Call Center Management Information System

CC MIS
Release
4.1

CC MIS
System
Description

Standard   297-2671-150.04.04

**Overview of CC MIS
Maintenance & Supervisor 's Interfaces**

NORTEL
NORTHERN TELECOM

CC MIS

CC MIS System Description Guide

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System Description

CC MIS Release 4.1

NTP: 297-2671-150.04.04

Status: Standard

Date: April 1998

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CC MIS

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Standard version for Release 4.1.

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Pre-Preliminary version for Release 4.1 for use by the Testing Group and VO Sites.

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About this Guide

This document provides a high-level overview of the Call Center Management Information System (CC MIS) as it is used with the Meridian SL-100 and DMS-100 switch. In this book, the MSL-100 and DMS-100 are referred to as DMS-ACD.

Introduction

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How to use this book

This book provides descriptive information about CC MIS. It contains the following information:

- Chapter 1: How to use this book - Provides an overview of this book and lists the documentation related to the product.

- Chapter 2: System components and capacities - Introduces the product and provides information about each hardware component, including hardware requirements and purchasable options. A complete listing of system capacities is also included in this chapter.

- Chapter 3: Functions and features - Describes the functions and the software features of the product.

- Appendix A: Example reports - Contains an example of each standard report format and agent event report.

- Appendix B: System reports - Contains an example of each system report.

- Appendix C: Supported Data Stream - Contains a complete listing of supported messages.

- Appendix D: Acronyms and abbreviations - Lists the acronyms and abbreviations used in this book.

Applicability of this document

This book applies to CC MIS Release 4.x. CC MIS Release 4 supports the BCS 32 and 35 software release. Unless the document is revised, it also applies to DMS-ACD systems with software releases greater than BCS32 and BCS35, but the MIS protocol must be BCS32 or BCS35.

Related documentation

Where appropriate, references to documents specific to a particular component are listed in the description sections.

For more information on ACD, refer to the following Northern Telecom Publications (NTP):

• ACD Product Guide (NTP 297-2041-010)
• ACD Server Product Guide (NTP 297-2041-011)
• ACD Planning and Engineering Guide (NTP 297-2041-101)
• ACD Planning and Engineering Guide - Canada (NTP 297-2041-104)
• ACD Administration Guide (NTP 297-2041-301)
• ACD Translations (NTP 297-2041-350)
• ACD Maintenance Guide (NTP 297-2041-500)
• ACD Trouble Locating and Clearing Procedures (NTP 297-2041-503)
• M5212 ACD Set General Description (NTP 297-2041-900)
• ACD End-User Load Management (NTP 297-2041-901)
• Network ACD General Description (up to BCS 34)
• (NTP 555-8101-100)

For more information on CC MIS, refer to the following NTPs:

• Call Center MIS Maintenance and Administration Guide (NTP 297-2671-545)
• Call Center MIS Release Notes (NTP 297-2671-211)
• CC MIS Getting Started Guide for Supervisor Interface (NTP 297-2671-175)

CC MIS

System Components and Capacities

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Introduction to ACD

Automatic Call Distribution (ACD) is a feature that makes it possible for a relatively small number of operators (called agents) to efficiently handle a large number of incoming calls. The ACD feature resides on the DMS-ACD switch that receives incoming calls. The ACD feature accepts and equitably routes calls to available agents.

Introduction to CC MIS

Call Center Management Information System (CC MIS) is a tool for managing the agents who handle ACD calls. It helps supervisors plan, manage, and monitor their ACD operation by collecting statistics on the performance of network configuration and personnel.

CC MIS reports these statistics to supervisors in one of three ways:

- in a numeric or graphic, real-time, online display
- in a series of standard management reports
- in custom management reports

CC MIS provides a variety of features, and as a result, not all features may be available in your area. Check with your local sales representative to learn the features available to you.

The following figure illustrates a potential basic system configuration for CC MIS Release 4.

Figure 2.1 Overview of Basic (Standalone) CC MIS System
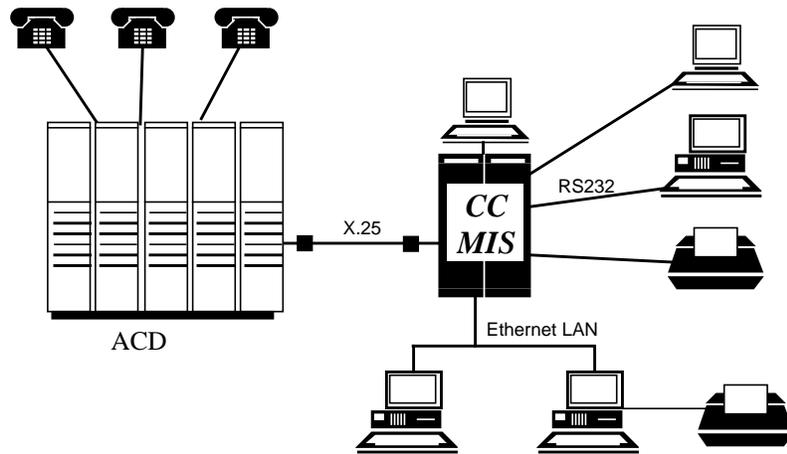
The following figure illustrates a potential Service Bureau configuration for CC MIS Release 4. The ability to partition a CC MIS node into multiple users based on subpools is available in Release 4.

Figure 2.2 Overview of Service Bureau
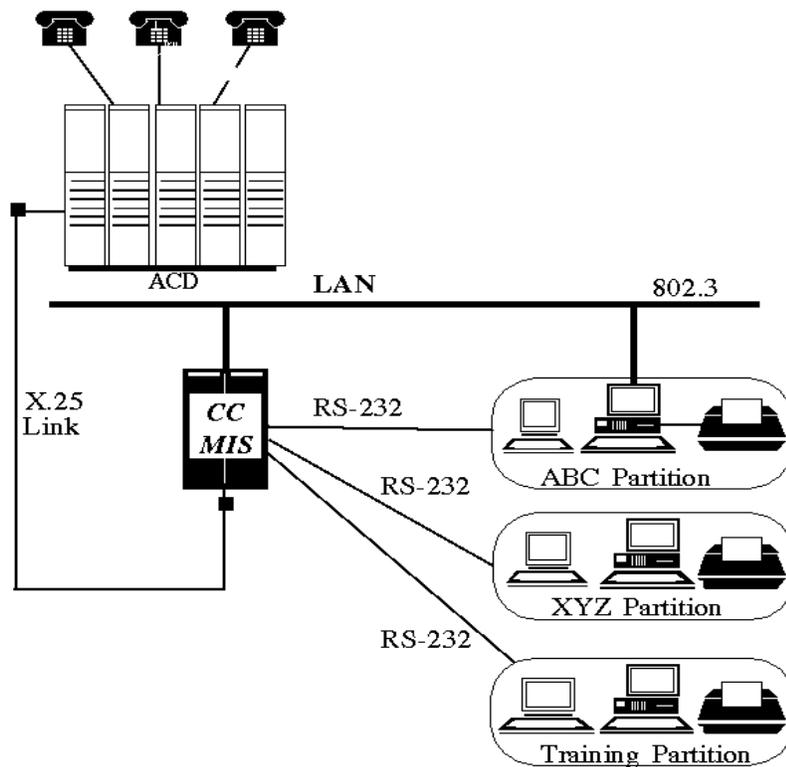
Overview of Networked CC MIS

The following figure illustrates a potential network configuration for CC MIS Release 4. CC MIS Release 4 provides the ability to view partitions on other CC MIS nodes within a defined network using Network Access Partitions (NAPs).

Figure 2.3 Overview of Networked CC MIS
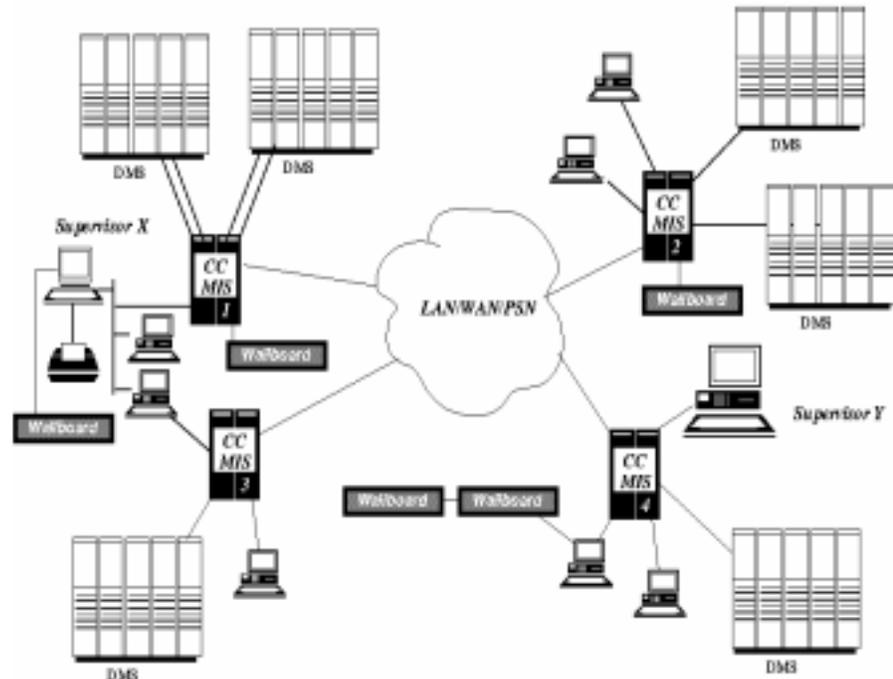
This section provides information about each component of CC MIS. In addition, information about the DMS-ACD as it pertains to the CC MIS is provided.

DMS-ACD

CC MIS is a downstream processor of the MSL-100 or the DMS-100 ACD switch. The CC MIS database needs information from DMS-ACD tables to setup the interface to the DMS-ACD, and the pools and subpools of the ACD.

CC MIS must have the same definitions used by the DMS-ACD for

- pools and subpools
- X.25 links
- NOS Logon Parameters

You cannot change, add, or delete information in these ACD tables through CC MIS. The CC MIS X.25 and Network Operation Services (NOS) logon information must match the information in the DMS-ACD tables to establish a connection to the DMS-ACD.

The ACD data link

In order for CC MIS to communicate with the DMS-ACD, CC MIS must establish DMS-LINK connections with the DMS-ACD over which agent and call event messages can pass. An ACD datalink is associated with one and only one ACD pool.

Connection at the switch

The X.25 link between CC MIS and the DMS-ACD connect at the switch to either a 1X89AA (MPC) or 1X89AB (EMPC) card. If redundant links are used, there must be two cards. There can be four live switch links on an 88K-based platform. On a PowerPC platform, there can be up to 12 live links.

Note: Only EMPC supports the V.35 56 Kbyte/s connection. Refer to the section "Link to DMS-ACD switch" in this chapter for detailed information about the connection to the switch.

Also, the 1X89AA (MPC) card is no longer available but is supported where needed.

Data stream supported

CC MIS supports the ACD MIS data stream that is part of BCS32 and BCS35. Although the protocol handler receives and processes any BCS32 or BCS35 message that may come from the switch, not all such messages are actually used by CC MIS. Refer to Appendix C for a complete listing of supported messages.

Note: It is recommended that your switch be at BCS35 when the Networking feature is enabled for your CC MIS system.

ACD Provisioning

In order for the CC MIS system to function correctly with the ACD switch, the ACD switch must have the following packages:

Table 2-1: Required packages for CC MIS

Package Number [a]	Description
NTX000AA	Bilge
NTX001AA	Common Basic
NTX901AA	Local Feature I
NTX100AA	IBN Basic
NTX106AA	IBN-P Business Set
NTX108AA	IBN Display Feature
NTX273AA	Multi-protocol controller BX.25
NTXE65AA	MPC X.25 Interface[b]
NTXE98AA	High Speed MPC[c]
NTX560AB	NOP - Generic RO Service
NTX407AB[d]	ACD Call Processing
NTX415AA[d]	ACD Basic
NTX416AJ[d]	ACD Enhanced
NTX991AF	ACD Mgmt Rep 2-way datastream
NTXA52AB	ACD Remote Load Mgmt

a. The alpha suffixes (AA,AB,AC, ...) may be incremented on an individual package basis in any BCS release. The alpha suffix for the most current generally available package associated with the BCS switch load should be utilized.

b. The package is required if the link redundancy option is used or if the link speed is greater than 19.2 BAUD. Optionally, package NTXN85AA (CCITT 1984 X.25) may be used instead of NTXE65AA without impact or benefit to CC MIS.

c. Required if the link speed is greater than 19.2 BAUD or if the switch load is pre-BCS35 and EMPC hardware is used.

d. This package is not required for CC MIS but may be required for certain ACD features which have been purchased. Refer to the appropriate ACD NTPs for details on package requirements for ACD features.

**512KB
Connection**

A 512 KB connection is possible using IOM at the switch end of the interface.

Link to the DMS-ACD switch

The link between the CC MIS and the DMS-ACD is an X.25 link. Clocking may range from 9600 byte/s to 56 Kbyte/s and may use an RS-232 or V.35 interface. The type of interface used is transparent to CC MIS. Either an MPC or an EMPC may be used on the switch end of the interface.

Note: Only EMPC supports the V.35 56 Kbyte/s connection.

If the link fails between the CC MIS and DMS-ACD, a loss of data will occur. Using a redundant link reduces the amount of data lost, but does not prevent data loss entirely. Data loss occurs during the time it takes a redundant link to switch over (up to two minutes). When a link failure occurs, CC MIS simply retries the connection on the X.25 link.

CC MIS must have the same definitions used by the DMS-ACD for the X.25 link.

Redundant link option

The redundant link option allows you to define a backup (redundant) link for each active link. The backup links are only activated when

- protocol errors determine that the X.25 session should be cleared.
- connection request to the DMS-ACD by CC MIS times out.
- connection to the DMS-ACD by CC MIS is refused.
- the DMS-ACD does not recognize CC MIS because the first link is not enabled on the DMS-ACD.

The redundant links are not activated for I/O errors, reset packets, or interrupt packets. These events are considered transitory and are not resolved by going to the other link.

If the redundant links are operational and the communication path is open between the DMS-ACD and CC MIS, it takes about two minutes for the redundant links to become the active link and carry data.

Maintenance engineers can test the links and disable one or both links to prevent the redundant link from attempting to re-establish a connection when there is a known link or hardware problem.

Link failures

The failure of any link to the switch generates a log message in the CC MIS system log and a log in the DMS-ACD log. When the connection between the CC MIS and the DMS-ACD is lost the following occurs:

• The connection status icon on the windows-based supervisor screen indicates link failure to the switch.

• CC MIS attempts to re-establish the link. During this time:
  - supervisors remain logged in, but their real-time screens are static.
  - no data is accumulated either historically or real-time.

• If the session is reactivated within five minutes:
  - link indicators are reset to indicate the link(s) are up.
  - CC MIS receives current event data from the switch.
  - all event data during the link outage is lost.

• If the session is not reactivated within five minutes, the system will perform an automatic configuration update after the link is restored.

X.25 link requirements

If the DMS-ACD switch and the host are less than 100 cable feet apart (co-located), one V.35 Modem Eliminator set to 56 Kbyte/s is required between the DMS-ACD switch and the CC MIS host.

Figure 2.4 Link requirements when host and switch are co-located
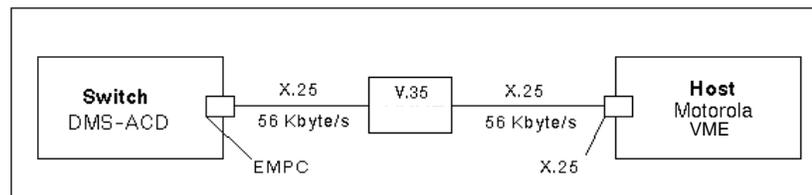
If the switch and the CC MIS system are not co-located, one of two options is required:

- Option 1 requires two 56 Kbyte/s Channel Service Unit (CSU) connections to a T1 channel.

- Option 2 requires two Data Service Units (DSU) or two V.35 modems set to 56 Kbyte/s and attached to a conditioned leased line.

Figure 2.5 Link requirements when host is remote from switch (Option 1)
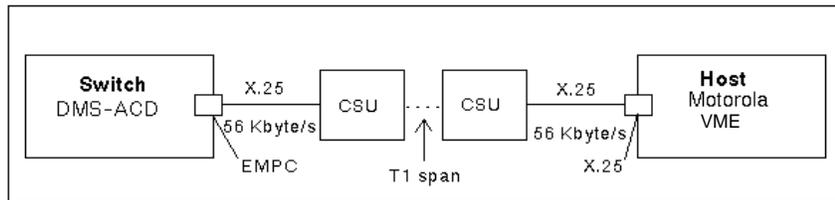
Figure 2.6 Link requirements when host is remote from switch (Option 2)

Host

The CC MIS host is either a Motorola VME Model 8420 or XR VME Model XR 9112 (both using the Motorola UNIX operating system) or a PowerPC mounted in the VME chassis using the AIX operating system.

The host contains the CPU, operating system, tape drives, hard disk and interfaces with the DMS-ACD and the connections to serial and parallel devices used in CC MIS.
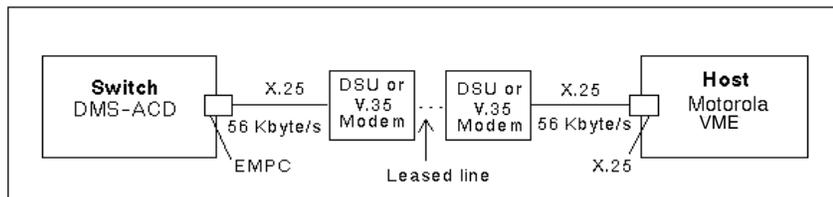
The term "VME" used in this document refers to the host machine which could contain a 187, 197, or PowerPC platform.

Uninterruptable Power Supply

Uninterruptable Power Supply (UPS) can be purchased as an option (highly recommended if AC is used) to prevent power failure to the host. The UPS provides about 20 minutes of power to the host after the normal power supply fails. CC MIS monitors the amount of time it has been powered by the UPS and gracefully terminates its processes and shut down the host if power is not returned to the system. The UPS lessens the possibility of database problems due to power failure.

Tape drives

The host computer has a DAT drive which is used to load software and perform backups.

