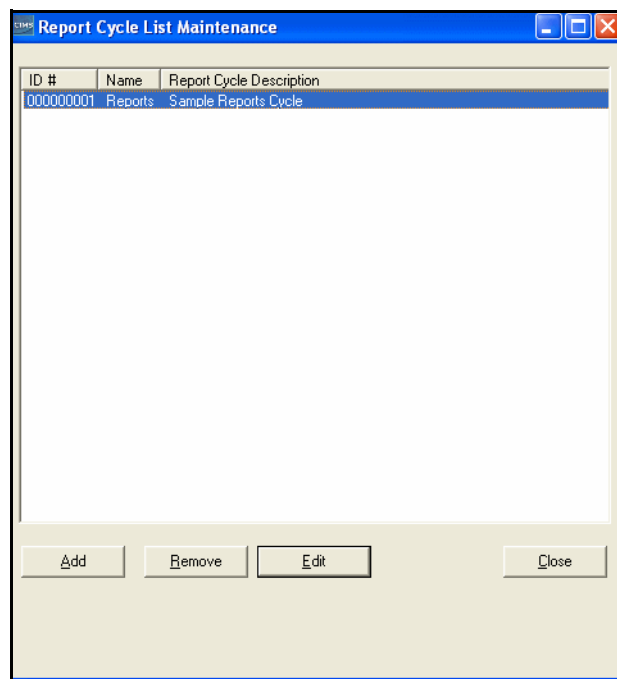
Figure 4-7 • Report Cycle List Maintenance Dialog Box

2 Click **Add**.

3 In the Add New Report Cycle dialog box, enter the name of the report cycle (e.g., `Invoice`), and then click **OK**. Maximum of 8 characters.

The Report Cycle Maintenance dialog box appears.

4 Enter the report distribution settings as follows. For an example, see Figure 4-8 on page 4-42.

- **Report Cycle ID.** The report cycle ID number is automatically assigned to the report cycle. Report cycle IDs are assigned in sequential order.

- **Name.** Use this box to change the name of the report cycle if needed.

- **Description**. Enter a description of the report cycle (e.g., `Invoice by Account`). Maximum of 255 characters.

- **Link type.** If you want to distribute a report by providing a link directly to the report, you need to click the type of link that you want to use: UNC or URL. The **Link type** box is applicable only if one of the following formats is selected in the **Report format** box on the Report Cycle Distribution Request dialog box (see Step 6 on page 4-32):

  - PDF : E-mail with link to report

  - Excel : E-mail with link to file

  - CSV : E-mail with link to file

  If any other format is selected, the value in this box is ignored.

  If you click **UNC**, the UNC path for the `Published` folder must be entered in the **Path to published reports box** on the **Reporting** tab of the Configuration dialog box (see *Reporting Settings* on page 3-45). An example of the use of a UNC path is for in-house users on the same network as the Web server.

  If you click **URL**, a virtual directory must exist for the `Published` folder. For more information, see *Creating a Virtual Directory for the Published Folder* on page 4-49. An example of the use of a URL path is to enable users who cannot access the reports through the network to access reports through the intranet.

- **CIMS Server URL.** If you want to distribute a report by providing a link to the CIMS Server Web Reporting Web site, type the URL for the site in this box.

  This box is applicable only if one of the following formats is selected in the **Report format** box in the Report Cycle Distribution Request dialog box (see Step 6 on page 4-32):

  - Crystal : E-mail with link to report (this provides a direct link to the report on the Web site)

  - Crystal : E-mail with link to Web site (this provides a link to the Web site home page)

  - Excel : E-mail with link to Web site (this provides a link to the Web site home page)

  If any other format is selected, the value in this box is ignored.

- **Reports URL.** If you selected **URL** in the **Link type** box, type the URL for the virtual directory for the report.

- **E-mail from address.** Type the fully qualified e-mail address of the sender of the e-mail.

  Note • **The "to" address for the recipient of the e-mail is defined by user in the User Maintenance dialog box. For more information, see** *To add a user:* **on page 3-28.**

- **Mail server.** The name of the SMTP mail server that will be used to send the e-mail distribution.

- **E-mail subject and E-mail body.** Use these boxes to type the subject and body of the e-mail.

  It is very important that you include an `&WebSite` or `&Location` variable in the subject or body if you select a report format that includes a link. The `&WebSite` variable provides the URL link to the CIMS Server Web Reporting Web site. The `&Location` variable provides pre-defined text and a URL link to the CIMS Server Web Reporting Web site or a URL or UNC link to the published report.

  To add these variables and other optional variables, click **Add variable** and then click the variable that you want to add (see the following descriptions). The variables will be automatically populated with the correct information in the e-mail.

  - **Link to Reporting Web Site (&WebSite).** Provides a URL link for the CIMS Server Web Reporting Web site. For example, `http://roca`.

  - **Link to Location (&Location).** Provides text and a UNC or URL link. The link is provided with the following text depending on whether the link is directly to the report or to the CIMS Server Web Reporting Web site:

    "*Report name* may be found by using this link:"

    Example: `Account Budget for Period YTD may be found by using this link: http://Server1/Published/USER/Joan/200508/Reports/RBGTC001.pdf`

    "*Report name* has been published at the site:"

    Example: `Account Budget for Period YTD has been published at the site: http://Server1`

  - **User Name (&UserName).** The CIMS user name for the user defined for the report.

  - **User ID (&UserID).** The CIMS user ID for the user defined for the report.

  - **Report Name (&ReportName)**. The report name.

  - **Report Cycle Name (&CycleName).** The report cycle for the report.

  - **Date report was published (&Date).** The date that the report was published and the e-mail notification sent.

  - **Report Period (&ReportPeriod).** The period in which the report was published as defined in the CIMSCalendar table.

- **Requests.** This box contains requests for the reports that you want to publish. A report request defines the settings for the report such as the format that you want to publish the report in, the parameters for the report, and the report recipient(s).

5 Under the **Requests** box, click **Add**.

The Report Cycle Distribution Request dialog box appears.

6 In the Report Cycle Distribution Request dialog box, enter the settings for the report that you want to publish as follows. For an example, see Figure 4-8 on page 4-42.

- **Report cycle ID.** The report cycle ID number is automatically assigned to the report cycle.

- **Request ID.** You need to create a separate request for each report that you want to publish. The request ID number is automatically assigned to the request. Request IDs are assigned in sequential order.

- **Report format.** Click the format that you want the published report to appear in. This setting also specifies the distribution method (i.e., link or attachment).

Note • **The format that you select in this box should support the report or spreadsheet that you select in the Report box. For example, if you select a spreadsheet in the Report box, you might not get the desired results if you select the Crystal report format in this box.**

- **PDF : E-mail with report attached.** The report is published as a PDF document and attached to the e-mail. The text "*Report name* is attached" is placed in the e-mail body.

  Adobe Reader must be installed on the client computer to enable the e-mail recipient to view the report.

  This report format has the following advantages and disadvantage:

  Advantages

  - The recipient receives the report directly.

  - The recipient does not require Windows folder or IIS security privileges to access the report.

  Disadvantage

  - Large reports included as attachments can affect the performance of your e-mail system.

- **PDF : E-mail with link to report.** The report is published as a PDF document and a link to the report is included in the e-mail. The format of the link, UNC or URL, is determined by the value in the **Link type** box of the Report Cycle Maintenance dialog box (see Step 4 on page 4-29).

  Adobe Reader must be installed on the client computer to enable the e-mail recipient to view the report.

  This report format has the following advantage and disadvantage:

  Advantage

  - Enables users to easily access the report without having to attach the report to the e-mail.

  Disadvantage

  - If you want to use a URL link for to the report, you must create a virtual directory for the `Published` report folder.

- **Crystal : E-mail with link to report.** The report is published as a Crystal report and a link directly to the report on the CIMS Server Web Reporting Web site is included in the e-mail. To use this option, the Web site must have Windows authenticated access enabled and the recipient must be set up to use the auto logon feature for the CIMS Server Web Reporting Web site (see *Web Settings* on page 3-49).

  Note that if you are using Crystal Reports XI *and* you have not purchased the full Crystal Reports Server license, you cannot publish reports as Crystal Reports because users cannot view the report from the Web site (this applies to the following two Crystal Reports formats as well). You need to select another report format for distributing the report.

  This report format has the following advantage and disadvantage:

  Advantage

  - Provides a link directly to the report on the Web site.

  Disadvantage

  - The Web site must have Windows authenticated access enabled and the recipient must be set up to use the auto logon feature for the CIMS Server Web Reporting Web site.

- **Crystal : E-mail with link to web site.** The report is published as a Crystal report and a link to the home page of the CIMS Server Web Reporting Web site is included in the e-mail.

  This report format has the following advantage and disadvantage:

  Advantage

  - Enables recipients who are not set up to use the auto logon feature for the CIMS Server Web Reporting Web site (see *Web Settings* on page 3-49) to go to the Web site home page via a link. The recipient can then log on to CIMS Server Web Reporting and view the published report.

  Disadvantage

  - Links to the home page for the CIMS Server Web Reporting Web site rather than directly to the published report on the Web site.

- **Crystal : No e-mail.** The report is published as a Crystal report, but an e-mail is containing a link to the report is not sent.

- **Excel : E-mail with file attached.** The report is published as an Excel spreadsheet and attached to the e-mail. The text "*Spreadsheet name* is attached" is placed in the e-mail body.

  Excel must be installed on the client computer to enable the e-mail recipient to view the spreadsheet.

  This report format has the following advantages and disadvantages:

  Advantages

  - The recipient receives the spreadsheet directly.

  - The recipient does not require Windows folder or IIS security privileges to access the spreadsheet.

  Disadvantages

  - Large spreadsheets included as attachments can affect the performance of your e-mail system.

  - The spreadsheet does not appear on the Published Spreadsheets page of the CIMS Server Web Reporting Web site and cannot be accessed from the Web site.

- **Excel : E-mail with link to file.** The report is published as an Excel spreadsheet and a link to the report is included in the e-mail. The format of the link, UNC or URL, is determined by the value in the **Link type** box of the Report Cycle Maintenance dialog box (see Step 4 on page 4-29).

  Excel must be installed on the client computer to enable the e-mail recipient to view the spreadsheet.

  This report format has the following advantage and disadvantage:

  Advantage

  - Enables users to easily access the spreadsheet without having to attach the report to the e-mail.

  Disadvantage

  - If you want to use a URL link for to the spreadsheet, you must create a virtual directory for the `Published` report folder.

- **Excel : E-mail with link to web site.** The report is published as an Excel spreadsheet and a link to the home page of CIMS Server Web Reporting Web site is included in the e-mail.

  This report format has the following advantage and disadvantage:

  Advantage

  - Enables recipients to go to the Web site home page via a link. The recipient can then log on to CIMS Server Web Reporting and view the published spreadsheet.

  Disadvantage

  - Links to the home page for the CIMS Server Web Reporting Web site rather than directly to the published spreadsheet.

- **Excel : No e-mail.** The report is published as an Excel spreadsheet, but an e-mail containing the spreadsheet or a link to the spreadsheet is not sent.

- **CSV : E-mail with file attached.** The report is published as a comma-separated values (CSV) file and attached to the e-mail. The text *"Report name is attached"* is placed in the e-mail body.

  This report format has the following advantages and disadvantages:

  Advantages

  - The recipient receives the CSV file directly.

  - The recipient does not require Windows folder or IIS security privileges to access the CSV file.

  Disadvantages

  - Large CSV files included as attachments can affect the performance of your e-mail system.

  - The CSV file does not appear on the Published Reports or Published Spreadsheets page of the CIMS Server Web Reporting Web site and cannot be accessed from the Web site.

- **CSV : E-mail with link to file.** The report is published as a CSV file and a link to the report is included in the e-mail. The format of the link, UNC or URL, is determined by the value in the **Link type** box of the Report Cycle Maintenance dialog box (see Step 4 on page 4-29).

  This report format has the following advantage and disadvantage:

  Advantage

  - Enables users to easily access the CSV file without having to attach the report to the e-mail.

  Disadvantage

  - If you want to use a URL link for to the CSV file, you must create a virtual directory for the `Published` report folder.

- **Report.** Click the report that you want to publish.

- **Set default parameters for all users of this report.** Click this button to set the parameters for the report. These parameters will be applied to reports for all users unless you set override parameters by user or user group (see **Set optional override parameters for this user/user group**).

  For a description of all report parameters for the standard reports provided with CIMS Server, see *Setting Report Parameters* on page 4-37. If you are using custom reports, your report parameters might differ.

- • **User Type—User or User group.** This setting determines the user or user group that you want to send the published report to and where the published report is stored. If you click **User**, the report is stored in the `Published\user` folder in a subfolder with the same name as the user. For example, `Published\user\Joan`.

  If you click **User group**, the report is stored in `Published\group` folder in a subfolder with the same name as the user group. For example, `Published\group\AP`.

  Note • **Make sure that you have entered an e-mail address for each user that you want to send the report to as described in** *To add a user:* **on page 3-28.**

- • **Set optional override parameters for this user/user group.** Click this button to set any parameters that are specific to a user or user group. These parameters will override the parameters set for all users.

7 Click **OK** when you are finished and then click **OK** again to close the Report Cycle Maintenance dialog box.

The report request appears in the **Requests** area of the Report Cycle Maintenance dialog box. A separate e-mail is sent for each report defined in the **Requests** area.

To edit a report cycle:

1 Click the report cycle, and then click **Edit**. The Report Cycle Maintenance dialog box appears.

2 Follow the steps in *Creating a Report Cycle* on page 4-29 beginning with Step 4.

To remove a report cycle:

Click the report cycle, and then click **Remove**.

Setting Report Parameters

Note • **This section describes the parameters for the standard reports provided by CIMS Lab. Your reports might use other parameters that are custom for your organization.**

To set the parameters for a report:

1 Click **Set Default Parameters for all users of this report** in the Report Cycle Distribution Request dialog box.

The Report Distribution Request Parameters dialog box appears.

2 Type the parameters values that you want to use for the report. Click **OK** when you are finished. A description of each of the parameters is provided in *Report Parameters for CIMS Standard Reports* on page 4-38.

3 Click **OK** when you are finished.

These parameters will be applied to reports for all users unless you set override parameters by user or user group. To set override parameters for a specific user or user group:

1 Click **User** or **User Group** and then click the user or group that you want to apply the override parameters to.

2 Click **Set Optional Override Parameters for this User/User Group**.

The Report Distribution Request Parameters dialog box appears.

3 Type values for only those parameters that you want to override. All other parameters will remain the same as the parameters for all users.

4 Click **OK** when you are finished.

Report Parameters for CIMS Standard Reports

The following are the parameters for the standard reports provided with CIMS Server. The parameters are presented in alphabetical order with the exception of InvoiceLevel, which is the first parameter for many reports.

Note • **Parameters vary by report.**

Parameter	Description
InvoiceLevel (This parameter is synonymous with Account Code Level on the CIMS Server Web Reporting Web site.)	The account code level that you want to view in the report. For example, the account code AABBBBCCC might contain the following levels: ■ Level 1, the two-digit company code AA ■ Level 2, the 6-digit division code AABBBB ■ Level 3, the 9-digit department code AABBBBCCC In this example, the account code level that you can select is 1, 2, or 3. The resource use and charge data will reflect the level that you select.
AccountCodeStart and AccountCodeEnd	These parameters work in conjunction with the InvoiceLevel parameter to specify the account codes for that level that appear in the report. For example, if the InvoiceLevel parameter is set to 1 (level 1), and level one of the account code is the 2-digit company code, only 2-digit account codes in the range specified by these parameters appear in the report. If you want all account codes for the account code level to appear in the report, you can leave these parameters blank or set the AccountCodeStart parameter to the lowest account code (for example, AA) and AccountCodeEnd to the highest account code (for example, ZZ).

Table 4-2 • Standard Report Parameters

Parameter	Description
AuditType	The type of changes that you want to view in CIMSClient, CIMSRate, and CIMSTransaction table audit reports.

Valid values are:

■ `A` or blank. View all table changes.

■ `I`. View table additions.

■ `U`. View table updates.

■ `D`. View table deletions. |
| DateStart and DateEnd | The start and end dates for the data that you want to appear in the report. You can use a CIMS date keyword or a date value for either the start or end date. The dates for the keywords are calculated using the date the report is published.

CIMS date keywords:

`RNDATE` If used for either the start or end date, the date is the current day.

`CURDAY` If used for the start date, the date is the previous day. If used for the end date, the day is the current day.

`CURWEK` If used for the start date, the date is the first day of the current week (Sun–Sat). If used for the end date, the date is the last day of the current week.

`CURMON` If used for the start date, the date is the first day of the current month. If used for the end date, the date is the last day of the current month.

`PREDAY` If used for either the start or end date, the date is the previous day.

`PREWEK` If used for the start date, the date is the first day of the previous week (Sun–Sat). If used for the end date, the date is the last day of the previous week.

`PREMON` If used for the start date, the date is the first day of the previous month. If used for the end date, the date is the last day of the previous month. |

Table 4-2 • Standard Report Parameters (Continued)

Parameter	Description	
DateStart and DateEnd (continued)	CURRENT	If used for the start date, the date is the first day of the current period as defined in the CIMSCalendar table. If used for the end date, the date is the last day of the current period.
	PREVIOUS	If used for the start date, the date is the first day of the previous period as defined in the CIMSCalendar table. If used for the end date, the date is the last day of the previous period.
	Date value:	
	The date must be in month/day/year format as follows:	
	■ month and day with or without a leading 0	
	■ 2 or 4-digit year	
	For example, 9/16/2005, 09/16/2005, 9/16/05, or 09/16/05.	
Graph	This parameter specifies whether a graph appears on the first page of the report. Valid values are:	
	■ Y (a graph appears)	
	■ N or blank (a graph does not appear)	
Identifier or AllIdent	The name of the identifier that you want to retrieve data for.	
InvoiceNumber	Some invoice reports contain separate invoices for the account codes selected. If you leave this parameter blank, the invoice numbering begins with the invoice number defined in the CIMSConfigOptions table.	
	If you provide an invoice number for this parameter, invoice numbering begins with that number.	
Month	The month for the data that you want to appear in the report. The format is numeric, 1–12.	
Period	The period (1-13) for the data that you want to appear in the report. Periods are defined in the CIMSCalendar table (see *Setting Up a Calendar* on page 3-26).	
Prorate	The amount that you want to prorate across accounts in proration reports.	
RateCode	The rate code that you want to retrieve data for.	
RateGroup, RateGroup4DetRpts, or RateGroupwithIdentifiers	The rate group that you want to retrieve data for. This can be the rate group title, description, or index number.	

Table 4-2 • Standard Report Parameters (Continued)

Parameter	Description
Start_Value and End_Value	This parameter provides data by the selected identifier value range. For example, if you want data for the following three identifier values: Server1, Server2, and Server3, type `Server1` as the start and `Server3` as the end.
Trans_ID_Start and Trans_ID_Start End	This parameter provides data by the selected CICS transaction ID range. For example, if you want data for the following three transaction IDs: CESF, DEGV, and TINQ, type `CESF` as the start and `TINQ` as the end.
TopN	This parameter specifies the number of account codes that appear in a report or the drill down for a report. For example, if you type `1`, only the account code that used the most resources or incurred the most charges appears. If you type `2`, the highest and second highest account codes appear.
TransactionType	The transaction type that you want to retrieve data for. Valid values are: ■ `A` or blank. All transactions. ■ `M`. Miscellaneous transactions. ■ `R`. Recurring transactions. ■ `C`. Credit transactions. For more information about transactions, refer to the *CIMS Server Web Reporting User's Guide*.
Year	The two or four-digit year for the data that you want to appear in the report.
ZeroCostOption	The Zero Cost Invoice report may be processed in two ways: ■ **Factor total.** This factors the invoice total by the zero cost amount. To factor by total, type `A` for this parameter. ■ **Factor rates.** This factors each resource rate by the zero cost amount. To factor by rate, type `B` or leave the parameter blank. For more information about zero cost, see page 3-11.
ZeroValue	The zero cost amount. You can type this amount with or without the decimal point. For example, 100000 or 100000.00.

Table 4-2 • Standard Report Parameters (Continued)

Creating a Report Cycle Example

Figure 4-8 shows configured report cycle dialog boxes for the example report cycle `Budget`.
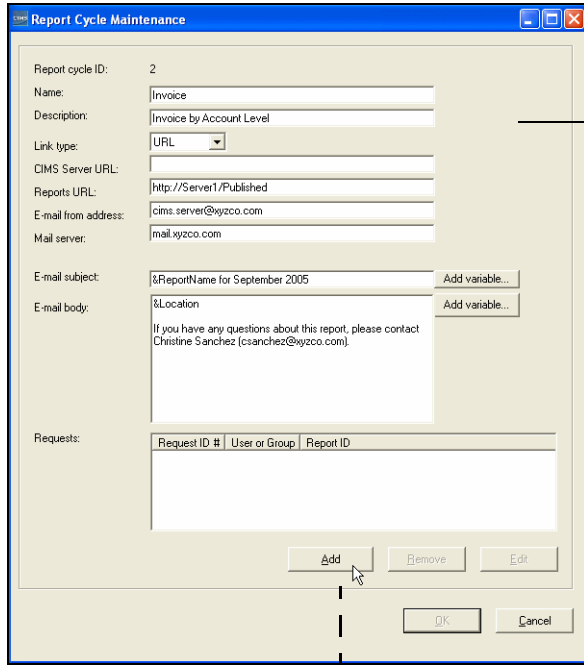
Reports generated using this report cycle are distributed via a URL link to the virtual directory Published (see *Creating a Virtual Directory for the Published Folder* on page 4-49).

The variables &ReportName in the subject and &Location in the body are automatically updated with the report name and a link to the report as shown in Figure 4-9 on page 4-43.

The report Invoice by Account Level is published as a PDF file and distributed via a URL link in the e-mail.

The e-mail will be sent to the CIMS user Joan. The user's e-mail address is defined in the User Maintenance dialog box (see page 3-29).
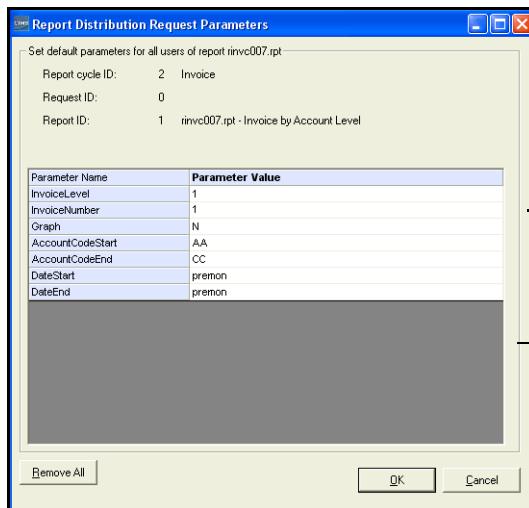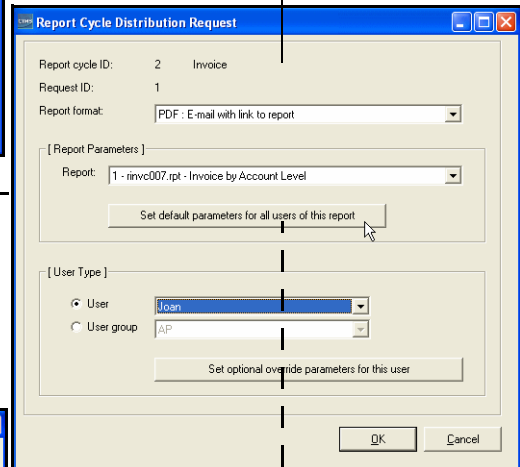
Only first level account codes between AA and CC appear in the report. The data presented for the report is for resources used during the previous month. Periods are defined in the CIMSCalendar table.

Figure 4-8 • Report Cycle Settings Example

The e-mail generated from the settings in the report cycle appears as shown in Figure 4-9. The e-mail includes a URL link to the report.
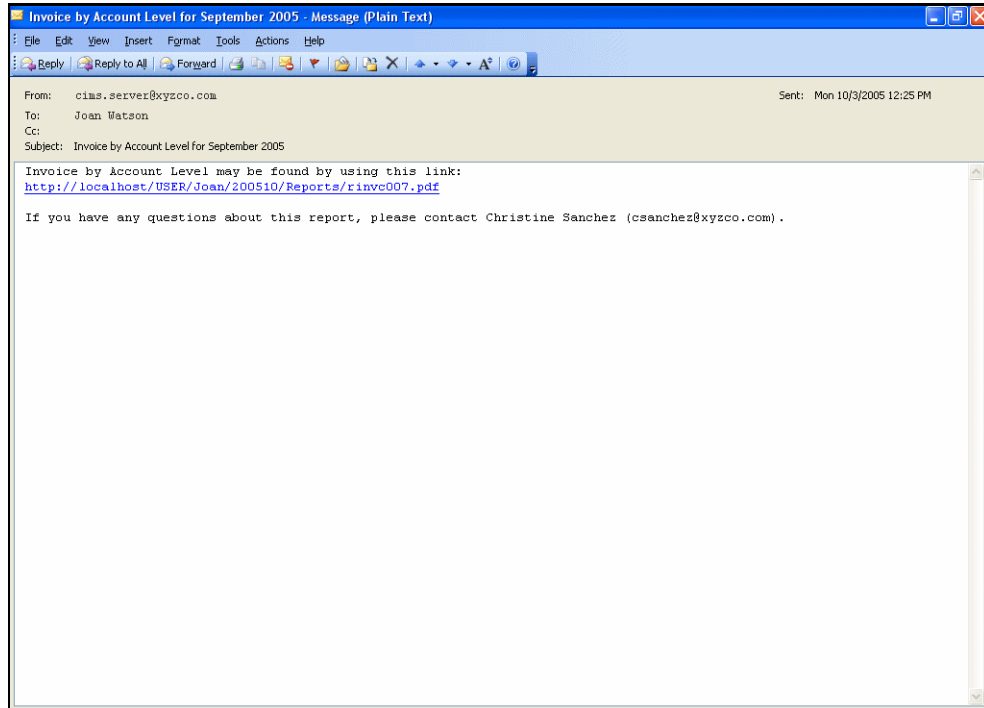
Figure 4-9 • E-mail Report Distribution Example

Running a Report Cycle

Once you have created a report cycle, you need to run the `ReportDistribution.wsf` script to create, publish, and distribute the reports defined in the cycle. If you installed CIMS Server in the default location, this script is in `C:\Program Files\CIMSLab\Scripts\Batch Reporting`.

Defining the Web Server (If Applicable)

Note • **This section is not applicable if you are using Crystal Reports 8.5 or XI.**

Crystal Reports 9 and 10 use the Crystal Report Application Server (RAS) interface, which is installed on the Web server. If you are using Crystal Reports 9 or 10 and *are not* running the `ReportDistribution.wsf` script on the Web server, you need to create a configuration option in CIMS Server Administrator to define the name of the Web server that contains the RAS interface. To set this option:

1   In the CIMS Server Administrator main window, click **System Administration** ▸ **Configuration Information**.

2   On the **Option List** tab, click **Add**.

3   In the **Add New Configuration Option** dialog box, type `RASServer` and click **OK**. The Configuration Option Maintenance dialog box appears.

4   Enter the following information as shown in example figure Figure 4-10:

  •   **Description.** An optional description of this option. Maximum of 80 characters.

  •   **Value.** The name of the Web server.

  •   **Data Type.** String.
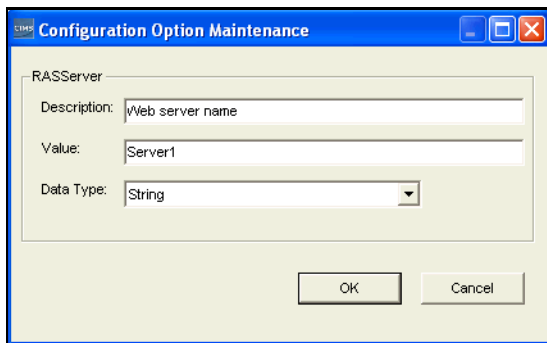
Figure 4-10 • Configuration Option Maintenance Dialog Box

Running the ReportDistribution.wsf Script

To run the `ReportDistribution.wsf` script, you should use the CIMS Job Runner console application and an XML job file as used for the data collection process for CIMS Server. The CIMS Job Runner application and its related architecture are described in detail *CIMS Data Collectors for Microsoft Windows Installation and User Guide*. This architecture provides the following benefits:

■ You can run the `ReportDistribution.wsf` script automatically on a scheduled basis (daily, monthly, etc.) using Windows Task Scheduler.

■ You can receive a log file via e-mail that provides the results of the report generation and distribution process. If a warning or failure occurs during processing, the file indicates at which point the warning/failure occurred. The log file can be sent to multiple recipients.

To run the `ReportDistribution.wsf` script via CIMS Job Runner, you need to create a job file for the script and then schedule CIMS Job Runner to run the job as shown in the following sections.

Create a Job File for the ReportDistribution.wsf Script

In the `JobFiles` folder, create an XML job file for the script using the structure shown in the following example file. (If you installed CIMS Server in the default location, the `JobFiles` folder is in `C:\Program Files\CIMSLab`.) For a complete description of the components of a job file, refer to the *CIMS Data Collectors for Microsoft Windows Installation and User Guide*.

```
<?xml version="1.0" encoding="utf-8"?>
<Jobs xmlns="http://www.cimslab.com/CIMSJobs.xsd">
    <Job    id="Monthly Report Distribution"
            description="Monthly Report Distribution"
            processPriorityClass="Low"
            smtpSendJobLog="true"
            smtpServer="mail.cimslab.com"
            smtpFrom="CIMSProcessResults@cimslab.com"
            smtpTo="CIMSProcessResults@cimslab.com"
            stopOnProcessFailure="false"
            joblogWriteToXMLFile="false"
            joblogShowStepOutput="true"
            joblogShowStepParameters="true"
            active="true">
        <Process    id="Monthly Report Distribution"
                    description="Monthly Report Distribution"
                    buildProcessFolder="false"
                    joblogShowStepOutput="true"
                    joblogShowStepParameters="true"
                    active="true">
            <Steps>
                <Step   id="Report Distribution"
                        description="Report Distribution"
                        type="Process"
                        programName="Batch Reporting\ReportDistribution.wsf"
                        programType="wsf"
                        active="true">
                    <Parameters>
                        <Parameter Cycle="Budget"/>
                    </Parameters>
```

```
            </Step>
        </Steps>
      </Process>
    </Job>
</Jobs>
```

In the preceding job file example, only the required parameter `Cycle` is provided for the `ReportDistribution.wsf` script. Table 4-3 describes the required and optional parameters for the script.

Parameter	Description/Values
Cycle (required)	The name of the report cycle that you want to run.
DataSourceID (optional)	The CIMS Data Source ID for the database that you want to use for reporting.
	If this parameter is not provided, the data source that is set as the Web/collector default in the CIMS Data Source Maintenance dialog box is used (see page 5-7).
	To use a CIMS Data Source other than the default, set this parameter to the appropriate data source ID.
Email (optional)	This parameter is helpful in testing or other situations in which you want to publish reports but do not want to distribute the reports via e-mail or you want to send an e-mail for reports that have already been published.
	Valid values are:
	■ `Trial`. An e-mail message containing the reports is a not sent, but the reports are published.
	■ `Only`. An e-mail is message is sent, but reports are not published. The e-mail contains a link to the previously published report.
Debug (optional)	If this parameter is set to `Y`, debugging information appears in the log file. If this parameter is set to `N` or is not provided, this information does not appear in the log file.

Table 4-3 • ReportDistribution Script Parameters

Schedule CIMS Job Runner to Run the Job File

Once you have created a job file, you can schedule CIMS Job Runner to run the file using Windows Task Scheduler as follows:

1 In Windows Control Panel, double-click **Scheduled Tasks**.

2 Double-click **Add Scheduled Task**.

3 The **Scheduled Task Wizard** appears. Click **Next**.

4 Click **Browse to find the program** `CIMSJobRunner.exe`, and then double click the program. If you installed CIMS Server in the default location, this program is in `C:\Program Files\CIMSLab\Process Engine`.

5 Type a name for the task or accept the default and click the schedule for the task. Click **Next**.

6 Select the time and day to start the task, and then click **Next**.

7 Type the password for the user account under which you want the scheduled task to run. The password cannot be blank. Click **Next**.

Note • **Make sure that the user account has a security permission of** `Full Control` **for the folder.**

---

8 Select the **Open advanced properties for this task when I click Finish** check box, and then click **Finish**.

9 In the **Task** tab, type following in the **Run** box where *jobfilename*.`xml` is the name of the job file that you want to run:

`"C:\Program Files\CIMSLab\Process Engine\CIMSJobRunner.exe"` *jobfilename*.`xml`

10 Click **OK**.

11 In the Set Account Information dialog box, type the password for the user account again, and then click **OK**.

The task appears in the Scheduled Task list. To execute `CIMSJobRunner.exe` immediately, right-click the task, and then click **Run**. For more information about Task Scheduler, refer to the Microsoft documentation.

Folder Permissions Required for Publishing and Viewing Batch Reports

The following sections describe the folder permissions required for the person who is publishing reports in batch mode and for the users accessing reports.

Permissions for Publishing Reports

To publish a report to a folder, the Windows account of the person who is publishing the report must have a security permission of `Full Control` for the folder.

If the folder is shared and is on a server other than the server where you are running the `ReportDistribution.wsf` script, the Windows account must also have a share permission of `Full Control`. If you are using Windows 2000, the default is to assign `Full Control` to the `Everyone` group. However, if you are using Windows XP with Service Pack 2 or Windows 2003, the default is to assign only the `Read` permission to the `Everyone` group.

Security Requirements for Viewing Reports

The security for accessing published reports is dependent on whether a user is viewing the report from the CIMS Server Web Reporting Web site or directly from a folder via a link.

Web Site Security

If a user is accessing published reports from the Web site, the CIMS user ID that the user logs on with determines which reports the user can view. For example, if the user `Joan` of the group `AP` logs on to the Web site, the user can view reports in the `Published\user\Joan`, the `Published\group\AP` folder, and the `Published\global` folder. The user can also view reports in any `Published\group\account\`*accountcode* folder if the account code for which the folder is named is assigned to the `AP` group.

Folder Security

If a user is accessing a published report directly from a folder via a link, the permissions set for the folder determines whether the user can view the report.

If the link is a UNC path, the Windows account must have a minimum security and share permission of `Read` for the folder.

If the link is a URL path to a virtual directory with Windows authenticated access enabled, the user's Windows account is used to determine whether the user can view a report in a folder. The user's Windows account must have a minimum security permission of `Read` for the folder.

If the link is a URL path to a virtual directory with Anonymous access enabled, the Windows account `IUSR_`*computername* is used for all users. To enable users to access reports using this account, the account must have a minimum security permission of `Read` for all applicable folders.

Creating a Virtual Directory for the Published Folder

Important! • This section is applicable only if you are providing a URL link directly to a published report. It is not applicable of you are providing a link to the CIMS Server Web Reporting Web site.

If you are providing a URL link directly to a published report, you need to create a virtual directory for the `Published` folder. CIMS Lab recommends that you create the virtual directory under the CIMS Server Web Reporting Web site (usually **Default Web Site**) as follows:

1 In Windows Control Panel, double-click **Administrative Tools** ▸ **Computer Management**.

2 Expand **Services and Applications** and navigate to **Internet Information Services** ▸ **Default Web Site**.

3 Right-click **Default Web Site**, and then click **New** ▸ **Virtual Directory.**

The Virtual Directory Creation Wizard appears. Complete the wizard as follows:

a Click **Next** at the welcome screen.

b Type an alias for the virtual directory, and then click **Next**.

c Enter the path for the `Published` folder, and then click **Next**.

d When prompted for access permissions, CIMS Lab recommends that you click only the **Read** access permission. You can optionally also click the **Browse** permission if you want users to be able to browse the entire directory (i.e., the entire contents of the `Published` folder) from a browser.

e Click **Next** and then click **Finish** to create the virtual directory.

The virtual directory appears below **Default Web Site**.

4 Right-click the virtual directory, and then click the **Directory Security** tab in the properties dialog box.

5 In the **Anonymous access and authentication control** area click **Edit**. The Authentication Methods dialog box appears

6 Click **Anonymous access** or **Integrated Windows access** (see *Folder Security* on page 4-48).

7 Click **OK** until the properties dialog box closes.

8 Restart IIS.

For additional assistance, consult your IIS administrator.

Drilling Down in Published Reports

A key feature of CIMS Server Web Reporting is the ability to drill down on items in a report to view more detailed information.

Depending on the report, you can drill down on items in reports published as a Crystal report or as a PDF document. Drill down is not available for CSV files for spreadsheets regardless of the format in which the spreadsheet is published.

If a report is published as a PDF, it is not accessible via the CIMS Server Web Reporting Web site and does not have all of the drill down options that are available from the Web site.

However, if the cursor icon becomes a hand when the user points to an item in a PDF report, the user can drill down on that item. In this case, the applicable page on the CIMS Server Web Reporting Web site is opened to allow drill down.

For more information about drilling down in reports, including drill down options by report, refer to the *CIMS Server Web Reporting User's Guide*.

■ **5**

Database Administration

This chapter describes how to use CIMS Server Administrator to create and administer CIMS Server databases.

Creating a Database

> **Note •** To create an Oracle or DB2 database, consult your DBA. For more information about the requirements for using an Oracle or DB2 database with CIMS Server, refer to the *CIMS Server for UNIX Installation and User Guide* or *CIMS Server for DB2 Database Setup Guide*. Continue to *Creating a CIMS Data Source and Initializing the Database* on page 5-4.

You might have already created a database using the steps in *Getting Started* on page 2-27. However, you can use more than one database with CIMS Server. For example, you might have a production database and a development database. The following sections provide steps for creating additional databases in Microsoft SQL Server or MSDE. If you require further assistance, consult your SQL Server DBA.

Creating a Database in Microsoft SQL Server

> **Note •** The steps in this section reflect creating a database in SQL Server 2000. If you are using SQL Server 2005, refer to the Microsoft documentation if needed.

1 In Windows, click **Start ▸ Programs ▸ Microsoft SQL Server ▸ Enterprise Manager**.

2 In the Tree window, under **Console Root**, navigate to **Microsoft SQL Server ▸ SQL Server Group ▸** *computername* **▸ Databases.**

3 Right-click the **Databases** folder, and then click **New Database**.

4 In the Database Properties dialog box, enter the configuration information for the new database as follows:

- On the **General** tab do the following:

  - In the **Name** box, type a name for the database. The name `CIMSServer` is used in this guide, but you can use any name.

  - In the **Collation name** box, click `SQL_Latin1_General_CP1_CI_AS`. Make sure that you select only this database collation type and not a type that looks similar. CIMS Server currently does not support other collation types.

- Unless you need to change the default settings for the database, you do not need to reset values in the **Data File** or **Transaction Log** tabs.

5 Click **OK** when you are finished.

Creating User Logins for the SQL Server Database

There are two types of CIMS Server users: the CIMS Server administrator or administrators and CIMS Server Web Reporting end users. After you create the database, you need to create database logins for these users as described in *To create a user login:* on page 2-31.

Creating a Database in MSDE 2000

To create an MSDE database, use either the OSQL or ISQL command-line interface as follows. Press <Enter> after each command.

1 At the command prompt, log on to the database server. For example:

```
osql -S servera-test -E
```

Where `-S servera-test` indicates the server name and `-E` indicates use a trusted connection. Note that there are other switches that you may have to use depending on your environment. For example, you may have to specify the login ID (`-U`) and password (`-P`) switches. To view the OSQL switches, type `osql /?` at the command prompt.

2 At the `1>` prompt, type:

```
create database database name
```

Where `database name` is the name that you want to give the database.

3 At the `2>` prompt, type:

```
go
```

The following messages appear:

```
The CREATE DATABASE process is allocating 0.63 MB on disk 'database name'.
The CREATE DATABASE process is allocating 0.49 MB on disk 'database name_log'.
```

4 At the `1>` prompt, type:

```
quit
```

The database is created in `C:\Program Files\Microsoft SQL Server\MSSQL\Data` (if you installed CIMS Server, including MSDE, in the default location). You should include the `Data` folder in your backup schedule.

Creating User Logins for the MSDE Database

There are two types of CIMS Server users: the CIMS Server administrator or administrators and CIMS Server Web Reporting end users. CIMS Lab recommends that you use the default SQL Server user login `sa` with a password of `sa` for both CIMS Server administrators and end users.

If you want to use a user login or logins other than `sa`, you can use the OSQL or ISQL command-line interface or a third-party product for maintaining the MSDE database.

Creating a CIMS Data Source and Initializing the Database

Once you have created a database, you need to follow the steps in the *Set Up CIMS Server* section beginning on page 2-33, including creating a CIMS Data Source for the database and initializing the database.

WARNING • Before you initialize the database, make sure that you have selected the correct CIMS Data Source for the database in the Select CIMS Data Source List at the bottom of CIMS Server Administrator main window. Initializing overwrites any existing data in a database.

Backing Up and Maintaining Databases

It is extremely important that you back up your CIMS Server database(s) so that you can recover your data in case of media failure or natural disaster. CIMS Lab recommends that you back up your database(s) weekly and that you back up to *a different server at another site*.

If you are using an Oracle or DB2 database, consult your DBA for assistance in backing up and maintaining the database.

If you are using a SQL Server database, CIMS Lab recommends that you use the Database Maintenance Plan feature included with SQL Server to schedule and perform backup up and maintenance tasks for databases. To use this feature:

1 In Windows, click **Start ▸ Programs ▸ Microsoft SQL Server ▸ Enterprise Manager**.

2 In the Tree window, under **Console Root**, navigate to **Microsoft SQL Server ▸ SQL Server Group ▸** *computername* **▸ Management ▸ Database Maintenance Plans.**

3 Right-click **Database Maintenance Plans**, and then click **New Maintenance Plan**.

4 Follow the steps provided in the Database Maintenance Plan Wizard.

If you are using a SQL Server or MSDE database, you can also use the script `SampleSQLMaintenance.bat` to back up and maintain the database. For more information about this script, see *SampleSQLMaintenance.bat Script* on page C-26.

Setting the Database Recovery Model

> **Note •** **This section is not applicable if you are using an Oracle or DB2 database. For information regarding database recovery, consult your DBA.**

CIMS Lab recommends that you change the SQL Server recovery model from Full, the default, to Simple.

Full recovery allows the database to be recovered to the point of failure. Simple recovery allows the database to be recovered to the most recent backup. Because any lost data can be recovered and reloaded from the CIMS Server Resource (CSR) or CIMS Server Resource Plus (CSR+) files, the benefit offered by the Full recovery is not as beneficial as the smaller SQL Server log file size and disk space savings provided by Simple recovery.

To set the database recovery model:

1 In Enterprise Manager, navigate to the database that you want.

2 Right-click the database, and then click **Properties**.

3 On the **Options** tab, click **Simple** in the **Recovery Model** list.

4 Click **OK**.

Managing CIMS Data Sources

CIMS Server Administrator, the CIMS Server Web Reporting Web site, CIMS batch reporting, and CIMS Data Collectors all require access to the databases that you create for CIMS Server. To enable these components to use a database, you need to do the following:

■ Create an ODBC Data Source that points to the database.

■ Create a CIMS Data Source that points to the ODBC Data Source. The CIMS Server components use the CIMS Data Source to identify and access the correct ODBC Data Source.

The steps required to create the ODBC and CIMS Data Source depend on the database that you are using with CIMS Server. The steps for each database type are provided in *Configure the CIMS Data Source for the Database* on page 2-33.

Once you have created the ODBC and CIMS Data Source, you can maintain the configuration via the CIMS Data Source Maintenance dialog box. To open this dialog box, click **System Administration ▶ CIMS Data Source Maintenance** in the CIMS Server Administrator main window.

To add a CIMS Data Source:

1 Click **Add**.

2 In the Add CIMS Data Source dialog box, type an ID for the CIMS Data Source, and then click **OK**.

3 Follow the steps that are applicable to your database as described in *Configure the CIMS Data Source for the Database* on page 2-33.

To edit a CIMS Data Source:

1 Click the CIMS Data Source, and then click **Edit**.

The Configure CIMS Data Source dialog box appears.

2 Edit the CIMS Data Source as applicable for your database as described in *Configure the CIMS Data Source for the Database* on page 2-33.

To rename the CIMS Data Source:

1 Click the CIMS Data Source, and then click **Edit ▶ Rename CIMS Data Source**.

2 In the Rename CIMS Data Source dialog box, type the new ID for the CIMS Data Source and then click **OK**.

To remove a CIMS Data Source:

Important! • Before you remove a CIMS Data Source, make sure that the data source is not used by CIMS Server Web Reporting or any other CIMS Web application, CIMS batch reporting, or CIMS Data Collectors.

---

1 Click the CIMS Data Source, and then click **Remove**.

2 Click **Yes** to confirm that you want to remove the CIMS Data Source.

Setting a CIMS Data Source as the Web Site/CIMS Data Collectors Default

If there are multiple entries in the CIMS Data Source List Maintenance dialog box, you can set any of the entries as the default data source. The default data source setting is used as follows:

■ **For Web reporting.** CIMS Server Web Reporting uses the default CIMS Data Source as described in *Using Multiple Databases for CIMS Server Web Reporting* on page 5-9.

■ **For batch reporting.** The default CIMS Data Source is used for batch reporting unless another data source is passed as a parameter to the ReportDistribution.wsf script. See *Running the ReportDistribution.wsf Script* on page 4-45.

■ **For CIMS Data Collectors.** CIMS Data Collectors load data to the database specified by the default CIMS Data Source unless another data source is specified in the job file. **For more information, refer to the** *CIMS Data Collectors for Microsoft Windows Installation and User Guide.*

Important! • If you are using a CIMS Data Collector that collects data from a database, you need to create a CIMS Data Source for that database as described in the *CIMS Data Collectors for Microsoft Windows Installation and User Guide*. Make sure that you do not select a non-CIMS Server database as the default.

Until you specifically set one of the CIMS Data Sources as the default, the data source selected in the **Select CIMS Data Source** list at the bottom of the CIMS Server Administrator main window is set as the default.

Notes • The default setting is not applicable when you are using CIMS Server Administrator to access a database. CIMS Server Administrator points the CIMS Data Source that is selected in the Select CIMS Data Source list regardless of whether the data source is set as the Web/collector default.

You should never select a CIMS Data Source for a non-CIMS Server database in the Select CIMS Data Source list. If you accidently select a CIMS Data Source for a SQL Server or MSDE database that you are collecting data from and that data source points to the master database, you will be asked whether you want to create another database. Click No.

To set a CIMS Data Source as the default:

■ Click the CIMS Data Source, and then click **Set Web/Collector Default**. Yes appears in the **Default for Web/Collectors?** column for the data source entry as shown in example Figure 5-1.
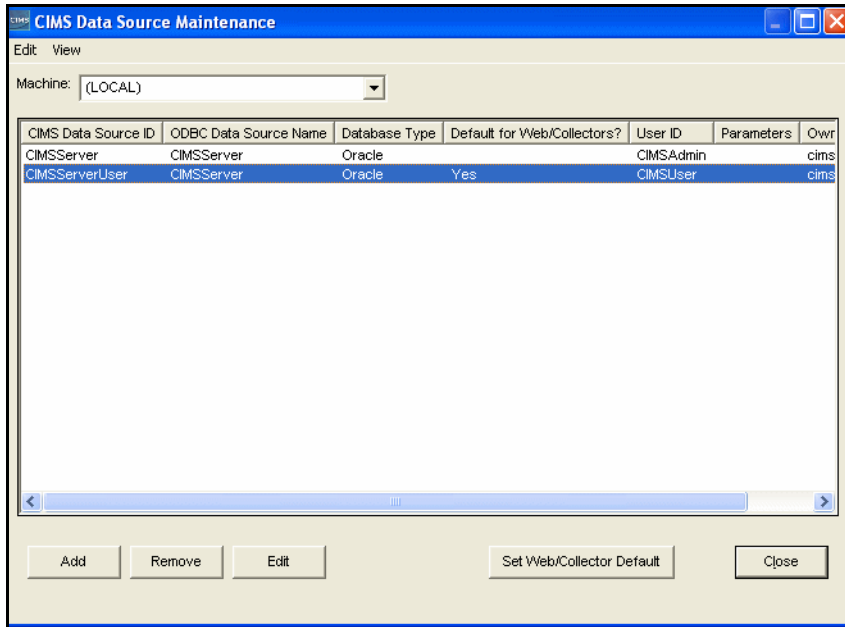
Figure 5-1 • Data Source List Maintenance Dialog Box—Set Web/Collector Default

Using Multiple Databases for CIMS Server Web Reporting

There are two scenarios for using multiple databases for Web reporting:

■ One Web server with one virtual directory. This scenario allows you to point your Web site to the default database set in CIMS Data Source Maintenance dialog box. You can change the default database as needed and then update CIMS Server Web Reporting to connect that database.

■ One Web server with multiple virtual directories. This scenario allows you to access multiple databases without changing the settings in CIMS Server Administrator. You can access multiple databases during a CIMS Server Web Reporting session by creating individual virtual directories for each database other than the default database.

Both scenarios can be used for development, testing, and upgrade purposes. However, the second scenario is more commonly used.

Note • **If you are using multiple database applications (e.g., SQL Server and Oracle), you need to restart IIS when you switch between database types.**

To use one Web server and one virtual directory:

1 In the CIMS Server Administrator main window, click **System Administration ▸ CIMS Data Source Maintenance**.

The CIMS Data Source Maintenance dialog box appears.

2 Click the CIMS Data Source ID for the database that you want to use as the default, and then click **Set Web/Collector Default**.

3 Click **Upgrade Configuration** on the Edit Configuration page of CIMS Server Web Reporting *or* restart IIS. The correct data source should appear in the **ODBC DSN** field on the Edit Configuration page.

4 Repeat this procedure each time you want to use a different database.

To use one Web server and multiple virtual directories:

A typical configuration for multiple virtual directories is one in which the default directory is pointing to the production database and another directory is created to point to a development database. Using this scenario as an example:

1 In CIMS Server Administrator, set the production database as the default CIMS Data Source (see Step 1 and Step 2 in *To use one Web server and one virtual directory:*).

2 In Windows, copy the CIMS `Web` folder and its contents to create a Web site that will point to the development database. If you installed CIMS Server in the default location, the `Web` folder is in `C:\Program Files\CIMSLab\Server`.

3 In the new folder, do the following:

- Open the `WebReportingDataSource.asp` file and enter the CIMS Data Source ID for the development database as follows:

  `Application("WebSiteUID") = "`*UID*`"` (where `UID` is the CIMS Data Source ID for the development database [see *Managing CIMS Data Sources* on page 5-6]).

