Tadiran Telecom

Coral Center JET

ACD MIS Packages

Reference Guide

(Release 3: Feb. 19, 2001)

Coral FlexiCom

The flexible way to communicate

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CoralCenter JET Configuration Guide

There are a number of different ways to configure the CoralCenter JET. To help in the decision process we have developed these guide lines. This will give you the pieces required for each configuration.

Standalone Server

If you have a standalone server with Real Time, Reporting and Database, you will need to install the following:

- Chapter 5 – Server Installation (installing NT)
- Chapter 6 – Server Installation continued (additional software)
- Chapter 7 – Server Installation of CoralCenter JET Software

Separate Database Server

If you are installing a separate Database Server with no client, you will need to install the following:

- Chapter 5 – Server Installation (installing NT)
- Chapter 6 – Server Installation continued (additional software)
- Install SQL Anywhere Patch
- Call Tech Support if further instruction is needed.

Server with Client Access

If you have a server with network client access, you will need to install the following:

- Chapter 5 – Server Installation (installing NT)
- Chapter 6 – Server Installation continued (additional software)
- Chapter 7 – Server Installation of CoralCenter JET Software
- Chapter 8 – Setup Server for Browser Based RT Clients

JAVA Real Time Client Installation

If you are installing a Windows client machine with real time reporting, you will need to install the following:

- Chapter 9 – Setup Client for Browser Based RT Access **or**
  Chapter 10 – Setup Client for RT Access without a Browser

NOTE: For browser based access use Chapter 10.

Reporting Database Client

If you are installing a Windows client machine with reporting database client you will need to install the following:

- Chapter 9 – Setup Client for Browser Based RT Access **or**
  Chapter 10 – Setup Client for RT Access without a Browser
- Chapter 11 – Setup Client for Reporting/DB Access

Marquee Only

If you are installing a Windows client machine with Marquee only, you will need to install the following:

- Chapter 10 – Setup Client for RT Access without a Browser

NOTE: This is the same installation as the Real Time Client. The important step is the client will be logging in with their Extension. With this in mind it is important not to make real time ID available.

Reporting Database and JAVA Real Time Client Installation

If you are installing a full Windows client, you will need to install the following:

- Chapter 11 – Setup Client for Reporting/DB Access

Change History

The reasons for changes are listed below along with the initials of the person making the change and the date of the change if a revision of software or of the manual takes place along with the change, it is also detailed. Change bars have been added to the document to show where specific changes have taken place. These are removed when a new full version of the document is released.

Date	Initials	Doc Rev #	Reason for change
18 October, 1996	JVE	Pre-Release 1.1	Prepare for Beta site training, replace reference to OS/2-ACD(was Engineering Project name) with CoralCenter JET, add Change History as separate page and include reference to latest changes with DNIS window 117 replaced
06 February, 1997	JVE	Release 1.0	Incorporated new report pages, DNIS verbiage, Agent Table, Document number, Product overview and changes throughout the document.
17 March, 1997	JVE	Release 1.1	Window “cleaning” separate reports document and changes throughout document
24 March, 1998	JT	Release 1.2	New and updated forms, revise Setup section
April 1, 1998	JT	Release 1.3	Clarify some report field definitions
April 15, 1998	GM	Release 1.3	Incorporated various Egan comments as well as JT updating reports.
July 1, 1998	DH	Release 1.3	Changes incorporated from Bob Erwig and John Dabnor
March 1, 2000	EP	Release 2	Incorporated Microsoft NT operating system and Java Client for Real Time Reports.
February 6, 2001	JP	Release 3	Reflect changes to documentation for new software build.

Chapter 1 – Introduction

Document Overview

This Reference Guide contains detailed information on Tadiran Telecom's CoralCenter JET (Java Enabled Technology). This WindowsNT and Java-based application provides a complete ACD-MIS environment for a Coral ACD system.

The purpose of this Guide is to provide the CoralCenter JET user with a complete reference tool in hard copy form. This document complements the Help System incorporated into the product. This document describes the features, functions and services available in the CoralCenter JET product(s). Additionally, step-by-step procedures for configuring and monitoring the system are provided.

The CoralCenter JET system is designed to provide ACD MIS features and functionality for small to medium sized call centers up to 350 agents. The software is based on the latest database technology and object oriented programming. The design of the hardware and software components is to fully support the Client/Server model in any size and configuration.

The call center manager will notice the ease and speed with which the system responds to queries and requests for information. The Real Time screens were designed with end user feedback dictating the structure and presentation of information in an uncluttered fashion. Every aspect of the user interface was reviewed and planned for ease of user interaction and access to data.

The Servers are Microsoft WindowsNT based with the Clients being Windows 95/98/NT based. Standard with each system is PC Anywhere software for remote maintenance of the system.

NOTE: The software is subject to change without notice which may create conflicts with the details put forth in this document.

Documentation Conventions

Various printing and organization conventions have been used to assist the reader in comprehending the presented material. The following chart provides information on the conventions used.

Table 1: Documentation Conventions

Convention	Description
Boldface	Identifies valid field values, which must be entered exactly as indicated.
Italics	Identifies titles of manuals and is used for word emphasis.
Bold Italic	Identifies a term defined in the Glossary.
"Double Quotes"	Identifies system messages.

Who Should Use This Guide?

The intended audience for this guide is the personnel responsible for programming CoralCenter JET and the call center manager (supervisor) who is responsible for the day-to-day operation of the call center.

This document is focused then, for these individuals so that they can perform the following duties:

- Install the CoralCenter JET hardware and software
- Set up the system's database hierarchy
- Layout the various elements of the database into a cohesive reporting structure
- Input data into the CoralCenter JET database
- Comprehending reports
- Review the ACD's performance
- Make management decisions regarding the operation of the call center based on the reports generated

How This Guide Is Organized

This guide consists of the following chapters:

- **Chapter 1 – Reference Guide Introduction**

  Contains a brief overview of this document and its components

- **Chapter 2 – CoralCenter JET Product Overview**

  Contains sections from the Product Overview document including summaries of several system features and the various CoralCenter JET options available.

- **Chapter 3 – System Details**

  Contains a brief overview of the CoralCenter JET product and introduces terms used throughout this document.

- **Chapter 4 – Client/Server Considerations**

  Includes information regarding system requirements, software installation procedures and configuring the system.

- **Chapter 5 – Server Installation for Windows NT Server/Workstation**

  Step by step instructions for installing Windows NT on the Standalone or Server model.

- **Chapter 6 – Continued Standalone/Server Software Installation**

  Step by step instructions for installing additional required software on the Standalone or Server model.

- **Chapter 7 – Installing CoralCenter JET Software on the Server or Standalone Model**

  Step by step instructions for installing the CoralCenter JET Software on the Standalone or Server model.

- **Chapter 8 – Setup the SERVER for Browser Based Realtime Client Access**

  Required programming on the Server to allow Client access to the Realtime Screens using Internet Explorer or Netscape Navigator.

- **Chapter 9 – Setup JAVA CLIENT for Browser Based Realtime Access**

  Required programming on the Client for accessing the Realtime Screens using Internet Explorer or Netscape Navigator.

- **Chapter 10 – Setup CLIENT PC for Realtime Access Without a Browser**

  Step by step instructions for installing the CoralCenter JET Java Client – used for accessing the Realtime screens without the use of a browser.

- **Chapter 11 – Setup CLIENT PC for DB/Reporting/Administration Access**

  Step by step instructions for installing required software to allow the Client PC to access the Reporting/DB/Administration areas.

- **Chapter 12 – Setup Backup Parameters**

  Step by step instructions for setting up the CoralCenter JET software to backup to the 2nd partition of the hard drive.

- **Chapter 13 – Starting CoralCenter JET**

  How to start the various CoralCenter JET components.

- **Chapter 14 – Database Administration**

  Contains information on switch vs. database elements, MS-Access database configuration, data input, changing the password, setting up your desktop, and database administration functions.

- **Chapter 15 – System Maintenance**

  Provides procedures for performing PC maintenance and back up the database.

- **Appendix A – DNIS Call Tracking**

  Discusses DNIS routing within the Coral environment.

- **Appendix B – Troubleshooting**

  Contains insight on how to deal with possible CoralCenter JET problems that may occur.

- **Glossary**

  Provides concise definitions on terms and acronyms used throughout this document.

Chapter 2 - CoralCenter JET Product Overview

This document provides an overview of the CoralCenter JET product line. Although intended for a reader knowledgeable in ACD, this document is aimed at providing the novice as well as the experienced ACD manager with information needed to understand CoralCenter JET.

Foreword

As the service-oriented approach to business has evolved, the need to facilitate contact with customers or prospects has grown. To handle this task many companies have implemented their own call centers. Call centers are designed and deployed with the thought in mind of handling large volumes of in-bound and out-bound traffic as expeditiously and cost-effectively as possible. Early call centers were quite large with several hundred agents and had reputations for poor service. During the 1990's, the trend in businesses has been to focus on customer service and smaller call centers. Now many firms, large and small, have started their own call centers.

With the introduction of call centers has come the need for strong data analysis tools that aid management in assessing the performance of the call center and its staff. These tools, Management Information Systems (MIS), are used by supervisors and managers in controlling current call traffic as well as in planning for future activity.

The Coral ISBX Multimedia Switching Platform is a strong choice for small to moderate sized call center environments. From the small Coral SL through the Coral family up to the large Coral III, all of the Coral platforms are "ACD ready." The Coral system's inherent flexibility and its design as an ACD have made it the premier choice for call center managers. Tadiran Telecom has developed a companion MIS package for the Coral ACD, called CoralCenter JET. Named after the environment it was designed to manage and help control, CoralCenter JET is a state of the art solution to the demands for managing and tracking today's complex call center environment.

Overview

CoralCenter JET was developed to the requirements voiced by call center managers. An extensive list of requirements was developed and set as the basic design criteria of the CoralCenter JET.

Some of our customer's requirements were:

- The product must be the same high quality as the Coral and associated products.
- Scalability, so that the MIS could cover from 1 to over 300 agents.
- The product had to have a Client/Server architecture and be able to work in a standalone as well as multi-client mode.
- Backward compatibility between the MIS package and as many Coral software versions as possible.
- Base the MIS on standards and make it as 'open' as possible for future expansion.
- Provide for custom report creation, query statistics over the LAN as well as supply a complete portfolio of predefined reports.
- The product must have built-in support for future call center oriented applications.

CoralCenter JET meets and exceeds these requirements and provides more functionality than any other comparably priced MIS system on the market today. When combined with the Coral, the result is an unparalleled solution to a call center's needs.

Design

Following the same design philosophy as the Coral, the CoralCenter JET product line is designed for flexibility: flexibility in configuration and reporting as well as supporting future applications.

The CoralCenter JET architecture is based on the Client/Server model and can be installed in a standalone configuration or in configurations consisting of a Server (or Servers) and several clients. This design benefits the user with shared resources, common data storage facilities and scalability. The call center manager has the product that meets their needs on installation and a platform that can grow with their business.

Every ACD MIS system must be either digitally linked to the ACD switch or a subset of the ACD. Tadiran Telecom's analysis of the market's requirements and the best means to deliver a cost-effective solution to meet those requirements was to have CoralCenter JET resident in an industry standard PC platform, digitally linked to the Coral. These digital links are Computer Telephony Integration (CTI) serial interfaces using an "Application Protocol Data Link" for ACD event messages. The CoralCenter JET can support up to 3 Corals attached to one CoralCenter JET system. This multi-switch connectivity allows call center managers with more than one site to have a centralized reporting package with real time screens that can show any activity in any site.

As call centers have evolved, so have the demands for accurate and sophisticated tools to provide and manage the call center's statistics. CoralCenter JET incorporates the latest technology in ACD MIS design. Using Sybase's SQL Anywhere and based on an SQL/ODBC query structure, CoralCenter JET is a complete reporting suite for the call center manager. The open architecture of the database allows for customer access via predefined or custom reports as well as ODBC queries over a LAN. Whether delivering real time data in easy to understand statistics or reporting on past events, CoralCenter JET provides a complete environment for data analysis and presentation.

The modularity of the CoralCenter JET's JET software allows the system to be scaled from a single PC running all of the processes to a multi-Client environment dispersed over a LAN or WAN or even the Internet. The Server functions are in one PC acting as the switch interface point, Client handler and Database Server or the Database functions can be placed on a separate server. The Server can have several real time and reporting clients attached to it. The connections can be through the corporate LAN or over the Internet. This scalability allows a call center manager to custom-tailor the system to meet their needs without sacrificing any future expansion options. There is no 'fork lift upgrade' or replacement of any core software components.

The CoralCenter JET Family

The CoralCenter JET system links to the Coral via an RS-232 serial connection using a more robust ACD messaging protocol than the one used by previous Coral ACD products. This protocol, called Computer Supported Telephony Services (CSTS), is based on the international standard for CTI communications, the CSTA protocol. The CSTS protocol provides the CoralCenter JET with a full complement of ACD event messages including DNIS and ANI information. This allows for a comprehensive reporting package. CoralCenter JET is available for version 9.63 and higher Corals.

Software Commonality

Any Client/Server CoralCenter JET can have the CC Web Server option for opening up Internet access to Real Time information. With the multi-switch option, called CC Link, call center managers can see real time information and generate reports on statistics over three ACD sites. No matter what the call center's requirements and growth patterns are CoralCenter JET is designed to meet their needs flexibly and completely.

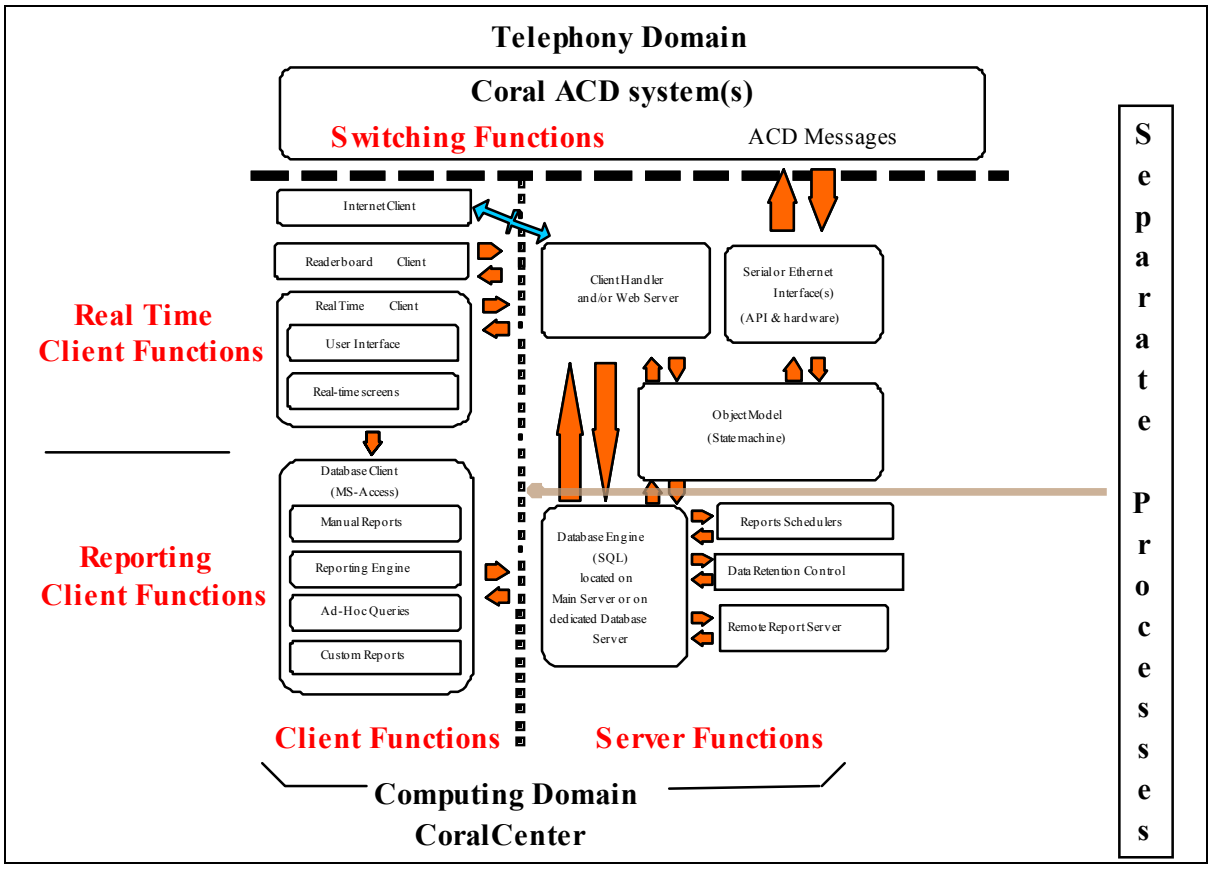


Figure 2 - Software Modules

CoralCenter JET Components

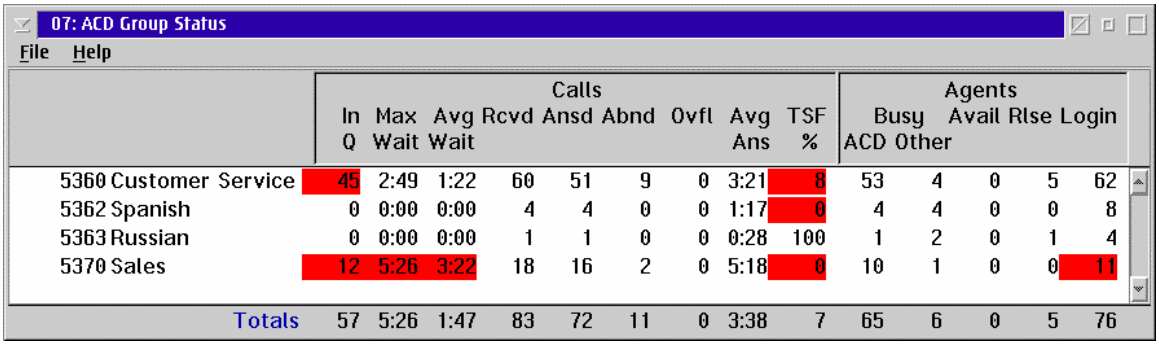
The CoralCenter JET is designed to be installed as standalone, all-inclusive packages on one PC or as multi-PC Client/Server environments. CoralCenter JET consists of the following modules that can be installed in one PC or separated over a LAN or, in the case of the Web Client, separated over the Internet.

- ACD Server – This Server communicates with the Coral and Clients. It is typically co-resident with the Database Server. This is also referred to as the 'Server.'
- Database Server – This Server handles all data storage and retrieval functions. The database is SQL Anywhere for Sybase. This Server is co-resident with the ACD Server except in very large installations.
- Web Server – This Server option (called CC Web) enables Web connectivity for the CoralCenter JET. The Java Applet used as a Client for this Server is temporarily (or permanently) downloaded on demand to the Web user's PC.
- Real Time Client – This Client presents the Real Time data in easy to understand formats. Several windows can be selected for viewing at any time.
- Readerboard Client – This option allows the CoralCenter JET to support Readerboards.
- Reporting Client – Used to generate reports and conduct database administration.

User Interface

A functional yet simple user interface has been designed into the CoralCenter JET product. Call data is presented as it takes place using Real Time displays. There is a Windows-based interface into the database for simplified updates, personnel changes and management of the data structure. Report generation is also through windows with a series of selections that step the user through generating reports. There is a special class of screens for users of CC Web that present the call center's activity in easy to comprehend bar charts and a mini-readerboard window.

The user can select what information windows they want displayed. ACD Groups (current and last period statistics), Agents, Trunks, Trunk Groups and DNIS activity can be displayed using individual windows. The selection of threshold highlighting colors is also under user control so that the user can select the threshold colors pertaining to each Group and agent state that appeal to them.

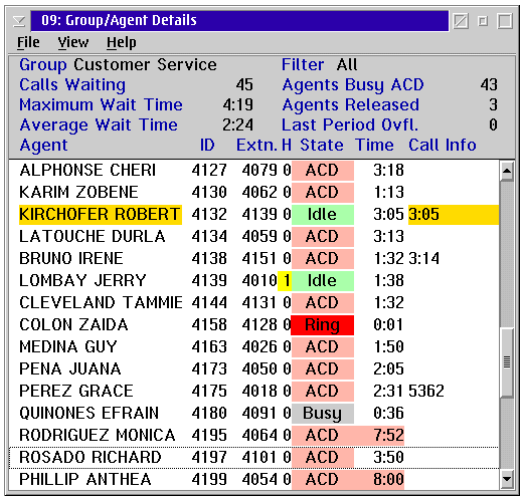

07: ACD Group Status

File Help

	Calls									Agents				
	In Q	Max Wait	Avg Wait	Rcvd	Ansd	Abnd	Ovfl	Avg Ans	TSF %	Busy ACD	Busy Other	Avail	Rlse	Login
5360 Customer Service	45	2:49	1:22	60	51	9	0	3:21	8	53	4	0	5	62
5362 Spanish	0	0:00	0:00	4	4	0	0	1:17	0	4	4	0	0	8
5363 Russian	0	0:00	0:00	1	1	0	0	0:28	100	1	2	0	1	4
5370 Sales	12	5:26	3:22	18	16	2	0	5:18	0	10	1	0	0	11
Totals	57	5:26	1:47	83	72	11	0	3:38	7	65	6	0	5	76

Window 1 - Real Time Group Status

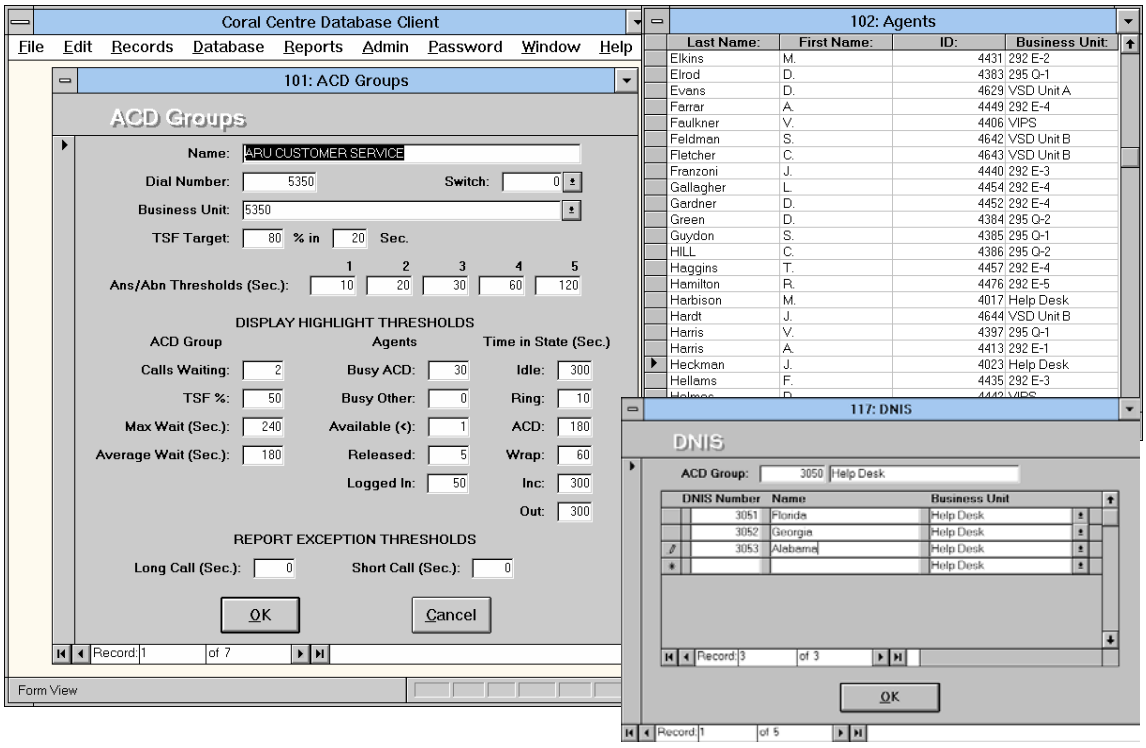
The Real Time screens display data such as calls in queue and current agent states (in Release, in Wrap Up, etc.). The Group window (above) shows current period call and agent summary data. The Group/Agent Details window (below) provides Group data and each agent's activity and status.



