Meridian 1 and Succession Communication Server for Enterprise 1000

Meridian Integrated Conference Bridge

Description, Installation, Administration, and Maintenance

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Standard, release 2.00.

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Contents

About this guide

This document is a global document. Contact your system supplier or your Nortel Networks representative to verify that the hardware and software described is supported in your area.

This document applies to the Meridian 1 Internet Enabled and Succession Communication Server for Enterprise (CSE) 1000 systems.

This document provides information about the implementation of the Meridian Integrated Conference Bridge (MICB) in the systems. It describes the MICB operation, installation, configuration, administration, applications, and maintenance.

It focuses on the application and administration of the MICB for scheduling and configuring multiple simultaneous conferences over a single MICB card.

The purpose of this document is to instruct the user how to install, configure, operate, and maintain the Meridian Integrated Conference Bridge (MICB) as a part of an overall system.

The following describes what is found in this document:

“Product description” on page 11 describes the MICB functional and physical characteristics.

“Engineering guidelines” on page 47 describes system hardware and software requirements and MICB Release 2.X configuration options.

"Installation and configuration" on page 59 describes how to prepare the equipment, how to install the MICB into the Intelligent Peripheral Equipment (IPE) module, how to connect it to the administration terminal, how to configure the MICB using the system TTY, and how to set up the web-based server.

"The Command Line Interface" on page 97 describes the MICB procedures using the Command Line Interface (CLI) for MICB parameter configuration, system administration and maintenance, and report generation.

"The Browser User Interface" on page 139 describes the MICB procedures using the Browser User Interface (BUI), a web-based server, for MICB conference administration and maintenance as well as user administration and maintenance.

"The Telephone User Interface" on page 179 describes the MICB procedures using the Telephone User Interface (TUI) for simple conference reservation.

"Maintenance" on page 195 describes how to perform maintenance functions and how to troubleshoot the MICB card and the associated equipment.

Appendix A on page 205 lists the MICB pin assignment and connector types for external connections to the MICB.

Appendix B on page 207 describes reliability, environmental specifications, product integrity, and regulatory standards for the MICB.

Appendix C on page 213 describes the daily reports that are available with MICB Release 2.X.

Appendix D on page 219 lists the Event Script files, which are audio files that MICB Release 2.X uses during audio conferences.

Appendix E on page 231 describes the billing and call detail recording features.

Product description

Contents

This section contains information on the following topics:

This chapter describes the Meridian Integrated Conference Bridge (MICB) Release 2.X card, both at a system level and at a card level. It describes functions, specifications, applications, engineering guidelines, and operation of the MICB card.

System overview

The MICB is an Intelligent Peripheral Equipment (IPE) card compatible with Meridian 1 Options 11C, 51C, 61C, and 81C.

The system software must contain the Automatic Call Distribution (ACD) features and routing software modules to support the MICB operation. Consider the ACD resources in the Incremental Software Management (ISM) of the customer configuration, where each MICB port represents an ACD agent that uses a TN from the system resources.

The MICB communicates with system software by emulating a digital line card, which allows the use of the existing software to control the MICB operation. Each MICB port is defined as an ACD agent. All MICB ports are members of the same ACD DN assigned to the MICB card.

The Conference/TDS card is not used in any application with the MICB card.

Multiple MICB cards can be installed into the system. Each MICB card can operate independently, providing up to 32 ports to a single conference; or two MICB cards can be combined in a dual card configuration, which provides up to 62 ports to a single conference.

The MICB card has two PCMCIA sockets. PCMCIA hard drive cards are used to store the MICB voice prompts and firmware code. The MICB is shipped with the PCMCIA hard drive. The bottom socket houses the PCMCIA hard drive card that contains the current firmware and customer data. Use the top socket to upgrade the firmware.

MICB Release 2.X OA&M

Certain Organization, Administration, and Management (OA&M) functions of the MICB Release 2.X system, including initial setup and configuration, are performed through a Command Line Interface (CLI). Access the CLI either through a TTY terminal that is connected directly to the MICB card or through a PC that emulates a terminal and which is connected to the MICB card through the LAN.

The CLI is used by the administrator to do the following:

- generate reports

- perform port maintenance
- manage system administration, maintenance, and security

Only the administrator can access the CLI. For more information on the CLI, refer to “The Command Line Interface” on page 97.

The OA&M of conferences and users for MICB Release 2.X is performed on a PC through a Browser User Interface (BUI). The BUI resides on a web-based server that can be either embedded in an MICB card, providing a direct point of contact to that particular card, or placed on an external server, providing a single point of contact to several MICB cards. The BUI provides three levels of user access, which are:

- **User** level access, for those who reserve and manage conferences just for themselves
- **Super user** level access, for those who must reserve and manage conferences for others and themselves
- **Administrator** level access, for those who must manage card and user attributes

For more information on the MICB Release 2.X BUI, refer to “The Browser User Interface” on page 139.

MICB Release 2.X also provides a Telephone User Interface (TUI), which can be used to reserve conferences over any DTMF telephone. Through the TUI, users can reserve simple conferences; many of the conference attributes are set to their default value. To set all of the attributes for a conference, or to modify a conference once it has been set, the BUI must be used. For more information on the TUI, refer to “The Telephone User Interface” on page 179.

MICB Release 2.X connection to the LAN

To conduct conference administration and maintenance for MICB Release 2.X, connect a PC to the LAN. The MICB Release 2.X card connects to the LAN through an Ethernet adapter. The Ethernet adapter provides two connection options:

- Direct terminal connection or modem connection to DB-9 connector (provides access only to the CLI)
- Ethernet connection, where multiple terminals connected to the LAN can access an MICB card. This provides access to the CLI through telnet, and the BUI through a common web browser.

For the LAN connection, an IP address must be assigned to the MICB card. This enables access to the MICB through the Local Area Network (LAN). There are two options for connecting MICB Release 2.X cards to the LAN through the Ethernet adapter:

- Connect each card directly to the LAN. This is the embedded server option, where users access each card separately through a web server that is embedded on each card. This option allows creation of 100 total users and up to 10 simultaneous users on each card.
- Connect each card to the LAN through an external web server. Users point their web browsers to the external server address. From there, they can access each card that is attached to the server. The external web server can centrally manage up to ten MICB Release 2.X cards. This option must be used if using the dual card configuration. This option allows the creation of 1000 total users (100 users per card) and up to 50 simultaneous users.

Figure 1 on page 15 shows a Meridian 1 with MICB cards connected directly to the LAN. Figure 2 on page 16 shows a Meridian 1 with MICB cards connected to the LAN through an external web server. Any PC with access to the LAN can access the MICB cards.

Figure 1
MICB Release 2.X cards in the Meridian 1 system (Internal server option)

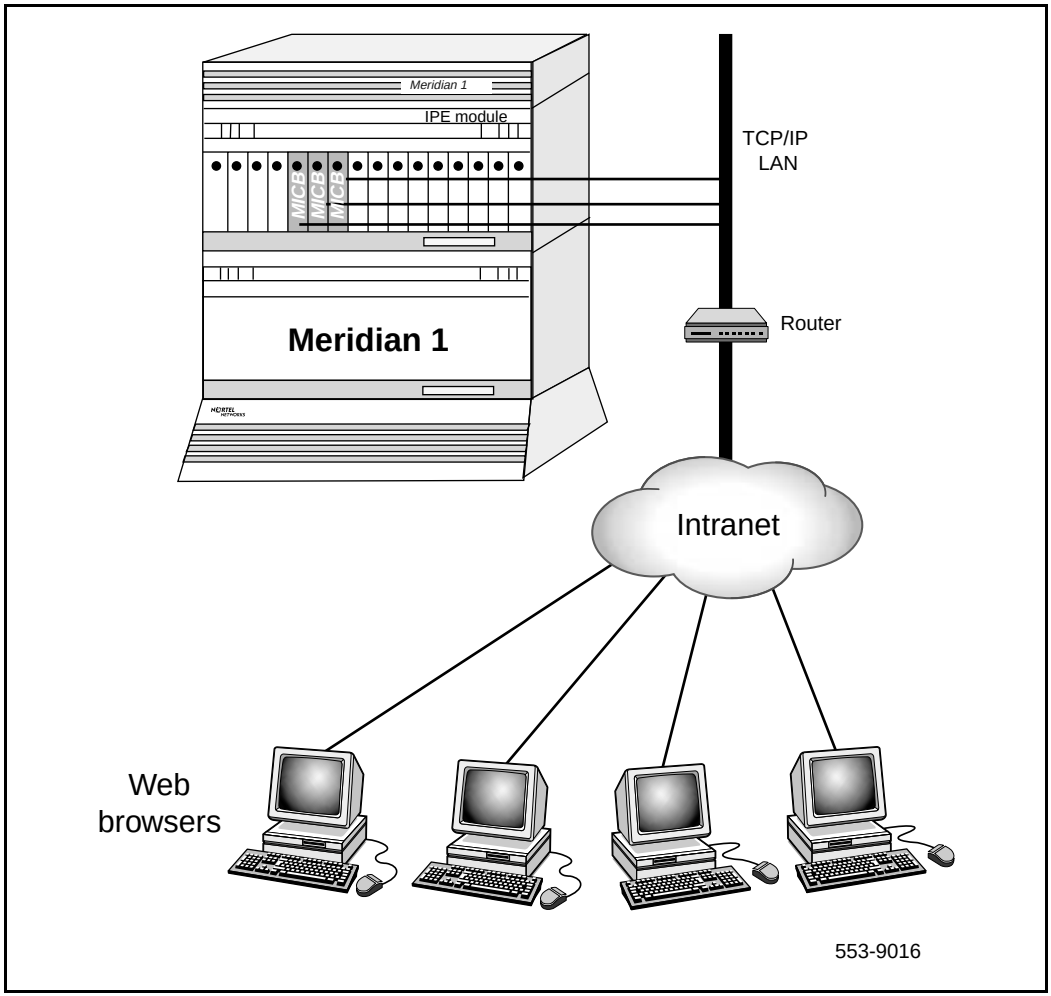
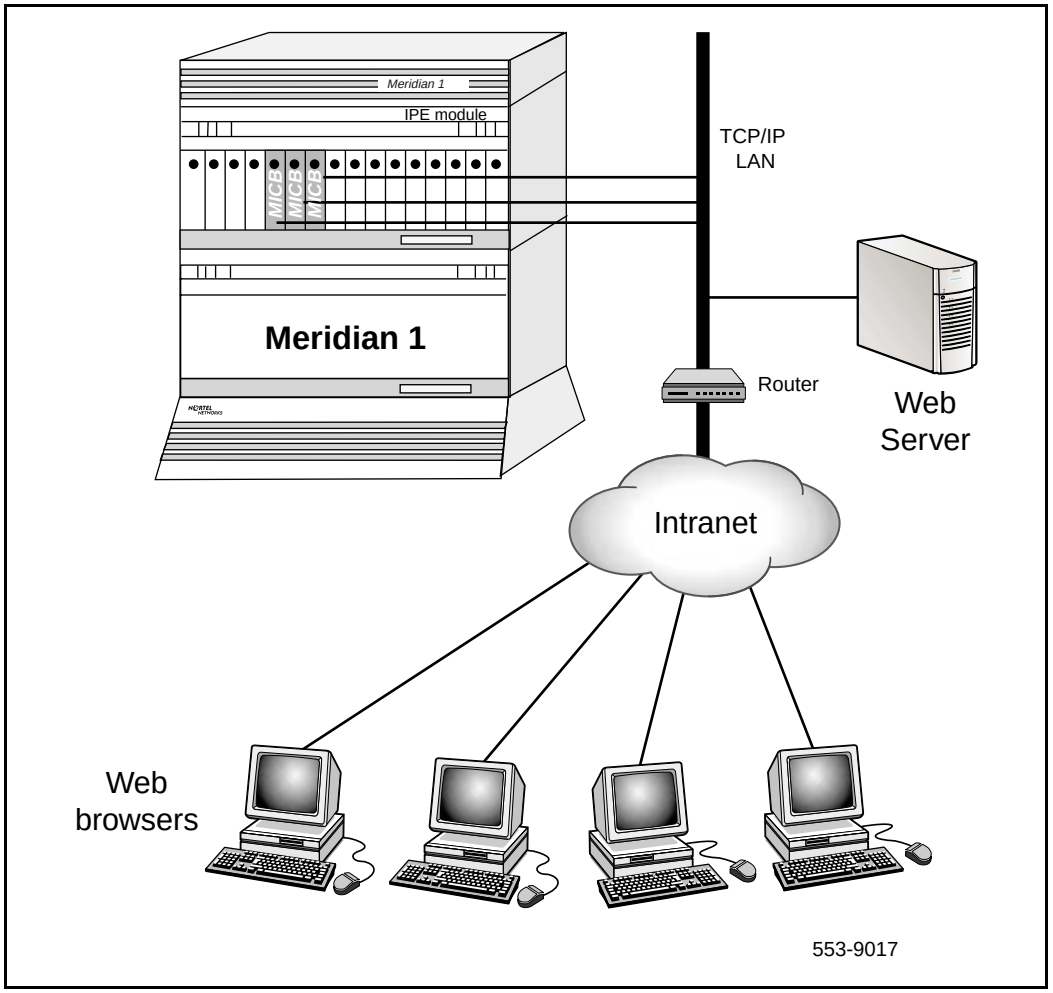


Figure 2
MICB Release 2.X cards in the Meridian 1 system (External server option)



MICB description

Install the Meridian Integrated Conference Bridge (MICB) card into any IPE card slot that is associated with full 50-pin I/O cables. For specific information of the possible IPE card slots where the MICB can be installed, refer to Table 5, "MICB installation into card slots in different IPE modules," on page 49.

A single MICB card provides up to 32 ports that can be partitioned into groups from 1 to 10, where each group represents an independent conference. Alternatively, two MICB cards can be connected together to provide up to 62 ports for a single conference.

Each MICB port is configured as an ACD M2616 digital telephone set. The Meridian 1 system ACD function routes the incoming calls to the MICB, where each MICB port is treated as an ACD agent. All MICB ports belong to the same ACD queue and are treated as a pool of ports with equal status. For an ACD DN description, refer to "Configuring the MICB ports" on page 33.

The MICB supports several conferences simultaneously. The number of conferences supported depends on two things:

- the number of MICB ports available
- the number of participants (conferees) in each conference.

For an MICB with 32 ports, there can be a maximum of 10 conferences with three or four participants in each conference totalling 32 participants, 1 conference with a maximum of 32 participants, or any combination in between.

The DNs and the corresponding TNs are system resources which, when assigned to the MICB ports, cannot be used for other Meridian 1 stations. For an MICB with 32 ports, a maximum of 10 simultaneous conferences would require 20 ACD DNs for the conferees and chairpersons to dial to enter the conferences, 32 TNs assigned to the ports, and one ACD DN assigned to the MICB card. Please be aware of this use of system resources when configuring the MICB card.

The main hardware and functional characteristics of the MICB card are described in the following sections:

- MICB functional characteristics
- MICB hardware design characteristics

MICB functional characteristics

The function of the MICB card is to schedule and administer multiple simultaneous conferences. These conferences are scheduled based on the following:

- time-of-day
- duration of each conference
- number of conferees or ports allocated for each conference

The MICB card provides pre-programmed announcements and tones that correspond to specific events during conferences. These events include, for example, advising the chairperson and other conferees of the status of the conference connection, indicating when a conferee joins or leaves the conference, warning the chairperson and the conferees when the scheduled conference time is about to expire.

MICB Release 2.X card features

The MICB 2.X card provides the following features:

- compatible with the IPE module in any system that supports IPE
- occupies one slot in an IPE shelf or an Option 11C
- emulates an M2616 digital telephone set on each MICB port
- supports both the A-law and the μ-law signal coding/decoding
- provides full duplex communication
- supports DTMF detection
- Command Line Interface (CLI), accessible by direct connection, modem, or telnet for performing certain OA&M functions
- Browser User Interface (BUI), accessible through a common web browser for conference and user administration and maintenance

- Telephone User Interface (TUI), accessible through any DTMF telephone for reserving simple conferences
- dual card configuration to allow up to 62 ports in a single conference (does not require new software)
- can reserve one port on each card for TUI-only interaction
- provides system reporting

Features supported through the MICB DSP firmware

MMICB DSP firmware supports the following features:

- selects two active speakers in a conference of up to 62 conferees
  - — analyzes the loudness of all received signals continuously and selects the two loudest signals to be the two active speakers
  - — the two speakers are not selected globally, but based on the signal strength associated with each timeslot
- handles 2-way conversation in conferences with 3 to 62 conferees
- supports a maximum of 10 simultaneous conferences per card
- normalizes the PCM input samples
- provides gain control on all output samples

MICB expansion options

- software upgrade using a PCMCIA Flash card
- scalable port options of 12, 16, 24, 32, 42, 50, and 62 ports

MICB conference features

MICB provides the following conference features:

- one chairperson per conference (two for a dual card conference)
- provides for one or more permanent bridge configurations
- supports multiple conferences simultaneously
- allows conference extension beyond the scheduled time

- provides automatic conference expansion, allowing additional conferees to join the conference. For the expansion to work, the ports hosting the additional conferees must be both unassigned *and* available. Also, expansion ports are assigned on a first come, first serve basis.
- supports the following languages for the North American, CALA, and Asia Pacific markets: N.A. English, French, Brazilian Portuguese, L.A. Spanish, Chinese, Japanese, Korean, and U.K. English
- supports the following languages for the European market: U.K. English, N.A. English, French, German, and Italian
- conference password security, requiring the chairperson and/or the conferees to enter a DTMF password before entering the conference
- automatically starts and terminates conferences based on reservations scheduled in advance
- provides e-mail notification to conference scheduler of conference attributes
- provides the ability to reserve a port from each conference for the chairperson
- block-out scheduling for recurrent conferences, up to one year in advance and 15 iterations
- over-booking option, enabling the administrator to allocate up to 125% of port resources (based on the idea that most conferences are scheduled with more ports than are required)
- emergency bridge option, which creates a permanent bridge that automatically dials a pre-determined list of DNs when someone dials the emergency bridge DN
- The emergency bridge option supports a maximum of 32 ports for the emergency bridge. The emergency bridge does not support the dual card configuration. It only works when all ports are on one card.
- issues 10-minute warning before the conference termination
- entry and exit indications—provide four options to indicate the entry and exit of a conference participant:
  - — entry by name, exit by name
  - — entry by name, exit by tone

  - entry by tone, exit by tone
  - silent entry and exit

- allows conference music turn off and turn on for the first conferee joining the conference
- controls access to the conference in progress by monitoring the maximum number of scheduled attendees at each conference
- manages time and date for scheduled conferences and reserves ports for each conference
- provides recorded announcements and tones to ports and conferences by playing pre-recorded files stored on the PCMCIA hard drive card
- supports administration features such as system configuration, scheduling, management, and report generation
- routes conferees to the appropriate conference based on the dialed Directory Number (DN)
- allows recording of a brand line (custom) greeting for each language
- issues audible responses to conferees based on the conference activity
- provides enhanced CDR and billing options
- provides conference traffic report
- Chairperson command features:
  - Dial-out, enabling the chairperson to call a non-participant. (The chairperson can then return to the conference with or without the person they called.)
  - Redial last dialed DN
  - Mute/unmute all ports
  - Mute/unmute self
  - Group call-out, enabling the chairperson to call several people on a pre-defined list simultaneously
  - Lock/unlock conference, enabling the chairperson to deny/allow the joining of new participants

- Count conferees and announce names of participants to all participants or just the chairperson
- Drop all conferees
- Drop last dial-out participant
- Drop last dial-in participant
- Conference duration expansion, enabling the chairperson to immediately extend the length of the conference by 15 minutes
- Selective disconnect/mute/unmute/consult, enabling the chairperson to disconnect, mute, unmute, or privately consult with a single participant. (The private consultation feature is also known as a side bridge.)
- Stop/start music while waiting
- Help access, enabling the chairperson to play the list of available commands

Participants can also execute the mute/unmute self, stop/start music while waiting, and help commands.

MICB hardware design characteristics

An MICB card occupies one IPE slot in an IPE module.

The MICB card has the following hardware interface characteristics:

- uses the MPU based on the 25MHz MC68EN360 Integrated Communications Controller
- uses standard interface buses and PCMCIA cards and handles MS-DOS compatible file on the PCMCIA storage device
- accesses all 32 DS-30X voice/signaling timeslots
- provides echo cancelling
- supports automatic gain control
- supports Card-LAN interfaces
- performs signaling protocol messages for input/output

- uses Digital Signal Processor (DSP) for conferencing and DTMF detection
- provides self-test of internal hardware components and allows card monitoring and maintenance through the maintenance port
- provides one RS-232 serial port for initial setup of the card
- provides Ethernet connection to the LAN for web and telnet access
- provides for either an embedded or an external web-based server

Table 1 describes each hardware component provided for the MICB application. These components are used to connect the MICB to the maintenance terminal locally and remotely.

Table 1
MICB hardware list

Component	Description
NT5D51 MICB Card	An IPE card that provides bridge and conference scheduling for up to 10 simultaneous conferences. (The NT5D51 MICB card, the Security Device, and the PCMCIA hard drive card are packaged together as NT5D32 in N.A./CALA/Asia Pacific and NT1439 in Europe.)
PCMCIA Hard Drive Card (NT5D62BB in N.A./ CALA/Asia Pacific; NT1438BC in Europe)	This PCMCIA card contains the MICB software and configuration. It must be installed into the lower PCMCIA drive for the MICB to operate.
NT5D52AC Ethernet Adapter card (for IPE module installation)	This adapter card is installed on the IPE module I/O panel for connection to the LAN.
NT5D52BC Ethernet Adapter card (for Option 11C installation)	This adapter card is installed into the Option 11C tip/ring connector for connection to the LAN.
Nullmodem Maintenance cable	This cable has a DB-9 female and a DB-25 male connector and is used to connect the terminal to the MICB using the Ethernet Adapter card DB-9 male connector. No additional nullmodem is required.

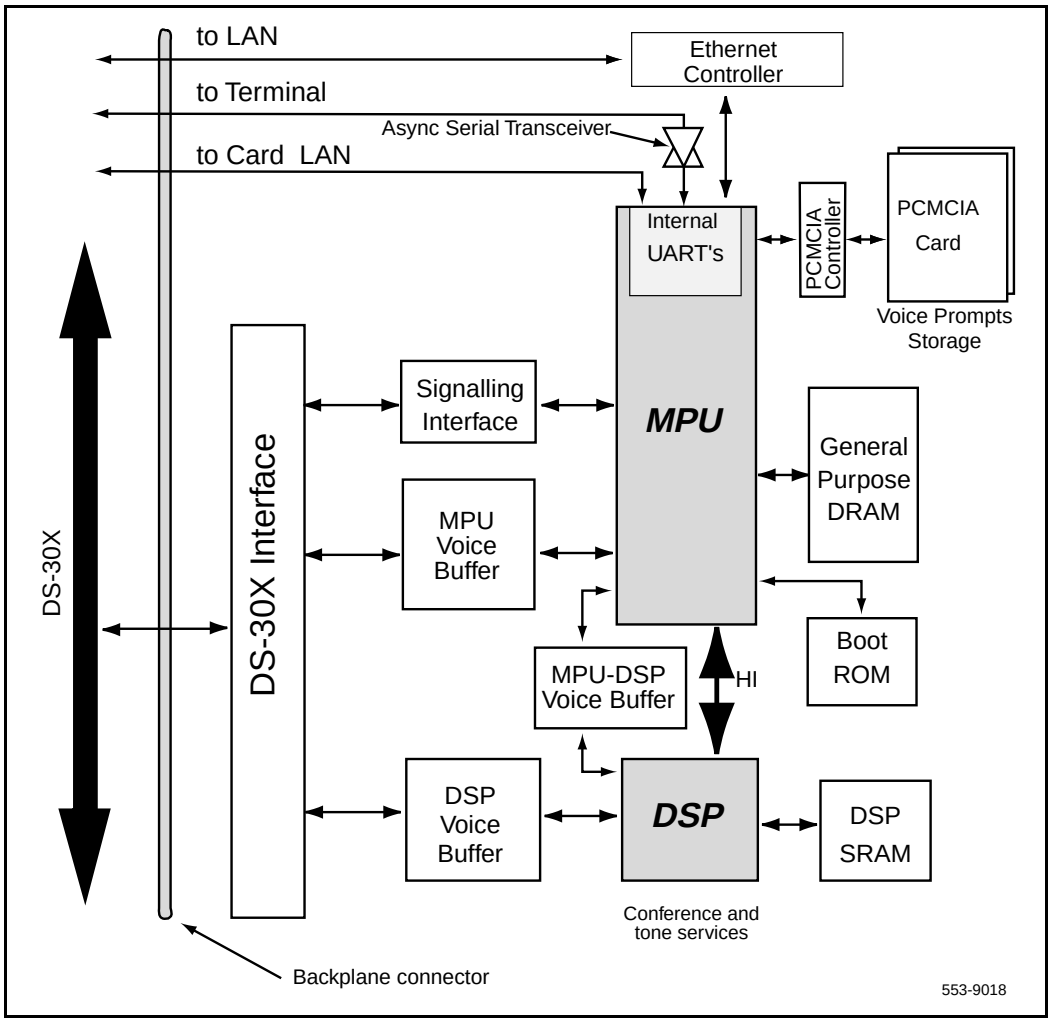
Table 2 lists the pin out for the DB-9 RS-232 port on the NT5D52 Ethernet Adapter.

Table 2
DB-9 RS-232 port pin out

Pin Number	Signal Description
9-pin (male) serial connector	
2	RS-232 TX (transmit)
3	RS-232 RX (receive)
5	GND

Figure 3 shows a high level block diagram of the MICB card components. It also shows the MICB interfaces at the IPE module backplane connector.

Figure 3
MICB block diagram



Micro Processing Unit

The Microprocessing Unit (MPU) coordinates and controls data transfer and addressing of the peripheral devices. Tasks that the MPU performs depend on the interrupts it receives. These interrupts are prioritized by the importance of the tasks they control.

The MPU is highly integrated and provides most of the decision making logic on the chip. Functions of the MPU include controllers, timers, control logic, address decoding, DRAM and independent direct memory access, Ethernet terminal and Card-LAN input/output ports, and independent full-duplex serial communication channels that support various protocols.

The MPU can be reset by:

- powering up the MICB card
- entering reset command on the MMI
- the watchdog timer

A resident boot code contained in Flash memory starts the process of bringing up the MICB. This boot code loads a start-up program from a fixed location on the PCMCIA disk. The start-up program performs basic diagnostics and loads the main code to the RAM.

Digital Signal Processor

The Digital Signal Processor (DSP) communicates with the MPU over the Host Interface (HI) and the MPU-DSP voice buffer. It also communicates with the DS-30X interface over the DSP voice buffer. The DSP can access program and data stored in the DSP SRAM.

Memory

The MICB card contains the following memory types:

- general purpose DRAM
- Boot ROM
- DSP SRAM

Additional memory is available when the PCMCIA card(s) are installed into the MICB card.

Card-LAN interface

To implement the Card-LAN interface, the MICB card uses an internal UART device. The UART channel is a serial communication interface to Peripheral Controller card.

The Card-LAN is a 19.2 kbps asynchronous interface. It is used to poll and communicate with the Peripheral Controller card to transmit maintenance messages, which include:

- LED control of the IPE card enable/disable
- MICB card configuration
- MICB card type and version information

DS-30X

A DS-30X network loop is composed of two synchronous serial data buses that transport data:

- One bus transmits data toward the line facility (Tx)
- The other bus receives data toward the Meridian 1 CPU (Rx)

DS-30Y network loops extend between controller cards and superloop network cards and function similarly to DS-30X loops. Essentially, a DS-30Y loop carries the PCM timeslot traffic of a DS-30X loop, but up to four DS-30Y loops form a superloop with a capacity of 128 channels (120 usable timeslots).

RS-232 port

A serial port is provided on the MICB card for initial setup of the MICB Release 2.X card. Access to this port is over the IPE module backplane connector to the I/O panel and from the I/O panel to the terminal.

Ethernet interface

An Ethernet interface on the MICB is provided at the I/O panel by installing the Ethernet adapter. The Ethernet interface is necessary to schedule and maintain conferences and users. This adapter provides an Ethernet RJ-45 and a DB-9 connector. There are two versions of the Ethernet adapter: one for Option 11C and the other for Meridian 1 options 51C, 61C, and 81C. Refer to Table 1 “MICB hardware list” on page 24. Also, refer to “To access the BUI” on page 55. The Ethernet interface provides multiple terminal access to the MICB card through the LAN.

Figure 4 on page 30 illustrates the component side of the MICB card and the faceplate. The component side shows the DRAM and the PCMCIA socket locations. The faceplate shows the card LED and the PCMCIA activity LED indicators and the slot locations for PCMCIA cards.

Faceplate sockets and indicators

The MICB faceplate provides the following LED indicators:

Card LED

The MICB faceplate provides a red card LED to indicate the enabled/disabled status of the card and to indicate the self-testing result during power up or card insertion into an operating system. This LED indicates the following:

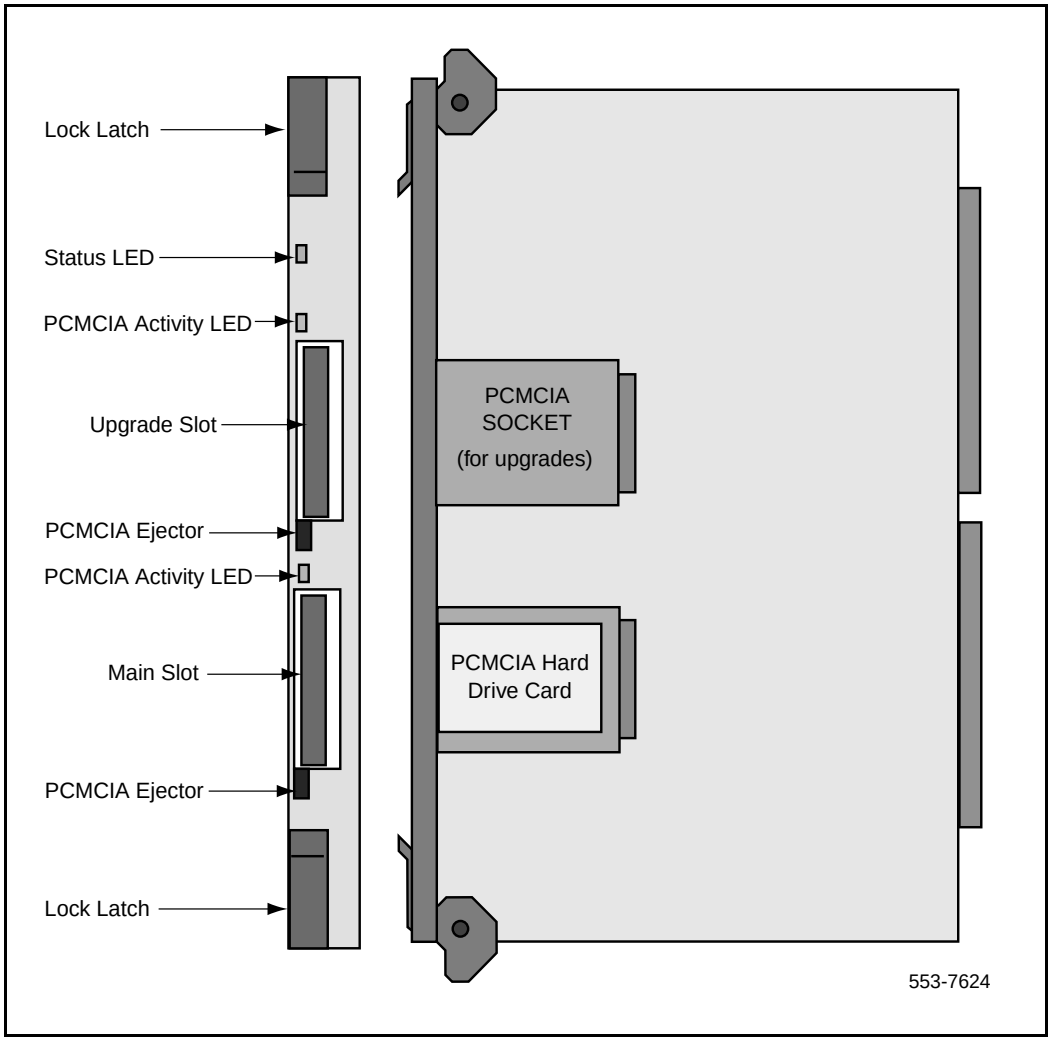
- LED is ON when the MICB card is disabled
- LED is OFF when the MICB card is enabled and ready for use
- LED BLINKS three times and stays ON (until is software enabled) when the MICB card has successfully completed self-test

PCMCIA activity indicator LEDs

These LEDs are next to the PCMCIA slots and indicate the following:

- LED is ON when the PCMCIA card is disabled
- LED is OFF when the PCMCIA card is enabled and ready for use
- LED is BLINKING when the PCMCIA card is in use

Figure 4
MICB card



Type II/III PCMCIA slots

The MICB faceplate provides two Type II/III PCMCIA card slots. These slots are used to house the PCMCIA cards. The lower slot is used to install the PCMCIA hard drive card that stores voice prompts and firmware code. The upper slot is used for upgrading the firmware, when required.

MICB operation

The MICB card continuously monitors the audio signal level received from each conferee and selects the two loudest signals for transmission. The two loudest signals are summed and inserted into the PCM sample prior to their transmission to other conferees. This implementation of the two loudest signals improves the interrupting capability of a conference connection and allows normal two way conversation that all participants can hear.

In addition to the participant timeslots, the MICB provides a timeslot between the MPU and the DSP. This timeslot transmits message prompts and/or entry and exit tones that are broadcast to all participants when requested by the MPU.