- Expand the `CIMSReporting` subfolder. Right click the `data` subfolder and assign `Read`, `Write`, and `Modify` permissions for the following user:

  - *computername*`\ASPNET` (Windows 2000 or XP)

  Or

  - `NT AUTHORITY\NETWORK SERVICE` (Windows 2003)

4 In IIS Manager, create a virtual directory that points to the development Web site folder. For assistance, consult your IIS administrator.

5 Expand the new virtual directory and do the following:

  a Right-click the `CIMSReporting` folder, and then click **Properties**.

  b Click the **Create** button next to the **Application name** box.

  c Click **OK** when you are finished.

6 To access the database that you want, enter the address that points to the virtual directory for that database in the **Address** bar of the browser. For example, `http://Server1/development`.

Important! • The files and subfolders in the Web folder might change from one CIMS Server release to the next. If you upgrade to a new release of CIMS Server, you need to delete all Web site folders that you have created and repeat Step 2 and Step 3.

Managing Database Tables

CIMS Server Administrator includes many powerful tools for managing database tables used with the CIMS Server system. You can easily create, drop, load, export, and view database tables.

Note • **All database objects, including tables, are** *XML* **files that can be customized for your site. For more information about tables and other database objects, see** *Managing Database Objects* **on page 5-15.**

About Exporting, Loading, Dropping, and Creating Tables

The following is a description of the drop, create, export, and load functions used for database tables:

■ *Exporting* a table from the database creates a comma-delimited text file with the same name as the table, but does not remove the table or its data. Exporting a table is useful as a means of backup—the file can be reloaded into the database.

■ *Loading* a table into the database first deletes all data currently in the table and then loads the table from the file in the directory that you specify. You can load files that were previously exported from the database or you can load files from another source such as a mainframe file.

The file must have the same name as the table (e.g., `CIMSRate.txt` for the CIMSRate table) and must contain the following:

• The table column heads in the first record of the file.

• All required fields for the table provided in comma-delimited format. To determine whether a field is required, view the table properties in SQL Server or Oracle Enterprise Manager. Fields that *do not* have the **Nulls** check box selected must be included in file.

For an example of the required format for a file, you can export the table to a file. For a description of the fields in the file, see the applicable table description in *Appendix A, Database Tables*.

WARNING • **Extreme caution should be used when loading a table. Deleting or overwriting data can cause unexpected results. Be sure a backup exists before performing this procedure.**

■ *Dropping* a table removes the table and its data from the database. You should consult CIMS Lab before you drop tables.

■ *Creating* a table creates the table with no data in the database after the table is dropped.

Loading and Exporting Tables

To load or export a table:

1 In the CIMS Server Administrator main window, click **System Administration** ▶ **Database** ▶ **Database Table Manager**.

The Database Table dialog box appears as shown in Figure 5-2.
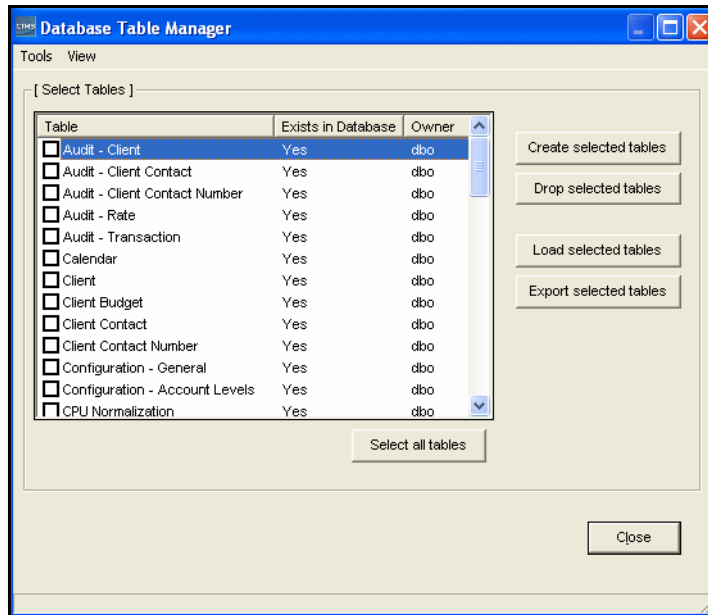
Figure 5-2 • Database Table Dialog Box

2 To load a table, select it in the list of tables. To select all table check boxes, click **Select all tables**. Note that the ability to select all tables is dependent on the privileges assigned by your DBA.

3 Click **Load selected tables** or **Export selected tables**. A dialog box appears, prompting you to select the location that you want to load tables from or export tables to. Select the correct folder, and then click **OK**.

Loading and Exporting Client and Rate Tables

The most commonly exported and loaded tables are the CIMSClient and CIMSRate tables and their related tables. You can export and load these tables from the Database Table Manager or you can use the Chargeback Tables dialog box. This dialog box includes only client and rate-related tables.

Note • You can also use the `Table.wsf` script to load the CIMSClient and CIMSRate tables in batch. For more information about this script, see *Table.wsf Script* on page C-29.

To load or export a client or rate table:

1 In the CIMS Server Administrator main window, click **Chargeback Administration ▶ Chargeback Table Maintenance ▶ Table Manager**.

The Chargeback Tables dialog box appears.

2 Select the tables that you want to export or load as shown in example Figure 5-3. (Note that if you select **Client** or **Rate**, all related tables are selected by default. You can clear those tables that you do not want.)
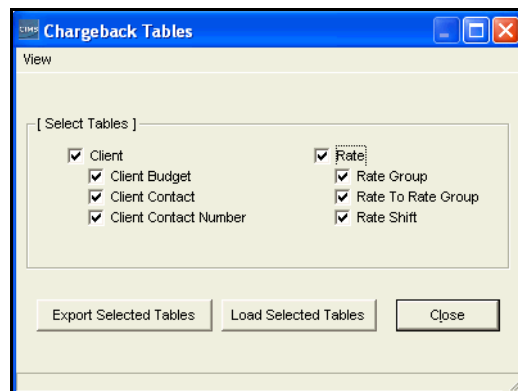
Figure 5-3 • Chargeback Tables Dialog Box

3 Click **Export Selected Tables** or **Load Selected Tables**. A dialog box appears, prompting you to select the location that you want to load tables from or export tables to. Select the correct folder, and then click **OK**.

Note • Because referential integrity rules are used in CIMS tables, some tables must be loaded in combination with other tables.

Creating and Dropping Tables

WARNING • **You should consult CIMS Lab before you drop tables. Dropping a table removes the table and its data from the database.**

To create or drop a table:

1 In the CIMS Server Administrator main window, click **System Administration** ▶ **Database** ▶ **Database Table Manager**.

The Database Table Manager dialog box appears.

2 Select the table(s) you want to create or drop. To select all tables, click **Select all tables**.

3 Click **Create selected tables** or **Drop selected tables**. A confirmation message appears. Click **Yes**.

Converting Daily Summary Tables to a Monthly Summary Table

You can consolidate your daily CIMS Summary records so that data is stored in an aggregated monthly record. This consolidation minimizes storage (there is typically a 90 percent or greater reduction in records) and decreases the time required to generate monthly reports. A drawback to this consolidation is that you cannot run costed daily reports against the CIMSSummary table.

To perform the consolidation process, use the `ConvertSummaryDailyToMonthly.wsf` script. For more information about this script, see page C-9.

Important! • **You should consult CIMS Lab before using this script.**

Updating the Rate Identifiers Table

A key feature of viewing invoices in CIMS Server Web Reporting is the ability to drill down on the units consumed for a resource by identifier. This feature uses the CIMSRateIdentifiers table, which contains the rate codes that are processed from the CSR or CSR+ files and correlates them to their corresponding identifier names in the CIMSIdent table.

If the identifiers in the CSR or CSR+ files have changed and/or a rate code or codes in the resource files have changed, the CIMSRateIdentifiers table will retain unused data in addition to the current data. Although this does not cause processing problems, the table can accumulate a large amount of data. To update the table so that it contains only the current data, in the CIMS Server Administrator main window, click **Chargeback Administration** ▶ **Database Loading** ▶ **Update Rate Identifiers**.

Viewing Tables

To view tables, in the CIMS Server Administrator main window, click **System Administration** ▶ **Database** ▶ **Table Viewers** ▶ *Table Name*.

Managing Database Objects

WARNING • Certain reports are dependent on database objects. Dropping or altering database objects could disable these reports.

All database objects are XML files. The standard database objects that are included with CIMS Server are located in `C:\Program Files\CIMSLab\Admin\ DBObjects\Standard` (if you installed CIMS Server in the default location). You can also create custom objects and store them in the `Custom` folder. If you create a custom object with the same name as a standard object, CIMS Server uses the custom object.

CIMS Server includes the following types of database objects:

■ **Tables.** Tables are database objects that contain all the data in a database. A table definition is a collection of columns. In tables, data is organized in a row-and-column format similar to a spreadsheet. Each row represents a unique record, and each column represents a field within the record.

Note • You can manage tables from the Database Table Manager dialog box as described in *Managing Database Tables* on page 5-11 or from the Database Objects Manager dialog box described in this section. However, the Database Table Manager offers more options.

■ **Views**. Each view is essentially a saved SQL statement that performs a query that allows the system to generate a report or reports.

■ **Stored Procedures**. Each procedure is set of SQL statements that can perform both queries and actions that allow the system to generate a report or reports. Stored procedures can accept parameters at runtime, whereas views cannot.

■ **Indexes.** These are files that contain the SQL statements that define how a table index is created. A table index allows the database program to find data in a table without scanning the entire table. There can be multiple indexes per table or no index at all.

■ **Triggers.** A trigger is a special type of stored procedure tha**t executes when data in a specified table is modified. A trigger can qu**ery other tables and can include complex SQL statements.

Creating and Dropping Database Objects

You can create or drop (completely remove) standard or custom database objects in the database.

WARNING • You should consult CIMS Lab before you drop tables. Dropping a table removes the table and its data from the database.

To create or drop database objects:

1 In the CIMS Server Administrator main window, click **System Administration ▸ Database ▸ Database Objects Manager**.

The Database Objects Manager dialog box appears as shown in Figure 5-4.
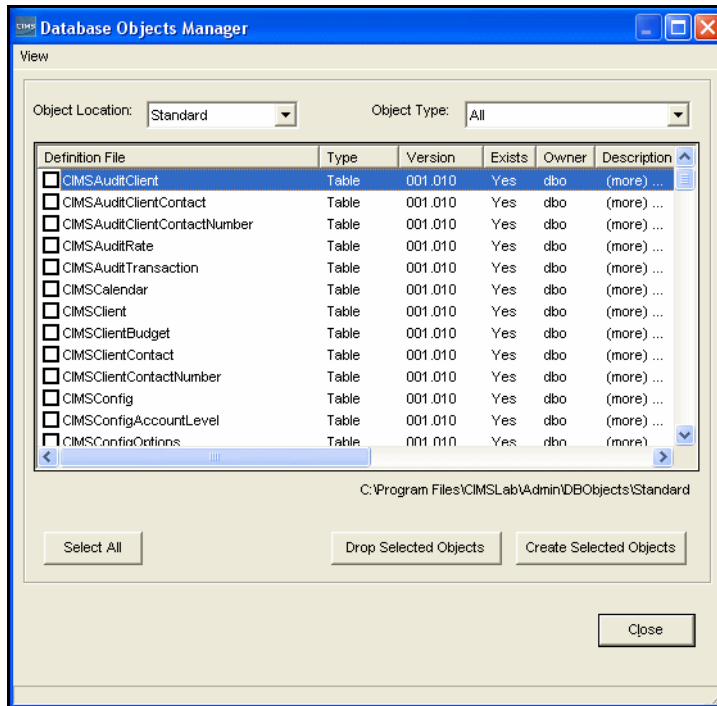
Figure 5-4 • Database Objects Manager Dialog Box

2 In the **Object Location** list, click the location of the database objects that you want to create or drop (i.e., the `Standard` or `Custom` folder).

3 In the **Object Type** list, click the object type or accept the default (`All`).

4 Select the object(s) that you want to create or drop. To select all object check boxes, click **Select All**.

5 Click **Create Selected Objects** or **Drop Selected Objects**. A confirmation message appears. Click **Yes**.

> **Note •** If the user ID that you are using to access the database does not have sufficient system administration authority, you might not be able to create database objects or to create objects with the appropriate permissions. In this situation, a warning message appears recommending that you contact your database administrator or CIMS Lab before continuing.

To confirm that an object exists in the database, make sure that Yes appears in the **Exists** column for that object.

Loading, Archiving, and Purging the Database

This section provides the procedures for loading, archiving, and purging the CIMS Server database using the CIMS Server Administrator. You can also perform much of the functionality described in this section via scripts as described in *Appendix C, Scripts*.

Loading the Database

If you are using CIMS Data Collectors for Windows, Mainframe, or UNIX, the batch collection process automatically creates the Ident, Detail, and Summary files used for reporting and loads them into the CIMS Server database on a defined schedule (daily, monthly, etc.). For more information about scheduling data collection for CIMS Server, refer to the *CIMS Data Collectors for Microsoft Windows Installation and User Guide*.

However, for testing and debugging purposes, you might want to load an individual file or files into the database. You can load files from the Edit Process definition dialog box (see *CIMS Server Administrator Processing* on page 6-21) or you can use the dialog boxes described in the following sections.

Note • **If you receive a warning stating that a file with the same date range has already been loaded, you are probably loading duplicate data. You can click Yes to continue to load the data, but you should delete the previous load immediately after the current load is completed (see** *Tracking the History of Database Loads* **on page 5-23).**

Loading From CIMS Server

This section describes how to load Ident, Detail, and Summary files into the CIMS Server database. Note that this process is normally not required because the files are automatically loaded at the end of batch processing.

To load a database from CIMS Server:

1 In the CIMS Server Administrator main window, click **Chargeback Administration ▶ Database Loading ▶ From CIMS Server**. The CIMS Server File Load dialog box appears as shown in example Figure 5-5.
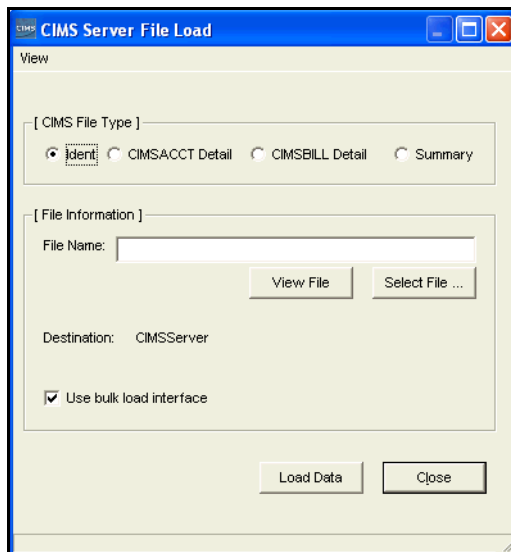
Figure 5-5 • CIMS Server File Load Dialog Box

2 Complete the dialog box as follows:

- **CIMS File Type.** Click one of the following:

  - **Ident.** This file is created by CIMSAcct. This is the identification file that contains fields such as User ID, department code, division code, server name, etc. These fields are used during account code conversion to create your account code structure.

  - **CIMSACCT Detail.** This file is created by CIMSAcct. This file provides an account code for each input file record processed. This file is used as an input into CIMSBill. *You will rarely need to load this file.*

  - **CIMSBILL Detail.** This file is created by CIMSBill. This file is loaded into the database for use in the drill down reports. This file contains resource utilization data.

    The CIMSBill Detail file differs from the CIMSAcct Detail file in that the CIMSBill Detail file reflects any proration, CPU normalization, or include/exclude processing that was performed. The CIMSBill Detail file also includes accounting dates.

  - **Summary.** This file is created by CIMSBill. This file contains summarized usage records with applied rates. You can load any number of Summary files individually.

  For more information about these files, see *Chapter 6, Processing Data*.

- **File Name.** Enter the path of the database file that you want to load. To browse for a file, click **Select File**. To view the file in Windows Notepad, click **View File**.

- **Destination.** This defaults to the CIMS Data Source selected in the **Select CIMS Data Source** list at the bottom of the CIMS Server Administrator main window. The files are loaded into the database represented by the data source.

- **Use Bulk Load Interface.** Select this check box to perform a bulk load when loading the database. This option is recommended because it increases the speed of loads. A disadvantage is that if there is an error in the data, a generic rather than specific error message appears. In this case, clear this check box and reload to view the specific error message.

3 Click **Load Data**.

Loading From CIMS Mainframe or CIMS Desktop

The CIMS Mainframe File Load and CIMS Desktop Table Load dialog boxes are provided for legacy purposes only. Consult CIMS Lab before using these dialog boxes.

Archiving, Purging, and Restoring Database Loads

Note • **This feature is available if you are using SQL Server database. Support for Oracle and DB2 will be included in a future release of CIMS Server.**

Archiving and purging database loads is a powerful feature that enables you to remove space and performance consuming data from the database and to store the data in compressed zip files. You can then easily restore the archived data to the database if needed.

Archiving, purging, and restoring loads in the database are defined as follows:

■ **Archive.** Saves selected CIMS Summary, CIMSBill Detail, CIMS Ident, and/or CIMSAcct Detail loads in a format that you can reload (restore) into the database. Archiving does not delete the load from the database.

■ **Purge.** Deletes selected loads from the database.

■ **Restore.** Reloads selected purged loads into the database. To use this feature, the loads must be archived.

You can archive loads, archive and purge loads, or purge loads without archiving them. To view a history of the loads that have been archived or purged, see *Tracking the History of Database Loads* on page 5-23.

Note • **You can also use the** `PurgeLoads.wsf` **script to purge loads in batch. However, you should consult CIMS Lab before using this script because it does not archive the loads before purging them. For more information about this script, see *PurgeLoads.wsf Script* on page C-19.**

To archive database loads:

1 In the CIMS Server Administrator main window, click **Chargeback Administration** ▸ **Database Loading** ▸ **Load Archiving & Purging**.

The Load Archive dialog box appears as shown in example Figure 5-6 on page 5-21.
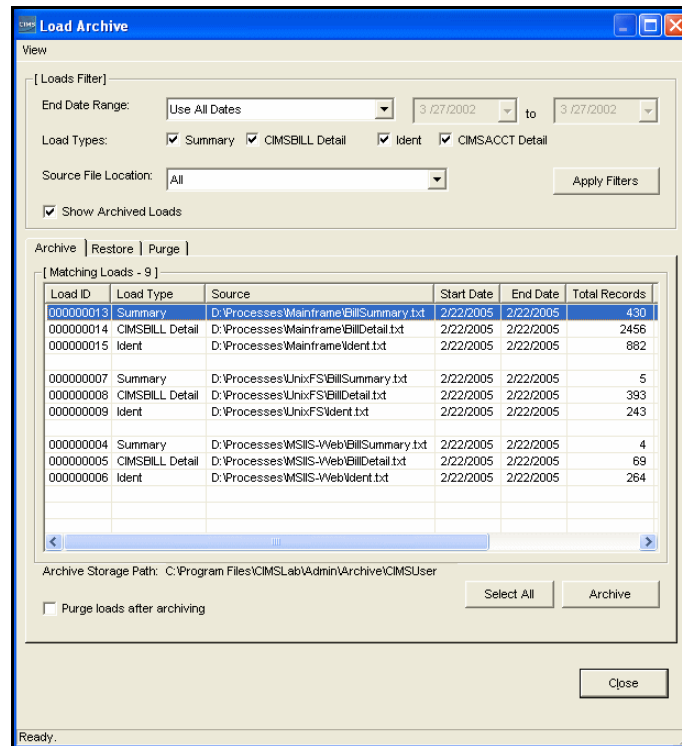
Figure 5-6 • Load Archive Dialog Box

2   In the **Loads Filter** area, set the following filters. These filters determine the loads that appear on the **Archive** tab. For example, you can select only CIMSBill Detail loads or only those loads with end dates that are in a certain date range.

- **End Date Range.** Loads are selected by the end date stored in the CIMSLoadTracking table. Click **Use All Dates**, **Use Specific Dates**, or a date keyword to select loads with end dates that fall within the specified date range. For example, if you click **Current Month**, loads with end dates in the current month are selected. If you select **Use Specific Dates**, enter the dates in the from/to boxes.

- **Load Types.** Select the check box or boxes for the load types that you want to archive. These are the loads created by CIMS Processing Engine. For more information, see *Chapter 6, Processing Data*.

- **Source File Location.** Click **All** to select loads from all applicable process definitions or click a specific process definition (see *CIMS Server Administrator Processing* on page 6-21).

- **Show archived loads.** Select this check box to show loads that have been archived. This filter appears only when the **Archive** tab is active.

3   Click **Apply Filters** to retrieve the loads that match the filter criteria.

Note • When you change a setting in the Loads Filter area, the loads on the Archive tab disappear until you click Apply Filters or click another tab and return to the Archive tab. Each time that you change the filters, you must apply them.

---

4 If you want to purge the loads after they are archived, select the **Purge loads after archiving** check box.

5 On the **Archive** tab, click the load or loads that you want to archive or click **Select All** to archive all loads, and then click **Archive**.

The archived loads are stored in a zip file in the path and folder shown at the bottom of the Load Archive dialog box. This path is set in the on the **Archiving** tab of the Configuration dialog box (see *Database Load Archive Settings* on page 3-55). The naming convention for the zip file is CIMSArchive_*StartDate_EndDate_ SequenceNumber*.zip.

Important! • **If you initialize a database, you should delete any archived files for that database. Errors can occur if you try to reload these files to the originating database or another database.**

To purge database loads:

Important! • **Purging removes database loads from the database. If the loads are not archived before they are purged, you cannot restore the loads to the database.**

To purge loads automatically after they are archived, click the **Purge loads after archiving** check box on the **Archive** tab.

To purge loads independently of archiving:

1 Set and apply the filters for the loads that you want to purge as described in *To archive database loads:* on page 5-20.

2 On the **Purge** tab, click the load or loads that you want to purge or click **Select All** to purge all loads, and then click **Purge**.

To restore database loads:

1 Set and apply the filters for the loads that you want to restore as described in *To archive database loads:* on page 5-20.

2 On the **Restore** tab, click the individual load or loads that you want to restore or click **Select All** to restore all loads, and then click **Restore**.

Tracking the History of Database Loads

You can track the history of CIMS Summary, CIMSBill Detail, CIMS Ident, and CIMSAcct Detail files that have been loaded to and/or deleted from the database.

To track loads:

1 In the CIMS Server Administrator main window, click **Chargeback Administration ▸ Database Loading ▸ Load Tracking**.

The Load Tracking dialog box appears as shown in example Figure 5-7.
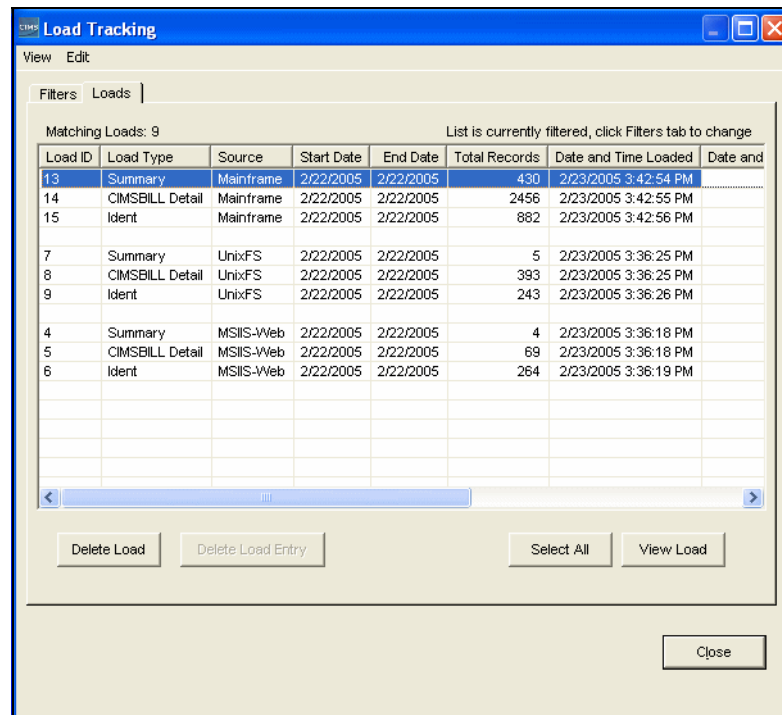
Figure 5-7 • Load Tracking Dialog Box

2 Use the **Loads** tab to track the files that have been loaded to the database. This tab provides information such as the type of files loaded, the earliest accounting start date and the latest accounting end date in the files, the date the files were loaded to the database, and whether the files have been archived. You can delete and view loads as follows:

• **Delete Load.** To remove a load or loads from the database, click the load(s) or click **Select All** to select all loads, and then click **Delete Load.**

• **Delete Load Entry.** To remove a deleted load or loads from the database, click the load(s), and then click **Delete Load Entry**. Deleted loads appear when using the **Show deleted loads** filter on the **Filters** tab.

• **Select All.** To select all loads, click **Select All**.

• **View Load.** To view a load, click the load, and then click **View Load**.

3 Use the **Filters** tab to determine the loads that appear on the **Loads** tab. For example, you can choose to track only CIMSBill Detail file loads or only files that were loaded during a certain date range.

- **Load Types.** Select the check box or boxes for the load types that you want to view. These are the loads created by CIMS Processing Engine. For more information, see *Chapter 6, Processing Data*.

- **Source File Location.** Click **All** to view loads from all applicable process definitions or click a specific process definition (see *CIMS Server Administrator Processing* on page 6-21).

- **End Date Range.** Loads are selected by the accounting end date of the data in the loads. (Note that CIMSAcct Detail loads are selected by the usage end date.) Click **Show All Dates**, **Use Specific Dates**, or a date keyword to select loads with end dates that fall within the specified date range. If you select **Use Specific Dates**, enter the dates in the from/to boxes.

- **Date Loaded Range.** Click **Show All Dates**, **Use Specific Dates**, or a date keyword to select loads that were loaded within the specified date range.

- **Show deleted loads.** Select this check box to view loads that have been deleted.

- **Apply Filters.** Click this button to view the loads that match the filter criteria.

Profiling the Database and Tables

You can view profiles of the database and tables. These profiles provide detailed attributes of the data.

To view profiles of a database or table:

1   In the CIMS Server Administrator main window, click **System Administration ▸ Database ▸ Database Profiler**.

The Database Profiler dialog box appears.

2   Under **Database**, you can navigate to view attributes of the database. Under **Tables**, you can navigate to a specific table and view **Dates** (created or modified), **Columns**, **Indexes**, or **Properties** information. See Figure 5-8.
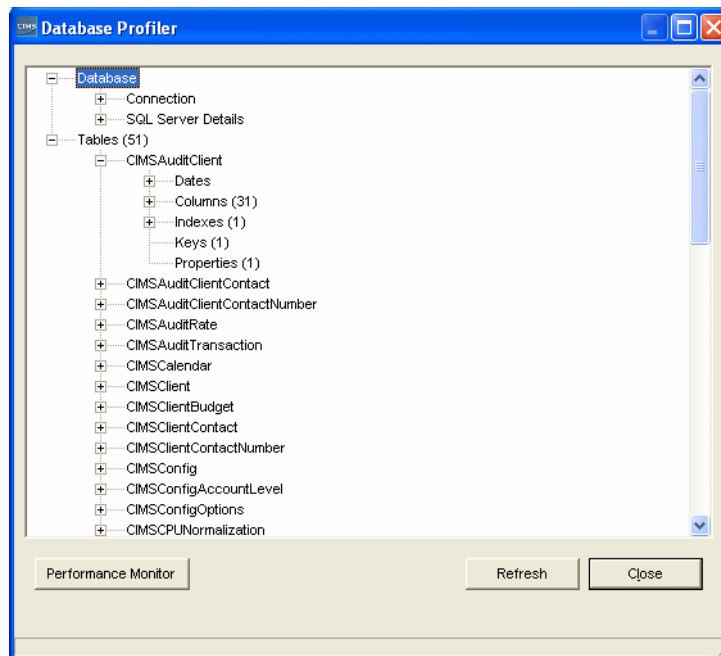
Figure 5-8 • Database Profiler Dialog Box

Upgrading the Database

Important! • **Back up the database or make sure that it has recently been backed up before you upgrade the database.**

The new version or release of CIMS Server might contain a new database version. In this case, you will receive notification that a database upgrade is available when you start CIMS Server Administrator. Click **Yes**, and then click **Upgrade Database**. If you have more than one database, you will receive this notification each time that you select a CIMS Data Source that points to a database that is not the latest version in the **Select CIMS Data Source** list. The **Select CIMS Data Source** list is at the bottom of the CIMS Server Administrator main window.

To view the version of a database at any time, make sure that the CIMS Data Source for the database is selected in the **Select CIMS Data Source** list and then click **System Administration** ▸ **Database** ▸ **Upgrade Database**.

■ 6

Processing Data

This chapter provides an overview of the data processing cycle and components and describes how to use CIMS Server Administrator to set processing options.

About Processing Data

CIMS Server processes and applies business rules to resource usage data from any application, system, or operating system on any platform. The primary method for loading this data into CIMS Server is the CIMS Server Resource (CSR) or CIMS Server Resource Plus (CSR+) file. The file type depends on the collector that created the file (see *CIMS Data Collectors* on page 1-5).

Note • **Although the CIMS External Transaction file is also supported, CIMS Lab recommends that you use the more flexible and efficient CSR or CSR+ file.**

The CIMS Data Collector(s) that you are using to collect your system data automate the data processing cycle. Using the console application CIMS Job Runner, the collectors can be run in batch mode on a defined schedule (daily, monthly, etc.) to convert usage metering data created by your system into CSR or CSR+ files. Once the CSR or CSR+ files are created, the collector processes the data in the files and loads the resulting output files into the database using the CIMS Processing Engine components `CIMSACCT.dll`, `CIMSBILL.dll`, `CIMSSORT.dll`, `CIMSAdminLib.dll`, and `CIMSResr1.dll`. For more information about CIMS Data Collectors and CIMS Job Runner, refer to the *CIMS Data Collectors for Microsoft Windows Installation and User Guide*.

Although not intended for daily processing, you can also process CSR and CSR+ files using CIMS Server Administrator. For example, you can use CIMS Server Administrator to process the sample files that are provided with CIMS Server for demonstration purposes. To process files using CIMS Server Administrator, see *Processing Data Using CIMS Server Administrator* on page 6-38.

The primary use of CIMS Server Administrator in regards to processing is to set the processing options required by the key processing programs, CIMSAcct and CIMSBill. These programs are responsible for assigning accountability and cost for resources consumed, respectively. The process settings for CIMSAcct and CIMSBill are described in *CIMS Server Administrator Processing* on page 6-21.

Data Processing Frequency

The preferred method of processing is to run the full data processing cycle as the data becomes available. The data produced by the various operating systems (z/OS, UNIX, Windows, Open VMS, etc.) and applications/databases (CICS, DB2, Oracle, IIS, Exchange Server, etc.) are usually made available for processing on a daily basis. Other feeds such as time accounting, help desk, line charges, equipment charges, and other shared services are usually produced on a monthly basis.

There are several advantages to running the full costing cycle on a daily or data availability basis:

■ The volume of data created makes it more practical to process daily. A single mid-sized Proxy Server might produce millions of records each day. It is more efficient to process these records each day of the month rather than try to run many millions of records through the processing cycle at month end.

■ It is easier to catch processing errors when the data is reviewed on a daily basis. It is more difficult to troubleshoot a problem when it is discovered at month end. If an unusual increase in utilization is observed for a specific resource at month end, the entire month's records must be checked to determine when the increase first took place.

Because there are fewer jobs, transactions, or records to review, the task of determining what caused the utilization spike is much simpler if caught on the day in which it occurred.

■ If the program CIMSBill is run monthly, the start date is the first day of the month and the end date is the last day of the month. Because of this date range, it is not possible to view CIMS Summary records for a single day or week. The smallest time range that may be used is the entire month.

Required Folder Permissions for Data Processing

The administrator that executes processes using CIMS Data Collectors or CIMS Server Administrator requires full access to files in the Processes folder (that is, the ability to create, modify, delete, overwrite, etc.). Therefore, the Windows user account or group account for the administrator must have Full Control security permissions for the Processes folder and all subfolders.

CIMS Processing Engine

CIMS Processing Engine is composed of COM components. Each component performs particular functions in the processing cycle. Table 6-1 describes the CIMS Processing Engine COM components in the order that they appear in the processing cycle and the output files created by the objects as applicable.

COM Object	Description	Output Files
CIMSACCT.dll	Performs account code conversion, shift determination, date selection, and identifier extraction on the data contained in the CSR or CSR+ file. The input file could also be the CIMSAcct Detail File previously produced by CIMSAcct. For more information about CIMSAcct, including a description if its input and output files, see page 6-6.	■ **CIMS Ident.** This file is loaded into the database. ■ **CIMSAcct Detail.** This file is input into CIMSSort or can be reprocessed through CIMSAcct.
CIMSSORT.dll	Sorts the CIMSAcct Detail file and produces a version of the file that is ready to be processed by CIMSBill.	■ **Sorted CIMSAcct Detail.** This file is input into CIMSBill.
CIMSBILL.dll	Processes the sorted CIMSAcct Detail file from CIMSSort and performs shift processing, CPU normalization, proration, and include/exclude processing and creates files that contain the billing information used to generate invoices and reports. For more information about CIMSBill, including a description of its input and output files, see page 6-11.	■ **CIMSBill Detail.** This file is loaded into the database or can be reprocessed through CIMSBill. ■ **CIMS Summary.** This file is loaded into the database or can be reprocessed through CIMSAcct.
CIMSAdminLib.dll	Contains the class CCIMSCBSLoad that loads the output files from CIMSAcct and CIMSBill into the database. For more information about CIMSAdminLib, see page 6-15.	
CIMSResr1.dll	Supports CIMSAcct and CIMSBill.	

Table 6-1 • CIMS Processing Engine Components

CIMSAcct

CIMSAcct is the first data processing program that is executed. CIMSAcct processes the records in the input file (see *CIMSAcct Input* on page 6-7) and performs the following:

■ **Identifier extraction and account code conversion.** CIMSAcct extracts the identifiers from the input file records and creates the CIMS Ident file, which is loaded into the database. It also uses specified identifiers to build the account code and perform account code conversion if required. For more information, see *Setting Up Account Codes and Performing Account Code Conversion* on page 6-39.

■ **Date selection.** CIMSAcct selects the input file records to be processed based on the specified date or date range. For more information, see *Date Selection* on page 6-27.

■ **Shift determination.** CIMSAcct can determine the shift to be used for processing in either of the following ways:

   • Use the shift code from the input file records. If a shift code is not included, the default shift code is 1.

   • Recalculate the shift using the start date/time in the records. For more information, see *Shifts Subtab* on page 6-29.

CIMSAcct produces the CIMSAcct Detail file, which contains records that are properly formatted for input into CIMSBill.

Reprocessing CIMSAcct and CIMSBill Output Files

You can reprocess the CIMSAcct Detail file and the CIMS Summary file from CIMSBill through CIMSAcct. This is usually done to reprocess data for further account code conversion. To reprocess either of these files during the data collection process, you need specify the file name in the XML job file used for data collection. For more information, refer to the documentation on the CIMSAcct parameter attribute `inputFile` in the *CIMS Data Collectors for Microsoft Windows Installation and User Guide*.

CIMSAcct Input

Table 6-2 lists the input and processing files used by CIMSAcct. These files are in the process definition subfolders in the `Processes` folder.

The file names in Table 6-2 are the default names used by both CIMS Data Collectors and CIMS Server Administrator. If you do not use the default names, you should ensure that the same file names are used for both programs.

File Type	File Name	Description
Input Files (CIMSAcct can process usage data from any of the following sources)		

CSR or CSR+ file	`CurrentCSR.txt`
	Or
	`yyyymmdd.txt`
		These are the most commonly used files for processing data through CIMS Server.
		
		To view the record layout for these files, see *Appendix B, File Layouts*.

CIMS External Transaction file	User determined	Although the CIMS External Transaction file is supported, CIMS Lab recommends that you use the CSR or CSR+ file for input into CIMS Server. The CSR/CSR+ file format is more flexible and efficient than the CIMS External Transaction file format.
CIMSAcct Detail file	`Detail.txt`	This file is the output from a previous run of CIMSAcct. This file provides an account code for each input file record. This file is input into the CIMSSort process. When used as input into CIMSAcct, this file is used primarily in the reprocessing of data for date selection or further account code conversion. The records within this file are also referred to as maintenance or 991 records.
CIMS Summary file	`BillSummary.txt`	This file is the output from a previous run of CIMSBill. When used as input into CIMSAcct, this file is used primarily for reprocessing data for further account code conversion.

Table 6-2 • CIMSAcct Input

File Type	File Name	Description
Processing Files		
Control file	`AcctCntl.txt`	This file contains the CIMSAcct control statements (see *CIMSAcct Control Statements* on page D-3).
Account Code Conversion Table	`AcctTabl.txt`	This optional file contains the account code conversion table (see *Creating an Account Code Conversion Table* on page 6-44).
Process Control file	`ProcessCntl.txt`	This file contains the processing statements used by CIMS Server Administrator (see *Processing Control Statements* on page D-27).

Table 6-2 • CIMSAcct Input (Continued)

CIMSAcct Output

Table 6-3 lists the CIMSAcct output files. These files are in the process definition subfolders in the `Processes` folder.

The file names in Table 6-3 are the default names used by both CIMS Data Collectors and CIMS Server Administrator. If you do not use the default names, you should ensure that the same file names are used for both programs.

File Type	File Name	Description
CIMSAcct Detail file	`Detail.txt`	This file provides an account code for each input file record. This file is input into CIMSSort.
CIMS Ident file	`Ident.txt`	This file contains all the identifiers (such as as user ID, jobname, department code, server name, etc.) that are contained in the input records. These identifiers are used during account code conversion to create your target account code structure.
		This file is loaded into the database.
CIMSAcct Message file	`AcctMsg.txt`	This file contains processing messages related to CIMSAcct.
CIMSAcct COBOL Message file	`AcctMsg_cob.txt`	This file contains any runtime COBOL messages related to CIMSAcct. If there are no errors, this file is blank.
CIMSAcct Results file	`AcctResults.txt`	This file contains the CIMSAcct processing results.
Exception file	`Exception.txt`	This is an optional file in CSR or CSR+ format that contains all records that did not match during account code conversion. These files can be reprocessed through the processing cycle as described in *About Exception File Processing* on page 6-17.
		To produce this file, you must have exception file processing enabled (see page 6-42).

Table 6-3 • CIMSAcct Output

File Type	File Name	Description
CSR+ file	CSRPFile.txt	The output of a CSR+ file from CIMSAcct is optional. For example, you might want to create a CSR+ file to be processed by CIMS Mainframe Data Collector and Chargeback System.
Windows Message Events		Events are written to the Windows Event Viewer when the CIMSAcct process starts and ends and when and warnings or errors are encountered while processing.

Table 6-3 • CIMSAcct Output

CIMSSort

CIMSSort sorts the CIMSAcct Detail file and produces a version of the file that is ready to be processed by CIMSBill.

CIMSBill

The cost of information services, and which departments are using the services, is of considerable interest to an organization. When users are made aware of the costs and are held financially responsible for those costs, they are more likely to use the resources in a prudent manner. CIMS Server provides comprehensive computer center billing through the program CIMSBill.

The primary function of CIMSBill is to perform cost extensions within CIMS Server and to summarize cost and resource utilization by account code. CIMSBill uses the rate table assigned to the client (see *Working With Clients* on page 3-20) to determine the amount to be charged for each resource consumed. It is possible to have a unique rate table for each client.

There are specific rules that CIMSBill follows when charging resource consumption:

■ If a resource has a corresponding entry with a monetary amount in the rate table, the number of resource units are multiplied by this amount. The result appears in the CIMS Summary records.

■ If a resource has a corresponding entry with no or zero currency amount in the rate table, a zero cost appears in the CIMS Summary records for that resource.

■ If a resource *does not* have a corresponding entry in the rate table, the data for that resource does not appear in the CIMS Summary records.

■ If *none* of the resources in the CIMSBill input file have a corresponding entry in the rate table, the CIMS Summary file will contain no records. If the **Load Summary records** check box is selected in CIMS Server Administrator (see page 6-24), the CIMS Ident file, CIMSBill Detail file, and CIMS Summary file are not loaded to the database—the process fails and a failure message is issued. You must have at least one rate code from the input file in the rate table to produce CIMS Summary records.

If the **Load Summary records** check box *is not* selected, the CIMS Ident file and CIMSBill Detail file load to the database if the **Load Ident records** and **Load CIMSBILL Detail records** check boxes are selected.

In addition to standard costing, CIMSBill also performs the following:

■ Processes non-standard costs such as miscellaneous, recurring, and credit transactions. For more information about creating and using transactions, refer to the *CIMS Server Web Reporting User's Guide*.

■ Performs proration. See *Prorating Resources* on page 6-49.

> **Note** • **Although you can perform proration using CIMSBill, CIMS Lab recommends that you use the CIMSPrat program. CIMSPrat provides more options for proration and enables you to prorate resources multiple times. For more information about proration using CIMSPrat, refer to the** *CIMS Data Collectors for Microsoft Windows Installation and User Guide*.
>
> **CIMS Server will continue to support proration using CIMSPrat or CIMSBill.**

■ Performs CPU Normalization. See *Normalizing CPU Values* on page 6-55.

■ Performs include/exclude processing. See *Include/Exclude Processing* on page 6-58.

CIMSBill Input

Table 6-4 lists the input and processing files used by CIMSBill. These files are in the process definition subfolders in the `Processes` folder.

The file names in Table 6-4 are the default names used by both CIMS Data Collectors and CIMS Server Administrator. If you do not use the default names, you should ensure that the same file names are used for both programs.

File Type	File Name	Description
Input Files		
CIMSSort/CIMSAcct Detail file	`Detail.txt`	This is the sorted Detail file from CIMSAcct.
CIMSBill Detail file	`BillDetail.txt`	This file is the output from a previous run of CIMSBill. When used as input into CIMSBill, this file is used primarily for performing additional proration functions.
		To reprocess this file during the data collection process, you need to define the file as an input to CIMSBill in the XML job file. For more information, refer to the *CIMS Data Collectors for Microsoft Windows Installation and User Guide*.
CIMS Summary file	`BillSummary.txt`	This file is the output from a previous run of CIMSBill. When used as input into CIMSBill, this file is used primarily for performing additional proration functions.
		To reprocess this file during the data collection process, you need to define the file as an input to CIMSBill in the XML job file. For more information, refer to the *CIMS Data Collectors for Microsoft Windows Installation and User Guide*.
Processing Files		
Control file	`BillCntl.txt`	This file contains the CIMSBill control statements (see *CIMSBill Control Statements* on page D-14).
Process Control file	`ProcessCntl.txt`	This file contains the processing statements used by CIMS Server Administrator (see *Processing Control Statements* on page D-27).
Proration Table	User determined	This optional file contains the proration table (see *To create a proration table:* on page 6-50).

Table 6-4 • CIMSBill Input

CIMSBill Output

Table 6-5 lists the CIMSBill output files. These files are in the process definition subfolders in the `Processes` folder.

The file names in Table 6-5 are the default names used by both CIMS Data Collectors and CIMS Server Administrator. If you do not use the default names, you should ensure that the same file names are used for both programs.

File Type	File Name	Description
CIMSBill Detail file	`BillDetail.txt`	This file is loaded into the database for use in drill down reports. This file contains resource utilization data. The CIMSBill Detail file differs from the CIMSAcct Detail file in that the CIMSBill Detail file reflects any proration, CPU normalization, or include/exclude processing that was performed. The CIMSBill Detail file also includes accounting dates.
CIMS Summary file	`BillSummary.txt`	This file is loaded into the database for use in producing reports. This file contains both resource utilization and cost data.
Prorate Report	`ProrateRep.txt`	This is an optional report that contains the original record and all subsequently-generated prorated records. To enable this report, see page 6-49.
CIMSBill Message file	`BillMsg.txt`	This file contains processing messages related to CIMSBill.
CIMSBill COBOL Message file	`BillMsg_cob.txt`	This file contains any runtime COBOL messages related to CIMSBill. If there are no errors, this file is blank.
CIMSBill Results file	`BillResults.txt`	This file that contains the CIMSBill processing results.
Windows Message Events		Events are written to the Windows Event Viewer when the CIMSBill process starts and ends and when and warnings or errors are encountered while processing.

Table 6-5 • CIMSBill Output

CIMSAdminLib

CIMSAdminLib is the central controlling library for all Windows-based CIMS Server functions. It contains all the COM objects used to manipulate CIMS data. These objects are called from CIMS Server Administrator and Windows Script Host (`.wsf`) scripts used by CIMS Data Collectors and CIMS Server.

CIMSAdminLib contains the class `CCIMSCBSLoad` that loads the output files from CIMSAcct and CIMSBill into the database.

CIMS Processing Engine Architecture Diagram

The diagram in Figure 6-1 shows the input and output for CIMS Processing Engine. For simplicity, this diagram shows only the key input and output. For a complete description of all input and output, refer to the preceding sections.
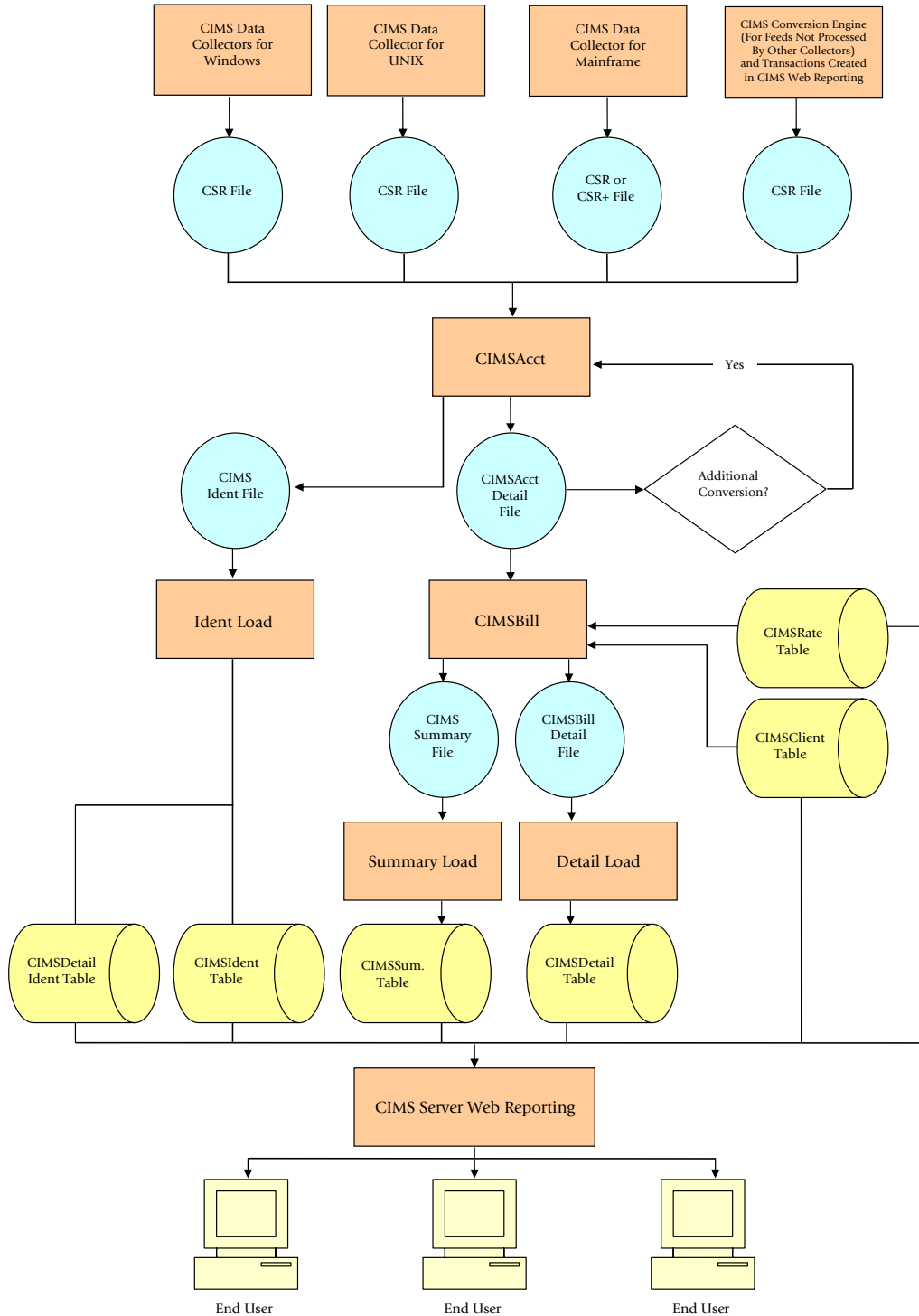
Figure 6-1 • Architecture of the CIMS Server System

Account Codes and Account Code Conversion

Within chargeback and resource accounting, an account code uniquely identifies an individual, billing, or reporting entity. The actual definition of what the account code represents depends on how CIMS Server is used. For example, an account code can represent an organization, a department in an organization, or an individual.

A key feature of CIMSAcct is its ability to use business rules to convert the identifier values in the CSR or CSR+ files into account codes. In some cases, the identifier value in the CSR or CSR+ file is the actual account code. However, in most cases, the identifier value represents the source of the consumed resources (i.e., a user ID, IP address, server name, jobname, transaction ID, terminal ID, etc.).

CIMSAcct uses an account code conversion table to convert identifier values into an account code. For example, an IP address of `10.26.12.255` is converted to the account code for Human Resources while an address of `10.26.12.260` is converted to the account code for Accounts Payable. These departments can then be charged for the consumption of the resources associated with their IP addresses.

For the steps required to set up account code conversion, see page 6-39. For an example of these steps, see page 6-46.

About Exception File Processing

During account code conversion, CIMSAcct might encounter input file records that do not match any entry in the account code conversion table. CIMSAcct includes an optional exception file processing feature that automatically identifies and removes unmatched records so that they can be reprocessed with the correct accounting information.

When this feature is enabled, all unmatched records are output to an exception file in the process definition subfolder. You can use the exception file to identify the information that needs to be corrected, either in the records in the exception file or in the account code conversion table, and then reprocess the exception file.

To enable the exception file processing feature, see *Setting the Account Code Conversion Options* on page 6-42. For assistance in processing exception files, contact CIMS Lab.