Window 2 - Real Time Group/Agent Detail

Each user, ACD Group, agent, Trunk and corporate level is put into a hierarchical structure made up of 'Business Units.' As each corporation's structure is different from others, Tadiran Telecom designed the CoralCenter JET to structure its data to meet the corporate hierarchy. The user can select from Business Units they have access to the specific ACD entities (Agents, Groups, etc.) that they want displayed on their screen. By selecting specific Groups, agents, etc. the user can focus on the immediate requirements at hand without displaying extraneous information not needed.

When the user wants to set or change the CoralCenter JET's programming they open a MS Access application used to 'administer' the SQL Anywhere database. The windows shown are a representative sample of the ones used.



Window 3 - Sample Database Windows

Once the CoralCenter JET accumulates statistics on call center activity, the user can choose from a broad selection for either automatic or manually generated reports to printer, file or screen.

AB Cable Company

D2: Login/Logout By Event

For A Busy Cable Company

From 20-Jan-98 12:00 AM to 20-Jan-98 12:00 AM

ACD Group: All

Issued: 29-Jan-98 2:16:06 PM

Coral Center Ver. 1.22 Report Ver. 1.3

Giusto Randy ID: 4085

Event	ACD Group	Date	Time	Station	Switch ID
Login	5363	20-Jan-98	00:19	4035	0
Logout	5363		00:22	4035	0
Release	All		00:54	4035	0
Resume	All		01:07	4035	0
Release	All		01:55	4035	0
Resume	All		01:57	4035	0
Release	All		02:04	4035	0
Resume	All		02:14	4035	0
Release	All		02:28	4035	0
Logout	5360		02:29	4035	0
Logout	5367		02:29	4035	0
Login	5360		02:52	4035	0
Login	5367		02:52	4035	0
Login	5360		04:00	4032	0
Login	5367		04:00	4032	0
Release	All		04:00	4032	0
Logout	5360		04:00	4032	0
Logout	5367		04:00	4032	0
Login	5360		04:03	4035	0
Login	5367		04:03	4035	0
Release	All		04:19	4035	0
Resume	All		04:20	4035	0
Login	5363		05:02	4035	0
Logout	5363		05:06	4035	0

Coral Center 1

Report 1 - Sample Report

CoralCenter JET's predefined reports are grouped by Report Type. Each Report Type is denoted by a letter which indicates the type of data presented, followed by a digit indicating the granularity (i.e. the amount of data summarized in one row).
The meaning of each digit is:

1: by ACD Group, Trunk Group, DNIS, Agent or similar
2: by sampling interval
3: by day
4: by sampling interval averaged across the selected days to show an average over this period
5: by ACD Group, Trunk Group, etc. averaged across the selected days to show an average day

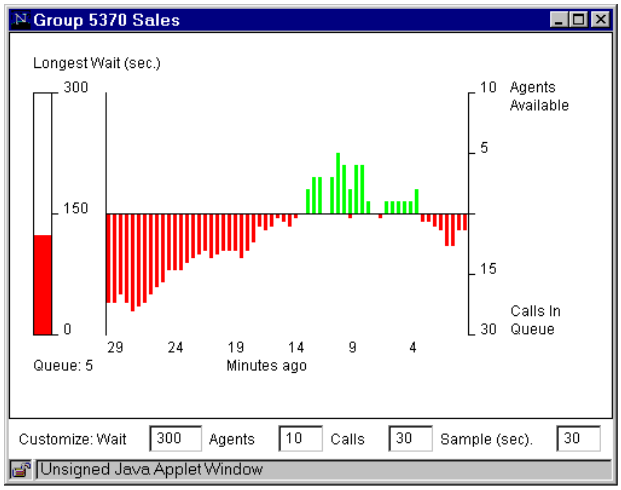
The C1V report is a special report generated for validating agent activity.

BY… **Report Type**	**DNIS**	**AGENT**	**GROUP (ACD or Trunk)**	**Interval/ Event**	**Day**	**Avg. Day per Interval**	**Avg. Day per Group**	**System**
ACD Group Performance			A1 A1A	A2	A3	A4	A5	
ACD Group Performance Graph				A2G				
Call Distribution			B1, B1A	B2	B3	B4	B5	
Call Distribution Graph			B1G					
Agent Performance		C1		C2	C3			
Agent Validation		C1V						
Agent Event (log in/out, etc.)		D1		D2				
Trunk Group			E1	E2	E3	E4	E5	
DNIS	F1			F2	F3			
Wrap Codes			G1		G3			
Trunk Exception			I1		I3			
Abandoned Calls			J1					
Exception log								K1
Group Performance Special						L4		
Business Hierarchy								M1

Chart 1 - Predefined Reports

CoralCenter JET offers two options for remote users. For users that must see every aspect of the call center, any Client can be remotely installed over a WAN. Every screen, report and window available to Clients on-site is available to remote users. ECI has just announced the addition of a Web server for those remote users that want anywhere, anytime connectivity for information on Group activity. Available since 1998, the Web server module (CC Web) enables CoralCenter JET to deliver ACD Group activity over an Intranet or the Internet. For instance, if a Headquarters-based manger wants to see current activity or the call center's customers want to see how their traffic is being handled, CoralCenter JET provides them with an easy to understand and use solution. The user does not need any special software to access the information. Using Java and the ability to load temporary Internet applications, CoralCenter JET can enable anyone anywhere to see how a call center is performing. In addition, as it uses standard browsers, any PC accessing the Internet can be a remote Client. The data over the Internet is presented in two forms for the user's benefit. The Marquee window is a small, mini-readerboard window automatically scrolling through Group statistics. The bar graph window presents the past few minutes or hours of traffic as well as a snapshot of current activity for a Group.

Window 4 - Real Time Scrolling Marquee



Window 5 - Real Time Bar Chart

The Internet Clients are Java applets that are downloaded on demand over the Internet. The applets have been tested with Internet Explorer 5.0 and higher, and Netscape 4.03. Using compact packets of information, the Real Time information is updated every 2 seconds to reduce network load. Once a user has logged in to the CC Web Server, they are given a list of the Groups they can view. Each Group has options next to it for viewing as part of the scrolling Marquee and/or as a Bar Chart. Each Group selected for Bar Chart is assigned its own window. The user can move/place each of the windows brought up anywhere on their display, as desired.

The Marquee window scrolls through several ACD Groups sequentially or scrolls continuously through snapshots regarding the same Group, if only one Group was selected for the Marquee.

Each Real Time Bar Chart window has its own four values the user can manipulate for their viewing ease. One value sets the maximum time in seconds for the Longest Wait Bar Graph along the left side of the window. The other three values relate to the Bar Graph running horizontally across the window. One of these values adjusts the maximum agents value to the upper y-axis. Another value adjusts the maximum number of calls in queue value along the lower y-axis while the last value adjusts the snapshot sample time (number of seconds between snapshots). Every snapshot period a calculation is made and a new set of bars added to the chart with existing bars shifted to the left. Once the time for sampling is set the 'Minutes Ago" values are assigned to the x-axis to assist the user in visualizing the time span of the chart.

Special Applications

CoralCenter JET is an open platform, able to communicate with several external applications. Examples of this are the CoralCenter JET's ability to send specially formatted data periodically or on demand to external applications such as the Workforce Management package from TCS called TeleCenter and to Host computers as files for inclusion in corporate reports.

Toward the future

CoralCenter JET is designed to provide call center managers the highest level of functionality today as well as a platform for future growth and applications. ECI's extensive commitment and involvement in call centers is evidenced by the well thought out features and functions available with CoralCenter JET and its ability to grow and expand in the future.

Technical Specifications

Server OS…….Microsoft Windows NT / 2000 Server or Workstation (SP4 Minimum)*
Client OS……Microsoft Windows NT / 2000 Workstation, Windows 98, Windows 95*
OS for Real Time Clients w/o Reporting…..Microsoft Windows NT/98/95 JAVA Client
OS for Real Time Clients with Reporting… Microsoft Windows NT/98/95 JAVA Client
OS for Reporting only Clients…….Microsoft Windows NT/98/95
Database Engine ……...Sybase SQL Anywhere V7.0 or later
Database Type ……..Relational using SQL
Database front end ……...Microsoft Access 2000 (Runtime Supplied)
Database Queries supported ……..…SQL, ODBC
Networking Protocol …….……TCP/IP
Maximum number of agents tracked simultaneously ……..350
Maximum number of agents in database (practical limit) ……. 10,000
Maximum number of trunks in database (practical limit) ……... 600
Maximum number of Real Time Clients …….. 32
Maximum number of Reporting Clients ……... 16
Number of predefined reports ……... 32 Numeric, 2 Graphical
DNIS reported separately from Groups …….. CTI
ANI reported on Abandoned Call report …… CTI
Multiple switch support ……Yes
Multiple printer support ……Yes
Minimum Coral SW version for CoralCenter JET Pro ……..…… 6.xx
Minimum Coral SW version for CoralCenter JET Pro Plus and CTI ……..….... 9.63
Coral Interface ……. Serial and Ethernet (CC CTI)
Remote Clients ……..…. via WAN Gateways, Intranet or Internet
Multiple switch support option ……..……. Up to 3 Corals

*User/Technician/Customer responsible for ensuring compliance with applicable software licenses.

Note: Tadiran Telecom recommends that the LAN segment used for CoralCenter JET be separated from other LAN traffic. This segregation will reduce the impact high LAN traffic will have on Real Time display of information.

CoralCenter JET is a dynamic, evolving product and so its specifications are subject to change without notice.

Chapter 3 - System Details

Foreword - System Overview

The term 'call center' has become one of the most widely used terms in telecommunications. As the service-oriented approach to business has developed, so has the need for keeping in frequent touch with customers or prospects. To handle this task many companies have implemented their own call centers. These call centers have been designed and deployed with the thought in mind of handling large volumes of in-bound and out-bound traffic as expeditiously and cost-effectively as possible. We believe the term call center will become a standard description of business units within all companies, or of a company's overall operations.

Some examples of call centers are Help desks, Airline reservations, technical support groups, customer service groups and customer contact representatives that call clients/prospects to generate new business or follow up on existing accounts.

With the introduction of call centers into the corporate environment has come the need for strong data analysis tools to aid management in assessing the performance of the call centers. These tools must be capable of assisting supervisors and managers in controlling current activity as well as planning for future business in the call centers they have responsibility for.

The Coral PBX/ACD is a strong choice for small to medium sized call center environments. The system's inherent flexibility and its design as an ACD have made it the premier choice for the call center manager. To handle the reporting side of the center, ECI focused its efforts on development of an MIS package that complemented the Coral. The package would be for the call center manager responsible for a few up to hundreds of agents. The initial result of Tadiran Telecom's efforts was the PC-ACD product. The initial release targeted 5 to 150 agent markets. It is offered by Tadiran Telecom as an inexpensive MIS package for the growing call center.

As call center managers increased their responsibilities and the call center environment increased in complexity, so too has the requirement for functionality beyond that offered by PC-ACD. Tadiran Telecom built on the success of the PC-ACD and, incorporating features in response to our customers' requests, developed the latest generation of MIS system for the Coral, the CoralCenter JET. Named after the environment it was designed to help manage and control, CoralCenter JET is a state of the art solution to the demands for reporting and tracking in today's complex call center environment.

Design Summary

Following the same design criteria as the Coral, the CoralCenter JET product line is designed for flexibility: in configuration, in reporting and in supporting future applications.

The CoralCenter JET architecture is based on the Client/Server model. It can be installed in a standalone configuration or in a configuration consisting of a Server (or Servers) and several clients. This design benefits the user in shared resources and common data storage facilities. The use of a Client/Server architecture has scalability designed into the product. The call center manager has the product that meets his or her needs on installation and a platform for growth as the business grows and evolves.

The CoralCenter JET is designed to incorporate the latest in Coral interfaces. The proprietary APA protocol, which runs over an RS-232 link, has a long list of ACD call event data messages. This interface is designed based on international standards.

As call centers have evolved, so have the demands for accurate and sophisticated tools to provide and manage the statistics related to the call center. The CoralCenter JET represents the latest technology in ACD MIS design. Based on an SQL/ODBC query structure, the CoralCenter JET provides a complete reporting suite to the call center manager. The open architecture within the database allows for customer access via predefined or custom reports. Whether delivering real time data in easy to understand statistics or reporting on past events, the CoralCenter JET provides a complete environment for data analysis and presentation.

The modularity of the CoralCenter JET's software allows the system to be scaled from a single PC running all of the processes up to a multi-PC environment with Clients dispersed over a LAN or WAN. The Main Server can be the CoralCenter JET Server, the switch interface point and Database Server. The Database Server can be separated from the Main Server in larger systems. The Main Server can have several Real Time and reporting clients attached to it, as the call center requires. This scalability allows a call center manager to custom-tailor the system to meet his or her needs without sacrificing any future expansion options. There is no 'fork lift upgrade' or replacement of any core software components.

Tadiran Telecom's CoralCenter JET is designed to be used as a management control tool for ACD supervisors. Tadiran Telecom's Coral provides real time information data to the CoralCenter JET either over the industry standard CSTA Ethernet link or over proprietary RS-232 links. The CoralCenter JET determines the appropriate interpretation from this data to provide Real Time information display and management reports. Supervisors can request reports on archived information to screen as well as to printers. The CoralCenter JET software can be customized by any supervisor for individualized displays and reports.

The CoralCenter JET system provides a flexible way to examine data that has been generated by the Coral ACD. Because of the CoralCenter JET's architecture, each CoralCenter JET user can build their individual access to the data using a common database structure. The structure of the database is designed to accommodate organizations of all sizes and levels

CoralCenter JET introduces a new and flexible business model. Instead of a fixed Company/Division/Department hierarchy, a tree structure of "Business Units" is created, each of which may contain other business units and in turn be contained within a parent business unit. You can name business units Divisions, Departments, Teams or whatever best represents this segment of your organization. In parallel with the business model is the switch model which represents the ACD such as Trunk Groups and other entities known to the Coral switch. Static and dynamic links between the two models allow the data from the switch to be stored and presented in a way that is most convenient for the user.

For example, an ACD agent has a static relationship with one Business Unit (the unit which is "responsible" for the agent) and a dynamic relationship with one or more ACD Groups, that changes as the agent logs in and out. Each ACD Group may have one or more DNIS numbers assigned to it for tracking and reporting purposes. The DNIS number routing is dynamic in the Coral and so the relationship to Groups must be dynamic. These DNIS numbers are reported individually, as subsets of the responsible Groups and as areas of agent activity.

System Architecture

CoralCenter JET is based on a client-server architecture, with one logical Server supporting multiple Clients. This architecture has the flexibility to support many clients across the LAN from a single server. The real time clients use Pentium PCs running Windows NT with JAVA Client. The Reporting clients can be similar PCs running MS-Access under Windows NT/95/98. A hybrid architecture was chosen for cost and performance reasons, with Sybase SQL Anywhere providing an efficient relational database engine, while a Microsoft Access front end supports all standard user interaction including reports and database queries.

Figure 3 and the following description describe the logical architecture without regard to machine boundaries.

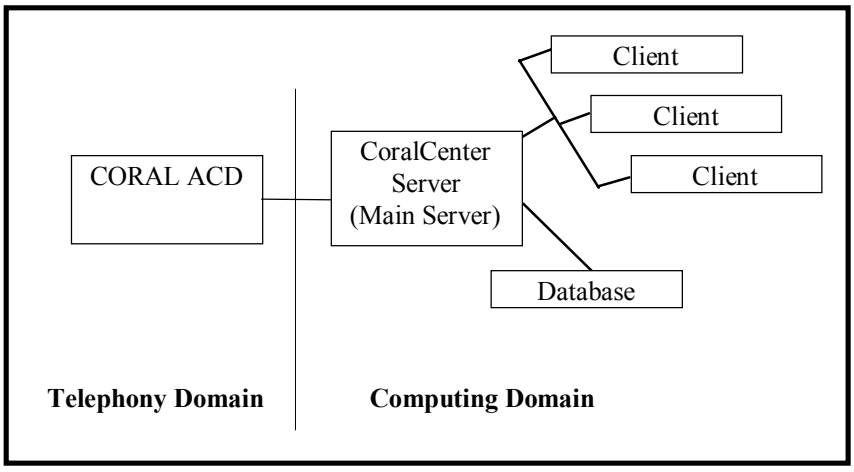


Figure 3: Commonality of Functions

The open structure of the database allows for data representation in forms required by the call center management. This open architecture approach is also the foundation of the CoralCenter JET's software components. The Computing Domain can exist as several systems on a LAN or in one platform. This Domain can be contained within the same building as the Coral or have Clients dispersed over a WAN. The heart of this design is the software of the CoralCenter JET. This design supports the multiple choices available with CoralCenter JET. Figure 4 on the

following page provides a view of the software structure of CoralCenter JET that allows this flexibility of deployment.

The software is segmented into logical groupings. The Switch Interface module is specific to the type of I/O used for ACD call data from the Coral. The PC-ACD and the CSTS serial data from of the Coral are 'mapped' to CSTA messages so that a common protocol is used internally between the Switch Interface and the next process, the Object Model. This Object Model module has common functions between all levels of CoralCenter JET. These functions are to report to the Database and Client Handler changes in status for the various ACD entities and accept real time information from the Coral. As the nature of the event reporting varies by interface type used, the Object Model is different from level to level. The Client Handler takes real time data out from the Object Model and distributes it to the attached Client(s). This module is also common throughout the various levels and configurations of CoralCenter JET. The Database Engine is an SQL database that supports remote reporting, data retention control and automatic reports scheduling. The database subsystem is also common throughout the product. The only database options are the number of simultaneous accesses and the location of the database (within the Main Server or dedicated Database Server). The Real Time Client software can be located on the Server in smaller systems or connected to the Server over a LAN. The Readerboard Client is a software module attached to a Real Time Client and must be resident in the Real Time Client's PC. The Database Client can be located on the Server in a standalone configuration, on a real time Client or on a separate Client PC. The ability of these modules to be intermingled on the same PC or dispersed over a LAN provides for an environment that can be configured to meet each customer's needs.

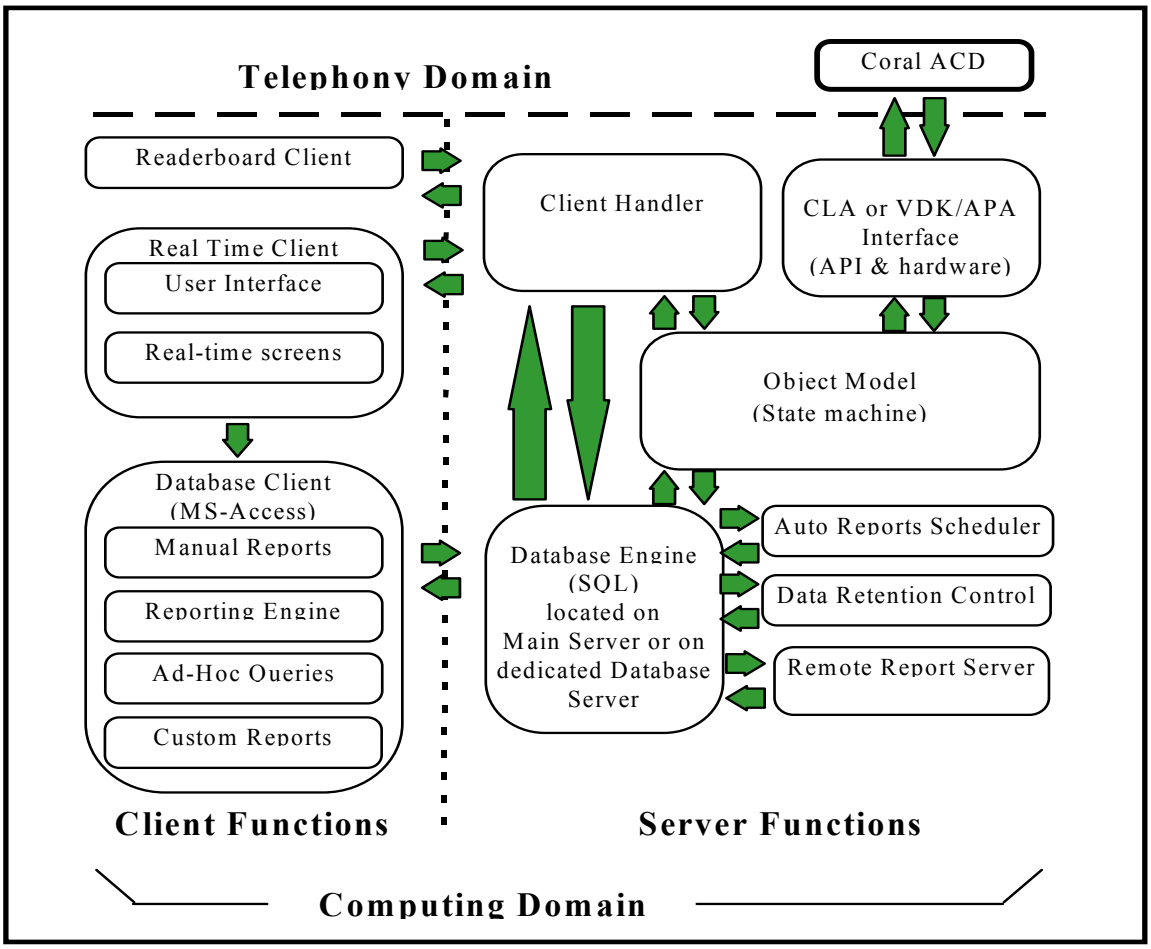


Figure 4: Software Structure

CoralCenter JET Architecture

At the heart of the Server function is the Object Model, which tracks the state of all ACD "objects" of interest. Tightly coupled to the Object Model are the Client Handler, which maintains connections with real time and Readerboard Clients, and the Switch Interface, which communicates with the switch using either the CSTA or the APA protocol. The Object Model also communicates with the Database Engine to retrieve information about ACD objects at initialization, and then periodically to save statistical information for reports and queries. Also communicating with the database engine are the Auto Reports Scheduler, which enqueues reports for timed execution; the Expiry task, which removes aged database records to conserve disk space; and the Remote Report Server, which enqueues reports under user control from a dial-in connection.

All Server components run in native Windows mode and are designed using multithreading techniques so that, when idle, little or no CPU resources are used. The server host/s could therefore be used by other applications, but for maximum responsiveness this is recommended for low traffic ACDs only. Most Server activity occurs during the periodic "database save" function and report generation.

The Client function consists of the Real Time Client, the Database Client and the Readerboard Client.

The Real Time Client is a native JAVA application that supports Real Time screens.

The Database Client is a Microsoft Access 2000 application running in Windows NT/95/98 on a separate host.

The Readerboard Client is a native Windows application to drive one or more ***Readerboards***.