Hard disk

CC MIS stores historical data on the host hard disk(s). The disk can be one of the following sizes: 520 Mbyte (discontinued), 1 Gbyte, 2 Gbyte, or 4 Gbyte. The size of the drive required is based on customer configuration and database requirements, such as the number of agents, ACD groups, and the required storage retention for historical data. Additional space (approximately 500 MBytes) is needed for the new OS. Systems upgrading from an earlier release to Release 3.x then to 4.x must have at least a 1 Gbyte drive.

Upgrades 2.x to 4.x

The minimum requirements for upgrade from CC MIS Release 2.x to 4.x for an existing VME host are as follows:

- at least 32 Mbyte RAM
- approximately 500 Mbyte space for operating system and a total of at least 1 Gbyte drive (for OS and CC MIS software)
- New version of UNIX operating system - SVR4.3 (NTOS 2.x)

Disk mirroring

Disk mirroring is provided by the RAID hardware (MicroDFT-1) and two identical SCSI disks. Disk mirroring performs the following functions:

- maintains two sets of identical data, protecting from temporary loss of access due to disk failure
- mirrors operating system, application software, and databases
- provides the ability to synchronize data if a disk fails or for backup purposes

Note: Disk mirroring does not eliminate the possibility of database integrity problems that may occur due to a power failure while the database is active. If a problem does occur, the database must be restored from the most recent backup. Use of the Oneac 900 Uninterruptable power supply (in conjunction with the Motorola Environmental Board) allows CC MIS to accomplish a graceful shutdown when backup power can no longer be sustained.

System interfaces

The host provides the following interfaces:

- Ethernet LAN interface (optional) - Used to connect PCs (used as a supervisor terminal) to the VME, and VME to VME in a CC MIS network.

- WAN interface (optional) - Used to connect VMEs in a CC MIS network.

- Serial interface - Used to connect the maintenance console, supervisor terminals (PCs and video terminals), printers, and wallboards. The number of serial interfaces provided depends upon the size of the host .

- An X.25 interface is used to connect to the DMS-ACD. A system can be configured to provide redundant links to the DMS-ACD.

  Note: Link redundancy is a purchasable option.

- Parallel Printer Interface - for a parallel printer.

Selecting the Required Processor

The increased capacities of the Networking functionality has a direct bearing on the processor required for the CC MIS system. The tables below provides several examples that can be used to *estimate* the processor speed that *may* be required for a particular networking configuration.

The table below reflects possible configurations for a CC MIS node that will have a NAP(s) configured on it with partitions from other CC MIS nodes as part of the virtual network defined on this CC MIS node. This node will not have any partitions configured locally that are part of a virtual network with the NAP residing on a remote CC MIS.

Processor selection is for the 88K-based platforms.

The PowerPC platform comes with a minimum 200 MHz processor.

Table 2-2: From a remote CC MIS with the NAP on this CC MIS

Combined Incoming Groups[a]	Incoming Positions	Number of Supervisor Terminals	Recommended Processor Speed
100	1000	64	50MHz
200	1500	64	50MHz
256	2000	64	50MHz
512	5000	32	33MHz
512	5000	64	50MHz
2000	10000	32	50MHz
2500	20000	10	50MHz

a. This does not include groups local to this node.

The table below reflects a CC MIS node that does not have a NAP configured locally, but has partitions that are part of the virtual network(s) with the NAP(s) configured on a remote CC MIS node(s). The number of nodes column reflects the number of remote nodes (with NAPs) to which data from this node will be sent.

Table 2-3: From this CC MIS with the NAP on a remote CC MIS

Groups Out	Outgoing Positions	Number of Nodes	Number of Supervisor Terminals	Recommended Processor Speed
50	500	1	32	25MHz
100	1000	1	32	33MHz
100	2000	1	64	50MHz
100	2000	2	64	50MHz
250	2000	1	64	50MHz
512	5000	1	30	50MHz

Maintenance console

Engineers maintain CC MIS through the maintenance console. Through this console, engineers can perform the following functions:

- install or upgrade CC MIS application software
- perform diagnostics
- adjust CC MIS configuration and logon parameters to the DMS-ACD
- access the error log
- perform routine backups

These maintenance functions are accessible only on the maintenance console. One maintenance console is provided per CC MIS system; the maintenance console is a VT220. The system also allows for one dial-up maintenance interface (VT220 compatible recommended).

The CC MIS maintenance and administration software allows you to perform maintenance functions. By logging into this software, you are logging into UNIX.

Supervisor terminals

Supervisors manage their agents through menus accessed at a supervisor terminal. The terminal is an IBM PC or compatible 486 CPU (or better) running at a minimum speed of 66 MHz.

User interface

The CC MIS Windows interface places certain requirements on the PC. The minimum requirements are summarized below.

- CC MIS Windows Interface running on an IBM Personal Computer (or 100% compatible) with the following recommended configuration

  — 486 (or better) CPU (minimum 66 MHz)

  — Microsoft's Windows NT 4.0 or Windows 95

  — VGA card with 1 MByte (or more) and a color monitor,

  — Minimum of 4Mbytes of RAM for CC MIS above and beyond the recommended RAM for Windows 95 or Windows NT. Note that a total of 16 Mbytes is recommended for PCs running only the CC MIS application. Additional memory is recommended for PCs running other software applications in addition to the CC MIS application.

  — Two or three button mouse device supported by Microsoft's Windows

  — one serial communication port for connection to the CC MIS system or LAN connection (see below),

  — one parallel or serial port for attaching a local printer or wallboard (optional).

  — one serial port for attaching mouse (if serial mouse is used).

Connection to the host

Supervisor terminals may be attached directly to the host or through modems. Any non-standard use of modem signals, such as that required by some line drivers, should be verified through your host's technical support.

In addition, PCs used as supervisor terminals may be connected to the host using a serial connection or a LAN connection.

Printers

CC MIS has provisions for printers, to be used as system printers and as a purchasable option, local (PC-attached) printers. These printers print the reports and displays.

System printers

CC MIS supports multiple dedicated system printers. The number is limited only by the number of available ports. The types of printers supported are:

- HP LaserJet 5
- HP LaserJet 4 or 4+
- HP RuggedWriter
- Epson LQ 850
- Epson FX 850 or FX 870
- DEC LA100, LA120, and LA210 with RS232 interface (supported when running in an Epson emulation mode)

The HP LaserJet is only printer in this list that is supported on the PowerPC platform.

Connection to the host

System printers may be attached directly to the host or through error detecting and correcting modems using a serial connection. One parallel connection is supported.

Note: Any non-standard use of modem signals, such as that required by some line drivers, should be verified through your host's technical support and design.

The maintenance printer is connected using either the parallel or a serial port on the host. This printer can be used to print text-based reports.

Note: Graphic reports can only be printed on a PC-attached printer.

Local printers

Printers can be attached to PCs used as supervisor terminals. These printers can be configured into the system and used by any or all supervisors.

PC-attached printers cannot be used by the maintenance interface.

Connection to the PC

Local printers may be attached through any one of the standard parallel printer ports or a serial port, depending on the interface provided on the printer.

Note: If the PC is connected to the host using a serial connection, the PC must have two serial ports to use a serial printer. If the PC is connected to the host by way of a LAN connection, the PC need only have one serial port to use a serial printer.

Wallboards

A wallboard is a message board that displays LED characters. Supervisors can display information on wallboards that are mounted on the wall, ceiling, or table of a call center. Supervisors use the wallboard to notify agents of statistical and administrative information. The following wallboard types are supported:

- Daktronics
- Nortel
- Generic

CC MIS supports multiple wallboard ports defined through the maintenance interface. The number is limited only by the number of available ports. In addition, Nortel wallboards can also be attached to a supervisor's PC. Only one Generic wallboard can be attached to a single port.

Nortel and Daktronics wallboards may be attached directly to individual ports on the CC MIS host. Multiple wallboards (up to five) can be daisy chained together on one port. Daktronics connection configurations for multiple wallboards use a six port y-cable (or a Com 4 kit - supplied by customer) of which five ports can be used.

In Release 4, the wallboard feature has been enhanced to support multi-line text in messages, multi-color characters, and variables within the message text. Only Nortel wallboard support the multi-line text and multi-color characters capabilities.

Purchasable options

The following are software options that can be purchased, in addition to the baseline product.

- Multiple Partitions
- Multiple Data Links
- Language Options (not currently available in Release 4)
- Link Redundancy
- Terminal Capacity
- Networking
- SNMP
- Flexible Intervals

The following hardware options can be purchased:

- Disk Mirroring (RAID)

System Capacities

The table summarizes the system capacities of the CC MIS system. This section summarizes all of the system limits within the CC MIS system (for both 88K and PowerPC platforms). The first table is representative of system limits for a CC MIS node and the second table is for partition limits.

Table 2-4: CC MIS System Node Limits

Entity	88K Limit	PowerPC Limit
Supervisor Terminals	64[a]	128
Printers attached directly to CC MIS	50[b]	1
Printers attached to PC-based Supervisor Terminals	1/PC	1/PC
Wallboard Ports	64[c]	64[c]
Wallboards on a single port	5[d]	5[d]
ACD groups	512[e]	1024[e]
ACD groups (Networked)	2000	3000
ACD-DNs	8704[f]	17408[f]
ACD-DNs (Networked)	32767	32767
ACD Subgroups (supervisors)	5000[e]	9999[e]
ACD Subgroups (Networked)	20000	30000
Agent positions	5000[e]	9999[e]
Agent positions (Networked)	20000	30000
System Partitions (16 partitions per node, up to 4 can be NAPs)	16[g]	32
System disks	16[h]	16[h]
Switch links	8[i]	24[i]
Switch links (Networked)	40	240
Network Nodes	10	20
Virtual Nodes for NAP	100	100

a. The system will allow more than 64 terminals attached via LAN. However, only 64 active supervisor logins are allowed. If more than 32 terminals are attached then a 33mhz or greater processor with 64mb memory is required.

b. This is the physical limit of the number of serial ports available on the VME Model 8420 (the limit for the XR VME platform is 64 serial ports).

c. It is possible to configure additional wallboard ports up to the physical limitations of the number of serial ports (see footnote "b" for physical limits). Unlike release 2, which required that one supervisor terminal be given up for each wallboard configured, release 4 will only require one supervisor terminal or printer, i.e., a serial port be given up for each additional wallboard port configured. This allows additional wallboards to be added for each serial port not utilized as supervisor terminals or printers. In Release 4.0, Nortel wallboards can also be attached to a serial port on the supervisor's PC.

d. Wallboards connected to a single port may be individually addressable or may be programmed with a common address. If they are individually addressable, each one must be datafilled in the CC MIS configuration and will then be able to display a unique message.

e. The actual maximum allowed on the system is determined within the installation media.

f. 512 (1024 on PowerPC) possible ACD Groups x 17 possible ACD-DNs per ACD Group

g. If more than 4 partitions are defined then a 33mhz processor with 64mb memory is required. (One subpool for each partition.) With two NAPs defined, a total of eight local partitions are allowed.

h. This is a logical limit. The current hardware configuration and the SCSI protocol impose a physical limit of 5 disks. Without a SCSI extender, the current SCSI protocol allows 8 addressable ports, one of which is the master and two of which are currently occupied by tape drives. This leaves 5 SCSI ports for disks. Also, the VME cabinet will only accommodate 3 disks, so some external disks would be required.

i. This allows for a maximum of four live links and four redundant links in standby for an 88K-based platform. On PowerPC, a total of 12 live and 12 redundant are allowed.

Table 2-7: CC MIS System Partition Limits

Entity	Limit
ACD group definitions (2560 on a NAP)	512[a] (1024 on PowerPC)
ACD-DN definitions (43520 on a NAP)	8704[b] (17408 on PowerPC)
Agent IDs	9999
LOB codes	1000
Walkaway codes	1000
MIS supervisor login IDs	256
Privilege Level Definitions	256
Scope Definitions	256
ACD Groups in Scope Definition	256
Subgroups in Scope Definition	256
Change orders	100
Lists	100
Elements per list	100
Lists elements per partition	1000
Schedule definitions	100
Scheduled reports per schedule definition	100
Scheduled change orders per schedule definition	100
Scheduled reports in partition	1000
Scheduled change orders in partition	1000
Custom formulas per statistics group per partition.	100[c]

Entity	Limit
Public display quadrant definitions (graphic or tabular)	250
Personal display quadrant definitions (graphic or tabular) per supervisor	5
Public display screen definitions	250
Personal display screen definitions per supervisor	5
Public tabular report formats	250
Personal tabular report formats per supervisor	5
Public graphic report formats	250
Personal graphic report formats per supervisor	5
Public report parameter definitions per partition	500
Personal report parameter definitions per supervisor	5
Spectrums within each type (answer delay, abandon delay, call duration)	10
Threshold Definitions	256
Periods	13
Shifts	5
Wallboard display definitions	250
Wallboard message definitions	250
Log events per agent per day	9999[d]
Days of log event records stored	9999[d]
Days of interval records stored	9999[d]
Days of daily records stored	9999[d]
Weeks of weekly records stored	9999[d]
Months of monthly records stored	9999[d]

a. Although each partition can define the maximum number of groups, only the system limit can be active across the CC MIS node at any given time.

b. Although each partition can define the maximum number of DNs, only the system limit can be active across the CC MIS node at any given time.

c. CC MIS currently supports 7 statistics groups including the real time statistics group.

d. This value is determined within the database storage calculator which defines the historical database with enough storage to hold the specified amount.

The user of the CC MIS system can specify names for certain objects. Depending on the object type, there is a specific limit to the number of characters in the object's name.

Additionally, there may be display limits which prevent some of the characters from being displayed under certain conditions. For example, each ACD group may be assigned a textual name (as opposed to the DN which normally identifies the group).

In the ACD group definition screen, the user is allowed to enter up to 16 characters for the group name.

In other areas of the system (for example, configuration control), all characters are displayed. In reports the column width of the report field determines the number of characters printed. For standard reports, the column width for group name fields is 16. However, the user can create custom report formats and decrease the column width. Windows imposes additional limits on the number of characters that may be displayed for object names. As in typical Graphical User Interfaces (GUIs), proportional width fonts are utilized to display text. This means that some characters take up more space (for example, 'W') than other characters (for example, 'i').

The design philosophy that has been adopted for the CC MIS windows interface is that field widths will accommodate the maximum amount of characters allowed for an object's name using an average character width[1]. This means that if the maximum number of characters has been chosen by the user to name an object, this name will be completely displayable in all situations only as long as the average width of all the characters chosen does not exceed the average width used to design the displays. If the name includes a large number of capital letters (especially 'W'), there is a good chance that the name may not be completely visible on all screens.

However, if the name includes mostly lower case characters, then there will likely be more than sufficient room to display the name on all screens.

The basic guideline to follow when defining names for objects should be to avoid over-use of capital letters since these letters are typically wider than the lower-case equivalent. If this guideline is followed, then all user-defined names should be completely displayable. Use of abbreviations and ensuring the displayable portion of a name is unique are also recommended techniques.

All names which are delivered with the product (i.e., names of standard objects) should not exceed any field width.

To assist the user in entry of names in the windows interface, the entry fields are designed such that they can accommodate the largest number of characters with the average character width. Should the user enter a name which exceeds this width without exceeding the maximum number of characters for the object, the windows interface will begin horizontal scrolling as additional characters are entered.

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[1] The mechanism to determine the average character width has not been determined.

Any name (with certain exceptions such as the group name) will be completely displayable in all situations.

The following table contains the limits for each of the object names. In addition, the number of characters that will be displayed if the name is defined with the worst-case character width (that is, the name consists of all Ws) is also indicated.

Table 2-8: Object Name Definition Limits

Object Type	Max Characters	Displays	Reports	Menus & Others
ACD Group Name	16	16	16	n/a
Primary/Supplementary DN[a]	16	16	16	n/a
Logical Group Name	16	16	16	n/a
ACD-DN Name	16	16	16	n/a
Supervisor Name	16	n/a	n/a	8
Supervisor Login ID[a]	4	n/a	n/a	4
Supervisor Password (not displayed)	16	n/a	n/a	n/a
Privilege Level Name	20	n/a	n/a	12
Scope Name	20	n/a	n/a	9
Agent Name	16	9	8	16
Agent ID[a]	4	4	4	4
Agent Comment	20	n/a	20	n/a
User Defined Threshold Name	10	n/a	n/a	n/a
Time Frame Period Name	16	n/a	n/a	n/a
Customer Name	16	n/a	16	16
Walkaway Reason	30	n/a	30	n/a
Walkaway Code Descriptor	3	3	n/a	3
Employee ID	14	n/a	14	n/a
Line-of-Business (LOB) Code Name	30	n/a	30	n/a
Schedule Name	40	n/a	n/a	21
List Name	16	16	n/a	16
Report Parameter Definition Name	35	n/a	35	18
Report Format Definition Name	55	n/a	23	17

Object Type	Max Characters	Displays	Reports	Menus & Others
Formula Name (Reports)	64	n/a	27	17
Graphical Report Data Axis Title	20	n/a	20	20
Graphical Report Key Axis Title	20	n/a	20	20
Tabular Report Custom Heading (each line)	132	n/a	111	n/a
Display Quadrant Definition Name	40	23	n/a	n/a
Display Quadrant Custom Heading (each line)	32/65[b]	32/65	n/a	32/65
Display Quadrant Legend (can only edit one at a time)	n/a	n/a	n/a	n/a
Display Screen Name	40	18	n/a	18
Formula Name (Displays)	64	35	n/a	17
Wallboard Message Definition Name	100	n/a	n/a	n/a
Wallboard Display Definition Name	40	n/a	n/a	18
Change Order Name	40	n/a	n/a	21
Printer Name	25	n/a	n/a	12

a. This is a numerical value only.

b. The smaller value is for half-width quadrants while the larger value is for full-width quadrants.

Section 3: Functions and features

3

Introduction

CC MIS performs the following functions to assist in the management of ACD operations:

- data collection
- reporting
- configuration control

In addition to these functions, CC MIS provides the following software features:

- three modes of operation
- windows user interface
- standard and customizable real-time displays
- parameter administration of supervisor profiles by system administrators
- maintenance and administration of the CC MIS system
- enhanced security for better control over access to CC MIS
- multiple user partitions
- multilingual capability
- networking of CC MIS systems

Note: See Chapter 2, "System components" for information on features that are hardware dependent.

Overview of Changes in 3.0, 3.1, 3.2 and 4.x

The following provides an overview of the changes made to the CC MIS starting in Release 3.0 through Release 4.