Accounting Dates

CIMS Server input records contain a *usage* start date and end date that specify the date range in which the resources in the record were consumed. CIMSBill uses the usage end date to calculate *accounting* start and end dates, which are used for billing and reporting.

If a close date *is not* set, the accounting dates produced by CIMSBill are always the same as the usage end date in the input file records.

If a close date *is* set, the accounting dates may be the same as or different than the usage end date depending on the factors described in *How Accounting Dates Are Calculated* on page 6-19.

The accounting start and end dates are stored in the following fields in the CIMSBill output files:

■ **CIMSBill Detail file.** The accounting dates are in the `ACCOUNTING-START-DATE` and `ACCOUNTING-END-DATE` fields (starting positions 159 and 168, respectively).

■ **CIMS Summary file.** The accounting dates are in the `AccountingFromDate` and `AccountingToDate` fields (starting positions 167 and 175, respectively). The `Period` and `Year` fields also reflect the accounting end dates. (These fields are at starting positions 282 and 284, respectively.) For example, if the end date is `20050916` and the date falls within the 9th period in the CIMSCalendar table, the `Period` field would contain `09` and the `Year` field `2005`.

About the Close Date

You can set an optional close date for processing input file records. Typically, the close date is set for the same date each month to close data processing for the previous month. For example, if you set the close date for the third of each month, the close date for January data would be February 3, the close date for February data would be March 3, etc. This allows any input records with usage end dates from the previous month to be processed with that month.

Example

Assume that in November you are processing input records with usage end dates in October. If the close date is the third of each month, all records with an October usage end date that are processed on November 1–3 will be processed with accounting dates in October. All records with an October usage end date processed from November 4 to December 3 will be processed with accounting dates in November.

You can set a system-wide close date or set close dates for individual process definitions. To set a system-wide close date, see page 3-44. To set close dates for an individual process definition or definitions, see page 6-32.

Using a Specific Close Date

When you set a specific close date, that date is applied to the applicable period in the CIMSCalendar table. For example, if you are using the default periods in the CIMSCalendar table and you set a close date of October 3, this close date is set for period 9 (September 1—September 30). When you set a specific close date, you should set the close date for the current period or the preceding period only.

How Accounting Dates Are Calculated

The accounting dates are calculated according to the usage end dates, the close date (see *About the Close Date* on page 6-18), and the periods defined in the CIMSCalendar table. The accounting dates may be the same as or different than the usage end date depending on the factors described in the following sections.

Scenarios in Which Accounting Dates and Usage End Dates are Always the Same

The accounting dates and usage end date are always the *same* in the following situations:

■ If no close date is set.

■ If both the CIMSBill run date and the usage end date are in the same period (as set in the CIMSCalendar table), regardless of the close date.

Example Using Calendar Month Periods With Monthly Close Date

Current Period	Close Date for Current Period	CIMSBill Run Date	Usage End Date	Accounting Dates
Sept. 1–30 (Period 9)	Oct. 3	Sept. 30	Sept. 16	Sept. 16

Example Using Non Calendar Month Periods With Specific Close Date

Current Period	Close Date for Current Period	CIMSBill Run Date	Usage End Date	Accounting Dates
Sept. 23–Oct. 22 (Period 9)	Oct. 25	Oct. 22	Oct. 1	Oct. 1

■ If the usage end date is in the previous period and the CIMSBill run date is prior to the close date for that period.

Example Using Calendar Month Periods With Monthly Close Date

Previous Period	Close Date for Prev. Period	Current Period	CIMSBill Run Date	Usage End Date	Accounting Dates
Aug. 1–31 (Period 8)	Sept. 3	Sept. 1–30 (Period 9)	Sept. 2	Aug. 16	Aug. 16

Example Using Non Calendar Month Periods With Specific Close Date

Previous Period	Close Date for Prev. Period	Current Period	CIMSBill Run Date	Usage End Date	Accounting Dates
Aug. 23–Sept. 22 (Period 8)	Sept. 25	Sept. 23–Oct. 22 (Period 9)	Sept. 24	Sept. 1	Sept. 1

Scenarios in Which Accounting Dates and Usage End Dates are Different

The accounting dates and usage end date are *different* in the following situations:

■ If the usage date is in *any* previous period and the CIMSBill run date is after the close date for the period immediately prior to the current period, the accounting dates are set to the previous day from the day CIMSBill was run.

Example Using Calendar Month Periods With Monthly Close Date

Note that for example purposes, the period immediately prior to the current period is used. However, this example is applicable for any previous period.

Previous Period	Close Date for Prev. Period	Current Period	CIMSBill Run Date	Usage End Date	Accounting Dates
Aug. 1–31 (Period 8)	Sept. 3	Sept. 1–30 (Period 9)	Sept. 5	Aug 16	Sept. 4 (CIMSBill run date -1 day)

Example Using Non Calendar Month Periods With Specific Close Date

Previous Period	Close Date for Prev. Period	Current Period	CIMSBill Run Date	Usage End Date	Accounting Dates
Aug. 23– Sept. 22 (Period 8)	Sept. 25	Sept. 23– Oct. 22 (Period 9)	Oct. 22	Sept. 1	Oct. 21 (CIMSBill run date -1 day)

■ If the usage end date is in any period *prior* to the previous period and the CIMSBill run date is before the close date for the previous period, the accounting dates are set to the last day of the previous period.

Example Using Calendar Month Periods

Period Prior to Previous Period	Close Date for Prev. Period (Aug. 1–31)	Current Period	CIMSBill Run Date	Usage End Date	Accounting Dates
July 1–31 (Period 7)	Sept. 3	Sept. 1–30 (Period 9)	Sept. 2	July 16	Aug. 31 (Last day of previous period)

Example Using Non Calendar Month Periods With Specific Close Date

Period Prior to Previous Period	Close Date for Prev. Per. (Aug. 23–Sept.22)	Current Period	CIMSBill Run Date	Usage End Date	Accounting Dates
July 23– Aug. 22 (Period 7)	Sept. 25	Sept. 23– Oct. 22 (Period 9)	Sept. 24	July 20	Sept. 22 (Last day of previous period)

CIMS Server Administrator Processing

In CIMS Server Administrator, you can set processing definitions that instruct CIMS Server how to execute processing jobs for different types of input resource data. A process definition is a folder that contains the files required to process usage data from a particular source such as a database, operating system, or application.

Note • **If you are using CIMS Data Collectors, process definition folders and required processing files are created automatically.**

The settings that you select for the process definition are stored in the `AcctCntl.txt`, `BillCntl.txt`, and `ProcessCntl.txt` files in the process definition folder. `AcctCntl.txt` and `BillCntl.txt` contain the CIMSAcct and CIMSBill control statements, respectively. (For a list of these statements, see page D-3 and page D-14). `ProcessCntl.txt` contains process settings used by CIMS Server Administrator (see page D-27).

You can edit these files using a text editor or through CIMS Server Administrator. For example, if you select the **Perform Account Code Conversion** check box in CIMS Server Administrator (see page 6-42), the control statement `ACCOUNT CODE CONVERSION` is automatically added to the `AcctCntl.txt` file.

Adding Process Definitions

When you add a process definition, CIMS Server Administrator builds a folder within the process definition path (see *Processing Settings* on page 3-44) and creates the necessary process definition files within this new folder. The folder shares the name of the process definition.

To add a process definition:

1 In the CIMS Server Administrator main window, click **Chargeback Administration** ▸ **Processing** ▸ **Process Definitions**. The Process Definitions List Maintenance dialog box appears as shown in example Figure 6-2.
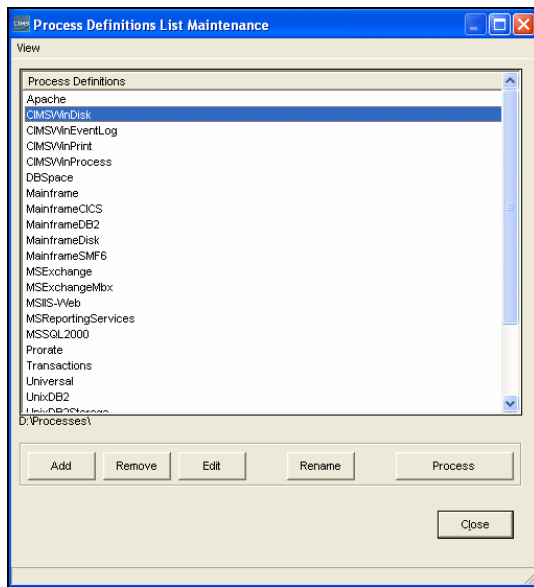
Figure 6-2 • Process Definitions List Maintenance Dialog Box

2 Click **Add**.

3 Type a name for the process definition in the Add New Process Definition dialog box, and then click **OK**.

The Edit Process Definition dialog box appears.

4 Edit the new process definition as needed (see *Setting Process Definition Options* on page 6-23).

To remove or rename a process definition, click the definition in the Process Definitions Maintenance List dialog box and click **Remove** or **Rename**.

Setting Process Definition Options

The Edit Process Definition dialog box includes a number of tabs and subtabs that contain settings for the process definition. The main tabs are:

■ **Process Options**

■ **CIMS Account Options**

■ **CIMS Bill Options**

■ **Process Results**

■ **Versions**

The following sections describe the options that are available on these tabs by subtab. Where applicable, the correlating control or processing statement for each option is also provided.

Process Options Tab

This tab contains the following subtabs: **General**, **Processing**, and **Database**.

General Subtab

This subtab displays the name and path of the process definition. You can also use this tab to add a description of the process definition.

Setting	Correlating Control File and Statement
Process Definition Path The path for the process definition folders. The use of a UNC path is recommended (e.g., `\\CIMS-SRV1\D$\Processes`).	None
Process Name The process name. This name is also shared by the folder that contains the process definition files.	None
Process Description Type an optional short description of the process definition.	**File:** `ProcessCntl.txt` **Statement:** `Description description`

Processing Subtab

Use this subtab to specify the processing options such as processing programs that you want to run and the output files that you want to load to the database.

Setting	Correlating Control File and Statement
Run CIMS Account Select this check box to instruct the system to run CIMSAcct as part of this process.	**File:** `ProcessCntl.txt` **Statement:** `RunCIMSAcct` *Yes/No*
Run CIMS Bill Select this check box to instruct the system to run CIMSBill as part of this process.	**File:** `ProcessCntl.txt` **Statement:** `RunCIMSBill` *Yes/No*
Remove output files before processing Select this check box if you want to delete previous output files from the process definition folder. This ensures that old data is not loaded into the database. This check box should be selected unless you are running CIMSBill or database loads only.	**File:** `ProcessCntl.txt` **Statement:** `RemoveFilesBeforeProcessing` *Yes/No*
Archive process files Select this check box to archive previous output files before processing. Archived files contain a date in the file name. Archived files for the same date are indicated by a number (1, 2, 3...) at the end of the file name. Note that if you select this option, you can potentially have a large number of archived files in the process definition folder. **Note:** This option is not related to the archive database loads feature described in *Archiving, Purging, and Restoring Database Loads* on page 5-20.	**File:** `ProcessCntl.txt` **Statement:** `ArchiveProcessFiles` *Yes/No*
Load Ident records Select this check box to load CIMS Ident files from CIMSAcct into the database.	**File:** `ProcessCntl.txt` **Statement:** `AutoLoadIdentFile` *Yes/No*
Load Summary records Select this check box to load CIMS Summary files from CIMSBill into the database.	**File:** `ProcessCntl.txt` **Statement:** `AutoLoadSummaryFile` *Yes/No*

Setting	Correlating Control File and Statement
Load CIMSBILL Detail records Select this check box to load CIMSBill Detail files into the database.	**File:** `ProcessCntl.txt` **Statement:** `AutoLoadDetailFile` *Yes/No*
Load CIMSACCT Detail records Select this check box to load the CIMSAcct Detail files into the database. Consult CIMS Lab before using this option.	**File:** `ProcessCntl.txt` **Statement:** `AutoLoadResourceFile` *Yes/No*
Use bulk load interface If you are using a SQL Server database, select this check box to perform a bulk load when loading the database. (Bulk load is performed automatically if you are using an Oracle database.) This option is recommended because it increases the speed of loads. A disadvantage is that if there is an error in the data, a generic rather than specific error message appears. In this case, clear this check box and reprocess to view the specific error message.	**File:** `ProcessCntl.txt` **Statement:** `UseBulkLoadInterface` *Yes/No*

Database Subtab

Use this subtab to select the ODBC data source for the CIMS Server database that you want to use for processing the data and storing the output Ident, Detail, and Summary files. In most cases, this will be the database that CIMS Server Administrator is currently pointing to.

Setting	Correlating Control File and Statement
Use same database connection information as CIMS Administrator Leave this check box selected (the default) to use the database that CIMS Server Administrator is currently pointing to.	**File:** `ProcessCntl.txt` **Statement:** `DSN name`
Automatically generate ODBC INF file Leave this check box selected (the default). This file is required.	**File:** `ProcessCntl.txt` **Statement:** `GenerateODBCINF Yes/No`

Data Source Name
 	
Database User ID/Password
 	
These options are deprecated and are retained for legacy purposes only.
	File: `ProcessCntl.txt`
	
	Statements:
	
	`DSN name`
	`DSNUID user ID`
	`DSNPWD password`

CIMS Account Options Tab

This tab contains the following subtabs: **General**, **Files**, **Account Codes**, **Shifts**, and **Trace**.

General Subtab

Use this subtab to specify general CIMSAcct settings such as the record type and date range for the input records to be processed.

Setting	Correlating Control File and Statement
Process Type Click the input record type to be processed (CIMS Server Resource Records [this includes CSR+ records], External Trans Records, CIMS Maintenance Records from CIMSAcct, or CIMS Summary Records).	**File:** `AcctCntl.txt` **Statement:** `Process` *record type* (see page D-11)
Date Selection Click the date range for records to be processed by CIMSAcct. Records are selected by the end date in the record (the accounting end date for CIMS Summary Records and the usage end date for all other record types). Click one of the following: ■ **No Date Selection** ■ **Use Specific Dates.** Enter the dates in the **Start Date** and **End Date** boxes. ■ **Run Date (Today).** Selects records based on the run date. ■ **Previous Day to Current Day.** Selects records based on the run date and the run date less one day. ■ **Current Week.** Selects records based on the run week (Sat–Sun). ■ **Current Month.** Selects records based on the run month. ■ **Previous Day.** Selects records based on the run date, less one day. ■ **Previous Week.** Selects records based on the previous week (Sat–Sun). ■ **Previous Month.** Selects records based on the previous month.	**File:** `AcctCntl.txt` **Statement:** `DATE SELECTION YYYYMMDD YYYYMMDD/` `keyword` (see page D-6)

Setting	Correlating Control File and Statement
■ **Current Period from Calendar.** Selects records based on the current period from the CIMSCalendar table. ■ **Previous Period from Calendar.** Selects records based on the previous period from the CIMSCalendar table. For example, if you click **Current Month**, records with end dates in the current month are processed.	
Include Fields These fields allow you to move identifiers into an area that can be later used by CIMSBill for include/exclude processing. For a complete description of this option and include/exclude processing, see *Include/Exclude Processing* on page 6-58.	**File:** `AcctCntl.txt` **Statement:** `INCLUDE FIELD` (see page D-10)

Files Subtab

Use this subtab to define the CIMSAcct input and output files.

Setting	Correlating Control File and Statement
Input File The input file to be processed by CIMSAcct. The default is `CurrentCSR.txt`. To select another file, click **Browse**. To edit the file in Windows Notepad, click **Edit**.	**File:** `ProcessCntl.txt` **Statement:** `AcctInputFile` *`filename`*
Output Files The names of the CIMSAcct output files (the CIMSAcct Detail, CIMS Ident, Exception, and CSR+ [optional] files). CIMSAcct writes these files to the path listed above the file names. CIMS Lab recommends that you use the default file names.	**File:** `ProcessCntl.txt` **Statement:** `AcctOutputDetailFile` *`filename`* `AcctOutputIdentFile` *`filename`* `AcctOutputExceptionFile` *`filename`* `CSRPFile` *`filename`*
Create CSR Plus The creation of a CSR+ file is optional. Select this check box to create a CSR+ file.	**File:** `ProcessCntl.txt` **Statement:** `CreateCSRPFile` *`Yes`*

Setting	Correlating Control File and Statement
Eliminate duplicates If the input file contains duplicate identifiers, selecting this check box eliminates the duplicate identifiers from the CIMS Ident file. Consult CIMS Lab before using this option.	None

Account Codes Subtab

This subtab allows you to build the account code from the identifiers in the input file and to convert the account code if needed. For a description of the options on this subtab and an explanation of account codes and account code conversion, see *Setting Up Account Codes and Performing Account Code Conversion* on page 6-39.

Shifts Subtab

As described in *Setting Rate Shifts* on page 3-13, you can set rates for a rate code by shift. This optional feature enables you to set different rates based on the time of day.

If you want CIMS Server to use the shift codes that appear in the input records to process the rate codes in the record, leave this tab blank. The shift codes that appear in the input records will appear in the CIMSAcct Detail file. If there is no shift code in the input record, the default shift code is 1.

If you do not want to use the shift codes in the input record for processing, you can use this subtab to recalculate the shifts using the start date/time in the records. For each shift that you want to create, enter a shift number and a time for the end of the shift. CIMSAcct compares the start dates and times in the input records to the daily shifts that you specify on this subtab and calculates new shift codes.

You can enter up to nine shifts per day. The shift end times must be listed in 4-character, 24-hour format (see example Figure 6-3 on page 6-30). The recalculated shift codes rather than the original shift codes appear in the CIMSAcct Detail file.

Note • CIMSAcct will not recalculate the shift codes for CSR or CSR+ files produced by CIMS Mainframe Data Collector and Chargeback System. CIMS Mainframe records are aggregated using the shift code as one of the aggregation points. Therefore, the time in the aggregated record is not representative of every record within the aggregation. For more information, refer to the *CIMS Mainframe Data Collector and Chargeback System User Guide*.

Regardless of whether you use the rate codes from the input file or recalculate the rate codes, you must select the **Use Shift Codes** check box on the **CIMS Bill Options/ General** subtab (see page 6-32). If you do not select this check box, CIMSBill uses the default rate shift 1 regardless of the shift code that appears in the CIMSAcct Detail file.

For the related `AcctCntl.txt` control statements for setting up shifts, see page D-11.

In the following example, shift 3 is from midnight to 8 a.m., shift 1 is from 8 a.m. to 4 p.m., and shift 2 is from 4 p.m. to midnight.
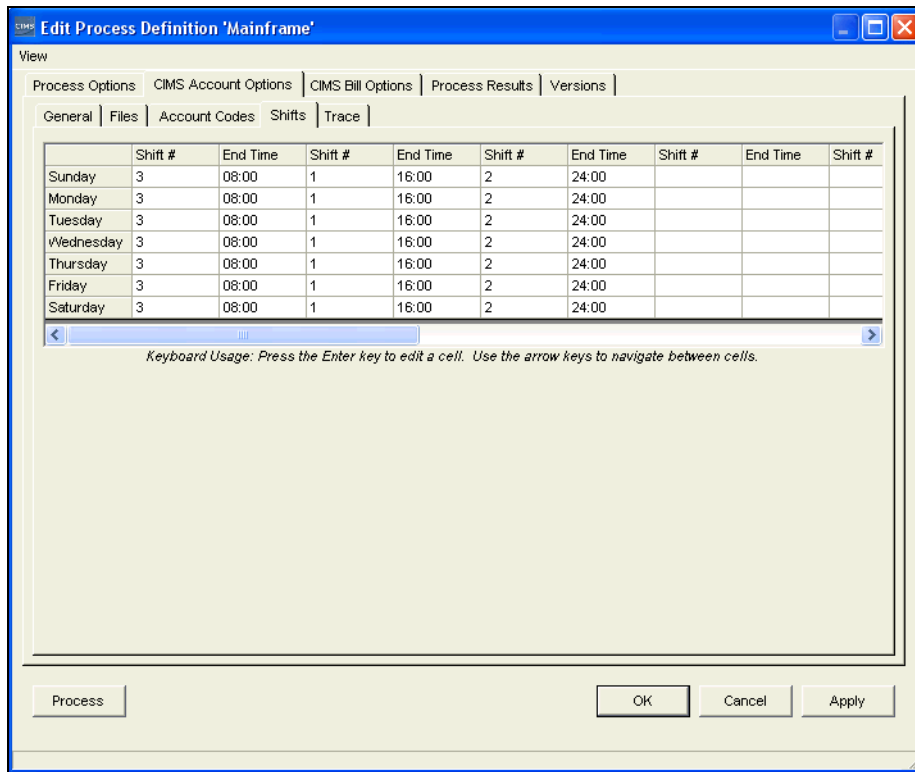
Figure 6-3 • Shifts Subtab

Trace Subtab

Note • **By default, tracing is disabled. Consult CIMS Lab before using one of the CIMSAcct trace flags described in this section.**

Use this subtab to include the following trace messages in the CIMSAcct Message file, `AcctMsg.txt`:

■ **General processing.** This is information related to CIMSAcct processing of the information in the account, define, and move fields.

■ **Account code conversion.** This is information related to the account code conversion, including the information in the account, define, and move fields and the account code conversion table, and the number of unmatched records (if applicable).

Setting	Correlating Control File and Statement
Trace flag	**File:** `AcctCntl.txt`
Click **Tracing Disabled**, **Y – Trace General Processing**, or **A – Trace Account Code Conversion**.	**Statement:** `TEST A or Y` (see page D-12)
Check for bad file input	None
Select this check box to validate each identifier. Some systems may pass data in identifier fields that are not valid ASCII display characters. This can cause unexpected results during processing. By pre-validating the data, the system verifies that the data passes through CIMS Server successfully. **Note:** This option slows down the processing of CIMSAcct. Consult CIMS Lab before using this option.	

CIMS Bill Options Tab

This tab contains the following subtabs: **General**, **Files**, **Define Fields**, **Include/Exclude Records**, **Proration**, **Client**, and **Trace**.

General Subtab

Use this subtab to specify general CIMSBill settings such as the record type and date range for the input and output records, to set the close date if other than the system close date, and enable other options such as CPU normalization and shift code processing.

Setting	Correlating Control File and Statement
Process Type The input record type to be processed (CIMS Detail records or CIMS Summary records).	**File:** `BillCntl.txt` **Statement:** `PROCESS record type` (see page D-23)
Default Close Day This option allows you to override the system-wide close date set on the **Processing** tab of the Configuration dialog box (see page 3-44). Consult CIMS Lab before using this option. For more information about the close date, see page 6-18.	**File:** `BillCntl.txt` **Statement:** `DEFAULT CLOSE DAY = nn` (see page D-18)
Input—Date Selection Click the date range for records to be processed by CIMSBill. Records are selected by the end date in the record (the usage end date for CIMSAcct Detail Records and the accounting end date for all other record types). Click one of the following: ■ **No Date Selection** ■ **Use Specific Dates.** Enter the dates in the **Start Date** and **End Date** boxes. ■ **Run Date (Today).** Selects records based on the run date. ■ **Previous Day to Current Day.** Selects records based on the run date and the run date less one day. ■ **Current Week.** Selects records based on the run week (Sun–Sat). ■ **Current Month.** Selects records based on the run month.	**File:** `BillCntl.txt` **Statement:** `DATE SELECTION YYYYMMDD YYYYMMDD/ keyword` (see page D-17)

Setting	Correlating Control File and Statement
Input—Date Selection (continued) ■ **Previous Day.** Selects records based on the run date, less one day. ■ **Previous Week.** Selects records based on the previous week (Sun–Sat). ■ **Previous Month.** Selects records based on the previous month. ■ **Current Period from Calendar.** Selects records based on the current period from the CIMSCalendar table. ■ **Previous Period from Calendar.** Selects records based on the previous period from the CIMSCalendar table. For example, if you click **Current Month**, records with end dates in the current month are processed.	
Output-Summary Date Range This setting is used to determine the accounting dates in the CIMSBill output files. To ensure that the accounting dates are calculated correctly, CIMS Lab strongly recommends that you use the default keyword, **Auto**. This setting enables CIMS Server to calculate the accounting dates as described in *Accounting Dates* on page 6-18. Consult CIMS Lab before changing this setting.	None
Back Load Data When this check box is selected, the close date is ignored. The accounting dates created by CIMSBill are the same as the usage end date, regardless of the close date.	**File:** `BillCntl.txt` **Statement:** `BACKLOAD DATA` (see page D-16)
Normalize CPU Values Select this check box to normalize the processing speeds of computers in the system (see *Normalizing CPU Values* on page 6-55).	**File:** `BillCntl.txt` **Statement:** `NORMALIZE CPU VALUES` (see page D-22)
Use Shift Codes Select this check box to instruct CIMSBill to use the shift character specified in the CIMSAcct Detail record and apply the appropriate rate shift value.	**File:** `BillCntl.txt` **Statement:** `USE SHIFT CODES` (see page D-26)

Files Subtab

Use this subtab to define the CIMSBill input and output files.

Setting	Correlating Control File and Statement
Input File	**File:** `ProcessCntl.txt`
The input file to be processed by CIMSBill. To select another file, click **Browse**. To edit the file in Windows Notepad, click **Edit**.	**Statement:** `BillInputFile` *`filename`*
Output Files	**File:** `ProcessCntl.txt`
The names of the CIMSBill output files (the CIMSBill Detail and CIMS Summary files). CIMSBill writes these files to the path listed above the file names. CIMS Lab recommends that you use the default file names.	**Statement:** `BillDetailFile` *`filename`* `BillSummaryFile` *`filename`*

Define Fields Subtab and Include/Exclude Records Subtab

These subtabs are used together to define data that you would like to include or exclude for CIMSBill processing. This is useful if there is certain data that your organization does not want to report on. For a description of how to use these tabs, see *Include/Exclude Processing* on page 6-58.

Proration Subtab

This subtab allows you to charge resources to more than one account. For a description of the options on this subtab and how to use proration, see *Prorating Resources* on page 6-49.

Note • Although you can perform proration using CIMSBill, CIMS Lab recommends that you use the CIMSPrat program. CIMSPrat provides more options for proration and enables you to prorate resources multiple times. For more information about proration using CIMSPrat, refer to the *CIMS Data Collectors for Microsoft Windows Installation and User Guide*.

CIMS Server will continue to support proration using CIMSPrat or CIMSBill.

Client Subtab

Use this subtab to enable CIMSBill to search for the applicable rate table (if you are using multiple rate tables) and to dynamically add clients to the CIMSClient table.

Setting	Correlating Control File and Statement
Enable client search If you are using multiple rate tables, select this check box to enable CIMSBill to search the CIMSClient table for the rate table associated with a client. If this check box is not selected, the STANDARD rate table is used for all clients.	**File:** `BillCntl.txt` **Statement:** `CLIENT SEARCH ON` (see page D-16)
Add new clients to Client table Select this check box to instruct CIMSBill to insert corresponding client entries in the CIMSClient table for all clients that have a resource usage charge, but are not entered in the table. If you are using multiple rate tables, you must also select the **Enable client search** check box. The inserted client entries will include account names only if a matching top level account is currently in the CIMSClient table. For example, if account code AA exists in the CIMSClient table and account code AABBB is inserted, account AABBB is assigned the same account name as AA. However, contacts and budgets assigned to the top level account are not copied to the client that is added. **Note:** This option can quickly fill up the CIMSClient table. Use this option with caution.	**File:** `BillCntl.txt` **Statement:** `DYNAMIC CLIENT ADD ON` (see page D-21)
Account Code Search Fields When CIMSBill is searching the client table or adding clients to the table, it needs to know the account code structure that you want to use. In the **Account Structure** box, click the account code structure that you want, and then click **Populate Fields**. The account code structure appears in Fields 1–9. For more information about the account code structure, see *Setting Up the Account Code Structure* on page 3-3.	**File:** `BillCntl.txt` **Statement:** `DEFINE` (see page D-19)

Trace Subtab

Note • **By default, tracing is disabled. Consult CIMS Lab before using one of the CIMSBill trace flags described in this section.**

Use this subtab to include the following trace messages in the CIMSBill Message file, `BillMsg.txt`:

■ **Date processing.** Includes the CIMSBill run date, the input file usage end date(s), and accounting start and end dates.

■ **Rate processing.** Includes rate code information from the rate tables that are used during processing.

■ **General processing.** Includes options selected, high–low date calculation, and other general processing messages.

■ **Client processing.** Includes information related to the clients that are processed.

Setting	Correlating Control File and Statement
Trace flag	**File:** `BillCntl.txt`
Click **Tracing Disabled, D – Trace Date Processing, R – Trace Rate Processing, Y – Trace General Processing**, or **Z – Trace Client Processing**.	**Statement:** `TEST D, R, Y, or Z` (see page D-26)

Process Results Tab

This tab contains the following subtabs: **CIMS Account, CIMS Bill,** and **Event Viewer.**

CIMS Account and CIMS Bill Subtabs

■ **View Message File.** Select this check box to view the most recent version of the CIMSAcct/CIMSBill Message file.

■ **View Results File.** Click this to view the CIMSAcct/CIMSBill Results file, which describes results of the most recent CIMSAcct/CIMSBill processing.

■ **View Detail File.** Select this check box to view the CIMSAcct/CIMSBill Detail file.

■ **View Ident File (CIMSAcct only).** Click this to view the CIMS Ident file.

■ **View Exception File (CIMSAcct only).** Click this to view the exception file. This button is unavailable if no exception file is available.

■ **View CSR Plus File (CIMSAcct only).** Click this to view the CSR+ file. This file is created if the **Create CSR Plus** check box is selected (see page 6-28).

■ **View Summary File (CIMSBill only).** Click this to view the CIMS Summary file.

■ **View Proration Report (CIMSBill only).** Click this to view the proration report. This button is unavailable if no proration report is available

■ **Use External Viewer.** When you select this check box and then click one of the preceding buttons, the files open in Windows Notepad.

■ **Word Wrap.** Select this check box to enable word wrap for the displayed files.

■ **Copy to Clipboard.** Click this to copy the contents of the currently displayed file to the Windows clipboard

Event Viewer Subtab

■ **Show Process Events.** Click this to view all process events in the Event Viewer (see page 6-38)

■ **Show All CIMS Events.** Click this to view all CIMS Server-related events in the Event Viewer

■ **Start Windows Event Viewer.** Click this to open the Windows Event Viewer and view system-wide events

Versions Tab

This tab provides the version number and path for CIMSAcct, CIMSBill, and CIMSORT.

Processing Data Using CIMS Server Administrator

To process data using CIMS Server Administrator, click the process definition that you want to process, and then click **Process**. You can also click **Process** in the Edit Process Definition dialog box for the definition.

Note • **If you receive a warning stating that a file with the same date range has already been loaded, you are probably loading duplicate data. You can click Yes to continue to load the data, but you should delete the previous load immediately after the current load is completed (see** *Tracking the History of Database Loads* **on page 5-23).**

Viewing Events

CIMS Server Administrator enables you to view system events related to CIMS Server and the processing of CIMS data. This is helpful if you want to see details about a processing job and any associated problems with it. To view these events:

1 In the CIMS Server Administrator main window, click **Chargeback Administration ▸ Processing ▸ Event Viewer**. The Event Viewer dialog box appears as shown in example Figure 6-4.
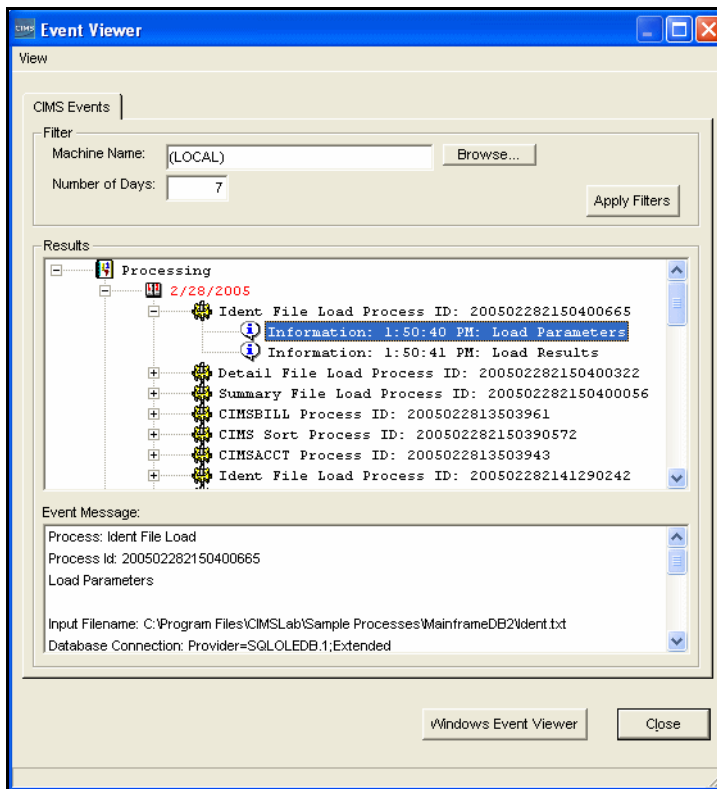
Figure 6-4 • Event Viewer Dialog Box

2 Click any event to view the event message at the bottom of the dialog box. To view Windows system-wide events, click **Windows Event Viewer**.

3 If you want to change the criteria for the events that appear, use the options in the **Filter** area, and then click **Apply Filters**.

Note • To refresh the list of events in the Event Viewer dialog box, press <F5>.

Setting Up Account Codes and Performing Account Code Conversion

This section describes the account codes structure and how to define and convert the account code.

Defining the Account Code Structure

One of the first steps in implementing CIMS Server is deciding on a final account code structure. The structure is the chargeback hierarchy for the organization. The levels of this hierarchy are arranged from highest to lowest level within the account code. The account code can consist of up to 128 characters.

For example, your final account code structure could consist of:

DDDCCCCUUUUUUUU

D = Division (three characters) (highest level)

C = Cost Center (four characters)

U = User (eight characters) (lowest level)

Note • You can use business rules to map identifiers to applications in addition to or instead of business units, departments, cost centers, etc.

The next step is to set the account code structure in CIMS Server Administrator, see *Setting Up the Account Code Structure* on page 3-3.

Once you have set up the account code structure, you can create an account code conversion table to convert the identifier values in the input file into an account code that fits within the final hierarchy pattern.

Defining the Account Code

The account code is derived from an identifier or identifiers in the input file. In CIMS Server Administrator, you need to specify the identifier(s) that you want to use to define the account code as follows:

■ If the input file contains an `Account_Code` identifier, the `Account_Code` identifier value is automatically used to define the account code. If this value fits your account code hierarchy, you can use the value as your account code. If this value does not meet your account code requirements, you can convert the value to the appropriate account code.

■ If the input file meets any of the following criteria, you need to specify an identifier or identifiers that you want to use to define the account code:

• The input file does not contain an `Account_Code` identifier.

• The input file contains an `Account_Code` identifier, but you want to use other identifiers instead.

• The input file contains an `Account_Code` identifier and other identifiers that you want to use. In this case, you must define the `Account_Code` identifier in addition to the other identifiers.

If the identifier values fit your account code hierarchy, you can use the combined values as your account code. However, in most cases you will need to convert combined values to the appropriate account code.

The identifiers that you use (either via the `Account_Code` identifier values or the identifiers that you specify) are referred to as the account code input field. For an example of how to define an account code input field, see Figure 6-5 on page 6-47.

To define the account code input field:

Note • **You do not need to define the account code input field if the input file contains the** `Account_Code` **identifier and you are using only it to define your account code.**

1 In the CIMS Server Administrator main window, click **Chargeback Administration ▸ Processing ▸ Process Definitions**.

2 In the Process Definition List dialog box, click the process definition that you want, and then click **Edit**.

3 Click the **CIMS Account Options** tab.

4 Complete the **Account Codes** subtab as follows:

● **Account Fields.** Define the identifier(s) that you want to use for the account code input field beginning at **Field 0** and continuing sequentially as needed.

If you want to use the full value for an identifier, use an offset of 1 and the length of the longest identifier value as defined in the input file. For example, if the longest identifier value is 7 characters, type 1 as the offset and 7 as the length.

If you want to use a portion of the identifier value, use the offset position at which you want to start the value and the corresponding length. For example, if you want to start the 7-character identifier value at the second character, type 2 as the offset and 6 as the length. You could also select a shorter length if you wanted to further reduce the identifier value length.

You can define up to 10 account fields (**Field 0 – Field 9**). The maximum number of characters for an account field is 128.

Note • **Although the maximum number of characters for each account field is 128, the overall length of all account fields added together cannot exceed 128 characters.**

Also, keep in mind that the total output account code, including any literals and move field values, cannot exceed 128 bytes.

The corresponding control statement in the `AcctCntl.txt` file is `ACCOUNT FIELD` (see).

● **Convert account fields to uppercase during processing.** Select this check box to convert lowercase account code input field values to uppercase values in the resulting account code. For example, the value `ddic` would be converted to `DDIC`. By using this option, CIMSAcct account code processing becomes case-insensitive and makes defining account conversion tables much easier.

The corresponding control statements in the `AcctCntl.txt` file is `UPPERCASE ACCOUNT FIELDS` (see).

Setting the Account Code Conversion Options

To perform account conversion, regardless of whether you are using the `Account_Code` identifier or another identifier, you need to set the conversion options described in this section and create an account code conversion table as described on page 6-44. Account codes are assigned by matching identifier values in the input file records to the values in the account code conversion table.

For an example of how to set the account code conversion options, see Figure 6-5 on page 6-47.

To set the account code conversion options:

Complete the **Account Codes** subtab as follows.

■ **Perform Account Code Conversion.** If this check box is selected, the account code conversion occurs as defined by the following **Define Field** and **Move Field** settings and the account code conversion table:

The corresponding control statement in the `AcctCntl.txt` file is `ACCOUNT CODE CONVERSION` (see page D-5).

■ **Define Fields.** Use this area to specify the offset and length of the account code input field values that you want to use for conversion. Begin at **Field 0** and continue sequentially as needed. Note that if you created the account code input field using account fields as described in *To define the account code input field:* on page 6-40, the define fields correlate to the account field values, not to the original identifier values in the input file.

For example, if you defined the following two identifiers as account fields, the resulting account code input field value would be `JJJJJJUUUUUUU`, where `J` represents the `Jobname` identifier and `U` represents the `User` identifier.

• Account Field 0—`Jobname` offset 2, length 6

• Account Field 1—`User` offset 1, length 7

You would set the Define Field 0 to offset 1, length 6 and Define Field 1 to offset 7, length 7. You could also select a shorter length if you wanted to further reduce the define field value.

You can define up to 10 define fields (**Field 0 – Field 9**). The maximum number of characters for a define field is 128.

Note • **Although the maximum number of characters for each define field is 128, the overall length of all define fields added together cannot exceed 128 characters.**

Also, keep in mind that the total output account code, including any literals and move field values, cannot exceed 128 bytes.

The corresponding control statement in the `AcctCntl.txt` file is `DEFINE FIELD` (see page D-7).

■ **Move Fields.** Use this optional setting to include either the define field(s) value *or* a literal in the output account code.

If you specify a define field as the move field, the define field value will be included in the account code. For example, if the define field represents the `Jobname` value `DDIC`, `DDIC` will appear at the beginning, end, or within the account code as specified in the account code conversion table.

If you specify a literal, the literal value will be included in the account code. For example, if the type a literal value of `A/P`, `A/P` will appear in the at the beginning, end, or within the account code as specified in the account code conversion table. The literal can be a maximum of 40 characters.

For an example of how move fields are used, see *Account Code Conversion Example* on page 6-46.

Begin at Field 0 and continue sequentially as needed. You can define up to 10 move fields (Field 0 – Field 9).

Note • **Although the maximum number of characters for each move field is 128, the overall length of all move fields added together cannot exceed 128 characters.**

Also, keep in mind that the total output account code, including any literals and move field values, cannot exceed 128 bytes.

The corresponding control statement in the `AcctCntl.txt` file is `DEFINE MOVEFLD` (see page D-8).

■ **Conversion Table.** This is the file name for the account code conversion table. If the table is located in the definition folder for the process, the file name appears without the path. If the table is located in a location other than the process definition folder (e.g., you are using the same table for multiple processes and have the table in a central location), the file path appears.

To select a table, click **Browse**. To edit the table, click **Edit**. To create a table, see *Creating an Account Code Conversion Table* on page 6-44.

The corresponding control statement in the `ProcessCntl.txt` file is `ACCTCODECONVERSIONTABLE` *filename*.

■ **Enable Exception Processing.** Select this check box to enable exception file processing. This instructs the system to write all non-matched records to an exception file. If this check box is not selected, the records that are not matched are written to the CIMSAcct Detail file with the unconverted account code input field value.

If you enable exception processing, do not include a default account code as the last entry in the account code conversion table (e.g., `",,DEFAULTCODE"`). If a default account number is used, records will not be written to the exception file.

The corresponding control statement in the `AcctCntl.txt` file is `EXCEPTION FILE PROCESSING ON` (see page D-9).

Creating an Account Code Conversion Table

The account code conversion table contains the definitions required to convert the identifier values defined by the account code input field to user-defined output account codes. For an example of how to create the account code conversion table, see

Consider the following when creating the account code conversion table:

■ The account code conversion table is case-sensitive. For convenience, you can enter uppercase values in the table and then select the **Convert account fields to uppercase during processing** check box on the **Account Codes** subtab (see *To define the account code input field:* on page 6-40). This is especially helpful it you are using one account code conversion table for multiple process definitions. This ensures that account code input field values that are lowercase or mixed case are processed.

■ Each record in the table can be up to 386 characters (129 for the low identifier, 129 for the high identifier, and 128 for the new account code).

■ The identifier fields follow these rules:

 • Each low and high identifier field is compared to the corresponding account code input field values. If the compares are true, the account code is assigned.

 • The low identifier fields are padded with x'00' and the high value fields are padded with x'FF'.

 • The high identifier field is set equal to the low field plus the high padding when the high identifier field value is null.

■ You can include a default account code as the last entry in the account code conversion table by leaving the low and high identifier fields empty (e.g., ",,DEFAULTCODE"). In this case, all records that contain identifier values that do not match an entry in the account code conversion table will be matched to the default code.

■ If you do not include a default account code, input file records that contain identifier values that do not match an entry in the account code conversion table are written to the CIMSAcct Detail file with the unconverted account code input field value.

 If you want unmatched records to go to an exception file for reprocessing at a later time, you need select the **Enable Exception Processing** check box on the Account Codes subtab (see page 6-42). If you enable exception file processing, make sure that you have not included a default account code entry in the account code conversion table.

■ If the PRINT ACCOUNT NO-MATCH statement is included in the AcctCntl.txt file, a message is printed in the CIMSAcct Message file showing the identifier values from the input file that were not matched during account code conversion. If this statement is not present, only the total number of unmatched records is provided. The system prints up to 1000 messages.

■ The number of definition entries that you can enter in the table is limited only by the memory available to CIMSAcct.

To create an account code conversion table:

1 In the **Conversion Table** box, CIMS Lab recommends that you type the default file name `AcctTabl.txt`, which is also the default for CIMS Data Collectors. However, you can type any name in the format *filename*`.txt`.

2 Click **Edit**.

3 In the Account Code Conversion Table Maintenance dialog box, click **Add Entry** and type the following for each account code input field value that you want to convert.

- The low and high identifier value that you want to use for conversion. You can enter up to 10 fields of 128 bytes each for the low and high identifiers. (However, all fields added together cannot equal more than 128 characters.) Each field must be delimited by a colon (:).

  For example, if you type AA as the low identifier and CC as the high identifier, all account codes that begin with characters greater than or equal to AA or less than or equal to CC are converted to the specified account code. If you type AAAAAAAA:BB as the low identifier and CCCCCCCC:DD as the high identifier, all account codes that begin with characters greater than or equal to AAAAAAAABB or less than or equal to CCCCCCCCDD are converted to the specified account code.

  The asterisk (*) and the question mark (?) characters can be used as wildcard characters for both the low and high identifiers. Note that using the wildcard characters can degrade performance; use them only when needed.

  If you do not set a high value, the value is equal to the low value by default.

- The account code value that you want to convert to (maximum of 128 characters).

4 To set additional account code conversion entries, click **Insert Entry**. To remove an entry, click the entry and then click **Remove Entry**.

5 Click **OK** when you are finished.

By default, the table is saved to the process definition folder. But you can move the table to any location.

Account Code Conversion Example

Note • **This section provides examples to supplement the preceding sections. Please refer to these sections for more detailed information.**

Assume that you want to use the User identifier values in an input file to define your account code and that your account code is in the following structure:

DDDCCCCUUUUUUUU

D = Division (three characters) (highest level)

C = Cost Center (four characters)

U = User (eight characters) (lowest level)

The following table shows the User identifier values that are in the input file records and the corresponding account code that you want to convert the value to.

User Identifier Value from Input File		Final Account Code		Division Account Code	Cost Center Account Code	User Account Code
DDIC	=	FINACTGDDIC	=	FIN	ACTG	DDIC
SAP	=	ISDDEVPSAP	=	ISD	DEVP	SAP
SAPCOMM	=	OPSMKTGSAPCOMM	=	OPS	MKTG	SAPCOMM
SAPSYS	=	MISPRODSAPSYS	=	MIS	PROD	SAPSYS
TEAM718	=	MISTESTTEAM718	=	MIS	TEST	TEAM718
TEAMF99	=	OPSTESTTEAMF99	=	OPS	TEST	TEAMF99

To convert the User identifier values to the final account code, you would complete the steps in the following sections.

Define the Account Code and Conversion Options for CIMSAcct

In this example, the `User` identifier is entered for an offset of `1` and length of `7` because you want to use the entire identifier value and the longest values (`SAPCOMM`, `TEAM718`, and `TEAMF99`) are 7 characters.

For account code conversion, you need to define the value from the account field (`USER`) at the full 7-character length. Because you also want to include the account field value at the end of the account code, you need to define a move field for the value.

Figure 6-5 • Defining the Account Code and Conversion Options Example

Create the Account Code Conversion Table

The account code conversion table contains the following entries. Note that the high identification code is not needed in this example because the low and high identification codes are the same.

The @0 at the end of the account code value specifies that the move field defined in the previous step will be included at the end of the account code. For example, the resulting account code for the first table entry would be `FINACTGDDIC`. If you placed the @0 at the beginning of the account code value, the resulting account code would be `DDIC<three spaces>FINACTG`. You could place the @0 anywhere in the account code.
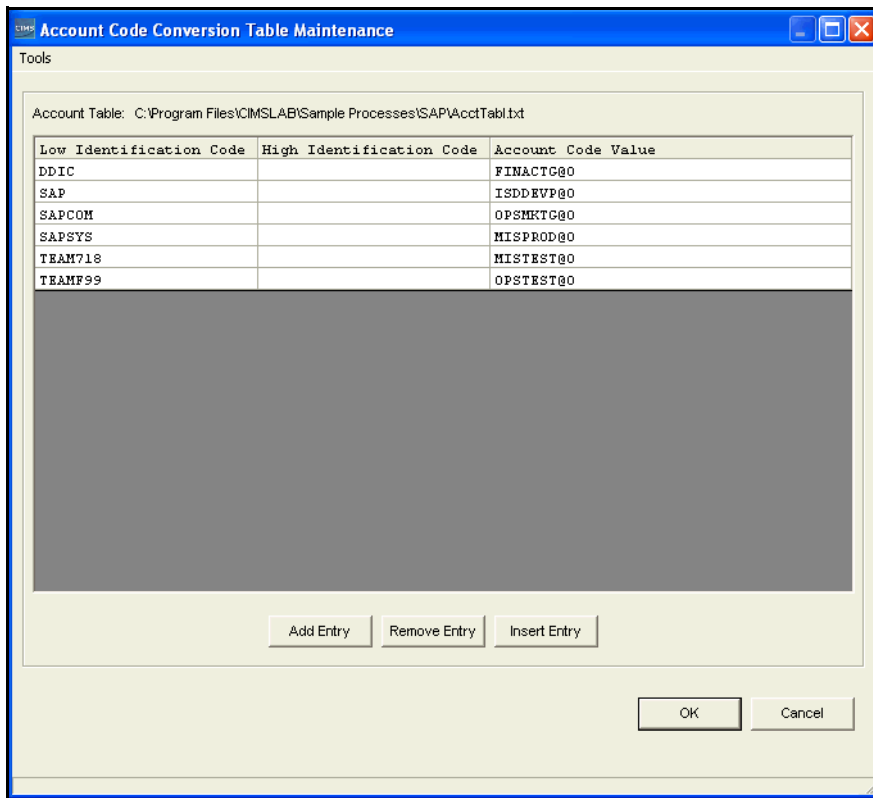
Figure 6-6 • Creating the Account Code Conversion Table Example

If you had additional move fields defined, they would be represented by `@1`, `@2`, `@3`, etc. For example, if you had used another identifier for account conversion in addition to `User` and had defined move fields for each (move field 0 and move field 1), `@1FINACTG@0` would place the value for move field 1 at the beginning of the account code and the value for move field 0 at the end of the account code.

Process the CIMS Server Resource File

The converted account codes appear in the CIMSAcct Detail, CIMSBill Detail, and CIMS Summary files.

Prorating Resources

Note • **Although you can perform proration using CIMSBill, CIMS Lab recommends that you use the CIMSPrat program. CIMSPrat provides more options for proration and enables you to prorate resources multiple times. For more information about proration using CIMSPrat, refer to the** *CIMS Data Collectors for Microsoft Windows Installation and User Guide***.**

CIMS Server will continue to support proration using CIMSPrat or CIMSBill.

Proration is taking the overall or individual resources used by an account and distributing those resources and the cost of the resources across multiple accounts at a specified percentage.

A common use of proration is the equitable allocation of overhead costs across the user community. An application or system that is normally assigned to the overhead category tends to be one that does not produce metering data to the end user or account level, or the processing of such data is considered too expensive to be practical at the end user or account level.

For example, you have an application that controls print in a centralized environment. To prorate the costs associated with this application among multiple accounts you need to do the following:

■ Assign the print program resource utilization and cost to a non-billable overhead account.

■ Set the proration options for CIMSBill.

■ Create a proration table assigning the percentage of print program costs for the non-billable account to the accounts that you want to bill.

To set the proration options:

1 In the CIMS Server Administrator main window, click **Chargeback Administration ▶ Processing ▶ Process Definitions**.

2 In the Process Definition List dialog box, click the process definition that you want, and then click **Edit**.

3 Click the **CIMS Bill Options** tab.

4 On the **Proration** subtab, set the following options:

• **Proration Type.** Click type of proration to be performed: **Resources** or **Money**. For a description of each option including its advantages and disadvantages, see *Prorating Resources vs. Prorating Money* on page 6-54.