Database Tables

Configuration and statistical data are stored in a multi-user, relational database on the server host. Internally, the database is queried and updated using Structured Query Language (SQL). The configuration data is loaded at installation time, and is retained until changed by the user. Statistical data is added at fixed time intervals by the CoralCenter JET Object Model subsystem, and is automatically deleted after a configurable number of days to limit disk storage requirements.

Security

This section describes CoralCenter JET security and access levels.

General Description

CoralCenter JET is a multi-user application. Access to features and data may be restricted on a per-user basis. Users gain access to their features and data, and retrieve their saved preferences, by logging in with a User ID and optional password***. As shipped, the application comes with a single user ID "ccadmin" with no password***. Sites with no security concerns may simply continue to use this ID universally; otherwise, the ccadmin user sets a password, then creates additional users and sets their individual access levels.

The security environment can be rather complex, but you only need to understand as much as is relevant to your security concerns.

Direct access to the Sybase (server) database is controlled by user IDs and passwords. We have not changed the Sybase defaults, and have added user IDs to support the application. Normally, CoralCenter JET users do not need to access the Sybase database directly. If you have acquired either the full single-user product or the Sybase SQL Anywhere Server, you will be able to access the database using dbisql.exe and the SQL language. In this case and if security is a concern, we recommend **physical** security of the server host. SQL Anywhere Server administrators must also be aware of the possibility of unauthorized network access to the server. ECI will work with you if this should become a problem.

Access to CoralCenter JET Real Time screens is controlled by user ID and password. User IDs and encrypted passwords are stored in the server database.

Access to the Database Client uses MS-Access security features. User IDs and passwords are stored in a SYSTEM.MDW file which, in a client/server configuration, should be shareable across the LAN so that users created on one host can log in from any host. A user, when created, is given one of three access levels, optional Admin privileges, and the ability to read or write a subset of the data. A user's access level is shown in the "Initializing" screen while logging in:

1 = Level 1

2 = Level 2

3 = Level 3

+A = plus Admin. level

- **Level 1** - users can run access existing database screens and reports except those in the database administration and data migration classes.
- **Level 2** - users will have level 1 access and can access database administration functions.
- **Level 3** - users have level 1 and 2 access and can design new objects (reports, forms, queries), and view database tables directly.
- **Admin** - users can manage user accounts including setting user Ids and levels.

Most of the advanced features are only available if you have the full Microsoft Access 2000 product. The runtime as shipped provides a menu user interface supporting level 1, 2 and Admin functions. Certain advanced features are reserved to Tadiran Telecom.

This reference guide has been developed based on a Level 3 +A access (the highest level).

User access to data is based on two anchor points or "nodes" in the Business Unit hierarchy - one for read-only and one for read-write access. The two nodes, which are set when the user is created, may be the same or different. A user can then report on or view (if so authorized) data for the specified ("parent") Business Unit, all Business Units recursively descended from the parent, and all ACD objects (ACD Groups, Trunk Groups...) associated with any of the allowed Business Units. Separately, read-write access allows the user to modify the parent or descending Business Units or associated objects. By having separate nodes for Read and Read-write users may be granted "Departmental" access to data, but may only change data associated with their group.

User Management

Users are added and deleted from the Admin→Users option of the Database Client. Please refer to the Help screen for this option for full details. Note especially how to coordinate passwords for the NT and MS-Access environments.

Security Device

Another dimension to security is provided by the ***Security Device or (Dongle)***. This is provided to enforce Tadiran Telecom's intellectual property rights over the software. It operates transparently and without inconvenience to you. The device is encoded so that, when attached to the parallel port, it regulates:

- The maximum number of simultaneously logged-in agents which the application will track.
- The maximum number of Full and Marquee clients which can connect to the server
- Whether a Readerboard Client can run on the host.

To view the agent limit, open the Object Model window while the CoralCenter JET Server is starting up. The agent limit is displayed.

To view the Client/Readerboard limits, open the "CC Java Server" window shortly after startup. The attempt fails if the host is not authorized.

System Help

Users may access the Help System, in both the NT and MS-Access client environments, by placing the cursor on the selected topic and pressing F1. A brief explanation of the topic is presented

Chapter 4 – Standalone and Client/Server Setup Introduction

CoralCenter JET consists logically of five independent major subsystems:

1. Database Server: The Sybase SQL Anywhere database - a multi-platform application
2. ACD Server: a group of processes which track ACD activity on the switch and communicate with client processes and the database – a Windows NT application
3. Real Time client: a single JAVA Client executable which manages all the Real Time windows;
4. Readerboard client: a single Windows executable which manages locally-attached readerboards;
5. Database/reporting client -a Microsoft Access for Windows application.

In principle these subsystems can be run on separate hosts or together on any platform which will support them. The following host configurations have been tested:

- All subsystems on a single host running Windows NT/Server (this is the entry-level standalone configuration);
- Database Server and ACD Server on a networked Windows NT host;
- Database Server, ACD Server and real-time client on a networked Windows NT host;
- ACD Server (with or without real-time client) on a networked Windows NT host, Database Server on a separate networked Windows NT host;
- ACD Server (with or without real-time client) on a networked Windows NT host, Database Server on a separate networked Windows NT 4.0 (Workstation or Server) host;
- Real-time client on a networked Windows NT host;
- Real-time client and database/reporting client on a networked Windows NT host;
- Database/reporting client on a networked host running Windows NT/95/98.

Installation options permit separate installation of these packages. Installation on a Windows host is across the network as described in the README.TXT file.

System Requirements

This section describes the hardware and software requirements for the various configurations.

Standalone

The standalone version of the CoralCenter JET software is designed to be installed and operated on a single personal computer with the following minimum configuration:

- Pentium/200 MHz
- 64MB of memory
- Microsoft Windows NT/Server Service Pack 4 or higher.
- Sybase SQL Anywhere Single User for Microsoft Windows
- 2 Gigabyte hard drive space recommended for all files
- CD ROM drive.
- Display adapter supporting 1024 x 768 x 256 resolution.
- Serial ports:
  - one for each APDL/APA link, i.e. one per switch
  - one equipped with modem (14.4K or faster) for remote maintenance (can be an internal modem as long as there are no conflicts)
  - one per Readerboard if required
  - typically this will require a multiport card to support more than two switches
- 3 ½" floppy drive
- Printer with Windows drivers, for hard-copy reports.
- 15" or larger monitor.

ACD Server, with or without Database Server and/or real-time client

Same as standalone, with the addition of:

- Ethernet adapter to support clients;
- Database Server requires SQL Anywhere Server instead of standalone.
- Additional memory is helpful in intensive reporting environments.

Separate Database Server

- Pentium/120 MHz
- 32MB of memory. Additional memory is helpful in intensive reporting environments;
- Microsoft Windows NT 4.0 (Workstation or Server), Service Pack 4 or higher.
- Sybase SQL Anywhere Server
- 2 Gigabyte hard drive space recommended
- CD ROM drive
- Ethernet adapter
- 3 ½" floppy drive
- (optional) removable cartridge drive for backup, such as Iomega Jaz drive.

Windows Realtime/Reporting/Database client

- Pentium/75 MHz
- 16MB of memory
- Windows 95 or 98
- Sybase SQL Anywhere Windows 16-bit client
- 1 Gigabyte hard drive space recommended for all files
- CD ROM drive recommended
- Display adapter supporting 1024 x 768 x 256 resolution
- Ethernet adapter
- 3 ½" floppy drive
- Printer with Windows drivers, for hard-copy reports.
- 15" or larger monitor

Chapter 5 –

Server Installation for Windows NT Server/Workstation

Note: Please be sure to read this section before installing NT.

Hardware Requirements:

- Pentium II or Pentium III, 200MHz or faster.
- 64MB Minimum, 128MB recommended.
- 2GB disk space available for CC database.
- Supported network adapter, unless standalone installation.
- Modem, preferably on COM3, for remote maintenance.
- Second or removable hard drive, or tape backup unit for database backup.

Server or Workstation?

An NT Workstation(NTW) license limits you to, not more than 10 inbound connections. An elaboration of this condition may be pursued at: http://www.microsoft.com/NTWorkstation/Newa/MktBulletins/Ntlicensing.asp Therefore, NT Server(NTS) should be used if more than 10 clients are planned to be in use simultaneously. It is possible that, under heavy load, network performance will begin to degrade on NTW with fewer clients, due to its optimization for interactive rather than server use. Therefore we recommend that NTS should be used for more than 5 clients. NTS should also be used if:

- You intend to set up a domain rather than a workgroup, or
- You expect more than one Remote Access session, or
- You wish to use features available only on NTS, such as disk mirroring.

Service Pack 4 or higher is required.

Choice of Workgroup or Domain is a matter for local procedures. We find that a “CORALCEN” Domain or Workgroup administered from the ACD server is convenient.

TCP/IP is required to support Java client, even standalone. IP address is a matter for local procedures.

An HTTP (Web) server is required to support browser-based Java clients. NT Server provides the “Microsoft Internet Information Server” and NT Workstation provides “Microsoft Peer Web Server” as optional installation components. Follow the Microsoft instructions to install these products. For a standard installation only the “WWW Service” is required. Final step is done after installing CoralCenter JET.

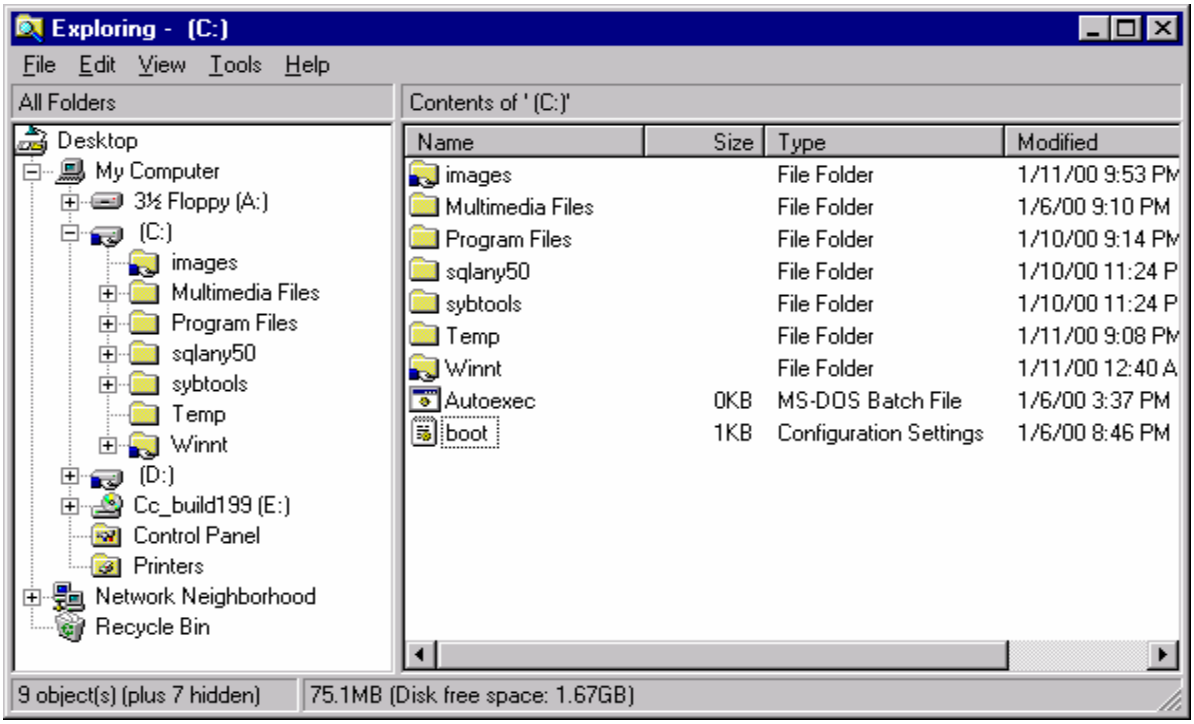
Display parameters of 1024 x 768, 256 colors, large fonts, recommended.

Installation

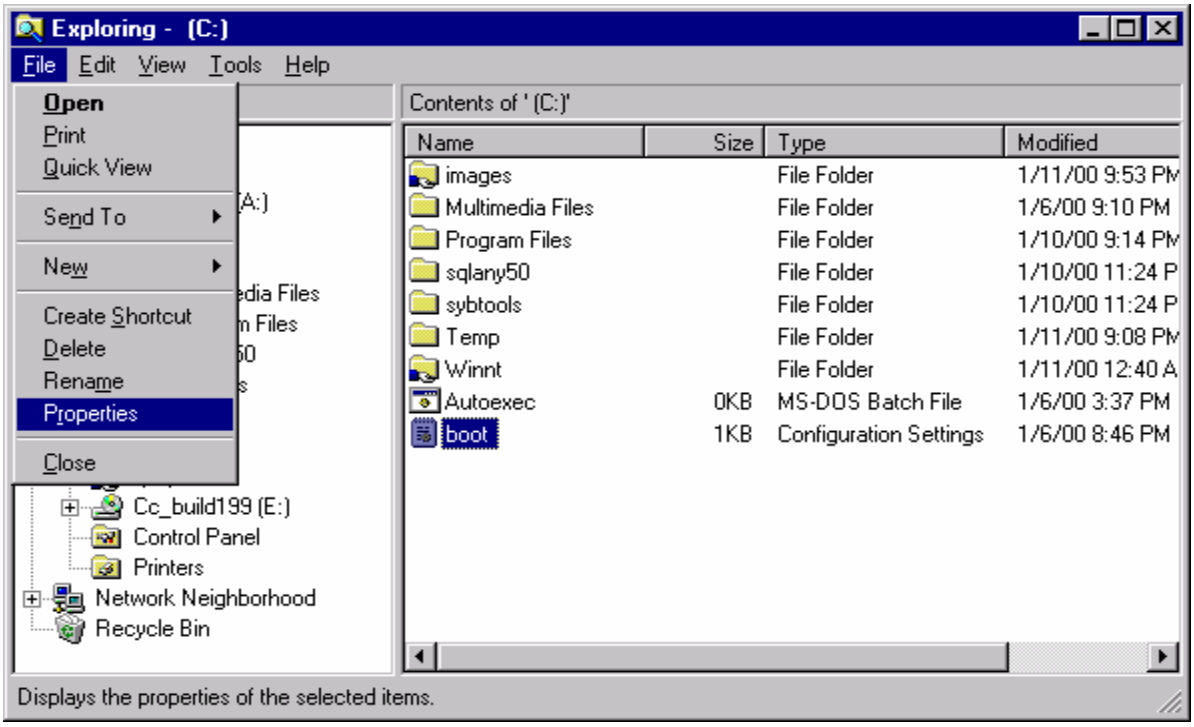
1. Install Windows NT Server or Workstation 4.0. Be sure that you have the necessary NIC card drivers on hand. You will need them during installation.

2. Edit C:\boot.ini (this is a Read-only file). You must unlock the file before you can edit it.

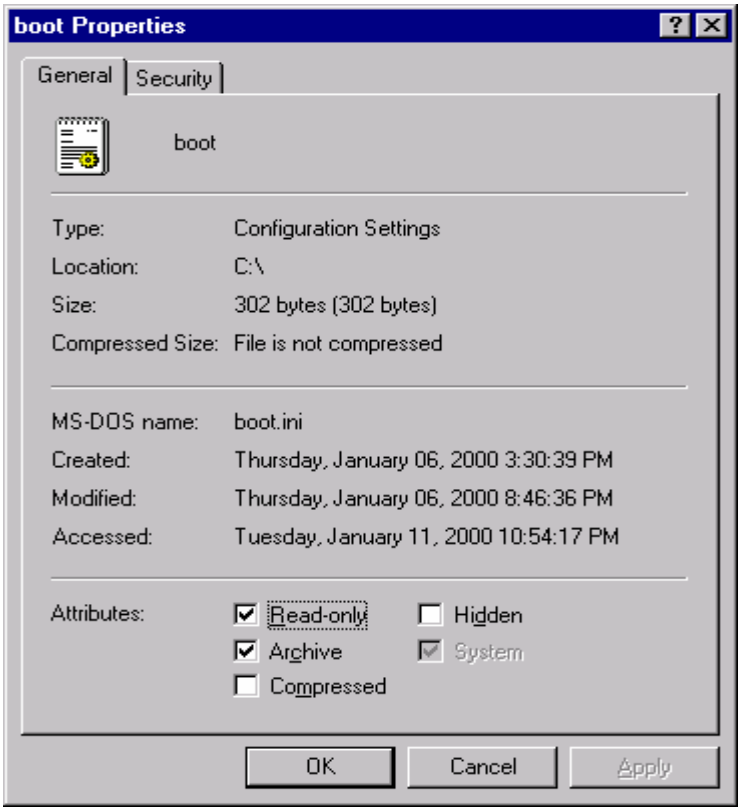
   - Open Windows Explorer. Click Start> Programs> Windows NT Explorer.



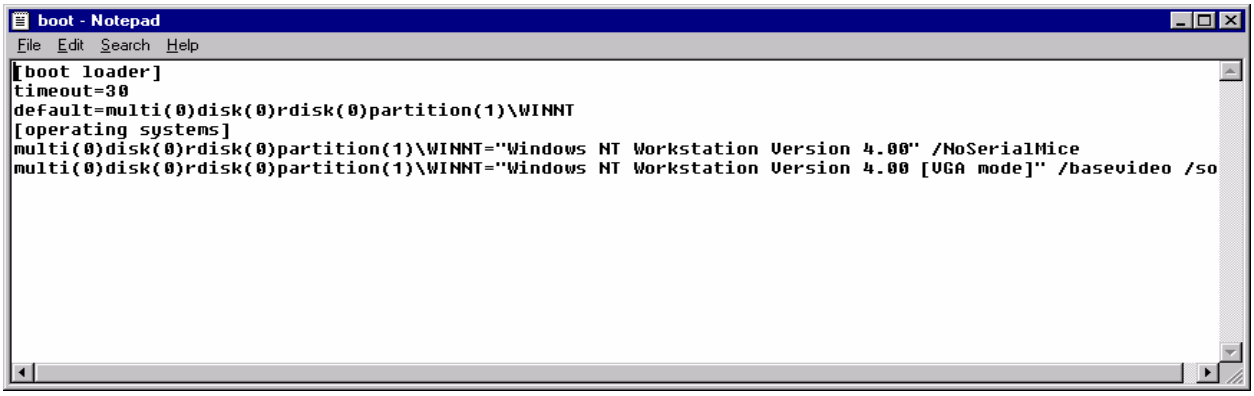
- Click on boot.ini file to highlight it.
- Click on File > Properties.



- Uncheck the Read-only box. Then click OK.



- Double click the boot.ini file.



- Append first line after [operating systems] with /NoSerialMice
- Save and exit the file.
- Reverse the process in step 13, by adding the check in the Read-only box.

Note: This will prevent Windows NT from detecting the APDL as a serial mouse at boot time.

Note: By now, you should have your NIC card installed and functioning with the proper drivers. Do not continue until you have done so.

Chapter 6 – Continued Standalone/Server Software Installation

Now that the NT installation is complete, let's move on to the other required software.

1. CoralCenter JET uses the default printer driver to format the reports – even if you are only printing them to the screen. You must install a default printer driver. For lack of knowing what printer will actually be used, install an "HP Deskjet 1200C". This driver is easy to access since it is included on the NT 4.0 CD. Add the printer now.

   Start – Settings – Printers – Add Printers, etc. etc.

2. Create a user account "ccadmin" (User Manager or User Manager for Domains).
   - The password should be also "ccadmin".
   - Be sure to uncheck "User Must Change Password at Next Logon" and check "Password Never Expires".
   - Add the account to the Administrators Group of the local machine.
   - Be careful that all references to "ccadmin" are made in lower case.

3. Now we have to edit the registry to enable "ccadmin" to login automatically when the Server is booted.

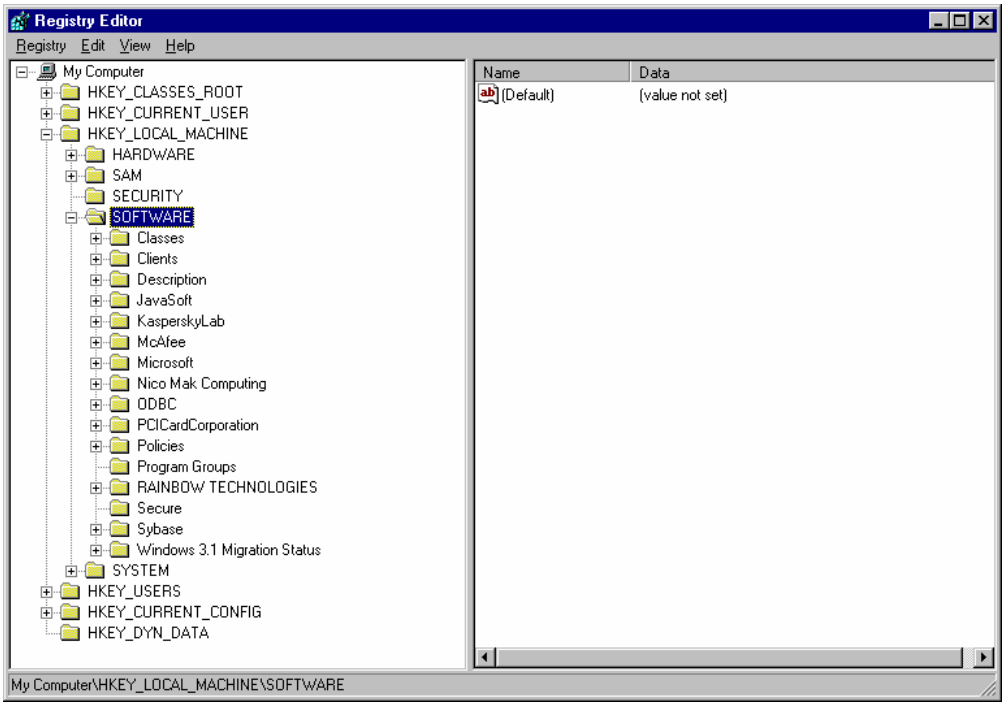
CAUTION!! Editing the registry can have disastrous effects on your Server. If you are unsure of your ability to complete the following section, please refer to a Microsoft Certified Technician. ECI accepts no responsibility for the following instructions.