CC MIS Release 3.0 standard features

The following features were added in Release 3.0 and are standard with Release 4.

- Automatic Position Reassignment (APR)
- BCS35 Support
- enhanced agent and group status
- shift and 24 hour real-time statistics
- increased report definitions (up to 500)
- Windows based Configuration Control screens
- One Partition

Maintenance Release 3.1 features

The following changes and enhancements were made to the Supervisor interface in the CC MIS Maintenance Release 3.1.

- *Employee ID* - The Employee ID field has been added to the Agent Definition screen. This field allows you to enter up to a 14 character employee ID for each agent. This employee ID can then be used as a key in custom tabular and graphical reports. The Employee ID field also appears in the Agent Database Report.
- *Group Ordering* - This feature allows supervisors to set a preference for the order in which ACD Groups are presented in reports and real-time (Queue Statistics and Agent Status) displays. (This feature only applies to the Windows Interface.)
- *Flexible DN Formatting* - This feature allows the DN formatting to be determined by a customer-defined template. Leading zeros are no longer removed from the DNs that are less than 10 digits.
- *Real-time Display Refresh* - Real-time displays (24 hr and Shift) are no longer initialized to zero when CC MIS is shutdown. These statistics are restored immediately following system start-up. (This only applies to controlled shutdowns.)

Maintenance Release 3.2 features

The following changes and enhancements were made to CC MIS in Maintenance Release 3.2:

- *Forced Agent Timers* - Agent timers were added for agents in a forced state in the Agent Status screen.
- *System Reports* - Two new reports: Alarm Definition and Schedule Definition database system reports.
- *Enhancement to Spectrum Data* - Prior to Release 3.2, spectrum data was normalized and did not always add correctly. Starting in Release 3.2, the spectrum data is no longer normalized.

• *SNMP feature* - The Simple Network Management Protocol (SNMP) feature was added to the Supervisor and Maintenance Interfaces. This feature allows managers to view information about network components. This is a purchasable option.

| Note: | Due to the technical nature of the SNMP capability, a background in network management and the SNMP protocol is recommended for administrators and users of this feature. |

The SNMP feature is accessed in the Maintenance Interface from the Configuration menu. In the Supervisor's interface, the feature is enabled in the Privilege Level Definition window and is accessed by the supervisor using the Displays / Alarms option from the CC MIS Main menu. This is the starting point for all SNMP-related activities at the partition level, including:

- alarm definition and maintenance,

- SNMP community setup and maintenance, and

- SNMP MIB file transfer.

• *Network Time Protocol* - Support has been added to allow administrators to specify reliable time servers for the CC MIS system.

Software Release 4.0 features

The following changes and enhancements were made to CC MIS in Software Release 4.0:

• Corrections for problems reported in CC MIS Releases 3.1 and 3.2.

Maintenance Interface

• *Physical Node Status* **-** The Physical Node Status has been added in View System Monitor to assist the user in diagnosing CC MIS networking problems.

• *System Identification* **-** Maintenance menus now include the system name in the title, to ease identification of the system.

• *Login Support* **-** The new Physical Network Login screen provides access for logging into other nodes in the CC MIS physical network.

• *Backup and restore* **-** The Backup and Restore functions were modified to reflect the change in the name of the System Database to the Definitions Database.

The changes made to Configuration section of Maintenance include:

• *Networked CC MIS Configuration* **-** Two new customer options were added to the install tape to indicate whether or not a physical node is a Network Node and the maximum number of Network Access Partitions (NAPs) that may be configured on the node.

• *Network Name* - This field was added to System Configuration for defining and securing the network.

• *New Configuration Commands* **-** The Configuration screen was updated to include the Physical Network Configuration command.

- *Physical Network Definition* - The nodes that comprise a CC MIS physical network are defined using the new Physical Network Configuration screen.

- *Switch Link Configuration* - The maximum number of X.25 links was increased to four (4). The Connection to Switch parameter was added to the link definition to indicate whether a live link uses modems or direct connection to connect to the switch. This parameter does not apply to simulator links. Also, time synchronization with the switch fields were added.

- *Network Access Partitions (NAP) -* The Partition Configuration supports Network Access Partition (NAP) configuration. The NAP must be defined on a network node. The number of NAPs allowed is controlled by a configuration option. NAPs are used to access local partitions in a CC MIS network.

- *Virtual Network Configuration -* The Virtual Network Configuration screen was added to define the nodes that comprise a virtual network associated with a NAP.

- *Master Privilege Definition -* Supervisor privileges may be restricted on a per partition basis using the new Master Privilege screen and a master supervisor privilege definition.

- *Configuration Reports -* Several configuration reports were added and existing ones updated to reflect the changes to the Configuration section.

- *Walkaway Statistics by Agent or ACD group* - The walkaway statistic has been enhanced to allow walkaway statistics to be stored by agent or by ACD group. (The new settings are available on the Storage Calculator screen.)

- *Flexible Interval Definition* - The configurable intervals feature allows the changing of interval length for each hour of the day. Interval lengths available are: 5, 10, 15, 30, and 60 minutes. Data collection can be turned off for any hour of the day by entering an interval length of 0 minutes.

Supervisor's Interface

- *Agent location by Login ID -* Provides a Find command in the agent status display to locate an agent or position in the display.

- *Increased Maximum Capacities* - The maximum number of groups was increased to 512 and the maximum number of agents was increased to 5,000. The maximum number of ACD-DNs is 8,704, and the number of agent definitions is 9,999.

- *Multiple DN key support -* CC MIS now correctly reports on positions with up to 2 simultaneous secondary DN calls active.

- *Walkaway Code Treatment* - A new field was added to the Walkaway Code Definition window that allows you to specify how the code is pegged and reported. Options on the menu are: Not Ready and Walkaway.

- *Networked CC MIS Real-Time Statistics -* Changes to load management and real-time statistics and screens to allow for the consolidated viewing of data from all partitions in a CC MIS network. This enhancement also allows network supervisors to perform the same load management functions as local supervisors. The Configuration Control screens display a Node field and the Insert windows allow for selection of a node, then the insertion of groups on that node.

- *Networked CC MIS Historical Statistics -* Reporting capability has been enhanced to allow the generation of reports that contain data from multiple CC MIS nodes. This network enhancement is available to supervisors who are logged into a NAP.

• *Windows completion -* All remaining emulation mode windows have been converted to a true Windows interface.

• *Additional Shift and 24 hr statistics* - Several new Shift and 24 hr statistics were added to the CC MIS product. The following new statistics are for both Shift and 24hr:

    - MAX TOF DELAY

    - MAX ANS DELAY

    - MAX ABD DELAY

    - TOT TOF DELAY

• *Enhanced Wallboard support -* The wallboard interface has been enhanced to support multi-line messages, multi-color characters, and visual and audible alarms. These enhancements can be used on the new Spectrum Wallboards available for Release 4.0. Three wallboard models supported in Release 4.0 are: Nortel (Spectrum), Daktronics, and generic. Nortel wallboards may also be attached to an available serial port on a supervisor PC.

• *Walkaway Statistics by agent* - The walkaway statistic has been enhanced to allow storage of walkaway statistics by agent or by ACD group. This enhancement also effects Walkaway reporting by allowing you to specify an agent or agent(s) to be included in the Walkaway report.

• *Report Services* - The Reporting feature in CC MIS has been enhanced to allow tabular reports to be sent to electronic mail addresses, or faxed. These enhanced options are in addition to printing to a file, or directing the report to a printer. (Note: The e-mail and fax capabilities require Microsoft Exchange™ .) A Report Status Logs window was added to allow you to view the status of all requested reports and to allow cancellation of pending reports.

• *Increased Call Rates* - Call rates (BHCA) for different processors in Release 4.0 are: 100,000 for 50mhz, 48,000 for 33mhz, and 35,000 for 25mhz.

• *Removal of Network Time Protocol* - The Network Time Protocol was removed and the ability to keep CC MIS synchronized with the switch was added.

Enhancements in Release 4.1

Summary of changes and enhancements were made to CC MIS in Release 4.1:

• Support for the PowerPC (AIX) platform was added.

• The Switch Code field was added to Switch Link Configuration to handle duplicate DNs that are datafilled on multiple switches in a private network when using the CC MIS Networking feature.

• An Analyze Configuration function was added to the storage calculator. Pressing this function key allows the storage calculator to analyze the values for your system based on data received from the switch and your system configuration.

• Added support for PVC (Permanent Virtual Circuit) X.25 connections to the switch for increased link throughput. These changes allow CC MIS to connect to the switch by means of the new IOM-based high speed X.25 interface. (The following port parameters where added for X.25 links: Line Type, Clock, and Virtual Circuit Type. These changes provide enhanced support for direct X.25 connections to the switch and to new IOM-based high speed (512KBps) X.25 switch interface.)

Notes on Release 4.0:

1. Text Interface has been removed and is no longer supported.

2. Graphic reports must be sent to PC-attached printers. The maintenance printer can no longer print graphical reports.

- Enhanced the direct switch connection capability to allow a clock rate to be specified. Note that on the PowerPC, the DTE/DCE setup for a port is determined from the hardware and cannot be changed in the Switch Link Configuration screen as it can on the 88K platform.

Optional CC MIS features

The following features are optional purchases. This document or related CC MIS documents address these features. Verify with the distributor that your system is equipped with one or all of the features.

- Multiple Partitions
- Multiple Data Links
- Language Options (not currently available in Release 4)
- Link Redundancy
- Disk Mirroring
- Terminal Capacity
- Networking
- SNMP
- Flexible Intervals

Data collection

CC MIS collects information about the ACD operation, storing the data in a historical database. The database performs the following functions:

- maintains its data elements for the length of time needed by the customer
- allows reports to be generated for any time period for which the data has been collected and stored

CC MIS provides flexible report generation as a result of the way it collects and stores data and generates reports.

Collecting and storing data

Each day, CC MIS collects data for the specified time periods (5, 10, 15, 30 or 60 minutes). CC MIS stores data in the following categories:

- Interval data - data collected for specified time periods that is stored for a specified number of days
- Shift data - combination of the appropriate and available Interval records
- Daily data - 24 hours of interval data that is stored for a specified number of days
- Period data - combination of the appropriate and available Daily records.
- Weekly data - 7 days of Daily data that is stored for a specified number of weeks
- Monthly data - Weekly data for the month that is stored for a number of months

These storage intervals determine the granularity of the information used in reports.

Impact of storage parameters on reports

You identify the number of days, weeks, and months for which data is kept in these categories when you configure the database. The number of days for which you keep this data determines the time periods for which valid reports can be generated.

Reports can be requested for time periods extending beyond the data retention values set for the database. However, these reports only provide data for the time periods supported by the data retention values. Periods extending beyond the data retention values are listed, but no values are provided.

Impact of storage parameters on disk space

The length of time that you save data, in conjunction with the number of agent positions and ACD-DN groups, determines the amount of disk space required for the historical database. During installation, you calculate the amount of space needed through the Storage Calculator tool. Any available disk space is used for the CC MIS application software, the operating system, temporary storage for generated reports, log files, and other databases used by the system.

Database configuration parameters

You configure the historical database to reflect the needs of your installation. You set the configuration parameters based on the following information:

* size of your ACD operation according to the number of
  - ACD groups, positions, Supplementary DNs (SDN), and agents
  - line-of-business codes used by an ACD group
  - walkaway codes used by an ACD group
  - source and destination ACD groups used for overflow and transfers
  - agent events per day
  - position moves per day
  - ACD-DN reassigns per day

* hours of operation according to the number of
  - shifts
  - operational hours per day and week

* storage duration of data

The system ensures that the database configuration values are not exceeded for the number of ACD groups, the number of agents, and the number of positions.

When these values are exceeded, the system sends a warning log message indicating the values have been exceeded, but continues to store data until the maximum limits of the product are reached, or the database capacity is exceeded. When the configured limit (disk space for partition) is reached, the oldest data is deleted to make room for new data.

> **Note:** No data type has precedence over other data types with regard to storing or dropping data.

Changing the configuration parameters

While the system is operational, a maintenance engineer can view and change the database configuration. If configuration parameters are changed, you may lose data. If you downsize, you lose the oldest data.

System partition databases

CC MIS allows system partition(s) databases to be customized for a particular user. When a partition is added to the system, the administrator can adjust disk resources using the Disk Allocation command in the Partition Configuration screen. Storage allocation needs to be performed for each partition.

> **Note:** Prior to Release 3, the Storage Calculator screen was displayed when the system was initially installed. The Storage Calculator screen is now available for the administrator, as needed, to define/ allocate system resources across multiple partitions.

When defining a partition, you must follow the procedures specified in the *CC MIS Maintenance Guide*. The process of defining a partition takes between 5-15 minutes.

Multi-tenant local partitions

CC MIS allows you to logically partition a node so that multiple customer defined users can co-exist on a single node. There can be up to 16 local customer partitions. Each local partition contains its own system and historical database.

This allows for partitions that are running in varying modes. For example, a partition for User A can be running in a training mode while partition for User B is in product mode. Partitions can be added or deleted while the system is running without disturbing other existing partitions. Partitions can be started or stopped independently to allow transitions between the training, precut, and product modes without affecting other partitions.

Partitions are added or deleted using the commands on the Partition Configuration menu in the Maintenance Interface. Partitions are started and shut down by selecting the Run State Utilities command, then the Partition Startup and Shutdown option.

When the networking option is enabled, Network Access Partitions (NAPs) can be defined (in addition to local partitions) to view and consolidate data from local partitions on other nodes within the defined network.

Networked CC MIS

CC MIS allows you to network CC MIS systems to access partitions on separate nodes. When Networking is enabled, you can specify network nodes (nodes [VMEs, XR VMEs, or PowerPCs] that comprise the network) and define NAPs to access specified partitions within the defined network. The networking feature allows supervisors to view CC MIS partitions on nodes other than the one to which they are connected. This is illustrated in the figure below.
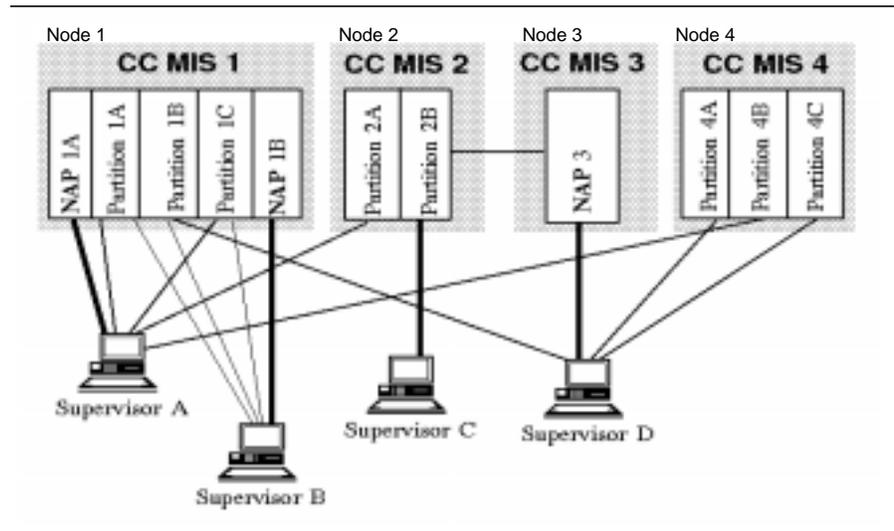
Reporting

CC MIS allows you to generate historical reports, agent log reports, and system reports.

- Historical reports-customizable reports that contain information about call events
- Event log reports (Agents)-non-customizable reports that contain information about agent log in and log out events and walkaways
- System reports-non-customizable reports that contain information about the CC MIS configuration

Note: For examples of these reports, refer to Appendix A, *Example Reports.*

Generating historical reports

CC MIS allows you to define the presentation and contents of historical reports about call event information. You can define the statistics that are included in the report, the time period of the report, and the format of the report.

Possible statistics groups

CC MIS groups the data it collects into six statistics groups. Each group has key fields that allow control over the order and totalling of data in the reports. The groups are

- Destination ACD group statistics-maintains statistics by ACD group
- Overflow statistics-maintains statistics associated with source/destination
- ACD group pairs, such as overflow and transfer statistics
- Agent statistics-maintains statistics associated with specific agents, keeping data separately for agents that move between supervisors and groups
- Line-of-business codes-maintains statistics associated with Line-of-business (LOB) code data by group and agent
- ACD-DN-maintains statistics by ACD-DN (primary and supplementary)
- Walkaway-maintains statistics associated with walkaway codes by ACD group and by agent.

Report formats

The report format determines the statistics provided in the report and the format of the report, tabular or graphical. A tabular format presents data as numbers in columns. A graphical format presents data as line graphs, stacked line graphs, vertical or horizontal bar charts, and pie charts.

Standard report formats

CC MIS provides standard report formats. These formats contain information commonly used by any ACD operation. The information is either a raw statistic collected by CC MIS, or data resulting from a formula that combines the raw statistics mathematically. Appendix A contains a complete listing of standard reports and examples of each report.

Data Only report format

The standard reports can be generated in a Data Only format. The differences between the Data Only report and the standard format are as follows:

- The Data Only reports have no column headings, total lines or total indication lines
- The report title is the topmost line of the report
- Each key field(s) is repeated on every detail line
- No report info file is generated

The Data Only report may be directed to a printer port to which a device such as a PC or other computer is attached. This computer monitors for data and extracts it as it is sent by CC MIS. Additionally, if the Windows interface is utilized on the supervisor terminal then the report may be directed to a disk file that has been configured within the windows interface.

Creating your own report formats

In addition, CC MIS allows you to create your own report formats. By creating your own report formats, you select the statistics provided in the report and the format of the report.

Using your own formulas

When you create your own report format, you can include in it information generated by formulas that you have also defined.

Using spectrums

Reports can provide information on spectrums, which are fields that are time-based and consist of multiple time-value categories. Three different spectrums are available:

- answer delay
- abandon delay
- ACD call duration

CC MIS provides standard spectrum definitions that you can modify. When you modify the spectrums, you distribute the time values (in seconds) into a time spectrum of up to 10 categories for reporting purposes.

Report parameters

Report parameters determine the records from the database that are included in the report. The parameters identify the report format, the time-frame of the data to retrieve, the method used to sort and total the data in the report, and the specific key fields to extract.

Reporting by logical groups

The ACD switch software allows the definition of groups of agents that process ACD calls.