The corresponding control statements in the `BillCntl.txt` file are `PRORATE MONEY` (see page D-23) and `PRORATE RESOURCES` (see page D-24).

- **Match Length.** The level of the account code that you want to match for proration. For example, if you type 5, accounts AAABB, AAABBBB, and AAABBCC are prorated. If you type 7, only accounts AAABBBB and AAABBCC are prorated.

  This is included in the `PRORATE MONEY` or `PRORATE RESOURCES` statement in the `BillCntl.txt` file. For example, `PRORATE RESOURCES 5` where 5 is the match length.

- **Proration Table.** This is the file name for the proration table. If the table is located in the definition folder for the process, the file name appears without the path. If the table is located in a location other than the process definition folder (e.g., you are using the same table for multiple processes and have the table in a central location), the file path appears.

  To select a table, click **Browse**. To edit the table, click **Edit**. To create a table, see *To create a proration table:*.

  The corresponding control statement in the `ProcessCntl.txt` file is `BillMultFile filename`.

- **Print Proration Report.** Select this check box to create a proration report as part of the process. The report will reside in the process definition folder.

  The corresponding control statement in the `BillCntl.txt` file is `PRINT PRORATION REPORT` (see).

To create a proration table:

1 In the **Proration Table** box, type a name for the table in the format *filename*`.txt`, and then click **Edit**.

2 In the Proration Table Maintenance dialog box, click **Add Entry** and type the following for each account that you want to prorate to.

- The original account code that you want to prorate from.

- The account code that you want to prorate to.

- The percentage that you want to prorate to the account code.

  > **Note** • **You can prorate resource costs at any percentage. The prorate percentage can be less than or greater than 100 percent.**

- The individual rate code(s) that you want to prorate or `All` to prorate all rate codes.

3 To set additional proration entries, click **Insert Entry**. To remove an entry, click the entry and then click **Remove Entry**.

4 Click **OK** when you are finished.

By default, the table is saved to the process definition folder. But you can move the table to any location.

Proration Table Examples

Assume that you want to split *all* resources used by overhead account code AAABB among three different accounts: A1, A2, and A3. A1 on average uses about 50 percent of the resources assigned to the AAABB account, A2 uses about 30 percent, and A3 uses about 20 percent.

Complete the Proration Table Maintenance dialog box as shown in Figure 6-7.
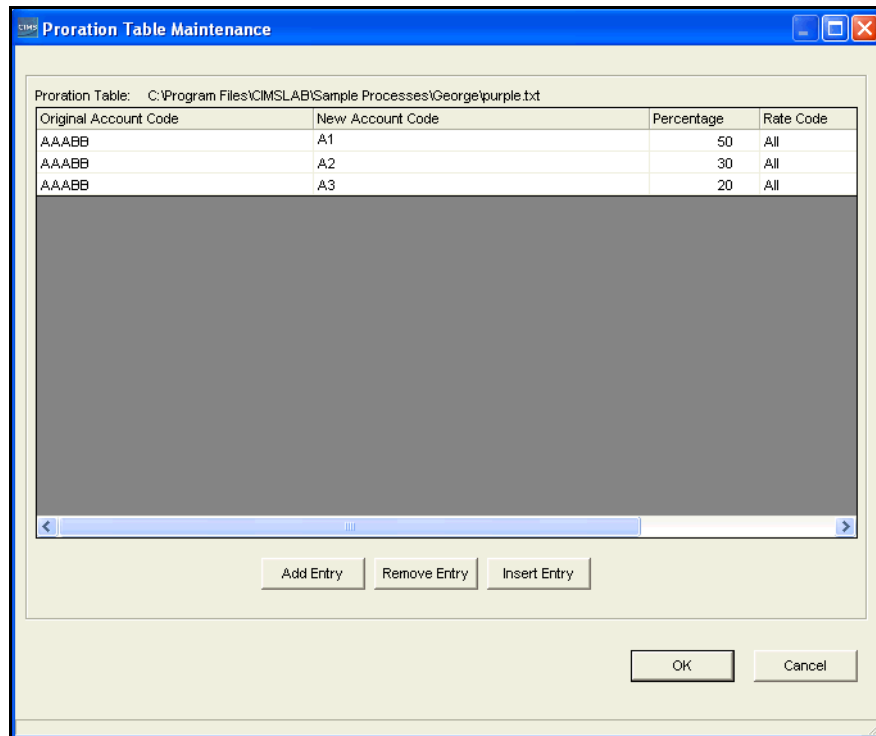
Figure 6-7 • Proration Example 1

You can also split *individual* resources among multiple accounts. Using the preceding example, assume that the only resources from account AAABB that you want to prorate are represented by the rate codes Z001 and Z002. Create the proration table as shown in example Figure 6-8.
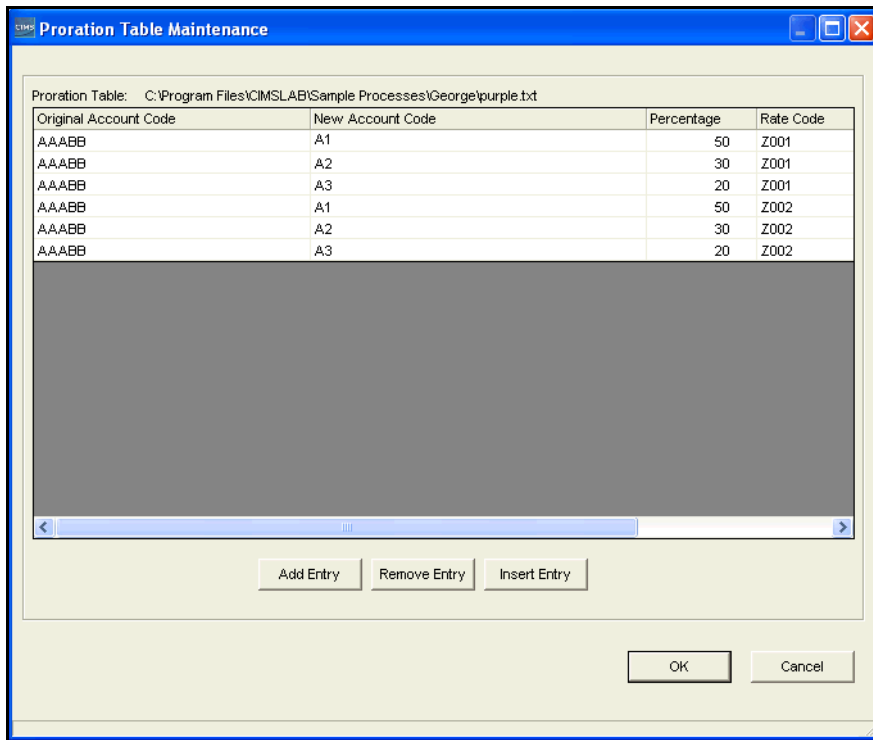
Figure 6-8 • Proration Example 2

In this example, all resources other than Z001 and Z002 would still be charged to the AAABB account.

If you want to charge account AAABB for a portion of the resources used, for example you want to charge account AAABB 40 percent and account AACCC 60 percent for all resources, create the proration table as shown in example Figure 6-9.
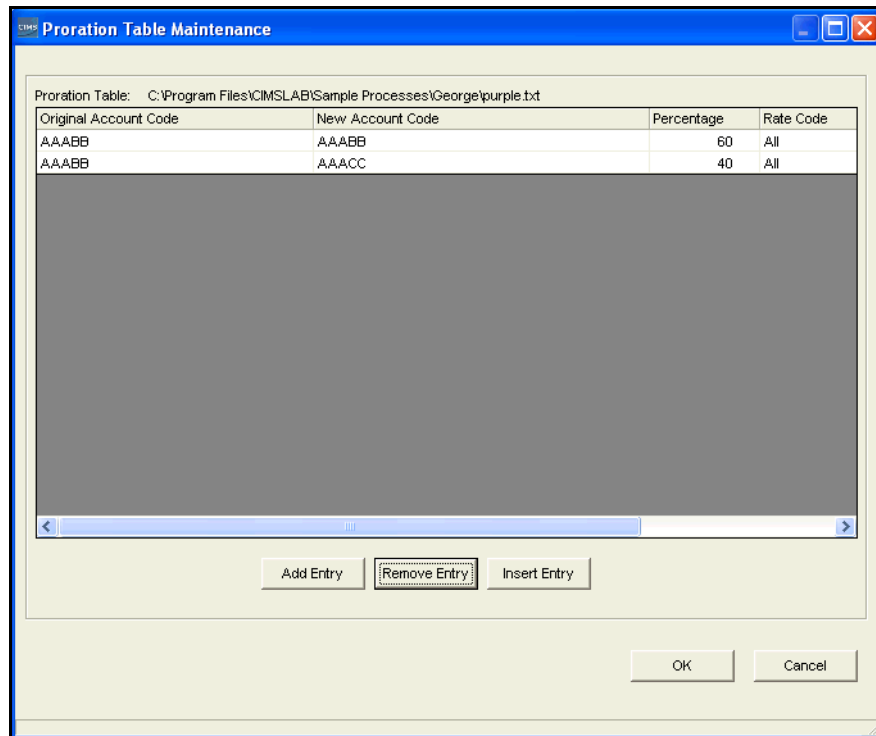
Figure 6-9 • Proration Example 3

Prorating Resources vs. Prorating Money

In CIMS Server Administrator, you can set the option to prorate on resources or on money. Both options display the same prorated units and charges in Web reports. However, you cannot drill down on resource units by identifier if you prorate by money. The following describes the advantages and disadvantages of prorating resources and prorating money:

Prorating resources. The CIMSAcct Detail file from CIMSSort is prorated before CIMSBill applies rates and figures money and a new CIMSAcct Detail file is built with all the prorated resources. The new CIMSAcct Detail file is then used in the CIMSBill process.

An advantage of prorating resources is that the CIMSBill Detail records match the records in the CIMS Summary file. Therefore, users can drill down on resource units by identifier when viewing invoices in CIMS Server Web Reporting. A disadvantage is that the CIMSBill Detail file can contain a potentially large number or records.

Prorating money. The CIMS Summary file is prorated just before CIMSBill ends. A new CIMS Summary file is built with the prorated values.

An advantage of prorating money is that the CIMSBill Detail file contains fewer records than it would if you prorated by resources. A disadvantage is that the CIMSBill Detail records do not match the CIMS Summary records and drilling down by identifier will not produce accurate data.

Normalizing CPU Values

Computers within an organization have different processing speeds. This speed difference might cause users to request that their work be run on the faster machine to reduce costs. This situation could lead to heavy workloads on the faster computers while the slower units stand idle. To avoid this problem, you can normalize the processing speeds to more evenly charge for CPU utilization. That is, you can assign a percentage of the original CPU time used by a system rather than the actual time to be used during the billing process.

For example, your organization has two z/OS systems, AL90 and AL95. System AL95 is 20 percent faster than AL90. If you use AL95 as the base system, use a factor of .80 to normalize AL90 to reflect the speed of AL95.

Note • **Due to the disparity between the way different operating systems capture performance statistics, it is not desirable to normalize the processor times between platforms (e.g., z/OS to UNIX or UNIX to Windows).**

To perform normalization, you need to do the following:

■ Select the CPU Value option for the rate code or codes for which you want to perform normalization.

■ Set the normalization factor for the applicable system or systems.

■ Select the Normalize CPU Values option for the process definition.

To set the rate code as a CPU value:

1 In the CIMS Server Administrator main window, click **Chargeback Administration ▸ Chargeback Table Maintenance ▸ Rate Codes**.

2 In the Rate Code Maintenance List dialog box, click the rate code that you want to set as a CPU value, (for example, Mainframe CPU Minutes [Z003]), and then click **Edit.**

3 Select **CPU Value** check box, and then click **OK**.

Note • **If this item is not checked, the rate code value will not be normalized during CIMSBill processing.**

To set the normalization factor by system:

1 In the CIMS Server Administrator main window, click **Chargeback Administration ▶ Processing ▶ CPU Normalization**.

2 Click **Add** in the CPU Normalization Maintenance List dialog box.

3 Enter the following:

- **System ID**. The name of the system. For z/OS, this is the four-character System Model ID, for UNIX and Windows, it is the computer name. Note that the input file must contain an identifier named `System_ID` to identify the system name for CIMSBill.

- **Work ID**. The subsystem name. This is any other system value that can narrow the normalization (i.e., the CICS region name, the DB2 plan name, the Oracle instance, etc.). Note that the input file must contain an identifier named `Work_ID` to identify the subsystem name for CIMSBill.

- **Factor**. This is the actual normalization factor. In the example at the beginning of this section, this would be .80.

4 Click **OK**.

An example of a configured CPU Normalization List Maintenance dialog box is shown in Figure 6-10.
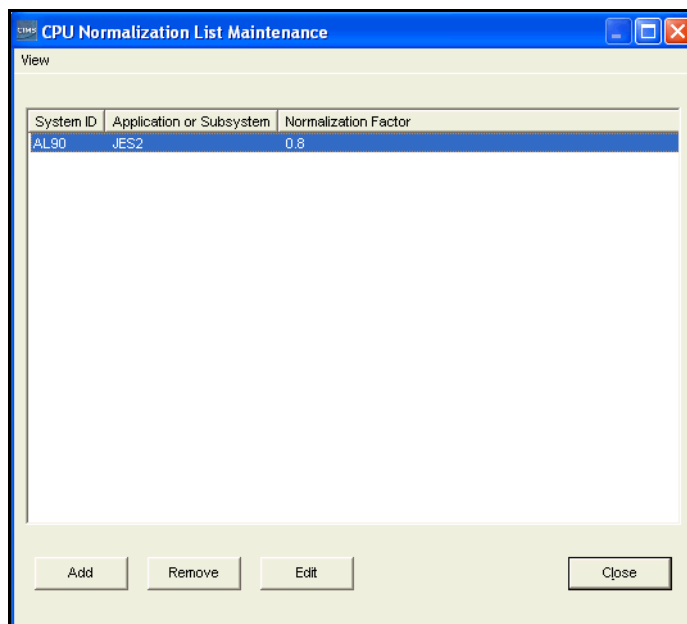
Figure 6-10 • CPU Normalization List Maintenance Dialog Box

To edit or remove a factor, click the factor, and then click **Edit** or **Remove**. Note that you cannot change the System or Work ID when you edit the factor.

To set the CPU normalization option for the process definition:

1 In the CIMS Server Administrator main window, click **Chargeback Administration** ▸ **Processing** ▸ **Process Definitions**.

2 In the Process Definition List dialog box, click the process definition that you want, and then click **Edit**.

3 Click the **CIMS Bill Options** tab.

4 On the **General** subtab, select the **Normalize CPU Values** check box.

The corresponding control statement in the `BillCntl.txt` file is `NORMALIZE CPU VALUES` (see).

About Ghost Machines

Many organizations attempt to perform normalization against a "ghost machine". This is the factor applied to all the processors in the enterprise today, using as a base the speed of the slowest machine running in the environment. In an attempt to keep costing philosophy as simple as possible, the old technology "ghost" system is kept as the baseline for processor speed. This concept worked well when processor speeds were relatively constant. However, as processor speeds continue to increase, it becomes difficult to relate the higher CPU speeds of today's computers to older technology. CIMS Lab recommends that processor speed factors be restricted to those multipliers and divisors applicable to the existing environment.

Include/Exclude Processing

By default, CIMSBill processes all records within the input CIMSAcct Detail file. However, you might want to process only certain records or you might want to exclude certain records. This is useful if there is data that your organization does not want to report on.

You can exclude records by date using the date selection option in CIMS Server Administrator. See page 6-27 to set this option for CIMSAcct and page 6-32 to set this option for CIMSBill.

You can also include or exclude records by identifier values in the records. For example, you might want to exclude all records that contain a particular `Jobname` identifier value.

To include or exclude records by identifier values, you need to do the following in CIMS Server Administrator:

■ Define identifier fields that you want to use.

If the input record identifier fields that you want to include or exclude are other than `System_ID`, `Work_ID`, or `Account_Code`, you need to define identifier fields that you want to use. The values for these defined identifiers are stored consecutively beginning at starting position 301 of the CIMSAcct Detail file (see page B-8 for the file layout).

If you want to include or exclude `System_ID` or `Work_ID` identifier fields, you do not need to define the fields. The values for these identifiers are always stored at starting positions 57 and 90 (respectively) of the CIMSAcct Detail file.

If you want to include or exclude the `Account_Code` identifier field, you do not need to define the field unless the account code has been converted. If the account code has been converted, the code (stored in position 163 of the CIMSAcct Detail file) will not match the `Account_Code` identifier value in the input record. You need to define the field so that the original identifier value is used.

■ Define the identifier fields for CIMSBill.

■ Specify whether you want CIMSBill to include or exclude the defined fields.

To define the input record identifier fields that you want to include or exclude:

1 In the CIMS Server Administrator main window, click **Chargeback Administration ▸ Processing ▸ Process Definitions**.

2 In the Process Definition List dialog box, click the process definition that you want, and then click **Edit**.

3 Click the **CIMS Account Options** tab.

4 On the **General** subtab, enter the following in the **Include Fields** area beginning at **Field 0**:

- The identifier name that you want to use to include or exclude records. For example `Jobname`, `Server`, `User`, etc.

- The offset position at which you want to start the identifier value that you want to include or exclude. If you want to start the identifier value at the first character of the value, type `1`. If you want to start the identifier at the second character, type `2`, etc. For example, you could start the eight-character `Jobname` identifier value `DFMALE02` at position 1, which specifies the full value or at any other position such as position 4, which specifies just `ALE02`. This would specify that only those records with `Jobname` identifier values that contain `ALE02` are included or excluded from processing.

- The length of the identifier value. This can be the entire length of the identifier value starting at the offset position, or a shorter length. Using the preceding example of `ALE02`, you might want just `ALE`. In this case, you would type a length of `3`.

> **Note** • **The overall length of all include fields added together can not exceed 60 characters.**

The corresponding control statement in the `AcctCntl.txt` file is `INCLUDE FIELD` (see page D-10).

If you want to specify more than one identifier for include/exclude processing repeat these steps for each identifier. However, consult CIMS Lab before doing this to determine if it is necessary.

To insert an entry in the **Include Fields** area, click **Insert Entry**. To remove an entry, click the entry and then click **Remove Entry**.

To define the identifier fields for CIMSBill:

1 Click the **CIMS Bill Options** tab.

2 On the **Define Fields** subtab, click **Add Entry** and enter the following for each field that you specified on the **CIMS Account Options ▶ General** subtab (see page 6-59).

- A two-character ID for the identifier. You will use this ID to specify the records that you want to include or exclude (see *To include or exclude the defined fields in CIMSBill Processing*).

- The offset position at which you want to start the identifier value that you want to include or exclude. Unlike the offset position 1 through x that you specified for CIMSAcct processing, this is the position in the CIMSAcct Detail file in which the identifier value begins. As with the offset position used by CIMSAcct, you can specify any offset position within the identifier value. For example, if the `Jobname` identifier value `DFM` begins at position 301, you can set the offset at `302` to specify just `FM`. This would specify that only those records with `Jobname` identifier values that contain `FM` are included or excluded from processing.

- The length of the identifier value. This can be the entire length of the identifier value starting at the offset position, or a shorter length.

- An optional description of the field.

The corresponding control statement in the `BillCntl.txt` file is `Define` (see page D-19).

To insert an entry on the **Define Fields** subtab, click **Insert Entry**. To remove an entry, click the entry that you want to remove and then click **Remove Entry**. To add an entry, click **Add Entry**.

To include or exclude the defined fields in CIMSBill Processing

On the **Include/Exclude Records** subtab, click **Add Entry** and enter the following for each field that you specified on the **CIMS Bill Options ▶ Define Fields** subtab:

- ■ Click **Include** or **Exclude**.

- ■ Click the identifier ID that you created in *To define the identifier fields for CIMSBill:*.

- ■ In the **Low Value** and **High Value** fields, type the range for the identifier values that you want to include or exclude. For example, if you want to include only those identifiers that start with ALI type `ALI` in both fields. If you want identifiers that start with ALI and ALE, type `ALE` as the low value and `ALI` as the high value.

The corresponding control statements in the `BillCntl.txt` file are `EXCLUDE` (see page D-21) and `INCLUDE` (see page D-22).

To insert an entry on the **Include/Exclude Records** subtab, click **Insert Entry**. To remove an entry, click the entry that you want to remove and then click **Remove Entry**. To add an entry, click **Add Entry**.

Include/Exclude Processing Example

Assume that you have a CSR+ from a z/OS system with the following identifiers:

```
...System_ID,ALIJ,Work_ID,JES2,Account_Code,ALI09999,Jobname,BKMALI01,Start_date,20050714...
...System_ID,ALIJ,Work_ID,JES2,Account_Code,ALI09999,Jobname,BKMALI02,Start_date,20050715...
...System_ID,ALIJ,Work_ID,JES2,Account_Code,ALI09999,Jobname,BKMALI03,Start_date,20050716...
...System_ID,ALIJ,Work_ID,JES2,Account_Code,ALE09999,Jobname,DFMALE01,Start_date,20050714...
...System_ID,ALIJ,Work_ID,JES2,Account_Code,ALE09999,Jobname,DFMALE02,Start_date,20050715...
...System_ID,ALIJ,Work_ID,JES2,Account_Code,ALE09999,Jobname,DFMALE03,Start_date,20050716...
...System_ID,ALIJ,Work_ID,JES2,Account_Code,ALU09999,Jobname,LCHALU01,Start_date,20050714...
...System_ID,ALIJ,Work_ID,JES2,Account_Code,ALU09999,Jobname,LCHALU02,Start_date,20050715...
...System_ID,ALIJ,Work_ID,JES2,Account_Code,ALU09999,Jobname,LCHALU03,Start_date,20050716...
```

You want to exclude those records that contain `DFM` in the `Jobname` identifier value. Define the identifier field as shown in Figure 6-11.
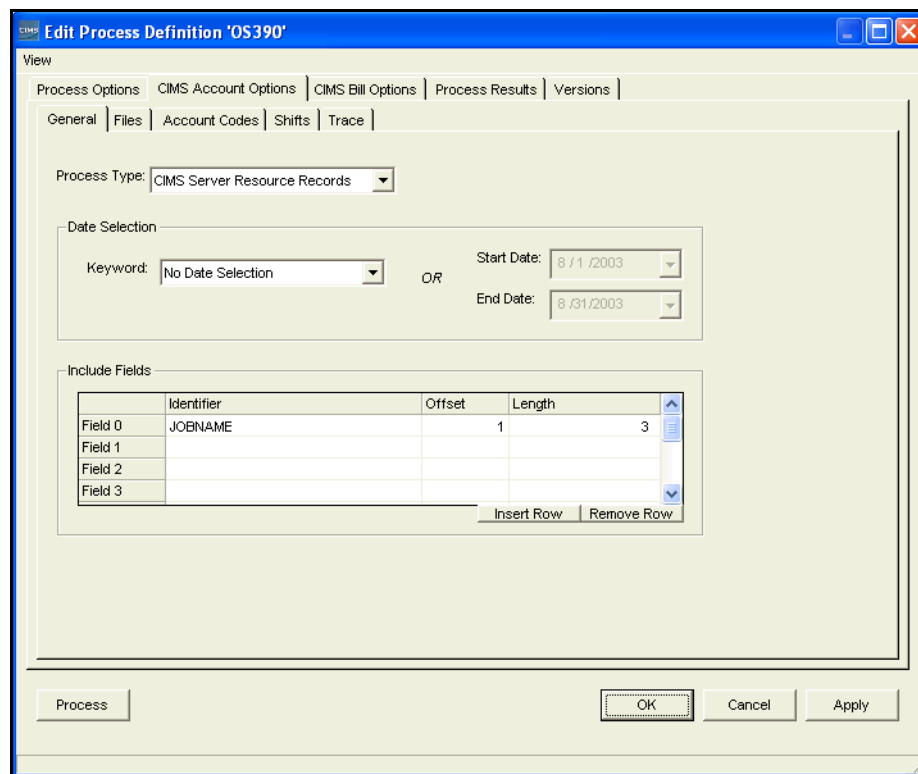
Figure 6-11 • Edit Process Definition—Include Fields

In this example, only the first three characters of the `Jobname` identifier value are required. Therefore, the offset is `1` and the length is `3`.

Next you need to define the identifier field for CIMSBill as shown in example
Figure 6-12.
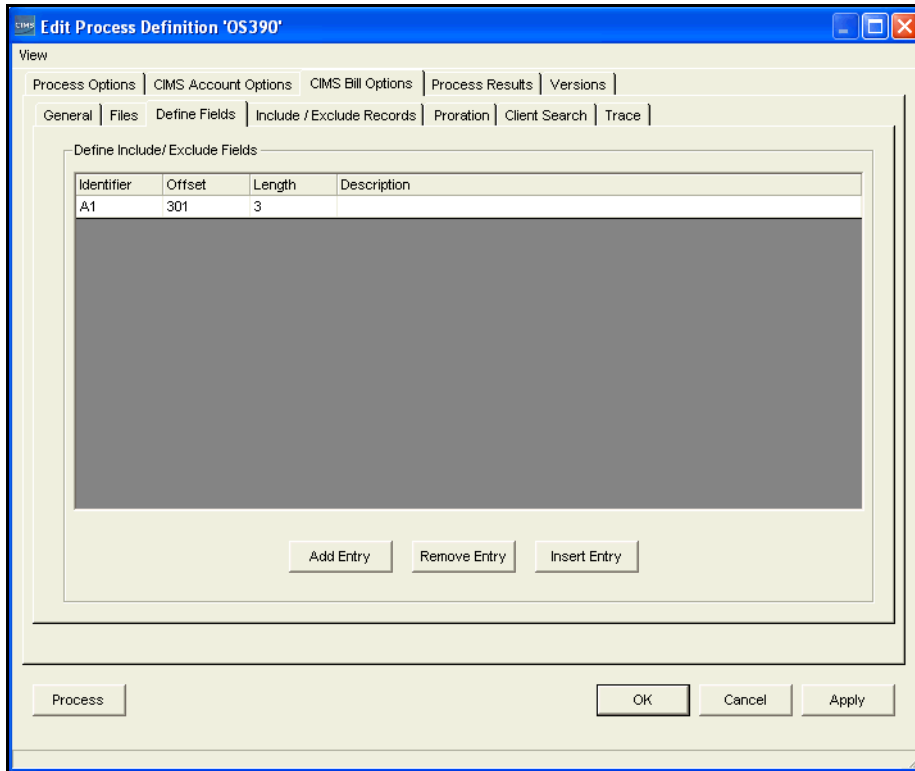
Figure 6-12 • Edit Process Definition—Define Fields Subtab

In this example, the Jobname identifier value is assigned the ID A1 and begins in position
301 of the CIMSAcct Detail file (the starting position for include/exclude identifier
values).

Next you need define `DFM` as the exclude identifier value as shown in example Figure 6-13. Records that contain `DFM` as the first three characters of the `Jobname` identifier value will not be processed.
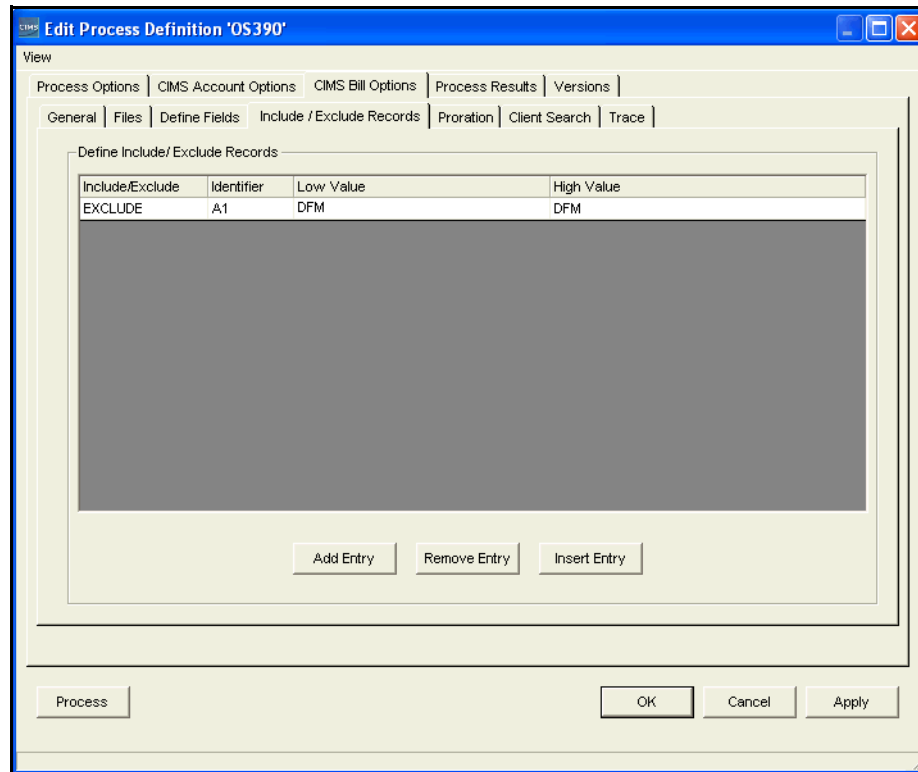
Figure 6-13 • Edit Process Definition—Include/Exclude Records Subtab

Rebilling Rate Codes After Changing Rate Code Values and/or Conversion Factors

---

Important! • **The following scripts change the data in the CIMS Server database. You should back up the database before running these scripts.**

You can recalculate rate codes that you previously processed and loaded into the CIMS Server database using a different rate value and/or resource conversion factor without reprocessing the data. That is, if you change the rate value and/or resource conversion factor for a rate code in the CIMSRate table, you can update the rate value and conversion factor and recalculate the money value directly in the CIMSSummary table. (For more information about the rate code value and resource conversion factor, see *Working With Rates* on page 3-9.)

CIMS Lab provides the following scripts to perform this process:

■ `Rebill.wsf`. This script updates the rate code value and recalculates the money value for a rate code or codes in the CIMSSummary table. If you have not changed the resource conversion factor for a rate code or codes, you do not need to run the `ResourceConversion.wsf` script.

■ `ResourceConversion.wsf`. This script updates the rate code resource conversion factor in the CIMSSummary table. You need to run the `Rebill.wsf` script after running this script to recalculate the money value for the rate code.

Important! • **Consult CIMS Lab before using the `ResourceConversion.wsf` script. If you run this script more than once for the same rate code or codes, the resource units that are converted are the units that were converted previously, not the original units. For example, if the conversion factor for a rate code is `Divide by 60` and the resource units are 120, the resource unit value after calculating once is 2, after calculating twice it is .033 (2÷60), etc.**

This scenario is not applicable to the `Rebill.wsf` script—you can run this script multiple times for the same rate code or codes.

For the parameters required for these scripts, see page C-22.

7

Working With CIMS Financial Modeler

About CIMS Financial Modeler

CIMS Financial Modeler is a Web-based program that enables CIMS administrators to easily perform IT finance-related tasks, including the following:

■ Determine usage-based cost allocation for resources.

■ Calculate and set rates for resource usage (including updating rates in the CIMSRate table).

■ Perform cost analysis.

CIMS Financial Modeler presents data in a familiar spreadsheet format in which data is presented in cost models containing cost pools and subpools. A cost pool represents the overall category of costs while the subpool specifies specific cost drivers. For example, the cost pool Software may contain the subpools Mainframe, UNIX, and Windows, which contain software-related resource usage costs by computer platform.

CIMS Financial Modeler requires a CIMS user ID to access the application. The ID must belong to a user group that has CIMS Financial Modeler access enabled (see *Defining User Groups* on page 3-33).

When CIMS Financial Modeler is installed on the Web server, a virtual directory named `FinancialModeler` is automatically created on the IIS Default Web Site (which is used for CIMS Server Web Reporting).

Installing CIMS Financial Modeler

CIMS Financial Modeler is included in the CIMS Server installation.

You can also install CIMS Financial Modeler independently of the CIMS Server installation. For example, you want to install the application with an earlier release of CIMS Server.

You can find the CIMS Financial Modeler executable `CIMSFinancialModelerSetup.msi` in the following locations:

■ In the `...CIMSLab\Redist\CIMSFinancialModeler` folder.

■ On the CIMS Product CD or FTP site in the `CIMSServer\FinancialModeler Install` folder.

■ On the CIMS Server Product Downloads page on the CIMS Lab Web site.

Starting CIMS Financial Modeler

You can start CIMS Financial Modeler in either of the following ways:

■ From the Web browser, type `http://servername/FinancialModeler`, where *servername* is the Web server name.

■ From CIMS Server Web Reporting, click **Admin ▶ Financial Modeler**. Note that the **Financial Modeler** link appears only if the CIMS user ID that is used to log on to Web Reporting belongs to a user group that has CIMS Financial Modeler access enabled.

Logging On to CIMS Financial Modeler

If auto logon is enabled for the CIMS user ID that you are using to access CIMS Financial Modeler, you do not have to manually log on to the application. (To set the auto logon feature, see *Web Settings* on page 3-49.)

If auto logon is not enabled for the CIMS user ID, the Login dialog box appears. Type the user ID and password, and then click **Login**.

User Authentication for the CIMS Financial Modeler Web Site

If you want to use the auto logon feature with CIMS Financial Modeler, Windows authenticated access must be set for the `FinancialModeler` virtual directory. For more information about IIS authentication (see *Set the User Authentication Method for the Web Sites* on page 2-67).

Getting Started—Open or Create a Cost Model

When you log on to CIMS Financial Modeler, the Open Model dialog box appears. You can either open an existing cost model from this dialog box or close the dialog box (click **Cancel**) and create a new model.

The Open Model dialog box initially contains a cost model named CIMS Standard Model. You can use this cost model as a reference or you can edit the cost model for your organization.

Opening an Existing Cost Model

To open an existing model, click the model in the Open Model dialog box and then click **OK**.

Creating a New Cost Model

To create a new model:

1   On the toolbar, click **New**. The Cost Model Wizard appears.

2   Type the model name (e.g., Storage) and then click **Next**.

3   On the Add Cost Pool page, type a name for the first cost pool that you want to create, and then click **Next**.

4   On the **Add Subpool** page, create one or more subpools for the cost pool. Type each subpool name in the **Name** box and then click **Add**. For example, if the cost pool is Storage, you might add the subpools Windows, UNIX, and Mainframe. When you are finished, click **Next**.

   To remove a subpool, click the entry from the **Subpools** list, and then click **Remove**.

5   On the Add Another Cost Pool page, click **Yes** or **No** and then click **Next**.

   If you click **Yes**, the Add Cost Pool and Add Subpool pages appear again.

   If you click **No**, the Add Rate Codes to Model page appears.

Note • **You can add or remove cost pools and subpools at any time after completing the wizard as described in** *Adding and Removing Cost Pools and Subpools* **on page 7-7.**

---

6 On the Add Rate Codes page, select the rate codes that you want to appear in the cost model and move them to the Selected Rate Codes box.

- If you want all move all rate codes to the Selected Rate Codes box, click the **>>** button.

- If you want to move selected rate codes, click the codes that you want and then click the **>** button.

You can move rate codes from one box to the other using the arrow buttons.

Note • **You can add or remove cost rate codes at any time after completing the wizard as described in** *Adding and Removing Rate Codes* **on page 7-9.**

---

7 When you are finished, click **Finish**.

8 Click **Save** to save the cost model. The data in the model is saved in an XML file in the `...CIMSLab\Server\Web\FinancialModeler\data` folder. The file names assigned to the XML files do not include the cost model name. However, you can determine the applicable cost model if needed by looking at the `name` attribute in the XML.

CIMS Financial Modeler opens with the **Budget Values** tab displayed. This tab shows the cost pools and subpools that you created in the Cost Model Wizard. Use this tab to create budgets for each subpool as described in *Creating Budgets* on page 7-6 and to add or remove cost pools and subpools as needed.

Setting Up Cost Models

Follow the steps in the following sections to set up cost models.

Creating Budgets

You need to create a budget for each subpool in a cost pool. A budget is the projected cost for the resources represented by the subpool over a specific period of time.

To create budgets:

1 Click the **Budget Values** tab if it is not already selected.

2 Use **Period Type** select box to specify the type of budget that you want to create (daily, weekly, monthly, or yearly) and then use the **Number of Periods** box to specify the number of periods that you want to apply to the period type.

Example: If you want to create a six-month budget, click `Months` in the **Period Type** box and then enter `6` in the **Number of Periods** box.

3 In the **Enter Total Budget Amounts** cell for each subpool, type the total budget amount for that subpool. This amount is divided by the number of periods that you entered in the **Number of Periods** box. The resulting charges appear in the **Budget Per <Day/Week/Month/Year>** cell.

Note • **Throughout CIMS Financial Modeler, cells that you can type in are yellow.**

Example Figure 7-1 presents six month budgets for storage and software resource usage. In this example, the cost pools Storage and Software have been created and each cost pool contains the subpools Windows, UNIX, and Mainframe.

Figure 7-1 • Setting Up Budgets

Adding and Removing Cost Pools and Subpools

The **Budget Values** tab also enables you to add or remove subpools from a cost model. When this tab is open, the **Add Pool/Subpool** and **Remove Pool/Subpool** buttons are active or inactive on the toolbar depending on the cells that you have selected on the **Budget Values** tab.

Note • **You can also use the commands in the Action menu to add and remove Cost Pools and Subpools.**

To add a cost pool:

1 Click any cost pool or subpool on the **Budget Values** tab and then click **Add Pool**.

2 In the **Add Cost Pool** dialog box, type the pool name, and then click **Next**.

3 In the Add Subpool dialog box, create subpools for the cost pool, and then click **Finish**.

The new cost pool and subpools appear on the **Budget Values**, **Percent Allocation**, and **Cost Calculations** tabs.

To add a subpool:

1 Click the cost pool that you want to add the subpool to, and then click **Add Subpool**.

2 In the Add Subpool dialog box, do the following:

  a Confirm that the cost pool that you want to create the subpool for is selected in the **Cost Pool** box.

  b Type the subpool name in the **Subpool Name** box.

3 Click **OK** when you are finished.

The new subpool appears under the applicable cost pool.

To remove a cost pool:

■ Click the pool that you want to remove, and then click **Del Pool**.

To remove a subpool:

■ Click the subpool that you want to remove, and then click **Del Subpool**.

Distributing Budgeted Costs

The **Percent Allocation** tab enables you to distribute the budgeted amount for each subpool by rate code. For each rate code within a subpool, enter the percentage of the budget that you want to apply to that rate code as shown in example Figure 7-2. (Note that the broken-line boxes in this example are for illustration purposes only and do not appear in the application.)

Figure 7-2 • Allocating Budgets

To view the actual cost allocations for the budgeted amounts, click the **Cost Calculations** tab.
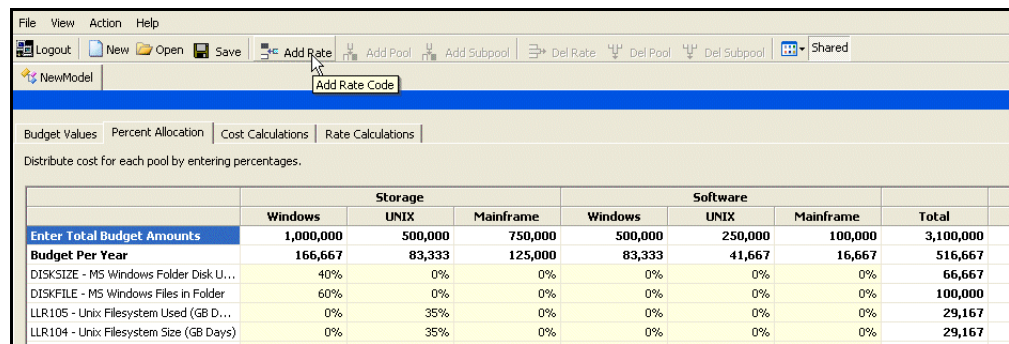
Adding and Removing Rate Codes

The **Percent Allocation** tab also enables you to add or remove rate codes to and from a cost model. When this tab is open, the **Add Rate** and **Remove Rate** buttons are active or inactive on the toolbar depending on the cells that you have selected on the **Percent Allocation** tab.

Note • **You can also use the commands in the Action menu to add and remove rate codes.**

To add a rate code:

1 Click any cell on the **Percent Allocation** tab, and then click **Add Rate** on the toolbar.

2 In the **Add Rate Code** dialog box, click the rate code or codes that you want to add, and then click **OK**.

The new rate code or codes are added to the top of the displayed rate codes.

To remove a rate code:

■ Click the rate code or rate codes that you want to remove, and then click **Del Rate**.

Calculating Rates

The **Rate Calculations** tab enables you to determine the rates that you want to apply to the rate codes in the cost model. By default, a rate is calculated as a zero cost value for the budget that you entered for the period. You can use this zero cost value or enter any rate value. After you have set the rate values that you want to use, you can use CIMS Financial Modeler to automatically update the rate values in the CIMSRate table.

The following describes the options and columns on the **Rate Calculations** tab:

- **Exclude Accounts.** If you do not want resource units for a specific account or accounts to be included in the rate calculations, click the + sign in the **Exclude Accounts** box. Click the account or accounts that you want to exclude, and then click OK.

  To remove accounts from the list of excluded accounts, click the accounts and then click the - sign.

- **Start Date and End Date**. Use these boxes to select a date range for calculating the actual number of resource units consumed during that range.

  Once you have entered the data range, click **Calculate Rates**.

- **Resource Name.** The resources that you want to calculate rates for as specified on the **Percent Allocation** tab.

- **Budget Per <Day/Week/Month/Year>.** The budgeted amount for each resource for the day, week, month, or year.

- **Total Units.** The actual number of resource units consumed for each resource for the date range selected in the **Start Date** and **End Date** boxes.

- **Units Per <Day/Week/Month/Year>.** This column presents the units adjusted to match the budget period type. The values in this column are calculated based on the total units, the number of days selected in the **Start Date** and **End Date** boxes, and the period type as follows:

  Period Type Days If the period type is days, the **Units Per Day** value is calculated by dividing the value in the **Total Units** column by the number of days specified in the in the **Start Date** and **End Date** boxes.

  $$\frac{\text{total units}}{\text{number of days in date range}}$$

  Example: Total Units=700, Date Range = 61 days, Units Per Day is 11.47541 (700÷61 rounded to 5 decimal places)

  Period Type Weeks If the period type is weeks, the **Units Per Week** value is calculated by dividing the value in the **Total Units** column by the quotient of the number of days specified in the **Start Date** and **End Date** boxes divided 7.

  $$\frac{\text{total units}}{\text{number of days in date range}÷7}$$

  Example: Total Units=700, Date Range = 61 days, Units Per Week is 80.32783 (700÷[61÷7] rounded to 5 decimal places)

Per. Type Months and **Per. Type Years**	Depending on number of days in the date range, calculations for units per month and per year are more complex than calculating days and weeks. The following are some examples of how units per month and year are calculated.

Calculating Units Per Month Examples

■ If the number of days specified in the **Start Date** and **End Date** boxes are equal to full months, the **Units Per Month** value is calculated by dividing the value in the **Total Units** box by the number of months in the date range.

$$\frac{\text{total units}}{\text{number of months in date range}}$$

Example: Total Units=700, Date Range = August 1 through October 31, Units Per Month is 233.33333 (700 ÷ 3 months)

■ If the number of days specified in the **Start Date** and **End Date** boxes *are not* equal to full months, the **Units Per Month** value is calculated by dividing the value in the **Total Units** column by a factor that is determined by:

• Calculating the total number of days in the months that the date range falls in divided by the number of months that the date range falls in. Quotient = x.

• Dividing the number of days in date range by the quotient x to get the factor.

Example: Total Units=700, Date Range = 45 days (September 1 through October 15), Units Per Month is 474.44444...

61 days ÷ 2 months = 30.5

45 days in date range ÷ 30.5 = 1.475409...

700 ÷ 1.4754098... = 474.44444...

Calculating Units Per Year Examples

■ If the number of days specified in the **Start Date** and **End Date** boxes are equal to full years, the **Units Per Year** value is calculated by dividing the value in the **Total Units** box by the number of years in the date range.

$$\frac{\text{total units}}{\text{number of years in date range}}$$

Example: Total Units=700, Date Range = January 1, 2005 through December 31, 2006, Units Per Year is 350 (700 ÷ 2 years)

■ If the number of days specified in the **Start Date** and **End Date** boxes are equal to full months, the **Units Per Year** value is calculated by multiplying the value in the **Total Units** column by the applicable number to equal 12 months. That is:

If the date range is 1 month, multiply by 12

...2 months, multiply by 6

...3 month, multiply by 4

etc.

Example: Total Units=700, Date Range = March 31 through April 30, 2006 (two months), Units Per Year is 4200 (700 x 6)

■ If the number of days specified in the **Start Date** and **End Date** boxes *are not* equal to full years or full months, the **Units Per Year** value is calculated by dividing the value in the **Total Units** box by a factor that is determined by:

● Calculating the total number of days in the months that the date range falls in divided by the number of months that the date range falls in. Quotient = x.

● Dividing the number of days in date range by the quotient x to get a factor and then dividing that factor by 12.

Example: Total Units=700, Date Range = 45 days (September 1 through October 15), Units Per Year is 5693.33333...

61 days ÷ 2 months = 30.5
45 days in date range ÷ 30.5 = 1.475409...
1.475409... ÷ 12 = .12295...
700 ÷ .12295... = 5693.33333...)

■ **Current Rate.** The current rate for each resource as set in the CIMSRate table.

■ **Per 1000.** An M in this column indicates that the rate for this resource is per thousand units. The zero cost rate is calculated as follows:

$$\frac{\text{budget amount} \div \text{units per period}}{1000}$$

For example, if the budgeted amount is 10,000 and the units per period amount is 5,000, the zero cost rate is .002 (10,000÷5,000=2 and 2÷1,000=.002)

■ **Zero Cost Rate.** The zero cost rate for each resource (i.e., budgeted amount ÷ units per period=zero cost rate).

■ **Factor.** A factor that you want to multiply the zero cost rate by to determine the new rate for each resource. The default is one.

■ **New Rate.** By default, the new rate for each resource is the zero cost rate. However, you can enter any rate. The factor adjusts accordingly.

■ **Calculate Rates.** Click this button to refresh the values on the **Rate Calculations** tab.

■ **Update Rates.** Click this button to update the CIMSRate table with the rates in the **New Rate** column.

Once you have updated the rates, the **Update Rates** button becomes the **Rollback Rates** button. Use the **Rollback Rates** button in the following situations:

• You want to revert to the rates as they appeared when you opened the cost model.

• You have changed something in the cost model and want to update the rates again.

Important! • **If you want to roll back rates, make sure you click Rollback Rates before you close the cost model. When you update rates and then close the cost model, the initial rates are deleted.**

Example 1–Monthly Rate Calculation

Assume that you created a budget for a six-month period as shown in Figure 7-1 on page 7-6. You want to determine the rates for this budget based on the actual resource units consumed during a two-month period (September–October). In this scenario you would set the start and end date as follows:
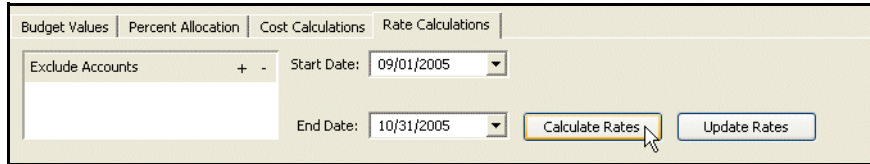
Figure 7-3 shows example data based on this date range. Because the budget period type is months and the days in the date range are equal to two full months, the units per month are calculated by dividing the total units by two.

M specifies the rate is per thousand. Zero cost rate is calculated as:

$$\frac{\text{budget amount} \div \text{units per period}}{1000}$$

Figure 7-3 • Example 1–Monthly Rate Calculation

Example 2−Excluding an Account Code

Assume that you are using the same scenario as shown in *Example 1—Monthly Rate Calculation* on page 7-14, but you want to exclude resources for account code ATM from the calculations. In this case, you would add the account code ATM to the **Exclude Accounts List**, and then click **Calculate Rates**.

If you compare the following figure to Figure 7-3 on page 7-14, you see the data has changed due to the excluded account code.
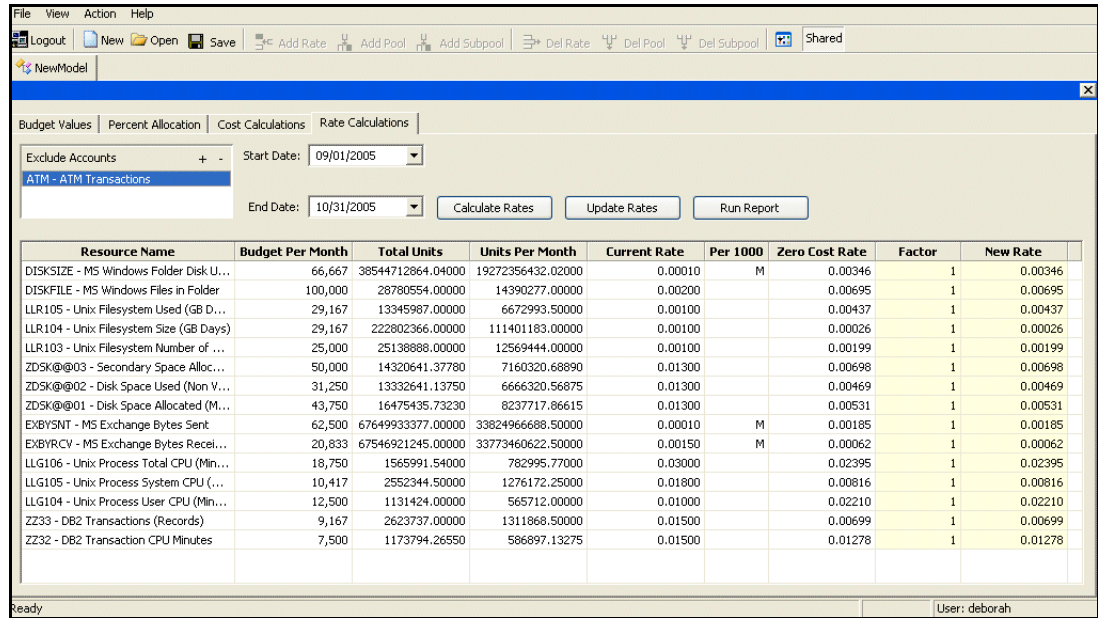
Figure 7-4 • Example 2−Excluding an Account Code

Example 3—Changing the Factor

Continuing with the previous examples, assume that you change the factor from 1 to 2 for all resources. The new rate values automatically recalculate as shown in Figure 7-5.