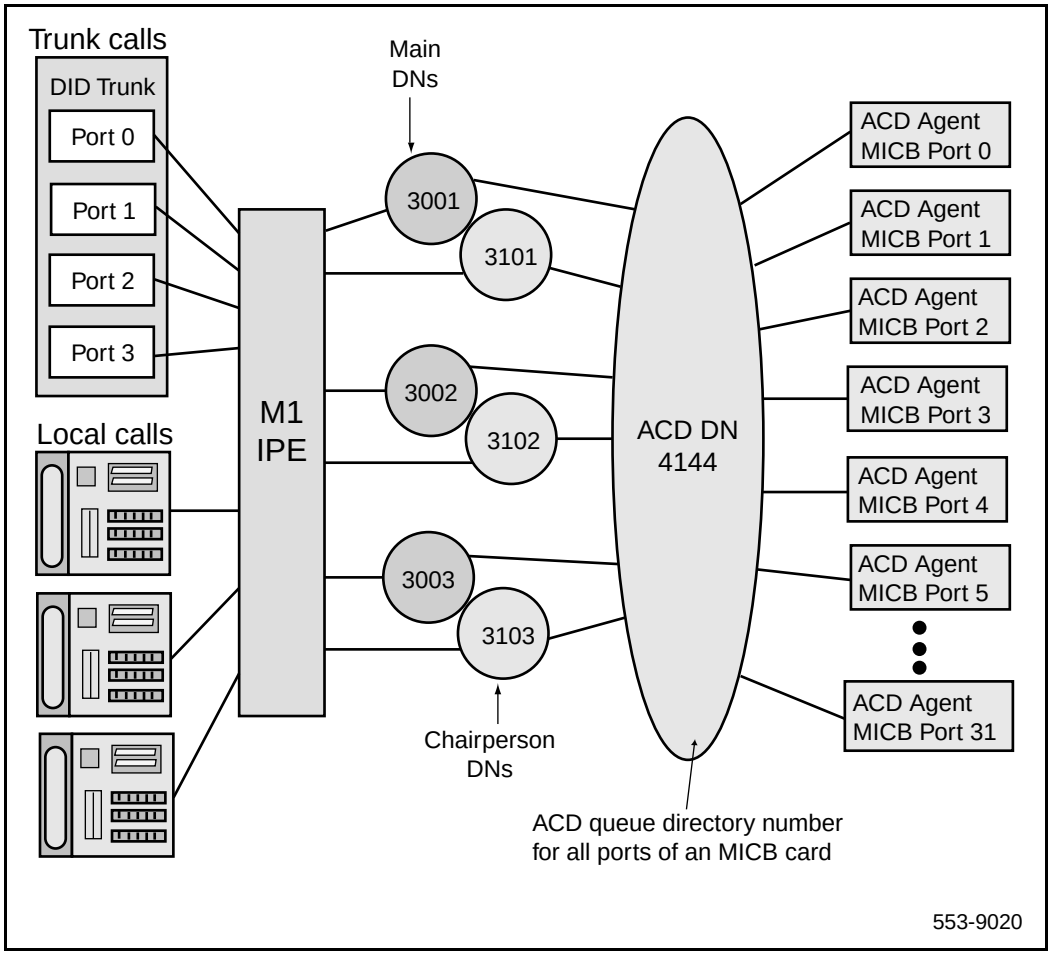
The MICB card uses the system ACD features to schedule multiple simultaneous conferences, to route external incoming trunk and local line participants to their appropriate conferences, and to provide queuing, chairperson features, and events reporting for each conference.

The ACD features used by the MICB card provide:

- expanded number of ports in the same pool allowing up to 1200 ACD agents for Meridian 1 systems 51C, 61C, and 81C, and up to 120 for the Option 11C system
- simple software configuration
- queuing of incoming calls, announcement on arrival, call management, and reporting
- operational statistics reports
- enhanced call routing

Figure 5 illustrates the call routing for three conferences. It shows the conference chairperson access directory number (DN) for each conference and the ACD DN for the ACD queue that controls the path of all ports on an MICB card. The right-hand-side of the figure shows the distribution of MICB ports as ACD agents.

Figure 5
Call routing with chairperson access



Configuring the MICB ports

Ports on the MICB card are configured as ACD digital sets, where each port is considered to be an ACD agent. Each port must be assigned a Terminal Number (TN). All ports on an MICB card belong to an ACD queue (group). This ACD queue is identified with an ACD DN that handles the connection of participants (ACD agents) to the appropriate conference.

Furthermore, each conference is assigned a main DN and a chairperson DN, where the main DN is the number the participants dial to get into the conference and the chairperson DN is the number the chairperson dials. The DNs are configured in Meridian 1 at the time the MICB card is installed. The total number of DNs is equal to two times the number of simultaneous conferences to be allowed. For example, if there are ten conferences, there will be twenty DNs – ten main DNs and ten chairperson DNs. Each DN is configured in Meridian 1 as ACD DN or is assigned to the Phantom TN.

Joining the conference

When several conferences are active simultaneously in the same MICB card, the participant dials the DN assigned to a specific conference. The MICB card recognizes the dialed DN and routes the participant to the appropriate conference represented by that specific DN. All ports belonging to an MICB card are routed on the ACD queue to the appropriate conference through the ACD DN assigned to that MICB card. The chairperson dials the chairperson DN to access their specific conference. This number is different from the DN dialed when the participants are accessing that same conference.

The MICB performs DTMF detection on all MICB ports so that both the chairperson and the participants can enter certain commands. A conference can start without the chairperson, and if all allocated ports for a conference are occupied with participants, the chairperson cannot join the conference unless a port is specifically reserved for the chairperson or conference expansion is allowed and there are free, unscheduled (floating) ports available.

The first participant joining the conference hears an announcement that indicates that no other conferee has joined the conference yet, and this announcement is followed by 60 seconds of music. This announcement with 60 seconds of music is repeated continuously until at least one more participant joins the conference.

The MICB provides flexibility in configuring conferences. They can be configured as:

- pre-scheduled conference with fixed number of ports and fixed start and stop times
- pre-scheduled elastic conference with variable number of ports, where they are added when required (if available) and removed as people leave the conference
- permanent bridge with a fixed number of ports that can be used without pre-scheduling the conference

Expanding the conference

Allow or deny conference expansion by checking the appropriate box on the MICB Conference Reserver page. If allowed, the number of participants belonging to a conference can be expanded as long as there are remaining MICB ports that are both unassigned and unused.

When reserving the MICB ports for each simultaneous conference, specific ports are not tagged for a specific conference. The MICB counts the number of reserved ports and compares them against the total number of ports provided by the MICB card. It makes sure that the reserved ports do not exceed the total number of ports provided by the MICB card.

If the conference over-booking option is enabled, the total number of ports reserved for conferences can equal, but not exceed, 125% of the port capacity.

If there are problems in dialing for whatever reason (for example, the number is not treatable by the MICB card or the conference is fully attended), the MICB card issues an overflow tone and disconnects the call.

If unscheduled (floating) ports are released from a conference, they are immediately available for use by other conferences that have the expansion feature enabled.

The minimum duration of a conference is 15 minutes and the maximum duration of a time-limited conference is 12 hours.

Schedule conference starting times and conference durations in increments of 15 minutes.

Ending the conference

When a conference is scheduled, the conference's number of ports, start time, and duration are specified. The conference ends at the predetermined time, which is determined by the start time and conference duration. Ten minutes before the end of a conference, the MICB card issues an announcement warning the conferees that the conference must terminate in 10 minutes.

When the conference time is up, the MICB card issues the final warning to the conferees. The MICB also sends the release message to Meridian 1 for all the associated MICB ports. These ports now become available for the next pre-scheduled conference. If the ports are not scheduled, they become floating ports not reserved for any other conference and are available to expand conferences in progress.

Individual participants can leave a conference in progress at any time. The MICB detects a conferee leaving the conference and inserts an exit prefix announcement in the conference and the conferee's name is announced, if this feature is enabled.

A conference can begin and end two minutes before the specified time. This feature allows the system to close all terminating conferences two minutes earlier and start all conferences that should be started immediately after the terminating conferences are closed. This feature is important when terminating and starting conferences use some of the same DNs.

Chairperson's function

To become a chairperson, be the first to dial the chairperson DN. The chairperson can control conference activities by executing commands on a DTMF telephone. These commands consist of a star (*) followed by one or two digits. If only a star (*) is dialed, after 5 seconds the command times out.

Dual card conferences require two chairpersons, one for the primary card and one for the secondary card. The primary card chairperson can control conference activities only on the primary card. Therefore, a secondary card chairperson is necessary for controlling conference activities on the secondary card. One exception to this restriction is the Group Call-out feature. The primary chairperson can activate a group call-out to all participants in a dual card conference.

The following sections detail the chairperson commands.

Dial-out

The chairperson can dial out and call a new party outside of the conference, with the intention to confer only with the party, or to bring the party into the conference. To do this, the chairperson dials *0DN# to dial a party outside the conference, or *0# to access the operator. The chairperson can then decide to bring the party into the conference by dialing *2 or disconnect the call by dialing *3. If the wrong number is dialed, dial *3 and re-dial. To redial the last number dialed, the chairperson dials *#.

The MICB card selects the port for dialing out. The port is available if the number of ports reserved for the conference is greater than the number of conferees that have joined the conference. The port can also be available if all the reserved ports are occupied for that conference, but there are some un-reserved ports available on the MICB card and the port expansion feature is enabled for that conference. If all reserved ports are occupied and there are no unscheduled ports available, the call cannot be completed.

All ports mute/unmute toggle

The chairperson can place all conference participants on mute, excluding him or herself, by dialing *10. While on mute, the participants can still listen to the conference. To unmute the participants, the chairperson dials *10 again.

Because there is one command for mute and unmute, the system announces to the chairperson one of two possible voice messages: “All participants have been muted” or “All participants have been unmuted”. Only the chairperson hears the mute/unmute announcement.

Self mute/unmute toggle

Any conference participant, including the chairperson, can put himself or herself on mute by dialing *19. While on mute, the participant can still listen to the conference. To unmute, the participant dials *19 again.

Because there is one command for mute and unmute, the system announces to the participant one of two possible voice messages: “Muted” or “Unmuted”. Only the participant that activates the command hears the mute/unmute announcement.The mute/unmute command is available not only to those participants who enter the conference by dialling in, but also to those participants who are brought into the conference through the chairperson’s dial-out command.

Group call-out

Each MICB card supports up to 64 group call-out lists, each with up to 61 phone numbers. Each phone number can be up to twenty digits in length.

The administrator defines these lists through the web-based server. The information is saved on the MICB PCMCIA disk.

The administrator also defines the following three options for each group list:

- Wait time for an answer (range: 15 – 90 seconds), default is 30.
- Number of call attempts (range: 1 – 3), default is 1.
- Time period between attempts (range: 5 – 30 seconds), default is 10.

The chairperson on an active conference can call all members of a pre-defined group call-out list by dialing the following: *2 <group list number> #. The MICB dials out to all the phone numbers in the requested group call-out list simultaneously. If there are more than 31 numbers on the group call-out list, two MICB II cards must be involved.

When two MICB cards are involved in a group call-out, the primary card divides the group call-out list into two groups. The primary card dials one group of numbers and sends the second group, over the TCP/IP LAN, to the secondary card. The secondary card then dials the second group of numbers. Both groups of numbers are dialed simultaneously.

The MICB card dials out by allocating a free port and originating the call on it. The port is not connected to the meeting until the call is completed successfully. The MICB card needs an external input to indicate successful completion of the call. This input comes from the called party.

After the MICB card originates the call, it plays a specific prompt and keeps repeating it for a pre-defined number of seconds (determined by the administrator). In this time, the called party must respond by dialing star (*). When the MICB card detects the proper response, the MICB card connects the call to the meeting. If the MICB card does not detect the proper response after the pre-defined timeout time and the pre-defined number of retries, the MICB card disconnects the call.

The chairperson can enable connection of the called party to the conference without waiting for the calling party to dial (*). This option enables:

- attendance by users who do not have touch tone phones
- connection of multiple bridges to a single conference call by adding one bridge as a dial-out participant in the other.

To use this option, the Administrator sets "Confirm" option to "No" in the Group Calls dialog box. See Figure 27 “Group Calls administration page” on page 155. If the "Confirm" option is set to "Yes" the calling party is connected to the conference only after pressing the (*) key.

Group call-out is limited to the number of available ports on a conference. For example, if the chairperson uses a group call-out list that contains 61 numbers, and there are only 20 free ports available, the MICB card dials only the first 20 phone numbers of the list.

Lock or unlock the conference

The chairperson can lock the conference to prevent any new conferees from joining by dialing *4. The chairperson can unlock the conference by dialing *4 again and thereby allow new conferees to join the conference. A caller attempting to join a locked conference hears an announcement indicating that the conference is locked, and the call is disconnected. The chairperson can dial-out and include a conferee even if the conference is locked.

Because there is one command for lock and unlock, the system announces to the chairperson one of two possible voice messages: “Meeting is locked” or “Meeting is unlocked”. Only the chairperson hears the lock/unlock announcement.

Count conferees

The chairperson can execute one of two commands to count the conferees and play a list of all of the participants. With the execution of either of these commands, the MICB card issues a string of voice prompts, one for each conferee in the conference. If a new conferee joins the conference after the chairperson activates either command, the MICB card does not count that new conferee.

To announce the names of the conferees through either command, the conference scheduler must define an entry and exit indication that requires entry by name.

The two options for counting conferees are:

- Chairperson dials *60 to count the conferees and play the list of participants for *all* of the participants. When the list is over, the conference returns to normal state.
- Chairperson dials *69 to count the conferees and play the list of participants for *only* the chairperson. Dialing *69 puts the chairperson into a “scrolling state” where he or she can execute the following commands, as shown in Table 3.

Table 3
Chairperson commands

Chairperson dials...	In order to...
#	Stop and start the playlist (Chairperson must dial # after dialing *69 to start the playlist.)
0	Consult privately with the conferee
1	Mute/unmute the conferee
2	Announce the current conferee's name greeting
4	Select and announce the previous conferee
6	Select and announce the next conferee
9	Disconnect the current conferee
*3	Return to the conference
**	Start and stop the help menu

When the playlist is over, the MICB automatically returns the chairperson to the conference unless the chairperson dials #.

Drop all conferees

The chairperson can drop all conferees from the conference except the chairperson by dialing *90. No announcement is issued to the conferees before disconnecting them. The MICB card issues an announcement to the chairperson indicating that no conferees are connected to the conference, followed by 60 seconds of music. The conference is still active, so conferees can dial in again.

Drop last dialed conferee

The chairperson can drop the last conferee to join the conference through chairperson dial-out by dialing *91. The chairperson can drop the last conferee to dial in by dialing *92. These commands are not repeatable; that is, the chairperson can drop the last conferee to dial in but not the second-to-last to dial in. If the chairperson is the last to dial into the conference, the MICB card cannot execute the *92 command.

Conference duration expansion

The chairperson can expand the duration of a conference by 15 minutes by dialing *98. The chairperson receives the voice message, “Your meeting duration has been expanded” if the expansion is successful. If the duration expansion is not successful due to a lack of resources, such as ports or DNs that have already been reserved for other meetings, the chairperson receives the voice message, “Your meeting duration has not been expanded”.

The maximum conference duration, including all chairperson expansions, is 12 hours. The MICB card does not permit conference duration expansion to a conference that is scheduled to end within three minutes of the expansion request.

Chairperson help

The chairperson can access a help menu by dialing **. The help menu is a voice recording of all chairperson command options. The chairperson can stop the help menu before it finishes by dialing ** again.

The help command is sensitive to where the chairperson is in the command structure. For example, if the conference is in the normal active state, the chairperson hears the main list of commands after dialing **. If the chairperson dials out to someone and then dials **, the chairperson hears the list of commands relevant to dialing out. And if the chairperson dials *69 to count conferees, and then dials **, the chairperson hears the list of commands relevant to counting conferees.

Conferees can also dial ** to hear a list of command options available to conferees. Only the participant who dials **, whether the chairperson or a conferee, hears the relevant list of commands.

Summary of chairperson commands

Table 4 lists conference commands that one can execute on the telephone set while the conference is in progress.

Table 4
Conference commands (Part 1 of 2)

Chairperson Command	Description
*0<DN>#	Dials out to a DN (called party directory number, which is not a conference participant)
*0#	Dials out to the assistant DN
*#	Redials last dialed DN
*10	All ports mute/unmute toggle
*19	Self mute/unmute toggle
*2<GN>#	Group call-out, where GN is the group number to call
*2	Returns to the conference with dialed party
*3	Returns to the conference without dialed party
*4	Locks or unlocks the conference
*60	Counts conferees and plays list of participants and their port numbers to *all* participants
*69	Counts conferees and plays list of participants and their port numbers to chairperson *only*.
*90	Drops all ports except the chairperson's port
*91	Drops the last dialed-out port

Table 4
Conference commands (Part 2 of 2)

Chairperson Command	Description
*92	Drops the last dialed-in port
*98	Extends the conference by 15 minutes
*99	Stops or starts the initial conference music by the chairperson. This is possible only when the chairperson is the first person to join the conference. The first entry stops it, the second entry starts it.
*	Aborts current command
**	Starts or stops help menu
Conferee command	**Description**
*19	Self mute/unmute toggle
*99	Stops or starts the initial conference music. This is possible only when the conferee is the first person to join the conference. The first entry stops it, the second entry starts it.
*	Aborts current command
**	Starts or stops help menu

MICB capacity expansion

Each MICB card can be configured to provide a maximum of 12, 16, 24, or 32 ports. Dual card configurations are available in 42, 50, and 62 port options. To activate a different number of ports than are currently active, enter the CLI, access the General Administration commands *Functionality Upgrade* menu and select *Modify* to change the maximum number of ports available, and then *Save* to save the changes.

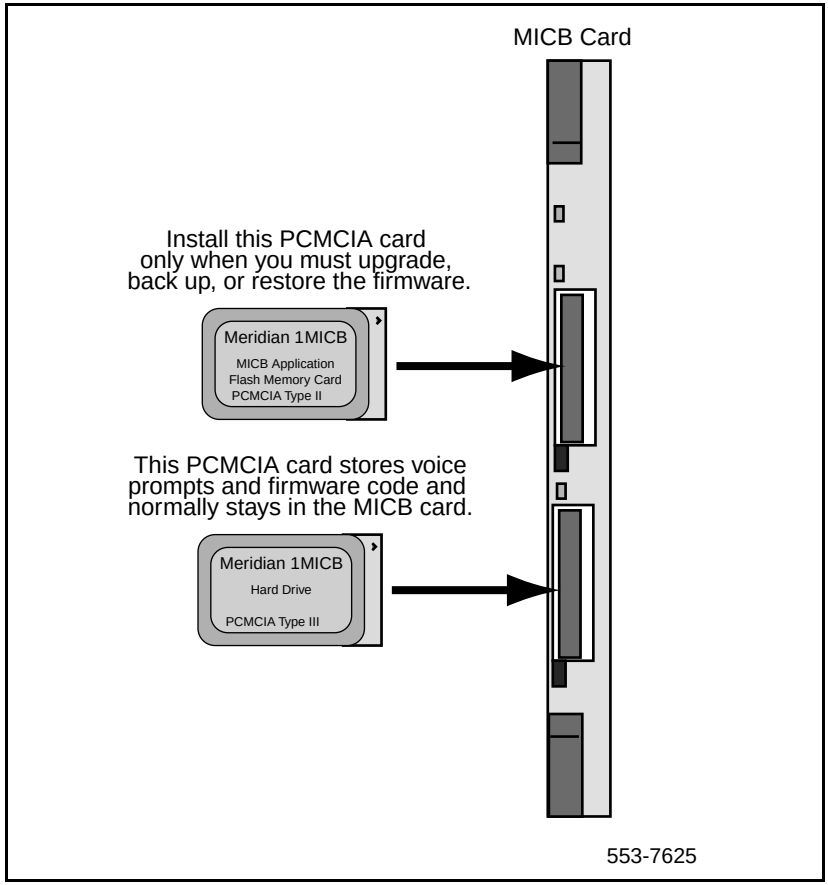
> ***Note:*** If expanding from a single card to a dual card configuration, an external server and the corresponding software (NT5G10) are also needed. For information on external web servers, refer to Engineering Guidelines: “External equipment requirements” on page 54.

After saving the changes, enter the correct keycode that allows the changes to occur. The keycode consists of 24 characters. Enter it in three sets of 8 digits each called key-code1, key-code2, and key-code3. Refer to “The Command Line Interface” on page 97 of this document for details.

External memory expansion, new voice announcements, and firmware upgrades occur by inserting a PCMCIA card into the top PCMCIA slot accessible through the MICB faceplate.

Figure 6 illustrates how PCMCIA cards are loaded into the MICB faceplate slots to upgrade the MICB capacity.

Figure 6
Installing a PCMCIA card into the MICB faceplate slot



Security

A keycode is implemented to protect against unlawful MICB feature usage, because industry-standard PCMCIA cards are used as the software medium on the MICB. All upgrades of either port capacity or application software are restricted to a given MICB card and are accurately tracked to allow for satisfactory handling of field repairs and incremental upgrades.

Security is required for the following upgrades:

- port capacity upgrades
- feature enhancements
- new applications

Security is not required for the following upgrades:

- backup and restore operations
- application patching/bug fixes

Nortel Networks provides the customer with a keycode to enable installation of any desired upgrade. Access the CLI to enter the keycode using the "Functionality Upgrade" option. See "Functionality Upgrade" on page 120. The keycode consists of 24 characters and is entered in three sets of 8 digits each called key-code1, key-code2, and key-code3.

Keycodes allow increased functionality on an existing application (for example, add extra ports) or can be used to provide new software (for example, add new pre-recorded announcements).

Engineering guidelines

Contents

This section contains information on the following topics:

Reference list

The following are the references in this section:

System Engineering (553-3001-151)

Capacity Engineering (553-3001-149)

Power Engineering (553-3001-152)

Summary of Transmission Parameters (553-2201-182)

Meridian 1 general system engineering guidelines are described in *System Engineering* (553-3001-151). The following information deals specifically with engineering guidelines for the MICB planning and implementation. For system integrity and standards, refer to Appendix B: "Product integrity" on page 207.

MICB real time impact

The MICB real time impact on the Meridian 1 system is comparable to a Digital Line Card (DLC), as the call holding time is longer for conference ports than for typical two-party calls. For more information on real time impact, refer to *Capacity Engineering* (553-3001-149).

System compatibility

Each MICB port emulates a digital set assigned to an ACD agent. All ports on an MICB card belong to an ACD queue, which is controlled by the ACD DN assigned to that specific MICB card. Conferees and chairpersons calling into their conferences are routed to the ACD queue if the ACD DN assigned to the MICB card is entered at the Night Call Forward (NCFW) prompt at the time the main and chairperson DNs are defined in LD 23. See "LD 23 – Assign the ACD DNs for the MICB card." on page 61. This programming is the same as that used for Meridian Mail.

MICB software provides for flexible voice and data TN features, allowing configuration of up to 32 ports per card.

MICB Release 2.X comes in port-size options of 12, 16, 24, 32, 42, 50, and 62 ports. Options of 42, 50, and 62 ports require the dual-card configuration, which involves connecting two MICB Release 2.X cards. Each card requires one slot in the IPE shelf.

The MICB is supported by the following systems:

- Meridian 1 options 11C, 51C, 61C, and 81C
- SL-100 systems

Table 5 lists the Meridian 1 modules and the card slots suitable for MICB installation.

Table 5
MICB installation into card slots in different IPE modules

Meridian 1 modules	MICB card slots
NT8D37BA/EC IPE modules, NT8D11BC/ED CE/PE modules	All available IPE card slots.
NT8D37AA/DC IPE modules	Slots 0, 4, 8, and 12
NT8D11AC/DC CE/PE modules	Slot 0

MICB cards in a dual card configuration *do not* need to reside next to each other in an IPE shelf. Software accomplishes the audio connections between the two cards. There is no hardware connection between the two cards.

Power requirements *do not* limit the number of MICB cards that can be placed in an IPE shelf. However, power requirements *do* limit the number of MICB cards in an Option 11 cabinet to six.

MICB Release 2.X requires access to a customer LAN. The MICB card connects to the LAN through the Ethernet adapter at the I/O panel. The customer manages conferences and users through a web server.

System resources

The use of system ACD resources must be considered. If applicable, review Incremental Software Management (ISM) for the specific Meridian 1 system option. Each MICB card requires an ACD DN that defines the ACD queue; each MICB port represents an ACD agent that requires a TN; and each potential conference requires two ACD DNs or two Phantom TNs.

For example, an MICB card in a single-card configuration that is configured to the maximum capacity of 32 ports and 10 simultaneous conferences requires the following system resources:

- 1 ACD DN assigned to the MICB card
- 32 TNs assigned to the 32 ports

- 20 ACD DNs or 20 Phantom TNs for dialing into the potential conferences
- Therefore, a total of 21 ACD DNs (or 1 ACD DN and 20 Phantom TNs) and 32 TNs required for a maximally configured MICB card

Note: To use the telephone user interface (TUI) to schedule conferences, an extra ACD DN or Phantom TN must be configured.

A 62-port dual-card configuration has the following system requirements:

- 1 NACD DN assigned to act as the main (conference) DN for a dual-card conference
- 20 ACD DNs for the primary card (1 DN to be the ACD DN for the card, 1 DN to be the primary card chairperson DN, and 18 DNs to handle 9 potential non-dual-card conferences) or 1 ACD DN for the card and 19 Phantom TNs for the chairperson and conferences
- 22 ACD DNs for the secondary card (1 DN to be the ACD DN for the card, 1 DN to be the secondary card chairperson DN, 18 DNs to handle 9 potential non-dual-card conferences, and 2 other DNs for dual-card conference purposes) or 1 ACD DN for the card and 21 Phantom TNs for chairperson and conferences
- 64 TNs assigned to the 64 ports on the dual-card configuration
- Therefore, a total of 1 NACD DN, 42 ACD DNs (or 2 ACD DNs and 40 Phantom TNs), and 64 TNs required for a maximally configured dual-card configuration

Note: To use the telephone user interface (TUI) to schedule conferences, an extra ACD DN for *each* card in the dual-card configuration must be configured.

These resources must be subtracted from the overall system resources and cannot be used for any other application as long as they are assigned for MICB use. Refer to “Engineering multiple simultaneous conferences” on page 51 for the system resource allocation.

If agent IDs are used on the system, remember that MICB must use successive agent IDs (for example 3000-3023 for 24 agent IDs). Ensure that a suitable block of agent IDs is available before assigning them.

Required software packages

In addition to the standard software, the system must be equipped with the following software packages:

- Automatic Call Distribution Package A (ACDA) package 45 – basic features
- Automatic Call Distribution Package B (ACDB) package 41 – advanced features
- M2000 Digital Sets (DSET) package 88
- End-to-End Signaling (EES) package 10 – required if chairperson calls locally within the same switch
- ACD Enhanced Overflow (EVOF) package 178 – optional, but required for the dual card configuration
- Call Detail Recording (CDR) package 4 – optional but required for billing
- Charge Account for CDR (CHG) package 23 – optional but required for billing
- Charge Account/Authorization Code Base (CAB) package 24 – optional but required for billing
- Phantom TN (PHTN) – optional, but required if Phantom TN is used

Engineering multiple simultaneous conferences

MICB Release 2.X can be configured to provide a maximum of 12, 16, 24, 32, 42, 50, or 62 ports. The dual card configuration is required for 42, 50, or 62 ports. To activate the selected number of maximum ports, a keycode consisting of 24 digits is required. Refer to “The Command Line Interface” on page 97 of this document for details.

For the list of MICB features and functions, refer to “MICB functional characteristics” on page 18.

To provide multiple simultaneous conferences on one MICB card, specify the following system resources:

1 Activate the maximum number of MICB ports required for the site. If the current number of active ports is sufficient to meet the requirements, or if all ports are enabled, skip this step.

2 Assign one ACD DN (automatic call distribution directory number including its queue and data block). One ACD DN is required for each MICB card.

3 Specify main and chairperson DNs (directory numbers) and their data blocks. All DNs should be accessible by DID trunks. To determine the number of DNs:

a. Determine the maximum number of simultaneous conferences to be scheduled on the MICB card.

Note: The more simultaneous conferences to be scheduled, the more system resources (that is, available DNs) consumed. Ten simultaneous conferences per MICB card is the maximum.

b. Multiply the number of conferences by 2 to determine the number of DNs required. Each conference requires 2 DNs - one for the chairperson and one that conferees call to access the conference. For example, 10 simultaneous conferences require 20 DNs. Each DN can be configured as an ACD DN or be assigned to a Phantom TN.

4 Assign TNs (terminal numbers) and corresponding digital set data blocks. Each configured MICB port appears as a digital set of an ACD agent. The number of TNs is equal to the maximum number of ports provided by the MICB card. For an MICB with 32 ports active, 32 TNs are required.

Environmental and power requirements

The environmental requirements for the MICB must meet or exceed the overall Meridian 1 system requirements. The power provided for each card slot in the IPE module exceeds the power requirements for an MICB. This means there is no power limitation for the number of MICB cards that can be placed in an IPE shelf.

Note: Power requirements limit the number of MICB cards in an Option 11C cabinet to six.

Environmental requirements

Table 6 shows the operating and storage environmental specifications. Ideally the system should operate in a stable environment at 22° C (72° F). However, the system is designed to operate in the temperature and humidity ranges specified in Table 6.

Table 6
Environmental requirements

Condition	Environmental specifications
Operating	
Temperature	0° to 40° C (32° to 104° F)
Relative humidity	5% to 90% noncondensing
Altitude	3,048 meters (10,000 feet) max
Storage	
Temperature	–40° to 70° C (–40° to 158° F)
Relative humidity	20% to 55% noncondensing

Power requirements

Power to the MICB is provided by the IPE module power supply (AC or DC). Refer to Table 7 for a display of the MICB power requirements and also to the *Power Engineering* (553-3001-152).

Table 7
MICB power requirements

Voltage	Source	Current
+5 V	Backplane	3.0 A
+15 V	Backplane	0.25 A
Total maximum power		18.75 W

The maximum IPE module per slot power budget is 30 Watts, with an effective limitation of 20 Watts for thermal compensation. The MICB card does not exceed the power allocated for each card slot in the IPE module. This means there is no power limitation for the number of MICB cards that can be placed in an IPE shelf.

Note: Power requirements limit the number of MICB cards in an Option 11C cabinet to six.

Table 8 lists the transmit and receive analog signal levels as measured at the transmitter output and receiver input in the MICB card.

Table 8
Voice signal level specifications

Signal Direction	Minimum Power	Maximum Power
Transmit signal	-55 dBm0	0 dBm0
Receive signal	-55 dBm0	0 dBm0

Note: For other signal characteristics, refer to *Summary of Transmission Parameters* (553-2201-182)

External equipment requirements

There are three interfaces available to interact with the MICB Release 2.X card. They are:

- The Command Line Interface (CLI), for performing initial setup and configuration, performing upgrades, and generating certain reports
- The Browser User Interface (BUI), which uses a common web browser to create and manage conferences and users
- The Telephone User Interface (TUI), which enables the scheduling of simple conferences over the telephone

The following sections describe the external equipment necessary to use each of these interfaces.

To access the CLI

A VT100 terminal or a personal computer emulating a terminal is used to perform certain MICB administration, configuration, maintenance, and diagnostic functions through the CLI.

For initial setup and configuration, connect the terminal to the MICB RS-232 interface or to the DB-9 connector on the NT5D52 Ethernet Adapter card installed on the I/O panel. For long-term administration and maintenance (through the CLI), telnet to the card over the LAN. Telneting requires the connection of the MICB card to the LAN through the RJ-45 jack on the Ethernet adapter.

The terminal interface must be set to 9600 baud, 8 data bits, 1 stop bit, and no parity. The flow control is hard wired. Never use XON/XOFF flow control.

To access the BUI

Access to the Browser User Interface (BUI) requires:

- a Local Area Network (LAN)
- a web server to house the BUI
- a web browser on a PC to access the BUI

LAN characteristics

Ethernet implementation over the MICB has the following LAN characteristics:

- The MICB Ethernet connection is separated from the external LAN traffic by a firewall.
- The Ethernet adapter options for MICB are:
  - NT5D52AC for the IPE module application
  - NT5D52BC for the Option 11C application
- The LAN administrator assigns the IP address for the MICB. The IP address is entered over the VT100 terminal during initial setup.

Web server characteristics

The web server houses the BUI and can be either an embedded web server or an external web server.

The embedded web server

is a web server that already resides on the MICB Release 2.X card. See Figure 1 on page 15. Setup of the embedded web server is simple and does not require any external equipment. The administrator assigns an IP address for the users to point their browsers to. The embedded web server supports the following user levels:

- a maximum of 100 total users configured for the card. If more than 100 users are configured for the card, the system returns an error message.
- a maximum of 10 simultaneous users of the BUI

Note: The embedded server option cannot be used with the dual-card configuration; the external server option must be used.

The external web server

The external web server option provides a means of managing up to ten MICB Release 2.X cards (with a maximum of 100 users per card) from a common point,. See Figure 2 on page 16. The external web server requires the following external equipment:

- a PC to act as the web server
- a CD-ROM that houses the web server software
- a hub to connect the MICB Release 2.X cards to the server

The PC has the following requirements:

- **Hardware requirements**
  - minimum of 200 MHz PC Pentium processor
  - minimum of 64 MB RAM
  - minimum of 1 GB for the hard drive
  - CD-ROM drive
- **Software requirements**
  - Windows NT 4.0 Server (or later)
  - Microsoft NT Service Pack 3 (or later)
  - Microsoft Internet Information Server 3.0 (or later)

The MICB Release 2.X package includes the CD-ROM when the external web server option is selected.

The administrator assigns an IP address to each MICB card *and* to the PC server. The users point their browsers to the server's IP address, and from there have easy access to each of the MICB cards in the network. With the external server option, the administrator logs in only once to access multiple cards. The external server option supports the following user levels:

- a maximum of 1000 users (with a maximum of 100 users per card) configured in any combination for the cards in the network. A user access can be assigned to one card only.
- a maximum of 50 simultaneous users of the BUI

Web browser characteristics

The BUI operates from a Java 1.1 level. One of the following web browsers is required on the PC:

- Netscape Communicator 4.5 (or later)
- Microsoft Internet Explorer 4.01 (or later) with Service Pack 1 (SP1)

To access the BUI, open the browser and enter the address of the MICB web server in the URL field. The web server address is **<MICB card IP address>/micb.htm** for an embedded server, or **<PC server IP address>/micb/micb.html** for an external server,

To access the TUI

To access the Telephone User Interface (TUI), use any DTMF telephone, either internal or external to the telephone system. The TUI uses a simple DTMF menu-driven system for scheduling simple conferences.

For TUI access, the administrator designates a DN in both the BUI and the system software. The administrator can choose to reserve a port for the TUI on the MICB card. If a port is reserved for the TUI, that port is not available for conferences. However, if a port is not reserved for the TUI, and all of the ports are in use for conferences, a user cannot access the TUI.

Installation and configuration

Contents

This section contains information on the following topics:

This chapter describes the installation and configuration of the Meridian Integrated Conference Bridge (MICB) card. It describes how to configure the system software, install the MICB card, connect the MICB card to a terminal for access to the Command Line Interface (CLI), and connect the MICB card to a web server for access to the Browser User Interface (BUI). It also describes the basic MICB card configuration procedures.

Configure the system software for the MICB

Prior to installing any of the MICB hardware, the system software can be configured for the MICB card(s) through the system TTY terminal. The Meridian 1 must have the optional software packages listed in “Required software packages” on page 51.

Task summary list

The following is a summary of the tasks in this section:

1 LD 23 – Define the ACD DN assigned to the MICB card.

2 Define DNs using either:

LD 23 – Define ACD DNs and assign them to the MICB card

or

LD 10 – Define Phantom TNs and forward them to the ACD DN assigned to the MICB card.

3 LD 11 – Configure MICB ports as digital sets.

4 LD 23 – Configure the main DN for dual card conferences.

LD 23 – Define the ACD DN assigned to the MICB card.

Prompt	Response	Description
REQ	NEW	Add new data.
TYPE	ACD	ACD data block.
CUST	xx	Customer number.
ACDN	xxxx	ACD DN assigned to the MICB card.
MAXP	32	Maximum number of ACD agent positions.