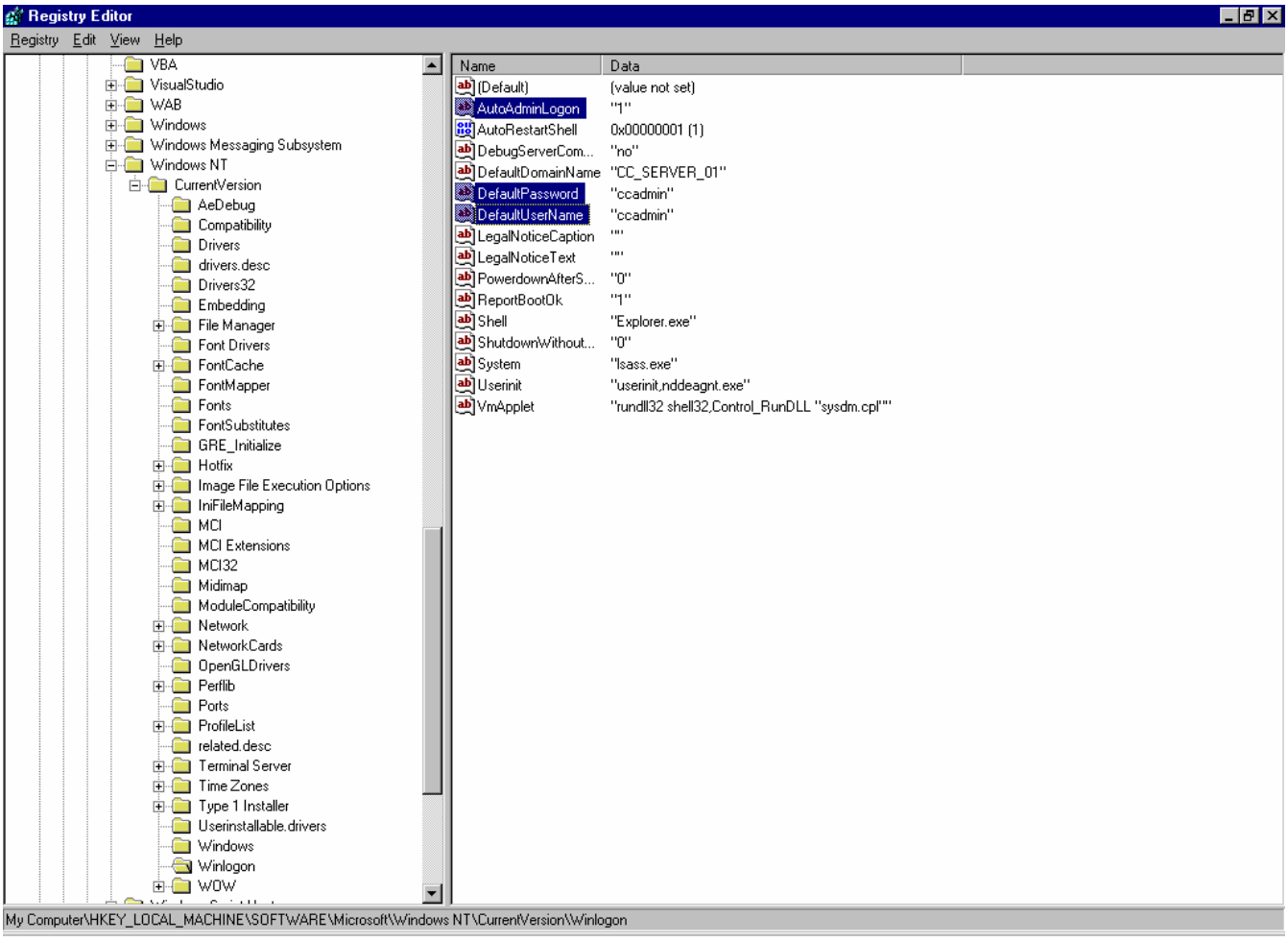
   - To edit the registry, click Start – Run – Regedit and press <enter>.
   - Navigate to the following:

HKEY_LOCAL_MACHINE \ SOFTWARE \ Microsoft \ Windows NT \ CurrentVersion \ Winlogon

   - Change the key DefaultUserName to ccadmin.
   - Add string value AutoAdminLogon with a value of 1.
   - Add string value DefaultPassword with a value of ccadmin.

Below, you will find some screenshots to help you verify your actions:


Registry Editor
Registry Edit View Help
My Computer
HKEY_CLASSES_ROOT
HKEY_CURRENT_USER
HKEY_LOCAL_MACHINE
HARDWARE
SAM
SECURITY
SOFTWARE
Classes
Clients
Description
JavaSoft
KasperskyLab
McAfee
Microsoft
Nico Mak Computing
ODBC
PCICardCorporation
Policies
Program Groups
RAINBOW TECHNOLOGIES
Secure
Sybase
Windows 3.1 Migration Status
SYSTEM
HKEY_USERS
HKEY_CURRENT_CONFIG
HKEY_DYN_DATA
Name
Data
(Default)
(value not set)
My Computer\HKEY_LOCAL_MACHINE\SOFTWARE


Registry Editor
Registry Edit View Help
VBA
VisualStudio
WAB
Windows
Windows Messaging Subsystem
Windows NT
CurrentVersion
AeDebug
Compatibility
Drivers
drivers.desc
Drivers32
Embedding
File Manager
Font Drivers
FontCache
FontMapper
Fonts
FontSubstitutes
GRE_Initialize
Hotfix
Image File Execution Options
IniFileMapping
MCI
MCI Extensions
MCI32
Midimap
ModuleCompatibility
Network
NetworkCards
OpenGLDrivers
Perflib
Ports
ProfileList
related.desc
Terminal Server
Time Zones
Type 1 Installer
Userinstallable.drivers
Windows
Winlogon
WOW
Name
Data
(Default)
(value not set)
AutoAdminLogon
"1"
AutoRestartShell
0x00000001 (1)
DebugServerCom...
"no"
DefaultDomainName
"CC_SERVER_01"
DefaultPassword
"ccadmin"
DefaultUserName
"ccadmin"
LegalNoticeCaption
""
LegalNoticeText
""
PowerdownAfterS...
"0"
ReportBootOk
"1"
Shell
"Explorer.exe"
ShutdownWithout...
"0"
System
"lsass.exe"
Userinit
"userinit,nddeagnt.exe"
VmApplet
"rundll32 shell32,Control_RunDLL "sysdm.cpl""
My Computer\HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows NT\CurrentVersion\Winlogon

- Close the registry editor after completing the changes.

5. Format the D: partition as NTFS using My Computer properties (This partition will be setup later and used for Backup purposes)

6. Share both C and D. Be sure the share does not have a $ after the share name. (The $ causes the share to be hidden.)

7. Now restart the Server and observe that it boots and automatically logs in under the ccadmin account.

8. Install NT Service Pack 6a or most current version, restarting if prompted to do so.

9. Install Internet Explorer 5.0 or higher, restarting machine if prompted to do so.

10. Install or upgrade to Microsoft Internet Information Server version 4.0 or greater. (NT 4.0 includes IIS 2.0 only. If upgrading using Option Pack 4, choose upgrade only.)

11. Re-install NT Service Pack, restarting machine if prompted to do so.

12. You should now take the time to install the internal or external modem and appropriate drivers.

DO NOT INSTALL PCANYWHERE AT THIS TIME.

13. Now you will install SYBASE SQL ANYWHERE version 7.0 or higher.

- Insert the CD and follow the instructions. In the “Select Components” window, UNCHECK everything except “Adaptive Server Anywhere for Windows”.

NOTE: If this is to be a STANDALONE Only machine, you can choose only 1 SQL license. If you plan to have ANY Reporting/DB Clients, (or if you will be using a DB Server), you must choose the appropriate number of purchased SQL licenses, or your clients will not be able to connect to the Server DB.

- When you arrive at the Licensing Screen, choose “Networked Per Seat License” and enter the appropriate number of purchased SQL licenses here.

- Restart the machine.

14. Before continuing, it is imperative that you install the correct SVGA Video Adapter Driver dependent on what is in place in the PC.
As stated in the hardware requirements, this adapter must be capable of 1024 x 768 x 256 colors.

    - Right-click on a blank section of the desktop and click properties.
    - Go to the Settings Tab.
    - Proceed with requirements for installing your video adapter driver.
    - You must restart the machine for the changes to take effect.

15. You can now install PCAnywhere Host if you want remote access to the Server. Be sure to note any PCAnywhere login ID's and passwords that you set up. When requesting technical support, you will need to provide this information to the Engineer. Restart the machine as requested.

16. If you haven't already done so, physically connect the Sentinel Software Lock Device on the Parallel Port of the Server now.

Chapter 7 -

INSTALLING CORALCENTER JET SOFTWARE ON THE SERVER OR STANDALONE MODEL

If you have already installed SQL 7.0, you will need to install the latest release patch. This patch is included on the Coral Center CD:

1. Insert CoralCenter JET CD in drive.
2. Navigate to the **NT\MISC\SQL Anywhere 7.0.1 EBF** directory, and double click on Setup.exe.
3. Follow the instructions on the CD. If you receive a message saying that the patch is meant for SQL version 7.0.1 – click OK. If you receive an error message, click IGNORE.
4. RESTART

If you have not yet installed SQL on the Server, it is included on the Coral Center CD. You WILL, however, need to provide a valid LICENSE CODE. This will be required to be purchased from Sybase or you may use the one from your previous purchase of Sybase SQL.

- Follow instructions on Page 42 – Item #13, for installation

Install CoralCenter JET

1. Insert CoralCenter JET CD in drive.
2. Navigate to the NT\Setup directory, and double click Setup.exe
3. You will receive a message that says “Setup could not be completed – some files need to be updated”.
4. Click OK.
5. Restart your machine.
6. Again navigate to the NT\Setup directory on the CD, and double click Setup.exe.
7. Select “Standalone or Server”.
8. The MS Access Runtime Installation dialog will appear.
9. Select “Install Now”
10. Your machine will restart and continue with the CoralCenter JET installation upon reboot.
11. Choose “Standalone or Server” when the dialog box appears.
12. You will then be asked “Is database on a separate server?”. Answer No in most cases. (Yes would ONLY apply if you have a separate DB Server).

IF THIS IS A STANDALONE ONLY MACHINE, the installation is complete. Reboot and the CoralCenter JET software will start upon bootup. Be sure to have the APDL connected and programmed or you will receive errors from the CoralCenter JET software.

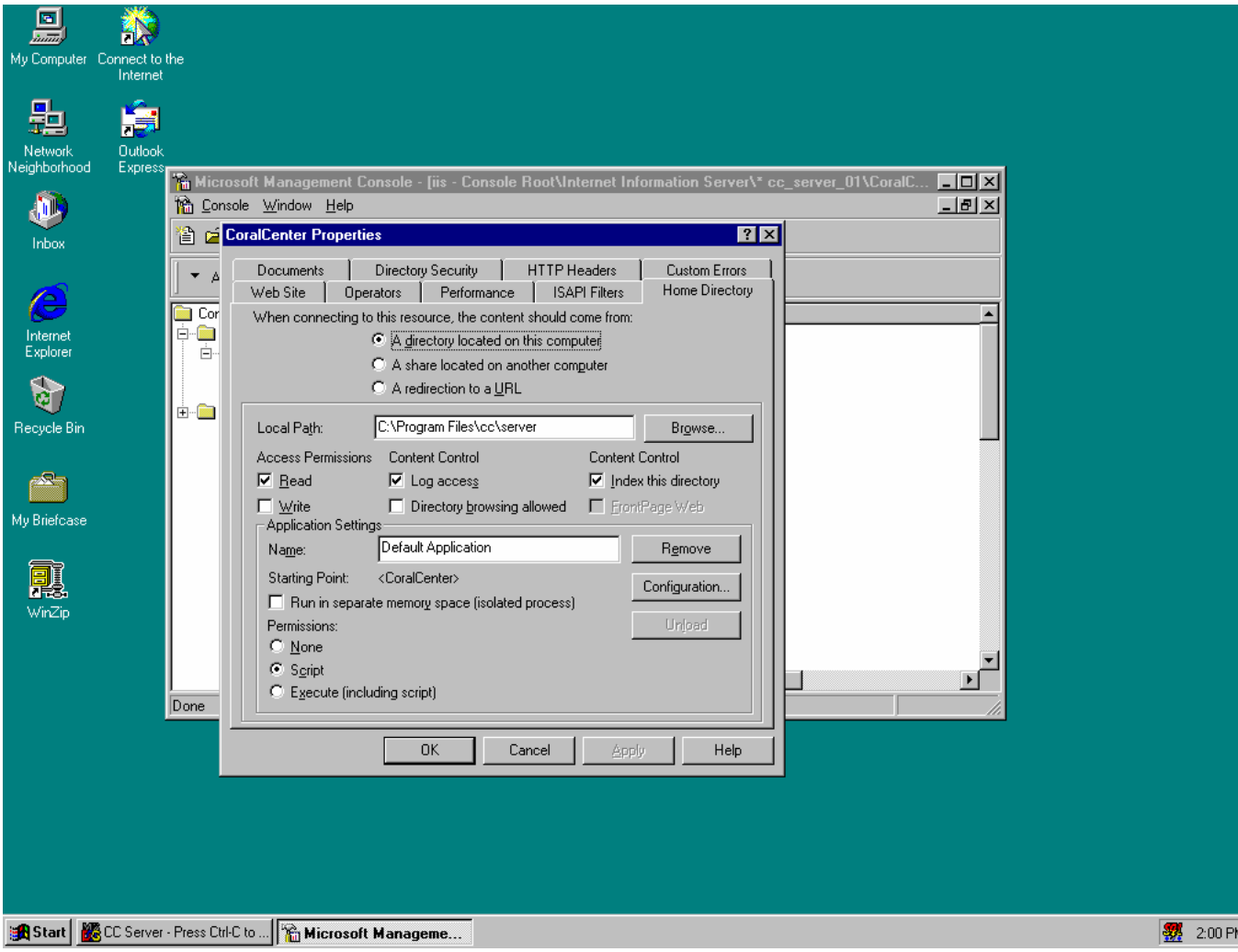
Chapter 8 -

SETUP THE SERVER FOR BROWSER BASED REALTIME CLIENT ACCESS

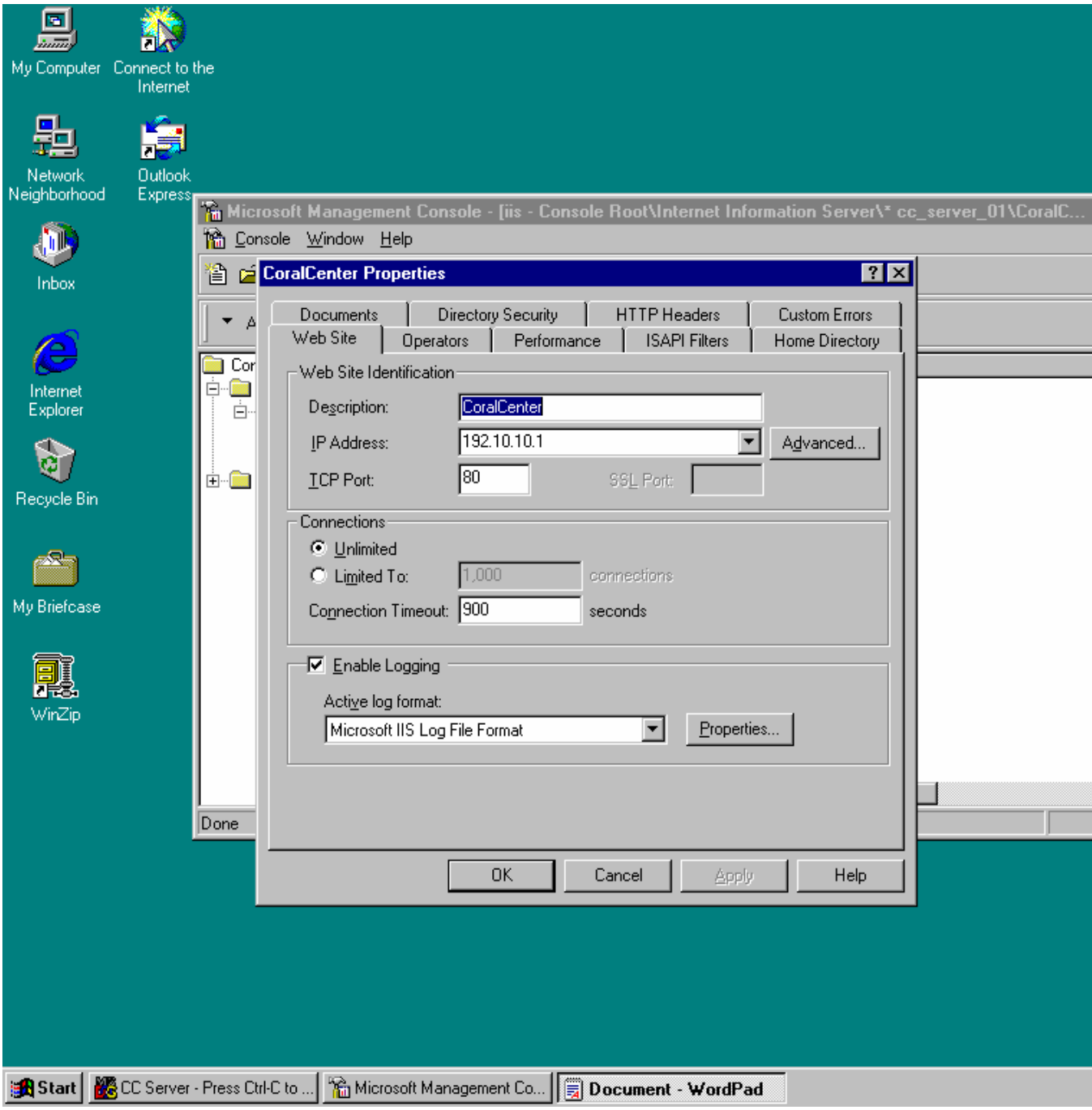
For the client PC's to easily access the CC Java Real-Time screens, the Internet Service Manager must be programmed properly.

1. Open Internet Service Manager and navigate to Console Root \ Internet Information Server \ CC_SERVER_01 \ Default Website \ Properties.

2. Go to the Home Directory Tab and set the home directory to c:\Program Files\CC\Server as show below.



3. Go to the Web Site Tab and set the description to “CoralCenter JET” and the IP address to the same as the Server’s address.



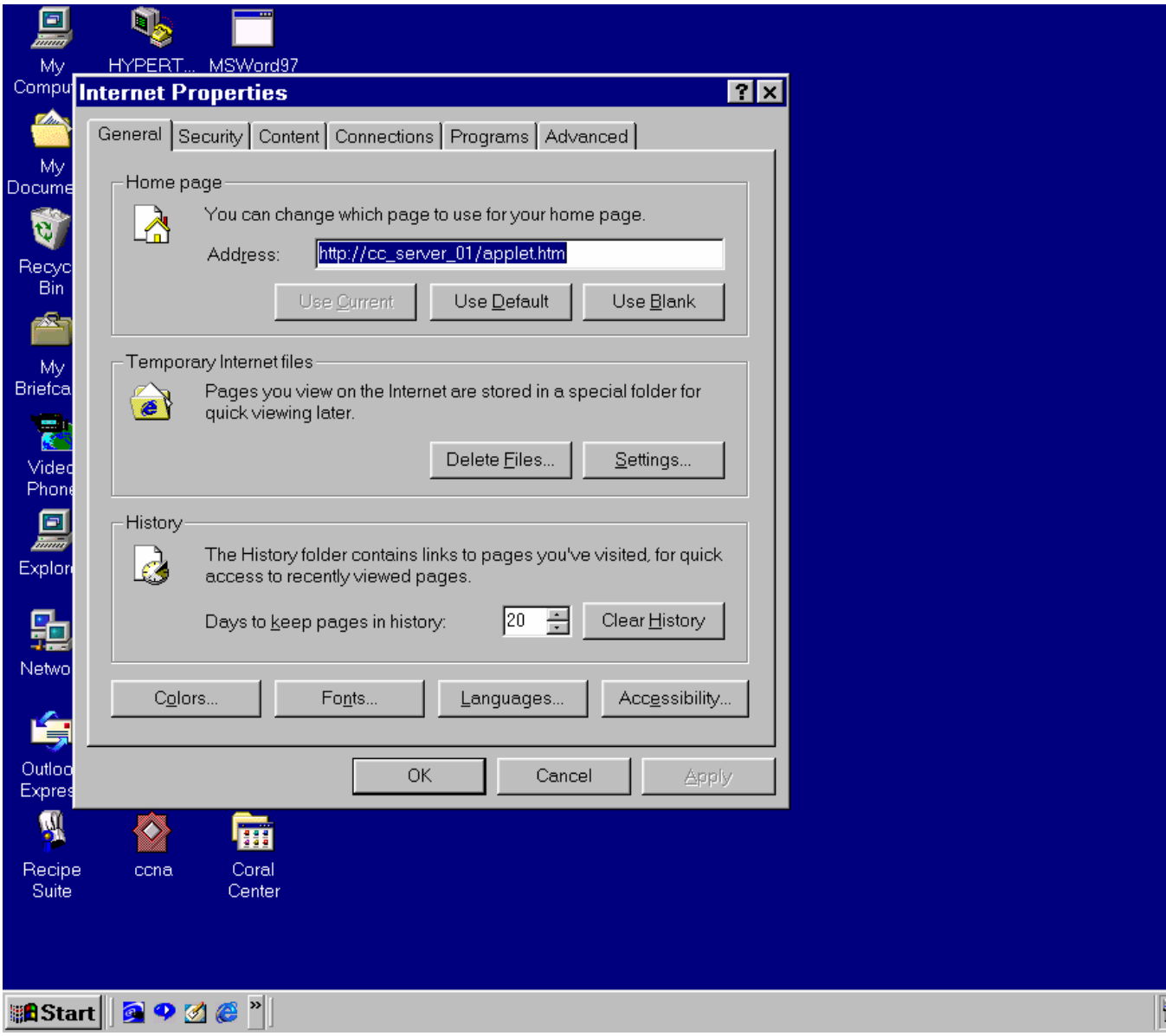
5. Go to the Documents Tab and Add “index.htm” and Remove “Default.htm”.

Chapter 9 – Setup JAVA Client for Browser Based RealTime Access

1. The JAVA client works with Internet Explorer 4.0 and higher and with Netscape Navigator 4.5 and higher.
2. Point the browser to the CoralCenter JET Server using a URL such as http://cc_server_1/applet.htm. After a few moments a login window should appear. Login as ccadmin, no password, to begin using the applet.
3. Optionally, set the browser's "home page" to the applet's URL.

If you receive the following error: "Sorry, your browser can't run this applet. Did you enable Java?" when trying to access the Coral Center JET web page, you will need to install Java Runtime which is included on the Coral Center CD.

1. Insert the Coral Center CD.
2. Navigate to **NT\SETUP\SUPPORT** and run the following file: **j2rel_3_0-win.exe**.
3. You will not need to restart your machine. You should now be able to access the Coral Center JET web page.


My Compu
HYPERT...
MSWord97
Internet Properties
General
Security
Content
Connections
Programs
Advanced
Home page
You can change which page to use for your home page.
Address:
http://cc_server_01/applet.htm
Use Current
Use Default
Use Blank
Temporary Internet files
Pages you view on the Internet are stored in a special folder for quick viewing later.
Delete Files...
Settings...
History
The History folder contains links to pages you've visited, for quick access to recently viewed pages.
Days to keep pages in history:
20
Clear History
Colors...
Fonts...
Languages...
Accessibility...
OK
Cancel
Apply
My Docume
Recyc Bin
My Briefca
Video Phone
Explor
Netwo
Outloo Expres
Recipe Suite
ccna
Coral Center
Start

Chapter 10 -

SETUP CLIENT PC FOR REAL-TIME ACCESS WITHOUT A BROWSER

(Using the CoralCenter JET Java Client Software)

1. Insert CoralCenter JET CD in drive.
2. Navigate to the NT\Setup directory, and double click Setup.exe
4. You will receive a message that says “Setup could not be completed – some files need to be updated”.
5. Click OK.
6. Restart your machine.

7. Again navigate to the NT\Setup directory on the CD, and double click Setup.exe.
8. Select “Client”and “Real-Time”.
9. The necessary components will be installed.

Note that a Realtime ONLY client does not require the Access 2000 runtime.

Chapter 11 –

SETUP CLIENT PC FOR DB/REPORTING/ADMINSTRATION ACCESS

1. Map a drive on the Client PC to the C drive of the Server.

2. First, you must install SYBASE SQL ANYWHERE version 7.0 or higher.

   - Insert the CD and follow the instructions. In the “Select Components” window, UNCHECK everything except “Adaptive Server Anywhere for Windows”.