CC MIS allows the association of multiple groups such that the historical data for all the groups is combined for reporting purposes. In so doing, you are reporting by logical groups.

Requesting reports

Reports can be generated on an ad hoc basis, or they can be scheduled to print. In addition, historical reports can be viewed on your terminal as a soft copy or sent to a printer or file. If your system has Microsoft Exchange™ you can also setup your system to allow reports to be sent by means of fax or e-mail.

Event log reports

CC MIS provides four event log reports for agents. These reports are not customizable as are other historical reports. However, they require the definition of report parameters to determine the data to extract from the database. The table below describes the event log reports.

Note: For examples of these reports, refer to Appendix A, *Example Reports*.

System reports

CC MIS provides system reports. These reports correspond to the system administration data built through the Parameter Administration menu. These reports are not customizable, and do not require the definition of report parameters to determine the data to extract from the database. For examples of these reports, refer to Appendix B.

Printing reports

CC MIS allows multiple dedicated system printers (number limited by available ports) and one PC printer per supervisor terminal. The local PC printers can be configured into the system and used by any or all supervisors.

CC MIS provides three types of reports:

- Historical reports
- Real-time reports (displays)
  - Agent Status
  - Queue Statistics
  - wallboards (see note)

Note: A wallboard is a light emitting diode (LED) message board, mounted on the walls of an ACD group office. The wallboard is used to notify agents of statistical information, such as the service level for your group, and administrative information. Queue statistics can also be displayed on a wallboard. While a message is displayed, any real-time values imbedded in the message are recomputed and redisplayed every two seconds.

- System reports

Configuration control

CC MIS allows supervisors access to the configuration of elements controlled by the ACD switch. The table below identifies the elements that can be changed through CC MIS.

Table 3-1: Abilities provided through configuration control

Element to Control	Ability provided
Agent position assignments	Reassign agents to ACD groups by changing the ACD group name or primary DN. Reassign agents to a subgroup by changing the supervisor number.
Agent set parameters for an ACD group	Specify the multi-stage Queue Threshold type as Call Queue size or Call Wait time. (Only on ACD switches using BCS32 or higher). Specify the threshold value that triggers the indicator on the agent set. Specify the number of digits displayed to agents in the ACD group. Specify the default LOB code for the ACD group. Specify the wrap-up time required by agents when they finish a call, thereby defining the amount of time an agent is considered not ready for the next call.

Table 3-1: Abilities provided through configuration control

Element to Control	Ability provided
Queue sizes for an ACD group	Specify the maximum number of calls that the incoming call queue can have at one time.
	Specify the maximum number of seconds a call can be held in the incoming call queue before being answered by an agent.
	Specify the number of logical calls that can be queued.
	Specify the number of transferred calls allowed to wait in queue for agents in a group.
	Specify the number of seconds a call waits at a given priority level before being promoted to the next higher level.
Time overflow parameters for an ACD group	Specify if priority 0 calls are the only type of calls to time overflow.
	Specify when the timer starts on overflow calls; either immediately when queued, or when the call reaches priority 0.
	Specify the number of seconds that a call remains in the incoming call queue before being offered to another group.
	Change the order in which call queues are serviced.
	Change the time delay threshold time.
	Change the table and index value that determines the time delay threshold route.

Table 3-1: Abilities provided through configuration control

Element to Control	Ability provided
Overflow targets for an ACD group	Specify the primary DN or group name of ACD groups to receive overflow calls for an ACD group. Change the table and index value that determines the route for new calls presented to a group that exceed the maximum queue size or wait time. Recorded announcements for an ACD group Specify the recorded announcement threshold for an ACD group. Specify the audio group for an ACD group. Specify the audio group used to give forced incoming announcements. Specify the audio group used to give Forced Overflow Announcements. Specify the ACD group to provide forced incoming announcements and delay announcements for the overflow calls in an ACD group.
Special routing for an ACD group	Specify the table and index value that determines the night service route. Specify the audio group providing night service announcements prior to rerouting the call over the night service route. Specify the table and index value for the controlled interflow route.

Table 3-1: Abilities provided through configuration control

Element to Control	Ability provided
ACD-DN assignment and priorities	Specify the trunk priority for primary or supplementary DNs.
	Specify the line priority for primary DNs.
	Note: Trunk priority is used only for supplementary DNs.
	Reassign supplementary ACD-DNs to another ACD group defined in the CC MIS database.
	Specify the name for the ACD-DN.
Networking parameters for an ACD group	Specify the number of calls that must be in the incoming call queue before new calls are networked to other groups.
	Specify the number of seconds that the oldest call must wait before new calls are networked to other groups.
	Specify the group preference weighting factor used to compute the best group to offer the networked call.
	Specify the most idle agent and number of idle agents weight factors used to calculate the resource index for the group.
	Specify the call handling time for the group.
	Specify whether the source group should be considered when determining the best target group for time overflow calls.
Network targets for source/ destination ACD group pairs	Specify the preference weighting factor for the source/destination ACD group pair.
	View the resource index for the destination ACD group.
View route and audio lists	View the route list to determine the routes each ACD group may access.
	View the audio list to determine the audio groups each ACD group may access.

Table 3-1: Abilities provided through configuration control

Element to Control	Ability provided
View OFRT table	View the Office Route entries that are defined on the ACD switch for all the ACD groups.
View IBNRTE table	View the International Business Route entries that are defined on the ACD switch for all the ACD groups.
View Audio table	View the list of all the audio group entries that are defined on the ACD switch for all the ACD groups.
View Transaction Log	View the Transaction Log.
Create or Modify Change Orders	Create or modify change orders, including attaching change orders to schedules.

Note: Network Access (NAP) partitions can only be set to Precut and Product modes.

Gaining access to configuration control

System administrators grant or deny a supervisor access to each configuration control function through the supervisor profile. When granted, a supervisor can alter the configuration of these elements at the ACD switch through CC MIS.

Implementing a configuration change

Supervisors with access to configuration control can make ad hoc changes to the configuration. System administrators can schedule a group of configuration changes.

Note: The term ad hoc is used in Configuration Control to indicate that the changes can be made immediately, without defining a Change Order or scheduling, by executing the changes using the File/Execute option.

Modes of operation

CC MIS partitions operate in training mode, precut mode, and product mode. With the multi-partitions in CC MIS, one partition can be defined for training (running with a simulator link) and another running with a live link in the product mode. (When CC MIS is first installed, it is initially in the setup mode.)

Training mode

In the training mode, supervisors train on the product without affecting live calls. In this mode, there is no connection between the CC MIS and the DMS-ACD, and only training data is collected and reported.

When in training mode, CC MIS interacts with a switch simulator to provide training data. The simulator uses call scenarios and configuration control typical to the ACD environment. During training, supervisors can adjust load management values and move position assignments through the configuration control ability of CC MIS. As a result, the simulator generates ACD switch responses identical to ACD processing in a live environment.

Precut mode

Pre-cutover mode allows system engineers to enter all administration data into the new CC MIS databases in preparation for transition to product mode. During precut mode the following information is established:

- custom report and display definitions
- schedules
- ACD group and agent names
- threshold values

Product mode

By transitioning from precut mode to product mode, CC MIS collects live data based on the configuration of its ACD groups and agents. The information it receives is stored based on the configuration database. In product mode, CC MIS establishes a connection between it and the DMS-ACD.

Simultaneous training and product modes

Transition from training to product mode on a partition can occur without affecting the states of other partitions. This allows the switch simulator program to be running while an X.25 link(s) is also running. For single user installations, the multiple partitions are useful because they allow the definition of a small partition to be left in the training mode. This allows new supervisors to train on the system before moving to a live partition.

User interface

Supervisors and system administrators access the functions of the system through screens and menus, provide input to the screens through the keyboard and a mouse, and have access to online help.

CC MIS uses PCs for a supervisor position. Positions that are PCs can print reports to printers attached to the PC.

Note: In Release 4.0, graphical reports must be printed to a PC-attached printer.

The main menu

The supervisor selects functions from the main menu, the menu that appears after logging into CC MIS. The selections available from the main menu are only the functions to which the supervisor has access, therefore the main menu may be different for each supervisor. Most of the functions on the main menu have submenus and commands to guide supervisors through CC MIS. A supervisor's main menu only displays the functions that are Enabled in the supervisor's profile.

The figure below show the main menu that has all CC MIS options Enabled.

Figure 3.1 CC MIS main menu
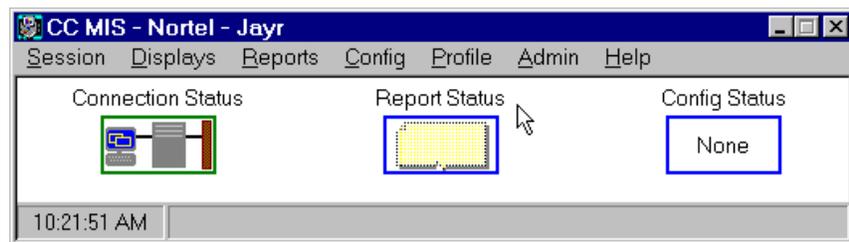
Keyboard and mouse controls

The supervisor can use the keyboard to enter information into screens. Supervisors can also use the mouse to initiate operations in the software and select options and commands from pulldown menus.

Online help

Online help is available for both interfaces. The help system provides information about using the product and its screens to perform functions.

Using the Windows online help

The Windows online Help system is available from the main menu, accessed through the Help pull down menu. From the pull down menu, you can access the information in the Help file in three different ways, as described in the table below.

Figure 3.2 Help menu
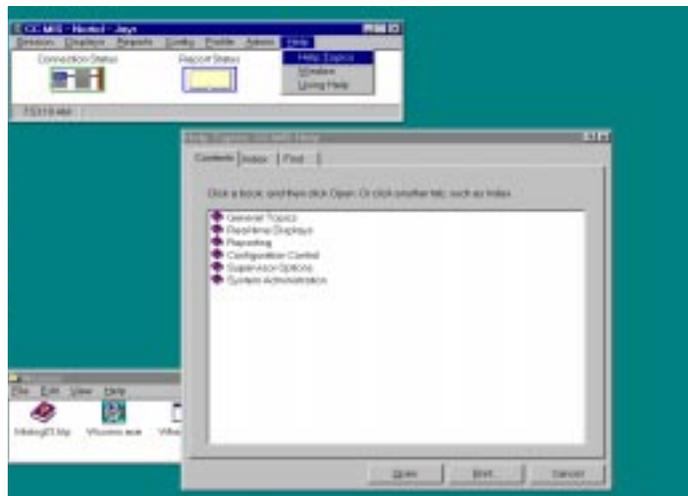
Table 3-2: Online help options

Option	Explanation
Help Topics	Lists all the topics for which help exists. You can double click on one of these options and go right to the topic.
Window	Displays the Help screen containing information specific to the current window.
Using Help	Provides information on how to use the Help system in Windows.

Agent Status display

CC MIS provides two types of real-time displays: Agent Status and Queue Statistics. The Agent Status display provides the status of each position in an ACD group.

CC MIS updates the information on the display as soon as it is notified by the ACD switch. The figure below shows the Agent Status displays.

Thresholds for the states of an agent position can be defined so that when a position remains in the state for too long, the position is highlighted to call attention to it.

While in the Agent Status display, the supervisor selects the global, scope, or subgroup view through a command menu. The global view shows all agent positions currently monitored by the CC MIS system partition. The scope view shows all agent positions that have been assigned to any of the subgroups which have been listed in the supervisor's scope definition. The subgroup view restricts the view to all the agents within a specific subgroup in the supervisor's scope definition.

Note: The views available to a supervisor are determined by the options enabled in the supervisor's profile.

Figure 3.3 Agent Status displays

Locating an Agent by Agent ID or Position

In Release 4.0, you can locate and agent or position using the View / Find command on from the Agent Status window. The Find Agent-Position dialog is shown below.

Figure 3.4 Find an AgentID or Position
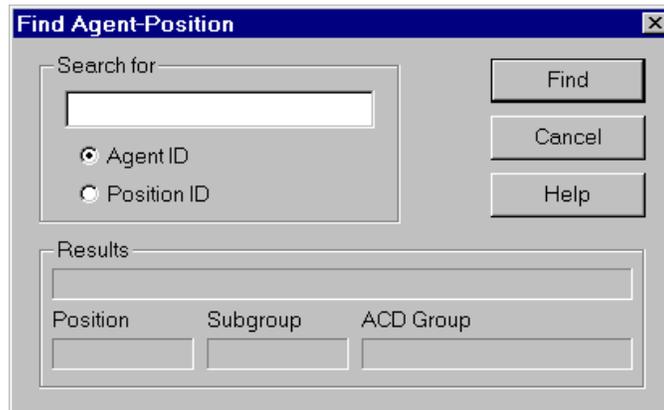
Tracking of Dual DN

In Release 4.0, you can view the status of two DN keys. This option is activated using the Preferences/Dual DN Status option. When activated, a second timer for the second DN is displayed.

Permanent agent detail window

Single click the right mouse button on any position ID to display the Agent Detail window. This window contains an Options menu with the following real-time agent statistics:

- Call Totals
- Average Durations
- Time Allocations

Permanent ACD Group detail window

Single click the right mouse button on any ACD Group ID to display the ACD Group Detail window.

Layout of the display

You can select the layout, either vertical or horizontal, for the display. This allows you to review position status in the way most comfortable for you. The layout is selected in the Preferences menu on both the Agent Statistics and Queue Statistics displays.

Viewing duration in the display

You can view the amount of time spent by an agent in each ACD state. There is a timer for primary ACD states and secondary DN states for each agent. To enable this feature, the supervisor selects durations from the Agent Status display Preferences menu.

Hold time for duration in the display

You can specify the way the timers in the duration field operate. When hold time is enabled, the current elapsed time for the ACD or DN call is reset and begins to count. This value is displayed with an underline in the duration field. To enable this feature, the supervisor selects Hold Time from the Agent Status display Preferences menu.

Queue Statistics display

The Queue Statistics display provides you with statistics that reflect the efficiency with which an ACD group handles the call load. Standard Queue Statistics displays are provided so that you can view commonly needed information about the groups you supervise. The system provides four standard Queue Statistics displays:

- Standard Tabular Queue Display
- Standard Graphic Queue Display
- Graphic Grade of Service Display
- ACD Group Summary Display

The figures below show the standard Queue Statistics displays for each interface.In addition, you can create your own display to view information specific to your ACD operation. The display you create is based on the statistics collected by CC MIS, standard formulas provided by CC MIS, and custom formulas created by your system administrators to support your ACD operation. Information displayed is refreshed at the rate defined by the Supervisor's Profile (2 - 60 seconds).

By providing the ability to customize real-time displays, CC MIS gives you the flexibility you need to manage ACD operation. In addition, as ACD switch software capabilities increase, CC MIS will be able to provide new statistics for these software capabilities easily and efficiently.

Figure 3.5 Standard Tabular Queue Statistics display s

Figure 3.6 Standard Graphic Queue Statistics Display

Figure 3.7 Graphic Grade of Service Display

Figure 3.8 ACD Group Summary Display

Parameter administration

System administrators control the functions that are performed by CC MIS supervisors. The system administrators have access to the parameter administration feature of CC MIS in order to define supervisors and control access to features, and define system-wide parameters.

Defining a supervisor and their access

In addition to being a supervisor as defined by the DMS-ACD, individuals are defined as supervisors in the context of CC MIS. Supervisors in the CC MIS context may or may not be supervisors in the context of the switch and may not have an ACD set.

The role of the supervisor profile

A profile for each CC MIS supervisor identifies the supervisor to CC MIS and determines the capabilities allowed for that supervisor. The privileges and preferences of each supervisor are stored on a per-supervisor-ID basis in the supervisor profiles. These profiles are co-administered by the supervisor and by the system administrator. The table below summarizes the capabilities that can be assigned to a supervisor.

Groups the supervisor can monitor

The supervisor can monitor the ACD groups assigned to the supervisor number entered in their profile. In addition, the supervisor can monitor the groups of any other supervisor defined in a group member list at their profile.

Table 3-3: Supervisor abilities

Options	Capabilities that can be assigned
Real-time display	Setting the default Queue Statistics display
	Setting the view of the display (Global, Group, Supervisor)
	Setting the default view for the displays
	Setting the statistics update rate for the display
	Using an emergency indicator or an audible alarm

Table 3-3: Supervisor abilities

Options	Capabilities that can be assigned
Available modes	Maintaining their own profile
	Customizing the use of color
	Monitoring other supervisors
	Defining report formats and formulas
	Creating their own Queue Statistics displays
	Accessing Configuration Control
	Defining group members they can monitor
	Printing system reports
	Having system administrator status
	Defining schedules to print reports and make configuration control changes
Default printers	Setting the tabular and graphic printers to use and enabling or disabling local printer override.

Defining system-wide parameters

System administrators can access and modify system parameters supporting the functions of CC MIS using the Admin menu. The listing below summarizes these parameters. These parameters can be printed out using System Reports.

Parameters maintained by system administrators

The following parameters are maintained by the system administrator:

- Time frames definition- Defines the number of shifts and their starting time. Defines the number of periods and their starting date. The historical reports use these definitions when accessing the database for shift, weekly, and period data summation.

- Threshold definition - Defines thresholds for Agent Status and Queue Statistics displays. In addition, five thresholds can be created and defined for use in highlighting values that exceed or fall below the agent status or Queue Statistics thresholds.

Note: Thresholds defined here have no relationship with ACD thresholds defined on the ACD switch and accessed through configuration control.

- ACD-Group definition - Associates a name and threshold set with an ACD group; in addition to creating logical groups used in reports.

- ACD-DNs - Associates a name to a secondary or primary ACD-DN defined in the CC MIS system.

- Agent definition- Associates a name with an agent login ID, and an optional employee ID, and is used in agent status displays.

- Customer options - Defines a name to appear in report headings, a system administrator password, and the tabular and graphic printers to be used for scheduled reports.

- Walkaway definition - Defines the walkaway codes and the walkaway reason associated with the code. (This is in addition to determining whether the walkaway event is stored in the agent log event database.)

- LOB definition - Defines the LOB codes and describes each code.

- SNMP - The system administrator enables the SNMP feature for a supervisor by setting the Alarms option in the Privilege Level Definition window.