LD 23 – Assign the ACD DNs for the MICB card.

Prompt	Response	Description
REQ	NEW	New control data block.
TYPE	ACD	ACD data block.
CUST	xx	Customer number.
ACDN	xxxx	Conferee (main) or chairperson DN.
MAXP	1	Maximum number of ACD agent positions.
NCFW	xxxx	ACD DN assigned to MICB card.
Note: Repeat commands in this table for each ACD DN you wish to configure.		

Note: The number of DNs defined for each MICB card depends on the number of conferences and bridges specified on the card. A maximum of 10 conferences can be configured requiring 20 DNs, two for each conference. One DN is for the participants to call in (the main DN) and one DN is for the conference chairperson.

Defining Phantom TN blocks

A phantom TN can be used instead of ACD DNs to serve as chairperson DNs, conferees DNs and TUI DNs.

Enter the Meridian 1 definitions for the Phantom TN (Overlay 10).

1 The specific TN and DN vary by site.

Those variables are represented by "x" in the next figure.

2 CFXA is the Class of Service (CLS) that enables Call Forwarding.

3 The last four variables in the screen (under FTR) are the main ACD DNs in LD 23.

Figure 7 on page 63 shows the Meridian 1 definitions for the Phantom TN.

Figure 7
Phantom TN definitions (LD 10)

```
DES  MICB
TN   xxx   x   xx   xx       PHANTOM
TYPE 500
CDEN 4D
CUST 0
WRLS NO
DN   xxxx   x    MARP
AST  NO
IAPG 0
HUNT
TGAR 1
LDN  NO
NCOS 0
SGRP 0
RNPG 0
XLST
SCI  0
SCPW
SFLT NO
CAC  3
CLS     CTD   DTN   FBD   XFD   WTA  THFD  FND   HTD  ONS
  LPR   XRD   CWD   SWD   MWD   LPD  XHD   CCSD  LND  TVD
  CFTD  SFD   MRD   C6D  CNID   CLBD AUTU
  ICDD  CDMD  LLCN  EHTD  MCTD
  GPUD  DPUD  CFXA  ARND  OVDD  AGTD CLTD  LDTD  ASCD
  MBXD  CPFA  CPTA  HSPD  UDI   ACC  HBTD  DDGA  NAMA  MIND
  NRWD  NRCD  NROD  SPKD  CRD   PRSD MCRD
  EXRO  SHL   ABDD  CFHD  DNAA
  CWND  USRD  BNRD  OCHD  RTDD  FAXD
PLEV 02
AACS NO
MLWU_LANG  0
FTR  DCFW  12    <ACD  DN>
```

LD 11 – Configure MICB ports as digital sets

Prompt	Response	Description
REQ:	NEW	Add new data.
TYPE:	2616	Digital telephone set M2616.
TN	l s c	Terminal number of the MICB card, Options 51C, 61C, and 81C.
	s c	For Option 11C.
CUST	xx	Customer number.
CLS	FLXA VCE, WTA	ACD agent (Use FLXA).
KEY	0 ACD <ACD DN> <CLI> <pos ID>	ACD DN plus CLI plus position ID
KEY	1 SCR <any DN>	Line key
KEY	2 NRD	Not ready key
KEY	3 MSB	Make set busy key
KEY	4 TRN	Call transfer key
Note: The administrator should consider chairperson dial-out restrictions through the MICB ports to prevent international dial-out.		

Note: The number of virtual ACD agents of the ACD queue is equal to the number of MICB ports. For example, if 12 ports are enabled, 12 ACD agents must be defined. If the TN for the MICB card is specified as 28 0 6, then TNs for the 12 agents are specified as 28 0 6 0 through 28 0 6 11.

Figures 8 and 9 show a sample LD 20 printout of a built MICB port.

Figure 8
LD 20 MICB configuration (part 1 of 2)

```
>LD 20

PT0000
REQ: PRT
TYPE: TNB
TN   76 0 8 0
SPWD
DATE
PAGE
DES

DES  MICB
TN   076 0 08 00
TYPE 2616
CDEN 8D
CUST 0
AOM  0
FDN
TGAR 1
LDN  NO
NCOS 0
SGRP 0
RNPG 0
SCI  0
SSU
XLST 0
SCPW
CLS  CTD FBD WTA LPR MTD FND HTD ADD HFD
     MWD LMPN RMMD SMWD AAD IMD XHD IRD NID OLD VCE DRG1
     POD DSX VMD CMSD CCSD SWD LND CNDD
     CFTD SFD DDV CNID CDCA MSID DAPA BFED RCBD
```

Figure 9
LD 20 MICB configuration (part 2 of 2)

```
CPND_LANG ENG
HUNT
PLEV 02
SPID NONE
AST
IAPG 0
AACS NO
ITNA NO
DGRP
PRI  01
DNDR 0
KEY  00 ACD 4004 0  4939210
         AGN
     01 SCN 4939250 0     MARP
        CPND
          NAME MICB CHANNEL 0
          XPLN 14
          DISPLAY_FMT FIRST,LAST
     02 NRD
     03 MSB
     04 TRN
     05
     06
     07
     08
     09
     10
     11
     12
     13
     14
```

Configure DNs for a dual card conference

When a dual card conference is defined, two meetings are defined on two cards. Firstly, the meeting is booked on the primary card allocating the maximum free ports. Secondly, the meeting is booked on the secondary card allocating the rest of free ports for the dual card conference. The user defines the dual card conference only on the primary card.

When a user dials into a dual card conference, the call can terminate either on the primary or on the secondary card. Calls to the dual card conference main ACD DN are forwarded according to the ACD time overflow night table.

On both cards (primary and secondary), the user cannot use the dual card conference pair DNs for a simple meeting. Therefore 9 DNs are available for simple meeting and bridges.

For a dual card configuration, one card functions as the *primary* card and the other as the *secondary* card. For each card, an ACD data block with an ACD DN must be defined in LD 23, as shown in"LD 23 – Define the ACD DN assigned to the MICB card." on page 61.

For the primary card, configure the following DNs:

- DN pairs (up to 9) – These pairs serve as chairperson and conferee DNs for single-card conferences (less than 32 ports) on the primary card.
- TUI DN – This is the DN that users dial to set up single-card conferences on the primary card. There is no need to configure this DN if the TUI will not be used.
- Primary chairperson DN – This is the DN that the primary chairperson of a dual card conference dials to enter a dual card conference. This DN must be configured for dual card setup.

Therefore, for the primary card, up to 20 DNs can be configured in LD 23 that Night Call Forward (NCFW) to the ACD DN of the primary card.

For the secondary card, configure the following DNs:

- DN pairs (up to 9) – These pairs serve as chairperson and conferee DNs for single-card conferences (less than 32 ports) on the secondary card.

- TUI DN – This is the DN that users dial to set up single-card conferences on the secondary card. There is no need to configure this DN if the TUI will not be used.
- Transfer DN – This is the DN that transfers dual card conference participants from the primary card to the secondary card when the primary card reaches capacity. (The primary card fills up first in a dual card conference.) This DN must be configured for dual card setup.
- Link DN – This is the DN the creates a speech path between the primary card and the secondary card for dual card conferences. This DN must be configured for dual card setup.
- Secondary chairperson DN – This is the DN that the secondary chairperson of a dual card conference dials to enter a dual card conference. This DN must be configured for dual card setup.

Therefore, for the secondary card, up to 22 DNs can be configured in LD 23 that Night Call Forward (NCFW) to the ACD DN of the secondary card.

The main DN must also be configured for the dual card conference. The main DN is the DN that conferees dial to enter the dual card conference. When the conferees dial the main DN, the main DN forward them to the ACD queue of the primary card. When the primary card becomes full, the transfer DN transfers further conferees to the secondary card. To configure the main DN for dual card conferences, refer to “LD 23 – Configure the main DN for dual card conferences” on page 69.

LD 23 – Configure the main DN for dual card conferences

Prompt	Response	Description
REQ	NEW	Add new data.
TYPE	ACD	ACD data block.
CUST	xx	Customer number.
ACDN	xxxx	The main DN for dual card conferences.
MAXP	1	Maximum number of ACD agent positions.
Note: Carriage return to the end and start again.		
REQ	NEW	New control data block
TYPE	NACD	Network ACD data block
CUST	xx	Customer number
ACDN	xxxx	The main DN for dual card conferences
TABL	N	Night time overflow table
- TRGT	xxxx 0	xxxx is the ACD DN of the *primary* card. 0 is the time, in seconds, for an immediate transfer to the primary card.
- TRGT	yyyy 2	yyyy is the ACD DN of the *secondary* card. 2 is the time, in seconds, for a delayed transfer to the secondary card.

Table 9 shows a sample dialing plan for a 62-port dual card configuration.

Table 9
Sample dialing plan for a 62-port dual card configuration

Table 10

Description of DNs	DNs for the primary card	DNs for the secondary card	Configure in...
ACD DN	7000	8000	LD 23
Pair DNs for single-card conferences	7001-7018 (NCFW=7000 in LD 23)	8001-8018 (NCFW=8000 in LD 23)	LD 23
TUI DNs	7019 (NCFW=7000)	8019 (NCFW=8000)	LD 23
Chairperson DNs	7020 (NCFW=7000)	8020 (NCFW=8000)	LD 23
Transfer DN	N/A	8021 (NCFW=8000)	LD 23
Link DN	N/A	8022 (NCFW=8000)	LD 23
Main DN	7021(TRGT=7000 0)	7021 (TRGT=8000 2)	LD 23

Note: Because of the number and variety of DNs that are programmed for the dual card setup, it is recommended that a dialing plan chart similar to Table 9 be created. Refer to this chart when configuring the primary and secondary card attributes, including the dual card settings, in the administration BUI.

Finally, also configure each port on the primary and secondary cards as a digital set. Refer to “LD 11 – Configure MICB ports as digital sets” on page 64.

Install the MICB hardware

The MICB can be installed into any Meridian 1 system that supports all 32 MICB ports per card, or which supports a maximum of 16 MICB ports per card.

Task summary list

The following is a summary of the tasks in this section:

1 Prepare the installation site

2 Unpack and inspect the MICB card

3 Take inventory

4 Install the Ethernet Adapter

5 Connect the terminal to an MICB card in the IPE module

6 Install MICB cards

7 Connect the terminal to the Option 11C cabinet

8 Prepare for dual card installation

9 Connect the external web server

10 Enable the MICB card

Prepare the installation site

The preparation consists of unpacking and inspecting components, taking inventory, and locating the IPE card slot(s) where the MICB card(s) is to be installed.

Unpack and inspect the MICB card

Unpack and inspect the equipment for damage. When unpacking, follow general precautions recommended by computer and telephone equipment manufacturers:

- Remove from the installation site items that generate static charge.
- Use antistatic spray if the site is carpeted.
- Be grounded properly before handling any equipment.

- Remove equipment carefully from its packaging.
- Visually inspect the equipment for obvious faults or damage. Report any damaged component to the sales representative and the carrier who delivered the equipment.

Take inventory

After the equipment is unpacked and visually inspected, verify that all the equipment is at the site before the installation begins. Check equipment received against the shipping documents. Note any shortages and report them to the sales representative.

Install the Ethernet Adapter

To install the Ethernet Adapter on to the Option 11C tip/ring connector:

1 Identify the 50-pin tip/ring connector at the bottom of the cabinet, which corresponds to the card slot position where the MICB will be installed.

2 Plug the 50-pin connector on the NT5D52BC Ethernet Adapter into the 50-pin tip/ring connector on the Option 11C cabinet.

3 Secure the Ethernet Adapter to the cabinet.

To install the Ethernet Adapter on the IPE module I/O panel:

1 Remove the cover plate from the I/O panel at the rear of the IPE module.

2 Lift the I/O panel from the module by removing all the retaining screws.

3 Disconnect the backplane cable 50-pin connector from the I/O panel filter connector.

4 Remove the existing filter connector from the I/O panel and save the retaining screws. This filter connector corresponds to the card slot designated for the MICB card installation.

5 Install the NT5D52AC Ethernet Adapter into the designated I/O panel connector cutout using the saved retaining screws.

6 Secure the I/O panel onto the module using the retaining screws previously removed. Replace the module's cover plate.

Connect the terminal to an MICB card in the IPE module

Connect the MICB terminal locally using a direct cable connection or remotely using a modem connection to provide access to the Command Line Interface (CLI) on the MICB card. The terminal can be connected to the MICB as a:

- local connection through the Ethernet Adapter DB-9 connector using a cable and a nullmodem
- remote connection through the Ethernet Adapter DB-9 connector using a cable and a modem for remote access
- remote multi-terminal (telnet) connection through the Ethernet Adapter RJ-45 jack and a RJ-45 modular cable to the Ethernet hub

Note: This final option is not possible until the card is initialized and has an IP address.

Local terminal connection through Ethernet Adapter

To connect a local terminal through the NT5D52AB Ethernet Adapter, connect the Ethernet Adapter DB-9 connector to the terminal using a direct cable. Refer to Figure 10 on page 75 for the connection illustration.

1 Position the terminal on a desk near the system.

2 Verify that the Ethernet Adapter has been installed onto the I/O panel as described in “Install the Ethernet Adapter” on page 72.

3 Plug the terminal cable DB-9 female connector into the DB-9 male connector on the Ethernet Adapter on the I/O panel.

4 Plug the DB-9 or DB-25 male connector at the other end of the terminal cable into the RS-232 connector on the terminal. (No nullmodem is necessary.) If the connection requires a gender changer, get one at a local electronics store. Refer to “Configure the VT100 terminal for CLI access” on page 86 for further information.

Remote terminal connection using Ethernet Adapter and modem

Remote terminal connection can be established by connecting the DB-9 Ethernet Adapter connector through a modem to a distant terminal. Refer to Figure 10 on page 75 for the connection illustration.

1. Verify that the Ethernet Adapter has been installed onto the I/O panel as described in “Install the Ethernet Adapter” on page 72.
2. Plug the terminal cable DB-9 female connector into the DB-9 male connector on the Ethernet Adapter on the I/O panel.
3. Plug the DB-25 male connector at the other end of the terminal cable into the DB-25 female connector of the DB-25F/DB-25M nullmodem adapter.
4. Plug the DB-25 male connector of the nullmodem adapter DB-25F/DB-25M into the DB-25 female connector on the modem.
5. Plug the modular modem cable RJ11 plug into the RJ11 jack on the modem.
6. Plug the other end of the modular modem cable RJ11 plug into the RJ11 jack on the wall.

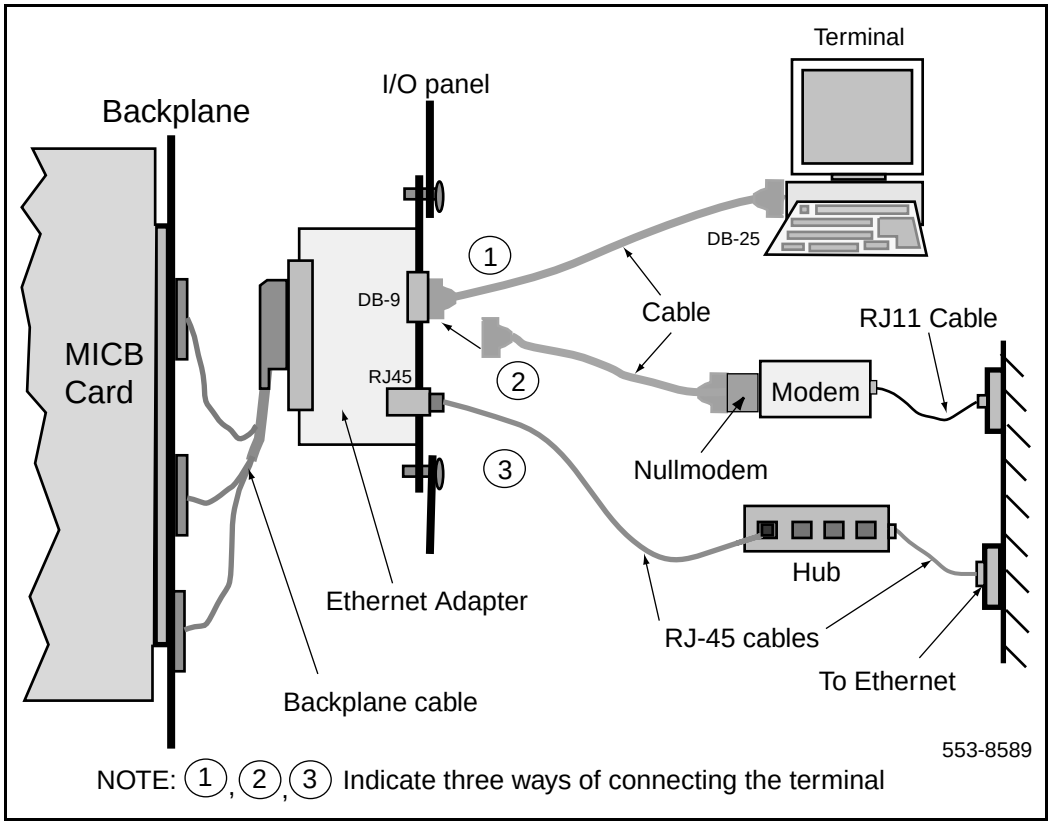
Remote multi-terminal connection through Ethernet

The MICB card can be accessed from multiple terminals through the Ethernet. See Figure 10 on page 75 for the connection illustration.

1. Verify that the Ethernet Adapter has been installed onto the I/O panel as described in “Install the Ethernet Adapter” on page 72.
2. Insert the modular cable RJ-45 plug into the RJ-45 jack on the Ethernet Adapter.
3. Insert the RJ-45 plug at the other end of the modular cable into the Ethernet hub.
4. Make the rest of the Ethernet connections as required using standard Ethernet connection rules.

Figure 10 illustrates the I/O connector bracket connection to the MICB card, the terminal, and the Ethernet.

Figure 10
Terminal connection through the Ethernet Adapter



Install MICB cards

Follow this procedure to install the MICB cards:

1. Identify the IPE card slots selected for MICB card(s). See Table 5, “MICB installation into card slots in different IPE modules,” on page 49.
2. Pull the top and bottom extractors away from the MICB faceplate.
3. Ensure that the PCMCIA hard drive card is properly seated in the lower faceplate PCMCIA slot.
4. Insert the MICB card into the card guides and gently push it until it makes contact with the backplane connector.
5. Push the top and the bottom extractors firmly towards the faceplate to insert the MICB card into the faceplate connector and to lock it firmly in place.
6. Observe the red LED at the top of the faceplate (the card LED). This LED blinks three times after the self-test is successfully completed and stays on until the MICB software is enabled.
7. Repeat steps 1 through 6 for each additional MICB card.

Connect the terminal to the Option 11C cabinet

To access the Command Line Interface (CLI) on the MICB card, connect the MICB terminal locally using a direct cable connection or remotely using a modem connection. The terminal can be connected to the MICB as a:

- local connection through the Ethernet Adapter DB-9 connector using a cable and a nullmodem
- remote connection through the Ethernet Adapter DB-9 connector using a cable and a modem for remote access
- remote multi-terminal access through the Ethernet Adapter RJ-45 jack and a RJ-45 modular cable to the Ethernet hub

Note: This final option is not possible until the card is initialized and has an IP address.

Local terminal connection through Ethernet Adapter

To connect a local terminal through the Ethernet Adapter on the Option 11C, connect the Ethernet Adapter DB-9 connector to the terminal using a direct cable. Refer to Figure 10 “Terminal connection through the Ethernet Adapter” on page 75 for the connection illustration.

1 Position the terminal on a desk near the system.

2 Verify that the Ethernet Adapter has been installed onto the Option 11C.

3 Plug the terminal cable DB-9 female connector into the DB-9 male connector on the Ethernet Adapter on the I/O panel.

4 Plug the DB-25 male connector at the other end of the terminal cable, into the RS-232 connector on the terminal. (No nullmodem is necessary.) If the connection requires a gender changer, get one at a local electronics store.

Remote terminal connection using Ethernet Adapter and modem

Remote terminal connection to the Option 11C can be established by connecting the DB-9 Ethernet Adapter connector through a modem to a distant terminal. Refer to Figure 10 “Terminal connection through the Ethernet Adapter” on page 75 for the connection illustration.

1. Verify that the Ethernet Adapter has been installed onto the Option 11C system.
2. Plug the terminal cable DB-9 female connector into the DB-9 male connector on the Ethernet Adapter on the I/O panel.
3. Plug the DB-25 male connector at the other end of the terminal cable into the DB-25 female connector of the DB-25F/DB-25M nullmodem adapter.
4. Plug the DB-25 male connector of the nullmodem adapter DB-25F/DB-25M into the DB-25 female connector on the modem.
5. Insert the modular cable RJ11 plug into the RJ11 jack on the modem.
6. Insert the other end of the modular modem cable RJ11 plug into the RJ11 jack on the wall.

Refer to Table 2 “DB-9 RS-232 port pin out” on page 25.

Remote multi-terminal connection through Ethernet

The MICB card in the Option 11C can be accessed from multiple terminals through the Ethernet. Refer to Figure 10 “Terminal connection through the Ethernet Adapter” on page 75 for the connection illustration.

1. Verify that the Ethernet Adapter has been installed into the Option 11C.
2. Insert the modular cable RJ-45 plug into the RJ-45 jack on the Ethernet Adapter.
3. Insert the RJ-45 plug at the other end of the modular cable into the Ethernet hub.
4. Make the rest of the Ethernet connections as required using standard Ethernet connection rules.

Prepare for dual card installation

A new feature of the MICB Release 2.X is the ability to combine two MICB Release 2.X cards in a "dual card configuration". This enables a single conference to take place on two cards and have up to 62 participants. In the dual card configuration, one card is defined as the primary card and the other as the secondary card. Each of these cards can host "single-card conferences" of three to 32 participants; or a "dual card conference" can be scheduled, which occupies ports on both cards.

Note: MICB cards in a dual card configuration *do not* need to reside next to each other in an IPE shelf. Software accomplishes the audio connections between the two cards. There is no hardware connection between the two cards.

To set up a dual card configuration, follow this procedure:

1 Install the two cards and their ethernet adapters the same as for normal, single-card installation. Refer to "Install the Ethernet Adapter" on page 72 and "Install MICB cards" on page 76.

2 Enable the two cards through LD 32. Refer to "Enable the MICB card" on page 85.

3 For each card, connect a VT100 terminal to the card and enter the keycode information, including the appropriate number of ports. Wait for each card to verify the keycode information.

4 For each card, log into the card through the CLI (default login: **admin**), and enter the following:

the subnet mask, the gateway address, and the IP address (in the System Attributes Editor—enter **sa** then **sy**)

Note: After entering the Ethernet information, the CLI asks if the card is to be restarted. Select **No** at this point.

"EXTSRV" for the external server configuration (in the Modify Software Functionality – enter **pa** then **sf**)

Note: After selecting the external server configuration (EXTSRV), the CLI asks if the card is to be restarted. Select **Yes**.

5 From a PC terminal, “ping” each MICB card to ensure that they have a proper connection to the LAN. To ping an IP card, do the following:

— Click on the **Start** button and select **Run** from the Start Menu.

— In the “Open:” field, enter “ping <IP address>” where <IP address> is the IP address of one of the MICB cards.

— Click the **OK** button, and the DOS window opens.

If the message, “Reply from <IP address>...” is received, the LAN connection is set up properly. If the message, “Request timed out.” is received, there is a problem with the LAN connection.

6 Configure the DNs for the dual card configuration. Refer to ““Configure DNs for a dual card conference” on page 67 for detailed instructions.

7 Configure each port on the two cards as a digital set. Refer to “LD 11 – Configure MICB ports as digital sets” on page 64 for detailed instructions.

8 Set up the external server. Refer to ““Connect the external web server” on page 83 for detailed instructions.

9 Open up the web browser on the PC. In the URL field of the browser, enter the following: **<server IP address>/MCPO/micb.html**. <server IP address> is the IP address of the external server.

10 Log into the BUI on the external server (defaults: **admin** and **000000**) and select the Cards page of the MICB Administration Utility. See Figure 24 “MICB Administration Utility, Cards page” on page 145.

Note: Refer to “Cards administration” on page 146 for details on configuring a card’s parameters.

11 Click on an empty field in the 'Card Name' list and enter the card name and card ID for the primary card. Enter the primary card's IP address in the card details section. Click **Apply**. This establishes the external server's connection to the primary card.

For example:

Card Name: Rega_Secondary
Character limits for Card Name: 15 characters
Character limits for Card ID: 4 characters

12 Click on **Display Details** and enter the rest of the attributes for the primary card, including the card type as "Primary", the TUI DN (if applicable), and the DN pairs for single-card conferences. Click **Apply**.

Note: Do not set the "Dual Card Settings" yet. The secondary card's attributes must be defined first.

13 Click on another empty field in the 'Card Name' list and enter the card name and card ID for the *secondary* card. Enter the secondary card's IP address in the card details section. Click **Apply**. This establishes the external server's connection to the secondary card.

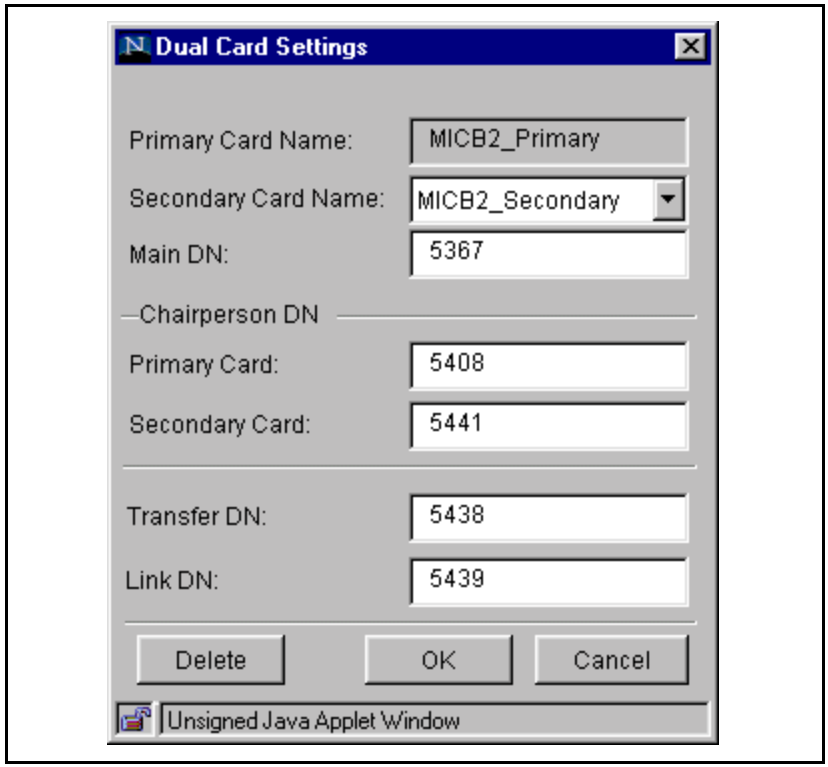
14 Click on **Display Details** and enter the rest of the attributes for the secondary card, including the card type as "Secondary", the TUI DN (if applicable), and the DN pairs for single-card conferences. Click **Apply**.

15 Click on the primary card's name in the 'Card Name' list and click on the **Display Details** button. Click on the **Dual Card Settings...** button to open the "Dual Card Settings" dialog box. Select the 'Secondary Card Name' from the combo box. Enter the main DN, the primary and secondary chairperson DNs, the transfer DN, and the link DN that you configured on the system in step 6. Click **OK** to save these parameters and close the dialog box. Figure 11 "Sample dual card settings" on page 82 shows an example of "Dual Card Settings..." for a primary card.

16 At the top-left of the MICB Administration Utility, click on the **Properties** button to open the "System Properties" dialog box. See Figure 29 "System Properties dialog box" on page 160. Enter the 'Mail server IP address' and click **OK** to establish email notification to users.

Note: For email notification to work, the mail server IP address *must* be 'unrestricted' and able to send email to everyone on the network.

Figure 11
Sample dual card settings



17 Define users for the cards as “Users administration” on page 150 describes. Users can then begin scheduling dual card conferences.

Connect the external web server

The external server configuration supports up to 1000 users (a maximum of 100 users per card) and 50 simultaneous users. The server software must be downloaded to an external server via a CD-ROM. The external server is a PC with the following specifications:

- **Hardware requirements**
  - — minimum of 200 MHz PC Pentium processor
  - — minimum of 64 MB RAM
  - — minimum of 1 GB for the hard drive
  - — CD-ROM drive
- **Software requirements**
  - — Windows NT 4.0 Server (or later)
  - — Microsoft NT Service Pack 3 (or later)
  - — Microsoft Internet Information Server 3.0 (or later)

Note: The external server configuration must be used to link two MICB cards together for a 62-port configuration.

External server setup

To set up the external web server, follow this procedure:

1. Obtain an IP address for the PC from the network administrator. Know or obtain the IP addresses for the MICB cards that the server will serve.
2. Connect the PC to the LAN and start the PC.
3. Place the MICB Server CD-ROM in the CD-ROM drive or the server. Wait for the “MICB Server Setup” window. The setup program runs automatically.

4 Follow the instructions until the setup program finishes. For example:

— At the “Welcome” window, click **Next** to continue.

— At the “Choose Destination Location...” window, click **Next** to continue.

— At the “Information” window, click **OK**.

At this point, setup is complete.

5 Start the MICB Server program in *one* of the *three* following ways:

— Select **Start->Programs->MiCB Server Application->MICB Server** from the server desktop.

— ‘In the “C:\WINDOWS\Start Menu\Programs\MICB Server Application” window, double-click on the “MICB Server” icon.

— Restart the PC. The MICB Server program runs automatically after the PC is restarted.

6 Minimize the “MICB Server” window. DO NOT close the window, because the program must run at all times. Any other windows that are open can be closed.

Configure cards and users through the external server

Once the MICB Server program is set up and running, follow this procedure to configure cards and users through the external server:

1 Run the browser, either Netscape or Internet Explorer.

2 In the URL field, type: **http://<server IP address>/micb/micb.html**, where **<server IP address>** is the IP address of the external server.

3 Login as administrator. The default login ID and password are **admin** and **000000** (six zeros), respectively.

4 Define all available cards and users. For more information, refer to “Cards administration” on page 146 and “Users administration” on page 150.

Upgrade the MICB PC server

To upgrade the external server to a new release, do the following:

1. Shut down the MICB Server program.
2. Place the upgrade CD-ROM in the CD-ROM drive of the PC server.
3. Follow steps 4-6 of the external server setup procedure. See "External server setup" on page 83.

   Note: If the "ComponentMoveData Error Information" message is received during setup, the MICB Server program is running. Close the MICB Server window and start the setup again.

Enable the MICB card

To enable the MICB, load the Network and PE Diagnostic program LD 32 into the system memory using the system TTY.

For Options 51C, 61C, and 81C, execute the **ENLC l s c** command, where **l** is the loop, **s** is the module or shelf, and **c** is the card to be enabled.

For Option 11C, execute the **ENLC s c** command, where **s** is the module or shelf, and **c** is the card to be enabled.

Note: It takes approximately 1.5 minutes for all ports to go to the idle state.

Configure the MICB parameters

Task summary list

The following is a summary of the tasks in this section:

1. Configure the VT100 terminal for CLI access
2. Enter the keycode information
3. Set the LAN parameters
4. Define card and user details through the BUI

   Note: "The Browser User Interface" on page 139 describes the use of the BUI in configuring and administering all MICB conference functions.

Configure the VT100 terminal for CLI access

To access the CLI, a VT100-type terminal must be used. Refer to "Connect the terminal to an MICB card in the IPE module" on page 73 or "Connect the terminal to the Option 11C cabinet" on page 77 for instructions on connecting the VT100 terminal to the MICB. Specify the VT100-type terminal interface characteristics to ensure compatibility with the MICB RS-232 interface.

Set the interface parameters as follows:

- Transmission speed: 9600 bps
- Data bits: 8
- Stop bit: 1
- Parity: No
- Flow control: none

Note: Do not use XON/XFF flow control.

Enter the keycode information

When first connecting a VT100 terminal to the MICB card, the CLI appears and prompts for keycode information. To enter the keycode information, do the following:

1 At the "Modify, Save, Cancel:" prompt, enter **m** to **Modify**.

2 At the "max conf_ports (0):" prompt, enter the number of ports that corresponds to the MICB Release 2.X keycode (for example, 32).

3 At the "Card Feature (BASIC, (1-ADVANCED)):" prompt, press **Return** for BASIC functionality.

Note: The ADVANCED option is in place for future call accounting capability. This capability is not available at the time of the printing of this document.

4 At the "Modify, Save, Cancel:" prompt, enter **s** to **Save** the modifications.

5 At the keycode prompts, enter "key-code1", "key-code2", and "key-code3" (eight characters each) for MICB Release 2.X functionality.

Set the LAN parameters

If the keycode entry is successful, the CLI notes this, and presents a login prompt. To enter the LAN parameters for the MICB, follow this procedure:

1 Once the system successfully registers the MICB Release 2.X keycode, enter **admin** to log into the CLI as administrator.

2 At the “SAdmin, SMint, PAdmin, PMaint, RGen, LOgout, ?:” prompt, enter **sa** to access **System Administration**.

3 At the “SYstem, REcorder, ?:” prompt, enter **sy** to access **System Attributes**.

4 Enter the system attributes of the MICB Release 2.X card, including the IP address, gateway, and subnet mask. Refer to “System Attributes Editor” on page 107 for details.

5 At the “Modify, Save, Cancel:” prompt, enter **s** to **Save** the system attributes.

Note: If connecting your MICB to an external web server, the external server option (EXTSRV) must also be selected. This option is available in the Modify Software Functionality section in the CLI. Refer to ““Modify Software Functionality” on page 122 for more information.

6 At the “Restart MICB?” prompt, enter **Yes**.

7 From a PC terminal, “ping” the MICB card to ensure that it has a proper connection to the LAN. To ping an MICB card, follow this procedure:

— Click on the **Start** button and select **Run** from the Start Menu.

— In the “Open:” field, enter “**ping <IP address>**” where <IP address> is the IP address of the MICB card.

— Click the **OK** button, and observe the DOS window that opens.

If the message, “Reply from <IP address>...” is received, you have set up the LAN connection properly. If the message, “Request timed out.” is received, there is a problem with the LAN connection.

Define card and user details through the BUI

The Browser User Interface (BUI) can now be accessed to configure card attributes, users, and conferences. To access the BUI, one of the following web browsers must be on the PC:

- Netscape Communicator 4.5 (or later)
- Microsoft Internet Explorer 4.01 (or later) with Service Pack 1 (SP1)

Before conferences on an MICB card can be administered, first define the card's details through the BUI. To define an MICB Release 2.X card's details, follow this procedure:

1 Open the web browser on the PC, and enter the following in URL field:

<MICB card IP address>/micb.htm for an embedded server, or **<PC server IP address>/micb/micb.html** for an external server,

and press **Return**.

2 At the MICB Release 2.X login page, enter **admin** for the login and **000000** (six zeros) for the password. This brings up the MICB Administration Utility. See "Abnormal BUI operation" on page 177.