     NOTE: You must choose the appropriate number of purchased SQL licenses, or your clients will not be able to connect to the Server DB.

   - When you arrive at the Licensing Screen, choose “Networked Per Seat License” and enter the appropriate number of purchased SQL licenses here.

   - Restart the machine.

1. Install SQL Anywhere Patch:

   - Insert CoralCenter JET CD in drive.
   - Navigate to the NT\SQL 7.0 Anywhere Patch directory, and double click on Setup.exe.
   - Follow the instructions on the CD.
   - UNCHECK everything except “Adaptive Server Anywhere for Windows”.
   - RESTART.

Install CoralCenter JET

- Insert CoralCenter JET CD in drive.
- Navigate to the NT\Setup directory, and double click Setup.exe
- You will receive a message that says “Setup could not be completed – some files need to be updated”.
- Click OK.
- Restart your machine.

- Again navigate to the NT\Setup directory on the CD, and double click Setup.exe.
- Select “Client” and “Reporting” (or Reporting AND Real-Time).
- The MS Access Runtime Installation dialog will appear.
- Select “Install Now”
- Your machine will restart and continue with the CoralCenter JET installation upon reboot.
- Again choose “Client” and “Reporting” when the dialog box appears.
- You will then be asked “Is database on a separate server?”. Answer Yes. The software will now try to connect with the Server DB. If the software is unable to connect, be sure that you have edited the CORALCEN.INI file and you chose more than 1 license when installing SQL on the Server.

2. Click Start > Settings > Taskbar & Start Menu >Start Menu Programs > Advanced >
   Programs > Startup

   - Right click CC DB & Reports > Properties
   - Change the target directory for the SYSTEM.MDW file to point to the mapped drive on the server.

You should now be able to access the Reporting/Administrative DB.

Chapter 12 –

Setup Backup Parameters

The CoralCenter JET setup makes the assumption that there is only one partition and will try to store backups in C:\PROGRAM FILES\CC\Backup. Since we divide the disk into two partitions, we can use the second partition for storing backups.

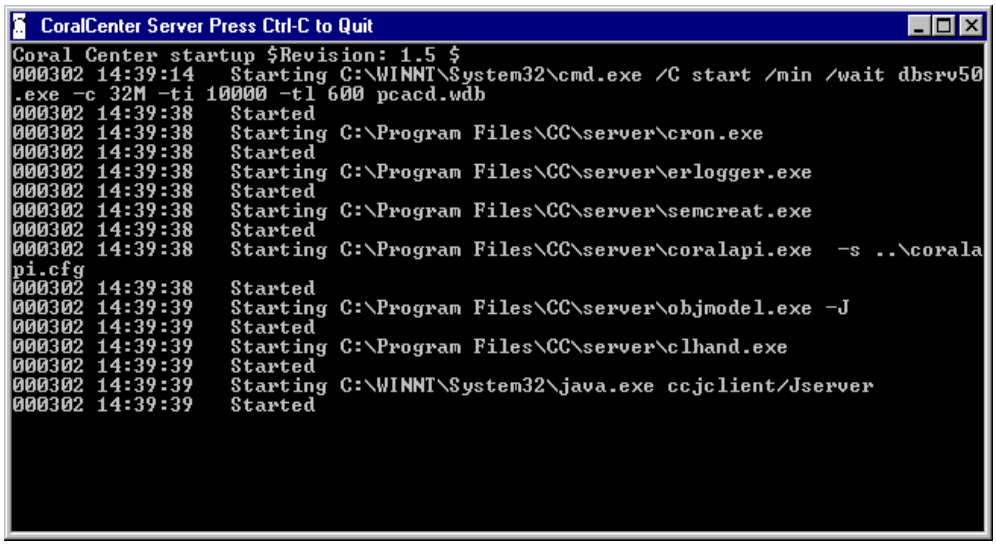
1. Open Windows Notepad.
2. Select C:\PROGRAM FILES\CC\SERVER\dvalbak.bat
3. Locate the line containing “dbbackup –c UID=DBA;PWD=SQL –x –y ..\backup”
4. Change the “..\backup” to read “D:\backup” (replace .. with the letter D).
5. Save the file and exit.
6. Create a new folder on the D: drive called “Backup” through NT Explorer.

Chapter 13 - Starting CoralCenter JET

CoralCenter JET Server

Click on Start> Programs> CoralCenter JET> CoralCenter JET Server Press CTRL+C to Quit. This starts the Server subsystem of CoralCenter JET. This subsystem includes components that communicate with the switch, the database and client tasks. No Real Time or historical data are collected unless the Server is running.

A window reports the status of the various tasks as they start. The Server will also detect and attempt to restart any tasks that terminate unexpectedly.



To stop the Server, press Ctrl-C. Enter STOP in upper case for confirmation before the system proceeds. The various tasks are signaled to shut down in an orderly manner by the Server.

NOTE: Rarely, a task may refuse to shut down. If this happens, try clicking on the X in the top right hand corner of the window.

CoralCenter JET JAVA Client

There is an icon located on the desktop called, CC Java Client. This starts a JAVA client application supporting Real Time screens and menu-controlled access to the Database Client.

If this is on a Server, ensure that the Server is running, and then double-click the Client icon to start. If this is a Real Time client connected over the LAN, ensure the server is running, and then double-click the Client icon. The main menu and login window appear:

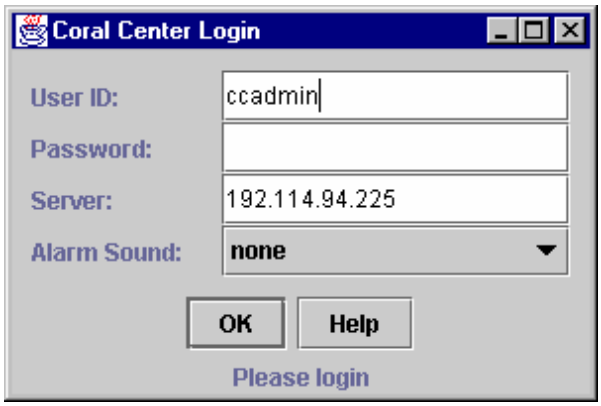


Figure 6: 02: Login

Login using your assigned User ID and no password. Enter the Server name or TCP/IP address, in the Server window. If you are logging in the JAVA Client on the Server, use TCP/IP address 127.0.0.1. Then click OK or press Enter.

Usage of the Client application is described in detail in the following sections.

To stop the Client, Click on the JAVA cup in the top left corner→Close from the main menu of Window 01, or press Alt-F4 while the main menu window has the focus.

NOTE: For additional information see JAVA Client Manual.

Readerboard Client

To start the Readerboard client, Click Start> Programs> CoralCenter JET> Readerboard Client, which supports one or more R***eaderboard***s. Readerboard setup is entirely controlled from the Database client; this icon simply starts and stops the application.

To stop the Readerboard client, give the window the focus and press Ctrl-C.

This process can be set to startup automatically by placing a Shadow icon in the startup folder.

Real Time Screens

The Real Time screens and their associated menu choices are discussed in detail in CoralCenter JET JAVA Client User Manual.

Chapter 14 - Database Administration

This section provides details on how to work with the MS-Access database side of the CoralCenter JET system.

Database Conventions

As shipped, the database is populated with a single top-level Business Unit.

To edit a text field, use the mouse or press Tab or Shift-Tab repeatedly to set the cursor on the field, then make your changes. To cancel an edit, press Esc.

To select from a combo box such as the Parent Business Unit field, click on the  button to display the drop-down list, then click to select one item from the list.

To delete the current record, select it either from the Records menu or by clicking on the vertical bar to the left of the record, then press Del.

NOTE: On other windows where sets of records are displayed, each record has a small rectangle to its left. One or more of these rectangles can be selected to mark records for deletion.

NOTE: Some windows represent a one-to-many relationship using the Access "main/subform" convention. There are two sets of record selector buttons. The inner set traverses the "many" table while the outer set traverses the "one" table. Use both sets to navigate the entire data domain as referenced on Table 9: Trunk Group Fields, page 65.

To move through the records one at a time, click on the  or  button, use the PgUp or PgDn, buttons, or use the Records menu.

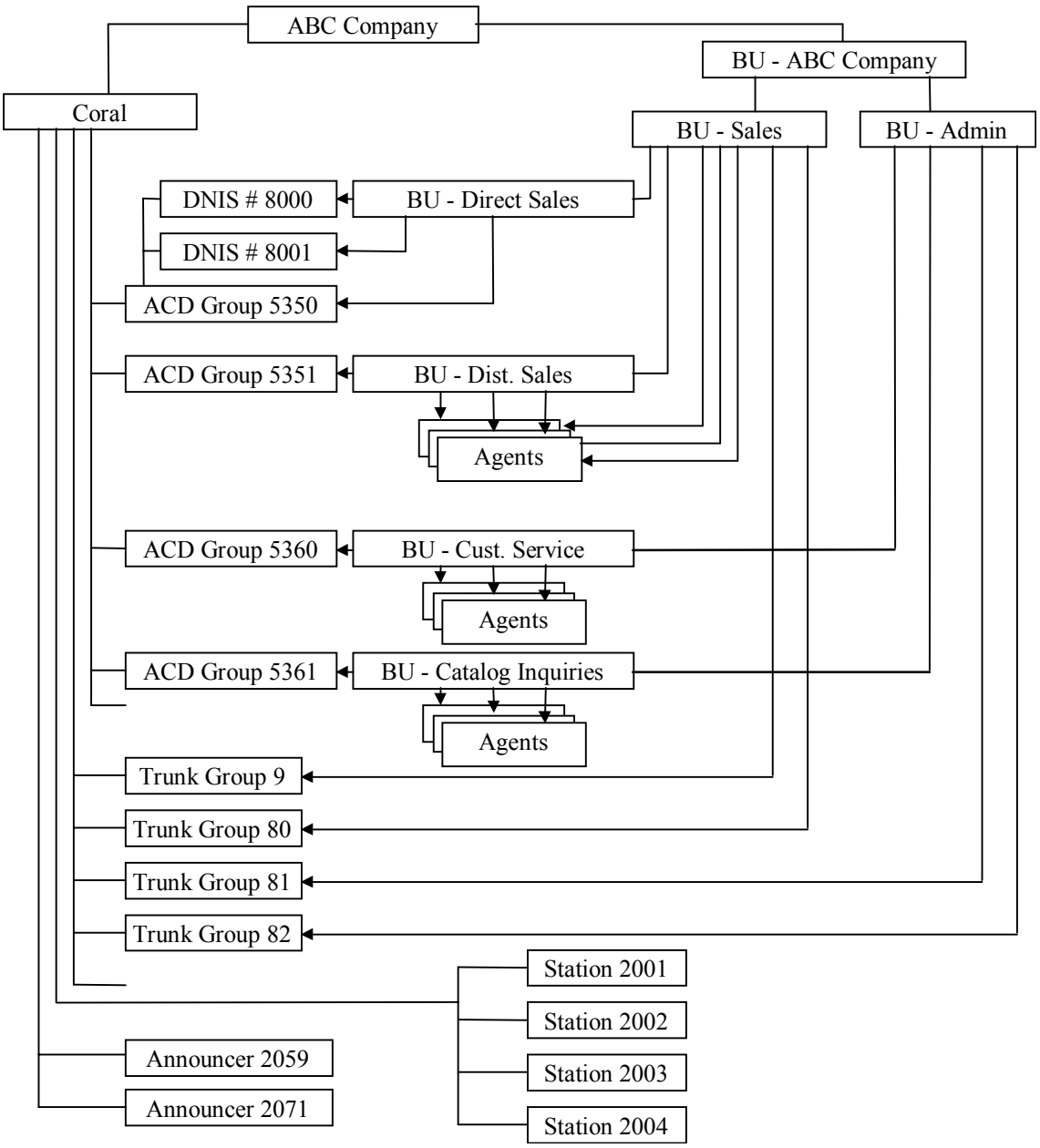
To go to the first or last record, click on the  or  button or use the Records menu.

To display a template for a new record, click  then  , or press Ctrl-+ (Ctrl and + simultaneously), or select Data Entry from the Records menu.

Database Hierarchy

The database is developed by the customer and programmer to reflect the customer's particular organization and ACD environments. The following diagram shows an example of how a database could be arranged.

Figure 9- Typical Hierarchy



In this example the Sales agents are shared between Direct Sales and Distributor Sales, hence, they logically belong to the higher Sales business unit.

Using the Database Client

When you open Access, an informative panel will briefly appear, then after a few moments you will see the Access Main Menu (shown here resized):

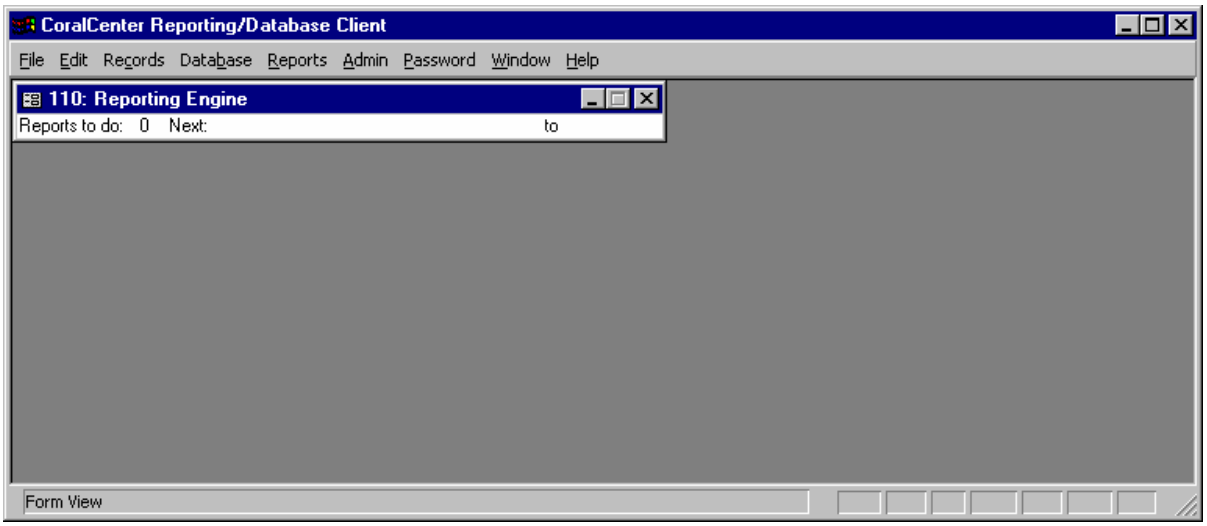


Figure 10: CoralCenter JET Database Client

Help

A section of the Help system describes useful key and mouse actions for navigation on the edit windows. The Help system is extensive and should be used as a quick reference guide in lieu of this document.

A section in the Help system describes the recommended order in which to populate the database. For "quick start" purposes, a minimally working configuration can be set up by entering Customer (change name), Business Units, Announcers, Stations, Trunk Groups, Trunks, ACD Groups and Agents, **in this order**.

The menu selections and pull-down options are now described.

File

This menu selection has one option.

Exit

Close Access and return to CoralCenter JET Client or Explorer.

Edit

This menu selection provides some standard Windows services, which are useful when editing records. The exact options available vary according to the window state.

Records

This menu selection provides some standard Access services, which are useful when navigating through sets of records:

Data Entry

Display a new “blank” record (sometimes containing default values) for editing and insertion into the database.

Go To

Position at first, last, next, previous or new (same as Data Entry) record

Refresh

Reload records from the database server.

Quick Sort

Sort records on current field, ascending or descending.

Database

This selection allows you to edit ACD objects that have Level 1 security (see “Security” on page 22). You can only view and edit objects for which you have read/write access.

Business Units

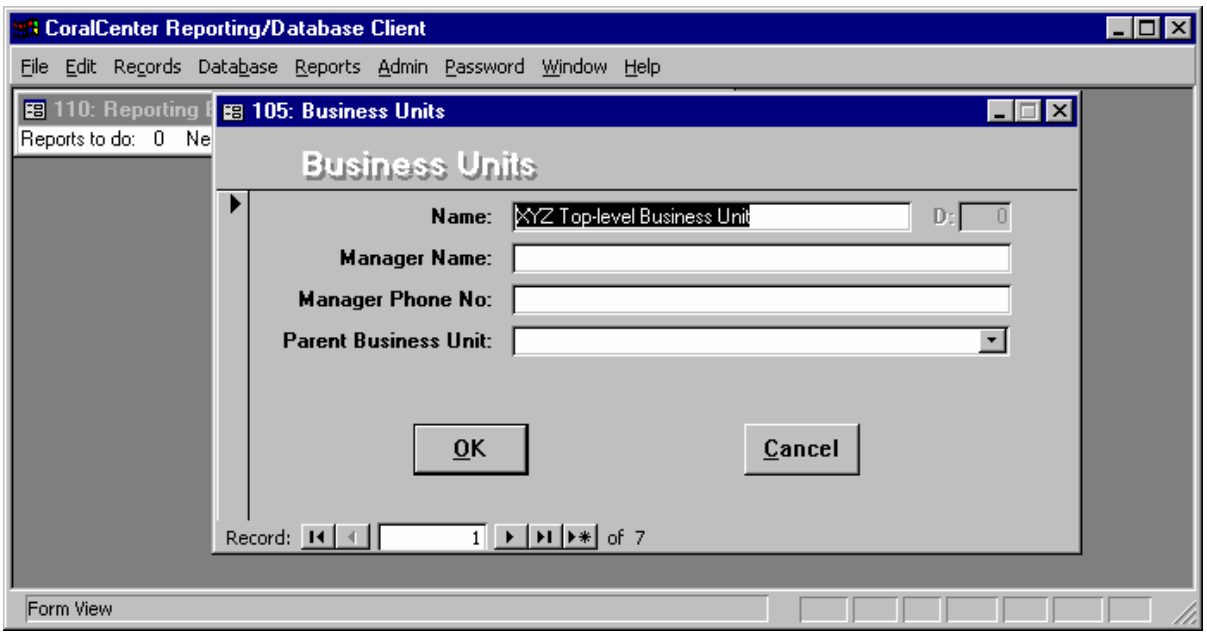


Figure 11: 105: Business Units

Table 2: Business Unit Fields

Field	Description
Name	Name of the business unit.
Manager Name	Name of the business unit manager. This field currently does not appear on reports.
Manager Phone No.	Phone number of the business unit manager. This field currently does not appear on reports.
Parent Business Unit	Parent of the business unit (see "Foreword - System Overview on p.17). Select from the list.
ACD Group	Name of the ACD group associated with that business unit. This is a display-only field: it is set while editing ACD Groups.
Customer	Customer name (display-only). Set on Customer window.

On this window set the Business Unit parameters and define the business unit hierarchy (see ACD Groups).

ACD Groups

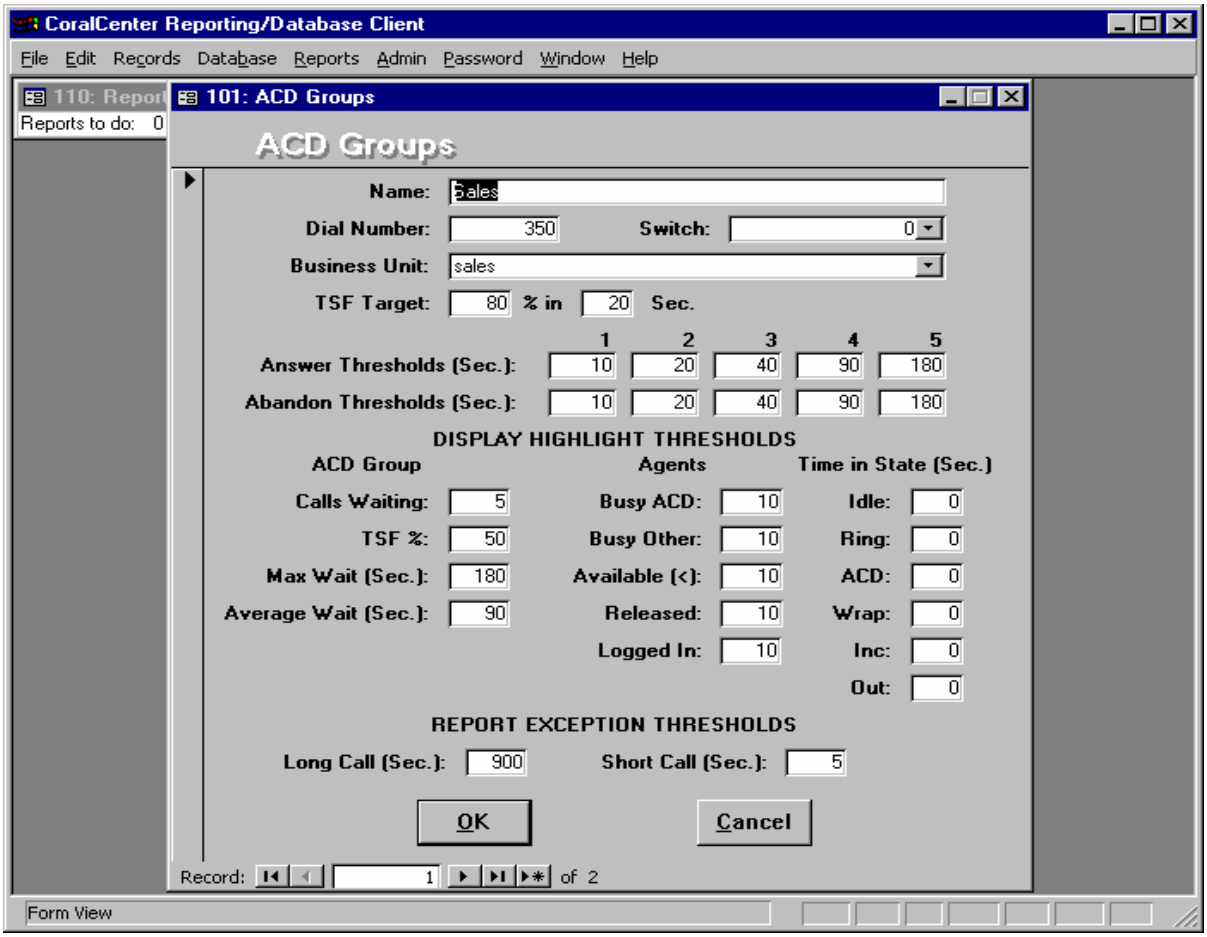


Figure 12: 101: ACD Groups

On this window you set ACD Group parameters and thresholds are established using this window.

Table 3: ACD Groups Fields

Field	Description
Name	**Name of the ACD Group.**
Dial Number	Number by which the Group is known to the switch.
Switch	Switch identifier. Select the switch on which this Group is defined.
Business Unit	Name of the associated business unit. Select from the list.
TSF Target % TSF Target Sec.	Grade of Service (*TSF*) target expressed as percent of calls answered or abandoned in specified number of seconds.
Answer Thresholds Abandon Thresholds	Answered and Abandoned Call Thresholds for B series reports. They divide Answer Time and Abandon Time into six categories.
Display Highlight Thresholds	Set threshold values for Real Time screen elements in three categories – ACD Group, Agents, Time in State.
ACD Group	
Calls Waiting	Calls In Queue (now) > T
TSF %	TSF % (in current interval) < T
Max Wait (Sec)	Maximum Wait Time (now) > T
Average Wait (Sec)	Average Wait Time (now) > T
Agents	
Busy ACD	Agents Busy ACD > T
Busy Other	Agents Busy Other > T
Available [<]	Agents Available < T
Released	Agents Released > T
Logged In	Agents Logged in > T
Time In State (Sec.)	
Idle	Idle Time > T sec.
Ring	Ring Time > T sec.
ACD	ACD Time > T sec.
Wrap	Wrap-up Time > T sec.
Inc	Non-ACD Incoming Time > T sec
Out	Non-ACD Outgoing Time > T sec.
Report Exception Thresholds	
Long Call (Sec.)	Threshold for C series reports.
Short Call (Sec.)	Threshold for C series reports.