Maintenance and administration

Engineers maintain CC MIS through the maintenance console. Through this console, engineers perform the following functions:

- diagnostics
- adjust CC MIS configuration and NOS logon parameters (such as pools, subpools, protocols, and acdmis password) to the switch
- view and print various logs
- routine backup and software upgrade functions for the system
- install CC MIS
- configure a CC MIS network (if enabled)

The maintenance console is a system console attached to the host. Maintenance functions are menu driven and are accessible only on the maintenance console or dial-up.

Maintenance and administration menus

Maintenance and administration functions are available to the maintenance administrator through a series of menus. The figure below shows how the menus branch.

Figure 3.9 Maintenance and administration menus
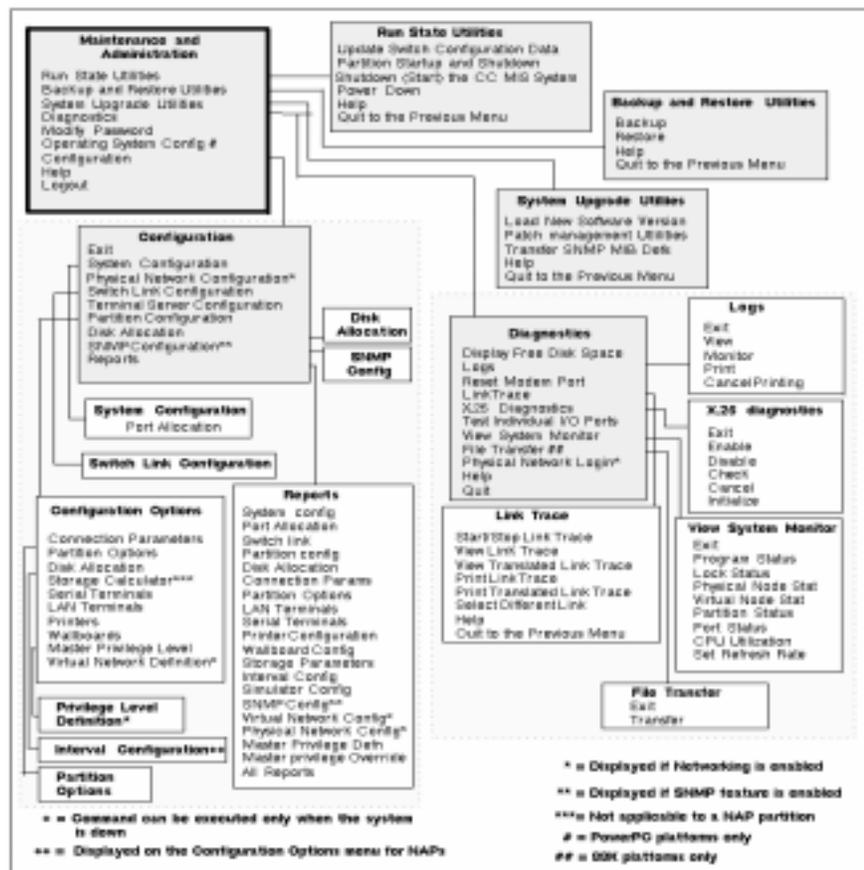
The effect of maintenance functions on the system

While the majority of the functions are available at all times, some functions can only be performed when CC MIS is shut down, while other functions can only be performed when CC MIS is operating. The Maintenance and administration system takes into account the state of CC MIS, and alters its menus accordingly.

For the most part, shutdown of CC MIS is automatic. When you request such a function, the software requires you to confirm CC MIS shutdown. The confirmation gives you control over the state of CC MIS. The table below identifies the functions that require CC MIS to shut down and if the shut down is automatic.

Table 3-4: Functions requiring shutdown

| Function	Type of Shutdown
Test all the input/output ports automatically	Manual
Load new software version	Automatic
Change CC MIS Network Name in System Configuration screen	Manual
Changes to Physical Network Configuration	Manual

Enhanced security

The CC MIS software provides a Privilege Level Definition mode, which allows supervisor access restrictions to be defined for all supervisor functions. A privilege level definition contains settings for different classes of supervisors. The settings allow or deny access to each supervisor function, usually on a screen-by-screen basis. Access to some groups of screens, however, is controlled by a single access control option in cases where the screens combine to provide a single logical function. The new SNMP feature is enabled from this screen.

The Privilege Level Definition screen consists of a name field and a series of access control options grouped together into functional groups. Most of the access control options can be set independently, however there are some options that are dependent upon others. The figure below is an example of the Privilege Level Definition screen in the Windows interface. Up to 256 Privilege Level Definitions can be defined.

Figure 3.10 Privilege Level Definition
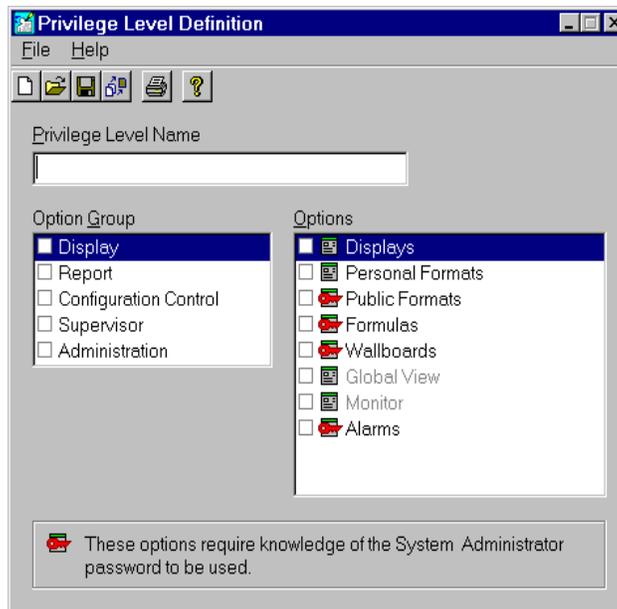
Note: Options marked the key require that the supervisor also know the system administrator password if one is defined. This password is defined in the Customer Options screen. If this password is defined, the supervisor must enter "system administration" mode, supplying the password in the process, before access to these modes is granted by the system.

Multilingual Support

Multilingual capability CC MIS parameter administration includes a Language Options screen which allows the enabling of multilingual capability. This screen is available only if the multilingual option has been purchased and built into the software load. The two languages supported are English and Canadian French. The multilingual interface includes support of the ISO 8859-1 (Latin-1) character set.

If the multilingual option is purchased, CC MIS provides a multilingual windows interface. The multilingual option can be configured (enable or disable) on a per partition basis.

Some of the customization screens require the user to enter text which will be associated with the object being defined. The user-defined text must be entered in the available languages in order for the objects to appear in the supervisor's preferred language. Screens that contain text definition fields that must be entered in multiple languages contain a "toggle" field displaying the current language being used. The toggle field is used to select the language in which the title field is being displayed or defined.

If only one language has been configured, the language "toggle" field does not appear, and all other aspects of multilingual support are hidden.

Appendices

Example
Reports

A

System
Reports

B

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C

Acronyms &
Abbreviations

D

Example Reports

Introduction

CC MIS comes with a series of predefined standard formats used for the generation of reports. Examples of the CC MIS management reports are shown in the figures in this appendix.

Standard formats

The standard reports are formats provided by CC MIS. These formats generate tabular and graphic reports. The following describes the standard report formats. A legend following the report identifies the report fields

Note: When the Networking feature is enabled, the Agent ID, subgroups, and position ID fields in reports will include the network location (partition code) along with the ID for the agent (for example, AGT ID 1010 would appear as NET1 - 1010 with NET1 being the network location identifier (partition code of the local partition for the agent).

The example reports shown in this appendix are screen captures of the report preview screens, therefore, some images may not contain all of the total fields that would appear on the printed report.

Report Summary

A report summary page can be displayed when viewing a generated report in the Report Preview by selecting the File / View Summary command.

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Table A-1: Standard report formats

Standard Format	Explanation
ACD Call Duration	Identifies the duration of a call by measuring from when the call is answered by the agent until the call is released by the agent.
ACD-DN Calls Abandoned	Identifies the total number of calls abandoned per ACD-DN and the total abandon delay.
ACD-DN Calls Answered	Identifies the total number of calls answered per ACD-DN and the total answer delay.
ACD Group by Agent Performance	Identifies agent activities for each group. This report can tell if there is a problem with a particular agent or if all agents are experiencing the same difficulties.
ACD Group by Agent Transfer	Identifies agent transfer activities for each group.
ACD Group by LOB Code	Identifies the number and duration of calls by LOB code for each group.
ACD Group by Walk-away Code	Identifies the walkaway codes associated with a specific ACD group.
ACD Group Overflow	For each source and destination ACD group pair, indicates the number of calls that either queue overflowed (for example, due to exceeding maximum wait or queue size) or time overflowed from the source to the destination.
ACD Group Transfer-In	Identifies the number of calls that were transferred in to a group.
ACD Group Transfer-Out	Identifies the number of calls that were transferred out of a group.

Table A-1: Standard report formats

Standard Format	Explanation
Agent Summary	Provides detail regarding the types of calls received or made and the amount of time spent for each agent.
Agent by ACD Group Performance	Identifies the activities of all agents sorted by Agent ID through ACD group.
Agent by LOB Code	Identifies the activities of all agents sorted by LOB codes.
Agent by Subgroup Performance	Identifies the performance of each agent under different subgroups.
Delay Before Abandoning	Identifies how many calls were abandoned and how long the callers waited before they hung up.
Delay Before Answering	Provides information about the service callers receive.
LOB Code by ACD Group	Identifies call processing time for each LOB code. Breaks down information to show which ACD group received the calls associated with the LOB code.
LOB Code by Agent	Identifies call processing time for each LOB code. Breaks down information to show the LOB codes associated with specific agents.
Summarized ACD-DN Call Analysis	Identifies the ACD-DNs and summarizes the associated call activity.
Summarized ACD Group Call Analysis	Provides an overall analysis of an ACD group. Shows how calls were handled, and the maximum and average delays and call durations.
Summarized ACD Group Performance	Identifies groups in the system and summarizes group load performance. It shows the actual number of calls each group answered and the average time it took to handle each call.

Table A-1: Standard report formats

Standard Format	Explanation
Summarized ACD Group Transfer	Identifies the groups and summarizes transfer information for the groups.
Subgroup by Agent Performance	Provides supervisors with performance information for their agents.
Walkaway Code by ACD Group	Identifies the reason and the total time spent in walkaway state by an agent in a specific ACD group.
Walkaway by Agent ID	Identifies walkaway codes by agent iDs.

Table A-2: Standard graphical reports

Standard Format	Explanation
ACD Group Calls Abandoned Graphic	For each ACD Group, shows how many calls were abandoned before and after receiving a recorded announcement.
ACD Group Calls Answered Delay Graphic	For each ACD group, shows how many calls were answered before and after the delay objective. ACD Group Calls Answered Delay Graphic
ACD-DN Calls Abandoned Graphic	For each ACD-DN, shows how many calls were abandoned before and after receiving a recorded announcement.
ACD-DN Calls Answered Delay Graphic	For each ACD-DN, shows how many calls were answered before and after the delay objective.

Summarized ACD Group Performance Report

The Summarized ACD Group Performance Report shows the groups in the ACD system and summarizes group load and performance. It shows the actual number of calls each group answered and the average time it took to handle each call.

The report is used to determine current work schedules and to forecast the manpower that may be needed to handle anticipated workloads.

The key field for the Summarized ACD Group Performance Report is ACD Group. A preview of an interval report is shown below:

Figure A-1. Summarized ACD Group Performance Report

This report shows each group specified from the report parameter definition screen. All selected intervals for the group are printed followed by a total line which summarizes all the intervals. At the bottom of the report is a grand-total line which summarizes all selected group data for this report.

The fields in the Summarized ACD Group Performance Report are derived from the following ACD-GRP Statistics fields:

Q PROFILE -

      SRV LVL % - .... Telephone Service Level (SRV LVL %)

      AVG DEL SEC - .... Average Answering Delay (AVG ANS DEL)

      DEL ANN - .... Number of Calls That Received RAN (NUM RCV RAN)

OF CALLS -

      ANSW - .... Number of Calls Answered (CALLS ANSWD)

      OVFL IN - .... Total Number of Calls Which Time Overflowed (TOF CALLS ANS)

      ABND - .... Number of Calls Abandoned (CALLS ABAND)

AVG AGENT TIME -

      ACD TALK SEC - .... Average ACD Talk Time (AVG ACD TALK TIME)

      NOT RDY SEC - .... Average Post-Call Processing Time (AVG NOT RDY TIME)

NON ACD -

      IN SEC - .... Average Incoming DN Call Time (AVG IN DN TIME)

      OUT SEC - .... Average Outgoing DN Call Time (AVG OUT DN TIME)

Delay Before Answering Report

The Delay Before Answering Report gives information about the service callers are getting. It shows how rapidly calls are being answered, and the lengths of delay that callers are experiencing.

The answering delays are broken up into time categories. The time categories are collectively called a "spectrum". Each category represents a range of time such that all delays which fall within the range are included in the category. The supervisor has the capability of specifying the time ranges for up to 10 categories in the Spectrum Definition portion of Report Definition. Changing a spectrum will affect any report including the Delay Before Answering Report which is based on the "percentage answered in category n" statistic (see the Statistic Groups section of this document). Also, changing a spectrum automatically changes customized headings to reflect the new ranges.

This report could be used to decide when recorded announcements and music will play to encourage callers to wait. The report may also be used as a supplement to other management reports to help decide if staff adjustments are needed or to forecast traffic patterns. The key field for the Delay Before Answering Report is ACD Group. An interval report is shown below:

Figure A-2. Delay Before Answering Report

This report shows each group specified from the report parameter definition screen. All selected intervals for the group are printed and followed by a total line which summarizes all the intervals.

At the bottom of the report is a grand-total line which summarizes all selected group data for this report.

The fields in the Delay Before Answering Report are derived from the following ACD-GRP statistics fields:

CALLS ANSWD - .... Number of Calls Answered (CALLS ANSWD)

% TOF - .... Percentage of Calls That Time Overflowed In (TOF ANS %)

PERCENT OF CALLS ANSWERED WITHIN (SEC) -

t1-<t2 - .... Percentage Answered in Category n (ANSW % CATn)

AVG DEL SEC - .... Average Answering Delay (AVG ANS DEL)

LONG DEL SEC - .... Maximum Answering Delay (MAX ANS DEL)

Delay Before Abandoning Report

The Delay Before Abandoning Report is similar in format to the Delay Before Answering Report. This report shows the tolerance level of the callers. It shows how many calls were abandoned and how long the callers waited before they hung up.

The abandoning delays are broken up into time categories. The time categories are collectively called a "spectrum". Each category represents a range of time such that all delays which fall within the range are included in the category. The supervisor has the capability of specifying the time ranges for up to 10 categories in the Spectrum Definition portion of Report Definition. Changing a spectrum will affect any report including the Delay Before Answering Report which is based on the "percentage abandoned in category n" statistic (see the Statistic Groups section of this document). Also, changing a spectrum automatically changes customized headings to reflect the new ranges.

The key field for the Delay Before Abandoning Report is ACD Group. An interval report for several groups appears below:

Figure A-3. Delay Before Abandoning Report

This report shows each group specified from the report parameter definition screen. All selected intervals for the group are printed and followed by a total line which summarizes all the intervals.

At the bottom of the report is a grand-total line which summarizes all selected group data for this report.

The fields in the Delay Before Abandoning Report are derived from the following ACD-GRP statistics fields:

CALLS ABAND - .... Number of Calls Abandoned (CALLS ABAND)

PERCENT OF CALLS ABANDONED WITHIN (SEC) -

t1-<t2 - .... Percentage Abandoned in Category n (ABND % CATn)

AVG DEL SEC - .... Average Abandoning Delay (AVG ABD DEL)

LONG DEL SEC - .... Maximum Abandoning Delay (MAX ABD DEL)

ACD Call Duration Report

The ACD Call Duration Report gives information about the amount of time that is required to handle ACD calls. The duration of a call is measured starting from when the call is answered by the agent until the call is released by the agent. Thus, this duration may include periods in which the call was placed on hold and the agent performed other activities. It does not include the amount of time that some other agent may have processed the same call in the case where the call is transferred between agents. Each portion of the transferred call is treated as separate calls for this report.

The call durations are broken up into time categories. The time categories are collectively called a "spectrum". Each category represents a range of time such that all durations which fall within the range are included in the category. The supervisor has the capability of specifying the time ranges for up to 10 categories in the Spectrum Definition portion of Report Definition. Changing a spectrum will affect any report including the ACD Call Duration Report which is based on the "percentage duration in category n" statistic (see the Statistic Groups section of this document). Also, changing a spectrum automatically changes customized headings to reflect the new ranges.

The key field for the ACD Call Duration Report is ACD Group. An interval report for several groups is shown below:

Figure A-4. ACD Call Duration Report

This report shows each group specified from the report parameter definition screen. All selected intervals for the group are printed followed by a total line which summarizes all the intervals. At the bottom of the report is a grand-total line which summarizes all selected group data for this report.

The fields in the ACD Call Duration Report are derived from the following ACD-GRP statistics fields:

CALLS ANSWD - .... Number of Calls Answered (CALLS ANSWD)

PERCENT OF CALLS WITH DURATION (SEC) -

    t1-<t2 -............................. Percentage Duration in Category n (DUR % CATn)

AVG DUR SEC - .... Average ACD Talk Time (AVG ACD TALK TIME)

LONG DUR SEC - .... Maximum Call Duration (MAX CALL DUR)

ACD Group by Agent Performance Report

The ACD Group by Agent Performance Report shows the agent activities for each group. This report can tell if there is a problem with a particular agent or if all agents are experiencing the same difficulties.

The key fields for the ACD Group by Agent Performance Report are ACD GROUP and Agent ID. An interval report for a several groups is shown below:

Figure A-5. ACD Group by Agent Performance Report

This report shows each group specified from the report parameter definition screen. All intervals for the group are printed and followed by a total line which summarizes all the intervals. At the bottom of the report is a grand-total line which summarizes all group data for this report.