3 Click on the **Cards** tab of the MICB Administration Utility to configure card attributes.

4 Click on an open field in the "Card Name" column and enter a name for the card, up to 20 characters.

Note: If a card name was entered in the System Attributes of the CLI, *and* the embedded server option is being used, the name of the card will already be in the "Card Name" column.

5 Click on the "Card ID" field next to the card name and enter the appropriate card ID.

6 Click on the **Display Details** button at the bottom-left of the screen. This displays (at the right side of the screen) the details of the selected card.

Note: If using the embedded server option, certain details of the card already appear at the right, such as hardware and software information and the card's IP address.

7 In the card details section, enter the appropriate details for the selected card, including the card type, the TUI DN, and the conference DN pairs.

Note: If you using the external server option, first enter the card's IP address and select the appropriate card type; then click **Apply**. This establishes the external server's connection to the card. Then proceed to configure the rest of the card attributes.

8 Configure any necessary **Group Calls** and **Weekdays** settings.

9 Program any permanent bridges from the original MICB in the **Permanent Conferences** settings.

10 Click **Apply** to save all of the card attributes.

11 At the top-left of the MICB Administration Utility, click on the **Properties** button to open the "System Properties" dialog box. See Figure 29 "System Properties dialog box" on page 160. Enter the 'Mail server IP address' and click **OK** to establish email notification to users.

Note: For email notification to work, the mail server IP address *must* be 'unrestricted' and able to send email to everyone on the network.

12 Click on the **Users** tab of the MICB Administration Utility to configure users for the MICB card.

13 Click **Apply** after defining each user, to save all of the user attributes.

14 Notify the users of their user (login) ID and passwords so that they can access the BUI and TUI.

Note: Refer to "Cards administration" on page 146 and "Users administration" on page 150 for further details.

Users can now access the BUI and the TUI to define and manage conferences.

MICB password security

To protect functional and software upgrades, the MICB provides the *Protected Administration* menu, accessible in the CLI. This menu allows password editing, and functional and software upgrades.

For details of how to upgrade the MICB functions and software, refer to "Protected Administration menu" on page 118.

Upgrade the MICB to MICB Release 2.X

This section describes how to upgrade the original MICB to the new MICB Release 2.X. The upgrade to MICB Release 2.X requires the following:

- the new NT5D51AC card, if using the older NT5D51AA card. (The NT5D51AC card supports MICB Release 2.X.)
- an Ethernet adapter cable – NT5D52AC for IPE modules and NT5D52BC for Option 11C systems. (Order this if one is not available.)
- an NT5D62BC PCMCIA disk (NT1438BC in Europe), which comes with the upgrade kit
- a new keycode to activate MICB Release 2.X functionality, which comes with the upgrade kit

Task summary list

The following is a summary of the tasks in this section:

1 Procedure 1 – upgrade the hardware

2 Procedure 2 – enter the keycode information in the CLI

3 Procedure 3 – configure the system attributes in the CLI

4 Procedure 4 – configure the card attributes in the BUI

5 Procedure 5 – configure the users in the BUI

6 Procedure 6 – configure the conferences in the BUI

Procedure 1 – upgrade the hardware

1 Access the MICB Command Line Interface (CLI) and print out or make note of *all* scheduled conferences and permanent (“forever”) bridges.

Note 1: The scheduled conferences and permanent bridges must be entered as part of the upgrade process; this information does not transfer during the upgrade.

2 Make note of the MICB card’s IP address, Gateway, and subnet mask.

Note 1: If the original MICB is connected to the LAN, get this information from the "System Attributes" in the CLI. Refer to "System Administration menu" on page 106.

Note 2: If the original MICB was not connected to the LAN, get this information from the network administrator.

Note 3: Connect MICB Release 2.X to the LAN for BUI access. Enter (or re-enter) this Ethernet information as part of the upgrade process.

3 If not already done, connect the Ethernet adapter to the I/O panel and the LAN. Refer to "Install the Ethernet Adapter" on page 72 for instructions.

4 Log into LD 32 from the system terminal. Disable the original MICB pack with the DISC command.

5 Remove the original MICB card from the module.

If the original MICB used the NT5D51AC card, replace the NT5D62BA PCMCIA disk in the lower drive (drive A:) with the NT5D62BC (NT1438BC in Europe) PCMCIA disk from the upgrade kit.

If the original MICB used the NT5D51AA card, insert the NT5D62BC (NT1438BC in Europe) PCMCIA disk from the upgrade kit into the lower drive (drive A:) of the new NT5D51AC card. Also, transfer the security device from the old card to the new card.

6 Insert the MICB card with the new NT5D62BC (NT1438BC in Europe) PCMCIA disk into the slot used for the original MICB.

7 Enable the MICB Release 2.X card with the ENLC command from LD 32.

Procedure 2 – enter the keycode information in the CLI

1 Return to the terminal that displays the CLI. At the "Modify, Save, Cancel:" prompt, enter **m** to **Modify**.

2 At the "max conf_ports (0):" prompt, enter the number of ports that corresponds to the MICB Release 2.X keycode (for example, 32).

3 At the "Card Feature (BASIC, (1-ADVANCED)):" prompt, press **Return** for BASIC functionality.

Note: The ADVANCED option is in place for future call accounting capability. This capability is not available at the time of the printing of this document.

4 At the “Modify, Save, Cancel:” prompt, enter **s** to **Save** the modifications.

5 At the keycode prompts, enter “key-code1”, “key-code2”, and “key-code3” (eight characters each) for MICB Release 2.X functionality. The keycode is part of the upgrade kit.

Procedure 3 – configure the system attributes in the CLI

1 Once the system successfully registers the MICB Release 2.X keycode, log into the CLI as **admin**.

2 At the “SAdmin, SMint, PAdmin, PMaint, RGen, LOgout, ?:” prompt, enter **sa** to access **System Administration**.

3 At the “SYstem, REcorder, ?:” prompt, enter **sy** to access **System Attributes**.

4 Modify/update/reenter the system attributes of the MICB Release 2.X card, including the IP address, gateway, and subnet mask. Refer to “System Attributes Editor” on page 107 for details.

5 At the “Modify, Save, Cancel:” prompt, enter **s** to **Save** the system attributes.

6 At the “Restart MICB?” prompt, enter **Yes**.

Note: The Browser User Interface (BUI) can now be accessed to configure card attributes, users, and conferences. To access the BUI, have one of the following web browsers on the PC: Netscape Communicator 4.5 (or later) or Microsoft Internet Explorer 4.01 (or later) with Service Pack 1 (SP1).

Procedure 4 – configure the card attributes in the BUI

1 Open the web browser on the PC, and enter in URL field: **<IP address>/micb.htm**, and press **Return**.

Note: If this upgraded MICB is accessed through an external server, enter **<server IP address>/micb/micb.html** in the URL field.

2 At the MICB Release 2.X login page, enter **admin** for the login and **000000** (six zeros) for the password. This brings you to the MICB Administration Utility. See “Abnormal BUI operation” on page 177.

3 Click on the **Cards** tab of the MICB Administration Utility to configure card attributes.

4 Click on an open field in the “Card Name” column and enter a name for the card, up to 20 characters.

Note: If you entered a card name in the System Attributes of the CLI, *and* you are using the embedded server option, the name of the card will already be in the “Card Name” column.

5 Click on the “Card ID” field next to the card name and enter the appropriate card ID.

6 Click on the **Display Details** button at the bottom-left of the screen. This displays (at the right side of the screen) the details of the selected card.

Note: If using the embedded server option, certain details of the card already appear at the right, such as hardware and software information and the card’s IP address.

7 In the card details section, enter the appropriate details for the selected card, including the card type, the TUI DN, and the conference DN pairs.

Note: If using the external server option, first enter the card’s IP address and select the appropriate card type; then click **Apply**. This establishes the external server’s connection to the card. Then proceed to configure the rest of the card attributes.

8 Configure any necessary **Group Calls** and **Weekdays** settings.

9 Program any permanent bridges from the original MICB in the **Permanent Conferences** settings.

10 Click **Apply** to save all of the card attributes.

11 At the top-left of the MICB Administration Utility, click on the **Properties** button to open the “System Properties” dialog box. See Figure 29 “System Properties dialog box” on page 160. Enter the ‘Mail server IP address’ and click **OK** to establish email notification to users.

Note: For email notification to work, the mail server IP address *must* be ‘unrestricted’ and able to send email to everyone on the network.

Procedure 5—configure the users in the BUI

1 Click on the **Users** tab to access the Users page of the MICB administration utility. See Figure 25 “MICB Administration Utility, Users page” on page 150.

2 Define users according to “Users administration” on page 150.

Note: Here you can define as users those who had operator (**oper**) access on the original MICB. This will allow them to continue scheduling their own conferences.

3 Click **Apply** after you define each user to save all of the user attributes.

4 Define yourself as a user of type “Superuser” so that you can enter the conference information that you took note of in Step 1.

5 Click **Exit** to exit the MICB administration utility.

Procedure 6—configure the conferences in the BUI

1 Log into the MICB BUI again, this time using your “Superuser” login ID and password.

2 Re-enter the scheduled conference that were on the original MICB. Refer to “MICB user BUI description” on page 161 for instructions.

This completes the upgrade of the original MICB to MICB Release 2.X. You can now continue with normal operation and administration of the MICB Release 2.X, which the rest of this document describes.

Upgrade a single card to a dual card configuration

This section describes how to upgrade a single card configuration to a dual card configuration. The upgrade requires the following:

- modify software functionality from EMBEDDED to EXTERNAL. See “Modify Software Functionality” on page 122

  Note: When you change the software functionality, the MICB deletes some of the customer files such as BUI users, conference DN pairs, and scheduled conferences. The IP address settings of the card remain and do not need to be reconfigured.

  Note: Upgrade procedures should be activated only after the card is disabled using the Overlay 32.

- perform the dual card configuration - see “Prepare for dual card installation” on page 79.

The Command Line Interface

Contents

This section contains information on the following topics:

Description

The MICB Command Line Interface (CLI) enables an administrator to perform various system administrative functions. The CLI can be accessed through a VT-100 type terminal or a PC running a terminal emulation program, both of which connect directly to the RS-232 port on the MICB card. The CLI can also be accessed over the LAN through a hub that connects to the RJ-45 port on the MICB card. The following system administration functions are accessible through the CLI:

- Configuring system parameters
- Displaying log files contents
- Entering the keycode
- Displaying conference statistics
- Performing system maintenance
- Performing MICB functional and software upgrades
- Upgrading software

Before you can use a terminal to access the CLI, you must configure the interface parameters as described in “Installation and configuration” on page 59.

To set up a telnet session, use the standard telnet utility available on Windows 95, Windows 98 or Windows NT. In the Start Menu, select **Run** and type **telnet <IP Address of the MICB>**.

For example:

telnet 47.10.12.70

> ***Note:*** An active telnet session ends when the card is reset. After a reset, you can restart the telnet session.

Login screen

The login screen appears when you press the **Enter** key after you connect a terminal to the MICB RS-232 port or telnet to the MICB card. This is the initial screen, which displays the general status of the MICB card and conferences in progress. This includes:

- Start time and duration of the first twenty active and future conferences
- DNs for the conference and the chairperson (**DN** lists the numbers conferees dial to enter conferences; **ch_DN** lists the chairperson DNs.)
- Number of ports occupied and, in parentheses, the maximum number of ports reserved for that conference
- Status of each conference (*bridge* is permanent, *expanded* is using more ports than have been reserved, *active* is conference in progress, and *next* is conference scheduled to start shortly)
- Locked, indicating whether a conference is accessible by a conferee that has not yet joined the conference
- Chairperson name and title for each conference

Note: When you first install the MICB, the initial screen, as in Table 11, can display dummy conference scheduling that remains from factory testing or lab testing. Use the Browser User Interface (BUI) to delete this dummy information before you schedule conferences. See "The Browser User Interface" on page 139.

Table 11
Initial screen showing the current MICB configuration status

Meridian Integrated Conference Bridge

Card name: first_card **10005666**

Start	Duration	DN	ch_ DN	# Ports	Status	Locked	Chair-person	Title
00:00	forever	3080	3081	0(6)	bridge	yes	-	bridge 3080
09:15	2:45	3020	3021	7(5)	expand	no	Bob	Y Report
10:30	1:30	3010	3011	4(6)	active	yes	Barry	X Gate 2
11:10	2:00	3000	3001	0(3)	active	no	Dale	ZGate 3
13:15	2:00	3030	3031	0(8)	next	-	Jim	ZSales

Total ports in use: 11(20) Last refreshed: March 15, 1999 11:30

Login:

Logging in

The administrator logs in by entering the password at the 'Login:' prompt. The default password is **admin**, which the administrator can change after logging in. The administrator uses the CLI to perform the following functions:

- **System administration**, such as editing system attributes and recording brandline greetings
- **System maintenance**, such as performing system tests, running reports, archiving and restoring the database, and restarting the card

- **Protected administration**, such as editing and resetting passwords, upgrading software, and modifying software functionality
- **Conference Administration**, such as viewing and printing conference details
- **Port maintenance**, for technology support use only
- **Report generation**, such as running the meetings log

The administrator can change the default password. If you cannot remember the password, reset the password as the following example shows:

Login: **rst**
Enter key-code1 (8 characters): **12345678**
Enter key-code2 (8 characters): **81234567**
Enter key-code3 (8 characters): **78123456**
Passwords have been reset.

Login: **admin**

The administrator can then assign a new password by accessing the *Protected Administration* menu.

General administration procedures

General administration procedures are rules you follow when modifying default or existing parameters that define the MICB system and conference operation. These apply when using:

- General administration commands
- Object modify procedure
- Collection modify procedure
- Custom recording procedure

General administration commands

To modify system administration parameters, use one or more of the following commands:

- **M**odify – Enter **M** to indicate that you wish to modify one or more parameters.

- **S**ave – Enter **S** to save modified parameters.
- **C**ancel – Enter **C** to cancel the modification and allow the parameter to retain its previous value.

After the session is complete, the screen displays again the *Modify, Save, or Cancel*: command line for additional modification of parameters, if required.

To navigate from menus to other menus or to display help, use the following terminal keys:

- ***** – Returns you to the previous menu
- **/** – Returns you to the top menu level
- **?** – Help, which assists with commands in the current menu

Object modify procedure

To modify a value or attribute of an object, the program responds with a sequence of prompts, one prompt for each attribute of the object. The prompt specifies the name and the current value of the attribute as follows:

attribute_a (current_value_a): **new_value_a**

attribute_b (current_value_b): .

For each prompt, the user may respond in three ways:

- **<cr>** - accepts the current value by pressing the Enter key
- **value** - changes the attribute by entering a new value
- **.** - terminates the session by entering "**.**" (dot)

In some cases the system displays the current value and a list of available values to select. Example:

attribute_c (current_c, (1-aaaa, 2-bbbb, 3-cccc)): 2
(where the value of attribute_c has been changed to bbbb)

After the session is complete the system lists the new set of values and prompts you to *Modify, Save, or Cancel* the modification(s).

Collection modify procedure

This procedure modifies, deletes, or adds an entry to a collection of items of the same type, such as, for example, port capacity.

You can move through the list of items by entering **<cr>** to skip the item, enter a **command** to modify the item, or enter **.** (dot) to exit the list. The **command** can be:

- **m** - to modify the item in the list using object modify procedure
- **d** - to delete a selected item in the list
- **i** - to insert a list of items above the currently selected item
- **a** - to append a list of items below the currently selected item

For insert and append commands, the system prompts you to add a new item. Terminate this sequence by entering the **.** (dot). When the system executes the command(s), the program gives you the option to *Modify*, *Save, or Cancel* the changes. You *must* enter **S**ave to keep the new changes.

When you reach the end of the list, the system displays or prints the new list and prompts you again to *Modify* or *Exit* the list.

Custom (brandline) greeting

Name the custom greeting file BRANDLIN.WAV when you create it over the telephone set. You must record a separate custom greeting for each language.

A custom greeting is used during the conference to provide a customized greeting, in one of the available languages, that specifically identifies the conference or the company holding the conference. This greeting is an alternative to the standard “Welcome to the conference call.” greeting.

Customer greeting files provide:

- customer recording of a brandline (custom) greeting in a specific language
- user selection of one of the two greeting options:
  - — brandline (custom) greeting
  - — standard greeting

Use the telephone set method to record a custom greeting such as, for example, “Welcome to the Nortel Networks conference bridge”. The custom greeting is identified as BRANDLIN.WAV to distinguish it from other recorded files. For telephone set message recording, refer to “Audio Recorder” on page 110.

The Main Menu

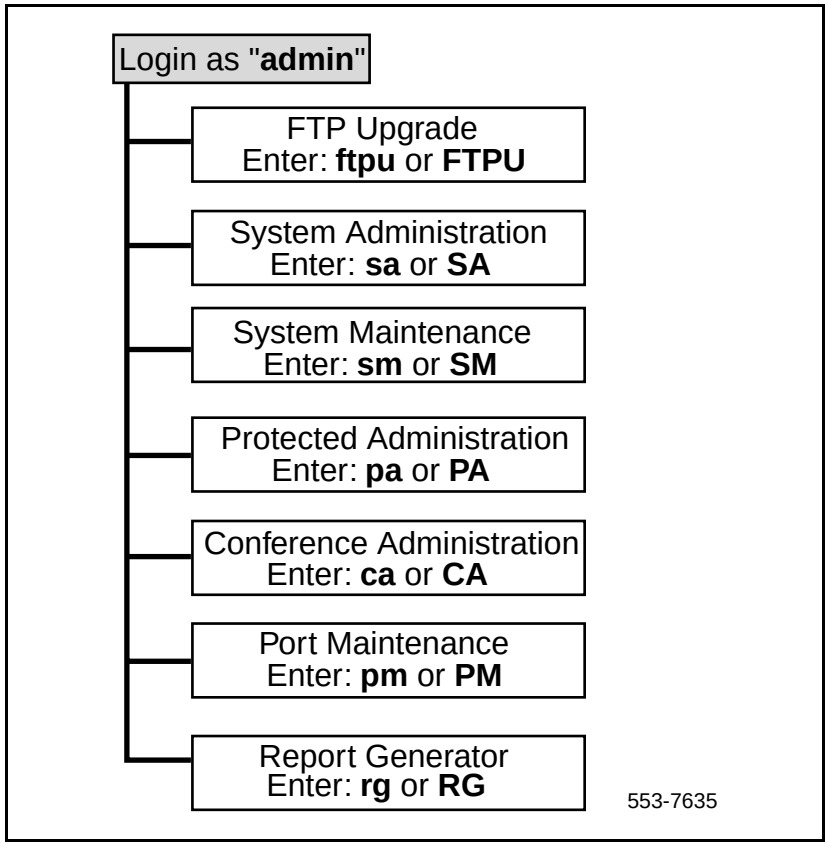
The Main Menu is the first menu to appear after the administrator logs in. The Main Menu lists administration and maintenance menus and appears as follows in the CLI:

```
FTPUpgrade/, SAdmin, SMaint, PAdmin, CAdmin, PMaint, RGen,
LOgout, ?:
```

To access one of the menus, enter the first two letters of the menu and press the **Enter** key. For example, to access the System Administrator menu, enter **sa**. Enter **lo** to logout.

Figure 12 illustrates the Main Menu and its submenus. After you log in as an administrator, you can access the various submenus; however, you must follow general administration procedures.

Figure 12
Main Menu



Help display

The help (?) command displays details of the Main Menu commands, as follows:

Short command	Full command	Explanation
ftpu	FTPUpgrade	FTP Upgrade directory
sa	SAdmin	System Administration directory
sm	SMaint	System Maintenance directory
pa	PAdmin	Protected Administration directory
ca	CAdmin	Conference Administration directory
pm	PMaint	Port Maintenance directory
rg	RGen	Report Generation directory
lo	LOgout	Logout

System Administration menu

To access the System Administration menus from the Main Menu, enter **sa** or **SA** or the full command (**SAdmin**). Figure 13 on page 107 illustrates the System Administration screen and all the menus accessible from this screen.

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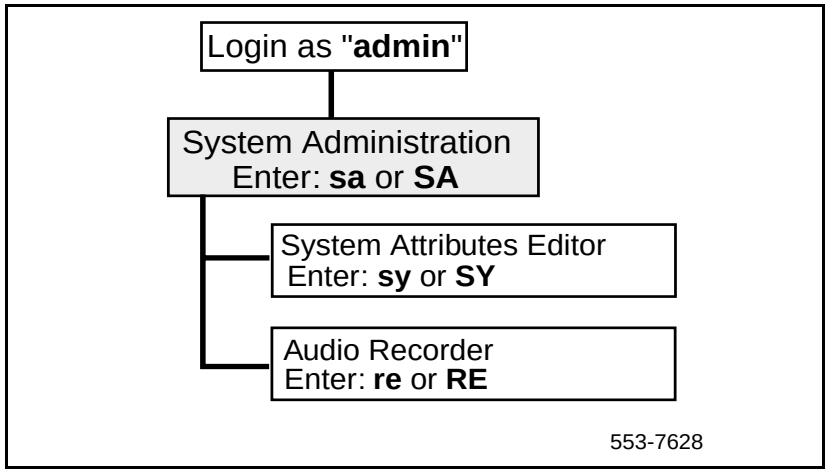
Figure 13
System Administration menu



System Attributes Editor

Use this menu to modify system attributes. These are:

- **backup e-mail address** - e-mail address to support the backup of out of date conference reservation files. Since disk space is limited, remove conference reservation files daily. This backup mechanism sends the out of date files to this address. If necessary, you can restore the files from this address.

  If no backup e-mail address is defined, the out of date files are deleted when the specified report aging period expires. See “report aging” on page 108.

- **card name** - a character string with maximum length of 10 characters. The name appears at the top of the Login screen, if you specify one.

- **idle time-out** - the time the terminal is idle before it automatically logs out and displays the Login screen with general system status. The default time-out is 20 minutes and the range is from 20 to 60 minutes.

- **refresh period** - the Login screen refresh (update) time when the terminal is not in use. The default is 5 minutes and the range is from 0 to 60 minutes. Enter 0 if you wish to disable system status display.

- **report aging** - the number of days the system maintains old reservation records, associated meeting log reports, and maintenance reports. The default is 32 days and the range is from 0 to 32 days. If you select 0, the system deletes the day's files at the end of the day. It is recommended that aging be set to 32.
- **short occupancy** - a threshold used to detect short usage of a conference port. If the connection is less than the threshold, it can indicate a bad connection or an incorrect DN dialed. When this condition is detected, the system increments a counter and when counters are checked, those with peg-counts are displayed as potential problems. The default is 10 seconds and the range is 0-30 seconds. To disable the short occupancy count, set the threshold to 0.
- **application traffic report** - default is 0 to disable the report. Range 1-24 enables you to select the number of reports that the system issues every hour-on-the-hour.
- **disconnect a lone participant** - defines the amount of time a participant can be alone in the conference. When the time elapses, the MICB disconnects the participant. The default is 0 minutes and the range is 0-720 minutes. Select 0 to disable this feature.

Ethernet defining attributes:

- **subnet mask** - has XXX.XXX.XXX.XXX format, where every XXX is in the range 0-255. The subnet mask is a binary representation of 32 bits of which the first 8 digits are all "1" and the last digit is a "0".
- **gateway address** - has XXX.XXX.XXX.XXX format, where every token is in the range 0-255.
- **IP address** - the Ethernet protocol address, and has the same format as the gateway address.

Example:

login: **admin**
Previous admin login:Apr. 9, 2000 16:04
FTPC / , SAdmin / , SMaint / , PAdmin / , CAdmin / , PMaint / , RGen / , LOgout, ?: **sa**
SYstem, REcorder, ?: **sy**
System Attributes:
card name: 244 card
idle time-out minutes: 20
refresh period minutes: 5
report aging days: 32
short occupancy seconds: 10
application traffic report hours: 0
disconnect a lone participant minutes: 0
subnet mask: 255.255.0.0
gateway address: 141.226.71.254
IP address: 141.226.71.244
Backup e-mail address:
Modify, **S**ave, **C**ancel: **m**
card name (244 card):
idle timeout minutes (20):
refresh period minutes (5):
report aging days (32):
short occupancy seconds (10):
application traffic report hours (0):
disconnect a lone participant minutes (0):
subnet mask (255.255.0.0):
gateway address (141.226.71.254):
IP address (141.226.71.244):

Backup e-mail address () : **johnsmith@abcdef.com**

New System Attributes:
card name: 244 card
idle timeout minutes: 20
refresh period minutes: 5
report aging days: 32
short occupancy seconds: 10
application traffic report hours: 0
disconnect a lone participant minutes : 0
subnet mask: 255.255.0.0
gateway address: 141.226.71.254
IP address:141.226.71.244
Backup e-mail address: **johnsmith@abcdef.com**
Modify, Save, Cancel: **s**

System Attributes have been updated.
SYstem, REcorder, ?: **/**
FTPC / , SAdmin / , SMaint / , PAdmin / , CAdmin / , PMaint / ,
RGen / , LOgout, ?: **lo**

This concludes the System Attributes Editor session, returns you to the Main Menu, and logs you out.

Audio Recorder

The Audio Recorder function can create a new custom greeting for each language. The brandline custom audio files serve as customized greetings for conferences.

When you select the Audio Recorder option, you see a list of brandline custom audio files, which you can modify (by entering **m**) or delete (by entering **d**). You can also insert new brandline files (by entering **i**). You cannot modify the default audio files that the factory supplies.

To create a new brandline audio file, follow these steps:

1 Log in as **admin**.

2 Enter **sa** for System Administration.

3 Enter **re** to enter the Audio Recorder.

4 Choose a language. (<cr> selects the default language.)

5 Enter **i** to record a new greeting.

6 Enter a file name, all CAPS and up to 8 characters.

7 Follow the dialing instructions given on the MICB administration screen.

8 Record the greeting and hang up.

9 Enter **s** to save the audio file.

Example:

This is an example of a recording session:

SYstem, REcorder, ?: **re**
language (american_english, (1-french, 2-brasilian_portuguese,
3-LA_Spanish, 4- UK_English)): <cr>
File Name
1 a:mlaw\user\ENGLISH\BRANDLIN.WAV: **m 1**
Dial 2099 to begin recording session.
Follow voice instructions.
Typing “exit” will end the recording session.
After the recording is completed and the phone is on-hook
Upon completion of recording, select one of the following:
Save, **M**odify, **C**ancel: **s**
SYstem, REcorder, ?:

The new message can play only after you save it. It plays when a conference participant dials either the main or the chairperson DN.

Help display

The help (?) command displays details of the System Administration commands, as follows:

Short command	Full command	Explanation
sy	SYstem	System Attribute Editor. Edit: card name, idle time out, idle refresh, conf log aging, short occupancy, traffic report frequency, IP address.
re	REcorder	Audio Recorder. Record custom messages for use in Audio Scripts.

System Maintenance menu

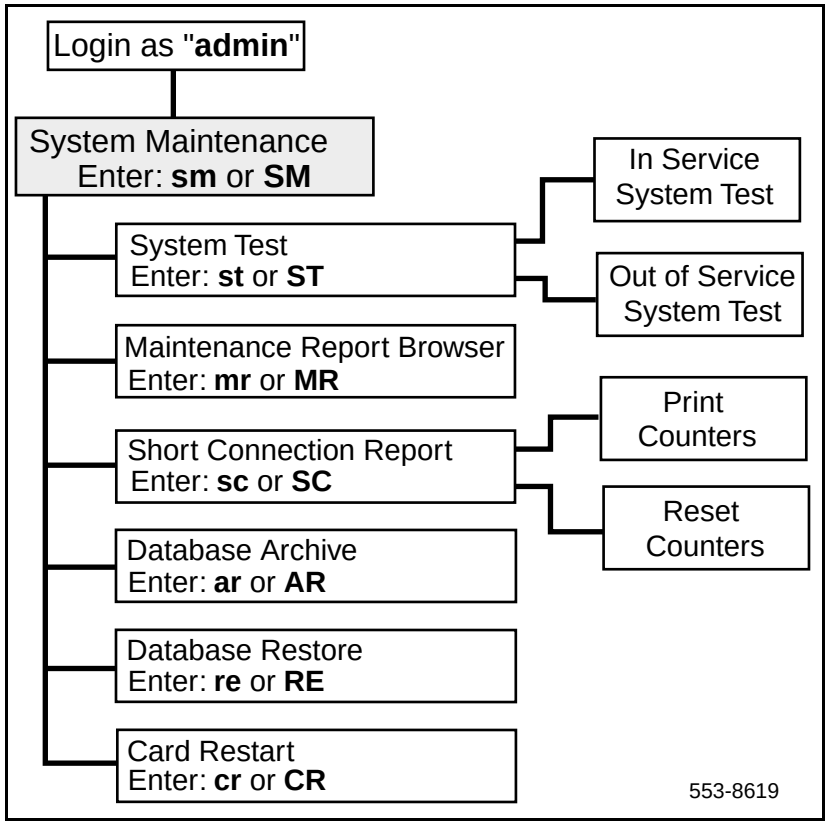
To access the System Maintenance menus from the Main Menu, enter **sm** or **SM** or the full command (**SMaint**). Figure 14 on page 113 shows the System Maintenance menu structure. The System Test and Short Connection Report menus have two sub-menus.

System Tests

Use this menu to perform system component tests. You can perform in-service tests that do not disrupt service and out-of-service tests that do disrupt service for the duration of the test. Select:

- **i** - to perform in-service tests
- **o** - to perform out-of-service tests

Figure 14
System Maintenance menu



Example

In the following example, perform the service impacting (out-of-service) tests.

STest, MReport, SCon, ARchivdb, REstordb, CRestart, ?: **st**
Inserv, Outserv, ?: **o**
Perform service impacting test? (Yes, (No)): **Yes**
Performing service impacting test...Test passed.
Inserv, Outserv, ?: *****
STest, MReport, SCon, ARchivdb, REstordb, CRestart, ?:

The help (?) command displays details of the commands, as follows :

Short command	Full command	Explanation
i	Inserv	Perform in-service system test.
o	Outserv	Perform out-of-service system test.

Maintenance Report Browser

This menu enables you to display and browse maintenance reports according to date. Use these reports to analyze system problems based on error messages compiled on that specified date.

All reports have a time stamp and contain information regarding the cause of the problem. After the system displays the data, the system returns to the *year-month-day* prompt using the last selected date as default.

To exit the report, enter "**.**" (dot); to interrupt the report display, enter "***<cr>**" (star and return).

The maintenance reports have the following format:

<serial number>: <MON_REPORT_ID> <channel #> <time> <Applic_Manager_cycle> <Message Body>

Example:

Display the maintenance report for March 15, 1996.

STest, MReport, SCon, ARchivdb, REstordb, CRestart, ?: **mr**
year(1998): **1996**
month (11): **03**
day (22): **15**
1234:timer101 ch01 16:16:18:111 9900 "Num: 100 Timing Stop. 00."
1235: sig100 ch00 16:17:05:234 9900 "SIG: Q_APP in msg:0000005A"
0001:HW PCMCIA001 ln0077 ch01 16:25:29:836 PCMCIA card inserted in socket 1
year (1996): **.**
STest, MReport, SCon, ARchivdb, REstordb, CRestart, ?:

The selected date must be in the past, not future. The old files that exceed the report aging number of days are discarded. If date entered is too old, an error message appears. If the date is within the correct date range, but there are no report entries for that day, a message appears indicating no messages.

Short Connection Report

The Short Connection Report menu allows the display or reset of the short connection peg-count.

Short port occupancy can indicate fault condition on the particular port or dialing of an incorrect DN. The short occupancy range is set in the System Administration menu from 1 to 30 seconds (default is 10 seconds). If 0 is selected, the short occupancy count is disabled.

You have an option to print (**p**) or reset (**r**) the counter. When printing the counters peg-count, all ports with a count are presented in the following format:

port # today's_count total_count

today's count - count of short connections that occur today
total count - cumulative count of all short connections since the MICB was last reset or the short connection counters were reset

If all counters are zero, the header is printed followed by the message:
all counters are zero

When you execute the reset, all counters are set to zero.

Example:

STest, MReport, SCon, ARchivdb, REstordb, CRestart, ?: **sc**
Print, Reset, ?: **p**

Port #	today's_count	total_count
10	2	4
18	1	10
31	5	34

Print, Reset, ?: **r**
Reset all short connection counters? (Yes, (No)) **Yes**
Counters reset.
Print, Reset, ?: *****
STest, MReport, SCon, ARchivdb, REstordb, CRestart, ?:

The help (?) command displays details of the commands, as follows:

Short command	Full command	Explanation
p	Print	Present peg-counts of short port occupancy.
r	Reset	Reset peg-counts of short port occupancy.

Database Archive

Database Archive enables you to backup the customer database. The system copies a set of database files from the active PCMCIA card in the lower slot (drive A:) to the backup PCMCIA card in the upper PCMCIA socket (drive E:). Names of files to be backed up are specified in the DB Description file. These files include configuration and reservation databases, as well as user made voice files.

Backup the customer database when you upgrade the PCMCIA card. The backup removes the need to re-enter the conference data.

Note: Use only MICB compatible PCMCIA devices for backup.

If the PCMCIA memory is too small to accept all the archived database information, an error message appears indicating that there is not enough memory.

Example:

STest, MReport, SCon, ARchivdb, REstordb, CRestart, ?: **ar**
Backup Database? (Yes, (No)) **y**
Please wait, performing backup... completed.
STest, MReport, SCon, ARchivdb, REstordb, CRestart, ?:

Note: You cannot use a Database Archive and a Database Restore to upgrade an original MICB to MICB Release 2.X.

Database Restore

Database Restore enables you to restore the customer database to the system PCMCIA card in the lower slot (drive A:). The system copies a set of files from the backup PCMCIA card in the upper slot (drive B:) to the active PCMCIA card in the lower slot (drive A:). Names of files to be restored are specified in the DB Description file.

Example:

STest, MReport, SCon, ARchivdb, REstordb, CRestart, ?: **re**
Restore Database? (Yes, (No)) **y**
Please wait, performing restore... completed.
STest, MReport, SCon, ARchivdb, REstordb, CRestart, ?:

Note: You cannot use a Database Archive and a Database Restore to upgrade an original MICB to MICB Release 2.X.

Card Restart

This command restarts the MICB card, which initiates a software reload.

STest, MReport, SCon, ARchivdb, REstordb, CRestart, ?: **cr**
Restart MICB card? (Yes, (No)) **yes**

This action returns the MICB card to the initial screen and you must login again.

Note: After restarting or resetting the card, allow approximately 1.5 minutes for the card to re-initialize. The telnet session closes while the card is resetting and you have to start another session if it is needed.