Agents

Using this window to enter Agent details and define the Business Units responsible for them.

Table 4: Agent Fields

Field	Description
Last Name	Agent's last name (sort key).
First Name	Agent's first name.
ID	Agent's assigned login ID number.
Business Unit	Business unit agent is permanently associated with. This does not restrict the ACD Groups an agent can log in to.

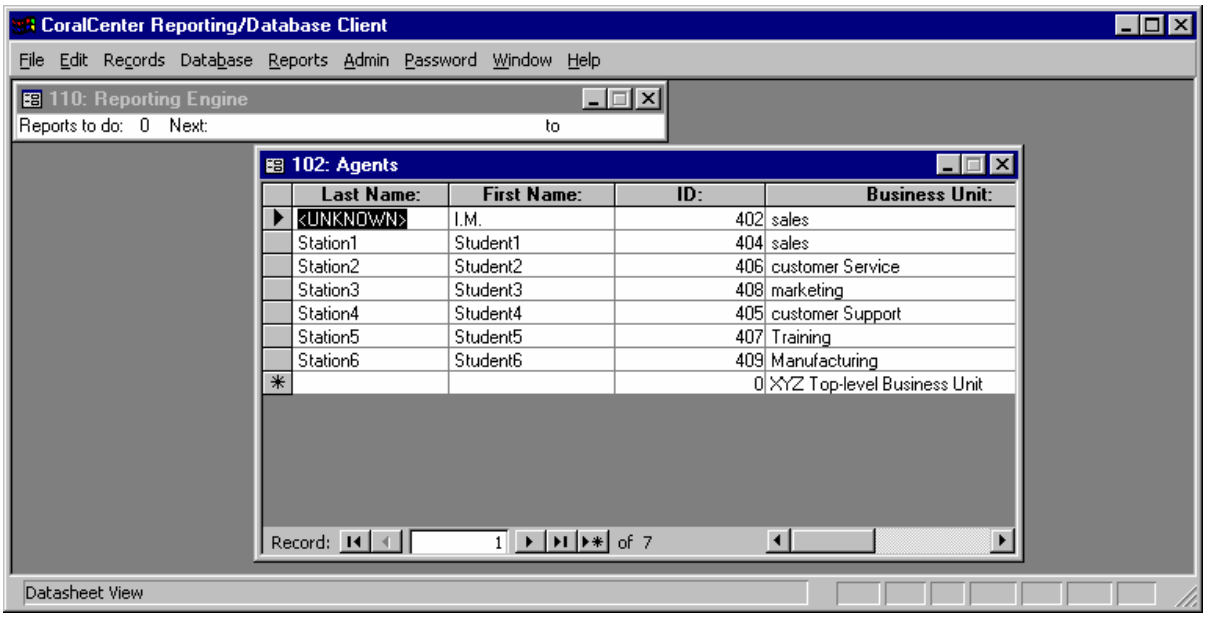


Figure 14: 102: Agents - Multi

The list can be sorted in ascending or descending order by field. To do so, click the cursor on the field heading name once or twice to select and then toggle between the sort type.

The user can change/enter several agents at one time. The first three fields accept text input. Click on the Business Unit field for a pop up menu providing all of the Business Unit choices. To change several agents to a specific Business Unit, copy the Business Unit name desired to the Clipboard using standard Windows conventions (Ctrl-C), then select each agent's Business Unit to be changed one at a time and press Ctrl-V to paste the desired name into the field.

Readerboards

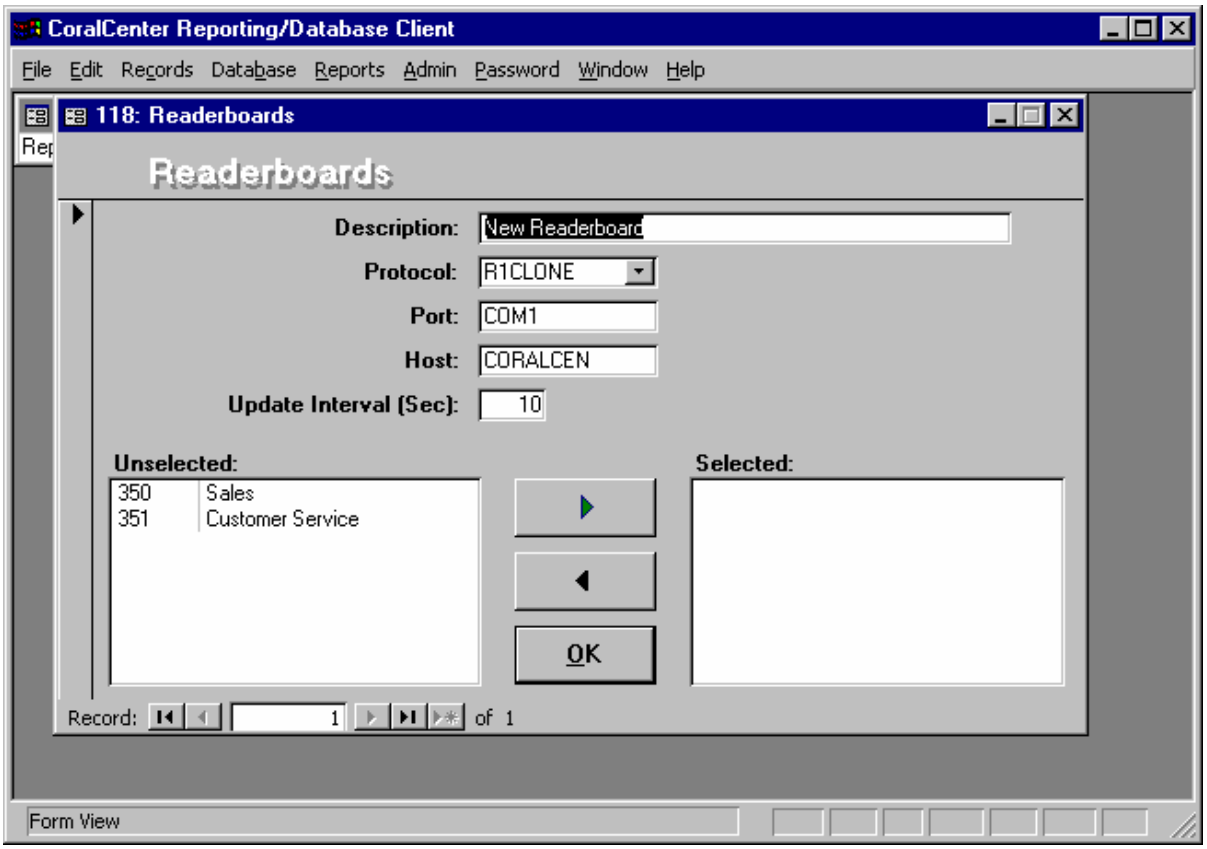


Figure 15: 118: Readerboards

On this window you set up information for one or more Readerboard Client on page 48. For each Readerboard, move ACD Groups between the Unselected and Selected boxes to indicate which Groups are to be reported on.

Table 5: Readerboard Fields

Field	Description
Description	Text of your choice, such as the readerboard's location
Protocol	RICLONE: Data output and timing identical to PC-ACD version 4.003. SPECTRUM: Data output is the same, but with a delay between each group instead of after all groups.
Port	Device to which data is sent: typically COM1 or COM2. For test purposes you may temporarily enter CON to display the data on the console. **Note:** COM port parameters (baud rate...) are set up in the file …cc\client\cchost.bat. Normally, this does not need to be modified.
Host	Name of the host to which this Readerboard is connected and on which a Readerboard client is running. (This can be obtained using "echo %COMPUTERNAME%".)
Update Interval (Sec.)	The interval at which the data will be refreshed. Choose a value that gives reasonable Real Time response while allowing a display cycle to complete.

Admin

This selection allows you to edit ACD objects that have Level 2 security (see “Security” on page 22). You can only view and edit objects for which you have read/write access.

Customer

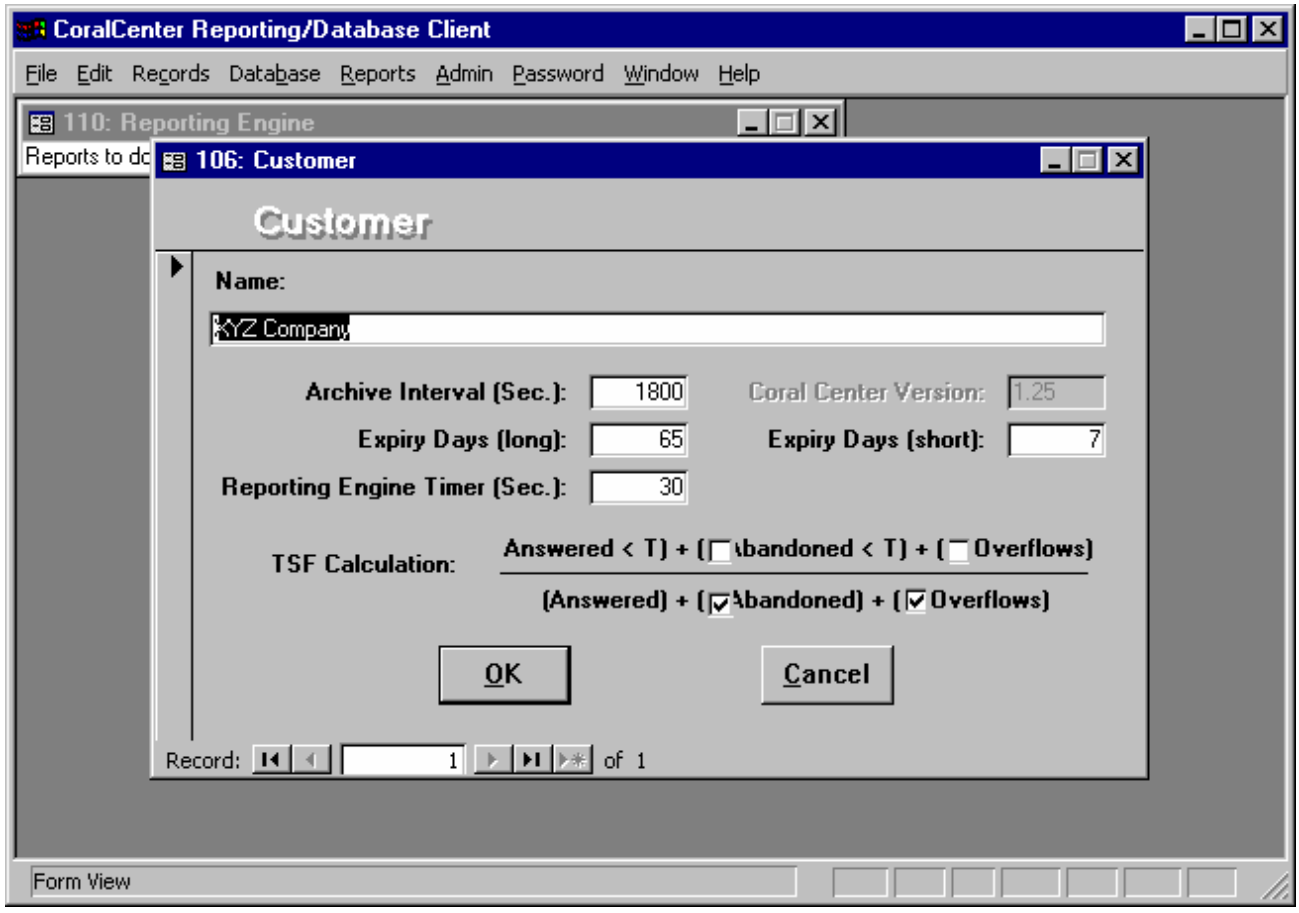


Figure 16: 106: Customer

This window allows you to view and change information about the Customer - the top-level user of the CoralCenter JET system. Currently, only one customer is defined, and a customer record is pre-installed for you.

Table 6: Customer Fields

Field	Description
Name	Name of the customer.
Archive Interval (Sec.)	Time interval between *database saves*.
CoralCenter JET Version (read-only)	Version of CoralCenter JET software. Strictly it is the server database schema version. Other components carry different version numbers.
Expiry Days (long)	Maximum number of days that records except those listed below will remain in the database before they are expired.
Expiry Days (short)	Maximum number of days that the following records remain in the database before they are expired: Trunk (I reports) Report Queue (unreported; support use only) Abandoned Call (J reports) Exception (K reports).
Reporting Engine Timer (sec.)	Interval at which the Reporting Engine checks for reports to run. Decrease for faster manual reports. Increase if CPU utilization stays at 100%. Default = 30 sec.
TSF Calculation	The check boxes control the TSF calculation algorithm. Check to include abandoned and/or overflowed calls in the numerator or denominator. Currently this controls reports only; real-time screens are hard-coded to include abandoned but not overflowed calls.

Tab through the fields changing data at will. When you are finished working with this screen, select **OK**. You are returned to the CoralCenter JET Database Client main menu.

NOTE: Changes to the Archive Interval must be synchronized with changes to the CRONTAB.DAT file, which schedules the database save events. Reports including data with different archive times may be misleading. **Call for support before changing this field**.

NOTE: The Expiry Days fields have been chosen to limit disk space requirements. Carefully monitor your disk usage if you increase these fields.

NOTE: The section "**Error! Reference source not found.**" on page **Error! Bookmark not defined.** explains how to save expired data permanently if you wish to do so.

Switches

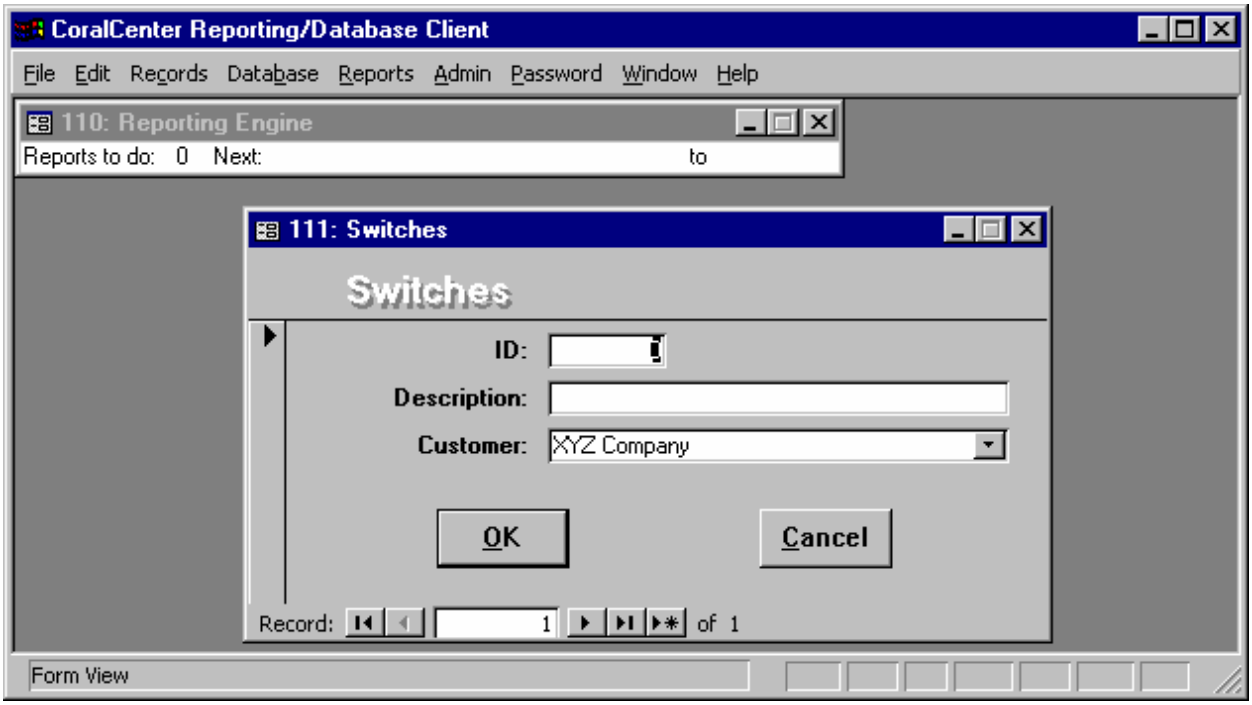


Figure 17: 111: Switches

A CoralCenter JET option permits data from two or more Corals to be combined into one logical presentation. Use this window to identify each switch.

Table 7: Switches Fields

Field	Description
ID	A unique numeric identifier. The first switch is ID=0. It corresponds to the order in which COM ports are defined in the CORALAPI.CFG file.
Description	Descriptive text of your choice
Customer	Currently, there is only a single customer to choose

Announcers

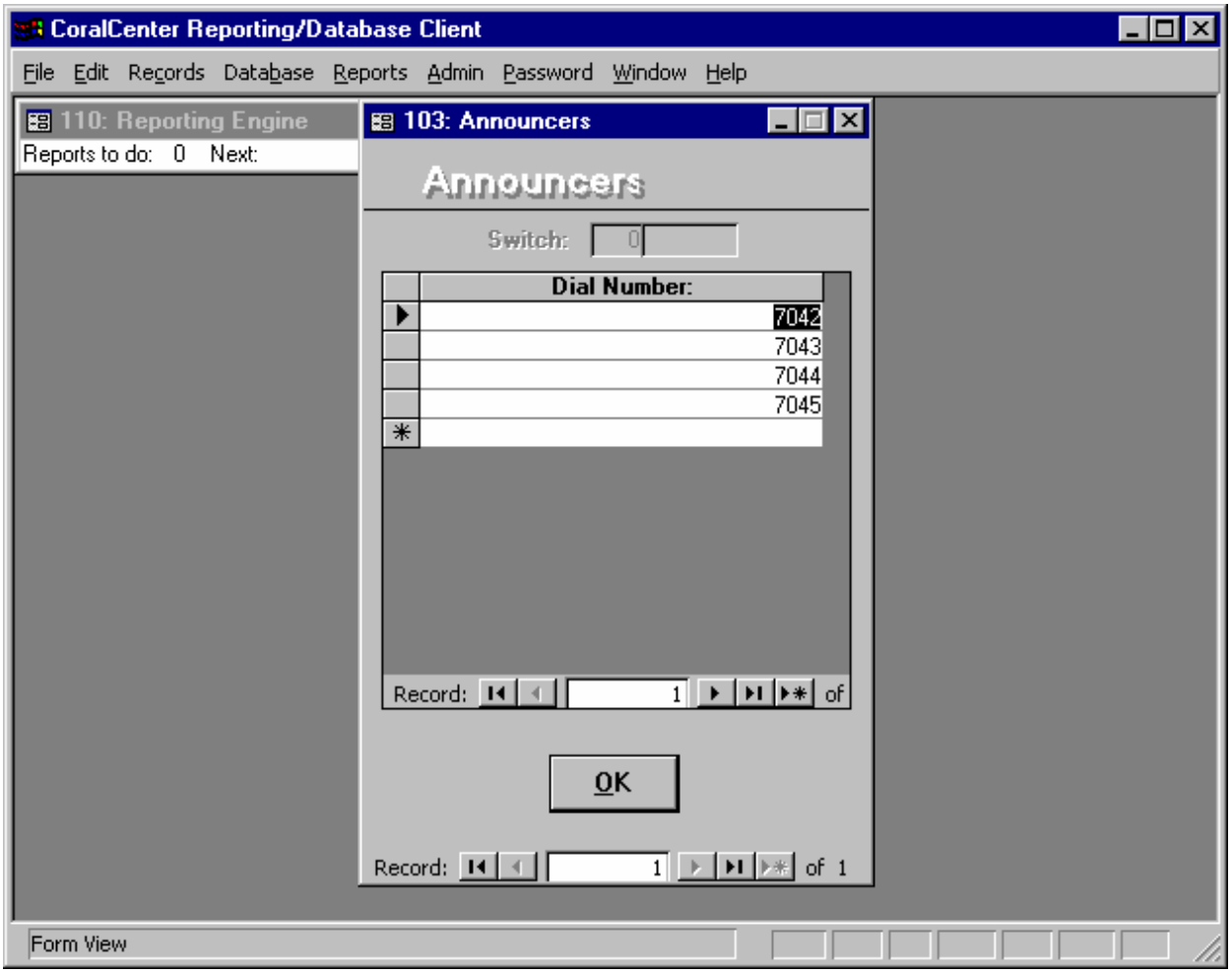


Figure 18: 103: Announcers

CoralCenter JET needs to know which ***dial numbers*** are ***announcers***, so it can process events from them properly. All devices used for Announcers (SLT port, 4VSN port) must have their dial numbers listed here. Enter one or more numbers on this window, then select OK.

Table 8: Announcers Fields

Field	Description
Switch (read-only)	Switch identifier. Use the lower selector buttons to select a switch to work with.
Dial Number	Announcer dial number

Trunk Groups

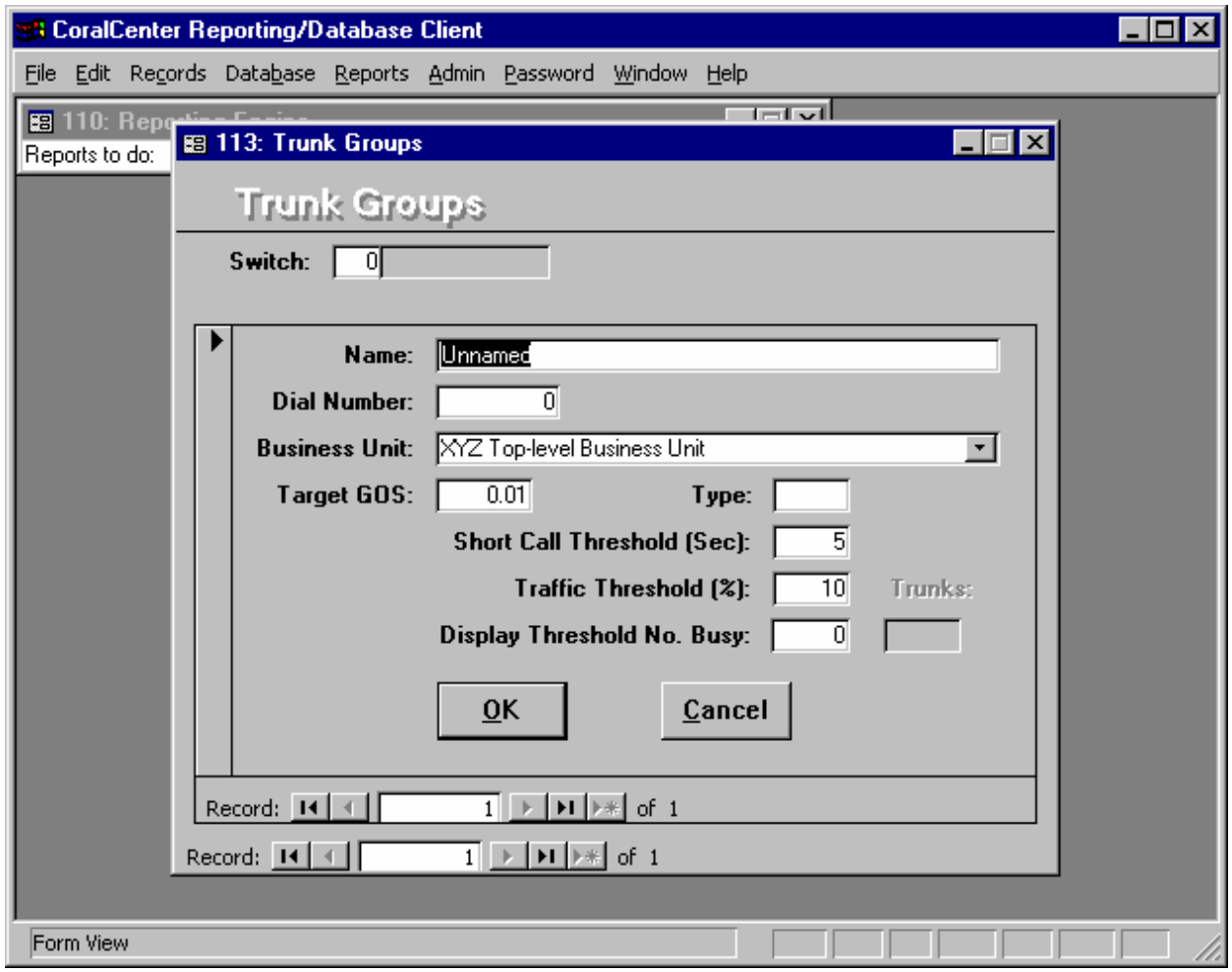


Figure 19: 113: Trunk Groups

Enter information on Trunk Groups on this window.