Figure 7-5 • Example 3—Changing the Factor

Sharing the Cost Model

By default, the a cost model can be opened only by the CIMS user that created the model. To enable other CIMS users to open and modify a model, click **Shared** on the toolbar or click **Action ▸ Share Model** on the menu bar.

Note • **If you share a cost model, other users can delete the model.**

Managing Cost Models

To create a cost model:

Click the **New** on the toolbar or **File** ▸ **New** on the menu bar and follow the instructions provided in *Creating a New Cost Model* on page 7-4.

To save a cost model:

Click the **Save** button on the toolbar or **File** ▸ **Save** on the menu bar.

To open a cost model:

Click the **Open** button on the toolbar or **File** ▸ **Open** on the menu bar.

To rename a cost model:

Click **File** ▸ **Rename** on the menu bar.

To delete a cost model:

Click **File** ▸ **Delete** on the menu bar.

To close a cost model:

Click the Close button ✖ or click **Logout** on the toolbar.

Working With Reports

You can run reports that reflect the data presented in CIMS Financial Modeler. At this time, only the Cost Comparison Report is available with CIMS Financial Modeler. However, more reports will be added in future CIMS Server releases.

The Cost Comparison Report enables you to view the current and adjusted rates by account code or resource.

Note • **The reports included with CIMS Financial Modeler are separate from those used by the CIMS Server Web Reporting application. CIMS Financial Modeler reports *do not* require the administration steps required for CIMS Server Web Reporting reports.**

Running Reports

To run a report:

1 On the **Rate Calculations** tab, click **Run Report**.

2 In the report parameters dialog box, enter the following parameters:

- **Order Output By.** Click **Account** or **Resource**. If you click **Account**, the data in the report appears by account code. If you click **Resource**, the data in the report appears by resource.

- **Account Code Level.** The account code level that you want to view in the report. The resource use and charge data will reflect the level that you select. For more information about account codes, see *Setting Up the Account Code Structure* on page 3-3.

- **Date Range.** The range for the data that you want to appear in the report. Click **This Month**, **Last Month**, **Current Year**, **Previous Year**, or **Custom**.

- **From and To.** Enter the beginning and end date if you selected **Custom** in the **Date Range** box.

3 Click **OK** to run the report.

The report opens in Microsoft Excel in a separate Web browser window.

Report Examples

The following are examples of the Cost Comparison Report by account code and resource. With the exception of the output type, the parameters are the same for both report types.

Cost Comparison Report by Account Code

In this example, the parameters are set as follows:

The resulting report appears as shown in Figure 7-6.

Figure 7-6 • Example Cost Comparison Report by Account Code

Note that the resource units and rates are accumulated for all of the resources for the account code. To view units and rates by resource for an account code, click the + sign next to the account code to drill down. In this example, account code BB is expanded as shown in Figure 7-7 on page 7-20.

Figure 7-7 • Example Cost Comparison Report by Account Code Drill Down

Note that not all of the individual resources for account code BB are shown in the example figure.

Cost Comparison Report by Resource

In this example, the parameters are set as follows:

The resulting report appears as shown in Figure 7-8.

Figure 7-8 • Example Cost Comparison Report by Resource

Note that the resource units and rates are accumulated for all of the account codes for the resource. To view units and rates by account code for a resource, click the + sign next to the resource to drill down. In this example, resource rate code IPRT is expanded as shown in

Figure 7-9 • Example Cost Comparison Report by Account Code Drill Down

Note that in this example, account codes FF and GG (which were shown in the previous report by account code example) did not consume resources for rate code 1PRT and are not included in the report.

Saving, Printing, and Editing Reports

Because reports open in Excel within the browser, you can save, print, and edit the reports using Excel commands. To view the Excel Standard toolbar in the browser, click **View ▸ Toolbars ▸ Standard**.

8

Troubleshooting and Additional Information

This chapter describes problems you may encounter while setting up and using the CIMS Server system and how to solve them. If you cannot find the answer to your question here, please contact CIMS Lab (see *Contacting Technical Support* on page 8-23).

Installation Problems

Unable to launch regasm.exe error appears

This problem occurs because the current user does not have the correct permissions for the following key in the Windows registry:

`HKEY_CLASSES_ROOT\Component Categories\{62C8FE65-4EBB-45e7-B440-6E39B2CDBF29}`

To resolve this problem, refer to the Microsoft Knowledge Base Article 327507.

Data Processing Problems

General data processing problems

You can use the following tools to diagnose general data processing problems:

■ Check the **Process Results** tab for the process definition (**Chargeback Administration ▸ Processing ▸ Process Definitions**). This tab provides message and results files for both CIMSAcct and CIMSBILL. These files provide information about errors encountered during processing. Also, click **Show All CIMS Events** on the **Event Viewer** subtab and check for unusual messages.

■ When processing data using CIMS Server Administrator, check the status bar in the lower left corner of the Edit Process Definition dialog box to note the point in the processing cycle that the error occurs.

■ Check the Load Tracking dialog box (**Chargeback Administration ▸ Database Loading ▸ Load Tracking**) to see of any database loads have completed.

For database problems:

■ Enable the Simple recovery model for SQL Server (see *Setting the Database Recovery Model* on page 5-5) to decrease the size of the SQL Server log files.

■ View the messages in the SQL Server log (**Program Files ▸ Microsoft SQL Server ▸ MSSQL ▸ Log**).

When account codes are converted using CIMSAcct, some records seem to be lost

Records that do not match any account code entries in the account code conversion table are written to CIMSAcct Detail file with the unconverted account code. If you want unmatched records to go to an exception file for reprocessing at a later time, you must enable exception processing in CIMS Server Administrator (see *Setting the Account Code Conversion Options* on page 6-42).

System Problems

A prompt for the Windows installation CD appears while your are using CIMS Server Administrator

In most cases, Windows is calling for dependencies that are not essential for you to run the application properly. Click **Cancel** when these messages appear.

Visit the Microsoft Web site and download all updates for your version of Windows and Microsoft Office (if you use Office). These updates should include the necessary dependent files.

If problems persist, contact CIMS Lab.

Performance of the CIMS Server system is slow

This could be caused by a number of things, including excessive network usage, problems with the network, excessive CIMS Server usage, etc.

It is also possible that the database you are using has become so large that it is difficult for the server housing the data to adequately store and access it. In this case, consider archiving certain data or upgrading the machine. You can also off load non-essential or non-CIMS-related processing to other machines.

Performance might also be affected by computer-related problems (see the following problem).

Computer "locks up", provides unexpected results, or seems to run very slowly

There could be some type of memory problem. Close CIMS Server Administrator and any other Windows applications. Reopen CIMS Server Administrator as the only Windows application and see if the problem corrects itself. If that fails to correct it, close Windows and then restart it. Open CIMS Server Administrator again and see if the same results occur.

The computer might not have enough memory to process. Try running the application on a computer with more memory (preferably 256 MB or more).

Web Reporting Problems

Problems accessing the Web site or generating reports

The following are problems that might occur as you are using the CIMS Server Web Reporting Web site to generate reports. The problems are presented in the order are they are most likely to occur, beginning with accessing the Web site.

Problem	Solution(s)
User cannot access the Web site	Verify that the users have appropriate network permissions and are using Internet Explorer 5.5 or later on the Windows platform.
	Verify the following:
	■ Your Internet or network connection is working properly.
	■ User has appropriate network permissions and are using Internet Explorer 5.5 or later.
	■ User entered the correct URL.
	■ User has the required security permissions for the CIMS Server program folders discussed in *Assign Folder Security Permissions on the Web Server* on page 2-69.
Web site is not opening properly or is having problems starting	If the following error appears, see page 8-10 for a possible solution:
	`Microsoft OLE DB Provider for ODBC Drivers error '80004005' [Microsoft] [ODBC Driver ] Data source name not found and no default driver specified.`
	If this does not resolve the problem, try the following:
	■ Restart IIS.
	Click **Start ▶ Run**. In the **Open** box, type `iisreset /restart`, and then click **OK**.
	■ Check the security settings on the computer running the Web server (see *Set the User Authentication Method for the Web Sites* on page 2-67).
	■ Install the latest service pack for Microsoft SQL Server.

Problem	Solution(s)
If using multiple Web sites, Web sites other than the default Web site do not open. The following message appears: `Server Error in '/virtual directory name' Application`	In IIS Manager, navigate to the virtual directory for the Web site and do the following: **1** Expand the virtual directory. **2** Right-click the `CIMSReporting` folder, and then click **Properties**. **3** Click the **Create** button next to the **Application name** box. **4** Click **OK** when you are finished. Make sure that you copied the `...CIMSLab\Server\Web` folder to create the folder for the Web site. You must recreate the Web site folder from the `Web` folder each time that you upgrade to a new CIMS Server release. For more information, see *Using Multiple Databases for CIMS Server Web Reporting* on page 5-9.
Auto logon feature is not working for a user.	Check the following: **1** The **Enable Intranet Auto Logon** check box is selected on the **Web** tab of the Configuration dialog box (see *Web Settings* on page 3-49). This is the default setting. **2** The correct domain name and user ID is entered for the user in the User Maintenance dialog box (see *Defining Users* on page 3-28). **3** IIS is using Windows authenticated access rather than anonymous access (see *Set the User Authentication Method for the Web Sites* on page 2-67). The auto logon feature is not available if anonymous access is enabled for IIS.

Problem	Solution(s)
Report parameters page does not open when a report is selected—a 405 error appears	Make sure that ASP.NET is installed and enabled as follows: 1 Click **Start ▶ Run**. In the **Open** box, enter `aspnet_regiis.exe -i` preceded by the path. For example, `Windows\Microsoft.NET\Framework\<version number>\aspnet_regiis.exe -i`. 2 Make sure that ASP.NET is enabled as described in *Enabling ASP.NET* on page 2-17. (This is applicable to Windows 2003 only). 3 Apply any Microsoft critical updates with latest .NET service pack.
Report parameters page opens, but report is not generated from the page—one of the following error occurs:	
■ A time-out message appears immediately or the following message appears: `-2147192179 An error has occurred on the server in attempting to access the data source`	In CIMS Server Administrator, click System **Administration ▶ Database ▶ Database Object.** In the Database Objects Manager dialog box, add any database objects that do not exist in the database (i.e., `Exists = No`). See *Managing Database Objects* on page 5-15. If this does not solve the problem, drop all stored procedures, indexes, triggers, and views in the Database Objects Manager dialog box and then create them again. **Important! Do not drop the tables in the Database Objects Manager dialog box. Dropping a table removes the table and its data from the database.** To view the detailed error message, run the report directly from Crystal Reports (not the Web).
■ A 404 "page not found" error appears.	Make sure that ASP.NET is installed and enabled as described in *Report parameters page does not open when a report is selected—a 405 error appears* at the top of this page.

Problem	Solution(s)
■ You are using Crystal Reports 10 and clientdoc.dll failure occurs.	Do the following: ■ In Crystal License Manager, make sure that the Crystal licenses are entered for the Crystal Reports Advanced and Embedded editions. ■ Make sure that the Crystal Report Application Server service is running (**Control Panel ▸ Administrative Tools ▸ Services**).

■ You are using Crystal Reports XI and the following message appears:
 	
`Failed to read data from report file C:\WINDOWS\TEMP\tmp.rpt.`
 	
`Reason: Failed to open print engine for C:\WINDOWS\TEMP\tmpreport\ <report>. Ensure that CRPE32 is installed on this computer."`
	This error message occurs on Windows 2003 computers running IIS 6.0 where the default application pool is running under the Network Service account. This account does not have sufficient rights to the fields and registry needed to create a copy of the report in the Crystal Reports enterprise system.
	
	To resolve this problem, do the following:
	
	1 In IIS Manager, expand the Application Pools folder.
	
	2 Right-click DefaultAppPool, and then click **Properties**.
	
	3 In the DefaultAppPool Properties dialog box, click the **Identity** tab.
	
	4 Make sure that the **Predefined** radio button is selected, and then select the Local System account from the **Predefined** drop-down list.
	
	5 Restart IIS.

■ You are using SQL Server Reporting Services and the following message appears: `The User Account <account name> does not have adequate permissions in Reporting Services. Make sure the User Account belongs to the Reporting Services's <role name> Role`	Make sure that the Windows user account that is accessing the Web site has been assigned to the Reporting Services role as described in *Assign Folder Security Permissions on the Web Server* on page 2-69.

Problem	Solution(s)
Report is generated, but the following problems occur:	
■ General problems viewing the report. For example, headers and data do not appear.	Change the viewer used to view reports. For more information, see *Defining Users* on page 3-28 and *Web Settings* on page 3-49. **Note:** If you are using the Crystal Reports ActiveX viewer, you may not have administrative privileges to allow the viewer to be automatically downloaded and installed on the computer on which you are trying to run the report. Use the Crystal HTML or Java viewer instead.
■ Old or sample data appears in the report.	One or more old loads have not been removed from the database. Unload the old data. For more information, see *Tracking the History of Database Loads* on page 5-23.
■ Cannot drill down in reports.	Certain items do not have any additional information available. If you place the cursor on an item and the cursor icon becomes a magnifying glass or a hand, you can drill down. If it does not, there is no detailed information available about the item.
■ Cannot print report when using the HTML viewer with Crystal Reports 9 or 10. The following message appears: `There was an error opening this document. This file cannot be found.`	When prompted to open or save the file, click **Save** and then click **Open**.

An error message appears When ActiveX Data Objects (ADO) or ODBC is used to open a database connection in an ASP page

When you use ActiveX Data Objects (ADO) or ODBC to open a database connection in an ASP page, you may receive the following error message:

```
Microsoft OLE DB Provider for ODBC Drivers error '80004005'[Microsoft]
[ODBC Driver ] Data source name not found and no default driver specified.
```

Solution

Note • **Make sure that you have completed the steps in** *Set the User Authentication Method for the Web Sites* **on page 2-67 before continuing with this solution.**

The Windows 2000/2003 user account that is used to process the request for the ASP page does not have sufficient permissions to read the registry key that stores the specified ODBC Driver's configuration information. The **Driver** parameter in a DSN-less connection string specifies the ODBC driver that is used to establish the database connection.

Grant the Windows 2000 user account Read access to the specified ODBC Driver registry key as follows:

1 Determine which account is used to process the request for the ASP page.

2 From the **Start** menu, click **Run**, type regedt32.exe, and then click **OK** to start Registry Editor.

3 In the HKEY_LOCAL_MACHINE window, browse to the HKLM\SOFTWARE\ODBC\ODBCINST.INI key. The ODBCINST.INI key contains a subkey for each ODBC Driver that is installed on the server.

4 Click the Driver registry key for the Driver that is specified in the ADO connection string.

5 From the **Security** menu, click **Permissions**.

6 Add the user account that you identified in Step 1 to the list of users who can access this key, and select the **Read** check box for this user.

7 Click **Apply**, and then close Registry Editor.

This information was taken from the Microsoft Knowledge Base Article 306345.

Database Connection Problems

An error message appears when selecting a CIMS Data Source (Oracle only)

The CIMS Data Source for an Oracle database assigns an Oracle user to the schema for the CIMS Server database.

A trigger (`logon_schema`) must also be created to assign the user to the schema.

It the schema defined in the trigger differs from the schema defined for the CIMS Data Source, the following message appears when you select a CIMS Data Source in the **Select CIMS Data Source** list.

```
Checking Oracle environment failed: The datasource schema name 'name' does not
match the current schema 'name'
```

To correct the problem, change the schema defined in CIMS Data Source (see page 2-44) or run the `OracleLogonTrigger.bat` script to change the schema in the trigger (see page C-16).

SQL Server Reporting Services Problems

Report Server cannot decrypt the symmetric key message appears

If you encounter the following error, you need to delete encrypted data from the Report Server database and restart the ReportServer service.

```
The report server cannot decrypt the symmetric key used to access sensitive or
encrypted data in a report server database. You must either restore a backup key
or delete all encrypted content and then restart the service. Check the
documentation for more information.
```

To delete the encrypted data and restart, make sure that the ReportServer services is running, and then do the following:

1 Click **Start ▸ Run**.

2 In the **Open** box, type `rskeymgmt -delete`, and then click **OK**.

3 Type `Y` to delete the data, and the press <Enter>.

The user account does not have adequate permissions message appears when you try to generate a report

If the following message appears when you try to generate a report:

```
The User Account <account name> does not have adequate permissions in Reporting
Services. Make sure the User Account belongs to the Reporting Services's <role
name> Role
```

Make sure that the Windows user account that is accessing the Web site has been assigned to the Reporting Services role as described in *Assign Folder Security Permissions on the Web Server* on page 2-69.

Executing Stored Procedures to Debug CIMS Server

WARNING • **Because some stored procedures update data, you should use care when executing procedures for debugging. If you are unsure as to whether you should use this feature, consult CIMS Lab.**

You can execute stored procedures from CIMS Server Administrator for debugging purposes. To execute a stored procedure:

1 In the CIMS Server Administrator main window, click **System Administration** ▸ **Database** ▸ **Execute Stored Procedure**.

The Stored Procedure Execute dialog box appears.

2 On the **Stored Procedures** tab, click the stored procedure that you want to run, enter the parameters for the procedure, and then click **Execute**.

When the stored procedure has finished running, the results appear on the **Results** tab.

Creating a Test Database for Troubleshooting

For troubleshooting purposes, you might need to send a copy of your database to CIMS Lab.

If you are using a SQL Server database, CIMS Lab recommends that you use the `SaveDBSQLServer.wsf` script to detach the database and create a zip file containing the database files. See *Option 1: Using the SaveDBSQLServer.wsf Script*.

If you are using an Oracle or DB2 database, or the zip file containing your detached SQL Server database is too large to send to CIMS Lab, you can export data from the database and send it to CIMS Lab. See *Loading Data Into a Test Database* on page 8-16.

Option 1: Using the SaveDBSQLServer.wsf Script

Note • **This script supports SQL Server only.**

The `SaveDBSQLServer.wsf` script automates the process of detaching the database, creating a zip file containing the `.MDF` and `.LDF` files, and reattaching the database. You can then send the zipped database files to CIMS Lab.

Note • **You cannot use this script to detach the** `master` **database.**

SaveDBSQLServer.wsf Script Parameters

The `SaveDBSQLServer.wsf` script uses the following parameters.

Parameter	Description/Values
ServerName (required)	The name of the server that contains the database.
DatabaseName (required)	The name of the database.
ArchiveFilename (required)	The full path and file name for the output zip file that contains the `.MDF` and `.LDF` files.
ODBCUserID and ODBCPassword (optional)	The SQL Server user ID and password for the database (if required).

Table 8-1 • SaveDBSQLServer Script Parameters

Option 2: Exporting Data From a Database

This option requires that you export the tables from the database and archive any database loads that you want to include for testing. The archived load files are automatically placed in a zip file. You should also create a zip file for the exported tables, and then send the zipped archive and table files to CIMS Lab.

Export the Database Tables

To export database tables:

1 In the CIMS Server Administrator main window, go to the Select CIMS Data Source box and click the CIMS Data Source for the database that you want to export tables from.

2 Click **System Administration ▶ Database ▶ Database Table Manager**.

The Database Table Manager dialog box appears.

3 Click **Select all tables**.

The check boxes for all tables are selected. Note that the ability to select all tables is dependent on the privileges assigned by your DBA.

4 Clear the following check boxes:

- Audit–Client, Audit–Client Contact, Audit–Client Contact Number, Audit–Rate, and Audit-Transaction

- Detail, DetailIdent, and Ident

- Load Tracking

- Summary, Summary Daily, and Summary to Detail

5 Click **Export selected tables**. (Note that exporting a table does not remove the table or its data.)

6 A dialog box appears, prompting you to select the location that you want to load the tables to. Select the correct folder, and then click **OK**.

The exported tables are saved as comma-delimited text files with the same name as the original table. For example, the CIMSRate table is exported as `CIMSRate.txt`.

Archive the Database Loads

To include database loads in the test database, you need to archive the loads that you want from the original database. To archive loads:

1 In the CIMS Server Administrator main window, click **Chargeback Administration** ▸ **Database Loading** ▸ **Load Archiving & Purging**.

The Load Archive dialog box appears.

2 On the **Archive** tab, select the loads that you want to include in the new database. (To define the loads that appear on the **Archive** tab, set the options in the **Loads Filter** and then click **Apply Filters**.)

3 Click **Archive**.

The archived loads are stored in a zip file in the path and folder shown at the bottom of the Load Archive dialog box. This path is set on the **Archiving** tab of the Configuration dialog box (see *Database Load Archive Settings* on page 3-55). The naming convention for the zip file is `CIMSArchive_StartDate_EndDate_SequenceNumber.zip`.

Loading Data Into a Test Database

Note • **The information in this section is intended for use by CIMS Lab technical support personnel to load customer data into a test database.**

Create the Database and CIMS Data Source ID

To create the database and CIMS Data Source ID, see *Create a Database* on page 2-27 and *Configure the CIMS Data Source for the Database* on page 2-33.

Create and Load the Tables

1 In the CIMS Server Administrator main window, go to the Select CIMS Data Source box and click the CIMS Data Source that you created for the test database.

2 In the Database Table Manager dialog box (**System Administration** ▸ **Database** ▸ **Database Table Manager**), click **Select all tables** and then click **Create selected tables**.

3 When the tables have been created, click **OK**.

4 In the Database Table Manager dialog box, clear the following check boxes:

- Audit–Client, Audit–Client Contact, Audit–Client Contact Number, Audit–Rate, and Audit-Transaction

- Detail, DetailIdent, and Ident

- Load Tracking

- Summary, Summary Daily, and Summary to Detail

5 Click **Load selected tables**, and then click **OK** in the subsequent message boxes.

6 A dialog box appears, prompting you to select the location that you want to load the tables from. Select the correct folder, and then click **OK**.

Build the Database Objects

In the Database Objects Manager dialog box (**System Administration ▸ Database ▸ Database Objects Manager**), click **Select All** and then click **Create Selected Objects**.

Restore the Database Loads

1 In the Load Archive dialog box (**Chargeback Administration ▸ Database Loading ▸ Load Archiving & Purging**), click the **Restore** tab.

2 Click **Select All**, and then click **Restore**.

Performing Disaster Recovery

In the event that the CIMS Server application server becomes inoperable due to media failure or natural disaster, the following steps are required to recover the CIMS Server system (including all databases, reports, folders, and files) to a new server.

Note that these steps reflect CIMS Server application server, the database server, and the Web server on one computer. If your previous installation included multiple servers, you need to restore accordingly.

To recover the CIMS Server system on a new server:

1 Install Microsoft SQL Server.

2 Install Microsoft Internet Information Services (IIS).

3 Install CIMS Server with the same options as the previous installation.

4 Restore a full backup of the database or databases that you are using for CIMS Server.

5 Restore the backup of the `Program Files\CIMSLab` folder structure.

6 Restore the backup of the `Processes` folder.

7 If your `Reports` folder or any of its subfolders are not installed in the `CIMSLab` folder, restore the backup of the `Reports` folder and/or subfolders.

About CIMS Data Sources for SQL Server Databases

> **Note •** For more information about creating CIMS Data Sources, see *Configure the CIMS Data Source for the Database* on page 2-33.

The number of ODBC Data Sources and CIMS Data Sources that you need to configure for a SQL Server database depends on the number of logins that you created for the database and the authentication method used for the logins. Table 8-2 shows the different database login configurations that might be used and the ODBC Data Source(s) and CIMS Data Source(s) required for each configuration.

Database Login(s)		ODBC Data Source(s)		CIMS Data Source(s)
One login (Windows or SQL Server authentication). (This is a common configuration.)	▶	One ODBC Data Source.	▶	One CIMS Data Source.
x number of SQL Server authenticated logins. (This is a common configuration.)	▶	One ODBC Data Source.	▶	Separate CIMS Data Sources for each login. For example, if you have one login for the CIMS Server administrator and one login for the Web reporting end users, you need to create two CIMS Data Sources for the same ODBC Data Source. The CIMS Data Sources store the SQL server ID and password for each login.
x number of SQL Server authenticated logins. **And**	▶	One ODBC Data Source for the SQL Server authenticated logins.	▶	Separate CIMS Data Sources for each login.
y number of Windows authenticated logins. (This configuration is uncommon.)	▶	One ODBC Data Source for the Windows authenticated logins.	▶	One CIMS Data Source for all logins.
y number of Windows authenticated logins. (This configuration is very rare.)	▶	One ODBC Data Source.	▶	One CIMS Data Source for all logins.

Table 8-2 • Possible ODBC Data Source and CIMS Data Source Configurations

If You Are Using Crystal Reports Developer 8.5

To use the Help system for Crystal Reports 8.5 on a computer with Internet Explorer 6.0 installed, follow the instructions on the Business Objects Web site (http://support.businessobjects.com/library/kbase/articles/c2010291.asp).

Crystal Reports 8.5 requires that you set security permissions for certain folders. For more information, contact CIMS Lab.

If you are using an Oracle or DB2 database, Crystal Reports 8.5 is not supported.

Important! • You need to install the ActiveX patch for Crystal Reports provided on the CIMS Lab FTP site (ftp://ftp.cimslab.com**) and CIMS Product CD. The path on both the FTP site and CIMS Product CD is** `CIMSServer\CrystalPatches\Crystal Decisions ActiveX Viewer Patch.exe`**).**

Installing Crystal Reports 9

Crystal Reports 9 Advanced Developer Edition includes Crystal Enterprise 9 Report Application Server Edition. You need to install both of these components and Crystal Reports 9 Service Pack 2 in the following order:

1 Crystal Reports 9 Advanced Developer Edition (provided on the CD labeled Crystal Reports).

2 Crystal Enterprise 9 Report Application Server Edition (provided on a separate CD labeled Crystal Enterprise Report Application Server).

> **Note •** **Make sure that you install the Report Application Server Edition. Crystal Reports 9 Advanced Developer Edition also includes a Crystal Enterprise 9 Standard Edition CD. Do not install the Standard Edition.**

3 Crystal Reports 9 Service Pack 2. (Service Pack 2 is available from CIMS Lab. Do not use a later Service Pack.)

To install Crystal Reports 9 Advanced Developer Edition:

1 Log on to Windows as a user in the Administrators group.

2 Do one of the following:

- If you are installing from the installation CD, insert the Crystal Reports CD. If the CD does not start automatically, browse to your CD-ROM drive and double-click `Setup.exe`.

- If you are installing from another location, for example from a network drive, double-click `Setup.exe`.

3 Click **Install** and follow the instructions in the Installation Wizard. CIMS Lab recommends that you select the **Typical** installation in the Select Installation Type dialog box.

To install Crystal Enterprise 9 Report Application Server Edition:

Follow the same steps provided for installing Crystal Reports. However, install Crystal Enterprise Report Application Server Edition rather than Crystal Reports. CIMS Lab recommends that you select the **Full** installation in the Installation Type dialog box.

To install Crystal Reports 9 Service Pack 2:

Crystal Reports 9 Service Pack 2 is available on the CIMS Lab FTP site (ftp:// ftp.cimslab.com) and CIMS Product CD. The path on both the FTP site and CIMS Product CD is `CIMSServer\CrystalPatches\Crystal 9 Patches\cr90win_en_sp2.exe`).

Double-click `cr90win_en_sp2.exe` and follow the instructions in the InstallShield wizard.

Installing Crystal Reports 10

The following are the steps required to install Crystal Reports 10 Advanced Edition. This edition includes Crystal Enterprise 10 Embedded Edition provided on a separate CD.

To install Crystal Reports 10 Advanced Edition:

1 Log on to Windows as a user in the Administrators group.

2 Do one of the following:

- If you are installing from the installation CD, insert the Crystal Reports CD. If the CD does not start automatically, browse to your CD-ROM drive and double-click `setup.exe`.

- If you are installing from another location, for example from a network drive, double-click `setup.exe`.

3 Click **Install** and follow the instructions in the Installation Wizard. CIMS Lab recommends that you select the **Typical** installation in the Select Installation Type dialog box.

To install Crystal Enterprise 10 Embedded Edition:

Follow the same steps provided for installing Crystal Reports. However, install Crystal Enterprise Embedded Edition rather than Crystal Reports. CIMS Lab recommends that you select the **Full** installation in the Installation Type dialog box.

Contacting Technical Support

The CIMS Lab Technical Support department is here to answer your questions on any aspect of CIMS Lab products.

CIMS Lab technical support can be reached in the following ways:

■ **Telephone**: (800) 283-4267 in USA and Canada; 916-783-8525 International

■ **Email**: support@cimslab.com

■ **Fax request**: (916) 783-2090

International customers may contact one of our authorized international partners. Contact CIMS Lab for more information.

In addition, customers may visit the Customer Area on our Web site for product downloads, updates, technical documentation, and password information. We are on the Web at http://www.cimslab.com.

■ A

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Database Tables

This appendix describes the layout of all database tables used by CIMS Server and provides Entity Relationship Diagrams (ERDs) for the tables in the CIMS Server database.

CIMSAuditClient Table

If auditing is enabled, this table tracks changes made to the CIMSClient table. To enable auditing of the CIMSClient table, see .

For a detailed description of the fields in this table (with the exception of `TransType`, `DateTimeChanged`, and `UserID`), refer to the field descriptions for the CIMSClient table (see).

Field Name	Key	Type	Field Description
TransType		char(1)	The type of change that was made to the table: ■ U = update to existing data ■ I = addition of new data ■ D = deletion of data
DateTimeChanged		datetime	The date and time that the change was made.
UserID		char(30)	The Windows user ID of the user who made the change.
OldAccountCode		char(128)	The old client account code.
NewAccountCode		char(128)	The new client account code.
OldAltAccountCode		char(128)	The old alternate client account code.
NewAltAccountCode		char(128)	The new alternate client account code.
OldAccountName		varchar(255)	The old client name.
NewAccountName		varchar(255)	The new client name.
OldLoadTrackingUID		int	The old load tracking unique identifier for the client.
NewLoadTrackingUID		int	The new load tracking unique identifier for the client.
OldRateTable		char(8)	The old rate table for the client.
NewRateTable		char(8)	The new rate table for the client.
OldInvoiceContact		int	The old index number for the contact name that appears on the invoice.

Field Name	Key	Type	Field Description
NewInvoiceContact		int	The new index number for the contact name that appears on the invoice.
OldActionCode1– OldActionCode8		char(1)	The old action codes—see the ActionCode field description for the CIMSClient table.
NewActionCode1– NewActionCode8		char(1)	The new action codes—see the ActionCode field description for the CIMSClient table.

CIMSAuditClientContact Table

If auditing is enabled, this table tracks changes made to the CIMSClientContact table. To enable auditing of the CIMSClientContact table, see page 3-54.

For a detailed description of the fields in this table (with the exception of TransType, DateTimeChanged, and UserID), refer to the field descriptions for the CIMSClientContact table (see page A-17).

Field Name	Key	Type	Field Description
TransType		char(1)	The type of change that was made to the table: ■ U = update to existing data ■ I = addition of new data ■ D = deletion of data
DateTimeChanged		datetime	The date and time that the change was made.
UserID		char(30)	The Windows user ID of the user who made the change.
OldLoadTrackingUID		int	The old load tracking unique identifier for the client.
NewLoadTrackingUID		int	The new load tracking unique identifier for the client.
OldAccountCode		char(128)	The old client account code.
NewAccountCode		char(128)	The new client account code.
OldContactIdx		int	The old index number for the contact.

Field Name	Key	Type	Field Description
NewContactIdx		int	The new index number for the contact.
OldAddressLine1-OldAddressLine5		varchar(255)	The old address line by line number.
NewAddressLine1-NewAddressLine5		varchar(255)	The new address line by line number.
OldContactName		varchar(255)	The old contact name.
NewContactName		varchar(255)	The new contact name.
OldDepartment		varchar(255)	The old contact department.
NewDepartment		varchar(255)	The new contact department.
OldOffice		varchar(255)	The old contact office.
NewOffice		varchar(255)	The new contact office.
OldComments		varchar(255)	The old contact comments.
NewComments		varchar(255)	The new contact comments.

CIMSAuditClientContactNumber Table

If auditing is enabled, this table tracks changes made to the CIMSClientContactNumber table. To enable auditing of the CIMSClientContactNumber table, see page 3-54.

For a detailed description of the fields in this table (with the exception of `TransType`, `DateTimeChanged`, and `UserID`), refer to the field descriptions for the CIMSClientContactNumber table (see page A-18).

Field Name	Key	Type	Field Description
TransType		char(1)	The type of change that was made to the table: ■ U = update to existing data ■ I = addition of new data ■ D = deletion of data
DateTimeChanged		datetime	The date and time that the change was made.
UserID		char(30)	The Windows user ID of the user who made the change.
OldLoadTrackingUID		int	The old load tracking unique identifier for the client.
NewLoadTrackingUID		int	The new load tracking unique identifier for the client.
OldAccountCode		char(128)	The old client account code.
NewAccountCode		char(128)	The new client account code.
OldContactIdx		int	The old contact index number.
NewContactIdx		int	The new contact index number.
OldNumberIdx		int	The old index number for the contact number or e-mail address.
NewNumberIdx		int	The new index number for the contact number or e-mail address.
OldNumberDescription		varchar(255)	The old contact number description.
NewNumberDescription		varchar(255)	The new contact number description.

CIMSAuditClientContactNumber Table

Field Name	Key	Type	Field Description
OldNumberValue		varchar(255)	The old contact number.
NewNumberValue		varchar(255)	The new contact number.

CIMSAuditRate Table

If auditing is enabled, this table tracks changes made to the CIMSRate table. To enable auditing of the CIMSRate table, see page 3-54.

For a detailed description of the fields in this table (with the exception of `TransType`, `DateTimeChanged`, and `UserID`), refer to the field descriptions for the CIMSRate table (see page A-29).

Field Name	Key	Type	Field Description
TransType		char(1)	The type of change that was made to the table: ∎ U = update to existing data ∎ I = addition of new data ∎ D = deletion of data
DateTimeChanged		datetime	The date and time that the change was made.
UserID		char(30)	The Windows user ID of the user who made the change.
OldLoadTrackingUID		int	The old load tracking unique identifier for the rate code.
NewLoadTrackingUID		int	The new load tracking unique identifier for the rate code.
OldRateTable		char(8)	The old rate table for the rate code.
NewRateTable		char(8)	The new rate table for the rate code.
OldRateCode		char(8)	The old rate code.
NewRateCode		char(8)	The new rate code.
OldRateIndex		int	The old index number for the rate code.
NewRateIndex		int	The new index number for the rate code.
OldRateValue		decimal(18,8)	The old per unit value for the rate code.
NewRateValue		decimal(18,8)	The new per unit value for the rate code.
OldResourceValue		decimal(19,4)	Deprecated.

Field Name	Key	Type	Field Description
NewResourceValue		decimal(19,4)	Deprecated.
OldDiscountDollars		decimal(19,4)	Deprecated.
NewDiscountDollars		decimal(19,4)	Deprecated.
OldDiscount		decimal(7,4)	Deprecated.
NewDiscount		decimal(7,4)	Deprecated.
OldDiscountIndex		int	Deprecated.
NewDiscountIndex		int	Deprecated.
OldDescription		varchar(255)	The old rate code description.
NewDescription		varchar(255)	The new rate code description.
OldFactor		numeric	The old resource conversion factor.
NewFactor		numeric	The new resource conversion factor.
OldRateValue1 – OldRateValue11		char(1)	The old rate values—see the RateValue field descriptions for the CIMSRate table.
NewRateValue1 – NewRateValue11		char(1)	The new rate values—see the RateValue field descriptions for the CIMSRate table.
OldEffDate		datetime	The old effective date for the rate code. For future use.
NewEffDate		datetime	The new effective date for the rate code. For future use.
OldTermDate		datetime	The old end date for the rate code. For future use.
NewTermDate		datetime	The new end date for the rate code. For future use.
OldComments		varchar(255)	The old comments for the rate code.
NewComments		varchar(255)	The new comments for the rate code.

CIMSAuditTransactionTable

If auditing is enabled, this table tracks changes made to the CIMSTransaction table. To enable auditing of the CIMSTransaction table, see page 3-54.

For a detailed description of the fields in this table (with the exception of `TransType`, `DateTimeChanged`, and `UserID`), refer to the field descriptions for the CIMSTransaction table (see page A-44).

Field Name	Key	Type	Field Description
TransType		char(1)	The type of change that was made to the table: ■ U = update to existing data or transaction marked as deleted ■ I = addition of new data
DateTimeChanged		datetime	The date and time that the change was made.
UserID		char(30)	The user ID of the user who made the change (usually the Windows user ID or the SQL Server login ID).
OldTransactionUID		char(32)	The old unique identifier for the transaction.
NewTransactionUID		char(32)	The new unique identifier for the transaction.
OldAccountCode		char(128)	The old account code for the transaction.
NewAccountCode		char(128)	The new account code for the transaction.
OldTransactionType		char(1)	The old transaction type— see the `TransactionType` field description for the CIMSTransaction table.
NewTransactionType		char(1)	The old transaction type— see the `TransactionType` field description for the CIMSTransaction table.
OldShiftCode		char(1)	The old shift code.
NewShiftCode		char(1)	The new shift code.
OldRateCode		char(8)	The old rate code.

Field Name	Key	Type	Field Description
NewRateCode		char(8)	The new rate code.
OldResourceAmount		decimal(18,5)	The old resource amount for the transaction.
NewResourceAmount		decimal(18,5)	The new resource amount for the transaction.
OldFrequency1-OldFrequency2		Int	The old frequency number—see the Frequency field descriptions for the CIMSTransaction table.
NewFrequency1-NewFrequency2		Int	The new frequency number—see the Frequency field descriptions for the CIMSTransaction table.
OldFromDate		datetime	The old from date.
NewFromDate		datetime	The new from date.
OldToDate		datetime	The old to date.
NewToDate		datetime	The new to date.
OldDateTimeSent		datetime	The old date and time sent.
NewDateTimeSent		datetime	The new date and time sent.
OldDateTimeModified		datetime	The old date and time modified.
NewDateTimeModified		datetime	The new date and time modified.
OldDateTimeEntered		datetime	The old date and time entered.
NewDateTimeEntered		datetime	The new date and time entered.
OldDateTimeStartProcessing		datetime	The old processing start date and time.
NewDateTimeStartProcessing		datetime	The new processing start date and time.
OldDateTimeStopProcessing		datetime	The old processing end date and time.
NewDateTimeStopProcessing		datetime	The new processing end date and time.

Field Name	Key	Type	Field Description
OldUserID		char(8)	The old CIMS user ID of the user who made the change.
NewUserID		char(8)	The new CIMS user ID of the user who made the change.
OldDateTimeDeleted		datetime	The old date and time that the transaction was deleted.
NewDateTimeDeleted		datetime	The new date and time that the transaction was deleted.
OldNote		varchar(255)	The old note for the transaction.
NewNote		varchar(255)	The new note for the transaction.

CIMSCalendar Table

This table defines the billing periods for a billing organization.

Field Name	Key	Type	Field Description
Year	PK[a]	int	The calendar year.
Period	PK[a]	int	The calendar period (1 – 13).
PeriodBeginDate		datetime	The beginning date of the period
PeriodEndDate		datetime	The ending date of the period
CloseDate		datetime	The processing close date.

a. PK = Primary Key

CIMSClient Table

This is the primary table for storing client information. All other client tables are related to this table.

Field Name	Key	Type	Field Description
AccountCode	PKa	char(128)	The account code for the client.
AltAcctCode		char(128)	The alternate account code for the client (optional).
AccountName		varchar(255)	The client name.
LoadTrackingUID		int	A unique identifier that tracks the client when loaded to the database from a location outside of CIMS Server. For example, from CIMS Mainframe Data Collector and Chargeback System.
RateTable		char(8)	The rate table for the client.
InvoiceContact		int	The index number for the client contact name that appears on the invoice.
ActionCode1 – ActionCode8		char(1)	These user-defined codes are strictly for reporting purposes and can be used in the custom reporting process for selecting data. CIMS Server does not use action codes.

a. PK = Primary Key

CIMSClientBudget Table

This table stores budget and actual information for amounts and resource units by account code, date, and rate code.

Field Name	Key	Type	Field Description
LoadTrackingUID		int	A unique identifier that tracks the client when loaded to the database from a location outside of CIMS Server. For example, from CIMS Mainframe Data Collector and Chargeback System.
AccountCode	PK[a]	char(128)	The account code for the client.
RateCode	PK[a]	char(8)	A valid rate code for an individual resource budget or TOTAL for an overall account budget.
Year	PK[a]	int	The budget year.
Period	PK[a]	int	The budget period (0 – 13).
BudgetAmt		decimal(19,4)	The budget monetary amount for the period.
ActualAmt		decimal(19,4)	Deprecated. The actual amount is in the CIMSSummary table.
BudgetUnits		decimal(18,5)	The budget units for the period.
ActualUnits		decimal(18,5)	Deprecated. The actual units consumed are in the CIMSSummary table.

a. PK = Primary Key

CIMSClientContact Table

This table stores client contacts.

Field Name	Key	Type	Field Description
LoadTrackingUID		int	A unique identifier that tracks the client when loaded to the database from a location outside of CIMS Server. For example, from CIMS Mainframe Data Collector and Chargeback System.
AccountCode	PK[a]	char(128)	The account code for the client.
ContactIdx	PK[a]	int	The index number for the contact.
AddressLine1		varchar(255)	Address Line 1
AddressLine2		varchar(255)	Address Line 2
AddressLine3		varchar(255)	Address Line 3
AddressLine4		varchar(255)	Address Line 4
AddressLine5		varchar(255)	Address Line 5
ContactName		varchar(255)	The name of the client contact.
Department		varchar(255)	The contact department.
Office		varchar(255)	The contact office.
Comments		varchar(255)	Comments related to the contact.

a. PK = Primary Key

CIMSClientContactNumber Table

This table stores numbers (phone, fax, etc.) and e-mail addresses for contacts.

Field Name	Key	Type	Field Description
LoadTrackingUID		int	A unique identifier that tracks the client when loaded to the database from a location outside of CIMS Server. For example, from CIMS Mainframe Data Collector and Chargeback System.
AccountCode	PK[a]	char(128)	The account code for the client.
ContactIdx	PK[a]	int	The index number for the contact.
NumberIdx	PK[a]	int	The index number for the contact number or e-mail address.
NumberDescription		varchar(255)	The type of number (VOICE, FAX, EMAIL, etc.)
NumberValue		varchar(255)	The contact number or e-mail address.

a. PK = Primary Key

CIMSConfigTable

This table defines configuration options that have a GUI option in CIMS Server Administrator. One CIMS Config record is allowed per CIMS Server database.

Field Name	Key	Type	Field Description
OrgName		varchar(255)	The organization name
AddressLine1		varchar(255)	Address Line 1
AddressLine2		varchar(255)	Address Line 2
AddressLine3		varchar(255)	Address Line 3
AddressLine4		varchar(255)	Address Line 4
InvoiceNo		int	Deprecated. This is stored in the CIMSConfigOptions table.
InvoiceNumberType		char(1)	Deprecated.
Use13Periods		char(1)	Indicates whether 13 periods are used: ■ Y (Yes) ■ N (No)
UseCalender		char(1)	Indicates whether the CIMS calendar is used: ■ Y (Yes) ■ N (No)
ReportAccessSecurity		char(1)	Indicates whether report security is used: ■ Y (Yes) ■ N (No)
LocationStandardReports		varchar(255)	The path to the CIMS standard reports.
LocationCustomReports		varchar(255)	The path to custom reports.
LocationSavedReports		varchar(255)	The path to published reports.
DatabaseVersion		char(7)	The CIMS Server database version number.
LastProcessUID		int	Used by CIMSAcct and CIMSBill.
CustomReportGroupID		int	The unique identifier for the default report group for user-defined Web reports.

Field Name	Key	Type	Field Description
CustomSpreadsheetGroupID		int	The unique identifier for the default report group for user-defined Web spreadsheets.
SessionTimeoutMinutes		int	The number of minutes before a CIMS Server Web Reporting session expires and a new login is required.
AccountParameterSelectionLevel		int	In CIMS Server Web Reporting, this setting determines the level of account codes that appear in the **Starting Account Code** and **Ending Account Code** parameter lists.
DefaultCrystalViewer		int	The unique identifier for the browser viewer used to view Crystal Reports.
DBConnectionTimeout		int	The maximum number of seconds that a database may respond to a query before timing out
WebCustomSite		char(1)	Indicates the Web site to be used: ■ D (Default) ■ C (Custom)
WebBGColor		varchar(32)	The hexadecimal number for the background color of a custom Web site.
WebCSSLocation		varchar(255)	The path to the CSS for a custom Web site.
WebImageLocation		varchar(255)	The path to the images for a custom Web site.
WebMenuVertStartPos		int	The start position (in pixels) for the menu of a custom Web site.
LastReportingDate		datetime	The last reporting date for reports that end users who do not have administrative privileges can view.

CIMSConfigOptions Table

This table defines configuration options that the administrator can add manually in CIMS Server Administrator.

Field Name	Key	Type	Field Description
PropertyName	PK[a]	varchar(80)	The name of the configuration option.
PropertyValue		varchar(255)	The value for the configuration option.
PropertyType		int	The data type of the configuration option: ■ 1 (String) ■ 2 (Integer) ■ 3 (Floating Point) ■ 4 (Date/Time)
Sequence		int	For future use.
PropertyDescription		varchar(255)	A description of the configuration option.

a. PK = Primary Key

CIMSConfigAccountLevel Table

This table defines the account code structure.

Field Name	Key	Type	Field Description
AccountStructureName		char(32)	The account code structure name (e.g., Standard).
StartPosition		int	The starting offset position for the account code.
AccountLevel		int	The account code level.
AccountLength		int	The length of the account code level.
AccountDescription		varchar(255)	A description of the account code level.

CIMSCPUNormalization Table

The table allows for differences in CPU speed.

Field Name	Key	Type	Field Description
SystemID	PK[a]	char(32)	The system identifier for the computer that you want to normalize. For z/OS, this is the four-character System Model ID. For UNIX and Windows, it is the computer name.
WorkID	PK[a]	char(32)	The subsystem name (e.g., CICS region name, DB2 plan name, Oracle instance, etc.).
Factor		decimal(10,4)	The normalization factor.

a. PK = Primary Key

CIMSDetail Table

This table stores the information contained in the CIMSBill Detail file. The table contains the resource information collected from the records in the input CSR or CSR+ file. Each record in this table represents a single resource used/time period. This is the most granular form of the resource data stored in the database.

Field Name	Key	Type	Field Description
LoadTrackingUID		int	The load tracking unique identifier from the CIMSLoadTracking table.
DetailUID		int	The unique identifier that tracks the CIMSBill Detail load.
DetailLine		int	The number of the record in the input CSR or CSR+ file that contains the resource (i.e., 1 if it is the first record, 2 if it is the second record, etc.).
AccountCode		char(128)	The account code.
Aggregate		int	A count of the number of original input records that have been aggregated into this record.
StartDate		datetime	The resource usage start date.
EndDate		datetime	The resource usage end date.
ShiftCode		char(1)	The resource usage shift code.
AuditCode		varchar(255)	The audit code (CIMS External Transaction records only).
SourceSystem		char(8)	The system identifier for this resource.
RateCode		char(8)	The rate code of this resource.
ResourceUnits		decimal(18,5)	The quantity of the resource used.
AccountingStartDate		datetime	The accounting start date.
AccountingEndDate		datetime	The accounting end date.

CIMSDetailIdent Table

This table stores the information contained in the CIMS Ident file. The table contains the identifier values collected from the records in the input CSR or CSR+ file. The identifier names are stored in the CIMSIdent table and are represented by a number assigned to the identifier name.

Field Name	Key	Type	Field Description
LoadTrackingUID		int	The load tracking unique identifier from the CIMSLoadTracking table.
DetailUID	PKa	int	The unique identifier that tracks the CIMSBill Detail load.
DetailLine	PKa	int	The number of the record in the input CSR or CSR+ file that contains the identifier (i.e., 1 if it is the first record, 2 if it is the second record, etc.).
IdentNumber	PKa	int	A sequential number assigned to the identifier in the CIMSIdent table.
IdentValue		varchar(255)	The value of the identifier.

a. PK = Primary Key

CIMSHeadline Table

This table defines the headlines that appear on the CIMS Server Web Reporting home page.

Field Name	Key	Key	Field Description
HeadlineUID	PKa	int	The sequential UID that tracks the headline.
HeadLineDate		datetime	The date that the headline was created.
Headline		varchar(255)	The headline text.
HeadlineLink		varchar(255)	The URL for the headline link.

a. PK = Primary Key

CIMSIdent Table

This table stores all identifier names contained in the input CSR or CSR+ files processed. As a file is processed, the identifier names in the file records are added to this table. This table will continue to store identifier names even if the identifiers are no longer used by records loaded in the database. To delete unused identifier names if needed, see *Maintaining Identifiers* on page 3-40.

Field Name	Key	Type	Field Description
IdentNumber	PK[a]	int	A sequential number assigned to the identifier.
IdentName		varchar(32)	A short name for the identifier.
IdentDescription		varchar(255)	A full description of the identifier name (optional).
IdentActiveFlag		char(1)	Indicates whether Active or Inactive has been selected for custom reports: ■ Blank (Active) ■ I (Inactive)
IdentReportFlag		char(1)	User-defined report flag.

a. PK = Primary Key

CIMSInpSrcCategory Table

This table is for future use.

CIMSInpSrcCategorySource Table

This table is for future use.

CIMSInpSrcMachineList Table

This table is for future use.

CIMSLanguage Table

This table is for future use. It is intended to display GUI options (menus, links, etc.) in CIMS Server Web Reporting in the required language.

Field Name	Key	Type	Field Description
StringName	PK[a]	varchar(80)	The tag name in the Web reporting ASP page.
ENG		varchar(255)	The GUI option in English.
SPA		varchar(255)	The GUI option in Spanish.
FRA		varchar(255)	The GUI option in French.
DUT		varchar(255)	The GUI option in Dutch.
ITA		varchar(255)	The GUI option in Italian.
GER		varchar(255)	The GUI option in German.
FIN		varchar(255)	The GUI option in Finnish.
SWE		varchar(255)	The GUI option in Swedish.
JPN		varchar(255)	The GUI option in Japanese.
POR		varchar(255)	The GUI option in Portuguese.
OTH		varchar(255)	The GUI option in another language.

a. PK = Primary Key

CIMSLoadTracking Table

This table records the loading of any data to the database. This enables database loads to be deleted if required.