Help display

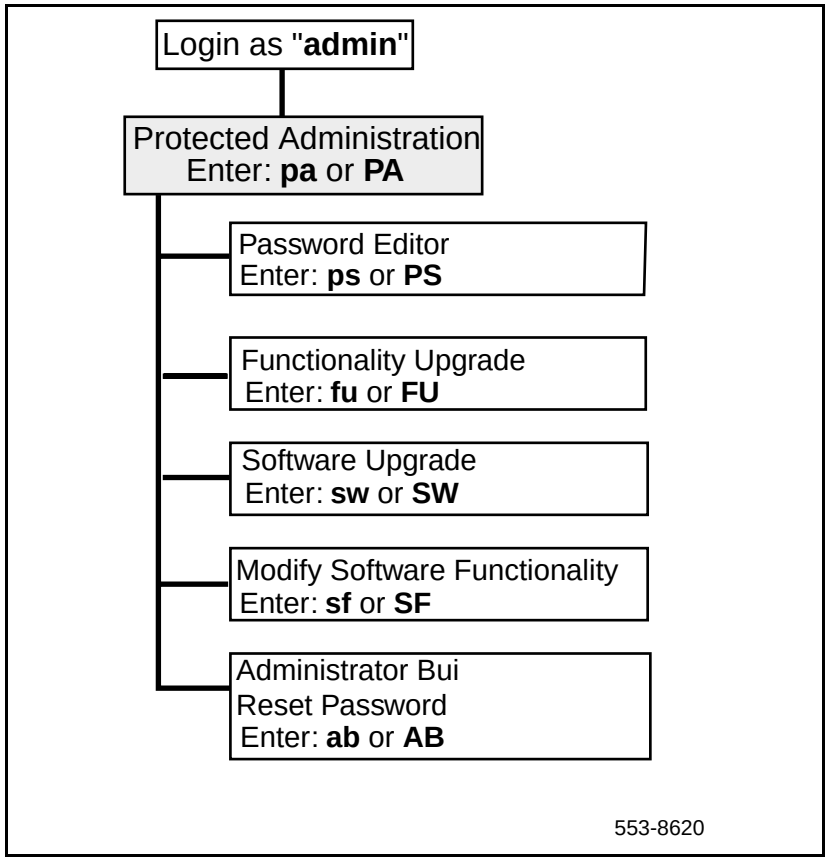
The help (?) command displays details of the System Maintenance commands, as follows:

Short command	Full command	Explanation
st	STest	System Test directory.
mr	MReport	Browse Maintenance Reports, according to date, in order to analyze system problems.
sc	SCon	Short Connection Report directory.
ar	ARchivdb	Back-up customer's database.
re	REstordb	Restore customer's database.
cr	CRestart	Reset MICB card.

Protected Administration menu

To access the Protected Administration menu from the Main Menu, enter **pa** or **PA** or the full command (**PAdmin**). Figure 15 on page 119 shows the Protected Administration menu, which provides password administration and port and software upgrade keycode administration.

Figure 15
Protected Administration menu



Password Editor

To change the password, login using the default password **admin** and access the Password Editor menu from the Protected Administration menu.

You can change the default or any other password to a new password. The maximum password length is 10 characters.

Example:

This example shows how to modify the administrator password:

PSweditor, FUpgrade, SWupgrade, SwFunctionality, ABreset, ?: **ps**
Current Passwords:
admin: admin
Modify, Save, Cancel: **m**
admin (admin): **johnsmith**
New passwords:
admin: johnsmith
Modify, Save, Cancel: **Save**
Passwords have been updated.
PSweditor, FUpgrade, SWupgrade, SwFunctionality, ABreset, ?:

Functionality Upgrade

Functionality Upgrade enables you to change the card feature (BASIC or ADVANCED) and the number of available ports/channels on the MICB Release 2.X card. To activate a change to the card feature and the number of ports/channels, enter the new keycode, which the system compares to the one in the MICB memory. Following the keycode authentication, the currently enabled MICB ports/channels are displayed.

You are allowed three attempts to enter the correct keycode. If you fail to enter the correct keycode, the changes you made do not take effect. If the keycode has been authenticated, the changes you made are stored in memory and take effect, allowing you to use the specified number of MICB ports.

If three attempts to enter the keycode fail, reset the card to allow further attempts.

The keycode is entered using three prompts: key-code1, key-code2, and key-code3, each requiring entry of 8 digits.

Note: The ADVANCED card feature option is in place for future call accounting capability. This capability is not available at the time of the printing of this document.

Example:

This example will expand the number of available MICB ports from 8 to 16:

```
PSweditor, FUpgrade, SWupgrade, SwFunctionality, ABreset, ?: fu
max conf_ports: 8
Card Feature: BASIC
Modify, Save, Cancel: m
max conf_ports (8): 16
Card Feature (BASIC, (1-ADVANCED)):
Modify, Save, Cancel: Save
Enter key-code1: 12121234
Enter key-code2: 23232345
Enter key-code3: 32222385
Incorrect key-code
Modify, Save, Cancel: Save
Enter key-code1: 121ad234
Enter key-code2: 12128934
Enter key-code3: 32222385
PSweditor, FUpgrade, SWupgrade, SwFunctionality, ABreset, ?:
```

Software Upgrade

Software Upgrade enables you to upgrade the software on an active MICB card. The new software is stored on a PCMCIA card, which you install in the upper slot, slot B: on the MICB card before executing the software upgrade command. If the PCMCIA card is not in place when you try to save the upgrade, the system issues an error message as follows:

```
There is no PCMCIA in socket B
MPU upgrade failed.
There is no PCMCIA in socket B
DSP upgrade failed.
```

Note: You cannot perform a Software Upgrade to upgrade an original MICB to MICB Release 2.X. Refer to “Upgrade the MICB to MICB Release 2.X” on page 90 for instructions on this particular procedure.

To upgrade the software:

1. Plug the PCMCIA Flash card into the upper slot (drive B:) on the MICB. Ensure that the PCMCIA hard drive card is still in the lower slot (drive A:).
2. Login as the administrator (**admin**) and proceed as shown in the example below.

Example:

Upgrade the software:

PSweditor, FUpgrade, SWupgrade, SwFunctionality, ABreset, ?: **sw**
software Release: 03, issue: 07
Modify, Save, Cancel: **m**
Modify software? (Yes, (No)) **yes**
Modify, Save, Cancel: **Save**
Installation of MICB s/w in progress...
New s/w will be used following MICB restart.
Restart MICB? (Yes, (No)) **Yes**

3. After the upgrade is complete, remove the PCMCIA card from the upper PCMCIA slot (drive B:) before resetting the card.

Note: Remove the PCMCIA Flash card before you reset the card.

Modify Software Functionality

Modify Software Functionality allows you to determine whether the MICB Release 2.X card uses an embedded (EMBEDDED) or an external (EXTSRV) web-server. The default is embedded (EMBEDDED).The external server option does not work unless you have connected the MICB card to an external server.

The following is an example of modifying the card software functionality:

PSweditor, FUpgrade, SWupgrade, SwFunctionality, ABreset, ?: **sf**
software functionality: EXTSRV
Modify, Save, Cancel: **m**
software functionality (EXTSRV, (1-EMBEDDED, 2-MUSIC)): **1**
Modify, Save, Cancel: **Save**
New s/w functionality will be available following MICB restart.
Restart MICB? (Yes, (No)): **Yes**

Note: When you change the software functionality, the MICB deletes some of the customer files such as BUI users, conference DN pairs, and scheduled conferences.

Note: The option 'MUSIC' is currently not supported.

Administrator BUI Reset Password

Administrator BUI Reset Password enables you to reset the passwords of all administrators that use the Browser User Interface (BUI). The default administrator password for the BUI is **000000**.

Note: This command is valid only for **embedded** software functionality.

To reset the BUI password to the default value for all administrators, follow this example:

PSweditor, FUpgrade, SWupgrade, SwFunctionality, ABreset, ?: **ab**
Reset BUI Administrator Password? (Yes, (No)): **Yes**
Password has been reset.
PSweditor, FUpgrade, SWupgrade, SwFunctionality, ABreset, ?:

Help display

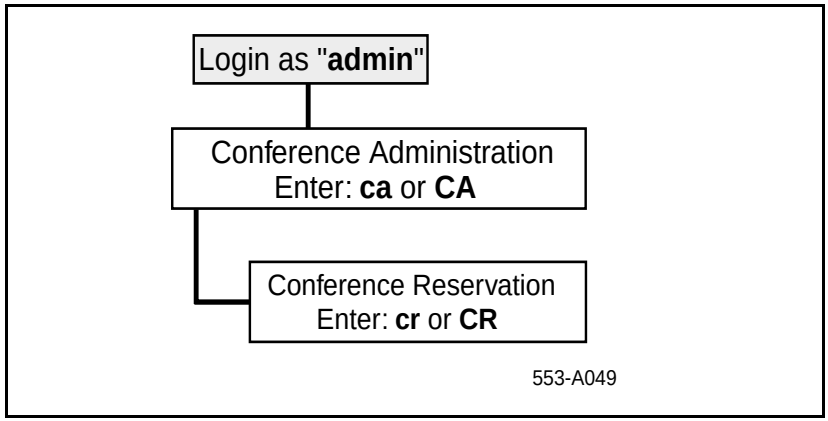
The help (?) command displays details of the Protected Administration commands, as follows:

Short command	Full command	Explanation
ps	PSweditor	Password Editor
fu	FUpgrade	Functionality Upgrade: allow or restrict capabilities secured by the keycode.
sw	SWupgrade	Software Upgrade. Upgrade MPU and/or DSP software.
sf	SwFunctionality	Modify Software Functionality. Upgrade MPU and/or DSP software.
ab	ABreset	Administrator BUI Reset Password. Reset is only for the embedded functionality.

Conference Administration menu

To access the Conference Administration menu from the Main Menu, enter **ca** or **CA** or the full command (**CAdmin**). Figure 16 shows the Conference Administration menu.

Figure 16
Conference Administration menu



Conference Reservation

This command displays the scheduled conferences for a specified date. If details are required of the conferences scheduled for the current date, enter **<cr>**; otherwise, enter the required date.

If you want to view details of a specified conference: enter **S** or **s** or the full name (**Status**) and the number of the conference. A full description is printed on the screen.

To exit, type: **E** or **e** or the full name (**Exit**) and you return to the CRes prompt. If you want to exit while entering the dates, enter "**.**" (dot) at the prompt.

> ***Note:*** When there is an active Conference Administration session in the CLI, all other conference administrative tasks using BUI are blocked to prevent any non-synchronized or conflicting data being generated.

Example:

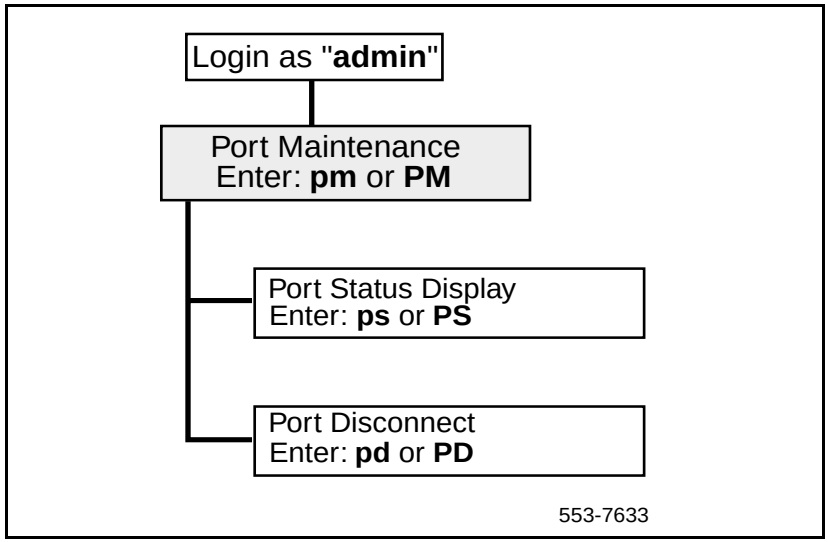
CRes, ?: cr
year(2000):
month(4):
day(9):
Current conferences for 09/04/2000:
Start Duration DN chair_ #Ports Name_ Expan Gree Chairperson
Title
DN Entry sion ting
1 16:00 01:00 2201 2202 4 yes no no jsmith
2 17:00 01:45 2203 2204 6 yes no no jsmith
3 18:00 00:30 2207 2208 8 yes no no jsmith
4 20:00 01:15 2203 2204 8 yes no no jsmith
Status, Exit: s 2
Attributes of conference 2 are:
start: 17:00
duration: 01:45
main dn: 2203
conferee password: not defined
chairperson dn: 2204
chairperson password: not defined
number of ports: 6
language: American_English
name mode: on_entry_exit
expansion: no
custom greeting: no
name of chairperson: jsmith
name of conference:
Current conferences for 09/04/2000:
Start Duration DN chair_ #Ports Name_ Expan Gree Chairperson
Title
DN Entry sion ting
1 16:00 01:00 2201 2202 4 yes no no jsmith
2 17:00 01:45 2203 2204 6 yes no no jsmith
3 18:00 00:30 2207 2208 8 yes no no jsmith
4 20:00 01:15 2203 2204 8 yes no no jsmith
Status, Exit: e

CRes, ?: **cr**
year (2000) : .

Port Maintenance menu

To access the Port Maintenance menu from the Main Menu, enter **pm** or **PM** or the full command (**PMaint**). Figure 17 shows the Port Maintenance menu and its commands. The commands display the status of the MICB ports and disconnect a specific MICB port.

Figure 17
Port Maintenance menu



Port Status Display

This commands displays the status of all MICB ports regardless of their allocation. The possible status for any port is: Idle, Dialing_out, Ringing, Talking, or Disable.

Example:

PStatus, PDisconnect, ?: ps

Port_ID	Port_Status	Port_ID	Port_Status
0	DISABLE	16	IDLE
1	DISABLE	17	IDLE
2	IDLE	18	DIALING_OUT
3	TALKING	19	DIALING_OUT
4	TALKING	20	RINGING
5	TALKING	21	RINGING
6	IDLE	22	IDLE
7	RINGING (Note)	23	DIALING_OUT (Note)
8	TALKING	24	TALKING
9	TALKING	25	IDLE
10	TALKING	26	TALKING
11	TALKING	27	TALKING
12	IDLE	28	IDLE
13	RINGING	29	DIALING_OUT
14	TALKING	30	IDLE
15	IDLE	31	RINGING

Note: Dialing out and ringing are very short events.

PStatus, PDisconnect, ?:

Port Disconnect

Port Disconnect enables you to disconnect a specific MICB port from a Conference.

Example:

PStatus, PDisconnect, ?: **pd 13**
Disconnect port 13? (Yes, (No)) **yes**
Port 13 has been disconnected.
PStatus, PDisconnect, ?:

Help display

The help (?) command displays details of the Port Maintenance commands, as follows:

Short command	Full command	Explanation
ps	PStatus	Display status of all Ports.
pd	PDisconnect	Disconnect specified port.

Report Generation menu

To access the Report Generation menu from the Main Menu, enter **rg** or **RG** or the full command (**RGen**). Figure 18 shows the Report Generation menu used to present the log of conference events for a particular date.

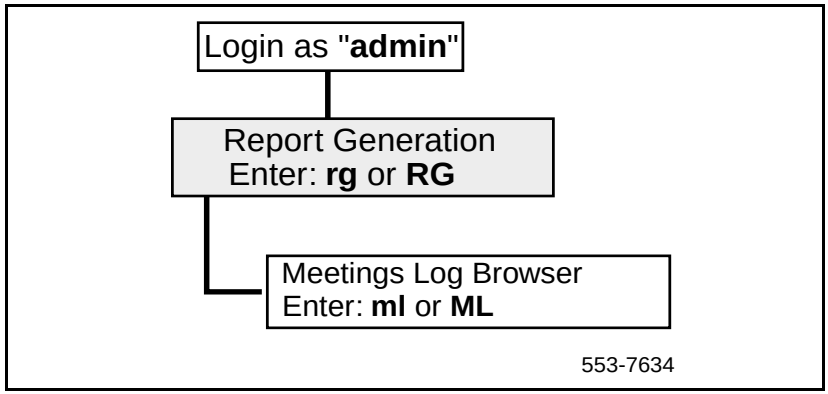
Meetings Log Browser

This command displays a log of conference events for a specified date. After the MICB displays the data, the system returns to the *year-month-day* prompt using the last selected date as default. To exit the log, enter "**.**" (dot) at the prompt. If you want to exit the log before the entire log appears, enter "***<cr>**" (star and return).

Each event report starts with the time stamp and the main DN in the following format:

hours:minutes:seconds (DN) <description of event>

Figure 18
Report Generation menu



Example:

MLog, ?: **ml**
year (1999): **1998**
month (02): **03**
day (20): **15**
14:55:06 (2230) opened:

DN	chair_DN	#Ports	Name_Entry	Expansion	Assist_DN
2230	2001	3	yes	no	1000

15:00:45 (2220) expanded
15:01:00 (2220) entry: 24 //*Conferee entered conference on port 24*//
15:03:23 (2230) ch_entry: 4 //*Chair joined conference on port 4*//
15:03:56 (2220) exit: 14 //*Conferee left conference from port 14*//
16:35:09 (2230) mmi_op lock //*Conference locked*//
16:44:15 (2220) mmi_op unlock //*Conference unlocked*//
16:45:00 (2220) closed
16:56:02 (2230) ch_com dial_out: 395945 //*Chair dials out DN*//
16:57:00 (2230) ch_com return //*Chair returns without called party*//
16:58:20 (2230) ch_com redial: 395945 //*Chair redialed last dialed DN*//

```
16:59:16 (2230) ch_com ret with_party //Chair returns with called party/
16:58:45 (2230) ch_com count                //Chair counts conferees//
17:00:54 (2230) mmi_op num_of_ports: 2   //New number of ports is 2//
17:01:44 (2230) mmi_op duration: 4:00      //New duration is 4 hours//
17:02:54 (2230) mmi_op expansion: yes    //Port expansion is allowed//
17:03:45 (2230) ch_com lock                 //Chair locks conference//
17:05:45 (2230) ch_com unlock               //Chair unlocks conference//
17:08:26 (2230) ch_com drop last d_in      //Drops last dial in conferee//
17:08:56 (2230) ch_com drop last d_out  //Drops last dial out conferee//
17:09:16 (2230) ch_com drop all             //Chair drops all conferees//

year (1998): .
MLog, ?:
```

The date you select to display the conference log must be in the past, not future.

The system deletes old log files after the predefined report aging time is exceeded. If there are no log files for the specified date, the system indicates this.

Help display

The help (?) command displays details of the Report Generation command, as follows:

Short command	Full command	Explanation
ml	MLog	Meeting Log Browser. Present log of conference events for a particular date.

FTP Upgrade

The MICB software for FTP upgrade is distributed as a compressed zip file. There are 2 parts to the procedure, firstly the transfer of the files from the Nortel Networks server, and secondly, the upgrade.

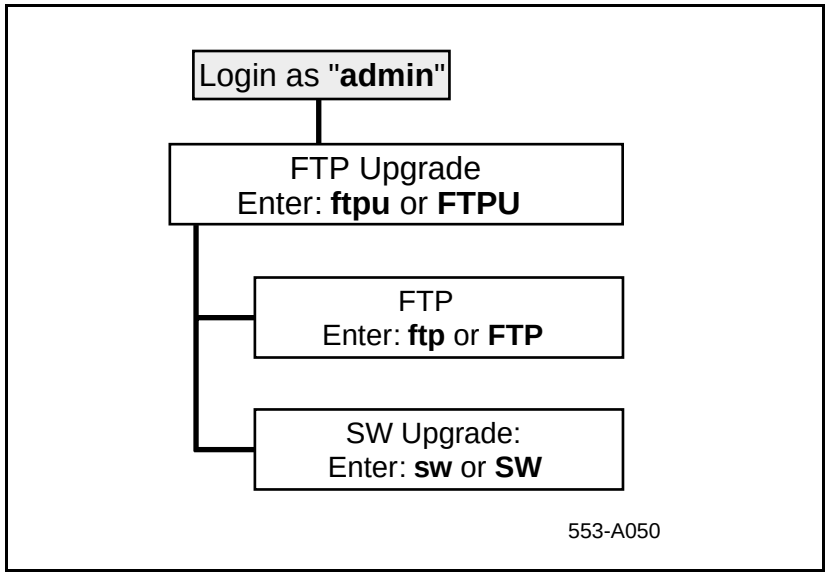
Use the CLI to connect to the FTP server where the upgrade zip file is located. Download the zip file by copying it to a temporary location and transfer it to a server where it can be uncompressed.

When you next restart the system, the upgrade procedure is activated and replaces the current software with the new software.

> ***Note:*** The FTP upgrade procedure should be activated only after the card is disabled using the Overlay 32.

To access the FTP Upgrade menu from the Main Menu, enter **ftpu** or **FTPU** or the full command (**FTPUpgrade**). Figure 19 illustrates the FTP Upgrade screen.

Figure 19
FTP Upgrade menu



To start the FTP session, follow these steps:

1 To open the FTP session to the FTP server, type:

ftp <FTP server IP address><cr>

2 Enter the FTP Server user and password as requested by the command. When the connection is established, type:

cd <ftp server path to unzipped micb upgrade files>

3 To start the FTP delivery process, enter this command:

$ upgrade

4 The automatic delivery process is finished when you see this message:

221 Goodbye

5 The directory a:upgrade\ is created on the server which received the files.

Proceed to the upgrade procedure.

Note: The procedure must be done from the current CLI directory, otherwise the upgrade will require flash disk as before.

Example:

```
FTP, SWupgrade: ftp 141.226.15.130
Name (141.226.15.130:anonymous): jsmith
Password:
999 Connected to 141.226.15.130.
220 tl001s63 FTP server (SunOS 5.6) ready.
331 Password required for jsmith.
230 User jsmith logged in.
ftp> cd /tmp/micbupgrade
250 CWD command successful.
ftp> $ getupgrd
mac>
############################################################
mac> # Start getupgrd.mac script
mac>
############################################################
```

```
mac> # 1. Check current remote directory
mac> dir
200 PORT command successful.
150 ASCII data connection for /bin/ls (141.226.71.246,1084) (0
bytes).
226 ASCII Transfer complete.**********
Press ENTER to stop <a:temp\AAAAAAAJ.TMP>total 6640
drwxr-xr-x 4 jsmith m1 1194 Apr 17 10:59 .
drwxrwxrwt 9 sys sys 839 Apr 17 10:54 ..
-rw-r--r-- 1 jsmith m1 2048 Apr 17 10:58 bootaa12.dsp
-rw-r--r-- 1 jsmith m1 2048 Apr 17 10:58 bootba06.dsp
-rw-r--r-- 1 jsmith m1 1261643 Apr 17 10:58 buiapp.zip
-rw-r--r-- 1 jsmith m1 8 Apr 17 10:58 dataaa12.dsp
-rw-r--r-- 1 jsmith m1 8 Apr 17 10:58 databa06.dsp
-rw-r--r-- 1 jsmith m1 67 Apr 17 10:58 filelist.dsp
-rw-r--r-- 1 jsmith m1 46 Apr 17 10:58 filelst2.dsp
-rw-r--r-- 1 jsmith m1 45 Apr 17 10:58 fupgrade.dat
-rw-r--r-- 1 jsmith m1 1664680 Apr 17 10:58 mainab09.abc
-rw-r--r-- 1 jsmith m1 475 Apr 17 10:58 micb.htm
-rw-r--r-- 1 jsmith m1 43830 Apr 17 10:58 micbhadm.htm
-rw-r--r-- 1 jsmith m1 80397 Apr 17 10:58 micbhmsr.htm
-rw-r--r-- 1 jsmith m1 77347 Apr 17 10:58 micbhusr.htm
-rw-r--r-- 1 jsmith m1 2104 Apr 17 10:58 p0aa12.dsp
-rw-r--r-- 1 jsmith m1 44120 Apr 17 10:58 p0ba06.dsp
-rw-r--r-- 1 jsmith m1 17472 Apr 17 10:58 p1aa12.dsp
drwxr-xr-x 2 jsmith m1 1066 Apr 17 10:58 tui
drwxr-xr-x 2 jsmith m1 163 Apr 17 11:20 user
-rw-r--r-- 1 jsmith m1 2056 Apr 17 10:58 x0aa12.dsp
-rw-r--r-- 1 jsmith m1 236 Apr 17 10:58 x0ba06.dsp
********** End of file <a:temp\AAAAAAAJ.TMP>
mac> # 2. Erase the local a:upgrade directory
mac> lerase a:upgrade
mac> lmkdir a:upgrade
creating directory: "a:upgrade"
mac> # 3. Copy delivery.mac script to a:user directory
mac> ascii
200 Type set to A.
mac> lcd a:.ser
local directory now: a:.ser
mac> cd user
```

```
250 CWD command successful.
mac> get delivery.mac
200 PORT command successful.
150 ASCII data connection for delivery.mac (141.226.71.246,1085)
(299 bytes).
226 ASCII Transfer complete.
999 299 bytes received in 1 seconds (0 Kbytes/s)
remote: delivery.mac local: a:.ser†elivery.mac
mac> cd ..
250 CWD command successful.
mac> lcd ..
local directory now: a:
mac> # 4. Running delivery.mac script
mac> $ delivery
mac> # START --- delivery --- SCRIPT
mac> # Remote upgrade testing: November 08, 1999
mac> # COPY TO LOCAL DIRECTORY a:upgrade
mac> bin
200 Type set to I.
mac> lcd a:upgrade
local directory now: a:upgrade
mac> get fupgrade.dat
200 PORT command successful.
150 Binary data connection for fupgrade.dat (141.226.71.246,1086)
(45 bytes).
226 Binary Transfer complete.
999 45 bytes received in 1 seconds (0 Kbytes/s)
remote: fupgrade.dat local: a:upgrade\fupgrade.dat
mac> get mainab09.abc
200 PORT command successful.
150 Binary data connection for mainab09.abc (141.226.71.246,1087)
(1664680 bytes).
226 Binary Transfer complete.
999 1664680 bytes received in 60 seconds (27 Kbytes/s)
remote: mainab09.abc local: a:upgrade\mainab09.abc
mac> get buiapp.zip
200 PORT command successful.
150 Binary data connection for buiapp.zip (141.226.71.246,1088)
```

```
(1261643 bytes).
226 Binary Transfer complete.
999 1261643 bytes received in 42 seconds (29 Kbytes/s)
remote: buiapp.zip local: a:upgradeouiapp.zip
mac> lcd a:upgrade
local directory now: a:upgrade
mac> lcd a:upgrade
local directory now: a:upgrade
mac> ldir
listing "a:upgrade\*"
. <DIR> 17/ 4(10:24)
.. <DIR> 17/ 4(10:24)
FUPGRADE.DAT 45 17/ 4(10:24)
MAINAB09.ABC 1664680 17/ 4(10:25)
BUIAPP.ZIP 1261643 17/ 4(10:26)
TUI <DIR> 17/ 4(10:26)
mac> # END --- delivery --- SCRIPT
mac>
mac> # 5. Check local directory a:upgrade
mac> ldir a:upgrade
listing "a:upgrade\*
. <DIR> 17/ 4(10:24)
.. <DIR> 17/ 4(10:24)
FUPGRADE.DAT 45 17/ 4(10:24)
MAINAB09.ABC 1664680 17/ 4(10:25)
BUIAPP.ZIP 1261643 17/ 4(10:26)
TUI <DIR> 17/ 4(10:26)
mac>
############################################################

mac> # End of getupgrd.mac script
mac>
############################################################
mac>
mac>
ftp> quit
221 Goodbye.
FTP, SWupgrade: sw
Software release: 02, issue: 09
Modify, Save, Cancel: m
```

```
Modify software ? (Yes, (No))y
The card must be disabled. Please disable the card and try again
Modify, Save, Cancel: m
Modify software ? (Yes, (No))y
Modify, Save, Cancel: s
installation of MICB s/w in progress...
copying a:upgrade\MAINAB09.ABC to a:MAINAB09.ABC ... OK!
copying a:upgrade\BUIAPP.ZIP to a:BUIAPP.ZIP ... OK!
new s/w will be used following MICB restart
Restart MICB ? (Yes, (No))y
```

The Browser User Interface

Contents

This section contains information on the following topics:

The Meridian Integrated Conference Bridge (MICB) provides a Browser User Interface (BUI) for the definition and maintenance of MICB cards and users. The BUI is also used for the scheduling and maintenance of MICB conferences (both regular and permanent).

You must define the following minimum card attributes: card name, IP address, card type, agent ID information (if applicable), and conference DN pairs. You can also define a card ID, a TUI DN, group call lists, permanent conferences, and "Weekdays" definitions for a card.

For a user, you define such attributes as the user name, the user ID, the user type, the telephone ID, and the user's email address.

You schedule a conference by setting the start time, the duration, the number of required ports, and other attributes. This document describes the web-based BUI for updating the MICB conference schedule.

System requirements

The MICB web server is accessed over an Ethernet connection through the local intranet. To access the MICB server, a PC with one of the following internet browsers is required:

- Netscape Communicator 4.5 (or later)
- Microsoft Internet Explorer 4.01 (or later) with Service Pack 1 (SP1)

The MICB web server can exist in one of two forms:

- As an external server – the MICB web server runs on an external workstation. An external server supports a maximum of 1000 users (a maximum of 100 users per card). This option requires the following:
  - — A 200 MHz Pentium PC with at least 64 MB of RAM, a 1+ GB hard drive, and a CD-ROM drive
  - — Windows NT 4.0 Server (or later)
  - — Microsoft Internet Information Server 3.0 (or later)

— Microsoft NT Service Pack 3.0 (or later)

— MICB Web Server software (on a CD-ROM)

or

- as an embedded server - the MICB web server runs on the MICB card. The MICB card acts as a stand-alone system. Users navigate their browser directly to the MICB card's IP address. An embedded server supports a maximum of 100 users. Configuring more than 100 users returns a system error message.

The external server provides one central point of administration and management of up ten MICB cards from a common point. All users navigate their browser to the server's IP address. However, each regular user (not the administrator) is associated with a specific card, and this card is contacted immediately when the user logs on.

The embedded server option supports up to a total of 100 registered users and ten simultaneous users. The external server option supports up to 1000 registered users (100 users per card) and 50 simultaneous users.

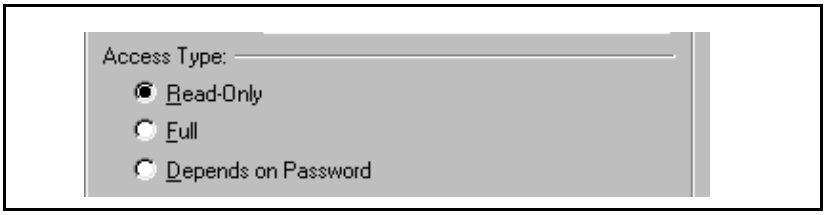
Web server conventions

Three action buttons appear at the bottom of various windows within this browser user interface (BUI):

- **Apply** – saves the current settings in the window
- **OK** – saves the current settings in the window and returns the user to the previous window
- **Cancel** – returns the user to the previous window without saving the current settings (that is, **Cancel** discards any modifications made to the settings).

Radio buttons indicate a choice of only *one* out of many options. Figure 20 illustrates radio buttons.

Figure 20
Radio buttons



Square ‘check-boxes’ indicate independent yes/no options, where the user can select *any number* of the options. Figure 21 illustrates check-boxes.

Figure 21
Check-boxes

A ‘combo box’ provides a list from which the user can choose a single option. To open a combo box, click on the down arrow at the right of the currently selected option. Figure 22 on page 143 illustrates a combo box.

Figure 22
A combo box

The Login window

To point your browser to the MICB BUI, enter **<IP address>\micb.htm** in the URL field and press **Return**. **<IP address>** is the IP address of the MICB card or the external server.

This opens the login window. See Figure 23.

Figure 23
Web server Login window

At the LOGIN prompt, enter your login ID. The administrator determines each user's login ID. At the PASSWORD prompt, enter the password. The password can be up to six digits and is the same one you use to access the Telephone User Interface (TUI). The first time you log in as a user or super-user, you use a default password that the administrator determines. After you log in, you can change the password by clicking on the key icon in the Conference Manager window.

When you log in to the MICB BUI, the login ID connects you to the server as a particular user type. The administrator determines what user type each user is. The three user types and their functionality are:

- **User** – A user can reserve conferences under their account as well as modify and delete their own conferences. A user can also view all scheduled conferences.
- **Super-user** – In addition to the normal user functionality, a super-user can reserve conferences under other users' accounts. A super-user can modify and delete the conferences of other users.
- **Administrator** – The administrator manages MICB system parameters, including user IDs, group-call tables, permanent bridges, and other MICB features.

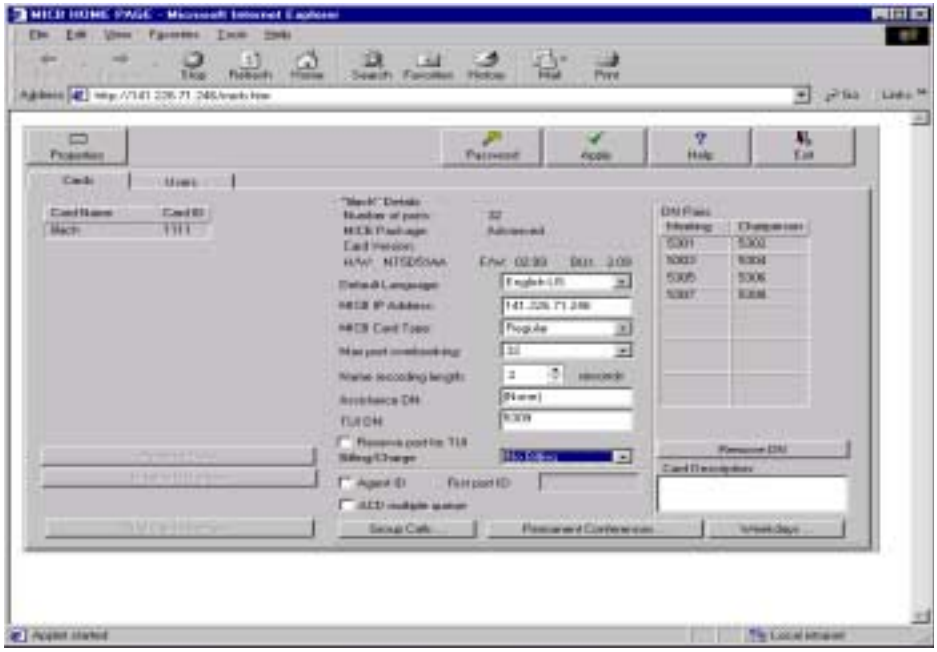
Users and super-users use the same BUI, while the administrator BUI is different. The user/super-user BUI handles conferences. The administrator BUI is only for system management and does not schedule conferences. The administrator can create permanent bridges, while the user and super-user cannot. In the external server configuration, each user/super-user is associated with one MICB card only and has no access to other cards. The administrator manages all MICB cards that the web server controls.

> ***Note:*** The administrator must first define all card attributes and user attributes before user and super-users can access the BUI to schedule conferences.

MICB administration utility

To access the MICB administrator BUI, enter the administrator login ID and password at the login window. See Figure 22 “Web server Login window” on page 143. Figure 24 shows the MICB Administration Utility window, which is the main administration window.