The fields in the ACD Group by Agent Performance Report are derived from the following agent statistics fields:

ACD CALLS -

      NUM ANSWD - .... Number of Calls Answered (CALLS ANSWD)

      AVG TALK SEC - .... Average ACD Talk Time (AVG ACD TALK TIME)

      AVG WAIT SEC - .... Average Time Spent Waiting for Calls (AVG WAIT TIME)

NON ACD CALLS -

      NUM IN- .... Number of Incoming DN Calls (IN DN CALLS)

      NUM OUT- .... Number of Outgoing DN Calls (OUT DN CALLS)

      TIME IN - .... Total Incoming DN Call Time (TOTAL IN DN TIME)

      TIME OUT - .... Total Outgoing DN Call Time (TOTAL OUT DN TIME)

TOTAL TIME -

      NOT RDY - .... Total Not Ready Time (TOTAL NOT READY TIME)

      STFD - .... Total Staffed Time of Agent (TOTAL STFD TIME)

ACD STFD % - .... Percentage of Staffed Time Worked (WORK STFD %)

Agent by ACD Group Performance Report

The Agent by ACD Group Performance Report shows the activities of all agents in the ACD system.

The key fields for the Agent by ACD Group Performance Report are ACD GROUP and Agent ID. An interval report of several agents is shown below:

Figure A-6. Agent by ACD Group Performance Report

This report shows each agent specified from the report parameter definition screen. All selected intervals for the agent are printed and followed by a total line which summarizes all the intervals. At the bottom of the report is a grand-total line which summarizes all selected agent data for this report.

The fields in the Agent by ACD Group Performance Report are derived from the following agent statistics fields:

ACD CALLS -

NUM ANSWD - .... Number of Calls Answered (CALLS ANSWD).

AVG TALK SEC - .... Average ACD Talk Time (AVG ACD TALK TIME)

AVG WAIT SEC - .... Average Time Spent Waiting for Calls (AVG WAIT TIME)

NON ACD CALLS -

NUM IN - .... Number of Incoming DN Calls (IN DN CALLS)

NUM OUT - .... Number of Outgoing DN Calls (OUT DN CALLS)

TIME IN - .... Total Incoming DN Call Time (TOTAL IN DN TIME)

TIME OUT - .... Total Outgoing DN Call Time (TOTAL OUT DN TIME)

TOTAL TIME

NOT RDY - .... Total Not Ready Time (TOTAL NOT READY TIME)

STFD - .... Total Staffed Time of Agent (TOTAL STFD TIME)

ACD STFD % - .... Percentage of Staffed Time Worked (WORK STFD %)

Agent by Subgroup Performance Report

The Agent by Subgroup Performance Report shows the performance of each agent under different supervisors.

The key fields for this report are Agent ID and Supervisor ID.

Figure A-7. Agent by Subgroup Performance Report

This report shows each agent specified from the report parameter definition screen. All intervals for the agent are printed and followed by a total line which summarizes all the intervals. At the bottom of the report is a grand-total line which summarizes all agent data for this report.

The fields in the Agent by Subgroup Performance Report are derived from the following agent statistics fields:

ACD CALLS -

     NUM ANSWD - ....Number of Calls Answered (CALLS ANSWD)

     AVG TALK SEC - ....Average ACD Talk Time (AVG ACD TALK TIME)

AVG WAIT SEC - .... Average Time Spent Waiting for Calls (AVG WAIT TIME)

NON ACD CALLS -

NUM IN - .... Number of Incoming DN Calls (IN DN CALLS)

NUMOUT - .... Number of Outgoing DN Calls (OUT DN CALLS)

TIME IN - .... Total Incoming DN Call Time (TOTAL IN DN TIME)

TIME OUT - .... Total Outgoing DN Call Time (TOTAL OUT DN TIME)

TOTAL TIME -

NOT RDY - .... Total Not Ready Time (TOTAL NOT READY TIME)

STFD - .... Total Staffed Time of Agent (TOTAL STFD TIME)

ACD STFD % - .... Percentage of Staffed Time Worked (WORK STFD %)

Subgroup by Agent Performance Report

The Subgroup by Agent Performance Report shows the performance of each agent under different supervisors.

The key fields for this report are Subgroup and Agent ID.

Figure A-8. Subgroup by Agent Performance Report

This report shows each agent specified from the report parameter definition screen. All intervals for the agent are printed and followed by a total line which summarizes all the intervals. At the bottom of the report is a grand-total line which summarizes all agent data for this report.

The fields in the Subgroup by Agent Performance Report are derived from the following agent statistics fields:

ACD CALLS -

> **NUM ANSWD -** .... Number of Calls Answered (CALLS ANSWD)

> **AVG TALK SEC -** .... Average ACD Talk Time (AVG ACD TALK TIME)

AVG WAIT SEC - .... Average Time Spent Waiting for Calls (AVG WAIT TIME)

NON ACD CALLS -

NUM IN - .... Number of Incoming DN Calls (IN DN CALLS)

NUMOUT - .... Number of Outgoing DN Calls (OUT DN CALLS)

TIME IN - .... Total Incoming DN Call Time (TOTAL IN DN TIME)

TIME OUT - .... Total Outgoing DN Calls Time (TOTAL OUT DN TIME)

TOTAL TIME -

NOT RDY - .... Total Not Ready Time (TOTAL NOT READY TIME)

STFD - .... Total Staffed Time of Agent (TOTAL STFD TIME)

ACD STFD % - .... Percentage of Staffed Time Worked (WORK STFD %)

Summarized ACD Group Transfer Report

The Summarized ACD Group Transfer Report shows the groups in the ACD system and summarizes transfer information for the groups. It shows the actual number of calls each group transferred and the number of transferred calls the group answered.

The key field for the Summarized ACD Group Transfer Report is ACD GROUP. An interval report is shown below:

Figure A-9. Summarized ACD Group Transfer Report

This report shows each group specified from the report parameter definition screen. All selected intervals for the group are printed and followed by a total line which summarizes all the intervals. At the bottom of the report is a grand-total line which summarizes all selected group data for this report.

The fields in the Summarized ACD Group Transfer Report are derived from the following ACD-GRP statistics fields:

TOTAL CALLS XFER'D -

> **IN -** ....Number of Calls Transferred In (TOTAL XFER IN)

> **OUT -** ....Number of Calls Transferred Out (TOTAL XFER OUT)

ACD Group by Agent Transfer Report

The ACD Group by Agent Transfer Report shows the agent transfer activities for each group.

The key fields for the ACD Group by Agent Transfer Report are ACD GROUP and Agent ID. An interval report for several groups is shown below:

Figure A-10. ACD Group by Agent Transfer Report

This report shows each group specified from the report parameter definition screen. All intervals for the group are printed and followed by a total line which summarizes all the intervals. At the bottom of the report is a grand-total line which summarizes all selected group data for this report.

The fields in the ACD Group by Agent Transfer Report are derived from the following agent statistics fields:

CALLS XFER'D -

    IN - .... Number of Calls Transferred In (XFER IN)

    OUT - .... Number of Calls Transferred Out (XFER OUT)

ACD Group Transfer-in Report

The ACD Group Transfer-in Report shows the number of calls which were transferred into a group. The source group is identified.

The key fields for this report are the Source ACD Group and the Destination ACD Group. An interval report for several groups is shown below:

Figure A-11. ACD Group Transfer-in Report

This report shows each destination group specified from the report parameter definition screen. All selected intervals and source groups are printed and followed by a total line which summarizes all the intervals for the destination groups. At the bottom of the report is a grand-total line which summarizes all data for this report.

The fields in the ACD Group Transfer-in Report are derived from the following overflow statistics fields:

CALLS XFER'D IN - ....Calls Transferred (CALLS XFERD)

ACD Group Transfer-out Report

The ACD Group Transfer-out Report shows the number of calls which were transferred out of a group. The destination group is identified to assist in determining the types of calls which were transferred.

The key feilds for this report are the Source ACD Group and the Destination ACD Group. An interval report for several groups is shown below:

Figure A-12. ACD Group Transfer-out Report

This report shows each destination group specified from the report parameter definition screen. All selected intervals and source groups are printed followed by a total line which totals all the intervals for the source groups. At the bottom of the report is a grand-total line which totals all data for this report. The fields in the ACD Group Transfer-out Report are derived from the following overflow statistics fields:

CALLS XFER'D OUT - .... Calls Transferred (CALLS XFERD)

ACD Group by Line of Business Code Report

The ACD Group by Line of Business Code Report shows the number and duration of calls by Line of Business (LOB) code for each group.

The key fields for this report are the ACD Group and the LOB code. An interval report for several groups is shown below:

Figure A-13. ACD Group by Line of Business Code Report

This report shows each destination group specified from the report parameter definition screen. All selected intervals and groups are printed followed by a total line which totals all the intervals for the groups. At the bottom of the report is a grand-total line which totals all data for this report.

The fields in the ACD Group by Line of Business Code Report are derived from the following LOB statistics fields:

NUMBER OF ENTRIES - ....Number of LOB Occurrences (NUM ENTRIES)

AVERAGE TALK TIME - ....Average Duration of a LOB Period (AVG TIME)

Line of Business Code by ACD Group Report

The Line of Business Code by ACD Group Report shows call processing time for each line of business (LOB) code. This is further broken down by the ACD Groups which received the calls associated with the LOB codes.

The key fields for this report are the LOB code and the Destination ACD Group. An interval report for several LOB codes is shown below:

Figure A-14. Line of Business Code by ACD Group Report

This report shows each destination group specified from the report parameter definition screen. All selected intervals and groups are printed followed by a total line which totals all the intervals for the groups. At the bottom of the report is a grand-total line which totals all data for this report.

The fields in the Line of Business Code by ACD Group Report are derived from the following LOB statistics fields:

NUMBER OF ENTRIES - .... Number of LOB Entries (NUM ENTRIES)

AVERAGE TALK TIME - .... Average Duration of a LOB Period (AVG TIME)

Agent by Line of Business Code Report

The Agent by Line of Business Code Report shows call processing time for each line of business (LOB) code for each agent selected

The key fields for this report are the AGENT-ID and the LOB code. An interval report for several agent IDs and LOB codes is shown below:

Figure A-15. Agent by Line of Business Code Report

This report shows each agent specified from the report parameter definition screen. All selected intervals and agents are printed followed by a total line which totals all the intervals for the agents. At the bottom of the report is a grand-total line which totals all data for this report.

The fields in the Agent by Line of Business Code Report are derived from the following LOB statistics fields:

NUMBER OF ENTRIES - .... Number of LOB Entries (NUM ENTRIES)

MAX DURATION - .... Maximum LOB Call Duration (MAX LOB DUR)

TOTAL DURATION - .... Total Time Charged to LOB (TOTAL TIME)

Line of Business Code by Agent Report

The Line of Business Code by Agent Report shows call processing time for each line of business (LOB) code selected. This is further broken down by the agents which handled the LOB calls.

The key fields for this report are the LOB code and the Agent-ID. An interval report for several LOB codes and agent IDs is shown below:

Figure A-16. Line of Business Code by Agent Report

This report shows each agent specified from the report parameter definition screen. All selected intervals and LOB Codes are printed followed by a total line which totals all the intervals for the LOB codes. At the bottom of the report is a grand-total line which totals all data for this report.

The fields in the Line of Business Code by Agent Report are derived from the following LOB statistics fields:

NUMBER OF ENTRIES - .... Number of LOB Occurrences (NUM CHARGES)

MAX DURATION -..................... Maximum LOB Call Duration (MAX LOB DUR)

TOTAL DURATION - .... Total Time Charged to LOB (TOTAL TIME)

Summarized ACD-DN Call Analysis Report

The Summarized ACD-DN Call Analysis Report shows statistics associated with calls made to ACD DNs. The ACD DNs may be primary or secondary DNs.

The key field for this report is the ACD-DN. An interval report for several ACD-DNs is shown below:

Figure A-17. Summarized ACD-DN Call Analysis Report

This report shows each ACD-DN specified from the report parameter definition screen. All selected intervals are printed followed by a total line which totals all the intervals for the ACD-DNs. At the bottom of the report is a grand-total line which totals all data for this report.

The fields in the Summarized ACD-DN Call Analysis Report are derived from the following ACD-DN statistics fields:

OF CALLS

OFFRD - ....Number of Calls Offered (CALLS OFFRD)

 ANSWD - ....Number of Calls Answered (CALLS ANSWD)

ABAND - .... Number of Calls Abandoned (CALLS ABAND)

DFLCT - .... Number of Calls Deflected (CALLS DFLCT)

BLCKD - .... Number of Calls Blocked (CALLS BLCKD)

NIGHT SVC - .... Number of Night Service Calls (NUM NS CALLS)

AVG ACD TALK TIME - .... Average ACD Talk Time (AVG ACD TALK TIME)

MAX CALL DUR - .... Maximum Call Duration (MAX CALL DUR)

AVG ANS DEL - .... Average Answering Delay (AVG ANS DEL)

MAX ANS DEL - .... Maximum Answering Delay (MAX ANS DEL)

AVG ABD DEL - .... Average Abandoning Delay (AVG ABD DEL)

MAX ABD DEL - .... Maximum Abandoning Delay (MAX ABD DEL)

ACD-DN Calls Abandoned Report

The ACD-DN Calls Abandoned Report shows statistics associated with calls made to specific DNs which were abandoned by the caller. The DNs may be primary or secondary DNs.

The key field for this report is the ACD-DN. An interval report for several ACD-DNs is shown below:

Figure A-18. ACD-DN Calls Abandoned Report

This report shows each ACD-DN specified from the report parameter definition screen. All selected intervals are printed followed by a total line which totals all the intervals for the ACD-DNs. At the bottom of the report is a grand-total line which totals all data for this report.

The fields in the ACD-DN Calls Abandoned Report are derived from the following ACD-DN statistics fields:

OF CALLS -

OFFRD - ....Number of Calls Offered (CALLS OFFRD)

 ANSWD - ....Number of Calls Answered (CALLS ANSWD)

ABANDONED -

BF RAN - .... Number of Calls Which were Abandoned Before Receiving RAN (NUM ABD BF RAN)

AFT RAN - .... Number of Abd Calls Received RAN (NUM ABD RCVD RAN)

ABD TIME OVFL - .... Number of Logically Queued Abandoned Calls (NUM ABD TOF)

TOT ABD DELAY -

BF RAN - .... Total Time to Abandon for Calls that Did Not Receive a RAN (TOTAL ABD TIME NORAN)

AFT RAN - .... Total Time to Abandon for Calls Receiving RAN (TOTAL ABD RCVD RAN)

MAX ABND DLY - .... Maximum Abandoning Delay (MAX ABD DEL)

MAX ABD DLY TOVFL - .... Maximum Abandoning Delay TOF(MAX ABD DLY TOF)

TOT ABD DLY TOVFL -............ Total Abandoning Delay TOF (TOTAL ABD DLY TOF)

ACD-DN Calls Answered Report

The ACD-DN Calls Answered Report shows statistics associated with calls made to specific DNs which were answered by an agent. The DNs may be primary or secondary DNs.

The key field for this report is the ACD-DN. An interval report for several ACD-DNs is shown below:

```
Report Preview - Lines 411-429 of 429                          _ □ ×
File   Preferences   Help

                    ACD DN Calls Answered Report
                          Interval Report

Snoopy-NAP-Part2                        Date: 01/09/97  Time: 17:21:00

Interval: 17:00  Day: 01/08/97

            ACD DN    INTVL    ---------- # OF CALLS ----------   AVG   MAX   TOT
                              OFFRD    ANSWD    ANSWD    ANSWD    ANS   ANS   ANS
                                                 BFOR    AFTER    DLY   DLY   DLY
                                               DLY OBJ  DLY OBJ
                                                                  SEC   SEC   SEC

          666-015-0014   17:00    32       6        6        0      9    25    53
          ------------------------------------------------------------------------
          666-015-0014            32       6        6        0      9    25    53
          ------------------------------------------------------------------------

          666-015-0015   17:00    29       8        8        0     11    27    85
          ------------------------------------------------------------------------
          666-015-0015            29       8        8        0     11    27    85
          ------------------------------------------------------------------------

          666-015-0016   17:00    22       6        6        0      6    16    35
          ------------------------------------------------------------------------
          666-015-0016            22       6        6        0      6    16    35
          ------------------------------------------------------------------------

          ========================================================================
                                2123     743      724       19      9  1796  6430
          ========================================================================
```

Figure A-19. ACD-DN Calls Answered Report

This report shows each ACD-DN specified from the report parameter definition screen. All selected intervals are printed and followed by a total line which totals all the intervals for the ACD-DNs. At the bottom of the report is a grand-total line which totals all data for this report.

The fields in the ACD-DN Calls Abandoned Report are derived from the following ACD-DN statistics fields:

OF CALLS

OFFRD - .... Number of Calls Offered (CALLS OFFRD)

ANSWD - .... Number of Calls Answered (CALLS ANSWD)

ANSWD BFOR DLY OBJ - ...... Number of Calls Which Were Answered Within the Delay Objective (ANS IN DLY OBJ)

ANSWD AFTER DLY OBJ - ..... Number of Calls Which Were Answered After the Delay Objective (ANS AFT DLY OBJ)

AVG ANS DLY - .... Average Answering Delay (AVG ANS DEL)

MAX ANS DLY - .... Maximum Answering Delay (MAX ANS DEL)

TOT ANS DLY - .... Total Answering Delay (TOT ANS DEL)

Walkaway Code by ACD Group Report

The Walkaway Code by ACD Group Report shows agent "walkaway" activity for each walkaway code selected. A walkaway occurs when an agent presses the walkaway activation key and enters a 3-digit walkaway code which correlates to the type of activity which the agent will be performing while no longer accepting ACD calls.

The key fields for this report are the WALKAWAY code and the ACD Group. An interval report for several walkaway codes and ACD groups is shown below:

Figure A-20. Walkaway Code by ACD Group Report

This report shows each ACD group and walkaway code specified from the report parameter definition screen. All selected intervals and walkaway codes are printed followed by a total line which totals all the intervals for the walkaway codes. At the bottom of the report is a grand-total line which totals all data for this report.

The walkaway reason is defined in the walkaway code definition screen of Parameter Administration. The fields in the Walkaway Code by ACD Group Report are derived from the following walkaway statistics fields:

NUMBER OF WALKS - ....Number of Walkaways (NUM WALKS)

WALKAWAY TIME -.................Total Walkaway Duration (TOT WALK DUR)

AVG WALK TIME - ....Average Walk Time (AVG WALK TIME)

ACD Group by Walkaway Code Report

The ACD Group by Walkaway Code Report shows agent "walkaway" activity for each ACD group selected. A walkaway occurs when an agent presses the walkaway activation key and enters a 3-digit walkaway code which correlates to the type of activity which the agent will be performing while no longer accepting ACD calls.