Table 9: Trunk Group Fields

Field	Description
Switch	(read-only) Switch identifier. Use the lower selector buttons to select a switch to work with.
Name	Descriptive name of your choice for the trunk group.
Dial Number	Conventionally, the trunk group's *dial number* as known to the switch. A different numbering scheme can be used, as trunk group numbers are not passed as data.
Business Unit	Business unit name associated with the trunk group.
Target GOS	Target *Erlang B Grade of Service* for the trunk group
Type	This field is available for your use when generating custom queries or reports
Short Call Threshold (Sec.)	Maximum seizure time which defines a short call. Used in Trunk Exception (I series) reports
Traffic Threshold (%)	Upper limit of traffic considered lower than average, for I series reports.
Display Threshold No. Busy	Number of busy trunks above which the field on Trunk Group Status window will be highlighted. Hint: set to (value of Trunks field - 1) for All Trunks Busy indication.
Trunks (read-only)	Number of trunks in group, as a convenience for setting previous field.

Trunks

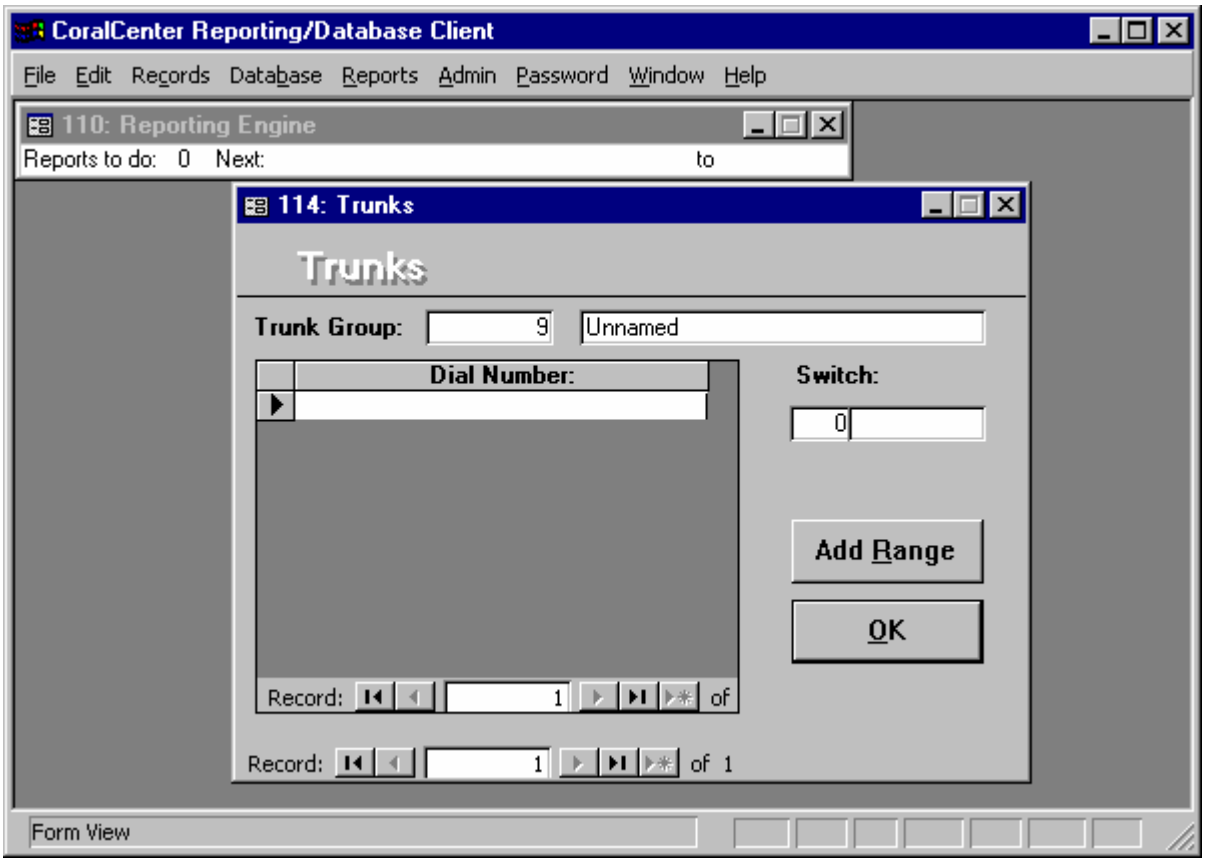


Figure 20: 114: Trunks

Enter trunk ***dial numbers*** per Trunk Group on this window. For reporting accuracy, all dial numbers should be carefully entered.

To add a contiguous range of numbers, click on "Add Range" then enter the beginning and end of the range.

Table 10: Trunks

Field	Description
Trunk Group (read-only)	Trunk Group Identifier/Name. Use the lower record selector buttons to select a trunk group.
Dial Number	Dial numbers associated with this trunk group.

Users

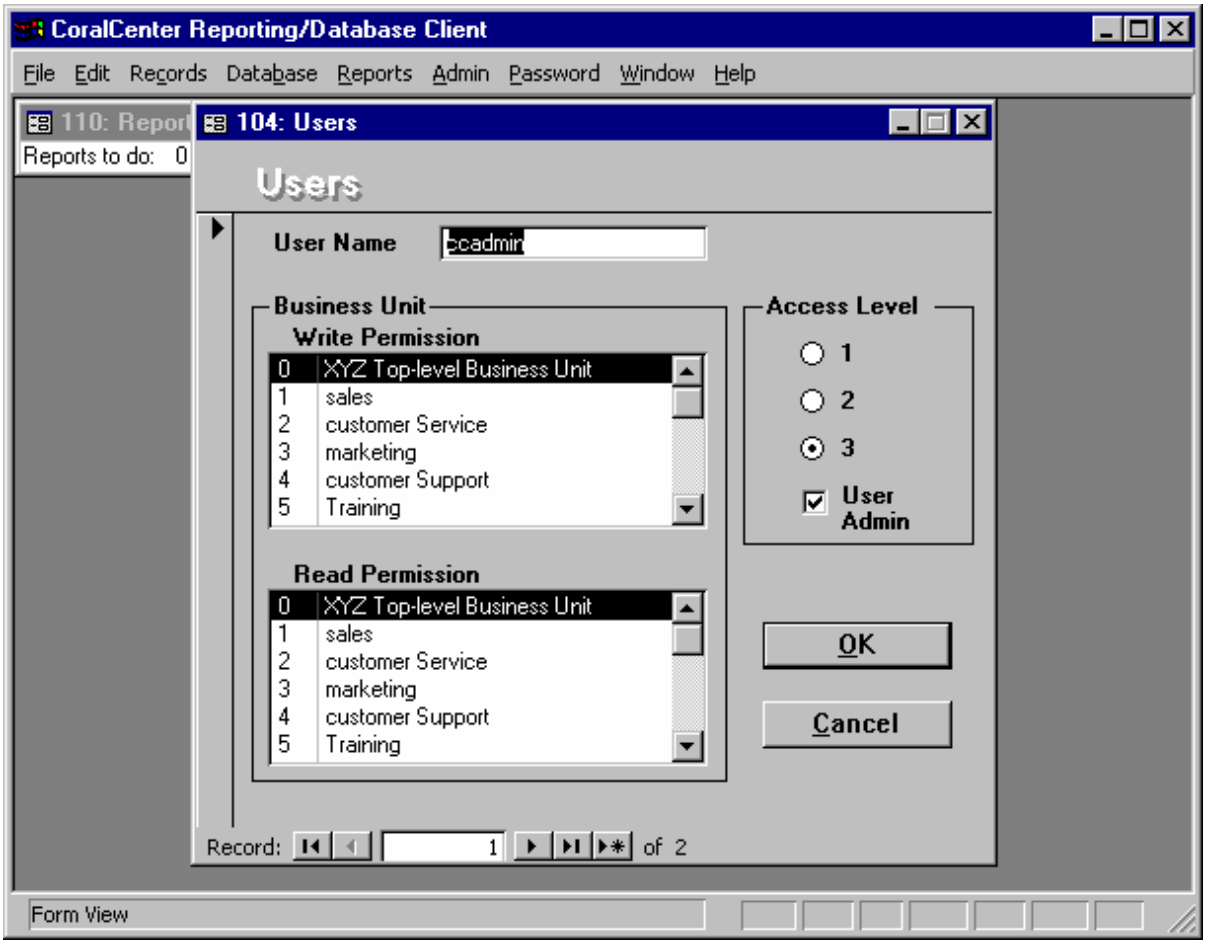


Figure 21: 104: Users

This window is used to add and remove users and set their access levels (see "Security" on page 22) and Business Unit associations.

While the set of user names is common to the Database Client and CoralCenter JET Real Time Client environments, it is necessary to administer passwords separately. Newly created users receive blank passwords for both environments. The current user's Database Client password is administered from the Password->Change menu option, while the Coral Center JET User password is administered from the Real Time Client application. If the password is the same in both environments the user does not need to re-enter it on opening the Database Client, otherwise a login panel is displayed for entry of the Database Client password.

Table 11: Users Fields

Field	Description
User Name	User name to be added or removed.
Read-Write Permission Read-Only Permission	List boxes of Business Units to "anchor" the user's read-only or read-write permissions to a node in the business hierarchy (see "General Description" on p.22). Click to select one from each box.

Name	Business unit name.
ACD Group	ACD group dial number, if one is associated with the business unit.
Access Level (1, 2 or 3)	User's Access Level: see "Security" on p.22. Check one of the radio buttons and, optionally, the check box.
User Admin	Check Box for whether user can manage other users: see "Security" on p.22.

Wrap Codes

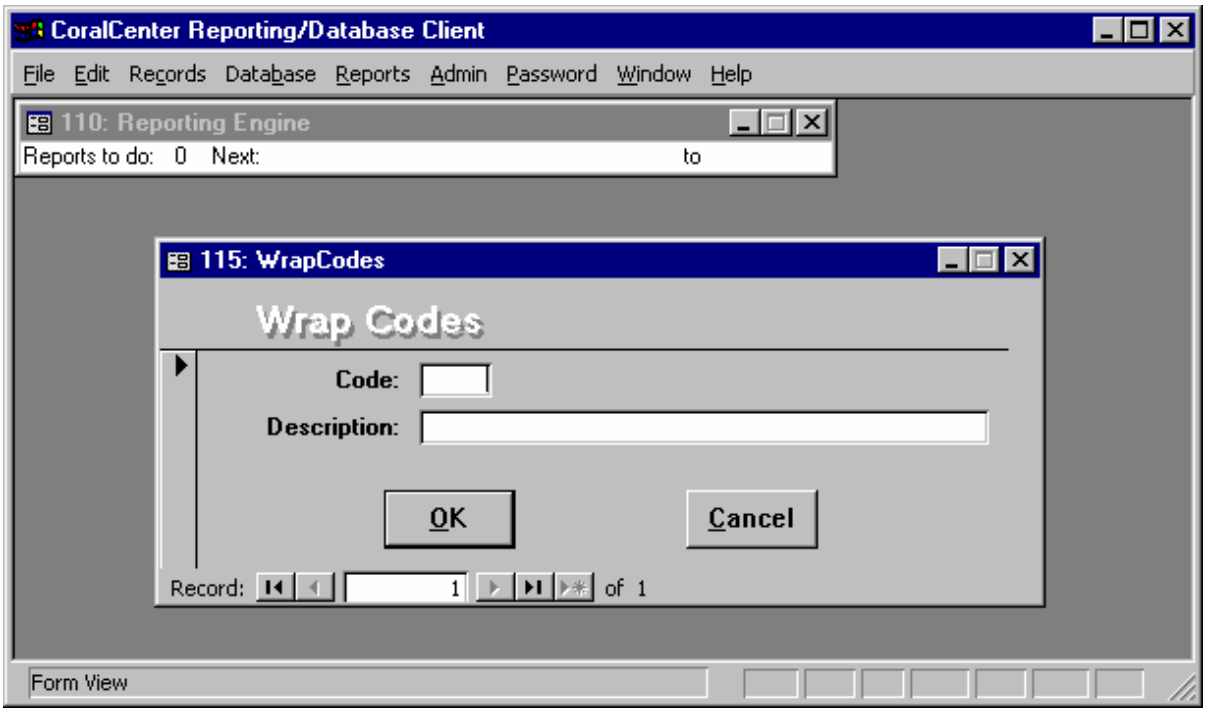


Figure 21: 115: Wrap Codes

On this window, enter textual information to accompany each numeric wrap code. This information is used in the Wrap Code reports (G series).

Table 12: Wrap Codes Fields

Field	Description
Code	Numeric wrap code as entered by agent
Description	Description of the wrap code.

Stations

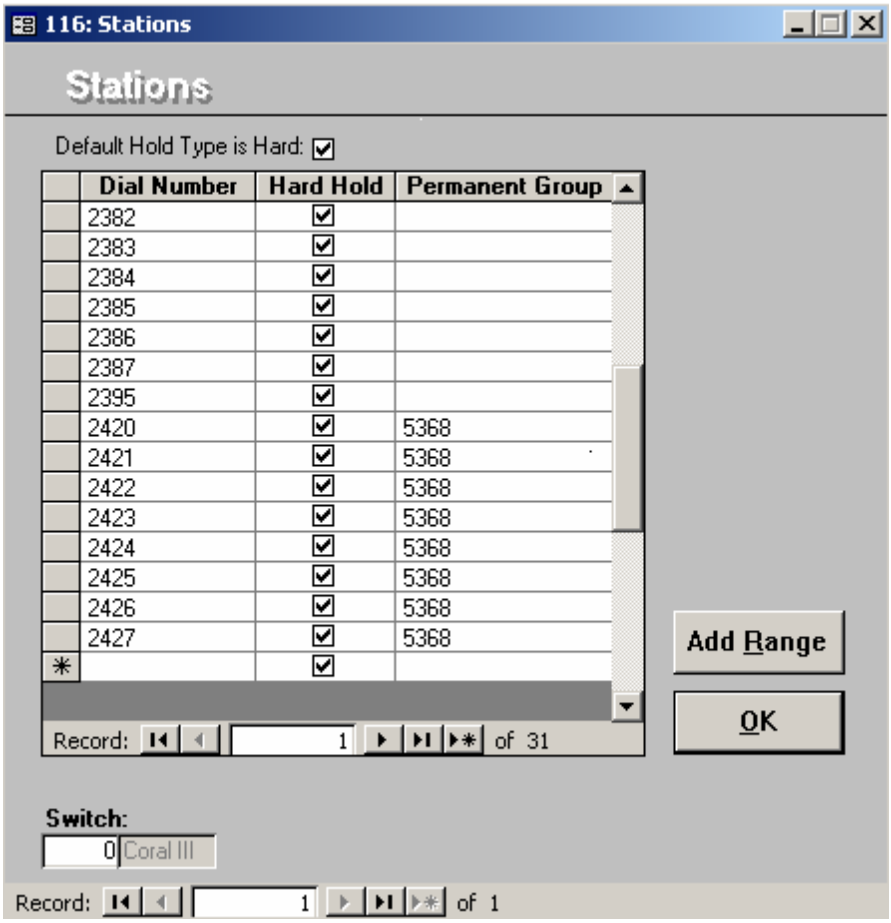


Figure 23: 116: Stations

Enter Station ***dial numbers*** on this window. For reporting accuracy, dial numbers of all stations at which ACD agents will log in should be completely and carefully entered.

To add a contiguous range of numbers, click on "Add Range" then enter the beginning and end of the range.

Table 13: Station Fields

Field	Description
Switch (read-only)	Switch identifier. Use the lower selector buttons to select a switch to work with.
Dial Number	Station dial numbers
Hard Hold	Check if set for this station in the Coral programming. The check box above this column allows the system to create stations with the correct setting.
Permanent Group	Select the group for permanently logged-in devices such as IVR ports. Used in conjunction with "Implied Agent Logins" in coralcen.ini file.

DNIS

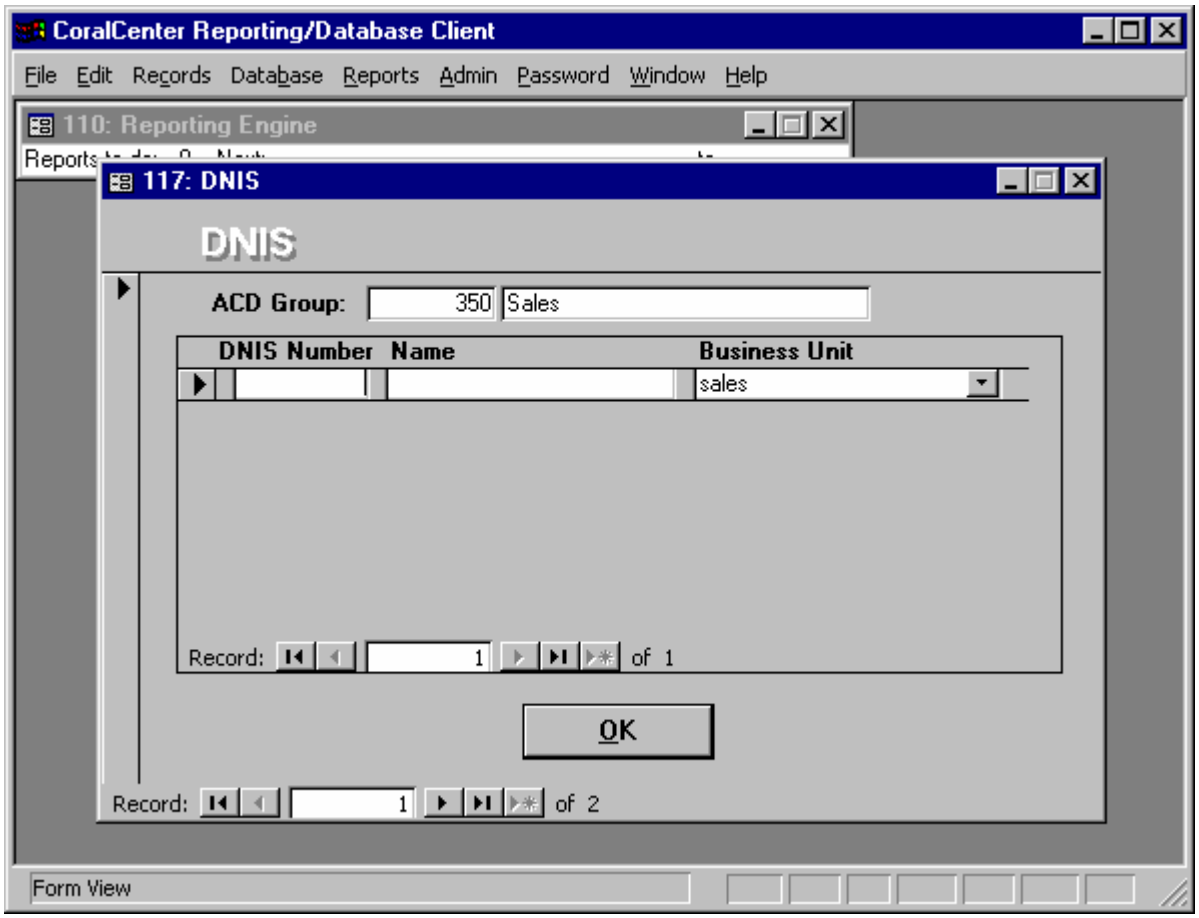


Figure 24: 117: DNIS

In this window, enter the *DNIS* numbers associated with your ACD Groups. DNIS numbers must be identified for accurate reporting to take place.

Table 14: DNIS Fields

Field	Description
ACD Group (read-only)	Use the lower selector buttons to select an ACD Group to work with
DNIS Number	Enter a DNIS number, as known to the switch, for which calls are delivered to this Group. This is usually a library number.
Name	Name or description of this DNIS number
Business Unit	The Business Unit which "owns" this DNIS identifier. It defaults to the Business Unit which owns the Group, and usually there is no need to change it.

Password

This selection allows you to change your password for the Database Client.

Change

Select **Change** from the Password drop down menu. The Change Password screen displays.

Figure 25: Change Password

Table 15: Password Fields

Field	Description
User Name	Your user ID
Old Password	Enter your current password.
New Password	Enter a new password.
Verify	Enter the new password again.

Normally, after changing your Database Client password, you should change your CoralCenter JET password to the same string. Then you will not have to log in again when invoking the Database Client from the CoralCenter JET main menu.

Window

Options in this selection provide standard Windows services to arrange the windows on your desktop. Select **Window** from the CoralCenter JET Database Client menu

bar. The Window drop down menu displays. Standard Access conventions pertain to this menu selection.

Help

This selection invokes the Database Client Help System. Context-specific and general help are provided. As with any Windows application, you can follow links between sections by clicking on marked text, search on topics, and choose sections to print. Some of the information in the Help system may be more detailed or up-to-date than this manual.

Context-specific help is also available by pressing F1.

This selection has three options:

Contents

Displays titles of Help sections, including help on each window as well as more general material.

Search

Takes you to the “topic search” subsystem of the help environment. Look for topics by keyword or one-line description.

Product Information

This read-only window displays the Database Server and Database Client versions. Technical Support may ask you for this information if you call.

Chapter 15 - System Maintenance

Overview

This section lists some routine housekeeping and other procedures.

Backup

CoralCenter JET makes a "hot" backup copy of the server database nightly, in the program files\cc\backup directory or on alternative media if available. When using a separate Database Server, backup is typically across the LAN to the ACD Server. Database Servers are also normally shipped with removable cartridge ("Jaz") drives which are assigned a drive letter and may be written and read like any hard drive, but procedures for doing so are the user's responsibility. The backup database (files pcacd.wdb and pcacd.log) is immediately available should the live database become corrupted. Routine backup of all hard drives on the server host, following established local procedures, is mandatory if you value your data. Several tape backup devices and software packages exist. The software can run at a time of low ACD activity without affecting data collection or reporting.

Backup of client hosts is only important in special configurations where custom versions of the MS-Access database exist on the client. Otherwise the software can simply be reinstalled from the server should media failure occur.