Field Name	Key	Type	Field Description
LoadTrackingUID	PK[a]	int	The unique identifier for the database load.
FileType		char(8)	The type of file processed: ■ Summary ■ Detail (CIMSBill Detail) ■ Ident ■ Resource (CIMSAcct Detail)
FileName		varchar(255)	The path and name of the file that was processed
DateLoaded		datetime	The date and time the input CSR or CSR+ file was processed by CIMSAcct.
DateDeleted		datetime	The date and time the load was removed from the database.
TotalRecsLoaded		int	The number of records loaded.
StartDate		datetime	The accounting start date for CIMS Summary, CIMS Detail, and CIMS Ident records. The usage end date for resource records.
EndDate		datetime	The accounting end date for CIMS Summary, CIMS Detail, and CIMS Ident records. The usage end date for resource records.
SourceSystem		varchar(32)	The name of the computer that produced the data.
SourceFeed		varchar(32)	The system that produced the data (e.g., IIS, Exchange, z/OS, etc.)

Field Name	Key	Type	Field Description
DateArchived		datetime	The date and time that the load was archived.
ArchiveLocation		varchar(255)	The location of the archived load.
LoadGroupUID		int	The unique identifier for the group that the database load belongs to.

a. PK = Primary Key

CIMSRate Table

This table stores the rate codes and rates for resource usage.

Field Name	Key	Type	Field Description
LoadTrackingUID		int	The unique identifier that tracks the rate when loaded to the database from a location outside of CIMS Server. For example, from CIMS Mainframe Data Collector and Chargeback System.
RateTable	PKa	char(8)	The name of the rate table that contains the rate code.
RateCode	PKa	char(8)	The code for the rate.
RateIndex		int	The index number for the rate code.
RateValue		decimal(18,8)	The per unit value for the rate code.
ResourceValue		decimal(19,4)	Deprecated.
DiscountDollars		decimal(19,4)	Deprecated.
Discount		decimal(7,4)	Deprecated.
DiscountIndex		int	Deprecated.
Description		varchar(255)	A description of the rate code.
Factor		decimal(15,8)	A user-defined resource conversion factor value for the resource unit value in reports.
RateValue1		char(1)	Indicates whether four decimal positions are used in the rate value in reports: ■ F (Four digits are used) ■ Blank (Eight digits are used [the default])

Field Name	Key	Type	Field Description
RateValue2		char(1)	Indicates whether the rate is per resource unit or per thousand units in reports: ■ M (Per thousand units) ■ Blank (Per unit)
RateValue3		char(1)	Indicates the resource conversion factor for the resource unit value in reports. ■ 1 (Divide total resource value by 60) ■ 2 (Divide total resource value by 3600) ■ 3 (Divide total resource value by 1000) ■ 4 (Multiply total resource value by 60) ■ 5 (Divide total resource value by 60000) ■ # (Multiple total resource value by user-defined number in Factor field.) ■ Blank (No conversion factor)
RateValue4		char(1)	Indicates whether the rate code is included in zero cost calculations: ■ N (The rate will not be included in zero cost calculations) ■ Blank (The rate will be included in zero cost calculations) For more information about zero cost calculations, see page 3-11.

Field Name	Key	Type	Field Description
RateValue5		char(1)	Indicates the number of decimal digits that appear in the resource units value in reports: ■ 0-5 (0 through 5 digits) ■ Blank (2 digits, the default)
RateValue6		char(1)	For future use.
RateValue7		char(1)	Indicates the whether the resource units for the rate code are considered a monetary amount rather than units if utilization: ■ $ (flat fee) ■ Blank (not flat fee)
RateValue8		char(1)	User-defined report flag.
RateValue9		char(1)	For future use.
RateValue10		char(1)	User-defined report flag.
RateValue11		char(1)	Indicates whether the rate should be included in CPU normalization: ■ Y (Yes) ■ N (No)
EffDate		datetime	The effective date for the rate code.
TermDate		datetime	The end date for the rate code.
Comments		varchar(255)	Comments for the rate code.
DetailDescription		varchar(255)	User-defined description of the rate code for custom reports.
CurrencySymbol		varchar(3)	User-defined currency symbol for custom reports.

a. PK = Primary Key

CIMSRateGroup Table

This table defines the rate groups.

Field Name	Key	Type	Field Description
RateGroup	PK[a]	int	A sequential number assigned to the rate group.
ParentUID		int	For future use.
GroupTitle		char(32)	The rate group title.
GroupTitleLong		varchar(255)	A description of the rate group.
PrintIndex		int	The order in which the rate group appears in reports.

a. PK = Primary Key

CIMSRateIdentifiers Table

This table correlates rate codes to identifiers to enable drill down on the units consumed for a resource by identifier.

Field Name	Key	Type	Field Description
RateCode	PK[a]	char(8)	The rate code.
IdentNumber	PK[a]	int	A sequential number assigned to the identifier for the rate code.

a. PK = Primary Key

CIMSRateShift Table

This table defines the optional rate shifts for rate codes.

Field Name	Key	Type	Field Description
RateTable	PK[a]	char(8)	The name of the rate table.
RateCode	PK[a]	char(8)	The rate code.
ShiftCode	PK[a]	char(1)	The shift code.
RateValue		decimal(18,8)	The rate value for the shift.
Description		varchar(255)	A description of the shift (Swing, Night, etc.).
RateValue1		char(1)	For future use.
RateValue2		char(1)	For future use.
RateValue3		char(1)	For future use.
RateValue4		char(1)	For future use.
RateValue5		char(1)	For future use.
RateValue6		char(1)	For future use.
RateValue7		char(1)	For future use.
RateValue8		char(1)	For future use.
RateValue9		char(1)	For future use.
RateValue10		char(1)	For future use.
RateValue11		char(1)	For future use.
EffDate		datetime	The effective date for the rate code.
TermDate		datetime	The end date for the rate code.
Comments		varchar(255)	For future use.

a. PK = Primary Key

CIMSRateToRateGroup Table

This table correlates rate codes to rate groups.

Field Name	Key	Type	Field Description
RateCode	PK[a]	char(8)	The rate code.
RateGroup	PK[a]	int	A sequential number assigned to the rate group.

a. PK = Primary Key

CIMSReport Table

This table stores information about the reports used for CIMS Server Web Reporting. These reports are entered in the Report List Maintenance dialog box (see *Adding Reports to the CIMS Server Report List* on page 4-19).

Field Name	Key	Type	Field Description
ReportID	PK[a]	int	The unique identifier for the report.
ReportName		char(32)	The name of the report
ReportFile		varchar(255)	The .rpt file name for the report. Also, the executable for all reports (except user-defined reports).
ReportDescription		varchar(255)	A description of the report.
UserID		char(8)	For a user-defined reports, the CIMS user ID of the person who created the report.
ReportTemplateFile		varchar(255)	The .rpt file to be used as the executable for user defined reports.

a. PK = Primary Key

CIMSReportCustomFields Table

This table stores the values for the user-defined reports that can be stored in the database and supplied to the report automatically at run time.

Field Name	Key	Type	Field Description
ReportID	PKa	int	The unique identifier for the report.
RateCode		char(8)	The rate code
ReportPosition	PKa	int	The position within the report where the values are used beginning with 1 and continuing sequentially.
DecimalPlaces		int	The number of decimal places to display for the resource usage amount in reports.

a. PK = Primary Key

CIMSReportDistribution Table

This table store the values for the report distribution requests. These requests are associated with a report cycle.

Field Name	Key	Type	Field Description
UserID		char(8)	The CIMS user ID for the user assigned to the report.
GroupID		char(8)	The CIMS user group ID for the user group assigned to the report.
ReportID		int	The unique identifier for the report.
ReportCycleID	PKa	int	The unique identifier for the report cycle.
RequestID	PKa	int	The unique identifier for the report distribution request.
ReportFormat		int	The unique identifier for the report format.

a. PK = Primary Key

CIMSReportDistributionCycle Table

This table stores values for report cycles.

Field Name	Key	Type	Field Description
ReportCycleID	PK[a]	char(8)	The unique identifier for the report cycle.
ReportCycleName		char(8)	The report cycle name.
ReportCycleDescription		int	The report cycle description.
EmailFromAddress		int	The address of the e-mail sender.
EmailSubject		int	The text in the e-mail subject.
EmailText		int	The text in the e-mail body.
WebSiteCIMS		varchar(80)	The URL fo the CIMS Server Web Reporting Web site.
WebSiteReports		varchar(255)	The URL for the virtual directory for published reports.
LinkType		int	The link type: ■ 1 (UNC) ■ 2 (URL)
MailServer		varchar(80)	The name of the SMTP mail server used to send the e-mail.
UserSelectable		int	For future use.
EmailAdminAddress		varchar(128)	The address of the CIMS Server administrator to receive the report distribution log file.

a. PK = Primary Key

CIMSReportDistributionParm Table

This table stores the values for each report assigned to a report cycle.

Field Name	Key	Type	Field Description
ReportID	PKa	int	The unique identifier for the report.
ReportCycleID	PKa	int	The unique identifier for the report cycle.
RequestID	PKa	int	The unique identifier for the report distribution request.
ParmName	PKa	varchar(255)	The parameter name.
ParmValue		varchar(255)	The parameter value.

a. PK = Primary Key

CIMSReportDistributionType Table

This table stores the values for report formats.

Field Name	Key	Type	Field Description
TypeID	PKa	int	The unique identifier for the report format.
TypeValue		varchar(255)	The description of the report format.

a. PK = Primary Key

CIMSReportGroup Table

This table stores information about report groups.

Field Name	Key	Type	Field Description
ReportGroupID	PKa	int	The unique identifier for the report group
ReportGroupName		char(32)	The report group name
ReportGroupDesc		varchar(255)	A description of the report group.

a. PK = Primary Key

CIMSReportStart Table

This table defines the order in which reports appear in CIMS Server Web Reporting.

Field Name	Key	Type	Field Description
ReportStartID		int	A unique identifier for the start group.
ReportStartGroup		int	A sequential number that is assigned to the start group. The number is dependent on the order in which the group was created.

CIMSReportToReportGroup Table

This table relates reports to report groups.

Field Name	Key	Type	Field Description
MemberID	PK[a]	int	The unique identifier of the report.
MemberType	PK[a]	char(1)	■ R (Report) ■ G (Graph)
ReportGroupId	PK[a]	int	The unique identifier for the report group.
Sequence		int	The order of the report in the report group list.

a. PK = Primary Key

CIMSResourceUtilization Table

This table stores the resource information contained in the CIMSAcct Detail file. In most cases, you will not need to load the data in CIMSAcct Detail file to the database.

Field Name	Key	Type	Field Description
LoadTrackingUID		int	The load tracking unique identifier from the CIMSLoadTracking table.
DetailUID		int	The unique identifier that tracks the CIMSAcct Detail load.
DetailLine		int	The number of the record in the input CSR or CSR+ file that contains the resource (i.e., 1 if it is the first record, 2 if it is the second record, etc.)
AccountCode		char(128)	The account code.
Aggregate		int	A count of the number of original input CSR or CSR+ records that have been aggregated into this record.
StartDate		datetime	The resource usage start date.
EndDate		datetime	The resource usage end date.
ShiftCode		char(1)	The resource usage shift code.
AuditCode		varchar(255)	The audit code (CIMS External Transaction records only).
SourceSystem		char(8)	The system identifier for this resource.
RateCode		char(8)	The rate code of this resource.
ResourceUnits		decimal(18,5)	The quantity of the resource used.

CIMSSummary Table

This table stores the information contained in the CIMS Summary file created by CIMSBill. This table contains both resource utilization and cost data for reports. Note the `BillFlag` fields reflect the flags that were set in the CIMSRate table at the time that CIMSBill was run.

Field Name	Key	Type	Field Description
LoadTrackingUID		int	The load tracking unique identifier from the CIMSLoadTracking table.
Year		int	The resource usage year.
Period		int	The resource usage period
Shift		char(1)	The resource usage shift code.
AccountCode		char(128)	The account code.
LenLevel1		int	Values are the following: ■ 0—The record was created from a Detail record. ■ 1—The record was by created by reprocessing a CIMS Summary record. ■ 2—The record was by created by processing a Summary record twice. If the Summary record was processed more than twice, the value would be 3, 4, 5, etc.
LenLevel2		int	A value of 0.
LenLevel3		int	A value of 0.
LenLevel4		int	A value of 0.
RateTable		char(8)	The name of the rate table that contains the rate code.
RateCode		char(8)	The rate code for the resource.
StartDate		datetime	The accounting start date.
EndDate		datetime	The accounting end date.

Field Name	Key	Type	Field Description
BillFlag1		char(1)	Indicates whether four decimal positions are used in the rate value in reports: ■ F (Four digits are used) ■ Blank (Eight digits are used [the default])
BillFlag2		char(1)	Indicates whether the rate is per resource unit or per thousand units in reports: ■ M (Per thousand units) ■ Blank (Per unit)
BillFlag3		char(1)	Indicates the resource conversion factor for the resource unit value in reports: ■ 1 (Divide total resource value by 60) ■ 2 (Divide total resource value by 3600) ■ 3 (Divide total resource value by 1000) ■ 4 (Multiply total resource value by 60) ■ 5 (Divide total resource value by 60000) ■ # (Multiple total resource value by user-defined number in Factor field.)
BillFlag4		char(1)	Indicates whether the rate code is included in zero cost calculations: ■ N (The rate will not be included in zero cost calculations) ■ Blank (The rate will be included in zero cost calculations) For more information about zero cost calculations, see page 3-11.

Field Name	Key	Type	Field Description
BillFlag5		char(1)	Indicates the number of decimal digits that appear in the resource units value in reports: ■ 1-5 (1 through 5 digits) ■ Blank (2 digits, the default)
BillFlag6		char(1)	For future use.
BillFlag7		char(1)	Indicates the whether the resource units for the rate code are considered a monetary amount rather than units if utilization: ■ $ (flat fee) ■ Blank (not flat fee)
BillFlag8		char(1)	User-defined report flag.
BillFlag9		char(1)	For future use.
RateValue		decimal(18,8)	Per unit charge for this rate.
ResourceUnits		decimal(18,5)	The total units for this rate.
BreakId		int	Deprecated.
MoneyValue		decimal(19,6)	The total currency units for this rate. **Note:** This will be 21,6 only if using an existing Oracle database prior to 4.2 and then upgrading to 4.2 or later.
UsageStartDate		datetime	The resource usage start date.
UsageEndDate		datetime	The resource usage end date.
RunDate		datetime	The date and time that CIMSBill was run.
BillFlag10		char(1)	User-defined report flag.
BillFlag11		char(1)	Indicates whether the rate should be included in CPU normalization: ■ Y (Yes) ■ N (No)

CIMSSummaryDaily Table

This table stores the data in the CIMSSummary table at a monthly rather than daily level. The fields are the same as the CIMSSummary table.

For more information about converting daily records to monthly records, see *ConvertSummaryDailyToMonthly.wsf Script* on page C-9.

CIMSSummaryToDetail Table

This table is obsolete.

Field Name	Key	Type	Field Description
SummaryLoadTrackingUID	PKa	int	The load tracking unique identifier from the CIMS Load Tracking table.
DetailUID	PKa	int	The unique identifier that tracks the CIMSBill Detail load.
StartDate		datetime	The accounting start date.
EndDate		datetime	The accounting end date.
DetailConverted		char(1)	Indicates whether the CIMSBill Detail records have been converted: Y (Yes) Null (No)
SummaryConverted		char(1)	Indicates whether the CIMS Summary records have been converted: Y (Yes) Null (No)

a. PK = Primary Key

CIMSTransaction Table

This table stores miscellaneous, recurring, and credit transactions. For more information about creating and using transactions, refer to the *CIMS Server Web Reporting User's Guide*.

Field Name	Key	Type	Field Description
TransactionUID	PK[a]	char(32)	The unique identifier for the transaction.
AccountCode		char(128)	The account code for the transaction.
TransactionType		char(1)	The transaction type: ■ M (Miscellaneous) ■ R (Recurring) ■ C (Credit)
ShiftCode		char(1)	The shift code for the transaction.
RateCode		char(8)	The rate code for the transaction.
ResourceAmount		decimal(18,5)	The amount of the transaction.
Frequency1		int	Applicable only to recurring transactions. The frequency that the transaction should occur (every month, every 6 months, etc.). Frequency is based on the calendar year (January–December) ■ 1 (monthly) ■ 2 (every other month) ■ 3 (every quarter) ■ 4 (every four months) ■ 6 (every six months) ■ 12 (once a year)

Field Name	Key	Type	Field Description
Frequency2		int	Applicable only to recurring transactions. The period in which the transaction should be processed. This value corresponds to the value in the Frequency1 field. For example, if the value in the Frequency1 field is 6, a value of 1 in this field indicates the first month of a 6 month period (January or July).
FromDate/ToDate		datetime	Applicable only to miscellaneous and credit transactions. The date range that the transaction occurred.
DateTimeSent		datetime	The date and time that the transaction was exported to a flat file.
DateTimeModified		datetime	The date and time that the transaction was last modified.
DateTimeEntered		datetime	The date and time that the transaction was created.
DateTimeStartProcessing		datetime	Applicable only to recurring transactions. The first day that the transaction will be processed.
DateTimeStopProcessing		datetime	Applicable only to recurring transactions. The last day that the transaction will be processed.
UserID		char(8)	The CIMS user ID of the person who entered the transaction.
DateTimeDeleted		datetime	The date and time that the transaction was deleted.
Note		varchar(255)	A description of the transaction.

a. PK = Primary Key

CIMSUser Table

This table stores the user options entered in the User Maintenance dialog box (see *Defining Users* on page 3-28).

Field Name	Key	Type	Field Description
UserID	PK[a]	char(8)	The CIMS user ID.
Password		int	A hash of the user password.
SessionID		int	A unique session identifier.
UserFullName		varchar(255)	The full name of the user.
UserFlag1		char(1)	Indicates whether full report path for published reports is displayed for the user on Favorites page in CIMS Server Web Reporting: ■ Y (Yes) ■ N (No)
UserFlag2		char(1)	Indicates whether full report path for published reports is displayed for the user on Published Reports page in CIMS Server Web Reporting: ■ Y (Yes) ■ N (No)
CrystalViewer		int	The unique identifier for the browser viewer used by the user to view Crystal Reports.
DomainUserName		varchar(255)	The Windows domain and user name for the user.
EmailToAddress		varchar(255)	The e-mail address for the user.

a. PK = Primary Key

CIMSUserConfigOptions Table

This table stores the user configuration options entered in the User Configuration Options List Maintenance dialog box (see *Defining Users* on page 3-28).

Field Name	Key	Type	Field Description
PropertyName	PK[a]	varchar(80)	The name of the configuration option.
UserID	PK[a]	char(8)	The CIMS user ID.
PropertyValue		varchar(255)	The value for the configuration option.
PropertyType		int	The data type of the configuration option: ▪ 1 (String) ▪ 2 (Integer) ▪ 3 (Floating Point) ▪ 4 (Date/Time)
Sequence		int	For future use.
PropertyDescription		varchar(255)	A description of the configuration option.

a. PK = Primary Key

CIMSUserFavorites Table

This table stores information regarding the CIMS Server Web Reporting users favorite reports. For more information about favorite reports, refer to the *CIMS Server Web Reporting User's Guide*.

Field Name	Key	Type	Field Description
UserID		char(8)	The CIMS user ID.
FavoriteReportGroup		int	The unique identifier for the report group that the favorite report belongs to.
FavoriteReport		int	The unique identifier for the favorite report.
DisplayOrder		int	The order in which the favorite report is displayed.

CIMSUserGroup Table

This table relates users to user groups.

Field Name	Key	Type	Field Description
GroupID	PK[a]	char(8)	The user group ID.
GroupFullName		varchar(255)	The full name of the group.
TransactionSecurity		char(1)	Indicates whether group has transaction maintenance privilege: 0 (No) 9 (Yes)
RateSecurity		char(1)	For future use.
ClientSecurity		char(1)	For future use.
GroupType		char(1)	Type of user: 1 (Client) 9 (Admin)
AllowFinModeler		char(1)	Indicates whether group has access to CIMS Financial Modeler: 0 (No access) 9 (Access)
AllowWebConsole		char(1)	Indicates whether group has access to CIMS Web Console: 0 (No access) 9 (Access)

a. PK = Primary Key

CIMSUserGroupAccountCode Table

This tables defines user the account codes that users within a user group can view.

Field Name	Key	Type	Field Description
GroupID	PK[a]	char(8)	The user group ID.
AccountCode	PK[a]	char(128)	The client account code that can be viewed. If the group has access to all clients, this field is blank.

a. PK = Primary Key

CIMSUserGroupAccountStructure Table

This table stores the account code structures assigned to a user group.

Field Name	Key	Type	Field Description
GroupID	PK[a]	char(8)	The user group ID.
AccountStructureName	PK[a]	char(32)	The name of the account code structure.
GroupDefault		int	Indicates whether the account code structure is the default: 1 (default) 0 (not default)

CIMSUserGroupConfigOptions Table

This table stores the user configuration options entered in the Group Configuration Options List Maintenance dialog box (see *Defining User Groups* on page 3-33).

Field Name	Key	Type	Field Description
PropertyName	PK[a]	varchar(80)	The name of the configuration option.
GroupID	PK[a]	char(8)	The CIMS user group ID.
PropertyValue		varchar(255)	The value for the configuration option.

Field Name	Key	Type	Field Description
PropertyType		int	The data type of the configuration option: ■ 1 (String) ■ 2 (Integer) ■ 3 (Floating Point) ■ 4 (Date/Time)
Sequence		int	For future use.
PropertyDescription		varchar(255)	A description of the configuration option.

a. PK = Primary Key

CIMSUserGroupReport Table

This tables defines the reports that users within a user group can view. If a group has access to all reports, it is not included in this table.

Field Name	Key	Type	Field Description
GroupID	PK[a]	char(8)	The CIMS user group ID.
ReportID	PK[a]	int	The unique identifier of the report.
ReportExecute		char(1)	Permission for users in this group to run the report: ◼ Y (Yes) ◼ N (No)

a. PK = Primary Key

Database Entity Relationship Diagrams

This section provides Entity Relationship Diagrams (*ERD*s) for most of the tables in the CIMS Server database. (Tables that do not have explicit relationships are not shown.)

These diagrams show the following:

■ The relationships of the client, report, and user tables

■ The relationship of the CIMSTransaction and CIMSSummary tables to other tables

The following conventions are used in these diagrams:

■ PK = Primary Key

■ Bold = A required field

■ Related tables are specified by their related fields. Related fields are connected by a line with a single arrow on one side and double arrow on the other. This line specifies both the related fields and the relationship of the tables. All linked tables reflect a one-to-many relationship. For example, the CIMSClient table has a one-to-many relationship with the CIMSClientBudget table (i.e., clients can have budgets for multiple resources).

Note that some tables are shown in more than one diagram.

Summary-Related Tables

The ERD in Figure A-1 shows the relationship of the CIMSSummary table to other tables.
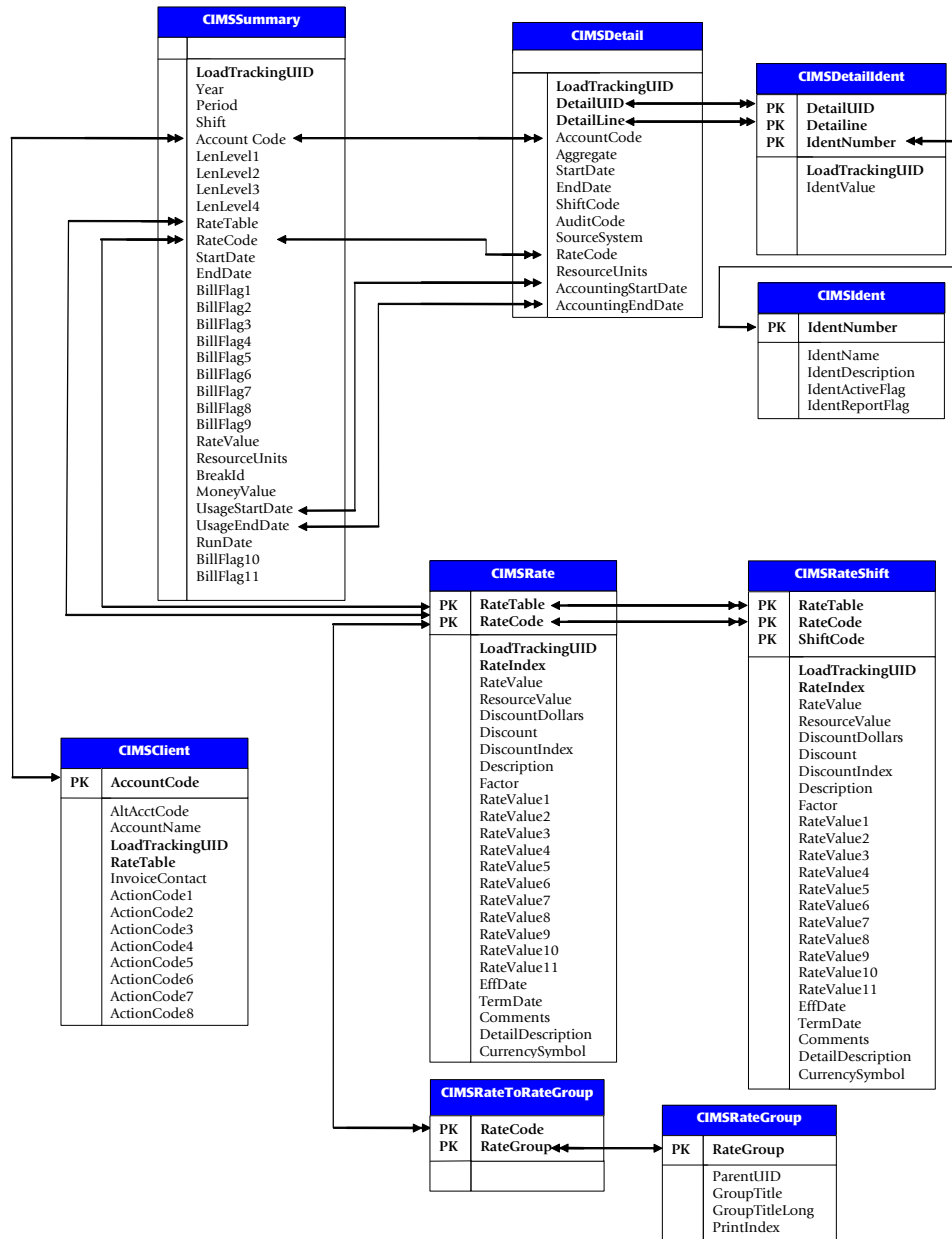
Figure A-1 • **Summary-Related Tables ERD**

Client Tables

The ERD in Figure A-2 shows the relationships of the client tables.
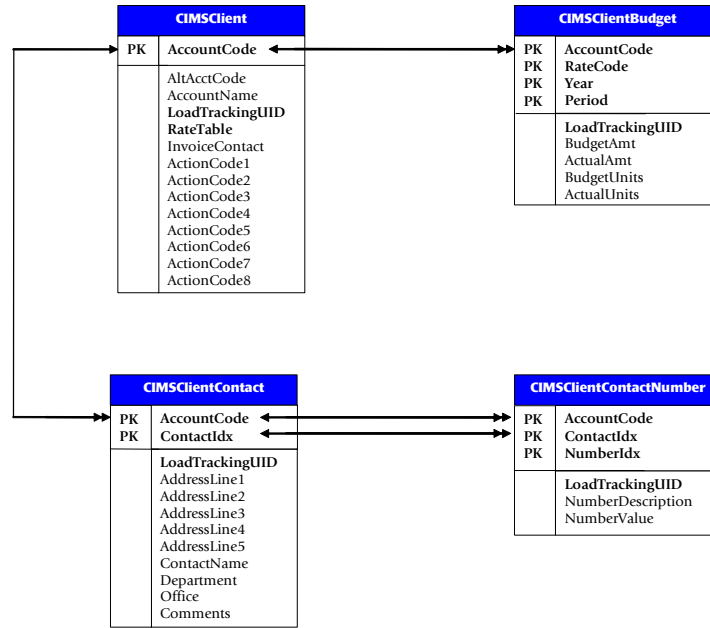
Figure A-2 • Client Tables ERD

User Tables

The ERD in Figure A-3 shows the relationships of the user tables.
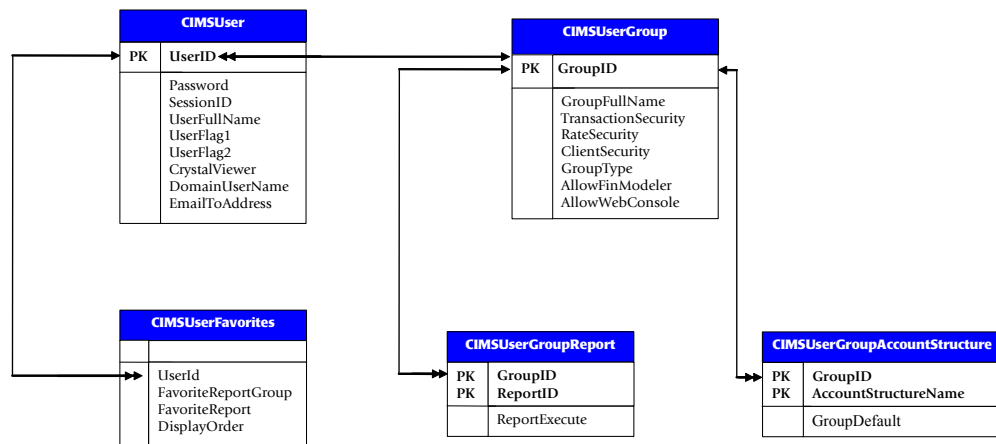
Figure A-3 • User Tables ERD

Report Tables

The ERD in Figure A-4 shows the relationships of the report tables.
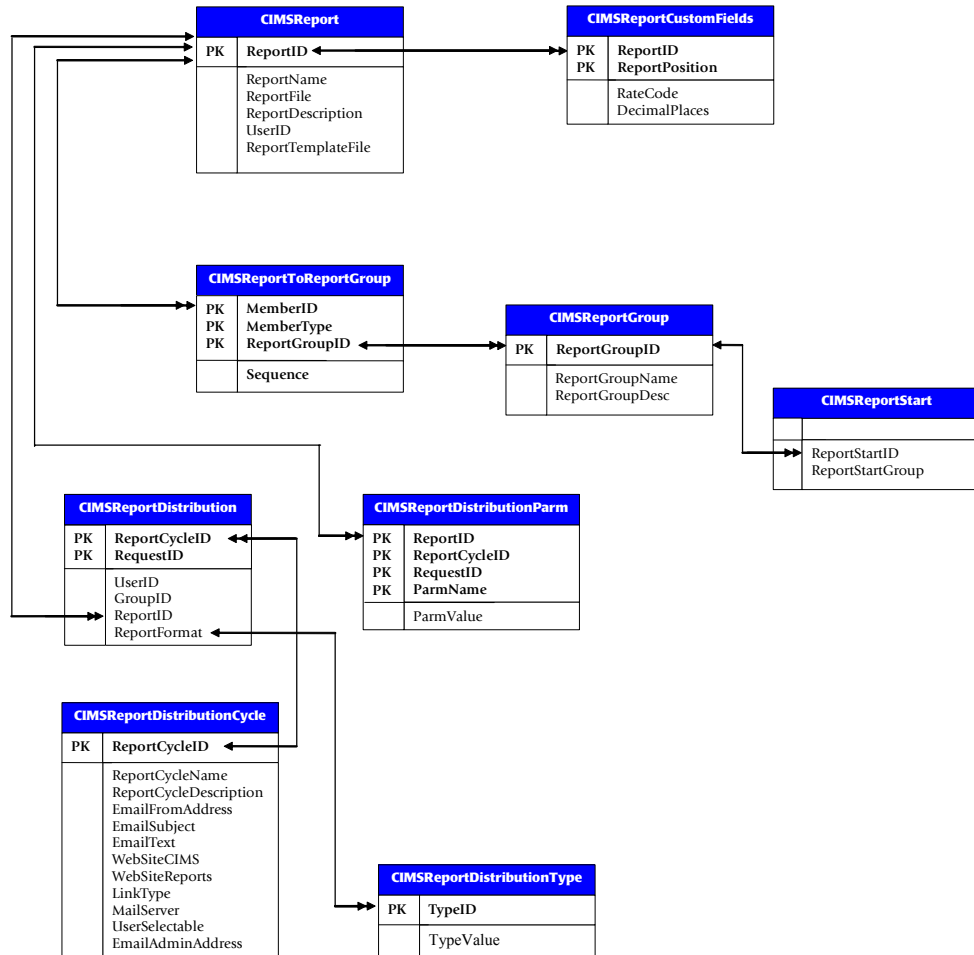
Figure A-4 • Report Tables ERD

Report Distribution Tables

The ERD in Figure A-5 shows the relationships of the report distribution tables.
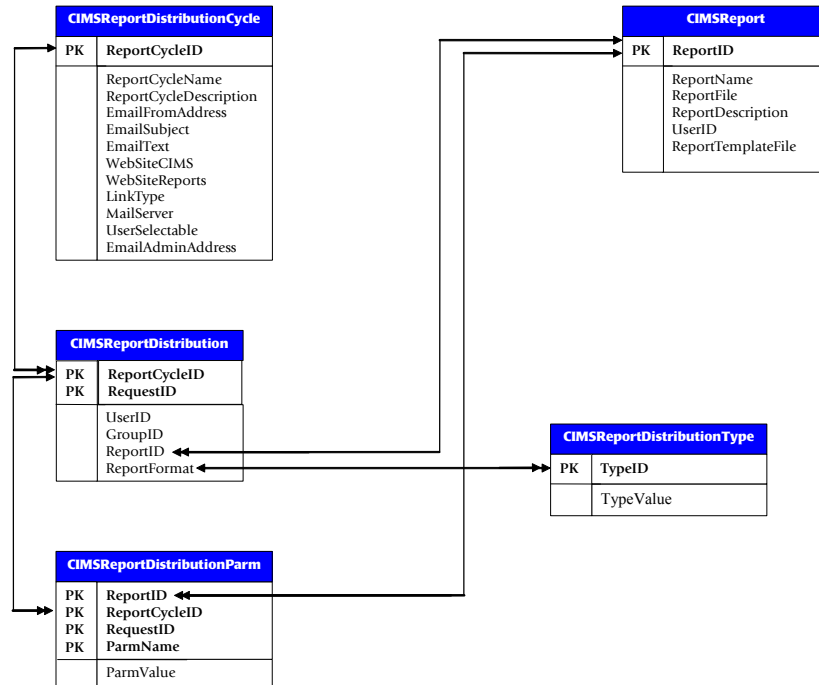
Figure A-5 • Report Distribution Tables ERD

Transaction-Related Tables

The ERD in Figure A-6 shows the relationship of the CIMSTransaction table to the CIMSClient and CIMSRate tables.
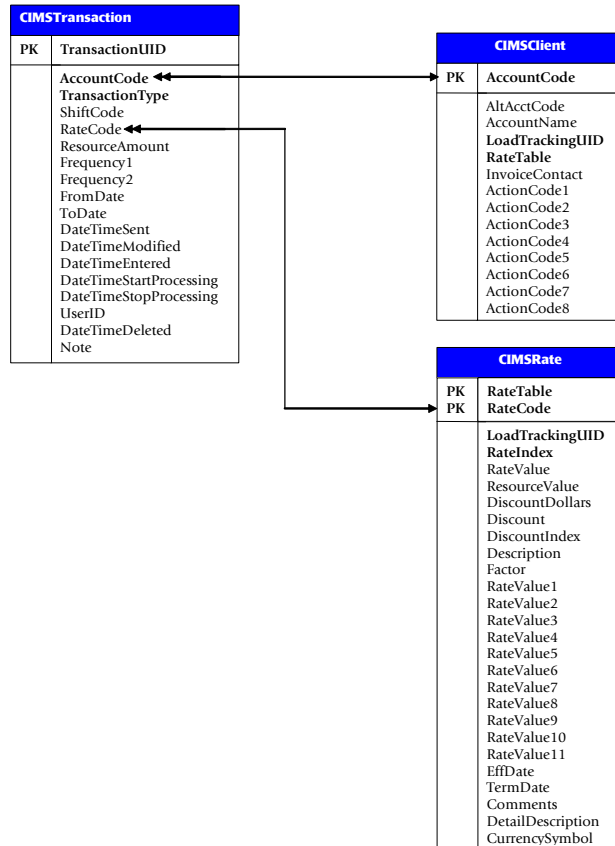
Figure A-6 • Transaction-Related Tables ERD

■ B

File Layouts

This appendix describes the layout of key files used by CIMS Server.

CIMS Server Resource (CSR) File

The primary method for input into CIMS Server is the CIMS Server Resource (CSR) file. The CSR file is automatically produced by CIMS Data Collectors for Windows, UNIX, and Mainframe (11.6 and earlier) and can also be produced and read by many other third-party products.

The CSR records are in a standard ASCII display format (no packed, binary, or bit data) with commas for delimiters and decimal points included in resource amounts. A negative sign should precede negative numeric data, with no sign when the data is positive. When the identifier data contains commas, there must be double quotes around the identifier character data.

For CIMS Server 3.3 and earlier, CSR records can be up to 5,000 bytes long. For CIMS Server 4.0 and later, CSR records can be up to 32,000 bytes long. CSR records in all CIMS Server releases can contain a very large number of identifiers and resources. However, the maximum length for the records in the output CIMSAcct Detail file is 5,000 bytes with a limit of 100 resources.

The following table describes the fields in the CSR record.

Pos.	Field Name	Length	Type	Description
1	Header	8	Character	Defines the source of data. For example, DB2 data from OS/390 contains a header of S390DB2. There is no standard for this header and any unique combination of characters can be used.
2	Start Date of Usage	8	Number	Date in format YYYYMMDD.
3	End Date of Usage	8	Number	Date in format YYYYMMDD.
4	Start Time of Usage	8	Character	Time in format HH:MM:SS.
5	End Time of Usage	8	Character	Time in format HH:MM:SS.
6	Shift Code	1	Character	Alphanumeric code denoting time of day usage occurred. Allows billing different rates by shift. If you do not want to charge by shift, the field should be blank.
7	Number of Identifiers	2	Number	Number of identifiers in the following fields.
8	Identifier Name 1	32	Character	The name of the identifier.

Pos.	Field Name	Length	Type	Description
9	Identifier Value 1	Variable	Character	Includes items such as database name, server name, LAN ID, user ID, program name, region, system ID, and so forth. This should be shortened as much as possible to a meaningful code for further translation.
10	Identifier Name 2	32	Character	The name of the identifier.
11	Identifier Value 2	Variable	Character	Includes items such as database name, server name, LAN ID, user ID, program name, region, system ID, and so forth. This should be shortened as much as possible to a meaningful code for further translation.
12	Identifier Name x	32	Character	The name of the identifier.
13	Identifier Value x	Variable	Character	Includes items such as database name, server name, LAN ID, user ID, program name, region, system ID, and so forth. This should be shortened as much as possible to a meaningful code for further translation.
X	Number of Resources	2	Number	Number of resources being tracked in the following fields.
X	Rate Code 1	8	Character	The rate code for the resource.
X	Resource Value 1	Variable	Number	Resource usage value such as CPU time, Input/Outputs, megabytes used, lines printed, transactions processed, etc.
X	Rate Code 2	8	Character	The rate code for the resource.
X	Resource Value 2	Variable	Number	Resource usage value such as CPU time, Input/Outputs, megabytes used, lines printed, transactions processed, etc.
X	Rate Code x	8	Character	The rate code for the resource.
X	Resource Value x	Variable	Number	Resource usage value such as CPU time, Input/Outputs, megabytes used, lines printed, transactions processed, etc.

CIMS Server Resource Plus (CSR+) File

Note • The description of the CSR file format and length is also applicable to the CSR+ file (see).

The CIMS Server Resource Plus (CSR+) file is produced by CIMS Mainframe Data Collector and Chargeback System 12.0 and later. The format of the CSR+ file record is the same as the CIMS Server Resource record with the exception that the CSR+ record contains an additional header at the beginning of the record. This is a fixed header that enables the records to be sorted more easily. The header is in the following format:

`"CSR+<usage start date><usage end date><account code length><account code><x'40'>",`

Note that the quotation marks and comma are included in the header.

Examples

`"CSR+2005022820050228010aaaaaaaaa ",S390DB2,20050228,...`
`"CSR+2005022820050228010bbbbbbbbbb ",S390DB2,20050228,...`

In these examples, the usage start and end dates are February 28, 2005 (`20050228`). The account codes `aaaaaaaaaa` and `bbbbbbbbbb` are 10 characters. The account codes are followed by a space (x'40'). The information after the header (`S90DB2,20050228,...`) represents the remaining fields found in the record. These fields are described in the following table.

Note • The CSR+ record does not supersede the CSR record. CIMS Server uses both record types.

Pos.	Field Name	Length	Type	Description
1	Header	153	Character	A fixed header used for sorting.
2	Header	8	Character	Defines the source of data. For example, DB2 data from OS/390 contains a header of S390DB2.
				There is no standard for this header and any unique combination of characters can be used.
3	Start Date of Usage	8	Number	Date in format YYYYMMDD.
4	End Date of Usage	8	Number	Date in format YYYYMMDD.
5	Start Time of Usage	8	Character	Time in format HH:MM:SS.
6	End Time of Usage	8	Character	Time in format HH:MM:SS.

Pos.	Field Name	Length	Type	Description
7	Shift Code	1	Character	Alphanumeric code denoting time of day usage occurred. Allows billing different rates by shift. If you do not want to charge by shift, the field should be blank.
8	Number of Identifiers	2	Number	Number of identifiers in the following fields.
9	Identifier Name 1	32	Character	The name of the identifier.
10	Identifier Value 1	Variable	Character	Includes items such as database name, server name, LAN ID, user ID, program name, region, system ID, and so forth. This should be shortened as much as possible to a meaningful code for further translation.
11	Identifier Name 2	32	Character	The name of the identifier.
12	Identifier Value 2	Variable	Character	Includes items such as database name, server name, LAN ID, user ID, program name, region, system ID, and so forth. This should be shortened as much as possible to a meaningful code for further translation.
13	Identifier Name x	32	Character	The name of the identifier.
14	Identifier Value x	Variable	Character	Includes items such as database name, server name, LAN ID, user ID, program name, region, system ID, and so forth. This should be shortened as much as possible to a meaningful code for further translation.
X	Number of Resources	2	Number	Number of resources being tracked in the following fields.
X	Rate Code 1	8	Character	The rate code for the resource.
X	Resource Value 1	Variable	Number	Resource usage value such as CPU time, Input/Outputs, megabytes used, lines printed, transactions processed, etc.
X	Rate Code 2	8	Character	The rate code for the resource.

Pos.	Field Name	Length	Type	Description
X	Resource Value 2	Variable	Number	Resource usage value such as CPU time, Input/Outputs, megabytes used, lines printed, transactions processed, etc.
X	Rate Code x	8	Character	The rate code for the resource.
X	Resource Value x	Variable	Number	Resource usage value such as CPU time, Input/Outputs, megabytes used, lines printed, transactions processed, etc.

CIMS External Transaction File

Although the CIMS External Transaction file is supported, CIMS Lab recommends that you use the CSR or CSR+ file for input into CIMS Server (see *CIMS Server Resource (CSR) File* on page B-2). These files are more flexible and efficient than the CIMS External Transaction record.

The CIMS External Transaction file contains CIMS External Transaction records. These records are comma-delimited.

The following table describes the fields in the CIMS External Transaction record.

Pos.	Field Name	Length	Type	Description
1	TRANS	5	Character	Record header that identifies the record as an External Transaction record.
2	Rate Code	8	Character	The rate code for the resource.
3	Start Date of Usage	8	Number	Date in format YYYYMMDD.
4	End Date of Usage	8	Number	Date in format YYYYMMDD.
5	Resource Value	Variable	Number	Resource usage value such as CPU time, Input/Outputs, megabytes used, lines printed, transactions processed, etc.
6	Account Code	32	Character	The account code.
7	Audit Code	6	Character	Optional and not used in processing. This can be any code that helps to identify the record such as Employee Code, Service Code, etc.

CIMSAcct Detail File

This file is created by CIMSAcct and contains all the resource data processed by the CIMSAcct run. The CIMSAcct Detail file is basically the same as the CIMSBill Detail file (see page B-10), but without CPU normalization, proration, or include/exclude processing applied to the resources.

The following is the file layout for the CIMSAcct Detail file.

Field	Starting Position	Length	Description
DETAIL-REC-TYPE	1	3	Always '991'.
DETAIL-REC-ID	5	8	Identifies the type of record. For example: OS390DB2 - (OS/390 DB2 records)
DETAIL-EYE-CATCH	14	7	The version of the record.
DETAIL-LOAD-ID	22	10	The unique ID of the file that contained this detail record.
DETAIL-REC-NUMBER	33	10	The record number within the original detail file.
DETAIL-NUM-RECS	44	10	The number of records that were aggregated to make this one record. This field applies only to mainframe data.
DETAIL-SORT-ID	55	1	(Reserved)
DETAIL-SYSTEM-ID	57	32	The system ID of the source of the record.
DETAIL-WORK-ID	90	32	The work id where the record came from (could be subsystem name, could be Oracle instance name).
DETAIL-START-DATE	123	8	The start date of the record.
DETAIL-END-DATE	132	8	The end date of the record.
DETAIL-START-TIME	141	8	The start time of the record.
DETAIL-END-TIME	150	8	The end time of the record.
DETAIL-SHIFT	159	1	The shift code.
DETAIL-DOW	161	1	The day of week.
DETAIL-ACCOUNT-CODE	163	128	The account code.
DETAIL-AUDIT-CODE	292	8	The audit code.

Field	Starting Position	Length	Description
DETAIL-INCLEXCL-AREA	301	60	Include/exclude data range.
DETAIL-RES-NUMBER	362	2	Number of resources being tracked in the following fields.
DETAIL-RES-INFO	365	x	Occurs 1 to 100 times depending DETAIL-RES-NUMBER (see preceding).
DETAIL-RATE-CODE			The resources rate code.
DETAIL-RESOURCE-VAL			The resource value.
DETAIL-RESOURCE-SIGN			This field is blank if the resource is positive and '-' if the resource is negative.

CIMS Ident File

This file is created by CIMSAcct and contains all the identifiers (such as user ID, jobname, department code, server name, etc.) that are contained in the input records. These identifiers are used during account code conversion to create your target account code structure. **This is a simple, comma-delimited file.**

The following is the file layout for the CIMS Ident file.

Field	Description
UNIQUE LOAD ID	The unique ID for the load.
RECORD NUMBER	The record number.
IDENTIFIER NAME	The name of the identifier (e.g., Jobname).
IDENTIFIER VALUE	The value for the identifier (e.g., ACPSJEFU).

CIMSBill Detail File

This file is created by CIMSBill and is a key component of the drill down feature of CIMS Server Web Reporting.

The CIMSBill Detail file differs from the CIMSAcct Detail file in that the CIMSBill Detail file reflects any proration, CPU normalization, or include/exclude processing that was performed. The CIMSBill Detail file also includes accounting dates.

For CIMS Server 3.2 and later, the file version number for the CIMSBill Detail file is 200306. Version number 200106 is deprecated. The version number is in the `DETAIL-EYE-CATCH` field, starting position 14.

CIMSBill Detail File Version 200306 (3.2 and Later)

The following is the file layout for the CIMSBill Detail file for CIMS Server 3.2 and later.

Field	Starting Position	Length	Description
`DETAIL-REC-TYPE`	1	3	Always '991'.
`DETAIL-REC-ID`	5	8	Identifies the type of record. For example: `OS390DB2` - (OS/390 DB2 records)
`DETAIL-EYE-CATCH`	14	7	The version of the record.
`DETAIL-LOAD-ID`	22	10	The unique ID of the file that contained this detail record.
`DETAIL-REC-NUMBER`	33	10	The record number within the original detail file.
`DETAIL-NUM-RECS`	44	10	The number of records that were aggregated to make this one record. This field applies only to mainframe data.
`DETAIL-SORT-ID`	55	1	(Reserved)
`DETAIL-SYSTEM-ID`	57	32	The system ID of the source of the record.
`DETAIL-WORK-ID`	90	32	The work id where the record came from (could be subsystem name, could be oracle instance name).
`DETAIL-START-DATE`	123	8	The start date of the record.
`DETAIL-END-DATE`	132	8	The end date of the record.
`DETAIL-START-TIME`	141	8	The start time of the record.

Field	Starting Position	Length	Description
DETAIL-END-TIME	150	8	The end time of the record.
ACCOUNTING-START-DATE	159	8	The accounting period start date.
ACCOUNTING-END-DATE	168	8	The accounting period end date.
DETAIL-SHIFT	177	1	The shift code.
DETAIL-DOW	179	1	The day of week.
DETAIL-ACCOUNT-CODE	181	128	The account code.
DETAIL-AUDIT-CODE	310	8	The audit code.
DETAIL-INCLEXCL-AREA	319	60	Include/exclude data range.
DETAIL-RES-NUMBER	380	2	Number of resources being tracked in the following fields.
DETAIL-RES-INFO	383	x	Occurs 1 to 100 times depending detail-res-number (see above).
DETAIL-RATE-CODE			The resources rate code.
DETAIL-RESOURCE-VAL			The resource value.
DETAIL-RESOURCE-SIGN			This field is blank if the resource is positive and '-' if the resource is negative.

CIMSBill Detail File Version 200106 (3.1 and Earlier)

This file is deprecated as of CIMS Server 3.2, see *CIMSBill Detail File Version 200306 (3.2 and Later)* on page B-10.

Field	Starting Position	Length	Description
DETAIL-REC-TYPE	1	3	Always '991'.
DETAIL-REC-ID	5	8	Identifies the type of record. For example: OS390DB2 - (OS/390 DB2 records)
DETAIL-EYE-CATCH	14	7	The version of the record.
DETAIL-LOAD-ID	22	10	The unique ID of the file that contained this detail record.
DETAIL-REC-NUMBER	33	10	The record number within the original detail file.
DETAIL-NUM-RECS	44	10	The number of records that were aggregated to make this one record. This field applies only to mainframe data.
DETAIL-SORT-ID	55	1	(Reserved)
DETAIL-SYSTEM-ID	57	32	The system ID of the source of the record.
DETAIL-WORK-ID	90	32	The work ID where the record came from (could be subsystem name, could be oracle instance name).
DETAIL-START-DATE	123	8	The start date of the record.
DETAIL-END-DATE	132	8	The end date of the record.
DETAIL-START-TIME	141	8	The start time of the record.
DETAIL-END-TIME	150	8	The end time of the record.
DETAIL-SHIFT	159	1	The shift code.
DETAIL-DOW	161	1	The day of week.
DETAIL-ACCOUNT-CODE	163	128	The account code.
DETAIL-AUDIT-CODE	292	8	The audit code.
DETAIL-INCLEXCL-AREA	301	60	Include/exclude data range.