The key fields for this report are the WALKAWAY code and the ACD Group. An interval report for several walkaway codes and ACD groups is shown below:

Figure A-21. ACD Group by Walkaway Code Report

This report shows each ACD group and walkaway code specified from the report parameter definition screen. All selected intervals and walkaway codes are printed followed by a total line which totals all the intervals for the walkaway codes. At the bottom of the report is a grand-total line which totals all data for this report.

The walkaway reason is defined in the walkaway code definition screen of Parameter Administration. The fields in the ACD Group by Walkaway Code Report are derived from the following walkaway statistics fields:

NUMBER OF WALKS - .... Number of Walkaways (NUM WALKS)

 WALKAWAY TIME - .... Total Walkaway Duration (TOT WALK DUR)

AVG WALK TIME - .... Average Walk Time (AVG WALK TIME)

Walkaway by Agent ID Report

The Walkaway by Agent ID Report summarizes the walkaway activity by agent ID.

An interval report is shown below:

Figure A-22. Walkaway by Agent ID Report

Summarized ACD Group Call Analysis Report

The Summarized ACD Group Call Analysis Report shows statistics associated with calls made to ACD groups.

The key field for this report is the ACD Group. An interval report for several ACD groups is shown below:

Figure A-23. Summarized ACD Group Call Analysis Report

This report shows each ACD group specified from the report parameter definition screen. All selected intervals are printed followed by a total line which totals all the intervals for the ACD groups. At the bottom of the report is a grand-total line which totals all data for this report.

The fields in the Summarized ACD Group Call Analysis Report are derived from the following ACD-GRP statistics fields:

OF CALLS

OFFRD - .... Number of Calls Offered (CALLS OFFRD)

 ANSWD - .... Number of Calls Answered (CALLS ANSWD)

ABAND - ....Number of Calls Abandoned (CALLS ABAND)

DFLCT - ....Number of Calls Deflected (CALLS DFLCT)

BLCKD - ....Number of Calls Blocked (CALLS BLCKD)

NIGHT SVC - ....Number of Night Service Calls (NUM NS CALLS)

AVG ACD TALK TIME - ....Average ACD Talk Time (AVG ACD TALK TIME)

MAX CALL DUR - ....Maximum Call Duration (MAX CALL DUR)

AVG ANS DEL - ....Average Answering Delay (AVG ANS DEL)

MAX ANS DEL - ....Maximum Answering Delay (MAX AND DEL)

AVG ABD DEL - ....Average Abandoning Delay (AVG ABD DEL)

MAX ABD DEL - ....Maximum Abandoning Delay (MAX ABD DEL)

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ACD Group Overflow Report

The ACD Group Overflow Report shows statistics associated with calls which overflowed from one group to another.

The key fields for this report are the Source ACD Group and Destination ACD Group. An interval report for several source and destination ACD groups is shown below:

DESTINATION ACD GROUP	INTVL	SOURCE ACD GROUP	NUM CALL ANS	QOF CALLS	QOF %	TOF CALLS	TOF %	MAX TOF DLY	TOT TOF DLY
666-014-0000	17:30	666-001-0000	0	0	0	0	0	0	0
		666-003-0000	0	0	0	0	0	0	0
		666-005-0000	0	0	0	0	0	0	0
		666-011-0000	0	0	0	0	0	0	0
		666-012-0000	0	0	0	0	0	0	0
		666-013-0000	25	0	0	25	100	21	391
		666-014-0000	111	0	0	0	0	23	23
		666-015-0000	31	40	65	20	32	19	299
666-014-0000			167	40	13	45	15	63	713
666-015-0000	17:30	666-001-0000	0	0	0	0	0	0	0
		666-003-0000	0	0	0	0	0	0	0
		666-004-0000	0	0	0	0	0	0	0
		666-011-0000	0	0	0	0	0	0	0
		666-014-0000	51	0	0	51	96	24	809
		666-015-0000	101	0	0	0	0	25	184
666-015-0000			152	0	0	51	20	49	993

Figure A-24. ACD Group Overflow Report

This report shows each source ACD group specified from the report parameter definition screen. All selected intervals are printed followed by a total line which totals all the intervals for the source ACD groups. At the bottom of the report is a grand-total line which totals all data for this report.

The fields in the Summarized ACD Group Overflow Report are derived from the following overflow statistics fields:

NUM CALLS ANS - .... Number of Calls Answered (CALLS ANSWD)

 QOF CALLS - .... Number of Calls which Queue Count Overflowed (QOF CALLS)

QOF % - .... Percentage of Calls that Queue Count Overflowed (QOF %)

TOF CALLS - .... Total Number of Calls that Time Overflowed (TOTAL TOF CALLS)

TOF % - .... Percentage of Calls That time Overflowed (TOF ANS %)

MAX TOF DLY - .... Maximum Time Overflow Answer Delay (MAX TOF DLY)

TOT TOF DLY - .... Answer Delay for Time Overflow Calls (TOT TOF DLY)

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Agent Summary Report

The Agent Summary Report summarizes the activity of each agent.

The key field for this report is Agent ID. An interval report for one agent is shown below:


```
Report Preview - Lines 18580-18599 of 18604
File  Preferences  Help
                              Agent Summary Report
                                Interval Report

Snoopy-NAP-Part2                             Date: 97/83/14  Time:  6:17:22 PM

Intervals: All  Days: All

 AGENT ID    INTVL      ------# OF CALLS-----   ---AVG DURATION----  TIME ALLOCATION
                        ANS    DN    DN TOTAL   TALK  NOT   DN   DN WORK  DN   DN NOT
                               IN   OUT CALLS   TIME  RDY   IN  OUT       IN  OUT RDY
                                                                          %   %   %   %
                                                SEC   SEC  SEC  SEC

              21:55.5    4     0     0     4     66    0    0    0   98    0    0 100
              22:00,10   9     0     0     9     58    0    0    0   98    0    0 100
              22:00,38  183   18    10   131    185    0   86   44   92   12    0 100
              22:10,10   6     1     0     7     67    0    0    0   73    0    0 100
              22:20,10   4     1     0     5    130    0    0    0   92    0    0 100
              22:30,10   4     3     1     8    116    0   57   60   77   28    0 100
              22:30,38  113   17     9   139     95   23   55   45   92    7    0 100
              22:40,10   3     0     0     3    177    0    0    0   98    0    0 100
              22:50,10   4     2     0     6     99    0    0    0   76    0    0 100
              23:00,10   7     1     0     8     75    0   84    0   98   14    0 100
              23:00,38  102   21     8   131    184    0   47   42   90    8    0 100
              23:10,10   4     0     1     5    130    0    0   26   92    0    0 100
              23:20,10   2     0     1     3    283    0    0   35   99    0    0 100
              23:30,10   3     1     1     5    177    0    0   35   99    0    0 100
              23:30,38  107   17    10   134    180   23   48   37   92    5    0 100
              23:40,10   8     1     1    10     63    0    0   35   93    0    0 100
              23:50,10   6     0     0     6     91    0    0    0   98    0    0 100
  --------------------------------------------------------------------------------
snp4-1849             6190  1087   527  7804    184  343   58   41   91    7    0 100
  --------------------------------------------------------------------------------
```

Figure A-25. Agent Summary Report

This report shows each agent specified from the report parameter definition screen. All selected intervals for the agent are printed followed by a total line which summarizes all the intervals. At the bottom of the report is a grand-total line which summarizes all selected agent data for this report.

The fields in the Agent Summary Report are derived from the following agent statistics fields:

OF CALLS -

ANS - .... Number of Calls Answered (CALLS ANSWD)

DN IN - .... Number of Incoming DN Calls (IN DN CALLS)

DN OUT - ....Number of Outgoing DN Calls (OUT DN CALLS)

TOTAL CALLS.................Total Calls (TOTAL CALLS)

AVG DURATION -

TALK TIME - ....Average ACD Talk Time (AVG ACD TALK TIME)

NOT RDY - ....Average Not Ready Time (AVG NOT RDY TIME)

DN IN - ....Average Incoming DN Call Time (AVG DN IN TIME)

DN OUT - ....Average Outgoing DN Call Time (AVG DN OUT TIME)

TIME ALLOCATION -

WORK % - ....Percentage of Staffed Time Worked (WORK STFD %)

DN IN % - ....Percentage of Staffed Time on Incoming DN Calls (DN IN %)

DN OUT % - ....Percentage of Staffed Time on Outgoing DN Calls (DN OUT %)

NOT RDY % - ....Percentage of Staffed Time Spent Not Ready (NOT RDY %)

Standard Graphical Management Reports

This section describes the standard graphical management reports available in CC MIS. These reports may be used as they are or may be customized by a supervisor. Example enhancements include graphic format changes, new fields, and field calculation changes. These changes are performed using the Report Definition capabilities available to a supervisor with report definition enabled in their profile. Additionally, such a supervisor may define new customized reports in graphical formats using available or customized statistics (see the Statistic Groups section of this document).

The data on the report is based on statistics which are kept in the database or are computed based on data which is in the database (see the Statistic Groups section of this document). This data is maintain by interval (half-hour), day, week, or month. Reports may be generated based on interval, daily, weekly, or monthly time frames. Reports can also be generated on shift and period time frames which are defined in the Time Frames Definition mode of Parameter Administration. The shift reports are generated using interval data; the period reports are generated using daily data. The data on each of the standard reports are available for all time periods (except for those restricted by the parameters specified in the database storage calculator).

Additionally, report parameters can be specified (via Report Parameter Definition) which limit the report to particular ACD groups or logical ACD groups.

The description of each of the standard reports includes the available keys for that report. When specifying the parameters for the report, a supervisor can specify a value, a range of values, or all values.

Included with each example report is a specification of the fields which are contained within the report. The fields are shown with the name of the standard statistics fields as well as the default heading which is associated with the statistics fields. The default heading is not used in graphic format but is provided to ease look-up of the field definition in the historical statistics appendix.

All example reports are shown with the formats that are delivered with the system. The customer has the option of changing the report layout at any time and storing as a new public or personal format.

ACD-DN Calls Answered Delay Report - Graphic

The ACD-DN Calls Answered Delay Report graphically presents calls which were answered before the delay objective versus calls that were answered after the delay objective. In addition, abandoned calls are also shown.

The key field for this report is the ACD-DN. An interval report is shown below:
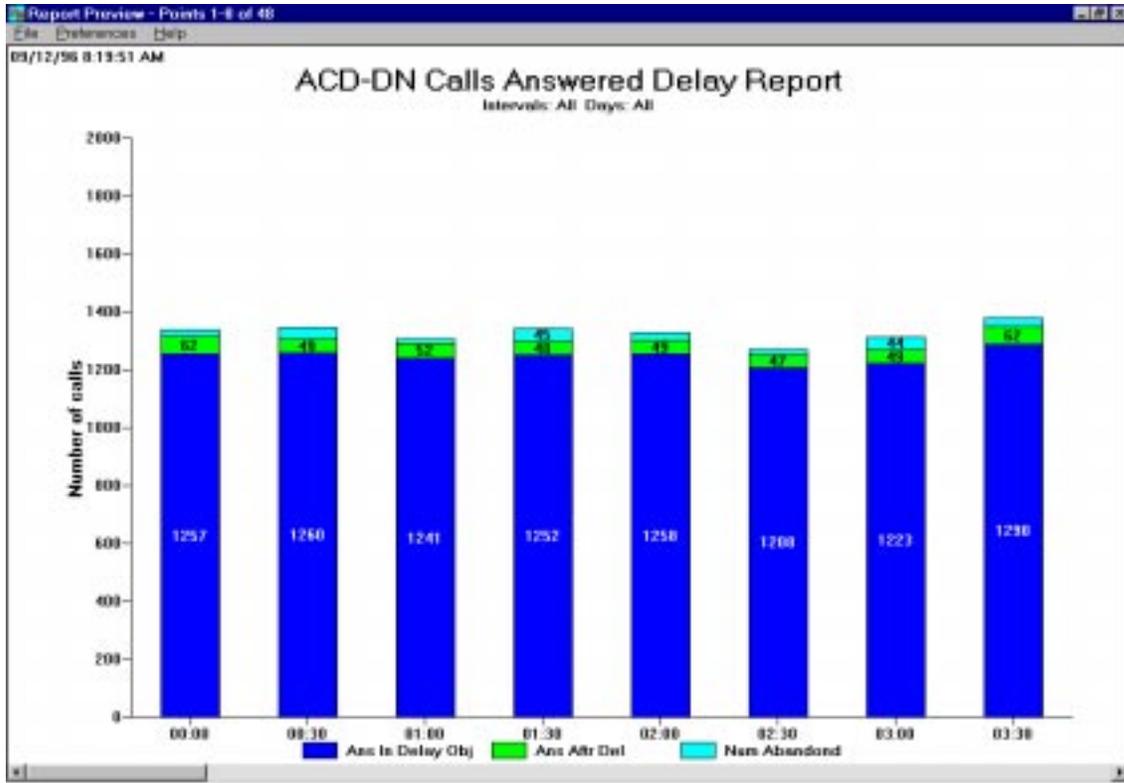

Figure A-26. ACD-DN Calls Answered Delay Report - Graphic
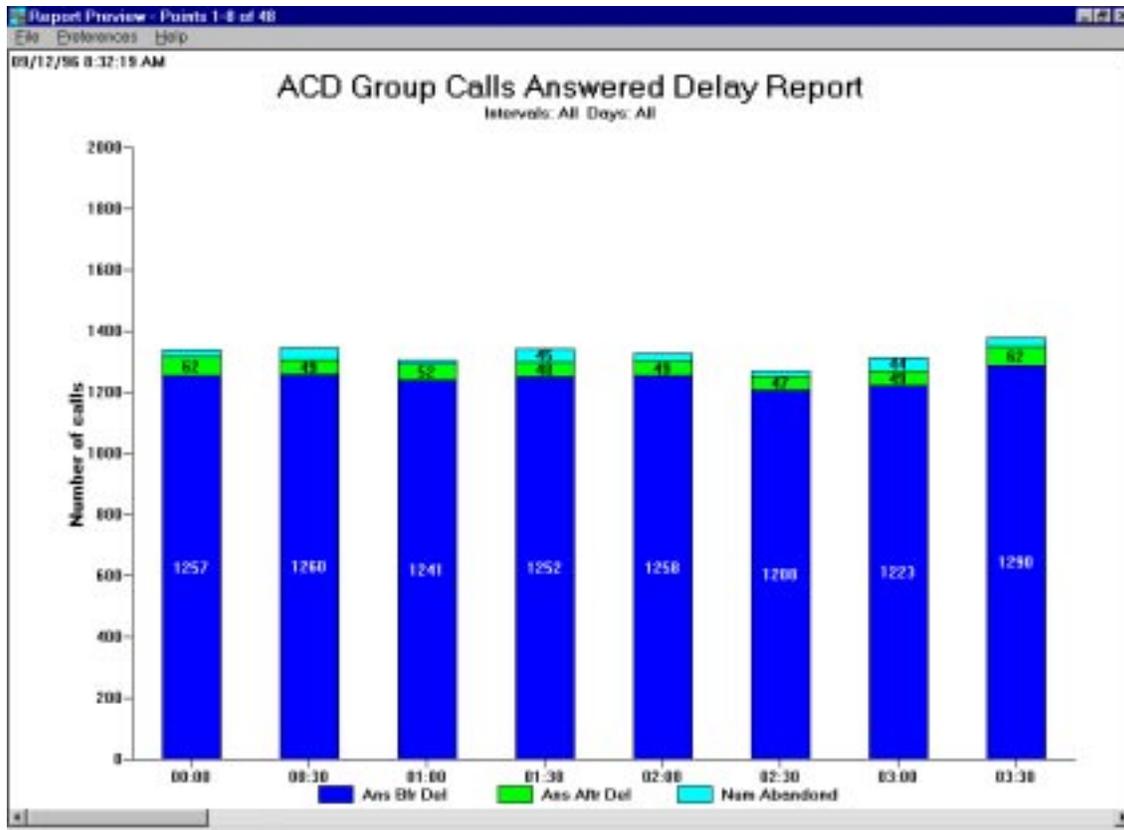
This report shows each ACD-DN specified from the report parameter definition screen.

The fields in the ACD-DN Calls Answered Delay Report are derived from the following ACD-DN statistics fields:

ANS BFR DEL - .... Number of Calls which were Answered within the Delay Objective

                              (ANS IN DLY OBJ)

ANS AFTR DEL - .... Number of Calls which were Answered After the Delay Objective

                              (ANS AFT DLY OBJ)

NUM ABANDOND - .... Number of Calls Abandoned (CALLS ABAND)

ACD-DN Calls Abandoned Report - Graphic

The ACD-DN Calls Abandoned Report graphically presents calls which were abandoned before receiving the recorded announcement versus calls which were abandoned after receiving the recorded announcement.