Delete Log Files

Log files called program files\cc\log\acderrNN.log and program files\cc\server\capierNN.log, where NN is the month number, are generated by the system. When the files are a few months old they should be deleted to free disk space. Otherwise the 12 files will grow indefinitely: this year's files append to last year's, rather than overwriting them.

Exception Report

Report K1, Exception Log, lists system start and stop events and other conditions of which the customer should be aware. Periodically run it and review the output for anomalies.

Access Database

The MS-Access database (CC.MDB) contains no ACD data. The only updates are loading of language-dependent strings on client startup, and saving of per-report printer setup. If the file should become corrupt you can simply reinstall it from the distribution disks. If you have made local changes, you may wish to make backup copies of CC.MDB as well as checking the file occasionally. Microsoft provides database repair and compaction capabilities. To use them, copy the Windows Database Client icon and add options /Repair and/or /Compact at the end of the command line. Periodically, double-click on the new icon to run the checks.

Appendix A - DNIS Call Tracking

Overview

A detailed discussion of DNIS routing within the Coral requires a moderate amount of knowledge of DNIS call handling and the Coral's ACD environment. The paragraphs that follow present an overview of DNIS and then build on this information to present the routing of DNIS calls within the Coral and, finally, the statistics reported regarding these DNIS calls.

DNIS (Dialed Number Identification Service)

What is DNIS? This is a local Telco or Long Distance carrier offering associated with 800-type (800, 888, 900) service when sent over a T1 or PRI connection. The acronym stands for Dialed Number Identification Service. It means that the number dialed (for example: 800-676-8126) would have an 'identifier' common to that number. This identifier is usually a 4 digit number and many times the same as the last 4 digits dialed. The identifier is sent by the Telco or carrier along with the call when it is originally presented (rings into) the ACD system. The ACD uses the DNIS number as routing control digits to 'know' where (what queue, etc.) to send the call to. The DNIS service is analogous to the Direct Inward Dialing (DID) service offered by local Telcos for non-800 number service.

Why use DNIS? Call centers that have large numbers of clients or inbound campaigns that are tracked individually, but want to maximize the use of their trunk facilities, select DNIS as a means of accomplishing this. By having DNIS a call center can have their trunks pooled. Any customer can call any 800 number and come into the ACD over any of the DNIS trunks yet be routed to the queue associated with the called 800 number. This dramatically reduces the requirement for outside lines while expanding the routing options offered within the ACD.

Coral DNIS Routing

How does DNIS fit into the Coral's routing capabilities? The use of DNIS into the Coral ACD allows the system manager to assign trunks as needed to specific functions in a pooled or non-pooled capacity. The routing of the DNIS calls has traditionally been to IVRs or to ACD Groups specific to the DNIS number. This assignment of DNIS number per ACD Group has provided customers with the ability to track each DNIS number's traffic for all call and agent related statistics. Among these are number of people needed per report period to handle the calls, the average wait time in queue, the average wait to abandonment, etc. These have all been available for tracking with each DNIS number assigned to an ACD Group.

The Coral supports any agent logged into any and every ACD Group in any combination by the agent. This flexibility makes possible a number of choices for the call center manager. Agents that specialize in specific DNIS calls are assigned those calls on a priority basis while other types of calls may only come to those agents during slack periods for their primary ACD Groups. The possibilities are virtually endless for how the call answering duties can be configured using the flexibility of agent assignments with a DNIS environment. Each DNIS can be separately targeted. This allows DNIS numbers to point at the same or individual Groups. For tracking purposes PC-ACD required any DNIS number that was to be tracked individually to be routed toward its own ACD Group.

The drawback of this arrangement is the number of groups an individual agent may have to be logged in to at any given time. The reporting of the agent's statistics can become cumbersome. The Departmental tracking of many DNIS calls related to the same customer or function becomes less flexible as the number of DNIS numbers with their own dedicated ACD Groups grows. A solution to this dilemma was developed using CoralCenter JET along with the routing capabilities of the Coral.

CoralCenter JET DNIS Option

Many call center managers have voiced a need for flexibility in reporting that allows the DNIS traffic to become separated from the agent statistics and allow for more choices in call routing and queuing. The answer from ECI is the DNIS development for the CoralCenter JET combined with the flexible programming of the Coral.

The flexibility of the Coral allows DNIS numbers to be pointed to an ACD Group separately from the Group's dynamics. What this means is that each DNIS number does not have to be pointed at its own specific ACD Group. This was only done in the past for DNIS specific reporting using PC-ACD. With CoralCenter JET Pro Plus or the ability to track DNIS traffic separate from ACD Group statistics opens up several possibilities. The calls for several DNIS numbers can point at the same Group yet the statistics for the individual DNIS numbers are reported separately.

Agents can log into a Group for a particular campaign or product and answer calls from several DNIS numbers pointed at that Group using a First In, First Out (FIFO) algorithm. This type of queuing treats these calls as if there was only one ACD/DNIS type of call. This change of focus from ACD Group to DNIS and ACD Group has opened up many options previously unavailable to the call center manager.

This combining of common DNIS traffic in one Group has eliminated the multiple log-on issue discussed previously. The statistics related to call handling and offered traffic are more precise as a larger sampling of call traffic is analyzed. This pooling of DNIS traffic toward a single Group maximizes agent performance and reduces log in confusion when many ACD Groups are used.

Regarding reported data, the agent's activity is reported on what DNIS calls (by individual DNIS number) and what ACD Groups (by Group logged in to). This allows the call center manager to compare each agent's performance with the other agents by DNIS and or ACD Group.

The DNIS traffic is reported within the realm of DNIS activity as well as a subset of the Groups the DNIS calls were handled in. This allows the manager to see where their calls are being handled. In the event overflows have taken place or a software change in the Coral has changed the DNIS routing pattern, there is no impact on the statistics reflecting call activity.

The Group statistics report on calls directly to the Group (no DNIS number) and those calls that came to the Group that were DNIS calls (reported by DNIS number). The Group reports include agent related information as that is where the agents are logged-in. This allows the manager to develop staffing plans that meet the DNIS traffic. Yet it also allows the assignment of personnel based on all calls handled by a segment of the agent population and not only by the traffic presented on one set of calls (single DNIS number). Figure 38 shows the call flow of a DNIS call with a narrative on the reported traffic.

When a manager is faced with the need to segregate specific DNIS numbers so that they route each to their own ACD Group, any CoralCenter JET handles this requirement as well. The manager can mix the DNIS traffic as required by their business and change it 'on the fly' to meet evolving business needs. Any DNIS

number can route to any ACD Group by itself or be combined with other DNIS traffic using the CoralCenter JET/Coral combination.

Considerations

There are some tradeoffs involved when selecting the call routing associated with a DNIS number.

There are many positive aspects to DNIS numbers routing to individual ACD Groups. When agents are logged into several ACD Groups the statistics are individually generated for each Group and agent. The agent's activity is tracked by each Group. This allows an exact skill matching between agent and Group/DNIS calls. Conversely, the agents log in to many Groups in a priority order using this method. The allocation of calls per agent becomes very defined but is presented by the log in priority assigned to each Group.

The positive aspects to having the DNIS call routing and statistics de-coupled from the Groups opens up more choices in routing and reporting for the call center manager. There is better resource management using this scenario. The agents, when logged into one ACD Group that answers several DNIS numbers, have a FIFO pool that they are responsible for. Their levels of priority are now expanded to be multi-dimensional. Each priority level can be one or more DNIS numbers with fewer Groups for the agent to log in to. The reporting granularity is not lost with this pooling of DNIS calls, it is expanded using the enhanced reporting capabilities of the CoralCenter JET. The agent, DNIS and Group dynamics are separated for ease of analysis yet can be combined as each entity (Agent, DNIS, Group) can be a subset of any other. The trade-off of skills matching to Groups is overcome by the skills matching to Group or DNIS number with the option available by the DNIS number or Group.

DNIS Call Scenario

Using the concept of reporting on DNIS numbers separately from Groups encourages comparison with other ACDs and their use of similar but different technology and terms. The terms "Split" and "Gate" are analogous to the ACD Group as defined using the de-coupled DNIS routing. The development of the DNIS routing with CoralCenter JET reporting offers the call center manager the flexibility needed to meet their tactical and strategic requirements. These requirements can be for immediate changes to call routing in the system or long term planning on agent utilization and how to structure a specific inbound campaign.

The following Figure and narrative provide insight into the functionality gained by using this call routing and reporting scheme.

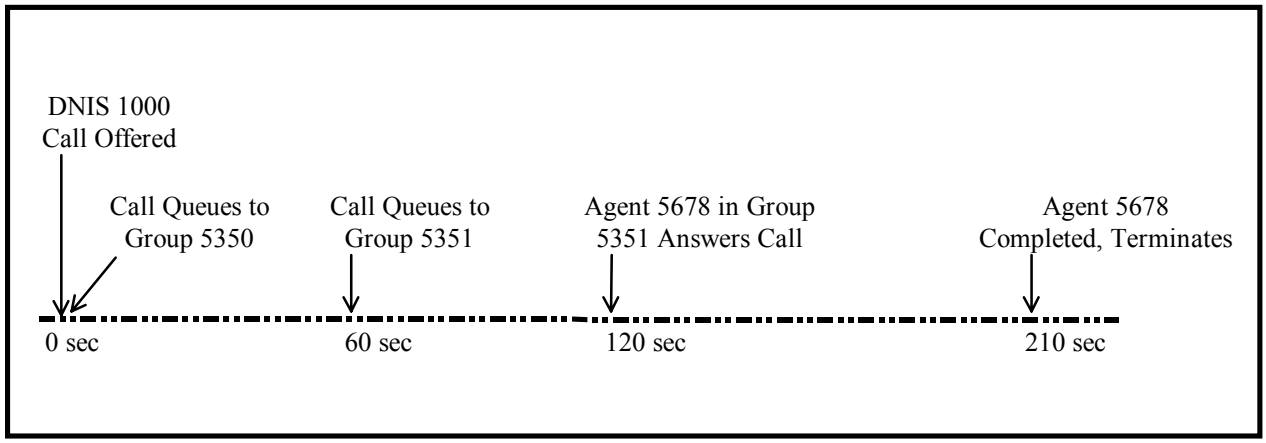


Figure 38: DNIS sample call time line

DNIS 1000 call offered to Group 5350 overflows after a predetermined time to Group 5351. An agent (5678) in Group 5351 answers and handles the call. The statistics reported are by each entity involved in this scenario, Agent, DNIS Number and ACD Group(s). What would be reported is based on the following Table.

Agent 5678 would report 1 call handled for DNIS 1000 and Group 5351. Each DNIS number reported would contain all relevant data in its statistics for the agent but would not report on Group related data such as Work or Released time. The agent would report on Group relevant statistics that would include the DNIS statistics and those relevant only to Groups such as Work and Release time.

DNIS 1000 would report on a queue wait time of 120 seconds with 60 seconds allocated to Group 5350 and 60 seconds allocated to 5351. Relevant data would be related to call activity such as Offered, Abandoned and Overflowed statistics and what Groups the DNIS calls were routed to in the ACD. DNIS 1000 would report on 5350 and 5351 with Talk time, etc. reported for Group 5351.

Group 5350 would have data relative to an overflowed call. The wait until overflow would be 60 seconds. The same data would be reported for DNIS 1000 as a sub-set of the Group's traffic. Group 5351 would report similarly that it had traffic of 1 Offered call, the Wait in queue was 60 seconds and the call was answered and had Talk time of 90 seconds. These statistics would be in the aggregate Group numbers and the individual DNIS numbers reported (that make up the Group's numbers).

Table 16: DNIS Information Reported

Reported Information	Reporting Agent	Reporting DNIS	Reporting ACD Group
Agent	**NA**	**X**	By Individual Agent, also Agent aggregate statistics such as Talk, Hold, Release, etc. times
DNIS	DNIS calls, handled by DNIS number	**NA**	DNIS calls, handled by DNIS number
ACD Group	ACD Groups logged into, calls handled by Group which may or may not include DNIS calls	ACD Groups by amount of offered traffic per Group per DNIS number	**NA**

X = No predefined reports available at this time for this combination.

NA = Not Applicable as the Agent, DNIS and Group reports by definition contain information on themselves.

Coral Programming and Call Flow For CoralCenter JET DNIS Tracking

The Coral should be programmed in the following manner:

If it is a DKT&APA, disable the set display if this is a call center over 100 agents. This reduces messages that the application doesn't use but has to accept, process and then discard. The APDL should be optioned for "No Display."

The agent stations should be programmed into one ACD Group. There may be more than one Group, but one is used here for simplification.

Each DNIS number is a Library that calls that ACD Group.

The agents log into that ACD Group.

Calls to the DNIS numbers are routed to the ACD Group.

The Name Retention feature of the Coral displays the DNIS name. The agents can answer the call based on this information.

Version 10.XX –

The digital device (DKT&APA, APDL), that the Coral Center JET is attached to, must be set to PCC=CSTS_PCC.

Version 9.XX –

The **SFE**, 2 entry **ACD_CAP** must be set to **Yes**

The digital device (DKT&APA, APDL), that the CoralCenter JET is attached to, must be set to **PCACD = Yes**

CoralCenter JET Information

The following will explain what you must do to set up the CoralCenter JET for DNIS tracking. In summary, the system must be told what is a DNIS number or it will not 'know' what the messages mean when a DNIS call is presented to an ACD Group. The programmer 'tells' the CC Pro Plus by way of a table that is programmed for DNIS numbers, (see Screen 117) page 48.

DNIS numbers can be displayed for activity along with ACD Groups. This selection is under the display menu (DNIS Summary).

DNIS call activity is reported in three areas. The agent activity is broken down by ACD Group and DNIS number calls; the Group activity is broken down by DNIS number calls handled within the Group; and DNIS numbers are reported by the Groups the calls were handled in (allows for overflows and Library changes in mid-period, etc.).

CoralCenter JET Programming

In the CoralCenter JET Database Client, the following steps must be taken in order to ensure the proper entry of the DNIS information.

Make sure to have all Business Units installed in the database

Make sure all ACD Groups are installed in the database. Each DNIS number is assigned in the database to an ACD Group.

Select the DNIS item under the Admin menu choice along the menu bar.

Window 117 will be displayed on the screen. The DNIS information is entered and displayed in this window.

In Window 117, select the ACD Group to be used.

Click on the DNIS number field, if not already selected, and enter the DNIS number. Tab over to the name field and, if you want to change the Business Unit of the DNIS number to be different from the ACD Group, then select the appropriate Business Unit.

Select the next DNIS number field if you want to enter more numbers, etc.

When you are finished, click on the OK button.

To delete a DNIS number's entry, select the number field and use the Edit menu commands to select and delete the record.

Appendix B - Troubleshooting

Overview

This section addresses some problems which may occur. It is meant more for the experienced system operator than the casual user. Information presented here is likely to be supplemented by periodic technical bulletins.

Anomalies

If the system appears to be behaving abnormally, first check each CoralCenter JET window on the ACD Server for error indications. The windows are normally minimized but can be made visible by selecting from the window list (Ctrl-Esc). Restarting the server quickly will minimize loss of data.

Boot Up Problem

This is a Windows problem and not an application one. It should be possible to recover without reinstalling the Windows software. Consult your Windows user guide or a Certified Microsoft Engineer. If the hard disk is full, one option which will permit the system to boot is to delete files from the ..\CC\EXPIRED directory, which contains old data which has been removed from the database.

Database Validation or Backup Failed

The CoralCenter JET Server backs up the server database nightly. If a problem occurs, your Server host may display a message like:

"CoralCenter JET Database backup failed"

If this happens, shut down any running components of CoralCenter JET and do not attempt to restart the application until the problem has been resolved. If the backup failed, the problem is most likely a full disk. Free up some space, start the database and run the program files\cc\server\dbvalbak.cmd script manually. If this was successful you may proceed. If validation failed, it may be necessary to revert to the most recent backup or, as a last resort, attempt to unload and reload the database contents.

No Events From the Switch

Does the Server database have any ACD Group, Station or Trunk records? If not, the application will not attempt to monitor anything.

At an MS Dos prompt on the ACD Server, run MSGWIND.EXE from the program files\cc\server directory. Events should be displayed as they are received.

CoralCenter JET Pro or Pro Plus Specific

If this is the CoralCenter JET system verify the APDL/APA link and follow the PC-ACD troubleshooting procedures for this link.

Verify the correct version of SKD/SDT/SD card, the correct version of APDL, APA and the correct serial cable. Verify the database in the Coral related to the digital port. The port must be set to PC-ACD=Y for version 9.XX or PCC=CSTS_PCC for version 10.XX.

Client Cannot Connect to the Database Server

Either of the servers may not be running, or initialization did not complete. Client Handler window should display the following message “Ready . . . ”.

Log Files

A log file called program files\cc\log\acderrNN.log, where NN is the month number is kept by the system. Technical support may ask you to go to this directory of files to help with diagnostics.

Debug Output

Many of the CoralCenter JET executables can run in a “debug” mode in which they generate extra diagnostics. Debugging output is turned on by editing the coralcen.ini file. Technical Support will advise the correct procedures.

Report Fields All Say “#Error”

The database contained no data for the time and date range of the report. Verify all settings in your Report Control (i.e. – be sure the report is not being run for a time “in the future”).

Glossary

@

@ Protocol
Protocol used for RS-232 communications from APA. Named after the @ sign used to signal the transmission of an Op code out of the RS-232 link from the switch. This name has been replaced by "APA Protocol" in recent documentation.

A

Access
Microsoft database program that CoralCenter JET utilizes. Also know as "MS Access."

ACD
Automatic Call Distribution.

ACD Group
Queue where ACD calls are presented.

Agent
The person who receives an incoming ACD call from the Coral system. Agents log-in to an ACD Group (or Groups) to answer calls routed there.

Announcer
Device or designation on the switch (identified by a dial number) which provides a recorded announcement to callers. Also known as RAN.

APA
Applications Processor Adapter for use with a DKT 2xxx series set. This adds an RS-232 connector to the base of the DKT. The APA can be used as a link between a Coral and a CoralCenter JET Pro or CoralCenter JET Pro Plus.

APA Protocol
Protocol used for RS-232 communications from APDL, APA. There are two modes of this protocol, the PC-ACD mode which is used by PC-ACD and CoralCenter JET Pro and the CSTS mode which is used by CoralCenter JET Pro Plus.

APDL
Applications Processor Data Link. This device provides a low cost RS-232 data link between the Coral and an external Applications Processor. This is the preferred link between Coral and a CoralCenter JET Pro or CoralCenter JET Pro Plus.

B

Boot Up
The process of starting up your computer.

C

Call Center Manager
Person who has overall responsibility of the call center that's utilizing the CoralCenter JET system. The call center manager administers the CoralCenter JET system.

Client Handler
Subsystem within CoralCenter JET that controls the communications between individual clients and the OS/2 Object Model/State Machine.

Company
Within the CoralCenter JET hierarchy, a company is made up of divisions.

CSTA
Computer Supported Telephony Application. Accepted standard for linking computers to telephone systems.

CSTS
Computer supported Telephony Services. Proprietary RS-232 protocol modeled after the CSTA standard. Used by ECI as the Link to CoralCenter JET Pro Plus.

D

Departments
Within the CoralCenter JET hierarchy, departments are made up of ACD Groups and agents.

Dial Number
Numeric identifier known to the switch which identifies a particular device or function (station, ACD Group etc.). Also known as Directory Number.

Division
Within the CoralCenter JET hierarchy, divisions are made up of Departments and Trunk Groups.

DNIS
Dialed Number Identification Service. DNIS delivers identifying digits that distinguish incoming calls by the called number.

Dongle
See Security Device.

E

Erlang B Grade of Service
Probability of blockage of a call accessing a trunk group.

F

Focus

An OS/2 term. The window which is responding to mouse and keyboard events is said to have “the focus”. Its title bar is highlighted. To give a window the focus, click on it.

G

GUI

Graphical User Interface. A generic name for a user interface based on graphical elements (windows, icons...), such as OS/2 Workplace Shell or Microsoft Windows.

H

HEX

Numbering system used to specify addresses in computer memory. The HEX (Hexadecimal) numbering system consists of 16 characters, ten digits and six letters (0, 1. . .9, A, B, C, D, E, F)

HPFS

High Performance File System. OS/2-specific file system offering robustness, disk-usage, performance and functionality enhancements. Native DOS systems cannot read files on an HPFS partition. You select FAT or HPFS when formatting a disk partition.

I

Icon

An icon is a picture or symbol representing an object, task or choice you can select from the CoralCenter JET software.

IP Address

Internet Protocol address of an individuals computer that’s connected to a LAN.

ISQL

Query language used to perform queries to the Sybase database

L

Log File

Everything that the database engine does is stored in the log file in the order that it occurred.

M

Manual Reports
Reports initiated on request.

N

NTFS
New Technology File System – Windows Proprietary Format. Affords the network a higher level of security than a FAT partition.

O

OS/2
Multitasking operating system that was the previous software platform for CoralCenter.

P

PBX
Private Branch Exchange.

CoralCenter JET
ECI's automatic call distribution systems management information system. CoralCenter JET is used to collect and examine the data generated by the Coral ACD.

Ping
The act of sending an ICMP echo packet to the Coral host, and waiting for a response. It is used to test and debug a network. Used with the CSL card.

R

RAM
Random Access Memory. The primary memory in your PC. It can be overwritten with new information.

Readerboard
An external device, typically wall-mounted, which displays ACD and other information in near Real Time. Otherwise known as a wall display.

Real Time
With CoralCenter JET you can view the data generated within the ACD as it is being collected "Real Time". The information is processed as it enters the CoralCenter JET, as opposed to batch processing where the data is stored and operated on a later time.

S

Scheduled Reports
Reports initiated automatically at preset times.

Scheme Palette
The OS/2 window in which you set colors for various window areas. It is reached from "OS/2 System"→"System Setup"→"Scheme Palette".

Security Device
An attachment to a computer which authenticates specific software to run on that computer; also known as a "dongle". CoralCenter JET uses a Software Sentinel security device.

Shadow
A reference or pointer to an OS/2 Workplace Shell object. When the original object changes, the shadow changes as well. Shadows are used to reference objects from a special or more convenient location such as the desktop or the Startup Folder. The easiest way to create a shadow is by holding down Shift and Ctrl while dragging the object to its target location using the right mouse button. Shadows are described in the OS/2 documentation.

SQL
Structured Query language. Used in conjunction with database servers for creating, maintaining and viewing database information.

Startup Folder
A Windows folder containing objects to be started when the system boots.

Strudel Protocol
See "APA protocol." Early nickname for the RS-232 protocol. Named after the @ sign used to signal the transmission of an Op code from the Coral.

Sybase
Sybase is the manufacturer of REXX which has been utilized in the development of CoralCenter JET. REXX enables development of a full featured graphical user interface to the OS/2 database.

T

TCP/IP
Transmission Control Protocol/Internet program. Protocol used by the Ethernet LAN that connects the Coral switch to the end-users of the CoralCenter JET.

Trunk Groups
A group of essentially like trunks that go between the same two geographical points.

TSF
Target Service Factor. A measure of target or actual grade of service defined as the percentage of calls handled within a certain time. CoralCenter JET currently includes abandoned as well as answered calls in the denominator of this calculation. Real Time screens currently include abandoned calls as well; reports do not. This will change in future releases.

V

Reports

The attached document has been created as an independent guide for ease of separation from this manual. Once the user has become familiar with CoralCenter JET the most frequently accessed part of the guide is the reports section. With this in mind, we have separated it into its own document while retaining it as part of this complete reference guide.