Figure 24
MICB Administration Utility, Cards page



Across the top of the main administration window are five buttons:

- **Properties** button opens the Properties window. See “Properties button” on page 160.
- **Password** button opens the Change Password dialog box, which allows the administrator to change the administrator password. See Figure 38 “The Change Password dialog box” on page 176.
- **Apply** button saves the current data.

- **Help** button opens the online help.
- **Exit** button terminates the BUI session and logs you out.

The main administration window contains two pages: the Cards administration page and the Users administration page. Click on the tab for the page you want to view.

Cards administration

The MICB card parameters are managed from the Cards page of the MICB Administration Utility. See Figure 24 on page 145. In the external server configuration, one BUI server can manage up to ten MICB cards. In the embedded server configuration, the BUI shows only one card.

The table on the left side in Figure 24 on page 145 lists the names of all of the cards that the BUI server manages. Each name can be up to 20 characters in length. The right-hand column of the table lists the card ID of each card. The card ID is a decimal number up to four digits long and represents the card in billing reports and CDR charge-account records.

In the external server configuration, add a card by typing into an empty row. Select a card by clicking on it; the selected card is highlighted.

The **Remove Card** button deletes the currently selected card.

The **Display Details** button displays the details of the selected card in the right-hand portion of the Cards page. To display the details of a card at the right of the frame, select the card from the ‘Card Name’ list, then click on **Display Details**.

The **Dual Card settings...** button opens an auxiliary window for the configuration of a dual card set. See “Dual card settings” on page 152.

Card details

The parameters of the selected card appear on the right-hand side of the Cards page. The left column lists the number of ports, the MICB package, and the version, including the hardware vintage, the firmware version, and the BUI version.

Table 12 lists the card attributes that can be configured.

Table 12
Card Attributes

Attributes	Description
Default Language:	The default language of the conferences. Default: English - US
MICB IP address:	The card's IP address. With the embedded server option, the card's IP address appears automatically and it cannot be changed. With the external server option, the IP Address must first be configured using the CLI. When the BUI is first used to connect to the external server, enter the card's IP address and click **Apply** to establish a connection to the card; then define the remaining card attributes. In both options, the CLI, not the BUI, defines the card's IP address.
MICB Card type:	The card type, which is either 'Regular' (for a stand-alone card), 'Primary' (for a dual card set), or 'Secondary' (for a dual card set). Default: Regular
Max port overbooking:	The maximum number of ports available for reserving conferences, including overbooking. The range is 100-125% of the number of ports the card is equipped with (for example, 32-40 for a 32 port card). Default: the actual number of ports on the card
Name recording length:	The amount of time given to conferees to record their names when entering conferences, from 2-10 seconds. Default: 2 seconds
Assistance DN:	The DN (up to seven digits in length) to which the MICB card forwards help requests from the conference chairperson. Dial this DN for in-house assistance. It can be accessed by the chairperson using the DTMF command *0# (Star-Zero-Pound).
TUI DN:	The DN to dial for Telephone User Interface (TUI) operations, up to seven digits in length.
Reserve port for TUI:	Check this box to reserve one of the ports solely for TUI operations. The reserved port is not available for conferences.
Billing/Charge	Check this box to enable the billing feature. This feature generates billing reports which can be picked up by the customer by FTP. There are 3 options: No billing, Billing Reports or Billing and CDR Reports. See Appendix E: "Billing" on page 231.

The next framed area is for ACD setup, which must match the Meridian 1 system configuration. Table 13 shows the attributes to configure.

Table 13
ACD Setup

Attributes	Description
Agent ID:	Indicates whether ACD is configured with the Agent ID option.
First port ID:	If the Agent ID box is checked, then enter here the first agent ID for MICB ports, up to four digits in length. The other ports use the *succeeding* agent IDs. For example, if the first agent ID is 3000 and the MICB card has 24 ports, then the card uses IDs 3000-3023.
	Note: Ensure that all agent IDs that you intend to use (3000-3023 in this example) are available before you assign them.
ACD multiple queue:	Indicates whether ACD is configured with the multiple option.

The DN pairs table lists the paired conferee and chairperson DNs. You can define up to ten DN pairs per card.

> ***Note:*** The dual card DN pair counts toward the limit of DN pairs allowed on *both* the primary *and* the secondary cards. Therefore, you can define only nine DN pairs on each of the primary and secondary cards in a dual card configuration. You define the main and chairperson DNs for dual card conferences in the Dual Card Settings dialog box.

Select a DN by clicking on it; the selected DN is highlighted. Edit a DN by typing directly in the table. Add a DN pair by typing into an empty row. A DN can be up to seven digits in length.

The **Remove DN** button deletes the currently selected DN pair. Click **Apply** for the change to take effect.

The Card description field allows you to enter a description of the card, up to 30 characters in length.

The **Group Calls...** button opens an auxiliary window for the configuration of group calls for this card. See “Group-call configuration” on page 155.

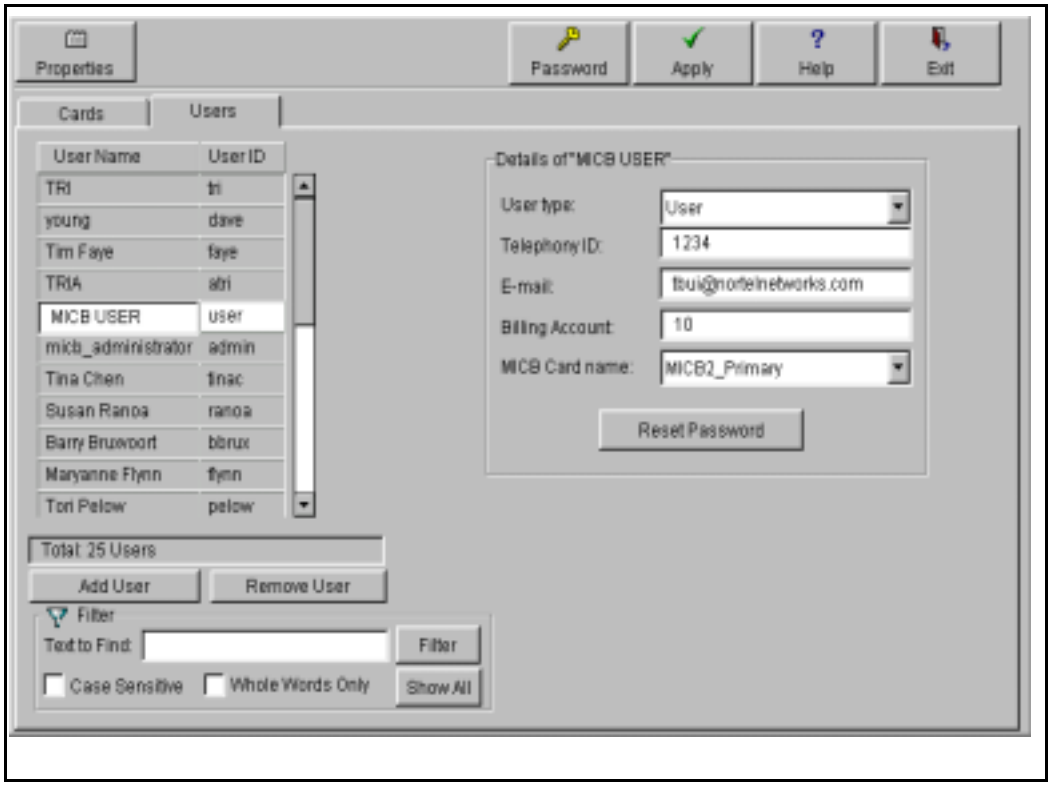
The **Permanent Conferences...** button opens an auxiliary window for the configuration of permanent conferences for this card. See “Permanent conference configuration” on page 157.

The **Weekdays...** button opens a dialog box for defining the range of working days. Default: from Monday to Friday.

Users administration

Manage MICB user parameters from the Users page of the MICB Administration Utility. See Figure 25. In the external server configuration, the external web server stores all user data. In the embedded server configuration, each MICB card stores its own user data.

Figure 25
MICB Administration Utility, Users page



The table on the left side of the Users page lists all of the users, listing for each user the user name (up to 20 characters) and the login ID (up to 10 characters). You can sort the list by either user name *or* user ID by clicking on the title of the appropriate column. For example, to sort the list alphabetically by user ID, click on the **User ID** column head. You can select a particular user by clicking on it; the selected user is highlighted, and the user details appear on the right.

> ***Note:*** The User ID is used as the login ID for access to the BUI.

The **Add User** button below the table opens a new line below the currently selected user. Enter a new user in this new line.

The **Remove User** button deletes the currently selected user.

> ***Note:*** Instead of deleting a super-user, the administrator can change the super-user's parameters (including the login name) to allow the administrator to delete or retain conferences scheduled by the super-user.

Up to 1000 users (a maximum of 100 users per card) can be defined in the external server configuration or up to 100 users in the embedded server configuration. A user can be assigned to only one MICB card.

The 'Filter' area at the bottom of the Users page allows a select subset of users to be displayed. When the **Filter** button is clicked, only users matching the 'Text to Find:' field appear in the users list. The **Show All** button cancels the filter and re-displays the entire list of users.

User details

The parameters of the selected user appear on the right-hand side of the Users page. Table 14 on page 152 lists the attributes that can be configured for each user.

Table 14
User attributes

Attributes	Description
User type:	The type of user, either user, super-user, or administrator.
	Note: Initially, there is one user of type 'administrator' with password '000000' and billing account number of 1. This is for the first login after installation.
Telephony ID:	The user ID for user login to the TUI, up to six digits in length.
e-mail:	The e-mail address of the user, for receiving reservation confirmation by e-mail, up to 36 characters in length.
Billing account:	The account number of the user, up to nine digits, for billing purposes. This number appears in the billing reports and in Meridian 1 CDR records for conferences owned by the user.
MICB Card name:	The name of the card the user is assigned to. Only the external server configuration supports this field.

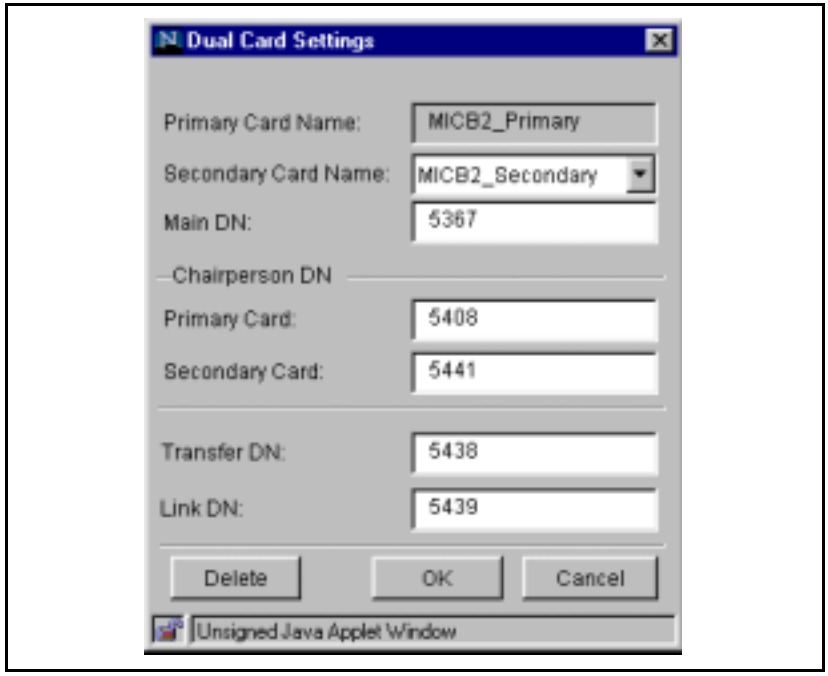
Click the **Reset Password** button to reset the selected user's password to the initial password. See "Properties button" on page 160 for information on the initial password.

Dual card settings

Configure the two cards that are to serve as a pair for dual card conferences as primary and secondary cards. To enter the dual card setup, click on the **Dual Card settings...** button in the main administration window of the *primary* card. The Dual Card Settings dialog box then appears, as Figure 26 page 153 shows.

> ***Note:*** Before the dual card settings are configured, configure the card attributes of both the primary and the secondary card. Set the dual card settings from the primary card.

Figure 26
Dual Card Settings dialog box



The Primary Card Name is the name of the card currently selected in the main administration window; the Primary Card Name cannot be changed in this window. Table 15 lists the attributes that can be configured.

Table 15
Dual card attributes

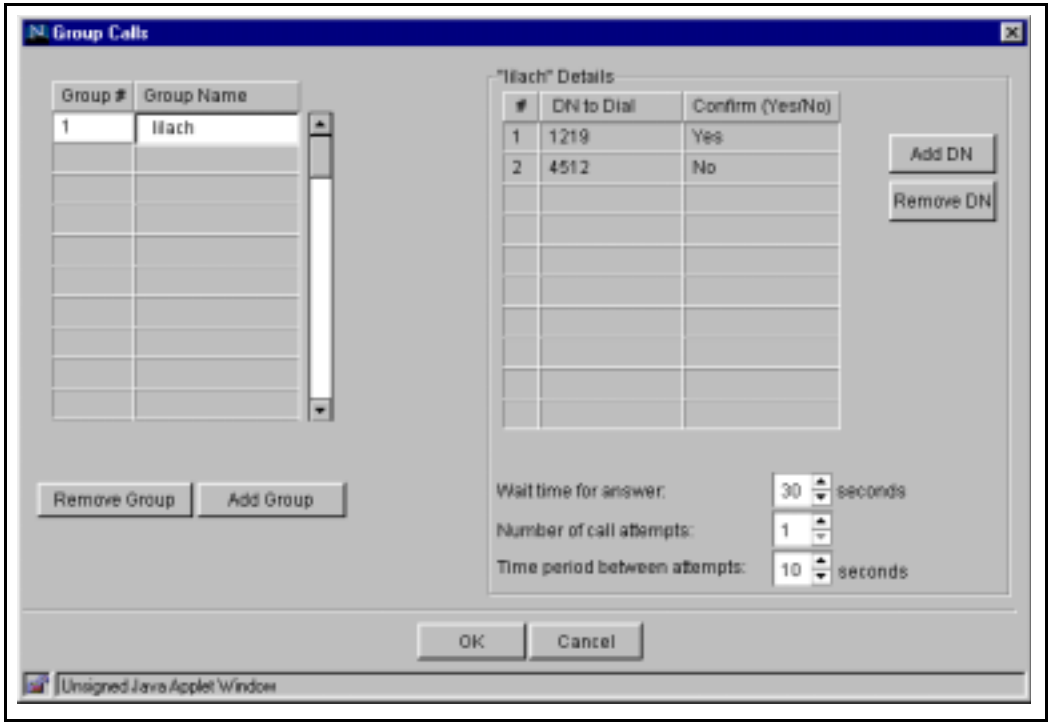
Attributes	Description
Secondary Card Name:	Select the Secondary Card Name from the list of *already* configured cards.
Main DN:	The DN that conferees dial to access a dual card conference. Enter the DN that you defined as an NACD DN according to “LD 23 – Configure the main DN for dual card conferences” on page 69.
Primary chairperson DN:	The DN that the primary chairperson dials to perform chairperson functions on the primary card.
Secondary chairperson DN:	The DN that the secondary chairperson dials to perform chairperson functions on the secondary card.
Transfer DN:	The DN that the primary card uses to transfer calls to the secondary card.
Link DN:	The DN that the two cards use to create a voice path between them.

All parameters from the Dual Card Settings dialog box, except for the chairperson DNs, are sent to both cards. The chairperson DNs are sent to their respective cards.

Group-call configuration

For each MICB card, groups can be defined for the group-call feature. To enter the group-call setup, click on the **Group Calls...** button on the cards page of the main administration window. The Group Calls dialog box then appears. See Figure 27.

Figure 27
Group Calls administration page



For each DN in a group call, define if the user should enter a * DTMF signal before joining the meeting. The default option is **Yes**. This option is entered in the Confirm column in the table on the right hand side (Group-Call details).

The table on the left side of the Group Calls dialog box lists all of the groups defined for the selected card. Up to 64 group-call lists can be defined per card.The group number is the number that the chairperson dials when executing the group-call command. The group name is up to 20 characters of free text that describes the group. The BUI sorts the group-call lists by group number.

Select a group by clicking on a particular row of the table. The group is then highlighted and the group's details appear on the right side.

The **Add Group** button below the table opens a new line below the currently selected group. Enter a new group in this new line.

The **Remove Group** button deletes the currently selected group.

Group details

The group details on the right side of the Group Calls dialog box lists the DNs assigned to the selected group. The order of the DNs indicates the priority of calling; for example, when a conference has seven ports available, the MICB dials only the first seven DNs on the list. A group call list can contain up to 61 DNs.

The **Add DN** button to the right of the table opens a new line below the currently selected DN. Enter a new DN, up to 20 digits, in this new line. The MICB sets the DN number in the left-hand column automatically.

The **Remove DN** button deletes the currently selected DN.

Table 16 lists the attributes you can configure for each group.

Table 16
Group details

Attributes	Description
Wait time for answer:	The number of seconds to wait for a called party to answer when dialing the selected group. The range is 15-90 seconds. Default: 30 seconds
Number of call attempts:	The number of times to dial each number in the group call list. The MICB card can re-dial a number in the case of failure. A value of 1 means only one attempt with no retries. The range is 1-3 attempts. Default: 1 attempt
Time period between attempts:	In case of dialing failure, the number of seconds the MICB card waits before re-dialing the number. The range is 5-30 seconds. Default: 10 seconds

Permanent conference configuration

For each MICB card, permanent conferences, or bridges can be defined. To enter the permanent conference setup, click on the **Permanent Conferences...** button on the cards page of the main administration window. The Permanent Conferences dialog box then appears. See Figure 28 on page 158.

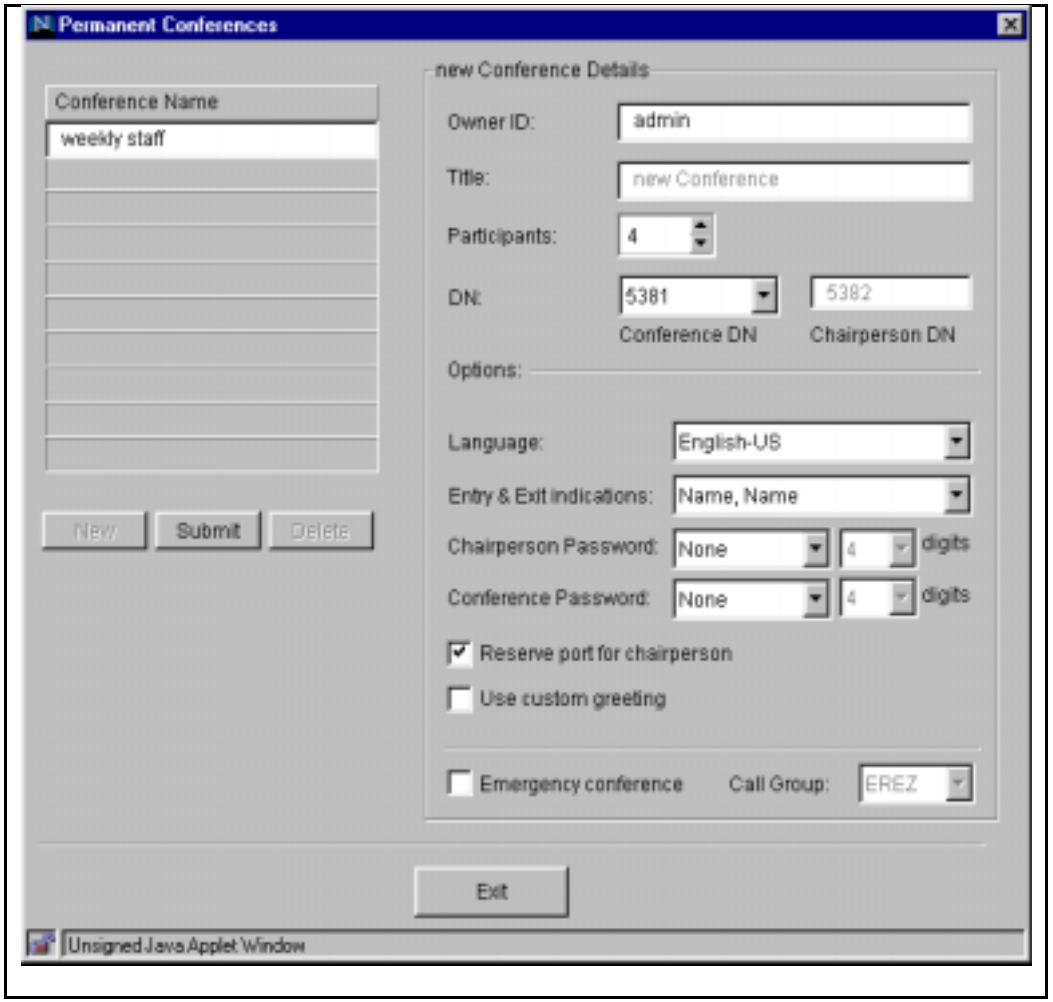
> ***Note:*** MICB Release 2.X does not support dual card permanent conferences. However, permanent conferences on either of the cards in a dual card configuration can be defined, as long as the number of participants does not exceed the number available on that particular card (maximum of 32).

The table on the left side of the Permanent Conference dialog box lists all of the permanent conferences defined for the selected card. The conference name is up to 20 characters of free text that describes the conference.

Select a conference by clicking on a particular row of the table. The conference is then highlighted and the conference details appear at the right.

.

Figure 28
Permanent Conference dialog box



The **New** button below the table opens a new line below the currently selected permanent conference. Enter a new conference in this new line.

The **Submit** button sets the currently defined permanent conference.

The **Delete** button deletes the currently selected permanent conference.

Conference details

For a selected conference, Table 17 lists the attributes that can be configured on the right side of the Permanent conference dialog box.

Table 17
Conference details

Attributes	Description
Owner ID:	The user ID of the owner of the permanent conference.
Title:	The title of the permanent conference.
Participants:	The number of ports to reserve for the permanent conference, up to the number of ports configured on the MICB card.
DN:	The DN that conferees must dial to enter the permanent conference.

Configure the Language, Entry and Exit Indications, Chairperson Password, Conference Password, Reserve port for chairperson, and Use custom greeting attributes the same way as those explained for the MICB Conference Reserver window. See“MICB user BUI description” on page 161.

Check the Emergency conference box at the bottom of the dialog box to activate the Emergency Conference feature. An emergency conference has an associated group-call list, which is selected in the adjacent combo-box. When somebody dials the DN for an emergency conference, the MICB immediately dials every DN on the selected group calls list.

After a permanent conference is added or modified, press the **Submit** button to save the conference attributes before proceeding to the next conference. An acknowledgment window appears, which specifies whether the Submit operation was successful.

If pending modifications are abandoned (by not pressing the **Submit** button) by selecting another permanent conference, or by pressing the **New** or **Exit** buttons, a dialog box appears asking whether to discard the pending modifications or set them.

Properties button

Click on the **Properties** button at the top of the main administration window to open the System Properties dialog box shown in Figure 29. This dialog box manages general settings that are not card-specific.

Figure 29
System Properties dialog box

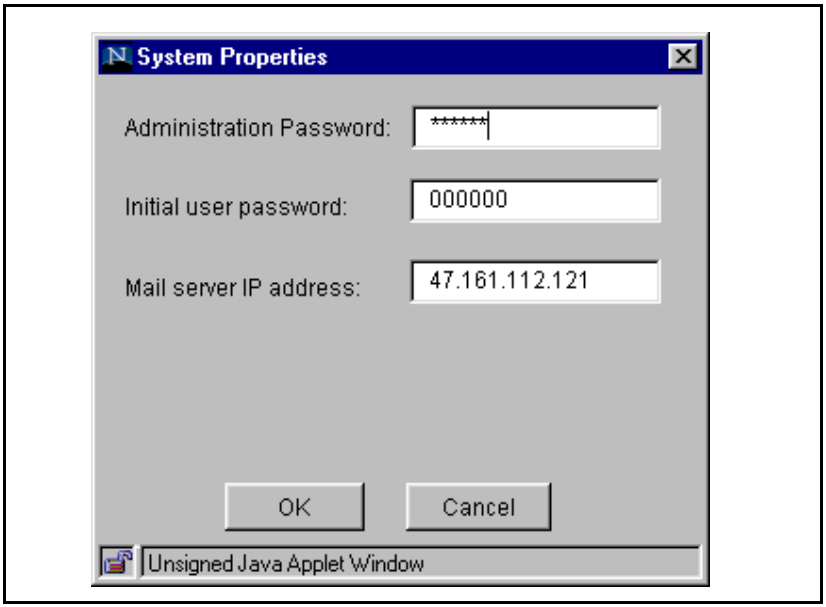


Table 18 lists the attributes that can be configured in the System Properties dialog box.

Table 18
Properties details

Attributes	Description
Administrator password:	The login password of the administrator that is currently logged in. When the MICB card is first installed, this password is 000000.
Initial user password:	The initial user password when the administrator adds a new user or resets a user's password. This password is initially 000000.
Mail server IP address:	The server for sending e-mails of conference reservations. To enable the email notification feature, enter the appropriate IP address in this field. Do this before allowing users to login and schedule conferences.

Note: For email notification to work, the mail server IP address *must* be 'unrestricted' and able to send email to everyone on the network.

MICB user BUI description

This section describes each BUI user window.

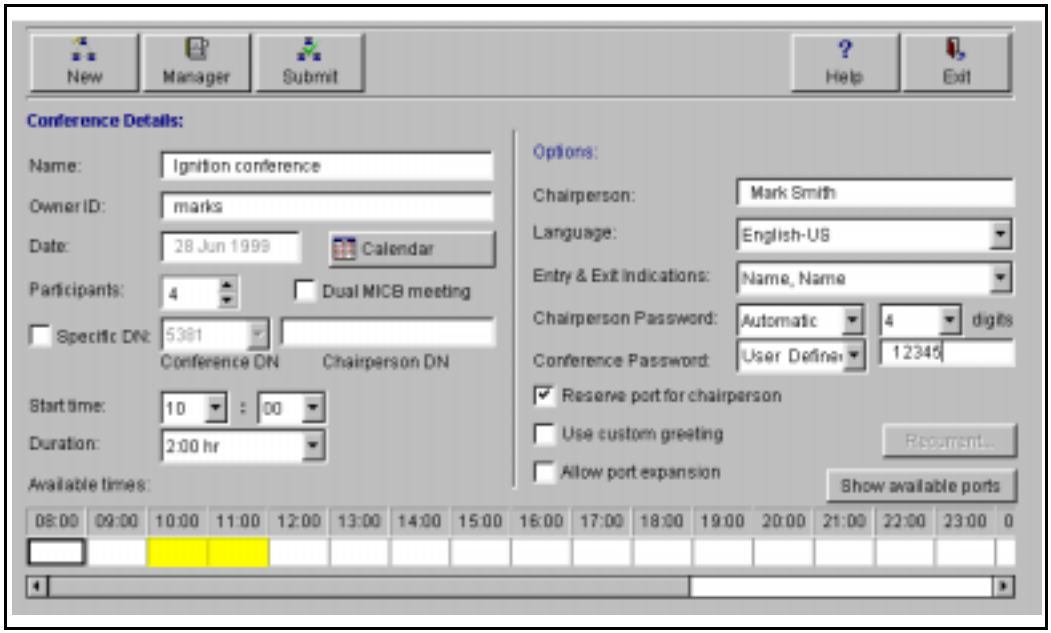
MICB Conference Reserver

The MICB Conference Reserver window is the main window of the MICB user/super-user BUI. See Figure 30 on page 162. This window is where a new conference is reserved, the most common task. This window appears immediately after a user or super-user logs in. The window is visible during the entire user/super-user session.

Across the top of the Conference Reserver window are five buttons:

- **New** button clears all entries in the Conference Reserver window so that a new conference can be defined.
- **Manager** button opens the Conference Manager window. See “Conference Manager” on page 171.
- **Submit** button submits the conference details to the MICB to reserve a conference. A confirmation message is sent.
- **Help** button opens online help.
- **Exit** button logs the user out of the BUI.

Figure 30
MICB Conference Reserver window



The left half of the window contains fields where basic information to set up the conference is entered. The right half of the Reserver window contains fields where options and features are set. Click on the **Submit** button to save the conference. Table 19 on page 163 lists the attributes available in the Conference Reserver Window.

Table 19
Conference Attributes (Part 1 of 3)

Attributes	Description
Name:	A maximum of 20 characters that describes the conference. The user can leave this field blank.
Owner ID:	The login User ID of the person who created the conference. A conference is billed to the owner's account. Only the owner can modify or delete a conference. For regular users, this field is read-only, and the adjacent button is absent. Super-users can edit data in this field, so the conference is reserved on behalf of the specified Owner ID. The specified user becomes the owner of the conference when the conference is set.
Date:	The date of the conference. The adjacent 'Calendar' button opens an auxiliary window that displays one month at a time. See "The auxiliary Calendar window" on page 175. Scroll to a particular month and click on the appropriate day for the conference. Default: Current date
Participants:	The number of participants, including the chairperson, in the conference. The number of conference participants depends on the provisioning of the MICB card. Default: 4
Dual MICB meeting:	Check this box to schedule a dual card conference (up to 62 participants). This checkbox is disabled if the MICB card is not a primary card. When you check this box, the MICB enters the pre-defined dual card conference DNs in the conference DN and chairperson DN fields.
Specific DN:	Check this box to select the conference DN from the combo box. The combo box shows all available conference DNs. Each conference DN has a chairperson DN associated with it. Default: The box is not checked and MICB selects the conference DN automatically.
Start time:	Select the conference start time in 15-minute increments. Default: Current time

Table 19
Conference Attributes (Part 2 of 3)

Attributes	Description
Duration:	Select the conference duration in increments of 15 minutes. Minimum conference duration is 15 minutes. Maximum conference duration is 12 hours. Default: 1 hour
Chairperson:	The chairperson of the conference. By default, it is the same as the owner's name, but the user can modify it. The chairperson name has a maximum length of 20 characters.
Language:	Select the conference language. The administrator determines the default language.
Entry and Exit Indications:	Indicates how the system announces participants as they enter and leave a conference. There are four options: **Name**, **Name**—Entry by name, exit by name **Name**, **Tone**—Entry by name, exit by tone **Tone**, **Tone**—Entry by tone, exit by tone **Silence**—Silent entry and exit (no indication) Name announcements are preceded by a tone. Default: **Name**, **Name**
Chairperson password:	The password, from four to eight digits in length, that the chairperson dials to enter the conference. There are three options for defining this password: **Automatic**—The MICB card generates the password automatically after the conference is set. The user determines how long the password is by the combo box to the right. **User defined**—The user specifies the desired password in the box to the right. **None**—No password is defined and none is needed to enter the conference. Default: **None**
Conference password:	The password that the conferees dial to enter the conference. This password has the same parameters as the chairperson password.
Reserve port for chairperson:	Check this box to reserve one of the conference ports for the chairperson. If this box is not checked, the chairperson can be blocked from the conference if sufficient conferees dial in to the conference before the chairperson does. Default: Box is checked

Table 19
Conference Attributes (Part 3 of 3)

Attributes	Description
Use custom greeting:	Check this box to use the ‘brandline’ greeting for the conference. If this box is not checked, the system uses the built-in factory default greeting. Default: Box is not checked
Allow port expansion:	Check this box to allow the conference to expand beyond the number of ports reserved for it. An expanded conference uses ports that are neither in use nor reserved by any other conference. Default: Box is not checked
The **Recurrent...**	This button at the bottom right of the window opens an auxiliary window that allows you to schedule a conference that recurs periodically. See “Recurrent conferences” on page 165. Dual MICB meetings cannot be recurrent. This button is disabled when the Dual MICB meeting box is checked. You must check the Specific DN box to enable this button.

The scale at the bottom of the window shows the available periods for the selected day. When the **Date** and **Participants** parameters are set, the time periods that can accommodate these parameters appear in white. (The system takes the Dual MICB meeting option into account.) Unavailable times have a gray background. If the user indicates a DN, the scale removes times when the DN is not available. When the user selects a conference start time and length, the meeting appears on the scale in yellow.

The **Show available ports** button - Press once to indicate on the scale the number of ports available in each hour. Press the button again to remove the port-availability information.

Recurrent conferences

Click on the **Recurrent...** button in the MICB Conference Reserver window to open an auxiliary window that allows you to schedule a conference that recurs periodically. See Figure 31 on page 166.

Figure 31
Recurrent Conference dialog box

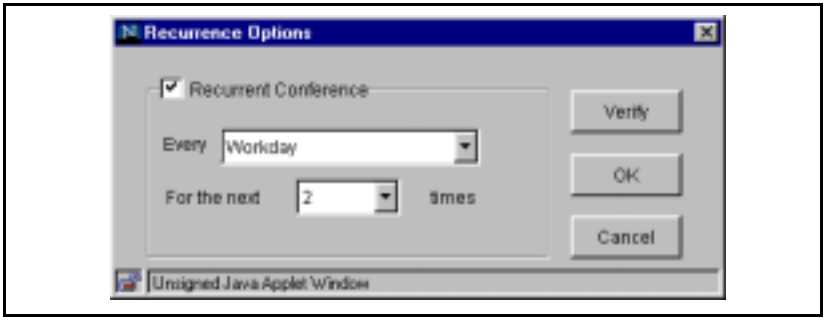


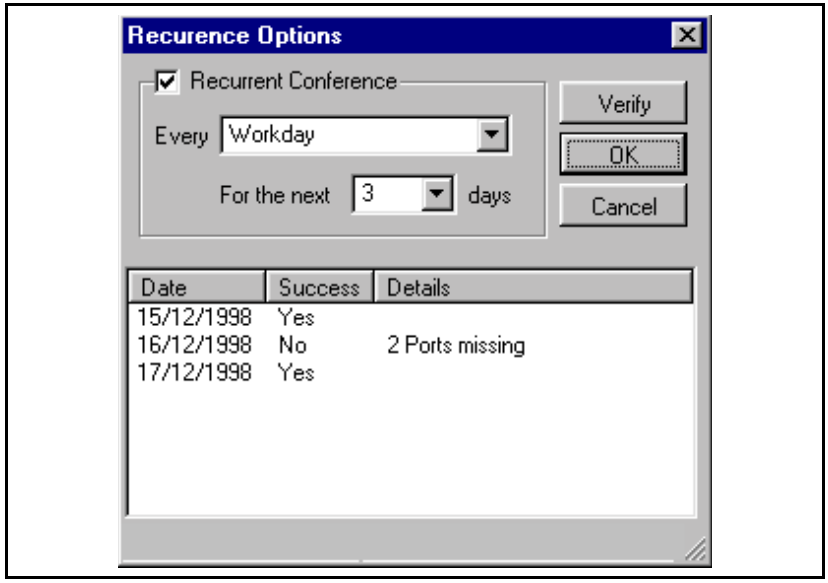
Table 20 lists the attributes you can configure in the Recurrent Conference dialog box:

Table 20
Recurrent Conference attributes

Attributes	Description
Recurrent Conference box	Activates or deactivates the ‘recurrent’ feature. The box is checked the first time you open this dialog box.
‘Every’ combo box	Determines the frequency of the recurrent conference. The options are: Workday, Day, Week, Two weeks, and Month. The administrator defines ‘Workday’ (for example, Monday-Friday). ‘Day’ refers to every day of the week, including non-work days.
‘For the next’ combo box	Determines how many times, from 2 to 15 times, the conference occurs. The number of occurrences can extend up to one year. Default: 2 times

Click the **Verify** button to check the requested dates in the MICB card. The result appears as a list as shown in Figure 32.