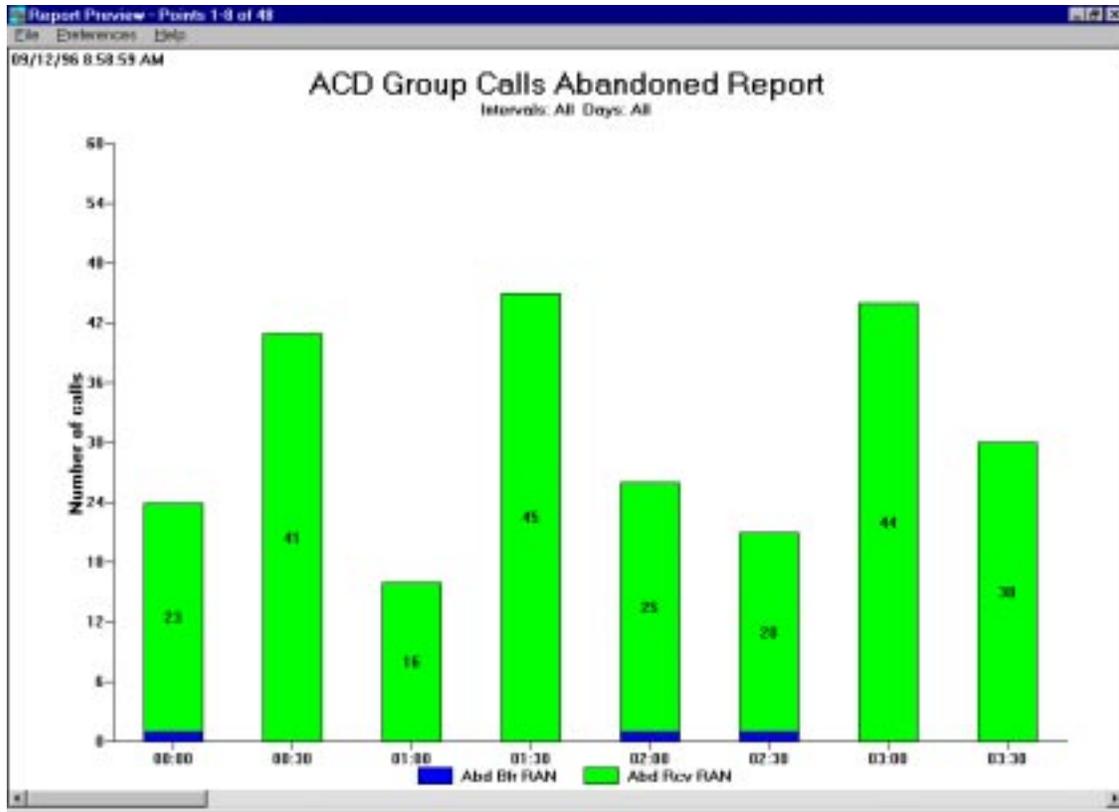The key field for this report is the ACD-DN. An interval report is shown below:
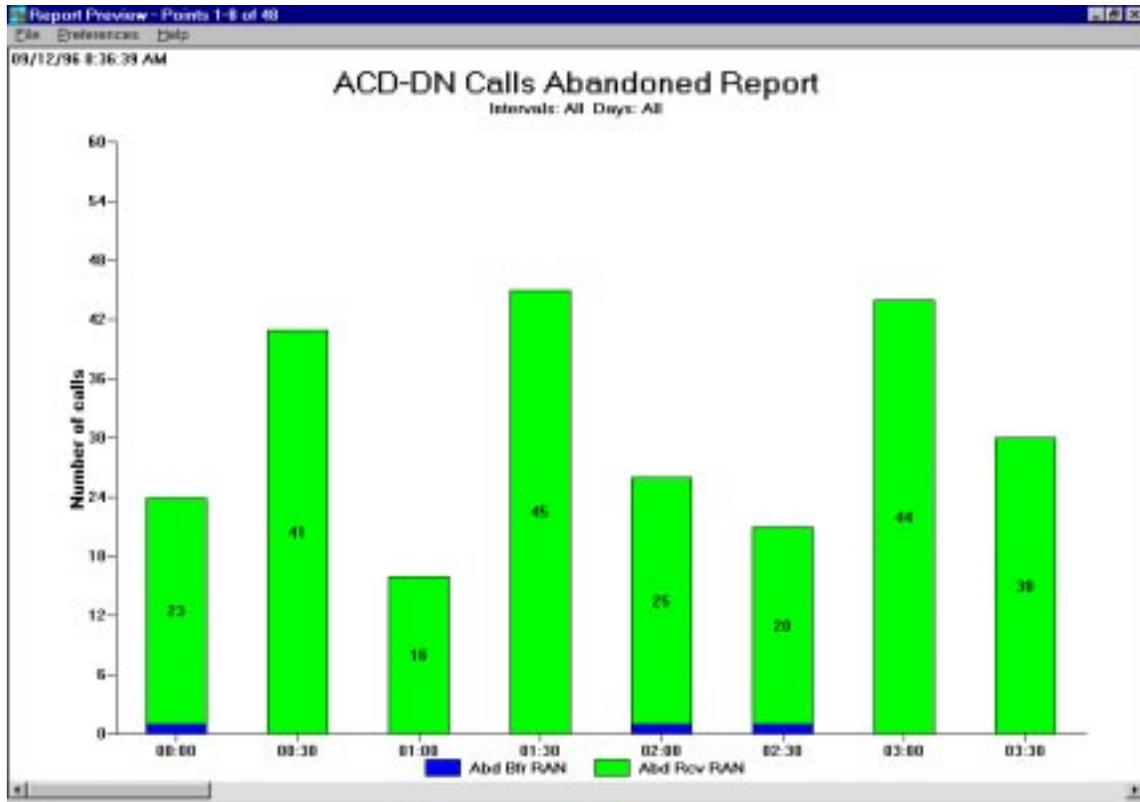
Figure A-27. ACD-DN Calls Abandoned Report - Graphic

This report shows each ACD-DN specified from the report parameter definition screen.

The fields in the ACD-DN Calls Abandoned Report are derived from the following ACD-DN statistics fields:

ABD BFR RAN - .... Number of Calls which were Abandoned Before Receiving RAN
(NUM ABD BF RAN)

ABD RCV RAN -....................... Number of Abandoned Calls which Received RAN (NUM ABD RCV RAN)

ACD Group Calls Answered Delay Report - Graphic

The ACD Group Calls Answered Delay Report graphically presents calls which were answered before the delay objective versus calls which were answered after the delay objective. In addition, abandoned calls are also shown.

The key field for this report is the ACD Group. An interval report is shown below:

Figure A-28. ACD Group Calls Answered Delay Report - Graphic

This report shows each ACD Group specified from the report parameter definition screen. The fields in the ACD Group Calls Answered Delay Report are derived from the following ACD Group statistics fields:

ANS BFR DEL - ....Number of Calls which were Answered Within the Delay Objective
(ANS IN DLY OBJ)

ANS AFTR DEL -.......................Number of Calls which were Answered After the Delay Objective
(ANS AFT DLY OBJ)

NUM ABANDOND - ....Number of Calls Abandoned (CALLS ABAND)

ACD Group Calls Abandoned Report - Graphic

The ACD Group Calls Abandoned Report graphically presents calls which were abandoned before receiving the recorded announcement versus calls which were abandoned after receiving the recorded announcement.

The key field for this report is the ACD Group. An interval report is shown below:

This report shows each ACD Group specified from the report parameter definition screen.

The fields in the ACD Group Calls Abandoned Report are derived from the following ACD Group statistics fields:

ABD BFR RAN - .... Number of Calls which were Abandoned Before Receiving RAN (NUM ABD BF RAN)

ABD RCV RAN -........................ Number of Abandoned Calls which Received RAN (NUM ABD RCV RAN)

Log Event Reports

Event log reports provide various levels of detail about an agent's workday. They show login and logout times and the hours an agent worked. The information contained in these reports does not come from the Statistic Groups and are **not available for custom reports**.

The data on the event logs is available as defined by the parameters specified in the storage calculator database.

The key field on each of the event logs is agent ID. A report can be generated for a single agent, a range of agents, or all agents.

Agent First Login/Last Logout Report

The Agent First Login/Last Logout Report shows when an agent started and ended on that day, and how much time was spent in staffed status. It may be used as a summary for payroll and administration, and to show variations in the overall efficiency of individual agents.

An example report follows:

Figure A-30. Agent First Login/Last Logout Report

The fields in the Agent First Login/Last Logout Report are:

START TIME - .... The time of the first login of the day.

END TIME - .... The time of the last logout of the day.

LOGIN DURATN - .... The time between the first login and the last logout of the day.

STAFFED TIME - .... The time spent logged into the system.

% LOGIN DURATN STAFFED - The percentage of the login duration time that the position was staffed.

WALKAWAY TIME - .... The total time the agent spent in all walkaway states

% STAFFED TIME IN WALKAWAY - The percentage of the total staffed time that the agent spent in walkaway states.

Agent All Login/Logout Report

The Agent All Login/Logout Report shows the time and length of each agent's login and logout activities during the day. This report may be used to verify shift and break times. An example report follows:

Figure A-31. Agent All Login/Logout Report

For each agent, there are "staffed" periods and "workday" periods. There may be multiple staffed periods if the agent has logged in and logged out multiple times. The workday period is a summary line for all the staffed periods during the day. The following are the field descriptions for the staffed periods:

START TIME - ....The time of each login throughout the day.

END TIME - ....The time of each logout throughout the day.

STAFFED TIME - ....The time spent logged into the system.

The following are the field descriptions for the workday periods:

START TIME - ....The time of the first login of the day.

END TIME - ....The time of the last logout of the day.

LOGIN DURATN - ....The time between the first login and the last logout of the day.

STAFFED TIME - .... The sum of all the logged-in times during the day.

% LOGIN DURATN STAFFED - The staffed time as a percentage of the login duration time.

WALKAWAY TIME - .... The time spent by the agent in walkaway states.

% STAFFED TIME IN WALKAWAY - The percentage of the total staffed time that the agent spent in walkaway states.

Agent Detail Report

The Agent Detail Report shows the time and length of each agent's login, logout, and walkaway activities during the day. This report may be used to verify shift and break times and walkaway times.

An example report is shown below:

Figure A-32. Agent Detail Report (Network)

For each agent, there are "staffed" periods, "walkaway" periods, and "workday" periods. There may be multiple staffed periods if the agent has logged in and logged out multiple times. There will be multiple walkaway periods if the agent has entered walkaway states multiple times. The workday period is a summary line for all the staffed periods during the day.

The following are the field descriptions for the walkaway periods:

START TIME - ....The time that the agent entered the walkaway state.

END TIME - ....The time that the agent returned from the walkaway state.

The following are the field descriptions for the staffed periods:

START TIME - ....The time that the agent logged-in.

END TIME - ....The time that the agent logged-out.

STAFFED TIME - .... The time spent logged into the system.

The following are the field descriptions for the workday periods:

START TIME - .... The time of the first login of the day.

END TIME - .... The time of the last logout of the day.

LOGIN DURATN - .... The time between the first login and the last logout of the day.

STAFFED TIME - .... The sum of all the logged-in times during the day.

% LOGIN DURATN STAFFED - The staffed time as a percentage of the login duration time.

WALKAWAY TIME - .... The time spent by the agent in walkaway states.

% STAFFED TIME IN WALKAWAY - The percentage of the total staffed time that the agent spent in walkaway states.

Agent Walkaway Report

The Agent Detail Report shows the time and length of each agent's login, logout, and walkaway activities during the day. This report may be used to verify shift and break times and walkaway times. An example report is shown below:

Figure A-33. Agent Walkaway Report

For each agent, there are "staffed" periods, "walkaway" periods, and "workday" periods. There may be multiple staffed periods if the agent has logged in and logged out multiple times. There will be multiple walkaway periods if the agent has entered walkaway states multiple times. The workday period is a summary line for all the staffed periods during the day.

The following are the field descriptions for the staffed periods:

START TIME - .... The time that the agent entered the walkaway state.

END TIME - .... The time that the agent returned from the walkaway state.

WALKAWAY CODE - .... The walkaway code that was entered by the agent.

WALKAWAY REASON - .... The walkaway reason that is assigned to the walkaway code.

The following are the field descriptions for the staffed periods:

START TIME - .... The time that the agent logged into the system.

END TIME - .... The time that the agent logged out of the system.

STAFFED TIME - .... The time spent logged into the system.
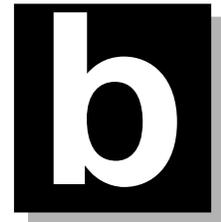
The following are the field descriptions for the workday periods:

START TIME - .... The time of the first login of the day.

END TIME - .... The time of the last logout of the day.

System Reports

b

Introduction

System Reports provide information describing the current state of the CC MIS customer configuration including information defined through Parameter Administration and Customer Configuration.

In general, a report containing Parameter Administration or Customer Configuration data is a replica of the corresponding screen on which the data is entered.

The Configuration Report also contains configuration data received from the switch as well as configuration data modified through Configuration Control. Further detail on this data may be obtained from the MSL-100 ACD-MIS Interface Specification.

These reports are available at any time through the System Reports menu item on the supervisors main menu screen. They can be printed but not previewed, and they cannot be modified through Report Definition.

Samples of system reports are in Appedix E of the CC MIS Maintenace Guide.

Supported Data Stream

C

The table below identies the BCS32 and BCS35 messages supported by CC MIS.

Note: It is recommended that your switch be at BCS35 when the Networking feature is enabled for your CC MIS system.
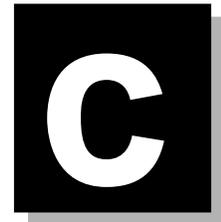
For an explanation of the use and content of these messages, consult the "DMS-100/SL-100 ACD MIS Interface Specification, NIS Q209-2, Version 6.0" for BCS 32 and "DMS-100/SL-100 ACD MIS Interface Specification, NIS Q209-2, Version 9.0" for BCS35.

Table C-1: ACD MIS Messages supported (BCS32 and BCS35)

Category	Message	Supported
Switch control	EndOfInit	yes
	SendThrottle	yes

Table C-1: ACD MIS Messages supported (BCS32 and BCS35)

Category	Message	Supported
Initialization data	SubPoolData	yes
	ACDGroupData	yes
	ACDVFGData	yes
	AudioList	yes
	RouteList	yes
	ACDSupplDNData	yes
	ACDSubGroupData	yes
	AgentPositionData	yes
	ACDNetworkGroupRouting Data	yes
ACD VFG OM	ACDVFGOM	yes
ACD Event	ACDCall Offered	yes
	ACDCallAnswered	yes
	ACDCallNetworkAnswered	yes
	ACDCallAbandoned	yes
	ACDCallReleased	yes
	ACDCallBlocked	yes
	AgentPosition	yes
	ACDCallTransferred	yes
	ACDCallParked (BCS35)	no

Table C-1: ACD MIS Messages supported (BCS32 and BCS35)

Category	Message	Supported
Load Management Event ***Note:*** Messages noted with an * indicate that changing the value of these variables on the switch does not cause the CC MIS to be updated. CC MIS does not change because there is no facility that generates these messages to CC MIS.	AgentPosReassigned	yes
	ACDDNReassigned	yes
	PrioProChanged*	yes
	MaxWaitChanged	yes
	TMDelOvflChanged*	yes
	OvflTypeChanged*	yes
	ServiceChanged*	yes
	MaxCqSizeChanged	yes
	MaxVqSizeChanged*	yes
	ACDDNPrioChanged	yes
	AudioGroupChanged	yes
	RANTHChanged	yes
	RIChanged	yes
	ThRouteChanged	yes
	NSRouteChanged	yes
	ACDDNNameChanged	yes
	ACDDispDigsChanged	yes
	MSQSThresholdChanged	yes
	EhOvflChanged	yes
	CIFROUTEChanged*	yes
	NSAudioGroupChanged*	yes
	CTQSizeChanged	yes
	DefLOBChanged	yes

Table C-1: ACD MIS Messages supported (BCS32 and BCS35)

Category	Message	Supported
Load Management Event (continued)	WRPTIMEChanged	yes
	MSQSTypeChanged	yes
	TMDTHRTEChanged	yes
	TMDTHTIMEChanged	yes
	FIAUDIOGropChanged	yes
	FOAUDIOGroupChanged	yes
	ORGANNChanged	yes
	ACTIVATEChanged	no
DSP Control	AssociatePool	yes
	RequestInit	yes
	StopInit	yes
	StartTransfer	yes
	StopTransfer	no
Inquire Switch Data	QueryDateAndTOD	yes
	RequestAudioInfo	yes
	RequestRouteInfo	yes

Table C-1: ACD MIS Messages supported (BCS32 and BCS35)

Category	Message	Supported
Load Management Request	ReassignAgentPos	yes
	ReassignACDDN	yes
	ChangeSubPool	no
	ChangePrioPro	yes
	ChangeMaxWait	yes
	ChangeWaitThreshold	yes
	ChangeTmDelOvfl	yes
	ChangeOvflType	yes
	ChangeService	yes
	ChangeMaxCqSize	yes
	ChangeMaxVqSize	yes
	ChangeQueueThreshold	yes
	ChangeACDDNPrio	yes
	ChangeAudioGroup	yes
	ChangeRANTH	yes
	ChangePWF	yes
	ChangeRI	yes
	ChangeThroute	yes
	ChangeNSRoute	yes
	ChangeACDDNName	yes
	ChangeACDDispDigs	yes
	ChangeMSQSThreshold	yes
	ChangeEhOvfl	yes

Table C-1: ACD MIS Messages supported (BCS32 and BCS35)

Category	Message	Supported
Load Management Request (continued)	ChangeCIFRoute	yes
	ChangeNSAudioGroup	yes
	ChangeCTQSize	yes
	ChangeBestGrp	yes
	ChangeSrvRate	yes
	ChangeNumIdle	yes
	ChangeTimeIdle	yes
	ChangeDefLOB	yes
	ChangeWRPTIME	yes
	ChangeMSQSType	yes
	ChangeTMDTHRTE	yes
	ChangeTMDTHTIME	yes
	ChangeFIAUDIOGroup	yes
	ChangeFOAUDIOGroup	yes
	ChangeORGANN	yes
	ChangeACTIVATE	no

Acronyms and abbreviations

d

Introduction

This appendix contains a listing of acronyms and abbreviations.

Acronym	Meaning
ACD	Automatic Call Distribution
ACD-DN	Automatic Call Distribution Directory Number
ACD FM	Automatic Call Distribution Force Management
ACD GRP	Automatic Call Distribution Group
ACD-MIS	Automatic Call Distribution Management Information System
CCITT	International Telegraph & Telephone Consultative Committee
CC MIS	Call Center Management Information System
CPU	Central Processing Unit
DAT	Digital Audio Tape

Acronym	Meaning
DMS-ACD	DMS Automatic Call Distribution
DN	Directory Number
EGA	Enhanced Graphics Adaptor
EMPC	Enhanced Multi-Protocol Controller
Gbyte	Gigabyte
HDC	Historical Data Collector
Hz	Hertz
ID	Identification
I/O	Input/Output
Kbyte	Kilobyte
Kbyte/s	Kilobytes per second
KVA	Kilovolt amperes
LAN	Local Area Network
LOB	Line of business
Mbyte	Megabyte
MIS	Management Information System
MSL-100	Meridian SL-100
NAP	Network Access Partition
NOP	Network Operations Protocol
NTP	Northern Telecom Publication
PC	Personal Computer
PWD	Preference Weighting Factor
RAID	Redundant Array of Inexpensive Disks
RAM	Random Access Memory

Acronym	Meaning
SNMP	Simple Network Management Protocol
STFD	Staffed
TSF	Telephone Service Factor
UPS	Uninterruptable Power Supply
VDT	Video Display Terminal
VGA	Virtual Graphics Adaptor
V	Volts
Vac	Volts alternating current
Windows	Short for Microsoft Windows NT or Windows 95 software
X.25	Data transmission protocol as defined by the CCITT

NORTEL
NORTHERN TELECOM