Field	Starting Position	Length	Description
DETAIL-RES-NUMBER	362	2	Number of resources being tracked in the following fields.
DETAIL-RES-INFO	365	x	Occurs 1 to 100 times depending detail-res-number (see preceding).
DETAIL-RATE-CODE			The resources rate code.
DETAIL-RESOURCE-VAL			The resource value.
DETAIL-RESOURCE-SIGN			This field is blank if the resource is positive and "-" if the resource is negative.

CIMS Summary File

This file is created by CIMSBill and provides resource usage and cost data used for Web reports or for input to other financial or resource accounting systems.

For CIMS Server 3.2 and later, the file version number for the CIMS Summary file is 200306. Version number 200106 is deprecated. The version number is in the `Release ID` field, starting position 262.

Summary File Version 200306 (3.2 and Later)

The following is the file layout for the CIMS Summary file for CIMS Server 3.2 and later.

Field	Start Position	Length	Type
"SUMMARY"	1	8	Character
Version	9	3	Numeric
Reserved	12	3	Numeric
Reserved	15	3	Numeric
Reserved	18	3	Numeric
AccountCode	21	128	Character
RateTable	149	8	Character
SourceSystem	157	1	Character
RateCode	158	8	Character
ShiftCode	166	1	Numeric
AccountingFromDate	167	8	Numeric
AccountingToDate	175	8	Numeric
BillFlag1	183	1	Character
BillFlag2	184	1	Character
BillFlag3	185	1	Character
BillFlag4	186	1	Character
BillFlag5	187	1	Character
BillFlag6	188	1	Character
BillFlag7	189	1	Character
BillFlag8	190	1	Character

Field	Start Position	Length	Type
BillFlag9	191	1	Character
BillFlag10	192	1	Character
BillFlag11	193	1	Character
RateValue	194	18	Numeric
ResourceUnits	212	18	Numeric
MoneyValue	230	18	Numeric
BreakId	248	1	Character
Conv Factor	249	13	Numeric
Release ID	262	6	Numeric
Date-Century	268	2	Numeric
Date-Year	270	2	Numeric
Date-Month	272	2	Numeric
Date-Day	274	2	Numeric
Time-HH	276	2	Numeric
Time-MM	278	2	Numeric
Time-SS	280	2	Numeric
Period	282	2	Numeric
Year	284	4	Numeric
UsageStartDate	288	8	Numeric
UsageEndDate	296	8	Numeric

Summary File Version 200106 (3.1 and Earlier)

This file is deprecated as of CIMS Server 3.2, see *Summary File Version 200306 (3.2 and Later)* on page B-14.

Field	Start Position	Length	Type
"SUMMARY"	1	8	Character
Version	9	3	Numeric
Reserved	12	3	Numeric
Reserved	15	3	Numeric
Reserved	18	3	Numeric
AccountCode	21	128	Character
RateTable	149	8	Character
SourceSystem	157	1	Character
RateCode	158	8	Character
ShiftCode	166	1	Numeric
FromDate	167	8	Date
ToDate	175	8	Date
BillFlag1	183	1	Character
BillFlag2	184	1	Character
BillFlag3	185	1	Character
BillFlag4	186	1	Character
BillFlag5	187	1	Character
BillFlag6	188	1	Character
BillFlag7	189	1	Character
BillFlag8	190	1	Character
BillFlag9	191	1	Character
RateValue	192	18	Numeric
ResourceUnits	210	18	Numeric
MoneyValue	228	18	Numeric
BreakId	246	1	Character

Field	Start Position	Length	Type
Period	247	2	Character
Conv Factor	249	13	Numeric
Release ID	262	6	Numeric
Date-Century	268	2	Numeric
Date-Year	270	2	Numeric
Date-Month	272	2	Numeric
Date-Day	274	2	Numeric
Time-HH	276	2	Numeric
Time-MM	278	2	Numeric
Time-SS	280	2	Numeric

C

■
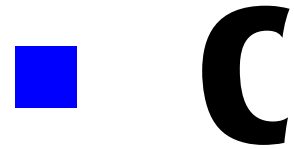
Scripts

This appendix describes of the scripts included in the CIMS Server installation. These scripts are located in the following locations (if you installed CIMS Server in the default location):

■ `C:\Program Files\CIMSLab\Scripts`

■ `...\Scripts\Batch Reporting`

■ `...\Scripts\Client Load`

■ `...\Scripts\Desktop`

Important! • Some scripts change or purge the data in your database. If you are unsure whether you should use a particular script, consult CIMS Lab.

If you make changes to a script, make sure that you rename the file. Otherwise, the file will be overwritten when you upgrade to a new version of CIMS Server.

Running Scripts

CIMS Lab recommends that you run the scripts described in this chapter using CIMS Job Runner and a job file as used for data collection process for CIMS Server. This architecture provides the following benefits:

■ It enables you to run the script automatically on scheduled basis (daily, monthly, etc.) using Windows Task Scheduler.

■ You can receive a log file via e-mail that provides the results of the report generation and distribution process. If a warning or failure occurs during processing, the file indicates at which point the warning/failure occurred. The log file can be sent to multiple recipients.

You can also use a `.bat` file to run a script on a scheduled basis. However, this method does not provide notification of the success or failure of the script run.

Note • **CIMS scripts use the** `StepRunWSF.dll` **file. If you installed CIMS Server in the default location, this DLL is in** `C:\Program Files\CIMSLab\Process Engine\JobLibrary.`

Running Scripts Using CIMS Job Runner

To run a script via CIMS Job Runner, you need to create a job file for the script and then run CIMS Job Runner to execute the job file as shown in the following steps.

Create a Job File for the Script

In the `JobFiles` folder, create an XML job file for the script using the structure shown in the following example job file for the `ExportRateToMainframe.wsf` script (see). (If you installed CIMS Server in the default location, the `JobFiles` folder is in `C:\Program Files\CIMSLab`.) For a complete description of the components of a job file, refer to the *CIMS Data Collectors for Microsoft Windows Installation and User Guide*.

```
<?xml version="1.0" encoding="utf-8"?>
<Jobs xmlns="http://www.cimslab.com/CIMSJobs.xsd">
    <Job    id="Export Rate"
            description="Export Rate"
            processPriorityClass="Low"
            smtpSendJobLog="true"
            smtpServer="mail.cimslab.com"
            smtpFrom="CIMSProcessResults@cimslab.com"
            smtpTo="CIMSProcessResults@cimslab.com"
            stopOnProcessFailure="false"
            joblogWriteToXMLFile="false"
            joblogShowStepOutput="true"
            joblogShowStepParameters="true"
            active="true">
```

```
        <Process   id="Export Rate"
                   description="Export Rate"
                   buildProcessFolder="false"
                   joblogShowStepOutput="true"
                   joblogShowStepParameters="true"
                   active="true">
      <Steps>
         <Step   id="Export Rate"
                 description="Export Rate"
                 type="Process"
                 programName="ExportRateToMainframe.wsf"
                 programType="wsf">
            <Parameters>
               <Parameter OutputFilename="C:\Rate Files\Rate.txt"/>
               <Parameter CreateRateGroups="true"/>
            </Parameters>
         </Step>
      </Steps>
   </Process>
  </Job>
</Jobs>
```

Note that the required parameter for this script, `OutputFilename`, is included in the XML. The `CreateRateGroups` parameter is optional.

Run CIMS Job Runner

Once you have created a job file, you can run CIMS Job Runner to execute the file using Windows command prompt or Windows Task Scheduler.

To run CIMS Job Runner from command prompt:

At the `C:\Program Files\CIMSLab\Process Engine>` prompt type `cimsjobrunner.exe` *jobfilename*`.xml` where *jobfilename*`.xml` is the name of the job file, and then press <Enter>. Or from any prompt, type `"C:\Program Files\CIMSLab\Process Engine\CIMSJobRunner.exe"` *jobfilename*`.xml`, and then press <Enter>.

Examples

`C:\Program Files\CIMSLab\Process Engine>CIMSJobRunner.exe` *jobfilename*`.xml`

Or

`C:\>"C:\Program Files\CIMSLab\Process Engine\CIMSJobRunner.exe"` *jobfilename*`.xml`

To run CIMS Job Runner from Task Schedular:

1 In Windows Control Panel, double-click **Scheduled Tasks**.

2 Double-click **Add Scheduled Task**.

3 The **Scheduled Task Wizard** appears. Click **Next**.

4 Click **Browse** to find the program `CIMSJobRunner.exe`, and then double-click the program. If you installed CIMS Server in the default location, this program is in `C:\Program Files\CIMSLab\Process Engine`.

5 Type a name for the task or accept the default and click the schedule for the task. Click **Next**.

6 Select the time and day to start the task, and then click **Next**.

7 Type the password for the user account under which you want the scheduled task to run. The password cannot be blank. Click **Next**.

8 Select the **Open advanced properties for this task when I click Finish** check box, and then click **Finish**.

9 In the **Task** tab, type following in the **Run** box where *jobfilename*.xml is the name of the job file that you want to run:

`"C:\Program Files\CIMSLab\Process Engine\CIMSJobRunner.exe"` *jobfilename*.xml

10 Click **OK**.

11 In the Set Account Information dialog box, type the password for the user account again, and then click **OK**.

The task appears in the Scheduled Task list. To execute `CIMSJobRunner.exe` immediately, right-click the task, and then click **Run**. For more information about Task Schedular, refer to the Microsoft documentation.

Running Scripts Using a Batch File

You can use a batch file to run a script and pass parameters. For example, CIMS Lab provides a default batch file `ExportRateToMainframe.bat` for the `ExportRateToMainframe.wsf` script. This file contains the following:

`cscript ExportRateToMainframe.wsf "c:\Program Files\CIMSLab\Scripts\Rate.txt" "true"`

The values in quotation marks are the parameter values for the `OutputFilename` and `GenerateRateGroups` parameters. You can modify these parameters as needed. Note that only the `OutputFilename` parameter is required for the `ExportRateToMainframe.wsf` script.

If a default batch file is not included for a script, you can copy and modify a similar file. If you are unsure as to what to include in the batch file, refer to the example that is provided in each script.

To run a batch file from command prompt:

1 Change the command prompt directory to the path that contains the `.bat` file that you want to run. For example, `C:\Program Files\CIMSLab\Scripts>`.

2 Type the name of the `.bat` file and then press <Enter>. For example, `C:\Program Files\CIMSLab\Scripts>ExportRateToMainframe.bat`.

To run a batch file from Task Scheduler:

1 In Windows Control Panel, double-click **Scheduled Tasks**.

2 Double-click **Add Scheduled Task**.

3 The **Scheduled Task Wizard** appears. Click **Next**.

4 Click **Browse** to find the `.bat` file that you want to run, and then double-click the file.

5 Type a name for the task or accept the default and click the schedule for the task. Click **Next**.

6 Select the time and day to start the task, and then click **Next**.

7 Type the password for the user account under which you want the scheduled task to run. The password cannot be blank. Click **Next**.

8 Click **Finish**.

The task appears in the Scheduled Task list. To execute the script immediately, right-click the task, and then click **Run**. For more information about Task Scheduler, refer to the Microsoft documentation.

General Scripts

The scripts described in this section are in `C:\Program Files\CIMSLab\Scripts` (if you installed CIMS Server in the default location) .

BuildCSRFromDB.wsf Script

The `BuildCSRFromDB.wsf` script extracts information from the CIMSIdent and CIMSDetail tables and creates an output file containing CIMS Server Resource (CSR) records for further processing (e.g., to perform account code conversion, proration, and other processing that requires a CSR file).

BuildCSRFromDB.wsf Script Parameters

The `BuildCSRFromDB.wsf` script uses the following parameters.

Parameter	Description/Values
`Start Date and End Date` (required)	These parameters specify the date range for the records that you want to select from the CIMSDetail table. Any records that have accounting start and end dates in this range are selected for processing.
	Valid values are:
	■ `preday` (previous day)
	■ `premon` (previous month)
	■ `rndate` (current day)
	■ `curmon` (current month)
	■ date in `yyyymmdd` format or a format valid for your operating system's regional settings
	If you use the `premon` or `curmon` keyword for the start date or end date, the first day of the month is used for the start date and the last day of the month is used for the end date.
`Output Filename` (required)	The full path and file name for the output CSR file.
`Rate Code` (optional)	The rate code or codes that you want to appear in the output CSR file records. If you set this parameter to `All` or do not include the parameter, all rate codes in the selected CIMSDetail table records are included.
`DataSourceID` (optional)	See *Data Source Parameters* on page C-44.

Table C-1 • BuildCSRFromDB Script Parameters

CIMSLib.wsf Script

For information about this script, refer to the *CIMS Data Collectors for Microsoft Windows Installation and User Guide.*

CIMSUtils.wsc Script

For information about this script, refer to the *CIMS Data Collectors for Microsoft Windows Installation and User Guide.*

ClientPropagate.wsf Script

The `ClientPropagate.wsf` script propagates the account name and contact information of top level account codes to lower level account codes that *do not have account names.* This script will not overwrite existing names for lower level account codes that have names or add contacts to those levels.

For example, the account code AABBBBCCC contains three levels: the two-digit company code AA, the 6-digit division code AABBBB, and the 9-digit department code AABBBBCCC. If account name for the account code AA is ABC Headquarters, the name ABC Headquarters and any contact information will be assigned to account codes AABBBB and AABBBBCCC.

ClientPropagate.wsf Script Parameters

The `ClientPropagate.wsf` script uses the following parameters.

Parameter	Description/Values
`TopLevelLength (required)`	The length of the top level account code. The top level account code must have a valid account name.
`DataSourceID, ODBCUserID, and ODBCPassword (optional)`	See *Data Source Parameters* on page C-44.

Table C-2 • ClientPropagate Script Parameters

ConvertSummaryDailyToMonthly.wsf Script

Important! • **This script consolidates daily CIMS Summary** records **into a monthly record. Consult CIMS Lab before using this script.**

The `ConvertSummaryDailyToMonthly.wsf` script consolidates the daily data in your CIMSSummary table so that data is stored at a monthly level. (For more information about the CIMSSummary table, see *Chapter 6, Processing Data* and *CIMSSummary Table* on page A-40). This script calls the `CIMSSp_ConvertSummaryDailyToMonthly` stored procedure, which is built in the CIMS Server database. This stored procedure aggregates the daily summary records and produces a monthly summary record with `Monthly Aggregation` listed as the source file name in the CIMSLoadTracking table.

This consolidation process minimizes storage space used (there is typically a 90 percent or greater reduction in Summary records) and decreases the time required to generate monthly reports. A drawback to this consolidation is that you cannot run costed daily reports against the CIMSSummary table.

Note • **The** `ConvertSummaryDailyToMonthly.wsf` **script is intended primarily to improve reporting performance. To drastically reduce storage space used by the database, you can run the** `PurgeLoads.wsf` **script (see** *PurgeLoads.wsf Script* **on page C-19).**

Before the monthly CIMS Summary aggregated data is created, daily data is copied from the CIMSSummary table to the CIMSSummaryDaily table for archival purposes. You can then run daily summary reports against the CIMSSummaryDaily table.

ConvertSummaryDailyToMonthly.wsf Script Parameters

The `ConvertSummaryDailyToMonthly.wsf` script uses the following parameters.

Parameter	Description/Values
`StartDate and EndDate(required)`	These parameters specify the date range for the records that you want to consolidate from the CIMSSummary table. Any records that have accounting start and end dates in this range are consolidated. Typically, the start date is the first day of the month and the end date is the last day of the month.
	Valid values are:
	■ `preday` (previous day)
	■ `premon` (previous month)
	■ `rndate` (current day)
	■ `curmon` (current month)
	■ date in `yyyymmdd` format or a format valid for your operating system's regional settings
	If you use the `premon` or `curmon` keyword for the start date or end date, the first day of the month is used for the start date and the last day of the month is used for the end date.
`DataSourceID, ODBCUserID, and ODBCPassword (optional)`	See *Data Source Parameters* on page C-44.
`RemoveSummaryDaily (optional)`	If this parameter is set to `true`, the daily records that are archived in the CIMSSummaryDaily table for this date range are purged.
	If this parameter is set to `false` or is not provided, the records are maintained in the table.

Table C-3 • ConvertSummaryDailyToMonthly Script Parameters

ConvertSummaryDailyToMonthly.wsf Script Considerations

■ If an error occurs while processing the `ConvertSummaryDailyToMonthly.wsf` script, the script will back out all database changes. You can then correct the error and run the script again.

■ You cannot run the script with an `EndDate` parameter equal to or greater than the current day.

■ CIMS Lab recommends that you run the script only once for a particular date range. Although the script can be run multiple times against the same date range, the CIMSSummaryDaily table is updated only once. If there is new data in a daily CIMSSummary table and you run the script a second time, the script will fail and the update will be backed out of the database because the data in the CIMSSummaryDaily table does not match the data in the CIMSSummary table. In this situation, you should run the script with the `RemoveSummaryDaily` parameter set to `true` and then rerun the script with this parameter set to `false`. For more information, contact CIMS Lab.

■ The script could run for more than an hour per month. A status does not appear while the script is running.

CSRAggregator.wsf Script

Although CIMS Data Collectors automatically aggregate the records in the output CIMS Server Resource (CSR) and CIMS Server Resource Plus (CSR+) file records, you might want to use the `CSRAggregator.wsf` script to further aggregate the records in the following situations:

■ You want to remove an identifier or identifiers from the aggregated records. For example, you might want to remove an identifier such as `Time` from the records to reduce the size of the CSR or CSR+ file.

■ You want to remove a rate code or codes from the aggregated records. For example, the records contain a rate code that is not contained in the CIMSRate table and you do not want to receive the CIMSBill message "One or more rate codes were missing".

■ You want to aggregate the records in a CSR or CSR+ file that was created by a source other than CIMS Data Collectors. In this situation, all records that contain the same identifier values are aggregated into one record that contains sum total resource values for the rate codes within these records.

`CSRAggregator.wsf` script can read CSR files that have multiple record formats. That is, records that have different identifier names and rate codes.

CSRAggregator.wsf Script Parameters

The `CSRAggregator.wsf` script uses the following parameters.

Parameter	Description/Values
`InputFilename (required)`	The full path and file name of the input CSR or CSR+ file.
`OutputFilename (required)`	The full path and file name of the aggregated CSR or CSR+ file.
`ExceptionFilename (optional)`	For future use.
`IdentifiersToRemove (optional)`	The identifier name or names that you want to remove. If you want to remove multiple identifiers, separate the identifier names by commas (e.g., `time,feed,server`). The identifier names can be in any order. If a record contains any of the specified identifiers, the identifier or identifiers are removed.

Table C-4 • CSRAggregator Script Parameters

Parameter	Description/Values
`ResourcesToRemove` (optional)	The rate code or codes that you want to remove. If you want to remove multiple rate codes, separate the codes by commas (e.g., `Z018,Z000,Z003`). The rate codes can be in any order. If a record contains any of the specified rate codes, the rate code or rate codes are removed.
`DataSourceID, ODBCUserID,` and `ODBCPassword` (optional)	See *Data Source Parameters* on page C-44.

Table C-4 • CSRAggregator Script Parameters

DropIdentFromDB.wsf Script

The `DropIdentFromDB.wsf` script deletes a specified identifier from the CIMSDetailIdent and CIMSIdent tables. You should use the `ListUnusedIdentifiers.wsf` script (see page C-15) to determine which identifiers are obsolete before using this script. You need to run this script for each identifier that you want to delete

WARNING • Because this script irreversibly changes the database, CIMS Lab highly recommends that you back up the database before you run the script.

DropIdentFromDB.wsf Script Parameters

The `DropIdentFromDB.wsf` script uses the following parameters.

Parameter	Description/Values
`IdentifierName (required)`	The name of the identifier that you want to delete.
`DataSourceID (optional)`	See *Data Source Parameters* on page C-44.

Table C-5 • DropIdentFromDB Script Parameters

DropIdentBeforeLoad.wsf Script

The `DropIdentBeforeLoad.wsf` script deletes a specified identifier from the `Ident.txt` file. Consult CIMS Lab before using this script.

ExportClientToMainframe.wsf Script

The `ExportClientToMainframe.wsf` script creates a Client file that you can load into CIMS Mainframe Data Collector and Chargeback System.

ExportClientToMainframe.wsf Script Parameters

The `ExportClientToMainframe.wsf` script uses the following parameters.

Parameter	Description/Values
`OutputFilename (required)`	The full path and file name of the output Client file.
`DataSourceID, ODBCUserID, and ODBCPassword (optional)`	See *Data Source Parameters* on page C-44.

Table C-6 • ExportClientToMainframe Script Parameters

ExportRateToMainframe.wsf Script

The `ExportRateToMainframe.wsf` script creates a rate file that you can load into CIMS Mainframe Data Collector and Chargeback System.

ExportRateToMainframe.wsf Script Parameters

The `ExportRateToMainframe.wsf` script uses the following parameters.

Parameter	Description/Values
`OutputFilename (required)`	The full path and file name of the output rate file.
`CreateRateGroups (optional)`	If set to `true`, rate groups will be created in the output rate file. Rate groups are required if you plan to produce reports on the CIMS Mainframe system.
	Warning: The rate index in the output rate file will be renumbered if this is set to `true`.
`DataSourceID, ODBCUserID, and ODBCPassword (optional)`	See *Data Source Parameters* on page C-44.

Table C-7 • ExportRateToMainframe Script Parameters

FTP.wsc and FTPSample.wsf Scripts

The `FTP.wsc` and `FTPSample.wsf` scripts assist in performing FTP transfers from a script.

ListUnusedIdentifiers.wsf

The `ListUnusedIdentifiers.wsf` script creates a list of identifiers in the CIMSDetailIdent table that are unused as of a specified date. You can use this script to determine identifiers that might be obsolete and then delete the obsolete identifiers using the `DropIdentFromDB.wsf` script (see page C-13).

The criteria for including an identifier in the list is based on the date entered for the `DateSelection` parameter as follows:

■ If an identifier is contained in the CIMSDetailIdent table with usage end dates before *and* after the `DateSelection` date, the identifier is not included in the list.

■ If an identifier is contained in the CIMSDetailIdent table with usage end dates before the `DateSelection` date only, the identifier is included in the list.

ListUnusedIdentifiers.wsf Script Parameters

The `ListUnusedIdentifiers.wsf` script uses the following parameters.

Parameter	Description/Values
`OutputFilename (required)`	The full path and file name of the output list file.
`DateSelection (required)`	The date that you want to use to select identifiers.
`DataSourceID (optional)`	See *Data Source Parameters* on page C-44.

Table C-8 • ListUnusedIdentifiers Script Parameters

OracleLogonTrigger.bat Script

The `OracleLogonTrigger.bat` script enables you to install a trigger (`logon_schema`) that changes a user's default schema to the schema for the CIMS Server database at log on. When the user logs on to the database, the schema defined in the trigger rather than the default schema is used.

Note • **You must also define the user and the schema in the Configure CIMS Data Source Dialog box as described in** *Configuring the Data Source for an Oracle Database* **beginning on** page 2-44**.**

The `OracleLogonTrigger.bat` script presents the following command line options that enable you to create, remove, and test the `logon_schema` trigger. Following each option is a description of the parameters that you are prompted to enter for that option.

Option/Parameters	Description
`1> Create Oracle logon trigger`	Calls the `logon_trigger_create.sql` script to install the trigger for a specified user.
`Enter Oracle Database`	If this prompt appears, type the TNS service name for the database.
`Enter User ID for `*database*[a]	If this prompt appears, type a user ID for the database that has administrative privileges required to add or remove the trigger.
`Password for `*user ID*[b]	If this prompt appears, type the password for the user ID.
`Enter user to modify`[b]	Type the user that you want to create the trigger for.
`New Schema for `*user*	Type the new schema that you want to assign to the user.
`2> Remove Oracle logon trigger`	Calls the `logon_trigger_drop.sql` script to remove the trigger for a specified user.
`Enter Oracle Database, User ID, and Password (if prompted for)`	See parameter descriptions for `Create Oracle logon trigger`.
`Enter user to remove trigger from`	Type the user that you want to remove the trigger from.

Table C-9 • OracleLogonTrigger Script Options and Parameters

Option/Parameters	Description
3> Test Oracle logon trigger	Calls the `logon_trigger_test.sql` script to confirm whether the trigger has been created for a user. If the trigger has been created, the user name and schema that were defined for the schema are returned. If the trigger has been removed or was not created, the user name and the user's original schema are returned.
Enter Oracle Database	See the parameter description for `Create Oracle logon trigger`.
Enter User	Type the name for the user that you want to test the trigger for.
Enter Password	Enter the user's password.
4> Exit	Exits the `OracleLogonTrigger.bat` script.

Table C-9 • OracleLogonTrigger Script Options and Parameters (Continued)

a. This parameter is required to connect to the database. Once you have entered this parameter, you are not prompted for the database again during the script session.

b. The User ID and Password parameters are required the first time that you create or remove a trigger during a script session (whichever you perform first). Once you have entered these parameters, you are not prompted for them again during the script session.

Running the PLSQL Scripts Manually

You can execute any of the PLSQL scripts manually by typing the following at the appropriate command prompt (e.g., `C:\Program Files\CIMSLab\Scripts>`).

To create a trigger:

`sqlplus <user ID>/<password>@<database> @logon_trigger_create.sql <user> <schema>`

`user ID`=user ID used to install the trigger

`password`=password for the user ID

`database`=TNS service name for the database

`user`=user you want to create the trigger for

`schema`=new schema for the user

To remove a trigger:

```
sqlplus <user ID>/<password>@<database> @logon_trigger_drop.sql <user>
```

Where:

`password`=user ID used to remove the trigger

`password`=password for the user ID

`database`=TNS service name for the database

`user`=user you want to remove the trigger from

To test a trigger:

```
sqlplus <user>/<password>@<database> @logon_trigger_test.sql
```

Where:

`user`=user you want to test the trigger for

`password`=user's password

`database`=TNS service name for the database

ProRate.wsf Script

The `ProRate.wsf` script is provided for backward compatibility. If you are using CIMS Server 4.0 or later, you should use the CIMSPrat program as described in *CIMS Data Collectors for Microsoft Windows Installation and User Guide*.

For assistance in converting your `ProRate.wsf` script to this new functionality, contact CIMS Lab.

PurgeLoads.wsf Script

Important! • **This script permanently removes data from the CIMSSummary, CIMSDetail,CIMSDetailIdent, and CIMSResourceUtilization tables. Consult CIMS Lab before using this script.**

The CIMSSummary, CIMSDetail, CIMSDetailIdent, and CIMSResourceUtilization tables can accumulate a large amount of data. To control the size of these tables, you can use the `PurgeLoads.wsf` script to delete loads that have accounting start and end dates within a specified date range. *All data loaded to the database within this date range is removed permanently, not archived.*

PurgeLoads.wsf Script Parameters

The `PurgeLoads.wsf` script uses the following parameters.

Parameter	Description/Values
`StartDate` and `EndDate` (required)	These parameters specify the date range for the loads that you want to delete from the tables. Any loads that have accounting start and end dates in this range are deleted.
	Valid values are:
	■ `preday` (previous day)
	■ `premon` (previous month)
	■ `rndate` (current day)
	■ `curmon` (current month)
	■ date in `yyyymmdd` format or a format valid for your operating system's regional settings
	If you use the `premon` or `curmon` keyword for the start date or end date, the first day of the month is used for the start date and the last day of the month is used for the end date.
`PurgeSummary`, `PurgeBillDetail`, `PurgeIdent`, and/or `PurgeAcctDetail` (required)	These parameters specify whether the CIMSSummary, CIMSDetail, CIMSDetailIdent, and/or CIMSResourceUtilization tables are `purged`. If set to `true`, the table is purged. If set to `false` the table is not purged.

Table C-10 • PurgeLoads Script Parameters

Parameter	Description/Values
SkipConfirmation (optional)	If this parameter is set to `false` or is not provided, a message appears and confirmation is required before the script is run. If this parameter is set to `true`, the confirmation message does not appear.
DataSourceID (optional)	See *Data Source Parameters* on page C-44.

Table C-10 • PurgeLoads Script Parameters (Continued)

Rebill.wsf and ResourceConversion.wsf Scripts

Important! • **The following scripts change the data in the CIMS Server database. You should back up the database before running these scripts.**

You can recalculate rate codes that you previously processed and loaded into the CIMS Server database using a different rate value and/or resource conversion factor without reprocessing the data. That is, if you change the rate value and/or resource conversion factor for a rate code in the CIMSRate table, you can update the rate value and conversion factor and recalculate the money value directly in the CIMSSummary table. (For more information about the rate code value and resource conversion factor, see *Working With Rates* on page 3-9.)

CIMS Lab provides the following scripts to perform this process:

■ `Rebill.wsf`. This script updates the rate code value and recalculates the money value for a rate code or codes in the CIMSSummary table. If you have not changed the resource conversion factor for a rate code or codes, you do not need to run the `ResourceConversion.wsf` script.

■ `ResourceConversion.wsf`. This script updates the rate code resource conversion factor in the CIMSSummary table. You need to run the `Rebill.wsf` script after running this script to recalculate the money value for the rate code.

Important! • **Consult CIMS Lab before using the** `ResourceConversion.wsf` **script. If you run this script more than once for the same rate code or codes, the resource units that are converted are the units that were converted previously, not the original units. For example, if the conversion factor for a rate code is** `Divide by 60` **and the resource units are 120, the resource unit value after calculating once is 2, after calculating twice it is .033 (2÷60), etc.**

This scenario is not applicable to the `Rebill.wsf` **script—you can run this script multiple times for the same rate code or codes.**

Rebill.wsf and ResourceConversion.wsf Script Parameters

The `Rebill.wsf` and `ResourceConversion.wsf` scripts use the following parameters.

Rebill.wsf Parameters

Parameter	Description/Values
`StartDate` and `EndDate` (required)	These parameters specify the date range for the records that contain the rate code or codes that you want to rebill. Typically, the start date is the first day of the month and the end date is the last day of the month.
	Valid values are:
	■ `preday` (previous day)
	■ `premon` (previous month)
	■ `rndate` (current day)
	■ `curmon` (current month)
	■ date in `yyyymmdd` format
	If you use the `premon` or `curmon` keyword for the start date or end date, the first day of the month is used for the start date and the last day of the month is used for the end date.
`RateCode` (optional)	The rate code or codes that you want to recalculate. If you want to recalculate all rate codes, set the parameter to `All` or do not include the parameter.
`RateTable` (optional)	The rate table that contains the rate code or codes that you want to recalculate.
	If this parameter is set to `Client` or is not provided, the CIMSClient table is read to determine the rate table for each client in the CIMSSummary table.
	If you provide a specific rate table name, for example `STANDARD`, that table is used for all clients in the CIMSSummary table.
`DataSourceID`, `ODBCUserID`, and `ODBCPassword` (optional)	See *Data Source Parameters* on page C-44.

Table C-11 • Rebill.wsf Script Parameters

ResourceConversion.wsf Parameters

Parameter	Description/Values
StartDate and EndDate (required)	See the description for *Rebill.wsf Parameters* on page C-22.
RateCode (optional)	The rate code or codes that you want to change the resource conversion factor for.
	If you want to change the conversion factor for all rate codes, set the parameter to All, leave the parameter blank, or do not include the parameter.
	CIMS Lab recommends that you do not use All as a parameter because *all* resources for rate codes with an specified resource conversion factor will be further factored by that value. That is, if a resource has already been factored, the resulting resource number, not the original resource number, will be factored again.
DecimalPositions (optional)	The number of decimal positions that you want to appear in the resource units that will be written out by the conversion. For example, if you want two decimal positions to appear in the converted resource units, set this parameter to 2.
	If you do not include this parameter, the default is four decimal positions.
DataSourceID, ODBCUserID, and ODBCPassword (optional)	See *Data Source Parameters* on page C-44.

Table C-12 • ResourceConversion Script Parameters

SampleBulkUserLoad.wsf Script

The `SampleBulkUserLoad.wsf` script loads users into the CIMSUser table. A user group with the same name as the user ID is created in the CIMSUserGroup table.

Note • **You should use this script to load users to a test database before loading to a production database.**

To use this script you can:

■ Customize this script to automatically gather and load the user information from another source such as a database. Please contact CIMS Lab for assistance in customizing this script.

Or

■ Create comma-delimited client access and report access files for the users that provide the following information. The information must be provided in the order shown.

Client access file format

`user ID,domain user ID,domain name,full name,client account code`

Report acces file format

`user ID,domain user ID,domain name,full name,report file name`

If you want to assign specific client account codes or reports to a user, include a separate line for each client/report. If you want to assign all client account codes and reports to the user, leave the client account code and report file name fields blank.

Do not include the extension for the report file name (e.g., `.rpt`, `.rdl`, `.xml`).

SampleBulkUserLoad.wsf Script Parameters

The `SampleBulkUserLoad.wsf` script uses the following parameters.

Parameter	Description/Values
`InputClientAccessFileName` (required)	The full path and file name for the input file containing the client or clients for the user group.
`InputReportAccessFileName` (required)	The full path and file name for the input file containing the report or reports for the user group.
`AccountCodeStructureName` (optional)	The account code structure to assign to the user if other than the Standard structure.
`DataSourceID (optional)`	See *Data Source Parameters* on page C-44.

Table C-13 • SampleBulkUserLoad Script Parameters

SampleExportSummary.wsf Script

This script creates a file containing the data from the CIMSSummary table in a general format. Because this script requires modification for your organization to specify the output file format, the script must be renamed `ExportSummary.wsf` (or another name). Renaming the script prevents it from being overwritten when you upgrade to a new version of CIMS Server.

SampleExportSummary.wsf Script Parameters

The `SampleExportSummary.wsf` script uses the following parameters.

Parameter	Description/Values
`StartDate and EndDate` (required)	These parameters specify the date range for the records that you want to export from the CIMSSummary table. Any records that have accounting start and end dates in this range are exported.
	Valid values are:
	■ `preday` (previous day)
	■ `premon` (previous month)
	■ `rndate` (current day)
	■ `curmon` (current month)
	■ date in `yyyymmdd` format or a format valid for your operating system's regional settings
	If you use the `premon` or `curmon` keyword for the start date or end date, the first day of the month is used for the start date and the last day of the month is used for the end date.
`OutputFilename` (required)	The full path and file name for the output summary file.
`DataSourceID` (optional)	The CIMS Data Source ID for the CIMS Server database. See *Data Source Parameters* on page C-44.

Table C-14 • SampleExportSummary Script Parameters

SampleSQLMaintenance.bat Script

Note • **This script supports SQL Server and MSDE only.**

The purpose of the `SampleSQLMaintenance.bat` script is to ensure that your CIMS Server database(s) are backed up and maintained on a regular schedule. This script is used to set up a database backup and maintenance routine if you do not have another method in place (see *Managing CIMS Data Sources* and *Setting the Database Recovery Model* on page 5-5).

This script performs all standard SQL Server maintenance tasks, including:

■ Ensures that the database is set to a Simple recovery model.

■ Backs up the database.

■ Deletes backups that are over two weeks old.

■ Checks the database for errors with a CheckDB command and a check of the indexes and catalog.

■ Performs an index rebuild.

■ Updates the database statistics.

■ Removes unused space in the database with a ShrinkDatabase command.

■ Writes a log file called `SQLMaintyyyymmddhhmm.txt` that provides feedback from the `SampleSQLMaintenance.bat` script and distributes the file via e-mail.

Important Notes About the SampleSQLMaint.bat Script

■ Because this script requires modification for your organization, the script must be renamed `SQLMaintenance.bat` (or another name) so that the file is not overwritten when you upgrade to a new version of CIMS Server.

■ By default, all users will be disconnected from the database while this script is running. You can change this default if necessary (see the `Set DB to Single User` step in the script).

■ Depending on the size of your database, this script could run for minutes or hours. Typically, a 5 GB database will run for less than 1 hour.

■ By default, the `UserID` and `Password` parameters are not used. The script assumes that you are using Windows authentication for the database and any values set for these parameters are ignored. It is preferable to use Windows authentication for the database so that the ID and password are not kept in the script.

If a user ID and password is required for the database:

  • Remove the `-E` from every line in which it appears.

  • Add `-U` followed by `%userID%` and `-P` followed by `%password%` to these lines. For example, `-U %admin% -P %global%`.

■ For MSDE users:

- The steps `Setting Recovery Model to Simple`, `Set DB to Single User`, and `Set Database back to Multi User` return a warning message. These messages to not require any action.

Setting Up the SampleSQLMaint.bat Script

You need to modify the `SampleSQLMaint.bat` script as follows:

1 Set the correct values for the `SQLServerInstallLocation`, `BackupDirectory`, `Database`, `Server`, `SMTPServer`, and `ToEmailAddress` parameters.

The `SQLServerInstallLocation` parameter defines the path for the SQL Server installation.

The `BackupDirectory` parameter defines the path for the database backup. A folder with the same name as the database is automatically created using this path. The database backup is placed in this folder.

The `Database` parameter defines the database name.

The `Server` parameter defines the name of the server that contains the database.

The `SMTPServer` parameter defines the name of the SMTP mail server that will be used to send the `SQLMaintyyyymmddhhmm.txt` log file.

The `ToEmailAddress` parameter defines the e-mail address that the log file is sent to.

2 Follow the remarks in the script to set the values required for the remaining lines in the script.

3 Save the modified script with the name `SQLMaint.bat` or choose another name.

4 Use Windows Task Schedular to run this script, preferably on a weekly basis on the weekend. To use Task Schedular, see *To run a batch file from Task Scheduler:* on page C-6.

5 If IIS is run from a server other than the server running this script, restart IIS.

SaveDBSQLServer.wsf

Note • **This script supports SQL Server only.**

The `SaveDBSQLServer.wsf` enables you to easily send your database to CIMS Lab for troubleshooting purposes. This script automates the process of detaching the database, creating a zip file containing the `.MDF` and `.LDF` files, and then reattaching the database.

Note • **You cannot use this script to detach the** `master` **database.**

SaveDBSQLServer.wsf Script Parameters

The `SaveDBSQLServer.wsf` script uses the following parameters.

Parameter	Description/Values
`ServerName (required)`	The name of the server that contains the database.
`DatabaseName (required)`	The name of the database.
`ArchiveFilename (required)`	The full path and file name for the output zip file that contains the `.MDF` and `.LDF` files.
`ODBCUserID and ODBCPassword (optional)`	The SQL Server user ID and password for the database (if required).

Table C-15 • SaveDBSQLServer Script Parameters

Schedule.wsf

The `Schedule.wsf` script runs a script or program daily at a specified time.

Table.wsf Script

WARNING • This script loads tables in the CIMS Server database. Extreme caution should be used when loading a table. Deleting or overwriting data can cause unexpected results. Be sure a backup exists before using this script.

The `Table.wsf` script loads the CIMSClient and/or CIMSRate tables from comma-delimited files. This script performs the same function as the Load Selected Tables option in the Chargeback Tables dialog box (see *Loading and Exporting Client and Rate Tables* on page 5-13).

The files must have the same name as the tables (i.e., `CIMSClient.txt` and `CIMSRate.txt`) and must be in the same comma-delimited format as a file that is exported from the table (including the column headers in the first record of the file).

For examples of the required formats for the files, you can export the CIMSClient and CIMSRate tables to files using the steps on page 5-13. For a description of the fields in the files, see *CIMSClient Table* on page A-15 and *CIMSRate Table* on page A-29.

Table.wsf Script Parameters

The `Table.wsf` script uses the following parameters.

Parameter	Description/Values
`CSVFilesFolderPath` (required)	The full path for the folder that contains the `CIMSClient.txt` and `CIMSRate.txt` files.
`DataSourceID` (optional)	See *Data Source Parameters* on page C-44.

Table C-16 • Table Script Parameters

ZeroCost.wsf Script

The `ZeroCost.wsf` script recalculates the money values in the CIMSSummary table for a rate code among all accounts using a specified amount. For example, if you specify a zero cost amount of $100,000 for the rate code DISKSIZE, the resource usage for this rate code for all accounts will be factored to this amount and a new CSR file is written.

ZeroCost.wsf Script Parameters

The `ZeroCost.wsf` script uses the following parameters.

Parameter	Description/Values
`OutputFilename (required)`	The full path and file name for the output CSR file.
`StartDate and EndDate (required)`	These parameters specify the date range for the records in the CIMSSummary table that contain the rate code that you want to recalculate.
	Valid values are:
	■ `preday` (previous day)
	■ `premon` (previous month)
	■ `rndate` (current day)
	■ `curmon` (current month)
	■ date in `yyyymmdd` format
	If you use the `premon` or `curmon` keyword for the start date or end date, the first day of the month is used for the start date and the last day of the month is used for the end date.
`ZeroCostAmount`	The amount by which you want to factor the money values for the rate codes. You can enter the amount with or without decimals, but do not include commas or currency symbols.
`AdjustmentRateCode`	The rate code that you want to apply the zero cost value to.
`DataSourceID, ODBCUserID, and ODBCPassword (optional)`	The CIMS Data Source ID for the CIMS Server database. See *Data Source Parameters* on page C-44.

Table C-17 • Table Script Parameters

Batch Reporting Scripts

CIMS Lab provides the following scripts for creating and distributing batch reports. These scripts are described in detail in the following sections. If you installed CIMS Server in the default location, these scripts are in `C:\Program Files\CIMSLab\ Scripts\Batch Reporting`.

■ `ReportDistribution.wsf`. This script automates the process of creating and distributing published reports. This script calls the `BatchReport.wsf` to create the reports and the `EmailDistribution.wsf` script to distribute the reports via a link or attachment in an e-mail message.

■ `BatchReport.wsf`. This script automates the process of creating published reports and directs the reports to the proper location in the `Published` folder. You can run this script independently of the `ReportDistribution.wsf` script; however, `BatchReport.wsf` does not call `EmailDisrtibution.wsf` to provide e-mail report distribution.

In addition, the `ReportDistribution.wsf` script automatically processes the definitions in a specified report cycle and creates the report parameters file required by the `BatchReport.wsf` script. If you do not use the `ReportDistribution.wsf` script, you need to create the parameters file manually or use the optional `AllAccts.wsf` script to create the file.

■ `AllAccts.wsf`. This script produces files that contain the report parameters used by the `BatchReport.wsf` script. If you are using the `ReportDistribution.wsf` script, this script is not applicable. If you are running the `BatchReport.wsf` script directly, this script is optional—you can create the report parameter files without using this script.

■ `EmailDistribution.wsf`. This script automates the process of distributing reports via e-mail.

■ **ReportParms.wsf.** This script is for use by CIMS Lab.

If you run these scripts on a computer other than the computer that contains the CIMS reporting folders (`Custom`, `Standard`, and `Published`), you need to do the following:

1 Create a share for each of the folders. Set the folder share permission to `Full Control` for the Windows user account or accounts that are publishing the report.

2 Define the path for each folder as a UNC path in the Configuration dialog box (see *Reporting Settings* on page 3-45).

3 Restart IIS on the Web server (see page 8-5).

4 Run a report on the CIMS Server Web Reporting Web site to make sure that the report paths are set up correctly.

ReportDistribution.wsf Script

The `ReportDistribution.wsf` script publishes all reports defined for a report cycle and distributes the resulting reports as a link or attachment in an e-mail message.

The `ReportDistribution.wsf` script uses the following parameters.

Parameter	Description/Values
`Cycle` (required)	The name of the report cycle that you want to run.
`LogFolder` (required)	This parameter defines the location of the following output files produced by this script: ■ A file that logs the batch reporting process. ■ A report parameters file used by the `BatchReport.wsf` script. The log file is automatically assigned the file name *YYYYMMDDHHMM*`.txt` and the report parameters file is assigned the file name `Input`*YYYYMMDDHHMM*`.txt`.
`DataSourceID` (optional)	The CIMS Data Source ID for the database that you want to use for reporting. See *Data Source Parameters* on page C-44.
`Email` (optional)	This parameter is helpful in testing or other situations in which you want to publish reports but do not want to distribute the reports via e-mail or you want to send an e-mail for reports that have already been published. Valid values are: ■ `Trial`. An e-mail message is not sent, but reports are published. ■ `Only`. An e-mail is sent, but reports are not published. The e-mail contains a link to the previously published report.
`Silent` (optional)	If this parameter is set to `Y`, no messages appear when the `ReportDistribution.wsf` script is run. If this parameter is set to `N` or is not provided, interactive messages appear and you must click **OK** to continue.
`Debug` (optional)	If this parameter is set to `Y`, debugging information appears in the log file. If this parameter is set to `N` or is not provided, this information does not appear in the log file.

Table C-18 • ReportDistribution Script Parameters

BatchReport.wsf Script

The `BatchReport.wsf` script generates published reports and places the reports in the proper location in the `Published` folder. This script is called by the `ReportDistribution.wsf` script.

The `BatchReport.wsf` requires the following input:

■ The report parameters file described in *About the Report Parameters File*.

■ The `BatchReport.wsf` script parameters described in *BatchReport.wsf Script Parameters* on page C-39.

About the Report Parameters File

The `BatchReport.wsf` script requires a file containing the parameters for the report(s) that you want to publish. If you are using the `ReportDistribution.wsf` script to run the batch reporting process, this file is created automatically using the definitions in the report cycle.

If you are not using the `ReportDistribution.wsf` script, you can create this file manually or you can use the `AllAccts.wsf` script to create the file (see *AllAccts.wsf Script* on page C-40).

One file may contain the parameters required to run multiple reports. CIMS Lab provides sample report parameters files for running a single report (`input1.txt`) and multiple reports (`input2.txt`). These files are in the `Batch Reporting` folder. To use these files to publish sample reports, follow the steps in the `readme.txt` file.

Any line in the report parameter file that begins with an asterisk (`*`) or does not include an equal sign (`=`) is considered a comment.

The parameters listed in Table C-19 are used for the standard reports included in the CIMS Server installation. The parameters required differ by report. (For a description of each of these reports and their required parameters, refer to the *CIMS Server Web Reporting User's Guide*). The parameters for custom reports used by your organization might differ.

Parameter	Description/Values
Run Parameters	
The following parameters are applicable to all reports defined in the file. These parameters can be in any order, but must precede report-specific parameters.	
`LOCALDRIVE=` (optional)	If you are running the `BatchReport.wsf` script on a computer other than the Web server, the drive that you are mapping to that contains the CIMS Server `Reports` folder. **Example:** `LOCALDRIVE=W`

Table C-19 • Batch Report Parameters

Parameter	Description/Values
	To enable drill down within published invoices, you need set the following three parameters as required. For more information about drilling down in reports, refer to the *CIMS Server Web Reporting User's Guide*.
`RUNSERVERNODE=` `(optional)`	The name of the server running the CIMS Server Web Reporting Web site. For more information about drilling down in reports, refer to the *CIMS Server Web Reporting User's Guide*. **Example:** `RUNSERVERNODE=SERVERABC`
`RUNPORTNUMBER=` `(optional)`	If the port number for the Web site if it is other than port 80. **Example:** `RUNPORTNUMBER=81`
`RUNVIRTUALDIRECTORY=` `(optional)`	The virtual directory name of the CIMS Server Web Reporting Web site. **Example:** `RUNVIRTUALDIRECTORY=DIRECTORYABC`

Report Parameters

The `RUN`*reporttype*`=` parameters indicate the beginning of a new report to be published. These parameters can be in any order, but cannot precede the run parameters described previously.

The report specified by the `RUN`*reporttype*`=` parameter must be a Crystal Report in the `Custom` or `Standard` report folder.

For an example parameter file for multiple reports, refer to the file `input2.txt` in the `Batch Reporting` folder.

Parameter	Description/Values
`RUNREPORT=` `(required for reports)`	The file name of the report that you want to publish. If want to publish an invoice that provides invoice numbers, use the `RUNINVOICE` parameter. **Example:** `RUNREPORT=XSUMC001.rpt`
`RUNINVOICE=` `(required for invoices)`	If you want to publish an invoice that provides invoice numbers, that is, Invoice by Account Level, Invoice with Shifts, etc., use this parameter to specify the file name of the invoice. **Example:** `RUNINVOICE=RINVC007.rpt`
`RUNSPREADSHEET=` `(required for spreadsheets)`	The file name of the spreadsheet that you want to publish. **Example:** `RUNSPREADSHEET=SYTDC001.rpt`
`RUNPDF=` `(optional)`	This parameter enables you to publish a report or spreadsheet as a PDF file. For example, if you want to publish the Invoice by Account Level report as a PDF, specify `RUNPDF=RINVIC007.rpt`.

Table C-19 • Batch Report Parameters (Continued)

Parameter	Description/Values
`ACCOUNTSTRUCTURE=` `(optional)`	The name of the account code structure to be used for the report. If you are using the account code structure Standard, this parameter is not required. If you are not using the Standard account code structure, this parameter is required after the RUN*REPORTYPE*= parameter. Note that you can use more than one account code structure in the parameter file. The `BatchReport.wsf` script will use the first account structure specified or the Standard structure until it encounters another `ACCOUNTSTRUCTURE=` parameter. Each time the script encounters a different parameter it will use that parameter. If the account code structure varies by report, you need to specify Standard as a parameter if it follows a different `ACCOUNTSTRUCTURE=` parameter. **Examples:** `ACCOUNTSTRUCTURE=Standard` `ACCOUNTSTRUCTURE=DivisionA`

`RUNDATESTART=` and
`RUNDATEEND=`
`(required depending on report)`
	The start and end dates for the data that you want to appear in the report in the format mm/dd/yyyy.
	
	All reports within the report parameter file use these parameters until another set of `RUNDATESTART` and `RUNDATEEND` parameters or another date parameter (see the following) is encountered. These parameters must appear before the RUN*reporttype*= parameters. For an example, refer to the file `input2.txt` in the `Batch Reporting` folder.
	