Figure 32
Recurrent meeting 'Verify' results



Note: The system does not reserve the recurrent conference at this point; it only verifies whether all requested occurrences are available.

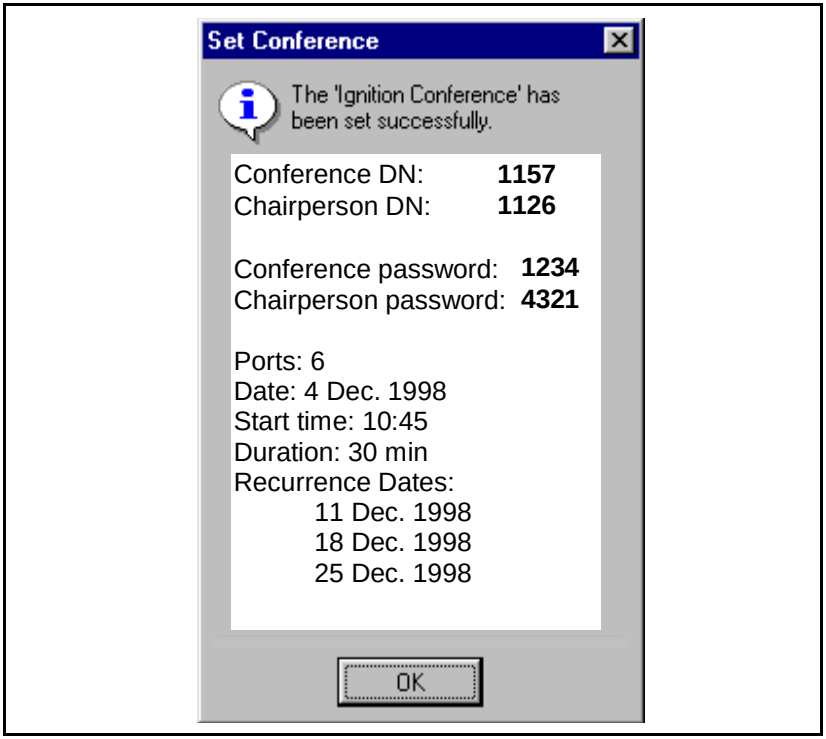
The user can accept the results by pressing **OK**, cancel the recurrent conference operation by pressing **Cancel**, or modify the parameters and try again. When the user modifies the parameters, the results list disappears and the dialog box returns to its initial form as in Figure 32.

When the user presses **OK**, the system stores the parameters and closes the dialog box. However, the system does not actually reserve the recurrent conference until the user presses the **Submit** button in the MICB Conference Reserver window. See "Setting a conference" on page 168. If there are simultaneous users on the MICB BUI, it is possible that the reservation result is different from the 'Verify' result. This can happen because the system reserves ports in the order that the users request them by pressing the **Submit** button.

Setting a conference

Once you have entered all of the parameters for a particular conference, press the **Submit** button in the MICB Conference Reserver window to reserve the conference on the MICB card. If the reservation is successful, an acknowledgment box appears. Figure 33 illustrates a conference reservation acknowledgment window.

Figure 33
Conference reservation acknowledgment window



The window is the same for a single or recurrent conference. The window shows the main conference parameters: DNs, passwords, number of ports, date, time, and duration. If you set a recurrent conference, you can also view all successful recurrence dates in this window. You can view all other parameters of the conference in the MICB Conference Reserver window, which is still in view.

Note: It is especially important to note the contents of the Conference reservation acknowledgment window if you had the MICB card set the DNs and/or passwords automatically.

You can copy the text in the white portion of the Conference reservation acknowledgment window and paste it elsewhere. The operation for copying and pasting the text is the same as for most word processors.

Reservation failure

If the MICB card cannot reserve a requested single conference, the Single conference 'Set' failure message appears. Figure 34 illustrates the failure message.

Figure 34
Single conference 'Set' failure message

The failure message gives the reason for the reservation failure. If the reason for failure is insufficient ports, you have the option to set the conference anyway with a smaller number of ports by pressing **Set Anyway**. Otherwise, you can press **Cancel** and reconfigure the conference. If the reason for failure is that a DN is not available, you must reconfigure the conference.

For a recurrent conference, pressing **Submit** reserves the conference for all of the requested dates that are available. If the list of dates actually set differs from the list shown in the ‘Verify’ result, the Recurrent conference ‘Set’ failure message window appears, as Figure 35 illustrates.

Figure 35
Recurrent conference ‘Set’ failure message

Email confirmation

When conference setup is successful, MICB automatically sends the conference owner an email with the details. Table 21 gives an example of the email format.

Table 21
Email confirmation

Your tele-conference meeting has been booked by MICB as follows:	
Owner ID:	Barryb
Conference DN:	1157
Chairperson DN:	1126
Conference password:	1234
Chairperson password:	4321
Date:	4 Dec. 2000
Start time:	10:45
Duration:	30 min
Ports:	6
Recurrence dates:	11 Dec. 2000 18 Dec. 2000 25 Dec. 2000
Options:	
Chairperson name:	Barry Bigglesworth
Language:	American_English
Entry and exit indications:	Name, Name
Reserve port for chairperson:	yes
Use custom greeting:	no
Allow port expansion:	no

Conference Manager

Click on the Manager button at the top of the Conference Reserver window as shown in Figure 36 on page 172. The Conference Manager window displays all the meetings scheduled for a selected day on that one MICB card. The Conference Manager window has an auxiliary Calendar window to select dates. The Conference Manager and Calendar windows appear side by side.

User privileges

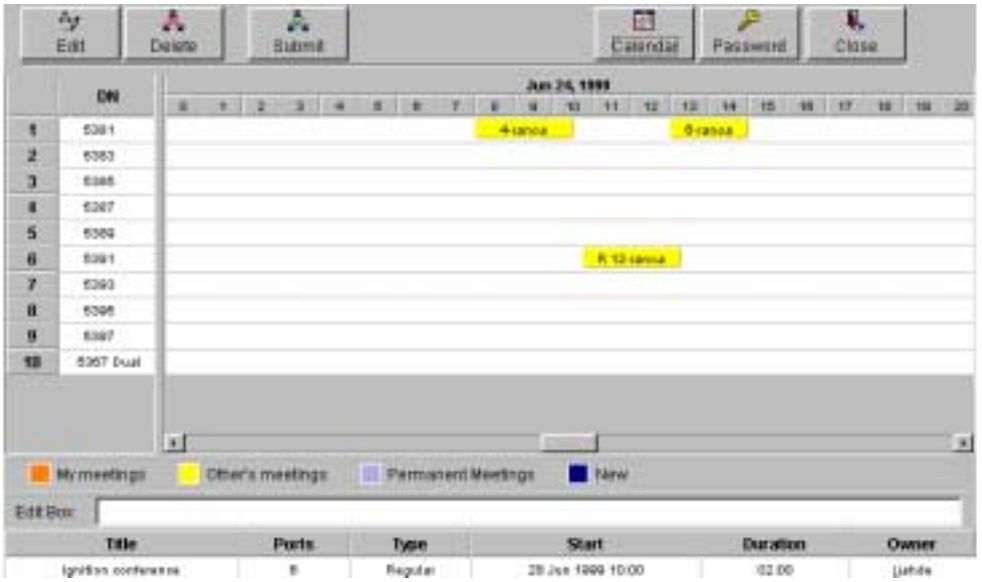
A user can only schedule their own meetings.

Super-user privileges

A super-user can schedule meetings for all users. A super-user cannot modify the conferences of another super-user.

> ***Note:*** Do not remove super-users. When there is a change of super-user, modify the super-user's parameters (including the login name) for the new super-user where it is necessary to retain conferences scheduled by the original super-user.

Figure 36
Conference Manager window



Conference manager description

Across the top of the Conference Manager window are six buttons:

- **Edit** button brings you to the Conference Reserver window to edit the details of a conference that you highlighted in the Conference Manager window.

- **Delete** button deletes a conference that you selected, if you have permission.
- **Submit** button submits the details of a conference that you are first defining or modifying for the MICB to save.
- **Calendar** button opens the auxiliary Calendar window so that you can select which day's conferences you want to view. See "The auxiliary Calendar window" on page 175.
- **Password** button opens the Change Password dialog box so that you can change your user password.
- **Close** button closes the Conference Manager window and returns you to the Conference Reserver window. You will lose all changes to conferences unless you first clicked on the **Submit** button.

The main part of the Conference Manager window shows the conferences scheduled for the selected day. The horizontal scale indicates the time. The vertical scale indicates the conference DNs. A colored, horizontal bar represents each conference. Immediately below the body of the window is a key to the colored bars:

- **Orange** indicates conferences that the current user owns.
- **Yellow** indicates conferences that others own.
- **Lavender** indicates a permanent bridge.
- **Dark blue** indicates a conference that the user is defining or modifying but has not yet submitted.

The letter '**R**' on a conference bar indicates a recurrent conference.

The vertical, dotted line in the body of the window indicates the separation between days. The window shows two days—the day selected and the day following.

To edit or delete a conference, click on a conference and press the **Edit** or **Delete** buttons at the top of the Conference Manager.

Note: Users can only edit or delete their own conferences.

User operation

Users can define a new conference by dragging the mouse from left to right in the row of the desired DN. The new conference you are defining appears in the lower table; you enter the conference title and the number of ports, or conferees, there. Adjust the duration of the conference by adjusting the size of the conference bar or by updating the 'Duration' column in the lower table.

If you have the dual-MICB card option, you can define a dual card conference by dragging the mouse from left to right in the bottom DN row titled 'Dual'. You can only create or modify a dual card conference in the primary MICB card. A dual card conference appears in the Conference Manager of the secondary card as well, but you cannot change its attributes there. A dual card conference appears in the lower table, just like other conferences.

You can view details of a selected conference in the MICB Conference Reserver window, which is the main window. See "MICB user BUI description" on page 161. To return to the main window, click on the **Edit** button at the top of the Conference Manager window. The main window contains the parameters of the conference that you selected in the Conference Manager window. In the main window, a user can modify the parameters of the selected conference if he or she owns the conference. A super-user can modify the parameters of any of the conferences.

> ***Note:*** If a user is viewing the parameters of any conference, the passwords do not appear.

Click on the **Delete** button to delete the selected conference. This opens a dialog box for confirmation. If the selected conference is a recurrent conference, the dialog box gives two delete options:

- The selected instance only
- All instances of the recurrent conference

Click on the **Submit** button to reserve or save the modifications of, the selected conference. If the reservation is successful, an acknowledgment box appears. See Figure 34 on page 169.

Click on the **Calendar** button to display or hide the auxiliary Calendar window.

Click on the **Password** button to open a dialog box for modifying the user's (or super-user's) password. The password can be up to six characters in length.

Click on the **Close** button to return to the MICB Conference Reserver window without the attributes of a selected conference.

The auxiliary Calendar window

Figure 37 shows the Calendar window, which appears when you click on the **Calendar** button in either the Conference Reserver window or the Conference Manager window. The window opens to the current day.

Figure 37
Calendar window

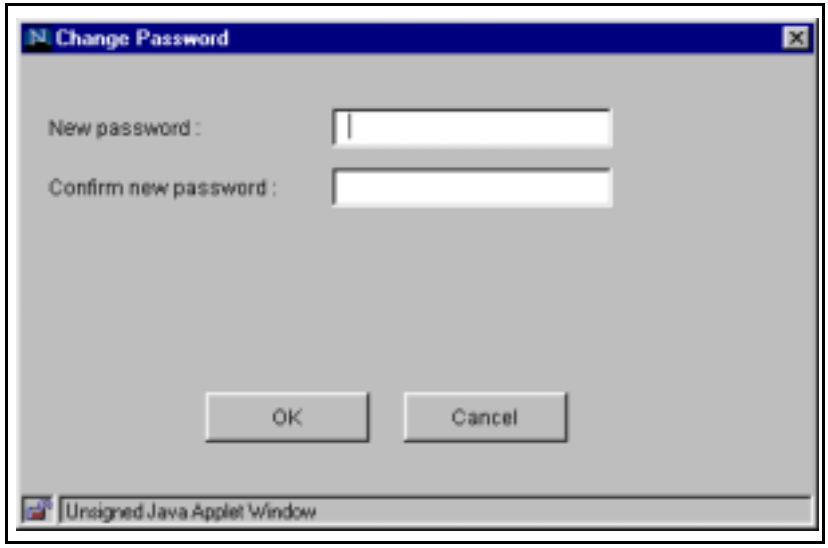
The year and month appear at the top of the window. The down arrows to the right of the year and month open combo boxes that allow you to select the desired year and month. The MICB card allows reservations up to one year in advance. Once you have selected the desired year and month, select the desired day by clicking on that day. A black box frames the selected day.

Click the **Today** button to return the calendar to the current day. Click the **Apply** button to set the conference date in the Conference Reserver window or to update the Conference Manager window to the selected date. Click the **OK** button to set the conference date in the Conference Reserver window, or to update the Conference Manager window to the selected date, *and* close the calendar. Click the **Cancel** button to close the calendar window and keep the current date.

The Change Password dialog box

From the Conference Manager window, you can change your login password by clicking on the **Password** button. When you click on the **Password** button, the Change Password dialog box opens, which Figure 38 shows.

Figure 38
Change Password dialog box



To change your user or super-user password, type in the new password you want to have. The new password can be up to six numbers. (Letters are not allowed.) Type the new password a second time to confirm it. Click **OK** to change your password and close this dialog box; MICB gives you a confirmation message that it has changed your password. Alternatively, you can click **Cancel** to close this dialog box without changing your password.

Abnormal BUI operation

Critical errors occur when the BUI cannot execute the user's request or when unexpected conditions prevent BUI service. The reason for the critical BUI error can be failure of the equipment or incorrect configuration. Figure 39 shows the format of the critical error message.

Figure 39
Critical error message format

Operational errors are a result of incorrect user input or a temporary blocking of resources. In the case of incorrect user input, operation can continue immediately by re-entering the input correctly. In the case of temporary blocking of resources, the user must wait for resources to become available. Figure 40 shows the format of the operational error message.

Figure 40
Operational error message format

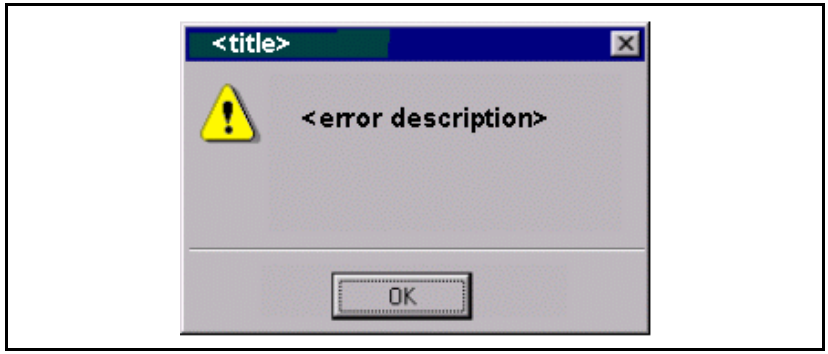


Table 22 lists some of the possible error messages.

Table 22
Possible error messages

Error title	Error description	Notes
Critical errors		
MICB	Lost communication with MICB. Re-access MICB with the browser.	This message appears when the BUI JAVA program loses communication with the MICB card (when the embedded server is used) or the server (when the external server is used).
Operational errors		
MICB Login	Incorrect password or user ID. Re-try login.	This message appears when the user tries to login with the incorrect user ID or password.
MICB Browser User Interface	User Interface server is full. Try again later.	This message appears when a user tries to access the BUI server at a time when the maximum number for a BUI session has been reached.
MICB Browser User Interface	User Interface blocked by maintenance activity. Try again later.	This message appears when the BUI is blocked because the administrator is using the CLI. It can occur in the middle of a BUI session, or when the user tries to access the MICB card.
MICB Browser User Interface	User interface is idle for too long - session disconnected!	This message appears when the BUI session is terminated due to a no-input timeout.

The Telephone User Interface

Contents

This section contains information on the following topics:

MICB provides a DTMF, menu driven, Telephone User Interface (TUI) scheduler. This interface allows a user to book a new simple conference using the key pad of the telephone. The user dials a unique DN for using the TUI, then schedules a conference by following a menu of instructions.

The TUI DN must be defined in both the Meridian 1 system and the MICB card. In the Meridian 1 system, define a new ACD DN with NCFW. See “The Command Line Interface” on page 97. In the MICB card, define a new DN for the TUI scheduler through the Browser User Interface (BUI). See “The Browser User Interface” on page 139. Also, the BUI must be used to define a TUI user ID for each user. To use the TUI scheduler, enter the TUI User ID and password. After scheduling a conference using the TUI, the user can see the conference on the BUI and only the user can modify or delete this conference.

The MICB card allocates only one port for the TUI. Define this port through the BUI. There are two options for configuring this port:

- available only for TUI use
- available for general use (both TUI use and conference use)

When the port is configured for TUI use only, only 31 ports are available for conference use. When the port is configured for general use, it is available either for TUI purposes or for conference use.

Scheduling a conference

A user can use the TUI only to define a new simple conference with default attributes. The user inserts the conference parameters (through the key pad of the telephone) at the prompts of a guided voice menu. Also, the MICB plays actual voice error messages when the user makes a mistake.

> ***Note:*** A user that calls the TUI has up to seven minutes to schedule a conference. After seven minutes, the MICB sends a voice message to the user indicating that the allotted time is over. The MICB then disconnects the call.

To schedule a simple conference through the TUI, perform the following procedure:

1. Dial the TUI DN.
2. Enter your TUI user ID.
3. Enter your TUI password (up to 6 digits).
4. Enter the date (optional) and time of the conference; the default date is the current date.
5. Enter the duration.
6. Enter the number of ports.
7. Enter the Conferee DN (optional); if not entered, the MICB card generates it. (The MICB card determines the Chairperson DN automatically.)
8. Enter the main and chairperson password lengths (optional).
9. Select the conference language (optional).

After the user enters all conference parameters, the MICB requests the user to confirm the reservation. The MICB sends a confirmation email to the TUI user.

The default attributes that the user does not set, but are set automatically by the MICB are:

1. Entry and exit by name
2. No custom greeting
3. No conference expansion

4 No name for the name of the conference

5 No name for the name of the chairperson

If a second user dials the TUI DN when the TUI is already in use, the MICB plays a voice message announcing that the port is already in use.

TUI voice files

The TUI voice files are audio files that are associated with scheduling a conference through the TUI. These files cannot be changed. Nortel Networks includes them here for informational purposes only.

Table 23 lists the TUI voice files heard when scheduling a simple conference.

Table 23
TUI voice files, simple conference reservation group (Part 1 of 3)

No.	Contents
	Welcome to the telephone menu driven scheduler
	Please enter your user id up to 10 digits followed by star
	Please enter your password up to 6 digits followed by star
	To set a conference for today press ’1’, to set a conference for a specific day press ’2’
	Please enter the date.
	Two digits for the day, two digits for the month and four digits for the year followed by star
	Please enter the time.
	Two digits from 0 to 23 hours and two digits in units of 15 minutes followed by star
	Please enter the duration up to 12 hours.
	Two digits for the hours and two digits in units of 15 minutes followed by star
	There are
	Available ports
	Please enter the number of ports up to the number of available ports, followed by star
	To continue entering the conference definitions press 1, for automatic entering press ‘2’
	To choose a DN press’1’
	For automatic choice press’2’
	To choose
	Press

Table 23
TUI voice files, simple conference reservation group (Part 2 of 3)

No.	Contents
	To choose a main password length Press a digit between ’4’ and ’8’ followed by star. Otherwise press ’0’ followed by star To choose a chairperson password length To choose a language press ’1’ The conference definitions are Date is Time is Duration is Number of ports is Main DN is Main password length is Chairperson password length is To approve press’1’, to change press’2’, to repeat conference definitions press’3’, to input conference definitions again press ‘4’ The conference is defined as follows Chairperson DN is Main password is Chairperson password is I repeat Your conference has been set successfully Goodbye Hours

Table 23
TUI voice files, simple conference reservation group (Part 3 of 3)

No.	Contents
	Minutes
	Date and time must be between now and a year from now
	Duration is out of range
	There are no DNs available for the requested time
	There are no ports available for the requested time
	DN is already in use
	Conference DN does not exist
	Incorrect input
	You have failed to enter a correct input
	The time to set a conference has expired
	The telephone menu driven scheduler cannot be accessed at this time
	Please hang-up and call your Meridian Integrated Conference Bridge administrator
	User id is
	Password is
	To approve press star
	To change press other digit
	And

Table 24 lists the TUI voice files that play when selecting a language for the conference.

Table 24
TUI voice files, language selection group

No.	Contents
	For American English press
	For Brazilian Portuguese press
	For British English press
	For Chinese press
	For French press
	For Japanese press
	For Korean press
	For L.A. Spanish press
	For German press
	For Italian press

Table 25 lists the TUI voice files that play to confirm the language choice.

Table 25
TUI voice files, language confirmation group

No.	Contents
	Language is
	American English
	Brazilian Portuguese
	British English
	Chinese
	French
	Japanese
	Korean
	L.A. Spanish
	German
	Italian

Table 26 lists the TUI voice files that play when modifying a conference.

Table 26
TUI voice files, conference modification group

No.	Contents
	To change date and time press
	To change the duration press
	To change the number of ports press
	To change the DN press
	To change the main password length press
	To change the chairperson password length press
	To change the language press

Table 27 lists the TUI digit voice files.

Table 27
TUI voice files, digits group (Part 1 of 2)

No.	Contents
	One
	Two
	Three
	Four
	Five
	Six
	Seven
	Eight
	Nine
	Zero

Table 27
TUI voice files, digits group (Part 2 of 2)

No.	Contents
	Star
	Number-sign
	Silence for 500ms
	Silence for 1 second
	And
	One (for a suffix)
	Two (for a suffix)
	Three (for a suffix)
	Four (for a suffix)
	Five (for a suffix)
	Six (for a suffix)
	Seven (for a suffix)
	Eight (for a suffix)
	Nine (for a suffix)
	Zero (for a suffix)
	Star (for a suffix)
	Number-sign (for a suffix)

Table 28 lists the TUI numbers voice files.

Table 28
TUI voice files, numbers group (Part 1 of 2)

No.	Contents
	One
	Two
	Three
	Four
	Five
	Six
	Seven
	Eight
	Nine
	Ten
	Eleven
	Twelve
	Thirteen
	Fourteen
	Fifteen
	Sixteen
	Seventeen
	Eighteen
	Nineteen
	Twenty
	Thirty

Table 28
TUI voice files, numbers group (Part 2 of 2)

No.	Contents
	Forty
	Fifty
	Sixty
	Seventy
	Eighty
	Ninety
	Hundred
	Thousand
	Million
	And
	Zero
	A.M.
	P.M.

Table 29 lists the TUI voice files regarding dates.

Table 29
TUI voice files, dates group (Part 1 of 4)

No.	Contents
	January
	February
	March
	April
	May
	June
	July
	August
	September
	October
	November
	December
	of January
	of February
	of March
	of April
	of May
	of June
	of July
	of August
	of September

Table 29
TUI voice files, dates group (Part 2 of 4)

No.	Contents
	of October
	of November
	of December
	the 1st
	the 2nd
	the 3rd
	the 4th
	the 5th
	the 6th
	the 7th
	the 8th
	the 9th
	the 10th
	the 11th
	the 12th
	the 13th
	the 14th
	the 15th
	the 16th
	the 17th
	the 18th
	the 19th

Table 29
TUI voice files, dates group (Part 3 of 4)

No.	Contents
	the 20th
	the 21st
	the 22nd
	the 23rd
	the 24th
	the 25th
	the 26th
	the 27th
	the 28th
	the 29th
	the 30th
	the 31st
	1st
	2nd
	3rd
	4th
	5th
	6th
	7th
	8th
	9th
	10th

Table 29
TUI voice files, dates group (Part 4 of 4)

No.	Contents
	11st
	12nd
	13rd
	14th
	15th
	16th
	17th
	18th
	19th
	20th
	21th
	22th
	23th
	24th
	25th
	26th
	27th
	28th
	29th
	30th
	31st

Maintenance

Contents

This section contains information on the following topics:

Reference list

The following are the references in this section:

General Maintenance Information (553-3001-500)

Fault Clearing (553-3001-510)

Hardware Replacement (553-3001-520)

Software Input/Output Guide Administration (553-3001-311)

This chapter describes Meridian Integrated Conference Bridge (MICB) maintenance tools and procedures to help in identifying the MICB faults, locating defective equipment, correcting problems by fixing or replacing defective equipment, and verifying the operation of the MICB after corrections or replacements have been made.

Maintenance overview

Approach problem identification systematically. A problem can have more than one cause. To isolate the cause, a knowledge of MICB operation is required. Once the cause is identified, the problem can be corrected by replacing the defective card, connecting accidentally disconnected cables, or correcting the software security problem.

The system and the MICB provide built-in self-diagnostic indicators and software and hardware tools. These diagnostic facilities simplify system troubleshooting and reduce Mean-Time-To-Repair (MTTR).

This document focuses on the maintenance of the MICB equipment. It requires that the Meridian 1 system operate correctly before starting to diagnose the MICB problems. System installation and maintenance guide documents— *General Maintenance Information* (553-3001-500), *Fault Clearing* (553-3001-510), and *Hardware Replacement* (553-3001-520)— describe how to maintain the entire system. This chapter describes how to maintain the MICB as an integral part of the system.

Diagnostic tools

Use diagnostic tools to troubleshoot problems in the system including problems with the MICB. When diagnosing MICB problems, more than one of these tools may have to be used.

System diagnostic tools consist of:

- LED indicators
- card self-tests
- sanity monitoring
- overlay commands
- history files

MICB status LED indicator

The MICB has a card LED indicator at the top of the faceplate. The card LED is a red LED that indicates the status of the card. If the LED is ON, the card can be faulty or disabled. When you power up the card, the card blinks three times during self-test and then it stays ON if functioning correctly, otherwise it turns ON without blinking and stays ON. The LED turns OFF when the card is software enabled.

Self-test

Each MICB card automatically performs a self-test when inserted into an operating system module or when you power up or reset the system. You can also perform a self-test on a card using software commands or menus.

The self-test checks general MICB functions and determines whether they are operating correctly. It is very useful when you first install the cards, because the card automatically starts the self-test upon insertion and gives an immediate indication of its operating status.

The self-test is a detailed test and analysis of the installed hardware. Self-tests determine the integrity of the hardware and establish the configuration of the MICB card by checking, for example, the processor, the RAM capacity, the Flash memory or the DSP. See Table 30.

Table 30
MICB self-test sequence

Item tested	Description of action
Processor/Coprocessor	Read and store processor ID. Run processor self-test.
DRAM	Check the amount of DRAM installed. Perform R/W test.
PCI Chipset	Perform R/W test on selected registers.
System I/O Controller	Perform R/W test on selected registers.
PCMCIA Controller	Perform R/W test on selected registers.
DS-30X Interface	Test shared memory and perform loopback test over SD-30 LCA.
CE-MUX Interface	Test shared memory and perform loopback test over CE-MUX LCA.
PCMCIA DSP card(s)	Check the presence of DSP cards and initiate diagnostic tests on DSP cards, if present.
PCMCIA hard drive	Check the presence of the hard drive and checks the configuration information.
PCMCIA Flash card	Check the presence of Flash memory and the MICB check configuration information.

Sanity monitoring

Sanity monitoring is a background routine that checks the operation of system resources, for example, CPU activity, memory allocation. This background routine attempts to restore normal system operation if the system performance has degraded to an unacceptable level. If all else fails, this routine restarts the system to try to restore it to normal operation. If the soft reset is not effective, the system initiates a full, board-level reset. If the full reset is not successful, the maintenance LED stays ON.

Overlay commands

Each card performs diagnostic tests as part of the daily routines, or you can activate diagnostic tests from a maintenance TTY or the SMP (when equipped). See *Hardware Replacement* (553-3001-520).

The boot time of the MICB from reset or power up to when the card is ready and from an ENLC to when the ports are idle is approximately 2 minutes.

The MICB card appears as an Extended Digital Line card to the system in which it is installed. You can use, therefore, all relevant system maintenance commands for an Extended Digital Line card with the MICB. Enabling and disabling of ACD digital telephone set M2616 is done in LD 32.

Table 31 lists some of the commands used to control the MICB status and functions.

Table 31
Commands to enable/disable MICB channels

LD 32 Commands	Operation performed
DISC / ENLC	Disable / Enable specified card
DISU / ENLU	Disable / Enable specified channel
LOOP	Performs a network memory test, continuity test, and signaling test on the specified loop.
STAT	Get status of specified card /channel
LD 30 Command	**Operation performed**
UNTT	Performs self-test on the MICB.

The MICB card handles all the above commands exactly as the Extended Digital Line card does, transparently to the system.

History files

Information on any fault conditions is stored on the MICB card to provide a history file. The file is in the form of a cyclical buffer, which is overwritten from the top when it runs out of space. It is configured to use memory resources efficiently.

MICB fault isolation and correction

Fault clearing procedures for the MICB are the same as for other IPE cards; refer to *Fault Clearing* (553-3001-510) for more information. Also, see "MMI error messages" on page 205.

Table 32 on page 200 deals specifically with MICB service problems. To diagnose these problems, the table indicates the relevant test procedure.

Table 32
MICB service problems

Symptoms	Diagnosis	Solution
Red card LED on the MICB is permanently on.	Card is disabled or faulty.	Go to "MICB self-test steps" on this page to check the card status and perform self-test.
Display on the controller card shows fault codes.	Card faulty, failed self-test or problem communicating with peripheral equipment.	Go to "MICB self-test steps" on this page and "Reset MICB card command" on page 201 to check self-test and self-test on reset. Also refer to *Software Input/Output Guide Administration* (553-3001-311) for a list of codes.
Error messages printed on the terminal or the Meridian 1 TTY.	Hardware or software problems with the MICB.	Note various error messages. Refer to *Software Input/Output Guide Administration* (553-3001-311) for a list of these messages and their description. Based on the code's description, take the appropriate action to resolve the problem.

If you cannot resolve the problem after exhausting all available diagnostic tools and test procedures, make a list of all the symptoms you observed and contact your field service representative.

MICB self-test steps

1 The card performs a self-test upon insertion.

2 The card LAN polls the card.

3 If the self-test passes, the card sends back a “powered-up occurred” message.

4 The card LAN requests the configuration data.

5 The card returns the configuration data (card type, signaling type, and TN mapping type 2).

6 The card LAN enables the DS-30X signaling channel.

7 The MICB card waits until it receives the configuration data (for example, trunk type, signaling type, balance impedance) through the DX-30X, but it then discards this data.

8 The card goes into its main program loop.

Reset MICB card command

1 The software sends a reset message to the card if no channels are busy.

2 The card sets all appropriate resources to the ‘disabled’ state and turns on the faceplate LED.

3 The MICB card resets and performs a self-test. Self-test results are stored in case the Meridian 1 performs a later query.

4 The card LAN polls the card.

5 If the self-test passes, the card sends back a “powered-up occurred” message.

6 The card LAN requests the configuration data.

7 The card returns the configuration data (card type, signaling type, and TN mapping type 2) and enables the DS-30X link.

8 The card LAN enables the DS-30X signaling channel.

9 The card waits until it receives the configuration data (for example, trunk type, signaling type, balance impedance) through the DS-30X, but it then discards this data.

10 The card goes to its main program loop.

Card replacement

The MICB is based on PCMCIA technology. This allows you to remove the MICB from the IPE shelf indefinitely without loosing the configuration data.

To replace the MICB card:

1. Disable the MICB card by loading the LD 32 overlay and executing the **DISC l s c** command, where **l**= loop, **s**= shelf or module, **c**= card in the module.
2. Remove the card from its card slot in the IPE module.
3. Remove the PCMCIA card from the faulty MICB card.
4. Transfer the PCMCIA card to the new MICB card.

   Note: This procedure moves all software, configuration, and records to the replacement MICB card.

5. Transfer the Security Device from the faulty MICB to the replacement.

   Note: The new card reuses the keycode. The keycode is still on the PCMCIA card, which you removed from the faulty MICB.

6. Enable the new card by executing the **ENLC l s c** command.
7. Configure the newly installed MICB card.
8. Package the faulty MICB card and ship it to the repair center.

   Note: When replacing the PCMCIA card, it is important to back up the data on the PCMCIA card so that you don't need to re-enter it. For instructions on backing up the data, refer to "Database Archive" on page 116.

External (PC) server maintenance

If the external server software fails on the PC, restart the MICB server program in *one* of the *three* following ways:

- Select **Start->Programs->Micb Server Application->Micb Server** from the server desktop.

- In the “C:\WINDOWS\Start Menu\Programs\MICB Server Application” window, double-click on the “MICB Server” icon.
- Restart the PC. The MICB Server program runs automatically after you restart the PC.

If this does not restore the external server to proper functionality, contact your distributor.

Note: Server failure does not affect conferences that users have already defined. It also does not affect TUI operation.

Appendix A: MMI error messages

MMI Error Messages

These error messages are displayed on the maintenance terminal during conference events.

Table 33
MMI error messages (Part 1 of 2)

Error message text	Comments
Failure on accepting key code	Check the keycode.
Incorrect login	Enter the correct password.
Incorrect card ID entered	Check the card ID.
Wrong input type	Check the input type.
Input out of range	Specify the input within the range.
Enter: yes, no, y or n.	Spell out yes or no.
Enter yes or no.	Enter the appropriate response.
Entered string too long	Check the string length.
Wrong number of input parameters	Check input parameters.
Input should be in HH:MM format.	Use the correct time format.
Invalid command for this directory	Check the directory/command.
Command not valid at this point	Check the command.
Audio recording in process, input ignored	Wait until recording is completed.

Table 33
MMI error messages (Part 2 of 2)

Error message text	Comments
There are no reports for this date.	The specified date has no reports.
Date entered must not be in the future.	The date for conference maintenance must be present date.
Date entered is too far in the past.	Files are deleted once their age reaches “conf log aging”.
Date entered is too far in the future.	Reservations can be made only 6 months in advance.
Command must be followed by a valid number.	Choose entry number according to the table presented.
Voice file specified does not exist.	When defining files per event
Voice file specified already exists.	When recording new file
Event must have at least one associated file.	Check the event and check the file table for that event.
A day in the past cannot be modified.	Check the specified date.
Error occurred while recording.	You may have to re-record.
DN provided for recording is available for 2 more minutes!	This is a warning.
Recording session terminated	End of recording is announced.
Invalid port number	Use the correct port number.

Appendix B: Product integrity

Contents

This section contains information on the following topics:

This chapter presents information about Meridian Integrated Conference Bridge (MICB) reliability, environmental specifications, and electrical regulatory standards.

Reliability

Reliability is measured by the Mean Time Between Failures (MTBF). The MICB card Mean Time Between Failure (MTBF) is better than 88 years.

Environment specifications

Measurements of performance in regard to temperature and shock were made under test conditions as described in Table 34.

Table 34
MICB environmental specifications

Specification	Minimum	Maximum
Normal Operation		
Recommended	15° C	30° C
Relative humidity	20%	30% (non- condensing)
Absolute	0 ° C	40° C
Relative humidity	5% to	90% (non-condensing)
Rate of change	Less than 1° C per 3 minutes	
Storage		
Long Term	–40° C	70° C
Relative Humidity	20%	55% (non-condensing
	–40° C to 70° C, non-condensing	
Short Term (less than 72 hr)	–40° C	70° C
Temperature Shock		
In 3 minutes	–40° C to	25° C
In 3 minutes	25° C to	70° C
	–40° to 70° C, non-condensing	

Electrical regulatory standards

The following three tables list the safety and electro-magnetic compatibility regulatory standards for the MICB, listed by geographic region. Specifications for the MICB meet or exceed the standards listed in these regulations.

Safety

Table 35 provides a list of safety regulations met by the MICB, along with the type of regulation and the country/region covered by each regulation.

Table 35
Safety regulations

Regulation Identifier	Regulatory Agency
UL 1459	Safety, United States, CALA
CSA 22.2 225	Safety, Canada
EN 41003	Safety, International Telecom
EN 70950/IEC 950	Safety, International
BAKOM SR 784.103.12/4.1/1	EMC/Safety (Switzerland)
AS3260, TS001 - TS004, TS006	Safety/Network (Australia)
JATE	Safety/Network (Japan)

Electro-magnetic compatibility (EMC)

Table 36 lists electro-magnetic emissions regulations met by the MICB card, along with the country's standard that lists each regulation.

Table 36
Electro-Magnetic Emissions

Regulation Identifier	Regulatory Agency
FCC part 15 Class A	United States Radiated Emissions
CSA C108.8	Canada Radiated Emissions
EN50081-1	European Community Generic Emission Standard
EN55022/CISPR 22 CLASS B	Radiated Emissions (Basic Std.)
BAKOM SR 784.103.12/4.1/1	EMC/Safety (Switzerland)
SS-447-20-22	Sweden EMC standard
AS/NZS 3548	EMC (Australia/New Zealand)
NFC 98020	France EMC standard

Table 37 lists electro-magnetic immunity regulations met by the MICB card, along with the country's standard that lists each regulation.

Table 37
Electro-Magnetic Immunity

Regulation Identifier	Regulatory Agency
CISPR 22 Sec. 20 Class B	I/O conducted noise
IEC 801-2 (level 4)	ESD (Basic Standard)
IEC 801-3 (level 2)	Radiated Immunity (Basic Standard)
IEC 801-4 (level 3)	Fast transient/Burst Immunity (Basic Standard)
IEC 801-5 (level 4, preliminary)	Surge Immunity (Basic Standard)
IEC 801-6 (preliminary)	Conducted Disturbances (Basic Standard)
BAKOM SR 784.103.12/4.1/1	EMC/Safety (Switzerland)
SS-447-20-22	Sweden EMC standard
AS/NZS 3548l	EMC (Australia/New Zealand)
NFC 98020	France EMC standard

Appendix C: Daily reports

Contents

This section contains information on the following topics:

There are two types of reports that are saved daily. The files are kept for up to 32 (default) days or less (depending on the period specified by the report aging feature of the System Attributes Editor. See System Attributes Editor, “report aging” on page 108.

The format of the report files is ASCII Comma-Delimited. This format is supported by Microsoft EXCEL as .CSV files.

The billing files are stored on the card’s PCMCIA disk. The path is A:\OAM\BILLING.

Retrieving billing reports

To retrieve billing report files, open an FTP session by typing:

ftp **<MICB card IP address><cr>**

Enter **micb** for the user identity and **admin** for the password as requested.

When the connection is achieved, to change directory to the files' location, enter:

cd <OAM\BILLING>

To retrieve the files, enter:

mget B*.CSV

The Billing files are transferred to your hard disk. The following example shows how to retrieve the billing file for July 27th, 1999. The default password is **admin**.

Example:

ftp **141.226.71.245**
Connected to 141.226.71.245.
220 141.226.71.245 pSOSystem FTP server ready.
Name (141.226.71.245:shulman): **micb**
331 Password required for micb.
Password: **admin**
230 User micb logged in.
ftp> **bin**
200 Type set to I.
ftp> **cd oam**
250 CWD command successful.
ftp> **cd billing**
250 CWD command successful.
ftp> **dir**
200 PORT command successful.
150 Opening ASCII mode data connection for ..
. <DIR>
.. <DIR>
B0990704.CSV 317
B0990727.CSV 334
ftp> **get B0990727.CSV**
226 Transfer complete.
local: B0990727.CSV remote: B0990727.CSV
ftp> **bye**

Over-booking report

Each line will save the following information:

- 1st field: hour (00-23)
- 2nd field: max ports (00-32)
- 3rd field: duration in minutes (00-59)
- 4th field: duration in seconds (00-59)

The total number of lines is 26. First line is for the date, second line is for the field names and 24 lines are for every hour.

The over-booking daily report format:

- DATE: <month name> dd yyyy,,,
- hour,max ports,duration minutes,duration seconds
- 00,<max port>,<duration minutes>,<duration seconds>
- 01,<max port>,<duration minutes>,<duration seconds>
- 02,<max port>,<duration minutes>,<duration seconds>
- 03,<max port>,<duration minutes>,<duration seconds>
- 04,<max port>,<duration minutes>,<duration seconds>
- 05,<max port>,<duration minutes>,<duration seconds>
- 06,<max port>,<duration minutes>,<duration seconds>
- 07,<max port>,<duration minutes>,<duration seconds>
- 08,<max port>,<duration minutes>,<duration seconds>
- 09,<max port>,<duration minutes>,<duration seconds>
- 10,<max port>,<duration minutes>,<duration seconds>
- 11,<max port>,<duration minutes>,<duration seconds>
- 12,<max port>,<duration minutes>,<duration seconds>
- 13,<max port>,<duration minutes>,<duration seconds>
- 14,<max port>,<duration minutes>,<duration seconds>
- 15,<max port>,<duration minutes>,<duration seconds>
- 16,<max port>,<duration minutes>,<duration seconds>
- 17,<max port>,<duration minutes>,<duration seconds>
- 18,<max port>,<duration minutes>,<duration seconds>
- 19,<max port>,<duration minutes>,<duration seconds>
- 20,<max port>,<duration minutes>,<duration seconds>
- 21,<max port>,<duration minutes>,<duration seconds>
- 22,<max port>,<duration minutes>,<duration seconds>
- 23,<max port>,<duration minutes>,<duration seconds>

Example:

- DATE: Aug 20 1998,,,
- hour,max ports,duration minutes,duration seconds
- 00,00,00,00
- 01,00,00,00
- 02,32,01,00
- 03,31,00,00
- 04,30,00,00
- 05,32,00,30
- 06,00,00,00
- 07,00,00,00
- 08,00,00,00
- 09,20,00,00
- 10,32,00,30
- 11,00,00,00
- 12,32,01,00
- 13,31,00,00
- 14,30,00,00
- 15,32,45,00
- 16,00,00,00
- 17,00,00,00
- 18,00,00,00
- 19,20,00,00
- 20,00,00,00
- 21,00,00,00
- 22,00,00,00
- 23,00,00,00

Billing report

See Appendix E: “Billing” on page 231.

Appendix D: Event Script files

The Event Script files are audio files that are associated with conference events. An Event Script can contain a single file or a set of files that are activated in a specific sequence. You cannot change these files and Nortel Networks includes them here for informational purposes only.

Table 38 shows a list of events that occur during a conference. For each event the system plays one or more audio files to instruct the conferees and the chairperson. These audio files are listed in Table 39 on page 222 and are numbered in the File column of this table.

Table 38
Voice script files (Part 1 of 3)

No.	Situation	Files
With name entry option:		
1.	Greeting to dial-in conferee with name entry	1, 2, 13
2.	Entry of conferee to meeting with prompt name	14, 3
3.	Exit of conferee from meeting with prompt name	15, 4
Without name entry option:		
4.	Greeting to dial-in conferee	1
5.	Entry of conferee to meeting	14
6.	Exit of conferee from meeting	15
General Prompts:		
7.	Announcement to single conferee	5, 6

Table 38
Voice script files (Part 2 of 3)

No.	Situation	Files
8.	Chairperson command acknowledge	16
9.	Chairperson command negative acknowledge (lack of resources)	17
10.	Chairperson command error acknowledge (illegal command)	17
11.	Dial-in to non-existent meeting	18
12.	Dial-in to locked meeting	106, 114, 26
13.	Dial-in to fully attended meeting	115, 26
14.	2nd chairperson dial-in attempt	116, 26
15.	Count conferees	27
16.	Meeting termination early warning-10 min till end	15, 7
17.	Meeting termination announcement	15, 8
18.	Record main menu	9
19.	Record invitation	13
20.	Record stopped	16
21.	Record error operation	11,9
22.	Record error operation for new file	11,10
23.	Record main menu for new file	10
24.	Nothing to play for new file	12
25.	Password request	21
26.	Repeated password request	22
27.	Incorrect password	23, 22

Table 38
Voice script files (Part 3 of 3)

No.	Situation	Files
28.	Exit from the system	24,25,26
29.	Announce to MIMS dialed-out user	71, 72
30.	Second TUI attempt	113, 114, 26
31.	Meeting lock	106
32.	Meeting unlock	107
33.	Meeting duration expanded	110
34.	Meeting duration not expanded	111
35.	Port muted	108
36.	Port unmuted	109
37.	All ports muted	117
38.	All ports unmuted	118
Help menus		
39.	Single conferee help	
40.	Participant help	
41.	Scrolling help	
42.	Dial out help	
43.	Chairperson first group help	
44.	Chairperson second group help	

Table 39 represents the system script files that play for a specific event as shown in Table 38 where, for example, event 1 activates files 1, 2, and 13.

Table 39
Event script files (Part 1 of 7)

No.	Contents
1.	Welcome to the conference call
2.	Please say your name after the tone
3.	Is joining the meeting
4.	Is leaving the meeting
5.	You are the only person in the meeting now
6.	Music
7.	Your conference call will end in ten minutes
8.	Your conference call has ended, thank you
9.	Press 2 to play, 5 to record or number-sign to exit
10.	Press 5 to record or number-sign to exit
11.	You have entered an incorrect command
12.	There is nothing to play
13.	tone 6 for 500 ms
14.	tones: 3,4,5,6 for: 100ms, 100ms, 100ms, 300ms respectively
15.	tones: 6,5,4,3 for: 100ms, 100ms, 100ms, 300ms respectively
16.	tone 2 for: 200ms on, 50ms off, 200ms on, off.
17.	tone 1: 5 bursts of 80ms on/ 80ms off
18.	tone 1: 250ms on/250ms off (Overflow tone) for 10 seconds
19.	tone 1: 500ms on/500ms off (busy tone) for 10 seconds
20.	tone 3: 200ms off/300ms on

Table 39
Event script files (Part 2 of 7)

No.	Contents
21.	Password
22.	Please enter your password followed by number-sign
23.	Password incorrect
24.	You have failed to enter your password
25.	Please hang-up and call your Meridian Integrated Conference Bridge administrator
26.	Goodbye
27.	The number of conferees is:
28.	One
29.	One (for a suffix: for example, twenty one)
30.	Two
31.	Two (for a suffix: for example, twenty two)
32.	Three
33.	Three (for a suffix: for example, twenty three)
34.	Four
35.	Four (for a suffix: for example, twenty four)
36.	Five
37.	Five (for a suffix: for example, twenty five)
38.	Six
39.	Six (for a suffix: for example, twenty six)
40.	Seven
41.	Seven (for a suffix: for example, twenty seven)
42.	Eight

Table 39
Event script files (Part 3 of 7)

No.	Contents
43.	Eight (for a suffix: for example, twenty eight)
44.	Nine
45.	Nine (for a suffix: for example, twenty nine)
46.	Ten
47.	Eleven
48.	Twelve
49.	Thirteen
50.	Fourteen
51.	Fifteen
52.	Sixteen
53.	Seventeen
54.	Eighteen
55.	Nineteen
56.	Twenty
57.	Twenty (for a prefix: for example, twenty one)
58.	Twenty one
59.	Twenty two
60.	Twenty three
61.	Twenty four
62.	Twenty five
63.	Twenty six
64.	Twenty seven

Table 39
Event script files (Part 4 of 7)

No.	Contents
65.	Twenty eight
66.	Twenty nine
67.	Thirty
68.	Thirty (for a prefix: for example, thirty two)
69.	Thirty one
70.	Thirty two
71.	tones: 3,4,5,6 for: 100ms, 100ms, 100ms, 300ms respectively
72.	You have a meeting please press star to enter
73.	User ID?
74.	Please enter your User ID followed by the number-sign
75.	If you have finished entering your User ID please press the number-sign
76.	Password?
77.	Please enter your Password followed by the number-sign
78.	If you have finished entering your Password please press the number-sign
79.	Login incorrect, please try again, User ID?
80.	Login incorrect, please contact your administrator for assistance, goodbye
81.	Room ID?
82.	Please enter the room ID, use the dial-pad to spell out the name of the room followed by the number-sign
83.	If you have finished entering the Room ID please press the number-sign
84.	Invalid Room ID, please try again, Room ID?

Table 39
Event script files (Part 5 of 7)

No.	Contents
85.	Invalid Room ID, please contact your administrator for assistance, goodbye
86.	You will be disconnected in ten seconds unless you complete your entry and press the number-sign
87.	You have entered too many digits
88.	Please wait
89.	Connecting you to your scheduled meeting
90.	There are no conference ports available, goodbye
91.	Your account information cannot be access at this time, please contact your administrator
92.	Please enter the room ID
93.	The Room for the scheduled meeting is not ready, please call back at the start time or enter another room
94.	You have more than one scheduled meeting, Room ID?
95.	You will now join your meeting, please say your name after the tone
96.	The audio portion of your meeting will end in ten minutes
97.	The audio portion of your meeting will end in ten minutes, extend your meeting if necessary
98.	Your conference call has been extended
99.	Your conference call has ended, thank you
100.	Connecting you to your meeting
101.	Your conference port was reserved for another meeting starting in ten minutes, you can continue the meeting web only after that time
102.	

Table 39
Event script files (Part 6 of 7)

No.	Contents
103.	
104.	
105.	tone of DTMF asterisk
106.	Meeting is locked
107.	Meeting is unlocked
108.	Muted
109.	Unmuted
110.	Your meeting duration has been expanded
111.	Your meeting duration has not been expanded
112.	Port number is
113.	Telephone user interface scheduler is already in use
114.	Please try again in five minutes
115.	Meeting is fully attended
116.	Chairperson is already in the meeting
117.	All ports have been muted
118.	All ports have been unmuted
119.	
120.	To stop help menu press the star twice
121.	To dial-out press ‘*0’ followed by the phone number and the number-sign
122.	To group call-out press ‘*2’ followed by the group list number and the number-sign
123.	To redial last dialed-out number press ‘*#’

Table 39
Event script files (Part 7 of 7)

No.	Contents
124.	To self mute or unmute press ‘*19’
125.	To mute or unmute all participants press ‘*10’
126.	To return with the called party press ‘*2’
127.	To return to the meeting without the called party press ‘*3’
128.	To return to the meeting press ‘*3’
129.	To lock or unlock the meeting press ‘*4’
130.	To count conferees and play list of participants press ‘*6’
131.	To stop or continue the play of the list of participants press the number-sign
132.	To consult with the participant press ‘0’
133.	To mute or unmute the participant press ‘1’
134.	To play the current participant press ‘2’
135.	To play the previous participant press ‘4’
136.	To play the next participant press ‘6’
137.	To disconnect the participant press ‘9’
138.	To drop all participants press ‘*90’
139.	To drop last dial-out participant press ‘*91’
140.	To drop last dial-in participant press ‘*92’
141.	To expand conference duration by 15 minutes press ‘*98’
142.	To stop or replay music press ‘*99’

Table 40 lists the beep frequencies and their levels.

Table 40
Tone specification

Index	Frequency (Hz)	Level (dBm/freq)
1	480+620	–24
2	440+660	–17
3	440	–14
4	560	–17
5	660	–17
6	880	–17
Maximum single frequency deviation is +/- 2% **Maximum level deviation is +/- 5 dB**		

Appendix E: Billing

Contents

This section contains information on the following topics:

Reference list

The following are the references in this section:

- *Call Detail Recording: Description and Formats* (553-2631-100)
- *Features and Services* (553-3001-306)

This chapter describes the MICB 2.X billing and call detail recording (CDR) features. Users can be charged for conference reservations and dial out calls during a conference. Billing reports are stored in database files which can be retrieved from the card by FTP, and in Meridian 1 CDR records. Figure 24 “MICB Administration Utility, Cards page” on page 145 shows where the billing option is located.

Billing charges are based on:

- the duration of the meeting, including any extension of the conference from either the BUI or by the chairperson using the *98 command.
- the number of ports booked for the meeting, including any increase in the number of ports during the conference from the BUI or a port increase provided automatically by MICB 2.X.

  Note: Users are charged for the number of ports booked for the conference regardless of how many conferees participated in the meeting or the duration of each input call.

BUI configuration

The billing account ID must be defined for every user through the BUI in the MICB Administration Utility window. The billing account ID is the account number of the user, up to nine digits, for billing purposes. This number appears in the billing reports and in Meridian 1 CDR records for conferences owned by the user. There are three options:

- No billing - the feature is not activated.
- Billing Reports - only billing reports are generated.
- Billing and CDR Reports - both billing and call detail records are generated.

Figure 41 shows the billing options in the MICB Administration Utility, Cards page.

Figure 41
Billing options in the MICB Administration Utility, Cards page

Billing reports

MICB 2.X billing reports are saved in files on a daily basis. These files are kept in a directory, a:\OAM\BILLING on the PCMCIA for the period specified by the report aging feature. The default is 32 days. See System Attributes Editor, “report aging” on page 108.

The file's names are comprised of capital letter 'B' and the date of the report (year, month and day) in the following format: Byyymmdd and have the extension CSV,

where:

yyy - indicates the year. It is '099' for 1999, '100' for 2000, '101' for 2001,

and so on.
mm - indicates the month
dd - indicates the day

For example,

B0990720.CSV has the billing report for July 20, 1999

and

B1010203.CSV contains billing report for February 03, 2001.

To retrieve billing files, see Appendix C on page 205.

Each billing report comprises 14 fields separated by commas, containing the following information:

- 1st field: time stamp in hours (00-23)
- 2nd field: time stamp in minutes (00-59)
- 3rd field: time stamp seconds (00-59))
- 4th field: event
  - 1 - Meeting Booked
  - 2 - Meeting Modified
  - 3 - Meeting Start
  - 4 - Active Meeting Modified
  - 5 - Meeting cancelled before it has started
  - 6 - Active meeting cancelled (after it has been started).
  - 7 - Meeting schedule time has ended.
  - 8 - Card Restart
- 5th field: card ID (up to 4 digit number)
- 6th field: meeting ID (up to 10 digit number)
- 7th field: billing account (up to 9 digit number)
- 8th field: meeting date
- 9th field: meeting start time in hours (00-23)

- 10th field: meeting start time in minutes (00-59)
- 11th field: meeting start time in seconds (00-59)
- 12th field: duration in hours (01-12)
- 13th field: duration in minutes (00-59)
- 14th field: ports (02-40)

Note: For a permanent bridge the meeting date, start time, and duration fields are not relevant and are therefore always equal to zero.

The first line is for the date, second line is for the field names, and all other lines are for the events.

The daily billing report format:

- DATE: <month name> dd yyyy,,,,,,,,,,,,
- <1st field name>, <2nd field name>,.....,<14th field name>
- <1st field>,<2nd field>,....,<14th field>
- <1st field>,<2nd field>,....,<14th field>
- <1st field>,<2nd field>,....,<14th field>
- <1st field>,<2nd field>,....,<14th field>

Example:

(In this example, the meeting ID is 32, user billing account is 999 and the card ID is 7.)

First line - at 08:00 a.m. a meeting has been booked to start on August 8 1998 at 10:30 a.m., duration of 2 hours 15 minutes, 6 ports.

Second line - at 09:00 a.m. the meeting has been modified to 8 ports.

Third line - at 10:28 a.m. the meeting has been started.

Fourth line - at 11:00 a.m. the active meeting has been modified to 3 hours duration.

Fifth line - at 01:28 p.m. the meeting has been ended (time has ended).

Sixth line - at 04:00 p.m. the card has been restarted.

DATE: August 7 1998,,,,,,,,,,,,

time stamp hours,time stamp minutes,time stamp seconds,event,card ID,meeting ID,billing account,date,start time hours,start time minutes,start time seconds,duration hours,duration minutes,ports

08,00,00,01,7,32,999,Aug 8 1998,10,30,00,02,15,06

09,00,00,02,7,32,999,Aug 8 1998,10,30,00,02,15,08

10,28,00,03,7,32,999,Aug 8 1998,10,30,00,02,15,08

11,00,00,04,7,32,999,,,,,03,00,08

Event examples

A billing file includes the following records:

- date stamp, for example: DATE: August 7 1998,,,,,,,,,,,,
- Header:

  time stamp hours,time stamp minutes,time stamp seconds,event,card ID,meeting

  ID,billing account,date,start time hours,start time minutes,start time seconds,duration

  hours,duration minutes,ports
- Billing event record.

Billing records for all events are illustrated in the following examples. The card ID is 1234 and the user's billing account is 999.

Meeting Booked

In this example, the following information is provided - time stamp, card ID, meeting ID, billing account, start time, duration and ports.

Example:

08,00,00,01,1234,7,999,Aug 8 1998,10,30,00,02,15,06

This record indicates that the meeting has been booked at 08:00 a.m. to start on August 8 1998 at 10:30 a.m., duration 2 hours 15 minutes, with 6 ports.

Meeting Modified

In this example, the following information is provided - time stamp, card ID, meeting ID, billing account, start time, duration and ports.

Example:

09,00,00,02,1234,7,999,Aug 8 1998,10,30,00,02,15,08

This record indicates that the meeting was modified from the BUI at 09:00 a.m. before it started to include 8 ports.

Meeting Started

In this example, the following information is provided - time stamp, card ID, meeting ID, billing account, start time, duration and ports.

Example:

10,28,00,03,1234,7,999,Aug 8 1998,10,30,00,02,15,08

This record indicates that the meeting started at 10:28 a.m.

> ***Note:*** The meeting's actual start time is 10:28 a.m. and not 10:30 a.m. as scheduled, because meetings always start 2 minutes before the scheduled start time to guarantee timely entry of users whose clock is faster of the MICB clock.

Active Meeting Modified

In this example, the following information is provided - time stamp, card ID, meeting ID, billing account, duration and ports.

Example:

11,00,00,04,1234,7,999,,,,,03,00,08

This record indicates that at 11:00 a.m., the duration of the active meeting was expanded to 3 hours. (The original duration was 2 hours 15 minutes.)

Meeting Ended

In these examples, the following information is provided - time stamp, card ID, meeting ID, billing account. This event is reported for three different cases:

a. The meeting was cancelled before it started.

Example:

10,05,00,05,1234,7,999,,,,,,00

This record indicates that the meeting reservation was cancelled at 10:05 a.m. from the BUI before the scheduled start time. The number of ports is 0 since none of participants entered the meeting.

b. The active meeting was cancelled after it started.

Example:

12,48,00,06,1234,7,999,,,,,,06

This record indicates that the meeting was ended at 12:48 p.m. from the BUI before the scheduled meeting time elapsed. The number of ports shows how many participants actually entered the conference. It may be greater than the number of ports booked for the meeting because the meeting was defined with the option for expansion.

c. The meeting's scheduled time elapsed.

Example:

13,28,00,07,1234,7,999,,,,,,10

This record indicates that the meeting was ended at 01:28 p.m. because the scheduled time elapsed. The number of ports shows how many participants actually entered the conference. This number is greater than the number of ports booked for the meeting, because of expansion during the meeting.

Card Restarted

In this example, the following information is provided - time stamp, card ID.

Example:

16,08,30,**0**8,1234,,,,,,,,

This record indicates that the card was restarted at 16:08:30 p.m. The event ID is given in bold letters, 1234 is the card's ID, 7 is the meeting's ID and 999 is the customer's billing ID.

Call detail recording

The Call Detail Recording (CDR) feature enables MICB 2.X users to be charged for out-going calls based on CDR reports generated by the Meridian 1 system. The reports are generated even if the call is unanswered. The Meridian 1 must have the software packages listed in “Required software packages” on page 51.

To enable the CDR feature, select the Billing and CDR Reports option from the Billing enabled check box in the MICB Administration Utility, Cards page. See Figure 41 on page 233.

Charge Account feature

To define the CDR with Charge Account feature, refer to *Call Detail Recording: Description and Formats* (553-2631-100) and *Features and Services* (553-3001-306).

When a user dials out with the Billing and CDR Reports option selected, the MICB card takes the Charge Account key (consisting of the first 8 digits of the user's account ID), the call ID, and the meeting ID from the charge account field for the CDR record.

The Charge Account key

The Charge Account key must be defined for every port of the MICB card in LD 11 as in this example:

LD 11 – Define the Charge key for an MICB port

Prompt	Response
REQ:	chg
TYPE:	4 0 2 0
TYPE:	2616
TN	4 0 2 0
ECHG	yes
ITEM	key 9 chg

CDR record format

CDR records are printed on Meridian 1 system TTY terminal defined as a CDR user. When the CDR with Charge Account feature is defined, the Charge Account data is included in CDR records for each MICB 2.X outgoing call, as in the following example:

Examples:

1. The following record appears on CDR TTY as outgoing call is started:

C 040 00 5211 T095019 1203 11.25 00000099912340000000007

& 0000 0000

where:

first 9 digits: 000000999 is the billing account,
next 4 digits: 1234 is the card ID,
next 10 digits: 0000000007 is the meeting ID.

2. The following record appears on CDR TTY as outgoing call is ended:

N 041 00 5211 T095019 1203 11.47 00:22:08 A 333

& 0000 0000

Billing/CDR examples

In the following examples, billing and CDR records are illustrated.

Example:

The conference call was booked using the BUI by a user whose billing account is 9134513, on July 19, 1999 at 06:15 p.m., for July 20, 1999 from 08:00 a.m. to 09:00 a.m. The number of ports booked for the meeting is 6.

The following record appears in file B0990719.CSV:

18,15,00,01,1234,7,9134513,Jul 20 1999,08,00,00,01,00,06

The conference call was started as scheduled on July 20, 1999 two minutes before 08:30 a.m.

The following record appears in file B0990720.CSV:

08,28,00,03,1234,7,9134513,Jul 20 1999,08,30,00,01,30,10

During the call at 08:36 a.m. (after 8 minutes), the chairperson calls out once to a long distance number and brings a user into the call. After 47 minutes the dialed out person drops off.

The following record appears in the Meridian 1 CDR:

C 040 00 5211 T095019 20/07 08:36 00913451312340000000007

& 0000 0000

N 041 00 5211 T095019 20/07 09:23 00:47:08 A 333

& 0000 0000

No record is stored in the MICB card in relation to this event.

At 08:55 a.m. the chairperson calls out to a long distance number and after 2 minutes returns to the meeting without the dialled party.

The following record appears in the Meridian 1 CDR:

C 040 00 5215 T095019 20/07 08:55 00913451312340000000007

& 0000 0000

N 041 00 5215 T095019 20/07 08:57 00:02:12 A 333

& 0000 0000

List of Terms

ACD

Automatic Call Distribution.

ACD DN

Automatic Call Distribution Directory Number (pilot DN of an ACD queue).

ASIC

Application-Specific Integrated Circuit. A microprocessor chip designed to do specific tasks; providing graphics capability is one such task.

BIOS

Basic Input/Output System. Permanent program outlines in buffers that allow software to interact with hardware components (for example, a keyboard) in a device-independent manner.

Browser User Interface

An interface that allows the administration of OA&M functions on conferences, users, and cards through a standard web browser.

BUI

See Browser User Interface.

CE

Common Equipment.

CE-MUX

Common Equipment bus with MUltipleXed address and data.

Chairperson DN

The directory number the conference chairperson dials to enter the conference.

CLI

See Command Line Interface.

CO

Central Office.

Command Line Interface

An interface that allows the administration of OA&M functions on cards through telnet or through a standard VT100 terminal.

CCITT

The International Telegraph and Telephone Consultative Committee.

CPE

Customer Premise Equipment. Equipment that resides on a customer's premises and which the customer controls instead of the Central Office

CPU

Central Processing Unit. A chip that performs logic, control, and arithmetic functions. The part of the switch that performs these functions and any others necessary to process calls.

CRT

Terminal.

CSA

Canadian Standards Association.

dB

Decibel.

dBm

Decibel with reference to Milliwatt.

DID

Direct Inward Dial trunk.

DMA

Direct Memory Access.

DN

Directory Number.

DIN

A German manufacturer of electronic devices for interconnection and other purposes.

DS-30X

Parallel serial transmission from a superloop (XNET) card to a Controller Card in an IPE shelf.

DRAM

Dynamic Random Access Memory. A high density type of semi-conductor memory. It typically has slower access time than SRAM and requires external memory refresh circuitry.

DSP

Digital Signal Processing. A specialized computer chip that performs speedy and complex operations on digitized waveforms. Useful in processing sound and video.

DTMF

Dual Tone Multi-Frequency. A term describing push-button or touch-tone dialing.

EEPROM

Electrically Erasable Programmable Read Only Memory device.

EMC

Electro-Magnetic Compatibility. Refers to equipment units that perform their functions without causing or suffering unacceptable electromagnetic interference from other equipment in the same environment.

EMI

Electro-Magnetic Interference. Unwanted electromagnetic coupling, such as a ham radio heard on an electric organ or church music heard in hearing aids. Also known as “static”.

EPLD

Erasable Programmable Logic Device. An electronic device for performing logical operations that one can easily erase and reprogram.

ESD

Electro-Static Discharge.

ESS

Environmental Stress Screening.

EST

Environmental Stress Testing.

EXUT

Enhanced Universal Trunk card.

Field programmable

A program that is changeable after installation.

FCC

Federal Communications Commission.

Firmware

Hardwired logic, software, data, and programming instructions such as that stored by threading wires through ferrite cores. May also refer to software programmed in the factory or burnt in the field, and is semi-permanently stored within ROM.

Flash memory

Electrically erasable memory that is non-volatile (not affected by power disruptions).

FPGA

Field Programmable Gate Array.

HI

Host Interface- DSP to MPU.

ID

Identification.

IDE

Integrated Drive Electronics. A low-cost hard disk drive interface.

IP

Internet Protocol.

IPE

Intelligent Peripheral Equipment. A range of cards that contain micro-processors that provide off-loading of the CPU function and the flexibility to make changes to the system's parameters without revising the hardware.

IVR

Interactive Voice Response. An application that allows telephone callers to interact with a host computer via pre-recorded messages and prompts.

Kernel

That part of a computer's operating system that performs basic functions like switching between tasks.

LAN

Local Area Network.

LED

Light Emitting Diode.

Loader

A device that moves a program or data from a floppy or hard disk and stores it into a computer's RAM memory.

M1

Meridian 1 switch.

Main DN

The directory number that conferees dial to enter the conference.

MAT

Meridian Administration Tool. Software enabling those performing OA&M to have a Windows™ graphical user interface (GUI) with Nortel Networks switches.

MINT

Message INTerrupt. This occurs when a message being transmitted receives an interrupt signal from an outside device, which must process a task of its own. Then the transmission of the original message can resume, or be resent.

MMail

Meridian Mail. Nortel Networks proprietary voice processing platform.

MMI

Man-Machine Interface.

MPU

Microprocessor Unit in the MICB card.

MTBF

Mean Time Between Failure. A measure of reliability: the time that a user may reasonably expect a device or system to work before an incapacitating fault occurs. Also, the average number of hours between one random failure and the next under stated conditions.

MTTR

Mean Time To Repair. The average time required for corrective maintenance.

MWI

Message Waiting Indicator. A lamp or other visual display on a telephone set that informs the user that one or more messages have been left in the user's voicemail box.

NTP

Nortel Networks technical publications; customer documentation. Each NTP is identified by a unique ten-digit publication number.

OA&M

Operations, Administration, and Maintenance.

OEM

Original Equipment Manufacturers.

OTP

One-Time Programmable. Name given to a type of PCMCIA card.

PAS

Product Administration System.

PBX

Private Branch eXchange. A telephony switch that is privately owned.

PCB

Printed Circuit Board.

PCM

Pulse Code Modulation. A method for encoding an analog voice signal into a digital bit stream.

PCMCIA

Personal Computer Memory Card International Association. This organization has defined a credit card sized plug-in board for use in PCs. These cards are the only way to get to a laptop bus without using a docking station. In addition, application software can be stored on the card into system address space so that the software can run directly from the card, resulting in a faster start and less memory required from the host computer.

RTC

Real Time Clock. System clocking influenced/determined by connection to a time process external to processing by the system.

SBC

Sub-Band Coding. Algorithm used by Meridian Mail and NGen for compressing speech data down to just over a quarter of its original size.

Scalable architecture

A way of designing a system that allows it to be resized with relative ease; the cost required to increase its size in proportion to the new size.

SCSA

Signal Computing System Architecture. A generalized open-system architecture describing the components and specifying the interfaces for a signal processing system for PC-based voice processing, call processing, and telecom switching.

SCSI

Small Computer System Interface. A device that enables computers to cable-connect to networks or external tape units/hard drives.

SDI

Serial Data Interface. For some Meridian switches, provides ports between the CPU and external devices such as a teletype or maintenance telephone. More generally, an SDI is a mechanism for changing the parallel arrangement of data within computers to the serial form used on transmission lines and vice versa.

SL-1

Generic term given to Nortel Networks digital switches. Meridian 1 refers specifically to the current series of Nortel Networks PBXs.

STA

Single Terminal Access.

Telephone User Interface

An interface that allows the scheduling of simple conferences over a DTMF telephone.

TN

Terminal Number.

TUI

See Telephone User Interface.

VGA

Video Graphics Adapter. A computer adapter that provides high resolution graphics and 256 colors.

UART

Universal Asynchronous Receiver/Transmitter.

UI

User Interface.

.WAV

File format used for storing voice files created under Microsoft Windows.

Index

Meridian 1 and Succession Communication Server for Enterprise 1000

Meridian Integrated Conference Bridge

Description, Installation, Administration, and Maintenance

Information is subject to change without notice. Nortel Networks reserves the right to make changes in design or components as progress in engineering and manufacturing may warrant. This equipment has been tested and found to comply with the limits for a Class A digital device pursuant to Part 15 of the FCC rules, and the radio interference regulations of Industry Canada. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy, and if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at their own expense.
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