	Example: `RUNDATESTART=07/01/05`
	`RUNDATEEND=07/31/05`

`REPORTMONTH=` `(required depending on report)`	The month for the data that you want to appear in the report in the format mm. **Example:** `REPORTMONTH=07`
`REPORTYEAR=` `(required depending on report)`	The year for the data that you want to appear in the report in the format yyyy. **Example:** `REPORTYEAR=2005`
`USER=` `(required)`	The user ID used to execute the report. The report will contain only those clients that are assigned to the user's user group (see *Adding or Removing Client Access to/from a Group* on page 3-38). If you have restricted client access for some users, make sure that you do not execute the report using a user ID that can view all clients. **Example:** `USER=admin`

Table C-19 • Batch Report Parameters (Continued)

Parameter	Description/Values
DEST= (required)	The report must be saved in the published reports folder specified on the **Reports** tab in the Configuration dialog box (see *Reporting Settings* on page 3-45). This parameter specifies the destination location of the report as follows: ■ **DEST=GLOBAL.** The report will be stored in the global subfolder in the published reports folder. ■ **DEST=GROUP=*group id*.** The report will be stored in a subfolder with the same name as the group id in the group subfolder in the published reports folder. For example, the destination for DEST=GROUP=Admin would be .../group/Admin. ■ **DEST=USER=*user id*.** The report will be stored in a subfolder with the same name as the user id in the user subfolder in the published reports folder. For example, the destination for DEST=USER=joe would be .../group/joe. ■ **DEST=ACCOUNT=*account code*.** The report will be stored in a subfolder with the same name as the account code in the account subfolder in the published reports folder. For example, the destination for DEST=ACCOUNT=AA would be .../account/AA.
REPORTPERIOD= (optional)	Published reports are further stored in a subfolder indicating the report period. For example, .../account/AA/200507 (July 2005 if you are using the default CIMSCalendar table). The report period is in YYYYMM format. If this parameter is not provided or is left blank, the folder name defaults to the current period. The report period can be any date. It does not have to reflect the dates of the data in the report. Depending on the report type specified by the RUNREPORT/INVOICE/SPREADSHEET= parameter, a subfolder named Reports or Spreadsheets is automatically created in the report period folder. The published reports reside in this folder. For example, the path for a published Invoice by Account Level report might appear as follows: .../Published/account/AA/200507/Reports/rinvc007.rpt. **Example:** REPORTPERIOD=200507

Table C-19 • Batch Report Parameters (Continued)

Parameter	Description/Values
`NAME=` (optional)	The file name that you want to assign to the report. The report is saved with the extension `.rpt`. If this parameter is not provided or is left blank, the name defaults to the file name specified by the `RUNREPORT/INVOICE/SPREADSHEET=` parameter. Note that if you assign a new file name, the report will not be included in the end user's favorite reports list in CIMS Server Web Reporting. For more information about favorite reports, refer to the *CIMS Server Web Reporting User's Guide*. **Example:** `NAME=AccountLevelInvoice`

Some invoice reports contain separate invoices for the account codes selected. The first invoice number is read from the CIMSConfigOptions table. This number is set in the in the Configuration dialog box (see *Invoice Subtab* on page 3-47).

The invoice numbers continue to increase sequentially in the table each time you run an invoice. For example, if the last invoice in a report was 99, the next invoice that you run will begin with invoice number 100.

If you do not want to use the invoice number in the table when your run the `BatchReport.wsf` script, use the `INVOICENUMBER=` parameter.

Parameter	Description/Values
`INVOICENUMBER=` (optional)	This parameter sets the number at which you want invoice numbers within the report to begin. Invoices numbers increase in sequential order from this number. The invoice number in the CIMSConfigOptions table is not used or changed when this parameter is used. **Example:** `INVOICENUMBER=10`
`INVOICELEVEL=` (required)	A number representing the account code level that you want to view in the report. For example, the account code AABBBBCCC might contain three levels: the company code AA, the division code AABBBB, and the department code AABBBBCCC. The resource usage and charge data will reflect the level that you specify—1, 2, or 3. **Example:** `INVOICELEVEL=2`
`ACCOUNTCODESTART=` and `ACCOUNTCODEEND=` (required)	This parameter works in conjunction with the `InvoiceLevel` parameter (see the following) and specifies the account codes for that level that appear in the report. For example, if `INVOICELEVEL=2` and you want data for account codes AABBBB, BBBBBB, CCBBBB, and DDBBBB, enter AA as the starting account code and DD as the ending account code.

Table C-19 • Batch Report Parameters (Continued)

Parameter	Description/Values
GRAPH= (optional)	If this parameter is Y a graph appears before the report. If this parameter is N, is left blank, or is not provided, the graph does not appear. **Example:** GRAPH=Y
IDENTIFIER= (required for some reports)	The identifier that you want to report data by. **Example:** IDENTIFIER=JOBNAME
RATECODE= (required for some reports)	The rate code that you want to report data by. **Example:** RATECODE=Z003
RATEGROUP= (required for some reports)	The rate group that you want to report data by. **Example:** RATEROUP=Oracle charges
PRORATE= (required for some reports)	The amount that you want to prorate across accounts in proration reports. **Example:** PRORATE=3000
TERMINALIDSTART= and TERMINALIDEND= (required for some reports)	The CICS terminal ID range that you want to report data by. For example, if you want data for the terminal IDs 3191, 3C02, and 8A33, enter 3191 as the starting transaction ID and 8A33 as the ending ID. Numbers precede letters in the range order. Therefore, 3191 precedes 3C02.
TOPN= (optional)	The number of account codes that appear in a report or the drill down for a report. For example, if you enter 1, only the account code that used the most resources or incurred the most charges appears. If you enter 2, the highest and second highest account codes appear. **Example:** TOPN=3
TRANSACTIONTYPE= (required for some reports)	The transaction type that you want to report data by. For more information about transactions, refer to the *CIMS Server Web Reporting User's Guide*. **Example:** TRANSACTIONTYPE=Recurring

Table C-19 • Batch Report Parameters (Continued)

Parameter	Description/Values
`ZEROCOSTPROCESSINGOPTION=` (required for some reports)	One of the following letters indicating how the Zero Cost Invoice report will be processed: ■ **A** —This factors the invoice total by the zero cost amount. ■ **B**—This factors each resource rate in the invoice by the zero cost amount. **Example:** `ZEROCOSTPROCESSINGOPTION=A`
`ZEROCOSTAMOUNT`	The zero cost amount. You can enter this amount with or without the decimal point. For example, 100000 or 100000.00. For more information about zero cost, refer to page 3-11. **Example:** `ZEROCOSTAMOUNT=50000`

Table C-19 • Batch Report Parameters (Continued)

BatchReport.wsf Script Parameters

The `BatchReport.wsf` script uses the following parameters.

Parameter	Description/Values
`Input (required)`	The file that contains the parameters needed to process the report (see *About the Report Parameters File* on page C-33).
`DataSourceID (optional)`	The CIMS Data Source ID for the CIMS Server database. See *Data Source Parameters* on page C-44.
`Silent (optional)`	If this parameter is set to `Y`, no messages appear when the `BatchReport.wsf` script is run. If this parameter is set to `N` or is not provided, interactive messages appear and you must click **OK** to continue.
`Debug (optional)`	If this parameter is set to `Y`, debugging information appears in the log file. If this parameter is set to `N` or is not provided, this information does not appear in the log file.

Table C-20 • BatchReport Script Parameters

AllAccts.wsf Script

Note • If you are using the `ReportDistribution.wsf` **script, this script is not applicable.**

This script produces the report parameters files that are used by the `BatchReport.wsf` to publish reports in batch. The primary purpose of this script is to retrieve the account codes associated with a user from the database and to create the parameters required to run a separate report for each account code.

You can create the report parameters file without using the `AllAccts.wsf` script. In addition, the script does not provide all required parameters for some reports. To create a report parameters file or to add parameters to a file created by the `AllAccts.wsf` script, refer to *About the Report Parameters File* on page C-33.

The `AllAccts.wsf` script requires an input file to determine the content of the report parameters file. The parameters for this input file are described in *Input File Parameters*. The parameters required process the input file are described in *AllAccts.wsf Script Parameters* on page C-42.

Input File Parameters

To specify the parameters that you want to appear in the report parameter file, you need to create an input file containing the parameters shown in Table C-21. You can add the parameters in any order.

You can include other parameters in the input file, but only the parameters in Table C-21 are used by the `AllAccts.wsf` script. Any other parameters are passed to the report parameters file.

Any line in the input file that begins with an asterisk (*) or does not include an equal sign (=) is considered a comment.

CIMS Lab provides a sample input file, `input3.txt`, that you can use to create a report parameter file. If you installed CIMS Server in the default location, this file is in `C:\Program Files\CIMSLab\Scripts\Batch Reporting`. Follow the steps in the `readme.txt` file.

Parameter	Description/Values
`LOCALDRIVE=` (optional)	If you are running the `AllAccts.wsf` script on a computer other than the Web server, the drive that you are mapping to that contains the CIMS Server `Reports` folder. **Example:** `LOCALDRIVE=W`
`ACCOUNTSTRUCTURE=` (required)	The name of the account code structure to be used (see *Defining the Account Code Structure* on page 3-4). **Example:** `ACCOUNTSTRUCTURE=Standard`

Table C-21 • Allacct.wsf Input File Parameters

Parameter	Description/Values
USER= (required)	The user ID. Only those account codes to which the user has access are included in the report parameter file (see *Adding or Removing Client Access to/from a Group* on page 3-38).
INVOICELEVEL= (required)	A number representing the account code level that you want to view in the report. For example, the account code AABBBBCCC might contain three levels: the company code AA, the division code AABBBB, and the department code AABBBBCCC. The resource usage and charge data will reflect the level that you specify—1, 2, or 3. **Example:** INVOICELEVEL=2
RUNREPORT= (required)	The file name of the report that you want to publish. **Example:** RUNREPORT=XSUMC001.rpt
RUNINVOICE= (required)	If you want to publish an invoice that provides invoice numbers, that is, Invoice by Account Level, Invoice with Shifts, etc., use this parameter to specify the file name of the invoice. **Example:** RUNINVOICE=RINVC007.rpt
RUNSPREADSHEET= (required)	The file name of the spreadsheet that you want to publish. **Example:** RUNSPREADSHEET=SYTDC001.rpt

Table C-21 • Allacct.wsf Input File Parameters (Continued)

AllAccts.wsf Script Parameters

The `AllAccts.wsf` script uses the following parameters.

Parameter	Description/Values
InputFile	The file that contains the parameters needed to create the report parameters file used by the `BatchReport.wsf` script (see *About the Report Parameters File* on page C-33).
OutputFile	The output report parameters file.
LogFolder	The full path for the output file that logs the process of creating the report parameters file. The file name is *YYYYMMDDHHMM*`.txt`.
DataSourceID, ODBCUserID, and ODBCPassword (optional)	See *Data Source Parameters* on page C-44.
Debug (optional)	If this parameter is set to `Y`, debugging information appears in the log file. If this parameter is set to `N` or is not provided, this information does not appear in the log file.

Table C-22 • AllAccts Script Parameters

EmailDistribution.wsf Script

The `EmailDistribution.wsf` script distributes all reports defined for a report cycle as a link or attachment in an e-mail message.

The `EmailDistribution.wsf` script uses the following parameters. These parameters are passed from the `ReportDistribution.wsf` script.

Parameter	Description/Values
Cycle	The name of the report cycle that is used.
DataSourceID	See *Data Source Parameters* on page C-44.
Silent (optional)	If this parameter is set to `Y`, no messages appear when the `EmailDistribution.wsf` script is run. If this parameter is set to `N` or is not provided, interactive messages appear and you must click **OK** to continue.
Debug (optional)	If this parameter is set to `Y`, debugging information appears in the log file. If this parameter is set to `N` or is not provided, this information does not appear in the log file.

Table C-23 • EmailDistribution Script Parameters

Client Load Scripts

The scripts described in this section are used to load the CIMSClient table. If you installed CIMS Server in the default location, these scrips are in `C:\Program Files\CIMSLab\Scripts\Client Load`.

MainframeClientContactToServer.wsf Script

The `MainframeClientContactToServer.wsf` script loads client and contact data from the CIMS Mainframe Client file into the CIMSClient table. This script retrieves the CIMS Mainframe Client file data from the CIMS Report Writer report SPWTR806.

MainframeClientContactToServer.wsf Script Parameters

The `MainframeClientContactToServer.wsf` script uses the following parameter.

Parameter	Description/Values
strMainFrameFile	The full path for the report file to be loaded.

Table C-24 • MainframeClientContactToServer Script Parameter

LoadClientTableFromCSVFile.wsf Script

The `LoadClientTableFromCSVFile.wsf` script is provided for backward compatibility. If you are using CIMS Server 4.0 or later, you should use the `Table.wsf` script (see).

Desktop Scripts

The scripts described in this section are in `C:\Program Files\CIMSLab\Scripts\Desktop` (if you installed CIMS Server in the default location).

UnloadDesktop<Client/Rate/Summary>ForServer.wsf Script

These scripts export the data from the CIMS Desktop Client, Rate, and Summary tables into a comma-delimited text file. This file can then be loaded into the CIMS Server database (see *To load or export a table:* on page 5-12).

UnloadDesktop<Client/Rate/Summary>ForServer.wsf Script Parameters

The `UnloadDesktop<Client/Rate/Summary>ForServer.wsf` script uses the following parameters.

Parameter	Description/Values
DatabaseLocation	The full path to the CIMS Desktop database.
OutputLocation	The full path and file name for the exported table.

Table C-25 • UnloadDesktop<Client/Rate/Summary>ForServer Script Parameters

Data Source Parameters

The following optional data source parameters are common to many of the scripts described in this chapter.

Parameter	Description/Values
DataSourceID	The CIMS Data Source ID for the database that you want to use with the script.
	If this parameter is not provided, the data source that is set as the Web/collector default in the CIMS Data Source Maintenance dialog box is used (see page 5-7).
	To use a CIMS Data Source other than the default, set this parameter to the appropriate data source ID.
ODBCUserID and ODBCPassword	These parameters are deprecated for most scripts. They were previously used to pass the SQL Server user ID and password for the database (if required). For security and convenience, the user ID and password are retrieved using the CIMS Data Source in CIMS Server Administrator.

Table C-26 • Common ODBC Parameters

Scripts Used by CIMS Server 3.3 and Earlier

The following scripts are provided for backward compatibility only. For descriptions of these scripts, refer to the *CIMS Data Collectors for Microsoft Windows Installation and User Guide* for releases 3.3 and earlier.

■ CIMSUtils.wsf

■ CleanUp.wsf

■ ProcCIMS.wsf

■ ProcConvEngine.wsf

■ SampleMonthly.wsf

■ SampleNightly.wsf

■ Scan.wsf

■ SendMail.wsf

■ Shell.wsc

■ D
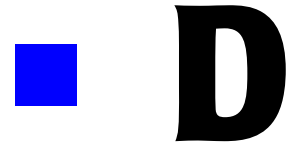
Control and Processing Statements

This appendix describes the statements in the `AcctCntl.txt`, `BillCntl.txt`, and `ProcessCntl.txt` files.

CIMSAcct Control Statements

This section describes control statements that you can use in the CIMSAcct Control file, `AcctCntl.txt`. By default, the control statements in the control file reflect the process definition settings in CIMS Server Administrator (see *CIMS Server Administrator Processing* on page 6-21). However, some optional statements do not have a corresponding GUI option and must be entered in the control file manually.

Where applicable, the control statement descriptions in this section include a reference to the corresponding option in CIMS Server Administrator.

Note • **Control statements are not case-sensitive, except for the literals in the** `DEFINE MOVEFLD` **statement (see** page D-8**).**

CONTROL STATEMENT	SEE	DESCRIPTION
ACCOUNT CODE CONVERSION	[page D-5]	Specifies processing of the CIMS account code conversion table.
ACCOUNT FIELD	[page D-5]	Defines how to build the account code from the identifiers within the input file record.
DATE SELECTION	[page D-6]	Defines a date range for records to be processed by CIMSAcct.
DEFINE FIELD	[page D-7]	Used only during account code conversion. Defines the fields for comparison within the account code input field (which is built from the `ACCOUNT FIELD` statements or from the identifier `Account_Code`).
DEFINE MOVEFLD	[page D-8]	Used only during account code conversion. Defines the fields that are to be moved from the account code input field (which is built from the `ACCOUNT FIELD` statements or from the identifier `Account_Code`) to the account code output field.
EXCEPTION FILE PROCESSING ON	[page D-9]	Used only during account code conversion. When present, any record that does not match an entry in the account code conversion table is written out to the exception file.
IGNORE ORIGINAL SOURCE IDENTIFIERS	[page D-10]	Specifies that CIMSAcct does not write the identifiers `SourceName` and `SourceLine` to the CIMS Ident file.

CONTROL STATEMENT	SEE	DESCRIPTION
INCLUDE FIELD	[page D-10]	Moves identifiers into an area that is used by CIMSBill for include/exclude processing.
PROCESS	[page D-11]	Specifies the type of data that is contained in the input file. CIMSAcct can process only one type of data at a time.
PRINT ACCOUNT NO-MATCH	[page D-11]	Prints the first 1000 input identifiers that are not matched during account code conversion.
SHIFT	[page D-11]	Sets up the shifts within the system.
TEST	[page D-12]	Prints tracing messages to the CIMSAcct Message file.
UPPERCASE ACCOUNT FIELDS	[page D-13]	Specifies that the account code built from the account code input field is uppercase.
VERIFY DATA	[page D-13]	Specifies whether CIMSAcct is to check for embedded nulls.

ACCOUNT CODE CONVERSION

Related interface option: Perform Account Code Conversion, see .

Format:

```
ACCOUNT CODE CONVERSION
```

This statement enables account code conversion using and `DEFINE FIELD` and `DEFINE MOVEFLD` statements and the account code conversion table.

When account code conversion is enabled, all no-match records are written to the CIMSAcct Detail file with the unconverted account code input field value. If you want the record written to an exception file for later processing, you must add the control statement `Exception File Processing On`.

ACCOUNT FIELD

Related interface option: Account Fields, see .

Format:

```
ACCOUNT FIELDn,identifier_name,offset_into_identifier,length
```

n = 0–9 (up to 10 `ACCOUNT FIELD` statements supported)

`offset_into_identifier` = 1–255

`length` = 1–128

Note • **Although the maximum number of characters for each account field is 128, the overall length of all account fields added together cannot exceed 128 characters.**

Also, keep in mind that the total output account code, including any literals and move field values, cannot exceed 128 bytes.

This statement defines the identifier(s) that you want to use to build the account code. Begin at `ACCOUNT FIELD0` and continue sequentially as needed. The account fields are used (along with `DEFINE FIELD` and `DEFINE MOVEFLD` statements) in account code conversion if account code conversion is enabled. If account code conversion is not enabled, then the account code is built directly from this statement or from the `Account_Code` identifier in the input file records (if present). For more information, see *Defining the Account Code* on page 6-40.

Example:

```
ACCOUNT FIELD0,UserName,1,10
ACCOUNT FIELD1,Division,1,2
```

In this example, the `UserName` and `Division` identifiers will be used to create the account code. The offset for both identifier values is 1 and the length of the values are 10 and 2, respectively.

If the `UPPERCASE ACCOUNT FIELDS` statement is specified, lowercase identifier values in the account field are converted to uppercase values.

DATE SELECTION

Related interface option: Input—Date Selection, see page 6-27.

Format:

```
DATE SELECTION {YYYYMMDD YYYYMMDD | keyword}
```

This statement defines a date range for records to be processed by CIMSAcct. Records are selected by the end date in the record (either the usage end date or the accounting end date, depending on the record type). You can use the following values:

■ From and to dates. For a record to be selected, it must be greater than or equal to the from date and less than or equal to the to date.

or

■ One of the following keywords:

Keyword	Description
**RNDATE	Selects records based on the run date
**CURDAY	Selects records based on the run date and the run date less one day
**CURWEK	Selects records based on the run week (Sun–Sat)
**CURMON	Selects records based on the run month
**PREDAY	Selects records based on the run date, less one (day)
**PREWEK	Selects records based on the previous week (Sun–Sat)
**PREMON	Selects records based on the previous month
CURRENT	Selects current period from the CIMSCalendar table
PREVIOUS	Selects previous period from the CIMSCalendar table

The start and end dates of data processed through CIMS Server must reflect the start and end dates of the target billing period. If the billing period runs from January 1 through January 31, any records produced with a date of February 1 (or later) should not be included as part of the processing. In most cases, this data screening has already been performed, either by CIMS Server or through the creation of data inputs reflecting the desired date range.

Note that it is rare that you would need to limit the date range of the data used as input to CIMSAcct. CIMSBill provides the ability to create billing records reflecting a specific date range (see page D-17).

Examples:

```
DATE SELECTION 20050601 20050630
```

```
DATE SELECTION **PREMON
```

DEFINE FIELD

Related interface option: Define Fields, see .

Format:

DEFINE FIELDn,offset,length

n = 0–9 (up to 10 DEFINE FIELD statements supported)

offset = 1–128 (from the start of the account field or the Account_Code identifier value)

length = 1–128

Note • **Although the maximum number of characters for each define field is 128, the overall length of all define fields added together cannot exceed 128 characters.**

Also, keep in mind that the total output account code, including any literals and move field values, cannot exceed 128 bytes.

This statement is used only during account code conversion. Use this statement to specify the offset and length of the account code input field value that you want to use for conversion. Begin at DEFINE FIELD0 and continue sequentially as needed.

For more information about using define fields, see *Setting the Account Code Conversion Options* on page 6-42.

Example:

```
ACCOUNT FIELD0,UserName,1,10
ACCOUNT FIELD1,Division,1,2
DEFINE FIELD0,3,8
DEFINE FIELD1,11,2
```

In this example, the first two characters of ACCOUNT FIELD0 will not be considered for account code conversion as specified by the offset of 3 for DEFINE FIELD0. However, the full value of ACCOUNT FIELD1 will be used because the offset for DEFINE FIELD1 is 11 (the Division identifier value starts in position 11 of the combined account fields) and the length for both the account field and define field are the same.

For example, if the combined value for ACCOUNT FIELD0 and ACCOUNT FIELD1 is AABBCCDDEEXZ, the value as defined by the DEFINE FIELD0 and DEFINE FIELD1 is BBCCDDEEXZ.

DEFINE MOVEFLD

Related interface option: Move Fields, see page 6-42.

Format:

```
DEFINE MOVEFLDn,offset,length,literal
```

n = 0–9 (up to 10 `DEFINE MOVEFLD` statements supported)

`offset` = 1–128 (from the start of the account field or the `Account_Code` identifier value)

`length` = 1–128

`literal` = a literal can be moved instead of a particular field (literals in this statement are case-sensitive)

Note • **Although the maximum number of characters for each move field is 128, the overall length of all move fields added together cannot exceed 128 characters.**

Also, keep in mind that the total output account code, including any literals and move field values, cannot exceed 128 bytes.

This statement is used only during account code conversion. Use this statement to move all or a portion of the account code input field value to a position in the output account code. Begin at `DEFINE MOVEFLD0` and continue sequentially as needed.

Targets within the account code conversion table are specified as @0–@9.

For more information about using move fields, see *Setting the Account Code Conversion Options* on page 6-42.

Example:

```
ACCOUNT FIELD0,UserName,1,10
ACCOUNT FIELD1,Division,1,2
DEFINE FIELD0,3,8
DEFINE FIELD1,11,2
DEFINE MOVEFLD0,11,2
```

In this example, the value for `DEFINE MOVEFLD0` specifies that the value beginning at position 11 account code input field will be placed in the output account code as defined by the account code conversion table.

For example, if the 2-character value beginning at position 11 is `XZ` and the account code conversion table is:

```
BBC,,FINACCT@0
```

The resulting account code will be `FINACCTXZ`.

For more information about the account code conversion table, see *Creating an Account Code Conversion Table* on page 6-44.

EXCEPTION FILE PROCESSING ON

Related interface option: Enable Exception Processing, see **.**

Format:

EXCEPTION FILE PROCESSING ON

This control statement is used only during account code conversion. When this statement is present, any record that does not match an entry in the account code conversion table is written to an exception file. If this control statement is not present, the records that are not matched are written to the CIMSAcct Detail file with the unconverted account code input field value.

For more information the exception file processing, see *About Exception File Processing* on page 6-17.

Example:

EXCEPTION FILE PROCESSING ON

Considerations

■ If you enable exception processing, do not include a default account code as the last entry in the account code conversion table (e.g., ",,DEFAULTCODE"). If a default account number is used, records will not be written to the exception file.

■ When an input file is processed through CIMS Server Administrator, the default file name for the exception file is Exception.txt. You should rename the output exception file so that it is not overwritten when subsequent files are created.

IGNORE ORIGINAL SOURCE IDENTIFIERS

Related interface option: None

Format:

```
IGNORE ORIGINAL SOURCE IDENTIFIERS
```

When this control statement is present, the identifiers SourceName and SourceLine are not written to the CIMS Ident file. These identifiers are built by CIMS Conversion Engine. The SourceName identifier, which provides the name and location of the input file, can be quite long. Use this statement if you are not interested in tracking this information and want to conserve space.

INCLUDE FIELD

Related interface option: Include Fields, see page 6-28.

Format:

```
INCLUDE FIELDn,identifier_name,offset_into_identifier_value,length
```

n = 0–9 (up to 10 INCLUDE FIELD statements supported)

offset_into_identifier = 1–255

length = 1–60

Note • **The overall length of all include fields added together can not exceed 60 characters.**

Use this control statement to move identifiers from the input file records into an area that can be later used by CIMSBill for include/exclude processing. For more information about using include fields, see *Include/Exclude Processing* on page 6-58.

Example:

```
INCLUDE FIELD0,UserName,1,10
```

In this example, the UserName identifier value would be moved into the DETAIL-INCLEXCL-AREA field of the CIMSAcct Detail records. This field is used by the CIMSBill DEFINE control statement to define the include/exclude fields for CIMSBill (see page D-19).

PROCESS

Related interface option: Process Type, see page 6-27.

Format:

```
PROCESS {CIMS SERVER RESOURCE RECORDS | CIMS MAINTENANCE RECORDS FROM CIMSACCT |
EXTERNAL TRANS RECORDS | CIMS SUMMARY}
```

This control statement specifies the type of data that is contained in the input file. CIMSAcct can process only one type of data at a time.

Example:

```
PROCESS CIMS SERVER RESOURCE RECORDS
```

PRINT ACCOUNT NO-MATCH

Related interface option: None

Format:

```
PRINT ACCOUNT NO-MATCH
```

When this statement is present, a message is printed in the CIMSAcct Message file showing the identifier values from the input file that were not matched during account code conversion. If this statement is not present, only the total number of unmatched records is provided. The system prints up to 1000 messages.

SHIFT

Related interface option: Shifts, see page 6-29.

Format:

```
SHIFT [day] [code] [end time] [code] [end time] …. [code] [end time]
```

day = SUN | MON | TUE | WED | THU | FRI | SAT

code = 1–9 (the shift code)

end time = the end time of the shift

This control statement defines shifts within the system. Seven shift records are supported (one for each day of the week) and up to nine shifts can be specified on each. End times are entered in hours and minutes using the 24-hour clock.

Rules that apply to shift records:

■ Day is defined as the first three letters of the day

■ Up to nine shifts per day can be specified

■ The preceding end time must always be less than the next end time

■ No shift spans midnight

Example:

For the following shifts:

Monday through Friday

Shift 1 - 5 AM to 8 AM and 3:30 PM to 5 PM

Shift 2 - 8 AM to 11:30 AM and 1:30 PM to 3:30 PM

Shift 3 - 5 PM to 8 PM

Shift 4 - 9:30 PM to 12 AM and 12 AM to 5 AM

Shift 5 - 11:30 AM to 1:30 PM and 8 PM to 9:30 PM

Saturday and Sunday

Shift 1 - 8 AM to 5 PM

Shift 2 - 5 PM to 12 AM and 12AM to 8 AM

The `SHIFT` statements are as follows:

```
SHIFT SUN 2 0800 1 1700 2 2400

SHIFT MON 4 0500 1 0800 2 1130 5 1330 2 1530 1 1700 3 2000 5 2130 4 2400

SHIFT TUE 4 0500 1 0800 2 1130 5 1330 2 1530 1 1700 3 2000 5 2130 4 2400

SHIFT WED 4 0500 1 0800 2 1130 5 1330 2 1530 1 1700 3 2000 5 2130 4 2400

SHIFT THU 4 0500 1 0800 2 1130 5 1330 2 1530 1 1700 3 2000 5 2130 4 2400

SHIFT FRI 4 0500 1 0800 2 1130 5 1330 2 1530 1 1700 3 2000 5 2130 4 2400

SHIFT SAT 2 0800 1 1700 2 2400
```

TEST

Related interface option: Trace flag, see page 6-31.

Format:

```
TEST c
```

`c` = a character (`A` for account code conversion messages `Y` for general messages)

This control statement is used to print tracing messages to the CIMSAcct Message file.

Example:

```
TEST A
```

UPPERCASE ACCOUNT FIELDS

Related interface option: Convert account fields to uppercase during processing, see **.**

Format:

```
UPPERCASE ACCOUNT FIELDS
```

This control statement instructs CIMSAcct to convert lowercase account code input field values to uppercase values in the resulting account code. For example, the value `ddic` would be converted to `DDIC`. By using this option, CIMSAcct account code processing becomes case-insensitive and makes defining account conversion tables much easier.

VERIFY DATA

Related interface option: None

Format:

```
VERIFY DATA ON|OFF
```

This control statement instructs CIMSAcct to check for embedded null characters within an input record (if `ON` is specified) and changes the null characters to spaces. Null characters should be contained only at the end of record, not within a record. CIMS standard interfaces do not embed nulls. Turning verification on slows processing and should be used only when processing non-standard feeds.

The default is `VERIFY DATA OFF`.

CIMSBill Control Statements

This section describes control statements that you can use in the CIMSBill Control file, `BillCntl.txt`. By default, the control statements in the control file reflect the process definition settings in CIMS Server Administrator (see *CIMS Server Administrator Processing* on page 6-21).

The control statement descriptions in this section include a reference to the corresponding option in CIMS Server Administrator.

CONTROL STATEMENT	SEE	DESCRIPTION
BACKLOAD DATA	[page D-16]	Instructs CIMSBill to ignore the close date. The accounting dates created by CIMSBill are the same as the usage end date regardless of the close date
CLIENT SEARCH ON	[page D-16]	Instructs CIMSBill to use the account code structure definition to search the CIMSClient table for the rate table associated with a client.
DATE SELECTION	[page D-17]	Defines a date range for records to be processed by CIMSBill.
DEFAULT CLOSE DAY	[page D-18]	Overrides the system-wide close date.
DEFINE	[page D-19]	Defines **the account code structure used by** the statements CLIENT SEARCH ON and DYNAMIC CLIENT ADD ON. Also defines character strings in the CIMSBill Detail record that are used for include/ exclude processing.
DYNAMIC CLIENT ADD ON	[page D-21]	Specifies that CIMSBill automatically insert corresponding client entries into the CIMSClient table for all clients that have a resource usage charge.
EXCLUDE	[page D-21]	Specifies an exclude record condition.
INCLUDE	[page D-22]	Specifies an include record condition.
NORMALIZE CPU VALUES	[page D-22]	Normalizes CPU values.
PROCESS	[page D-23]	Specifies the type of data that is contained in the input file. CIMSBill can process only one type of data at a time.
PRORATE MONEY	[page D-23]	Splits money for a specific resource (or all resources) among multiple accounts.
PRORATE RESOURCES	[page D-24]	Splits a specific resource (or all resources) among multiple accounts.

CONTROL STATEMENT	SEE	DESCRIPTION
PRINT PRORATION REPORT	[page D-25]	Generates a proration report that contains the original record and all subsequently-generated prorated records.
REPORT DATE	[page D-25]	Specifies the date that is put into the CIMS Summary records created by CIMSBill.
USE SHIFT CODES	[page D-26]	Instructions CIMSBill to use the shift character specified in the CIMSAcct Detail record and apply the appropriate rate shift value.
TEST	[page D-26]	Used to print tracing messages to the CIMSBill Message file.

BACKLOAD DATA

Related interface option: Back Load Data, see page 6-33.

Format:

```
BACKLOAD DATA
```

This statement instructs CIMSBill to ignore the close date. The accounting dates created by CIMSBill are the same as the usage end date regardless of the close date.

CLIENT SEARCH ON

Related interface option: Enable client search, see page 6-35.

Format:

```
CLIENT SEARCH ON
```

This statement instructs CIMSBill to use the account code structure definition (by use of the `DEFINE Jn` fields, see page D-19) to search the CIMSClient table for the rate table associated with a client. If this statement is not specified, the STANDARD rate table is used for all clients.

CIMSBill searches the CIMSClient table in a minor–major sequence to find client information. Consider the following example control statements:

```
DEFINE J1 1 1 /DIVISION/
DEFINE J2 1 5 /DEPARTMENT/
SEQUENCE FIELDS J1 J2
CLIENT SEARCH ON
```

Assume the data value for J1 and J2 is AABBB (J1 = AA, J2 = AABBB). CIMSBill searches the CIMSClient table for account code AABBB. If account code AABBB is not found, CIMSBill then searches the table for account code AA. If account code AA is found, the rate table for account code AA is used. If account code AA is not found, the STANDARD rate table is used.

DATE SELECTION

Related interface option: Input – Date Selection, see .

Format:

```
DATE SELECTION {YYYYMMDD YYYYMMDD | keyword}
```

This statement defines a date range for records to be processed by CIMSBill. Records are selected by the accounting end date in the record. You can use the following values:

■ From and to dates. For a record to be selected, it must be greater than or equal to the from date and less than or equal to the to date.

or

■ One of the following keywords:

Keyword	Description
**RNDATE	Selects records based on the run date
**CURDAY	Selects records based on the run date and the run date less one day
**CURWEK	Selects records based on the run week (Sun–Sat)
**CURMON	Selects records based on run month
**PREDAY	Selects records based on run date, less one (day)
**PREWEK	Selects records based on previous week (Sun–Sat)
**PREMON	Selects records based on previous month
CURRENT	Selects current period from the CIMSCalendar table
PREVIOUS	Selects previous period from the CIMSCalendar table

Examples:

```
DATE SELECTION 20050601 20050630
```

```
DATE SELECTION **PREMON
```

DEFAULT CLOSE DAY

Related interface option: Default Close Date, see page 6-32.

Format:

```
DEFAULT CLODE DAY=nn
```

nn = 01–31

This statement overrides the system-wide close date set in the Configuration dialog box (see *Processing Settings* on page 3-44). The year and month used for the close day reflect the year and month in which CIMSBill is run. For more information about the close date, see page 6-18.

Example:

```
DEFAULT CLOSE DAY=8
```

This statement sets the close date to the eighth of the month. If the CIMSBill run date is 20050706, the close date is set to 20050708. If the CIMSBill run date is 20050712, the close date is also set to 20050708.

DEFINE

The `DEFINE` **statement defines the account code structure used by** the statements `CLIENT SEARCH ON` and `DYNAMIC CLIENT ADD ON`. This statement also defines character strings in the CIMSBill Detail record that are used for include/exclude processing. The format differs depending on the use of the statement as described in the following sections.

Account Code Fields Define

Related interface option: Account Code Search Fields, see .

This statement is used with the `CLIENT SEARCH ON` and `DYNAMIC CLIENT ADD ON` statements to specify the client account code structure. You can specify up to nine account levels (fields J1–J9).

Format:

```
DEFINE Jn start_loc len /desc/
```

n = 1–9

`start_loc` = starting position within the account code

`len` = total length of the level

`desc` = a description for the field

Example:

Account code `AAABBBCCDDDDD` contains four levels. To search from the lowest level to the highest level, use the following define fields:

```
DEFINE J1 1 3
DEFINE J2 1 6
DEFINE J3 1 8
DEFINE J4 1 13
CLIENT SEARCH ON
```

For the previous define fields:

```
J1=AAA
J2=AAABBB
J3=AAABBBCC
J4=AAABBBCCDDDDD
```

CIMSBill first searches for `AAABBBCCDDDDD` and if it does not find an entry it searches for `AAABBBCC` and so on.

Include/Exclude Fields Define

Related interface option: Define Include/Exclude Fields, see page 6-60.

This statement defines any string of characters within the CIMSBill Detail record for include/exclude processing.

Format:

```
DEFINE fd loc len /desc/
```

fd = two-character field ID, for example A1

loc = starting position in the CIMSBill Detail record (see *CIMSBill Detail File* on page B-10). For example 163 is the start of the account code field.

len = length of the field

desc = a description for the field

Example:

In this example, you want to define UserName identifier, which starts at position 301 of the CIMSBill Detail file, so that you can exclude all UserName values that begin with geo.

First, define the field in CIMSAcct using the INCLUDE FIELD statement (see page D-10):

```
INCLUDE FIELD0,UserName,1,10
```

Define the field in CIMSBill:

```
DEFINE A1 301 3 /usergeorge/
```

And then use the following EXCLUDE statement:

```
EXCLUDE A1 geo geo
```

DYNAMIC CLIENT ADD ON

Related interface option: Add new clients to Client table, see page 6-35.

Format:

```
DYNAMIC CLIENT ADD ON
```

This statement specifies that CIMSBill automatically insert corresponding client entries in the CIMSClient table for all clients that have a resource usage charge, but are not entered in the table. *Use this statement with caution because it can quickly fill the CIMS Client table with extraneous records.*

If you are using multiple rate tables for clients, this statement requires that the control statement `CLIENT SEARCH ON` is also used (see page D-16).

The inserted client entries will include account names only if a matching top level account is currently in the CIMSClient table. For example, if account code AA exists in the CIMSClient table and account code AABBB is inserted, account AABBB is assigned the same account name as AA. However, contacts and budgets assigned to the top level account are not copied to the new client.

EXCLUDE

Related interface option: Define Include/Exclude Records, see page 6-60.

Format:

```
EXCLUDE fd low high
```

`fd` = two-character field id (from the `DEFINE` control statement - see page D-19)

`low` = specifies the low or from selection value (1 to 8 characters)

`high` = specifies the high or to selection value (1 to 8 characters)

This statement specifies an exclude record condition. The specified data from the field must be equal to or greater than the low value and equal to or less than the high value.

Example:

Assume that you want to exclude records with usage start dates between the dates of June 1, 2005 and June 12, 2005. You need to define the field that contains the usage start date in the CIMSBill Detail records. This field begins at position 123.

```
DEFINE A1 123 8 /Start Date/
EXCLUDE A1 20050601 20050612
```

INCLUDE

Related interface option: Define Include/Exclude Records, see page 6-60**.**

Format:

```
INCLUDE fd low high
```

`fd` = two-character field ID (from the `DEFINE` control statement—see page D-19)

`low` = specifies the low or from selection value (1 to 8 characters)

`high` = Specifies the high or to selection value (1 to 8 characters)

This statement specifies an include record condition. The specified data from the field must be equal to or greater than the low value and equal to or less than the high value.

Example:

Assume that you want to include records with usage start dates between the dates of June 1, 2005 and June 12, 2005. You need to define the field that contains the usage start date in the CIMSBill Detail records. This field begins at position 123.

```
DEFINE A1 123 8 /Start Date/
INCLUDE A1 20050601 20050612
```

NORMALIZE CPU VALUES

Related interface option: Normalize CPU Values, see page 6-33**.**

Format:

```
NORMALIZE CPU VALUES
```

This statement instructs CIMSBill to normalize CPU values. For more information about normalizing CPU values, see page 6-57.

PROCESS

Related interface option: Process Type, see page 6-32.

Format:

```
PROCESS {DETAIL RECORDS | CIMS SUMMARY RECORDS}
```

This control statement specifies the type of data that is contained in the input file for CIMSBill. CIMSBill can process only one type of data at a time.

Example:

```
PROCESS DETAIL RECORDS
```

PRORATE MONEY

Related interface option: Proration Type Money, see page 6-49.

Format:

```
PRORATE MONEY len
```

`len` = the length to match for proration

This statement splits money for a specific resource (or all resources) among multiple accounts. To prorate money, a prorate table must be set up to specify how the monies are split. The length specified is used to determine at what level to match for the splitting. Assume that the following control statement is specified:

```
PRORATE MONEY 5
```

The following prorate (or split table) is defined as:

```
AAABB,AA1,40,All
AAABB,AA2,60,All
```

The accounts AAABB, AAABBBB, and AAABBCC will match and be split into AA1 and AA2.

Example:

```
PRORATE MONEY 5
```

Prorating Resources vs. Prorating Money

In CIMS Server Administrator, you can set the option to prorate on resources or on money. Both options display the same prorated units and charges in Web reports. However, you cannot drill down on resource units by identifier if you prorate by money. The following describes the advantages and disadvantages of prorating resources and prorating money:

Prorating resources. The CIMSAcct Detail file from CIMSSort is prorated before CIMSBill applies rates and figures money and a new CIMSAcct Detail file is built with all the prorated resources. The new CIMSAcct Detail file is then used in the CIMSBill process.

An advantage of prorating resources is that the CIMSBill Detail records match the records in the CIMS Summary file. Therefore, users can drill down on resource units by identifier when viewing invoices in CIMS Server Web Reporting. A disadvantage is that the CIMSBill Detail file can contain a potentially large number or records.

Prorating money. The CIMS Summary file is prorated just before CIMSBill ends. A new CIMS Summary file is built with the prorated values.

An advantage of prorating money is that the CIMSBill Detail file contains fewer records than it would if you prorated by resources. A disadvantage is that the CIMSBill Detail records do not match the CIMS Summary records and drilling down by identifier will not produce accurate data.

PRORATE RESOURCES

Related interface option: Proration Type Resources, see .

Format:

```
PRORATE RESOURCES len
```

`len` = the length to match for proration

This statement splits a specific resource (or all resources) among multiple accounts. To prorate resources, a prorate table must be set up to specify how the resources are split. The length specified is used to determine at what level to match for the splitting. Assume that the following control statement is specified:

```
PRORATE RESOURCES 5
```

The following prorate (or split table) is defined as:

```
AAABB,AA1,40,All
AAABB,AA2,60,All
```

The accounts AAABB, AAABBBB, and AAABBCC will match and be split into AA1 and AA2.

Example:

```
PRORATE RESOURCES 5
```

PRINT PRORATION REPORT

Related interface option: Print Proration Report, see .

Format:

`PRINT PRORATION REPORT`

This statement generates a proration report that contains the original record and all subsequently-generated prorated records. The proration report will reside in the processing directory with the file name of `ProrateRep.Txt`.

Example:

`PRINT PRORATION REPORT`

REPORT DATE

Important! • CIMS Lab recommends that you do not use this statement. This statement will place report dates rather than actual usage end dates in the accounting date fields of the CIMSBill Summary records. You should use the default Auto option in CIMS Server Administrator rather than report dates (see **).**

Related interface option: Output-Summary Date Range, see .

Format:

`REPORT DATE {YYYYYMMDD YYYYYMMDD | keyword}`

This statement specifies the dates that are used as the accounting dates in the CIMS Summary records created by CIMSBill. This is the date that is used for reporting purposes in CIMS Server. You can use the following values:

■ From and to dates

   or

■ One of the following keywords:

Keyword	Description
`**RNDATE`	Sets the date range based on the run date
`**CURDAY`	Sets the date range based on the run date and the run date less one day
`**CURWEK`	Sets the date range based on the run week (Sun–Sat)
`**CURMON`	Sets the data range based on the run month
`**PREDAY`	Sets the date range based on the run date, less one day
`**PREWEK`	Sets the date range based on the previous week (Sun–Sat)

Keyword	Description
**PREMON	Sets the date range based on the previous month
CURRENT	Sets the date range based on the current period from the CIMSCalendar table
PREVIOUS	Sets the date range based on the previous period from the CIMSCalendar table
USE DETAIL DATES	Sets the date range based on the CIMSAcct Detail record (consult CIMS Lab before using this keyword)

Examples:

```
REPORT DATE 20050601 20050630
```

```
REPORT DATE **PREMON
```

USE SHIFT CODES

Related interface option: Use Shift Codes, see .

Format:

```
USE SHIFT CODES
```

This statement instructs CIMSBill to use the shift character specified in the CIMSAcct Detail record and apply the appropriate rate shift value.

If a shift value is not defined for the rate, the default rate value for the resource will be used. The default rate value is also the SHIFT1 rate value.

TEST

Related interface option: Trace flag, see .

Format:

```
TEST c
```

c = a character (D for dates, R for display rate information [each rate code read from the database], Y for general messages, Z for trace client processing [dynamic client add and client searching])

This control statement is used to print tracing messages to the message file.

Example:

```
TEST Y
```

Processing Control Statements

CIMS Server Administrator stores additional processing setting for each process definition in the `ProcessCntl.txt` file. This file resides in the folder of each process definition.

The following table describes the processing settings in the `ProcessCntl.txt` file and provides the corresponding GUI option in CIMS Server Administrator.

Processing Statement	GUI Option
`AcctInputFile` *filename* Where *filename* = the name of CIMSAcct input file.	Input File, see page 6-28
`AcctOutputDetailFile` *filename* Where *filename* = the name of CIMSAcct Detail file.	Output Files: Detail, see page 6-28
`AcctOutputIdentFile` *filename* Where *filename* = the name of CIMS Ident file.	Output Files: Ident, see page 6-28
`AcctOutputExceptionFile` *filename* Where *filename* = the name of CIMSAcct exception output file.	Output Files: Exception, see page 6-28
`ArchiveProcessFiles  Yes/No` This setting archives previous output files before processing.	Archive process files, see page 6-24

`AutoLoadIdentFile Yes/No`
`AutoLoadSummaryFile Yes/No`
`AutoLoadDetailFile Yes/No`
`AutoLoadResourceFile Yes/No`
 	
These settings determine if the system automatically loads these files into the database at conclusion of processing.
	Load *record type* records, see page 6-24

`BillInputFile` *filename* Where *filename* = the name of CIMSBill input file.	Input File, see page 6-34
`BillDetailFile` *filename* Where *filename* = the name of the CIMSBill Detail file.	Output Files: Detail, see page 6-34
`BillSummaryFile` *filename* Where *filename* = the name of the CIMS Summary file.	Output Files: Summary, see page 6-34
`BillMultFile` *filename* Where *filename* = the name of the proration table file.	Proration Table, see page 6-50

Processing Statement	GUI Option
`AcctCodeConversionTable filename` Where `filename` = the name of the account code conversion table.	Conversion Table, see page 6-43
`CreateCSRPFile Yes/No` This setting creates a CSR+ file.	Create CSR Plus, see page 6-28
`CSRPFile filename` Where `filename` = the name of the CSR+ file.	CSR Plus, see page 6-28
`Description name` Where `name` = a description of the process definition.	Process Description, see page 6-23
`DSN name` Where `name` = the name of the ODBC data source.	Data Source Name, see page 6-26
`DSNUID user ID` Where `user ID` = the user ID needed to access the ODBC data source.	Database User ID, see page 6-26
`DSNPWD password` Where `password` = the encrypted password needed to access the ODBC data source.	Database Password, see page 6-26
`GenerateODBCINF Yes/No` This setting generates an INF file that passes along user ID and password information to the ODBC data source.	Automatically generate ODBC INF file from above parameters, see page 6-26
`RemoveFilesBeforeProcessing Yes/No` This setting deletes previous output files from the process definition folder.	Remove output files before processing, see page 6-24
`RunCIMSAcct Yes/No` This setting determines whether CIMSAcct is run as part of the process.	Run CIMS Account, see page 6-24
`RunCIMSBill Yes/No` This setting determines whether CIMSBill is run as part of the process.	Run CIMS Bill, see page 6-24
`UseBulkLoadInterface Yes/No` This setting determines whether the SQL server bulk load interface is used.	Use bulk load interface, see page 6-25

Glossary

ASP • Acronym for Active Server Pages. A server-side scripting environment developed by Microsoft for developing Web pages and applications.

cascading style sheets • Cascading style sheets contain typographical information on how an HTML page should appear (i.e., fonts, colors, table and list formats, etc.).

CIMS Server Resource (CSR) File • The resource file that contains the data that is input into CIMS Server. The CIMS Server Resource file contains CIMS Server Resource records. These records are comma-delimited and can contain a very large number of resource identifiers and resources. *See also identifier and rate code*.

CIMS Server Resource Plus (CSR+) File • These files are produced by CIMS Mainframe 12.0 and later. CSR+ files are similar to CIMS Server Resource (CSR) files, with the exception that the records in the CSR+ file contain an additional header at the beginning of the record.

client • **1**. A computer that accesses shared network resources provided by a server. **2.** In CIMS Server, an entity that consumes resources. A client is represented by an account code.

COM • Acronym for Component Object Model. A specification developed by Microsoft for building software components that can be assembled into programs or add functionality to existing programs running on Microsoft Windows platforms.

cookie • A small text file that stores information about a Web site user. CIMS Server Web Reporting stores user information, such as the report parameter values entered by a user, in a cookie.

database alias • An alias name given to a remote or local DB2 database. Database names must be unique on a DB2 server. However, a DB2 client can have connections to two different databases that have the same name if those databases reside on different servers and each database has its own alias. If an alias is not specified for a database, the default alias is the database name.

DBMS • Acronym for Database Management System. Software used to organize, analyze, and modify information stored in a database.

domain • A set of network resources (applications, printers, etc.) for a group of users. The user need only to log in to the domain to gain access to the resources, which may be located on a number of different servers in the network.

ERD • Acronym for Entity Relationship Diagram. A diagram that illustrates the logical structure of a database.

identifier • In the CSR or CSR+ record, a unique key that denotes the source of a resource that has been consumed. Examples include device name, server name, system ID, phone number, user ID, state code or building number. A consumed resource can have one to many identifiers.

internationalization • In software development, internationalization is the process of planning and implementing a product so that it can easily be adapted (localized) to specific languages. The word "internationalization" is sometimes abbreviated as "I18N" because there are 18 letters between the first letter "I" and the last letter "N". *See also localization*.

IIS • Acronym for Internet Information Services. Microsoft software that supports Web site creation, configuration, and management.

localization • In software development, the process of adapting an internationalized product for a specific language, script, culture, and coded character set. The word "localization" is sometimes abbreviated as "L10N" because there are 10 letters between the first letter "L" and the last letter "N". *See also internationalization*.

ODBC • Acronym for Open Database Connectivity. An interface providing a common language for database access.

offset • A number that indicates how far from a starting point an item is located.

rate code • A rate code represents the resource units being reported (for example, CPU time, transactions processed, or lines printed). The rate code includes the value for the resource and other rate processing information.

UNC • Acronym for Universal Naming Convention. A file naming system beginning with two backslashes (\\) that indicates that the resource exists on a network computer. The syntax is `\\servername\sharename`.

URL • Acronym for Uniform Resource Locator. The address for a resource on the Internet or an intranet.

Windows Script Host • A language-independent scripting host for Windows Script-compatible scripting engines. WSH acts as a host for scripts—it makes objects and services available for the script and provides a set of guidelines within which the script is executed.

XML • Acronym for Extensible Markup Language. A simple, very flexible text format derived from SGML. XML allows for more precise declarations or content and more meaningful search results across multiple platforms.

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